



Ministry of Transportation

# **Highway 7&8 Transportation Corridor Planning and Class EA Study**

From Greater Stratford to New Hamburg Area  
MTO Group Work Project # 13-00-00

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## Report A: Study Plan for Technical Work, Outreach and Consultation

# DRAFT

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July, 2007

[www.7and8corridorstudy.ca](http://www.7and8corridorstudy.ca)



This report is presented in draft format in order to obtain information and comments from stakeholders. Your input is requested by October 30, 2007 so the report can be finalized.

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## **SUPPORTING DOCUMENTATION**

- Supporting Document #1: List of Abbreviations and Glossary of Terms
- Supporting Document #2: Highway 7&8 Transportation Corridor Planning and Class EA Study, Summary of Reports
- Supporting Document #3: Detailed Description of Alternatives
- Supporting Document #4: Federal/Provincial EA Co-ordination
- Supporting Document #5: Preliminary Factors, Sub-Factors, Criteria and Indicators for Evaluation of Area Transportation System Alternatives and Provincial Roadway Alternatives
- Supporting Document #6: Record of Consultation During Preparation of the Study Plan (to be completed before finalizing the Study Plan)

## LIST OF EXHIBITS

- Exhibit 1.1: Map of Analysis Area
- Exhibit 1.2: Summary of Study Objectives
- Exhibit 1.3: Preliminary Statement of Transportation Problems and Opportunities
- Exhibit 2.1: Overview of Planning and Class EA Study Process (Key Tasks, Reports, PICs and Information Presented, Preliminary Schedule)
- Exhibit 3.1: Assumptions of EA Proponency and Completion of Work
- Exhibit 5.1: Application of GGH Growth Plan and Provincial Policy Statement Policy Framework
- Exhibit 5.2: 'Area Transportation System' Context
- Exhibit 5.3: Comparison of Ideal Highway Geometric Conditions and Those on Highway 7&8
- Exhibit 7.1: Summary of Application Of Evaluation Methodologies
- Exhibit 7.2: Preliminary Identification Of Factors, Sub-factors And Criteria To Be Considered In The Generation, Assessment And Evaluation Of Alternatives
- Exhibit 7.3: Process Overview for the Development, Assessment and Evaluation of the Area Transportation System Alternatives (Phase 2 of Study) and Preliminary Planning Alternatives (Phase 3 of Study)
- Exhibit 7.4: Principles for Generating Preliminary and Detailed Planning Alternatives
- Exhibit 7.4: Process Overview for the Development, Assessment and Evaluation of Detailed Planning Alternatives for Provincial Roadway (Phase 4 of Study)
- Exhibit 9.1: Categories of Stakeholders
- Exhibit 9.2: Role of Stakeholders
- Exhibit 10.1: Transportation Environmental Study Report Contents

## **1 INTRODUCTION**

### **1.1 Introduction To The Highway 7&8 Transportation Corridor Planning And Class EA Study**

The Ministry of Transportation (MTO) has initiated a Highway 7&8 Transportation Corridor Planning and Class Environmental Assessment (Class EA) Study, from Greater Stratford to the New Hamburg area. The study will:

- develop a plan that addresses:
  - capacity, operation and safety needs along the 2-lane section of Highway 7&8 between Stratford and the New Hamburg area and through the urban centres (Stratford, Shakespeare and New Hamburg) along Highway 7&8 for the movement of people and goods; and
  - linkage needs between the analysis area to transportation corridors serving other regions in the province.
- prepare a preliminary design for the provincial roadway components of that plan; and
- be documented in a Transportation Environmental Study Report for public review at study completion.

This study will also:

- Review and build on the MTO Highway 7&8 Study Design – Greater Stratford to New Hamburg Area, December 2005;
- Address the transportation policies and directions of the ‘Growth Plan for the Greater Golden Horseshoe’ (recognizing that a portion of the analysis area for this project lies within the GGH);
- Recognize several municipal transportation initiatives in the area;
- Recognize other relevant transportation corridor studies being undertaken by MTO; and
- Be carried out as a Group ‘A’ project, in accordance with the Class Environmental Assessment for Provincial Transportation Facilities.

Access to the above documents can be obtained through the project website at [www.7and8corridorstudy.ca](http://www.7and8corridorstudy.ca).

A major component of the study will be an outreach and consultation program structured around six key points of decision-making, each of which will be supported by:

- the release of a newsletter;
- the release of draft reports for review and comment;
- a round of Public Information Centres (PICs);
- posting of information on the study web site; and
- newspaper notices announcing the above.

At the completion of the study, the filing of a Transportation Environmental Study Report (TESR) will be announced through newspaper notices. Decisions on funding and timing



of detail design and construction are based upon environmental clearance of the TESR, since it determines the type of transportation facilities and their location.

This Study Plan is designed to provide a comprehensive framework to guide the study. For an overview of this framework, readers are referred to the following exhibits in the Study Plan:

- Exhibit 1.1: Map of Analysis Area
- Exhibit 1.2: Summary of Study Objectives
- Exhibit 1.3: Preliminary Statement of Transportation Problems and Opportunities
- Exhibit 2.1: Overview of Planning and Class EA Study Process (Key Tasks, Reports, PICs and Information Presented, Preliminary Schedule)
- Exhibit 3.1: Assumptions of EA Proponency and Completion of Work
- Exhibit 5.1: Application of GGH Growth Plan and Provincial Policy Statement Policy Framework
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- Exhibit 7.1: Summary of Application Of Evaluation Methodologies
- Exhibit 7.2: Preliminary Identification Of Factors, Sub-factors And Criteria To Be Considered In The Generation, Assessment And Evaluation Of Alternatives
- Exhibit 7.3: Process Overview for the Development, Assessment and Evaluation of the Area Transportation System Alternatives and Preliminary Planning Alternatives (Phases 2 and 3 of Study)
- Exhibit 7.4: Principles for Generating Preliminary and Detailed Planning Alternatives
- Exhibit 7.5: Process Overview for the Development, Assessment and Evaluation of Detailed Planning Alternatives for Provincial Roadway (Phase 4 of Study)
- Exhibit 9.1: Categories of Stakeholders
- Exhibit 9.2: Summary of Role of Stakeholders
- Exhibit 10.1: Transportation Environmental Study Report Contents

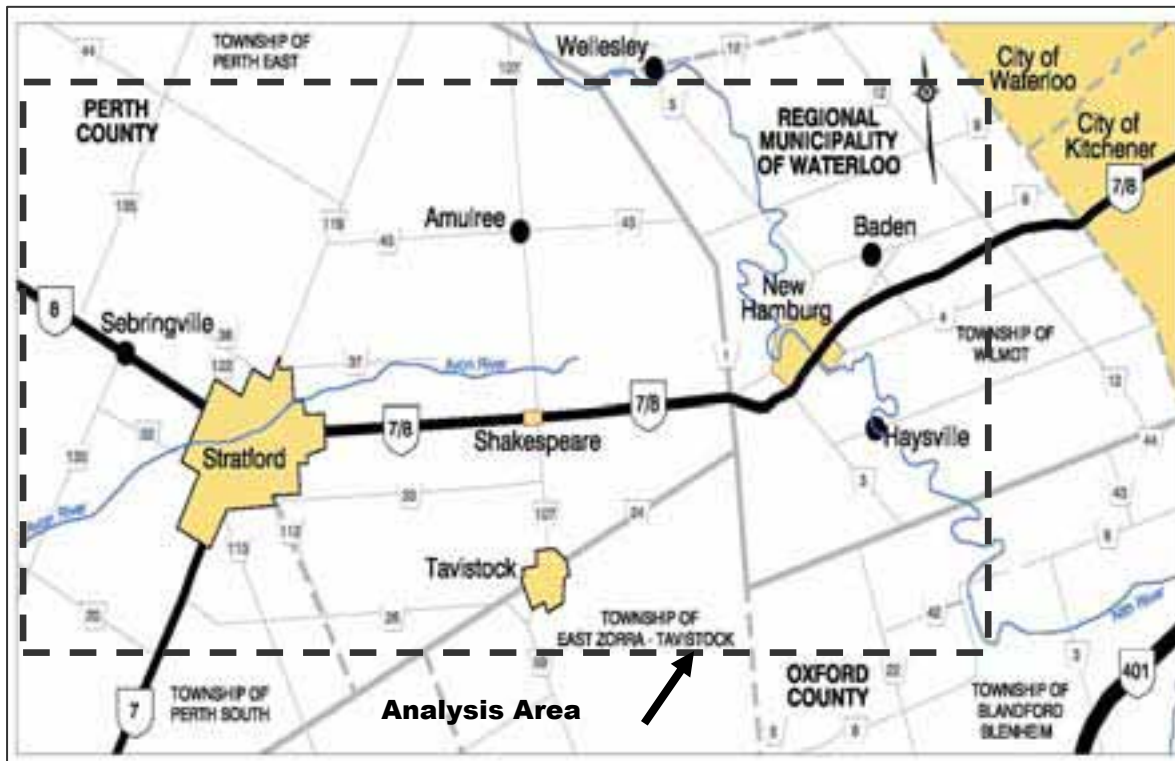
These exhibits may be presented at the first round of Public Information Centres.

For orientation and reference, a map of the Analysis Area follows. The Analysis Area has been established to identify transportation problems and opportunities associated with Highway 7&8 from Greater Stratford to the New Hamburg area plus the broader 'Area Transportation System'. The Analysis Area is not intended to represent a Study Area for the planning alternatives to be generated during the course of the study. The Study Area will be generated by the MTO Project Team through consultation with affected stakeholders as described in Sections 2.2 and 7.5.1.5 of this Study Plan.

## Exhibit 1.1

### HIGHWAY 7&8 TRANSPORTATION CORRIDOR PLANNING & CLASS EA STUDY

#### MAP OF ANALYSIS AREA



## 1.2 Study Objectives

The objectives of the Highway 7&8 Transportation Corridor Planning and Class EA Study are, in part, based upon the policies of the final Growth Plan for the Greater Golden Horseshoe, released by the province on June 16, 2006. The study objectives are summarized in Exhibit 1.2 and then discussed below:

<b>Exhibit 1.2</b> <b>Highway 7&amp;8 Transportation Corridor Planning and Class EA Study</b> <b>Summary of Study Objectives</b>	
1.	To identify and assess the factors that are driving 'Area Transportation System' needs
2.	To apply those driving factors in preparing a Transportation Development Strategy to address long-term multi-year needs for the movement of people and goods
3.	To undertake the planning and preliminary design of the provincial roadway components (provincial highways and provincial transitways) of those strategies
4.	To conduct the planning and preliminary design of provincial roadways with an inherent approach of avoiding or minimizing overall environmental impacts
5.	To identify highway access management measures for growth management and highway protection
6.	To engage public and stakeholders early in the study process and continue to engage them throughout the study process

The study objectives are the following:

- 1. To identify and assess the factors that are driving 'Area Transportation System' needs:**
  - to identify and assess factors that are driving 'Area Transportation System' needs, including area travel characteristics and the state of the existing provincial highway infrastructure (physical and operational); land use, area economics, employment, population, technology, environmental, socio-economic and cultural factors; and related programs, policy and legislation (for a definition and description of 'Area Transportation System', see Section 5.2.1 of this Study Plan);
- 2. To apply those driving factors in preparing a Transportation Development Strategy to address long-term multi-year needs for the movement of people and goods:**

- to apply those driving factors in preparing a Transportation Development Strategy to address long-term multi-year needs for the movement of people and goods within the context of a balanced and integrated 'Area Transportation System', which:
  - a) provides adequate 'Area Transportation System' capacity in order to serve current and projected needs of the travelling public, stimulate economic growth, and create jobs;
  - b) ensures that the corridors necessary for the various travel modes of the 'Area Transportation System' are identified and protected, in order to maintain and improve transportation linkages;
  - c) is co-ordinated and consistent with land-use related growth objectives and growth forecasts, in order to reflect the impact of designation of areas as urban growth centres, major transit station areas, settlement areas, built-up areas, intensification areas and corridors, non-urban areas, greenfield areas and greenbelt; and
  - d) has the following attributes:
    - (i) considers both the connectivity of modes, and the separation of modes within corridors, in order to provide travel choice for the various modes of the 'Area Transportation System' and thereby reduce reliance on any single mode;
    - (ii) puts the transit component of the 'Area Transportation System' (GO Transit, provincial transitways, other inter-city transit) as the first investment priority in order to support growth in a compact and efficient form;
    - (iii) puts goods movement as the first investment priority in the provincial highway component of the 'Area Transportation System', for service to cities, other major centres of population and other regions of the province, priority truck routes leading into those communities, and major regional goods movement facilities such as intermodal facilities.

**3. To undertake the planning and design of the provincial roadway components (provincial highways and provincial transitways) of those strategies:**

- to pursue the provincial roadway components (provincial highways and provincial transitways) of the Transportation Development Strategy by undertaking their planning, design and protection as modern, safe, efficient and effective facilities.

**4. To conduct the planning and design of provincial roadways with an inherent approach of avoiding or minimizing overall environmental impacts:**

- to conduct the planning and design of provincial roadways with an inherent approach of avoiding or minimizing overall environmental impacts (ie To avoid

natural, socio-economic and cultural environmental impacts) through consideration of alternatives and “mitigation measures”;

**5. To identify highway access management measures for growth management and highway protection:**

- to identify highway access management measures in order to:
  - discourage highway-related development in areas not designated for growth;
  - protect the purpose and level of service of ‘Area Transportation System’ provincial highways; and
  - protect the benefits of any new provincial highway capacity; and

**6. To engage public and stakeholders early in the study process and continue to engage them throughout the study process:**

- to engage public and stakeholders early in the study process and continue to engage them, in order to provide meaningful and regular outreach and consultation that is integrated with and supports the study work and decision-making process.

**1.3 Preliminary Statement of Transportation Problems and Opportunities**

Based upon previous MTO studies, and the final Growth Plan for the Greater Golden Horseshoe (released by the province on June 16, 2006), a preliminary statement of problems and opportunities for the Highway 7&8 Transportation Corridor Planning and Class EA Study is provided in Exhibit 1.3 below:

<b>Exhibit 1.3</b> <b>Highway 7&amp;8 Transportation Corridor Planning and Class EA Study</b> <b>Preliminary Statement of Transportation Problems and Opportunities</b>	
1.	There are transportation capacity concerns for the movement of both people and goods along the 2-lane section of Highway 7&8 between Stratford and the New Hamburg area and on Highway 7&8 through the urban centres (Stratford, Shakespeare and New Hamburg).
2.	Provincial / inter-regional traffic through the urban centres (Stratford and Shakespeare) along Highway 7&8 interferes with their “downtown / historic crossroads” function.
3.	The connection of the analysis area to transportation corridors serving other regions in the province may be inadequate for long-term transportation and economic development needs.
4.	Geometric and traffic safety characteristics along Highway 7&8 should be addressed with respect to long-term traffic needs.

<b>Exhibit 1.3</b> <b>Highway 7&amp;8 Transportation Corridor Planning and Class EA Study</b> <b>Preliminary Statement of Transportation Problems and Opportunities</b>	
5.	There is currently no comprehensive highway access management plan for Highway 7&8 from Greater Stratford to New Hamburg to protect highway needs and to address the GGH policy of discouraging inappropriate highway-related growth.
6.	The GGH Growth Plan policy of co-ordinating transportation system planning and land use planning must be addressed.

Highway 7&8 transportation corridor problems and opportunities are discussed in further detail in Section 5.2.4 of this Study Plan.

#### **1.4 Purpose Of This Study Plan and its Relevance to the Overall Planning & EA Process**

This Study Plan is the first deliverable of the planning and Class EA Study. The Study Plan establishes the framework and commitments for conducting the planning and Class EA Study, particularly in the areas of:

- study purpose and objectives;
- study process;
- study reports;
- outreach and consultation program;
- study schedule; and
- processes to generate and evaluate alternatives.

The Study Plan builds on the principles and processes for transportation engineering, environmental protection, evaluation, consultation and documentation that are specified in the 'Class EA for Provincial Transportation Facilities'. Further details of the Class EA process and the rationale for the framework of the Study Plan are provided in Sections 2.1 and 4.0.

In addition, the Study Plan provides the role of a scoping document under the *Canadian Environmental Assessment Act* (CEAA), to:

- confirm the "scope of project" that is being assessed (project description);
- establish the scope of factors to be considered in the EA process;
- describe the methodology to assess the environmental effects of the project, including the specific methodologies for assessing cumulative effects and for determining significance; and
- provide the basis for requesting federal authorities to "trigger" CEAA as early as is practicable in the planning process before "irrevocable decisions" are made.

## **2 OUTLINE OF PLANNING AND CLASS EA STUDY PROCESS**

### **2.1 Overview of the Class EA Process and the Class Environmental Assessment For Provincial Transportation Facilities**

The *Environmental Assessment Act* (EA Act) provides for the preparation of a Class Environmental Assessment (Class EA) for submission to the Minister of the Environment for review and a decision by the provincial cabinet regarding approval through order-in-council. A Class EA is an approved planning document that defines groups of projects and activities and the environmental assessment (EA) processes which the proponent commits to following for each of these undertakings.

The Ontario Ministry of Transportation developed the 'Class Environmental Assessment for Provincial Transportation Facilities', which was approved by Order in Council 1653/99 on October 6, 1999, as amended on July 14, 2000. It provides, in part, the following:

- classification of projects and activities;
- study stages and phases;
- transportation engineering and environmental protection principles;
- consultation principles and processes;
- documentation and "bump-up" principles and processes; and
- environmental clearance process.

This Highway 7&8 Transportation Corridor Planning and Class EA Study will comply with the Class EA process for 'Group A' projects (as defined under the Class Environmental Assessment for Provincial Transportation Facilities) for MTO undertakings in which highway widening, a major realignment and bypass of sections of existing highway, a new provincial highway (provided it is not a new 400-series highway), a new provincial transitway, or combinations of the above are possible outcomes.

By following the Class EA process, the Highway 7&8 Transportation Corridor Planning and Class EA Study does not require formal review and approval under the *Ontario Environmental Assessment Act*. The approved process itself is extensive, with significant consultation and outreach to agencies, stakeholders and the public.

If, at the completion of the Class EA study process, a stakeholder is not satisfied with MTO attempts to reach a resolution regarding concerns brought forward, that stakeholder may challenge the study by making a request to the Minister of the Environment to determine if a Part 2 order or "bump-up" is required. If the Minister agrees that a bump-up is required, the project would be re-designated to an individual environmental assessment, and would be subject to the formal review and approval processes noted above.

If, during the course of the study, it is determined that a new 400-series highway should be pursued, the Highway 7&8 Transportation Corridor Planning and Class EA Study would no longer be eligible to follow the Class EA process. Under such circumstances, the study would have to be converted to an “Individual EA” study, with the extended timeframes associated with formal review and approvals (which include the possibility of public hearings) required by the Ontario *Environmental Assessment Act*, as follows:

- the Study Plan would be converted to an Environmental Assessment Terms of Reference, and would be submitted to the Minister of the Environment for review and a decision by the Minister regarding approval; and
- the Transportation Environmental Study Report would be replaced by an Environmental Assessment Report, and would be submitted to the Minister of the Environment for review and a decision by the provincial cabinet regarding approval through order-in-council.

Because this Study Plan has been structured to be consistent with the requirements of a Terms of Reference, it provides the basis for an efficient transition to an individual Environmental Assessment in the event that the Study identifies a new 400-series highway as the preferred solution.

The overview of the planning and EA process for the Highway 7&8 Transportation Corridor Study that is provided in Section 2.2 below builds on the requirements provided in the Class Environmental Assessment for Provincial Transportation Facilities. A more detailed summary of the reports that will be produced for this study (both working papers and milestone reports) is provided in Supporting Document #2 for this Study Plan.

Environmental clearance of the Transportation Environmental Study Report (TESR) marks completion of the Highway 7&8 Transportation Corridor Planning and Class EA Study. If the TESR is cleared, the next stage of the project under the terms of the Class Environmental Assessment for Provincial Transportation Facilities, is detail design for provincial roadways (provincial highways and/or transitways). Detail design will follow the design and consultation processes outlined in the Class Environmental Assessment for Provincial Transportation Facilities, and will be documented in a Design and Construction Report (DCR).

## **2.2 Overview of the Planning and Class EA Study Process for The Highway 7&8 Transportation Corridor Study (Key Tasks, Reports, PICs and Information Presented, and Preliminary Schedule)**

Exhibit 2.1 below provides an overview of the planning and Class EA study process that will be used for the Highway 7&8 Transportation Corridor Study.



**Exhibit 2.1**  
**Highway 7&8 Transportation Corridor Planning and Class EA Study**  
**Overview of the Study Process**

STUDY PHASE	OBJECTIVES AND KEY TASKS	REPORTS	PUBLIC INFORMATION CENTRES (PICs) + INFORMATION PRESENTED	PRELIMINARY SCHEDULE
<b>1. STUDY PLAN</b>	<ul style="list-style-type: none"> <li>Establish framework to guide the study work, including: <ul style="list-style-type: none"> <li>study purpose and objectives</li> <li>overview of study process</li> <li>overview of study reports</li> <li>overview of outreach and consultation</li> <li>study schedule</li> <li>overview of processes, factors &amp; criteria to generate, assess &amp; evaluate alternatives</li> </ul> </li> </ul>	Report "A": Study Plan for Technical Work, Outreach and Consultation	PIC #1: <ul style="list-style-type: none"> <li>Study Newsletter #1</li> <li>Recently completed work: <ul style="list-style-type: none"> <li>drafts of Reports "A", "B" and 1<sup>st</sup> part of "F"</li> </ul> </li> <li>Proposed approach to upcoming work: <ul style="list-style-type: none"> <li>process to define 'Area Transportation System' problems and opportunities</li> <li>process and criteria for evaluating and selecting 'Area Transportation System' alternatives</li> <li>process, factors, and criteria for generating, assessing, and evaluating preliminary planning alternatives</li> </ul> </li> </ul>	April 2007 to August 2007  (PIC #1 July/August, 2007)
<b>EA STAGE 1: ALTERNATIVES TO THE UNDERTAKING - TRANSPORTATION NEEDS ASSESSMENT</b>				
<b>2. AREA TRANSPORTATION SYSTEM PLANNING</b>	<ul style="list-style-type: none"> <li>Overview of Transportation, Land Use, Economic and Environmental Conditions within the Analysis Area <ul style="list-style-type: none"> <li>description and assessment of land use and economic conditions</li> <li>description and assessment of existing transportation conditions</li> <li>preliminary assessment of problems and opportunities based on the above</li> <li>overview of environmental conditions and constraints within analysis area (based upon secondary source information)</li> </ul> </li> </ul>	Report "B": Working Paper – Overview of Transportation, Land Use and Economic Conditions within the Analysis Area  Report "F" – 1 <sup>st</sup> Part: Working Paper –Environmental Conditions and Constraints	PIC#2: <ul style="list-style-type: none"> <li>Study Newsletter #2</li> <li>Recently Completed work: <ul style="list-style-type: none"> <li>drafts of Reports "C", "D", &amp; "E"</li> </ul> </li> <li>Proposed approach to upcoming work: <ul style="list-style-type: none"> <li>process and criteria for generating provincial roadway detailed planning alternatives</li> </ul> </li> </ul>	August 2007 to Spring 2008  (PIC #2 in Spring 2008)
	<ul style="list-style-type: none"> <li>Identification of Area Transportation System Problems and Opportunities: <ul style="list-style-type: none"> <li>Establish travel demand forecasting approach and methodology</li> <li>Forecast future 'Area Transportation System' travel characteristics and patterns</li> <li>Detailed description and assessment of current and future 'Area Transportation System' problems and opportunities</li> </ul> </li> </ul>	Report "C": Working Paper – 'Area Transportation System' Problems and Opportunities		

**Exhibit 2.1**  
**Highway 7&8 Transportation Corridor Planning and Class EA Study**  
**Overview of the Study Process**

STUDY PHASE	OBJECTIVES AND KEY TASKS	REPORTS	PUBLIC INFORMATION CENTRES (PICs) + INFORMATION PRESENTED	PRELIMINARY SCHEDULE
	<ul style="list-style-type: none"> <li>• Identify 'Area Transportation System' alternatives:               <ul style="list-style-type: none"> <li>○ Do Nothing</li> <li>○ Transportation Demand Management (TDM)</li> <li>○ Transportation System Management (TSM)</li> <li>○ Local Transit*</li> <li>○ Inter-regional transit and passenger rail*</li> <li>○ Air Services*</li> <li>○ Marine Services*</li> <li>○ Freight Rail*</li> <li>○ Municipal Roads*</li> <li>○ Provincial Highways/Transitways*</li> </ul>               (* new or improved operations and/or infrastructure)             </li> <li>• Determine degree to which individual 'Area Transportation System' alternatives address problems and opportunities</li> <li>• Select and define elements of area transportation system alternatives and group them into combinations:               <ul style="list-style-type: none"> <li>○ Do nothing</li> <li>○ Combination #1: Optimize Existing Network</li> <li>○ Combination #2: New / Expanded Non-Road Infrastructure + Elements of Combination #1</li> <li>○ Combination #3: Widen/Improve Roads + Elements of Combination #2</li> <li>○ Combination #4: New Municipal Roads and/or Provincial Highways/Transitways + Elements of Combination #3</li> </ul> </li> <li>• Determine the degree to which combination alternatives address the problems and opportunities and select the preferred combination(s)</li> <li>• Select the alternatives that will proceed to Preliminary Planning</li> </ul>	Report "D": Working Paper – Area Transportation System Alternatives		

<b>Exhibit 2.1</b> <b>Highway 7&amp;8 Transportation Corridor Planning and Class EA Study</b> <b>Overview of the Study Process</b>				
STUDY PHASE	OBJECTIVES AND KEY TASKS	REPORTS	PUBLIC INFORMATION CENTRES (PICs) + INFORMATION PRESENTED	PRELIMINARY SCHEDULE
<b>3. PRELIMINARY PLANNING</b> (plans at 1:20,000 scale)	<ul style="list-style-type: none"> <li>• Generate the detailed elements of the preliminary planning alternatives (as applicable) based on transportation, natural, land use / social, economic and cultural factors:               <ul style="list-style-type: none"> <li>○ new/expanded services</li> <li>○ general areas of geometrical improvements and widening to existing facilities</li> <li>○ new corridors</li> <li>○ environmental protection for the above (by minimizing intrusion into areas of environmental significance as identified through secondary source information</li> <li>○ conceptual areas of limitations to highway access</li> </ul> </li> <li>• Comparative evaluation of the relative advantages and disadvantages of preliminary planning alternatives</li> <li>• Select alternatives for incorporation into transportation development strategy (including preliminary study area(s))</li> <li>• Decision if study is to continue through Phases 4-6 (<i>if provincial roadway alternatives are selected</i>)</li> </ul>	Report "E": Milestone Report – Highway 7&8 Transportation Corridor Needs Assessment		

**Exhibit 2.1**  
**Highway 7&8 Transportation Corridor Planning and Class EA Study**  
**Overview of the Study Process**

STUDY PHASE	OBJECTIVES AND KEY TASKS	REPORTS	PUBLIC INFORMATION CENTRES (PICs) + INFORMATION PRESENTED	PRELIMINARY SCHEDULE
<b>EA STAGE 2: ALTERNATIVE METHODS FOR CARRYING OUT THE UNDERTAKING</b>				
<b>4. DETAILED PLANNING FOR PROVINCIAL ROADWAYS</b>  (plans at 1:10,000 scale)	<ul style="list-style-type: none"> <li>Identify environmental conditions and constraints within the detailed planning study area (as identified through field investigations to augment secondary source information)</li> <li>Establish final study area(s) for provincial roadways for the preliminary planning alternatives carried forward from Phase 3</li> <li>Generate, specific location / type / character and template "footprint" for the following categories of provincial roadway detailed planning alternatives (as applicable): <ul style="list-style-type: none"> <li>new provincial transitway route location &amp; technology</li> <li>new provincial highway route location &amp; highway type</li> <li>specific location and type of geometrical improvements to existing highways</li> <li>specific location, extent and direction of widening to existing highways</li> </ul> </li> <li>Generate specialty engineering alternatives (bridge, drainage &amp; hydrology, foundation, pavement &amp; road base, traffic control &amp; electrical infrastructure) for the above</li> <li>For highway alternatives, establish specific nature &amp; location of limitations to highway access</li> <li>Undertake environmental impact assessment for the above (by striving to avoid or prevent major "footprint"-based environmental impacts to the area and its features, including fisheries and aquatic ecosystems, terrestrial ecosystems, groundwater, land use factors, contaminated property, built heritage &amp; cultural landscapes, archaeology, landscape composition, surface water, and designated areas; and by striving to avoid intrusion into noise-sensitive areas)</li> </ul>	Report "F" - 2 <sup>nd</sup> Part: Working Paper - Environmental Conditions and Constraints  Report "G": Working Paper - Generation of Detailed Planning Alternatives for Provincial Roadways	PIC#3: <ul style="list-style-type: none"> <li>Study Newsletter #3</li> <li>Recently completed work: <ul style="list-style-type: none"> <li>draft of Reports "G" &amp; 2<sup>nd</sup> part of "F"</li> </ul> </li> <li>Proposed approach to upcoming work: <ul style="list-style-type: none"> <li>process and criteria for evaluating &amp; selecting provincial roadway detailed planning alternatives</li> </ul> </li> </ul>	Spring 2008 to Fall 2008  (PIC #3 in Fall 2008)
	<ul style="list-style-type: none"> <li>Evaluate and select specific location / type / character and template "footprint" of the provincial roadway detailed planning alternatives</li> </ul>	Report "H": Milestone Report - Selection of Detailed Planning Alternatives for Provincial Roadways	PIC#4: <ul style="list-style-type: none"> <li>Study Newsletter #4</li> <li>Recently completed work: <ul style="list-style-type: none"> <li>draft of Report "H"</li> </ul> </li> <li>Proposed approach to upcoming work: <ul style="list-style-type: none"> <li>process and criteria for generating provincial roadway preliminary design alternatives</li> </ul> </li> </ul>	Fall 2008 to Fall 2009  (PIC #4 in Spring 2008)

**Exhibit 2.1**  
**Highway 7&8 Transportation Corridor Planning and Class EA Study**  
**Overview of the Study Process**

STUDY PHASE	OBJECTIVES AND KEY TASKS	REPORTS	PUBLIC INFORMATION CENTRES (PICs) + INFORMATION PRESENTED	PRELIMINARY SCHEDULE
<b>5. PRELIMINARY DESIGN FOR PROVINCIAL ROADWAYS</b>  (plans at 1:2,000 scale)	<ul style="list-style-type: none"> <li>For the detailed planning alternatives carried forward from Phase 4, generate provincial roadway alternatives for the following categories of preliminary design (as applicable):                             <ul style="list-style-type: none"> <li>calculated vertical &amp; horizontal alignment and cross-section</li> <li>highway interchange &amp; intersection preliminary design</li> <li>transitway station preliminary design</li> <li>location/design of private entrances to highway</li> </ul> </li> <li>Generate specialty engineering alternatives for the above (bridge, drainage &amp; hydrology, foundation, pavement &amp; road base, traffic control &amp; electrical infrastructure)</li> <li>For the above, develop environmental protection for the area and its features (as identified in Phase 4), including environmental control/mitigation, compensation and/or enhancement to address "footprint" impacts, interference impacts, traffic access modification impacts to property and neighbourhood/commercial areas, timing impacts; and by addressing effects of malfunctions or accidents, cumulative effects from the project in combination with other projects</li> <li>Identify right-of-way and property acquisition requirements</li> <li>Identify utility requirements (relocation etc)</li> <li>Develop preliminary staging of implementation</li> </ul>	Report "I": Working Paper – Generation of Preliminary Design Alternatives for Provincial Roadways	PIC#5: <ul style="list-style-type: none"> <li>Study Newsletter #5</li> <li>Recently completed work:                             <ul style="list-style-type: none"> <li>draft of Report "I"</li> </ul> </li> <li>Proposed approach to upcoming work:                             <ul style="list-style-type: none"> <li>process and criteria for evaluating &amp; selecting provincial roadway preliminary design alternatives</li> <li>process and criteria for evaluating and selecting provincial highway access management alternatives</li> </ul> </li> </ul>	Spring 2009 to Fall 2009  (PIC #5 in Fall 2009)
	<ul style="list-style-type: none"> <li>Evaluate and select provincial roadway preliminary design alternatives, and develop final access management plan</li> </ul>	Report "J": Milestone Report – Selection of Preliminary Design Alternatives for Provincial Roadways	PIC#6: <ul style="list-style-type: none"> <li>Study Newsletter #6</li> <li>Recently Completed Work                             <ul style="list-style-type: none"> <li>drafts of Reports "J" and "K"</li> </ul> </li> </ul>	Fall 2009 to Winter 2010  (PIC #6 in Winter 2010)
<b>6. TRANSPORTATION ENVIRONMENTAL STUDY REPORT</b>	<ul style="list-style-type: none"> <li>Filing of report, formal public review, and environmental "clearance"</li> </ul>	Report "K": Transportation Environmental Study Report (documentations overall study)	NO PIC <ul style="list-style-type: none"> <li>Study Newsletter #7</li> </ul>	TESR filed in Spring 2010
<b>PHASE 7: DETAIL DESIGN (documented in a Design and Construction Report) - NOT PART OF THIS STUDY</b>				

## **2.3 Federal/Provincial EA Co-ordination**

The Highway 7&8 Transportation Corridor Planning and EA Study is subject to the requirements of the *Ontario Environmental Assessment Act*. The requirements of the *Canadian Environmental Assessment Act* (CEAA) may also apply. Both governments have agreed to coordinate their respective EA processes as outlined in the Canada-Ontario Agreement on EA Cooperation, November 2004 (Harmonization Agreement).

The federal/provincial co-ordination process outlined in Supporting Document #4 of this Study Plan will guide the study. This approach is designed to address the information requirements of both federal and provincial environmental assessment Acts, in accordance with the harmonization agreement.

It is recognized by both the Canadian Environmental Assessment Agency (on behalf of the federal authorities) and MTO that ongoing dialogue on the information requirements should continue as the project progresses. As such, it may be necessary to provide additional or more detailed information as the EA process proceeds. The intent is to produce a single body of documentation on environmental effects to meet all of the information needs of both the federal and provincial governments. To the extent practical, federal/provincial information requirements regarding potential factors to be assessed in the context of this study have been integrated. General information requirements under CEAA can be found in Supporting Document #4 of this Study Plan.

## **2.4 Overview of Principles for Conducting the Study**

The Highway 7&8 Transportation Corridor Planning and Class EA Study will be conducted under the following areas of study principles:

- transportation engineering principles;
- environmental protection principles;
- evaluation principles; and
- stakeholder outreach, consultation and documentation principles.

These principles, which build on those specified in the Class Environmental Assessment for Provincial Transportation Facilities, are outlined in the subsections below.

### **2.4.1 Transportation Engineering Principles**

The transportation engineering principles that will be applied to the alternatives examined in the Highway 7&8 Transportation Corridor Planning and Class EA Study are based on the 'Class Environmental Assessment for Provincial Transportation Facilities', and include the following:

- a) provide for the efficient movement of people and goods;

- b) meet the needs of the travelling public as a whole, by maximizing opportunities for mobility;
- c) address the identified 'Area Transportation System' problems and opportunities, and maximize the opportunity to satisfy existing and future provincial travel demand;
- d) ensure compatibility, connectivity and consistency with the existing and future provincial and municipal transportation system;
- e) improve the level of service, safety and operation for the provincial transportation system users;
- f) ensure that sound engineering and scientific principles and judgement are applied to the best available data in the analysis, assessment and evaluation of transportation engineering problems, opportunities and solutions in order to meet or exceed current provincial design standards and practices;
- g) maximize opportunities to make the facility "more safe";
- h) avoid directing large volumes of long-distance provincial traffic through settlement areas;
- i) ensure the technical feasibility of planned construction, operation and maintenance;
- j) minimize property requirements and impacts on adjacent properties;
- k) use highway access management principles in order to preserve and protect the functional integrity of the provincial transportation system; and
- l) co-ordinate with municipal transportation studies and with other MTO transportation studies.

#### **2.4.2 Environmental Protection Principles**

The environmental protection principles that will be applied to the alternatives examined in the Highway 7&8 Transportation Corridor Planning and Class EA Study are based on the 'Class Environmental Assessment for Provincial Transportation Facilities', and include the following:

- a) conduct the study with an inherent approach of avoiding or minimizing overall environmental impacts through consideration of alternatives, with the objective of avoiding significant environmental areas;

- b) conduct the study to address the content of the following:
  - the Ministry of Transportation 'Environmental Protection Requirements for Transportation Planning and Highway Design, Construction, Operation and Maintenance'; and
  - the Ministry of Transportation 'Environmental Reference for Highway Design';
- c) meet the requirements of federal and provincial environmental legislation;
- d) meet the intent of government-approved policy and inter-ministerial protocols that relate to environmental protection;
- e) balance environmental protection considerations with transportation engineering considerations during each stage of the study process, recognizing that safety and effectiveness of the transportation system is fundamental to such decisions;
- f) recognize that it is seldom possible to satisfy all interests when making the tradeoffs necessary in the EA process, and that no single environmental factor is "paramount";
- g) identify existing environmental conditions and potential impacts relevant to the study, recognizing the following general categories of impacts at the appropriate study phase:
  - footprint impacts (to the area and its features)
  - interference impacts (to the area and its features)
  - traffic access modification impacts (to property, neighbourhoods, commercial areas)
  - emissions impacts (to air, water, soil and utilization of same)
  - ecological impacts
  - timing impacts (relative to season, week, day, hour, duration of the impacts above)
  - effects of malfunctions or accidents that may occur in connection with the project
  - cumulative environmental effects that are likely to result from the project in combination with other projects or activities;
- h) balance the approaches to environmental protection, recognizing that the general order of decreasing preference is as follows:
  - avoidance/prevention
  - control / mitigation (reducing the severity of environmental impacts)
  - compensation (provision of "equivalent" or countervailing environmental features)
  - enhancement (improvement over previous environmental conditions);
- i) provide mitigation effort in proportion to environmental significance and ability to reasonably mitigate with environmental mitigation measures that are technically and economically feasible;
- j) recognize that environmental mitigation measures themselves may have impacts to be considered;



- k) address the Ministry of Transportation's 'Statement of Environmental Values' (for access to this document, please see the study web site); and
- l) consider the Provincial Policy Statement related to land use planning and development issued under Section 3 of the Planning Act (for access to this document, please see the study web site).

### **2.4.3 Evaluation Principles**

The evaluation principles that will be applied to the alternatives examined in the Highway 7&8 Transportation Corridor Planning and Class EA Study are based on the 'Class Environmental Assessment for Provincial Transportation Facilities', and include the following:

- a) conduct the study with an underlying comparative evaluation process which starts with a broad perspective, and narrows to the more focussed, on a phased and iterative basis, as the study proceeds:
  - phasing of evaluation is the following:
    - evaluate and select 'Area Transportation System' alternatives;
    - evaluate and select preliminary planning alternatives;
    - evaluate and select provincial roadway detailed planning alternatives;
    - evaluate and select provincial roadway preliminary design and highway access management alternatives;
  - based on an overview representation evaluation process as provided in the Study Plan, the process will be reviewed and confirmed at each phase of evaluation to:
    - present technical information which is the subject of the evaluation process
    - present and obtain comment from external stakeholders on the proposed definition and refinement of the process to be applied at that phase of evaluation
    - present and obtain comment from external stakeholders on the results of the evaluation process;
- b) multiple alternatives to be considered;
- c) evaluation process to be comprehensive, traceable and replicable, and to be understandable by those who may be affected by the decisions;
- d) evaluation process at some phases may include a screening / short-listing component to improve efficiency and clarity;
- e) evaluation criteria to be comprehensive, fundamental, relevant, independent, measurable, well-defined;

- f) relevant factors, including natural environment, land use / socio-economic environment, cultural environment, area economy, and transportation to be given due consideration (for details, see Section 7.3 of this Study Plan); and
- g) appropriate areas of emphasis to recognized study area features and character, with evaluation factors/criteria to be refined if appropriate to reflect different sections of the study area and different stages of the study process.

#### **2.4.4 Stakeholder Outreach And Consultation Principles**

Outreach and consultation is a major component of the Highway 7&8 Transportation Corridor Planning and Class EA Study. The principles for outreach and consultation are the following:

- a) Comprehensive outreach and consultation plan:
  - is systematic, innovative and flexible;
  - is open, inclusive, responsive, transparent, traceable and defensible;
  - provides early and proactive explanation of “process” and policy requirements and how/why they are effectively/efficiently addressed by the Study Plan for Technical Work, Outreach and Consultation;
  - is structured around and focussed on points of key decision-making (for details see Section 2.2 of this Study Plan);
- b) Study work and decision-making process is integrated with and built upon the direct involvement and contributions of stakeholders:
  - structured decision-making process established through this Study Plan at the beginning of the study process
  - meaningful consultation with stakeholders at points of focused outreach and consultation before significant decisions are made. At each round of public information centres the following information will be presented:
    - recently completed study work (in draft – eg. preliminary findings and decisions)
    - the proposed approach to undertake upcoming study work (eg. generation and/or evaluation of alternatives)
  - consultation scheduled and implemented in a manner that permits stakeholders to make informed contributions to study decisions;
- c) Stakeholder examination/comment is encouraged:
  - notify stakeholders of intention to carry out the study and in advance of key study milestones (for details see Section 9.1 of this Study Plan)
  - comprehensive effort to identify and engage stakeholders
  - early outreach to stakeholder groups, and continued engagement during the study
  - explain stakeholder role, and importance of stakeholder participation

- enable stakeholders to understand the process and follow the study through its various stages
  - facilitate understanding of process and issues, which may include divergent or competing stakeholder interests
  - make information accessible and understandable
  - constructively address stakeholder input, with all relevant evidence, opinion and perspectives considered
  - reasonable effort made to resolve concerns
  - role and effect of outreach and consultation documented during the study (eg in each report), showing the effect of input received on the Study discussions/directions (within limits imposed by the *Freedom of Information and Protection of Privacy Act*);
- d) Clear outreach and consultation to each stakeholder category (for details see Section 9.7 of this Study Plan):
- First Nations
  - Business/commercial interest groups
  - Emergency service providers
  - General public
  - Municipalities
  - Regulatory agencies
  - Transportation service providers
  - Utility companies
- e) Effective documentation of study work and decision-making:
- documents prepared to support each point of key decision-making and focused outreach and consultation, and structured as inserts to the TESR (for details see Section 2.2 and Supporting Document #2 of this Study Plan)
  - documents organized for ease of access to information and reference, and in relation to relevance and in the overall planning and Class EA Study process
  - document content (e.g. exhibits) presented in a manner that facilitates use for PIC display boards, newsletters, etc
  - timely opportunity to review relevant information and documentation;
- f) Effective/innovative presentation of study information:
- use of a project website to inform / consult with stakeholders on an ongoing and timely basis
  - high quality mapping and graphics
  - newsletters, factsheets, questionnaires, etc. to effectively summarize study process and technical information presented, and to solicit input; and
- g) Effective consultation events (PICs, and as applicable, workshops and public meetings) to ensure that stakeholders understand and respond to key decision points:
- events appropriately scheduled

- events well advertised with appropriate lead time (for details see Section 9.2 of this Study Plan)
- events advertised through newspaper advertisements, and as appropriate, portable message signs, mail drops, etc.
- newspapers used for advertisements to reflect readership in First Nations communities, local and area communities, municipal boundaries, weekday and weekend exposure
- venue locations for each round of PICs to reflect municipal boundaries and centres/distribution of population within the study area
- venue/facility to have appropriate space, facilities, parking, external signing
- venue/facility to be universally accessible
- display and information material prepared to effectively present information and communicate issues at hand
- events to be appropriately staffed.

## **2.5 Earlier And Related Work**

The Highway 7&8 Transportation Corridor Planning and Class EA Study will build on the previous transportation planning work undertaken by MTO.

### **Strategic Transportation Directions for Southwestern Ontario (2002)**

In concert with other levels of governments, MTO developed the '*Strategic Transportation Directions for Southwestern Ontario*' (2002) to provide a vision for tomorrow's transportation system (for access to this document, see the study web site).

*The Strategic Transportation Directions* document sets out a course of action for transportation, taking into account the different needs of the region, based on extensive research, relevant factors such as Smart Growth principles, infrastructure decisions and announcements, transportation studies conducted by MTO and other pertinent information. In brief, the *Strategic Transportation Directions* document provides the following:

- an overview of the transportation network of the region;
- identification of the contribution of different transportation modes to the region's overall transportation system;
- identification of social and economic factors in the region that affect transportation;
- identification of growth patterns and their effect on future transportation needs;
- strategic directions for the development of the provincial transportation system; and
- strategies that MTO may pursue in relation to the region's overall transportation network.

The findings of the 2002 Strategic Directions document are incorporated into Section 5.2.4 of this Study Plan.

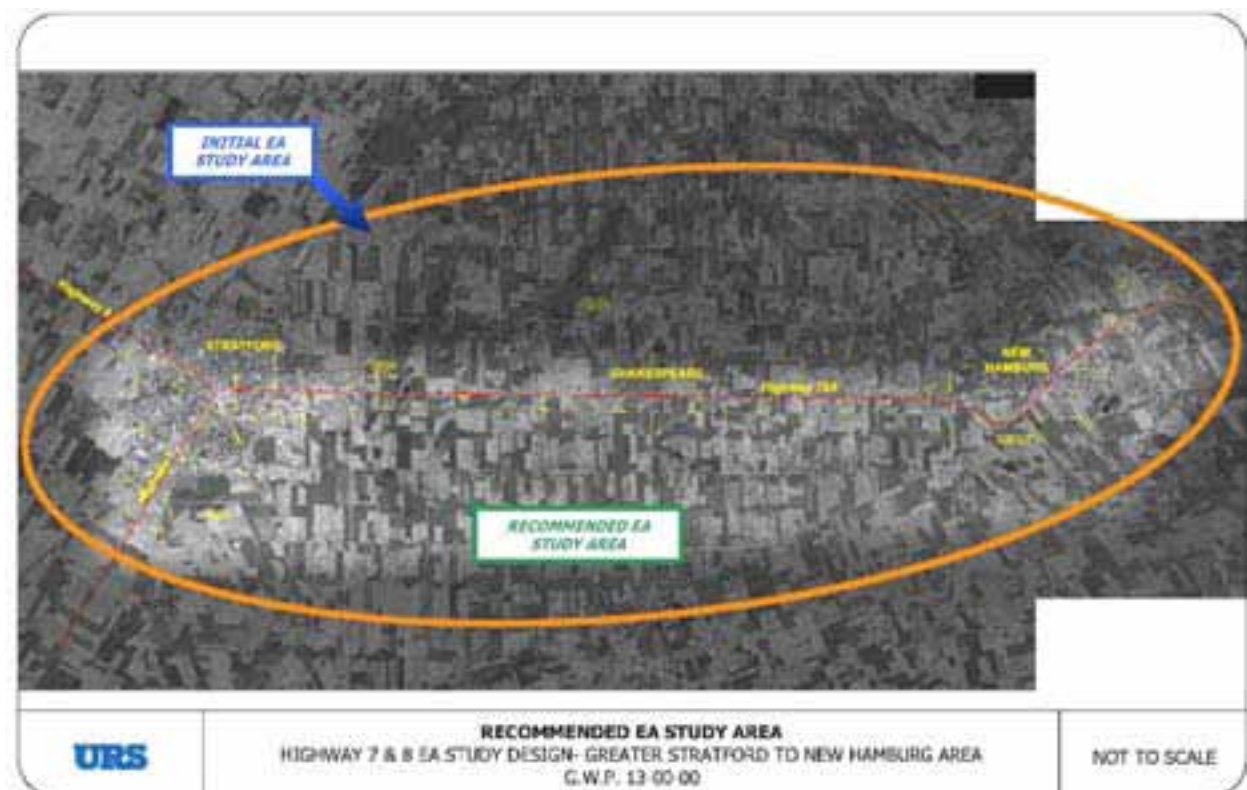
## **Highway 7&8 Corridor Planning Study Design Report (December 2005)**

MTO developed the 'Highway 7&8 Corridor Planning Study Design Report' (December 2005) to assess the present and future role and function of the Highway 7&8 Corridor between Greater Stratford and the New Hamburg area (for access to this document, see the study web site). Development of the study design report, in part, involved consultation with stakeholders, including two rounds of public information centres and the opportunity to comment on the report.

In brief, the Highway 7&8 Study Design Report provides the following:

- roadway role and function;
- engineering conditions;
- traffic conditions;
- traffic safety;
- origin-destination survey to accurately determine vehicle patterns between Greater Stratford and the New Hamburg area;
- assessment of transportation planning alternatives; and
- recommended preliminary study area as a factor for the identification of potential transportation solutions to address identified needs.

The findings of the 2005 Study Design Report are incorporated into Section 5.2.4 of this Study Plan. The preliminary study area identified in the Study Design Report is provided below:



This preliminary study area falls within the following municipalities:

- City of Stratford;
- County of Perth;
- Township of Perth East;
- Township of Perth South;
- Township of Wilmot; and
- Regional Municipality of Waterloo.

The preliminary study area recommended in the Study Design Report will be subject to review and modification as the Highway 7&8 Transportation Corridor Planning and Class EA Study proceeds.

### **3 STATEMENT AND ASSUMPTIONS OF PROPONENCY**

#### **3.1 Statement of Proponency**

The Ontario Ministry of Transportation is the proponent for this Study Plan for the Highway 7&8 Transportation Corridor Planning and Class EA Study.

#### **3.2 Assumptions Of EA Proponency And Completion Of Study Work**

MTO is conducting the Highway 7&8 Transportation Corridor Planning and Class EA Study under the assumptions of EA proponency and completion of study work provided in Exhibit 3.1 below:

<b>Exhibit 3.1 Highway 7&amp;8 Transportation Corridor Planning and Class EA Study Assumptions of EA Proponency and Completion of Study Work</b>	
<b>1.</b>	The current roles and relationships of different government levels and transportation service providers are maintained, consistent with their responsibility and authority.
<b>2.</b>	The consideration of 'Area Transportation System' and preliminary planning alternatives, and the development of a Transportation Development Strategy to address problems and opportunities are not restricted by these current roles.
<b>3.</b>	If 'Area Transportation System' and preliminary planning alternatives involving provincial roadways (provincial highways and/or provincial transitways) are selected, MTO will make the decision on the pursuit of further study through preliminary planning, detailed planning, and preliminary design.
<b>4.</b>	If 'Area Transportation System' and preliminary planning alternatives involving municipal roads, rail/air/water/intermodal facilities, municipal/private transit, or GO Transit are selected, MTO will refer the alternative recommendations to the appropriate government agency and/or transportation service provider for independent decision on further action.
<b>5.</b>	Depending upon the circumstances, the province may, as a separate initiative following completion of the Planning and Class EA Study, pursue innovative funding, and public and private partnerships for undertaking the following: <ul style="list-style-type: none"><li>• further study, design and construction of 'Area Transportation System' and preliminary planning alternatives identified in the planning and Class EA Study, for which MTO is not the EA proponent;</li><li>• design and construction of the provincial roadway (provincial highway and/or provincial transitway) that is the product of a planning and Class EA Study.</li></ul>
<b>6.</b>	The interaction of provincial transportation planning and growth management is a shared responsibility as follows: <ul style="list-style-type: none"><li>• municipalities, the Ministry of Municipal Affairs and Housing, and the Ministry of Public Infrastructure and Renewal are responsible for managing growth in a manner that encourages good development and discourages sprawl;</li></ul>

<p style="text-align: center;"><b>Exhibit 3.1</b> <b>Highway 7&amp;8 Transportation Corridor Planning and Class EA Study</b> <b>Assumptions of EA Proponency and Completion of Study Work</b></p>
<ul style="list-style-type: none"><li>• MTO is responsible for planning of the provincial roadways (provincial highways/provincial transitways) components of the Transportation Development Strategy; and</li><li>• in association with the planning of provincial highways/transitways, MTO is also responsible for provincial highway access management to discourage development in areas not designated for growth.</li></ul>
<p>7. The Highway 7&amp;8 Transportation Corridor Planning and Class EA Study will not address “over-arching issues” such as the following:</p> <ul style="list-style-type: none"><li>• statutes, policies and standards of governments;</li><li>• municipal official plans;</li><li>• responsibility, authority and decisions for transportation functions/modes that rest with government agencies and service providers other than MTO;</li><li>• ownership of lands and infrastructure; and</li><li>• funding policies and commitments of governments and the private sector.</li></ul>
<p>8. Although the Highway 7&amp;8 Transportation Corridor Planning and Class EA Study Process will not investigate concerns, suggestions or changes to such “overarching issues”, the study team will document input received during the Highway 7&amp;8 Transportation Corridor Planning and Class EA Study and refer it to the appropriate authority for information/consideration.</p>



#### **4 STATEMENT OF EA COMPLIANCE**

This Highway 7&8 Transportation Corridor Planning and Class EA Study will follow and comply with the Class Environmental Assessment for Provincial Transportation facilities outlined in Section 2.1 of this Study Plan.

Although this is a Class EA study, the requirements of Section 6 (2)(a) of the Ontario *Environmental Assessment Act* have been addressed as an appropriate standard for this Study Plan. Accordingly, the Study Plan specifically addresses the following:

- Identification of the Proponent (Chapter 3 of this Study Plan);
- The purpose of the undertaking (Chapter 5);
- The process for selecting preferred alternatives to the undertaking (Chapter 7);
- The process for generating the study area (Chapter 7);
- The process for generating and selecting preferred alternative methods (Chapter 7);
- A commitment to carry out compliance monitoring (Chapter 8); and,
- A description of the Consultation Plan proposed for the Environmental Assessment (Chapter 9).

The Study Plan also includes Supporting Documents, one of which is a Record of Consultation During Preparation of the Study Plan (to be completed before finalizing the Study Plan).

## 5 PURPOSE OF UNDERTAKING

### 5.1 Policy Framework And Other Government Initiatives

The Highway 7&8 Transportation Corridor Planning and Class EA Study builds on the policy framework provided by:

- the '2005 Provincial Policy Statement' (PPS) under Section 3 of the *Planning Act*; and
- the final 'Growth Plan for the Greater Golden Horseshoe' (GGH Growth Plan) released in June, 2006 under the *Places to Grow Act*.

This policy framework has direct impact on the following:

- study plan;
- identification of Area Transportation System problems and opportunities;
- evaluation and selection of Area Transportation System alternatives;
- evaluation and selection of preliminary planning alternatives; and
- evaluation and selection of detailed planning alternatives for provincial roadways.

The application of this policy framework is presented in Exhibit 5.1 below.

<b>Exhibit 5.1</b> <b>Highway 7&amp;8 Transportation Corridor Planning And Class Ea Study</b> <b>Application Of GGH Growth Plan And Provincial Policy Statement</b> <b>Policy Framework</b>	
<b>POLICY DOCUMENT</b>	<b>POLICY STATEMENT</b>
<b>Study Plan</b>	
<b>Study Objectives</b>	Study objectives are based upon the policies of the GGH Growth Plan
<b>Identification of Area Transportation System Problems and Opportunities</b>	
<b>GGH Growth Plan</b>	Population and employment forecasts of the Plan will be used for planning
- Growth Forecasts, Where and How to Grow	A significant portion of new population and employment growth will be directed to the (designated) built-up areas of the community through intensification
	(Designated) urban growth centres, and their gross density targets for residents and jobs will be as identified in the Plan
<b>Evaluation and Selection of Area Transportation System Functional and Modal Alternatives</b>	
<b>Provincial Policy Statement</b>	Transportation system should be provided which are safe, energy efficient, facilitate the movement of people and goods, and are appropriate to address projected needs
- Transportation Systems	

<b>Exhibit 5.1</b> <b>Highway 7&amp;8 Transportation Corridor Planning And Class Ea Study</b> <b>Application Of GGH Growth Plan And Provincial Policy Statement</b> <b>Policy Framework</b>	
<b>POLICY DOCUMENT</b>	<b>POLICY STATEMENT</b>
<b>GGH Growth Plan</b>  - General Transportation Policies	Ensure that corridors are identified and protected to meet current and projected needs for various travel modes
	Provide balance, choice, access and connectivity among transportation modes for moving people and goods
<b>GGH Growth Plan</b>  - Policies for Moving Goods	Provide linkages to planned or existing intermodal facilities and to other major regional facilities for primary goods movement
	Improve corridors for moving goods, consistent with the transportation infrastructure designated in the Plan
<b>Evaluation and Selection of Preliminary Planning Alternatives and Detailed Planning Alternatives for Provincial Roadways</b> (Policy statements indicated above also apply)	
<b>GGH Growth Plan</b>  - General Transportation Policies	Provide for safety of the system users
	Support opportunities for multi-modal use within corridors where appropriate
	Consider separation of modes within corridors where appropriate
<b>Provincial Policy Statement</b>  - Planning Transportation Corridors	When planning for corridors and rights-of-way for significant transportation facilities, consideration will be given to significant natural heritage, water, agricultural, mineral, cultural heritage and archaeological resources.

The influence on this study of the Growth Plan for the Greater Golden Horseshoe is further discussed in Section 5.2.2 and 5.2.3 of this Study Plan.

## 5.2 Transportation Problems And Opportunities

### 5.2.1 Definition And Description Of 'Area Transportation System'

The Highway 7&8 Transportation Corridor Planning and Class EA Study is being conducted in the context provided in Exhibit 5.2 below:

**Exhibit 5.2**  
**Highway 7&8 Transportation Corridor Planning and Class EA Study**  
**‘Area Transportation System’ Context**

- The Highway 7&8 Transportation Corridor Planning and Class EA Study is being conducted in the context of the ‘*Area Transportation System*’.
- The ‘*Area Transportation System*’ is composed of the area transportation facilities which have the primary function of providing transportation linkages for the movement of people and goods, by all modes and all jurisdictions, between multiple regions of the province and/or between cities and other major centres of population, or which function to complete such primary transportation linkages, with an emphasis on connections to:
  - cities and other major centres of population that contain designated urban growth centres;
  - cities and other major centres of population that contain designated major transit station areas;
  - major regional facilities for primary goods movement, such as intermodal facilities; and
  - international airports, major ports and international gateways.

### **5.2.2 Overview Of The Area Transportation System**

The analysis carried out for the *Strategic Transportation Directions* for Southwestern Ontario (2002) identified several trends:

- As in the rest of the province, the automobile (including vans and light trucks) is the dominant intercity travel mode in Southwestern Ontario, accounting for over 90% of passenger kilometres travelled. The remaining transportation modes (bus, rail, GO Transit, marine and air) account for 7.5% of passenger kilometres travelled.
- The primary modes used for the transportation of goods in and through the region, based on tonnes shipped, are truck (68%), rail (18%) and marine (15%). Mode usage varies with the particular commodity transported, the market served, the need for “just in time” service, and the industry distribution system. Market trends indicate that truck transport will play a greater goods movement role in the future.
- Trucking is the primary means of moving goods in Southwestern Ontario. Since the highway system links industry and markets in Southern Ontario and the U.S., there is substantial international truck freight movement on freeways in the region. The accessibility provided by the provincial and municipal road network makes trucking very competitive with other modes, except in the case of certain bulk goods and long distance hauls to markets outside Ontario.

- Provincial and regional roadways play a key role in the movement of intercity passengers and goods, and by 2026 will carry over 75% of the total system traffic in vehicle kilometres.
- A reduced level of service is forecast for the entire system, with provincial and regional routes showing substantial increases in the vehicle kilometres operating at congested conditions.
- All major urban centres show improved commuter containment (i.e. live-work arrangements); however, total commuter kilometres will continue to increase.

The Growth Plan for the Greater Golden Horseshoe (2006) in part provides the following direction with respect to the Area Transportation System for the analysis area:

- Future goods movement corridors are envisioned to provide links between the Niagara Frontier and the GTA.

### 5.2.3 Overview Of Area Economy, Employment And Population Growth Forecasts

Growth in the transportation corridor is dependent on a number of discreet but related socio-economic factors, such as: population and employment, demographic characteristics, and national, provincial and regional trends. Each of these factors acts upon the characteristics of travel demand with different and varying effects. In order to assess the needs of the Area Transportation System, the first step is to establish the factors that define the environments in the study area. These factors become the framework for the quantification of role and function of the transportation system.

#### *Growth Plan for the Greater Golden Horseshoe*

A major influence to the socio-economic environment in the analysis area is the recently published Growth Plan for the Greater Golden Horseshoe (GGH Growth Plan), released by the province on June 16, 2006, which reflects the *Places to Grow Act's* underlying principles of intensification and reduced urban sprawl. The Growth Plan promotes planning on a more regional level and sets the stage for future growth and land use scenarios by providing guidelines for municipal planning that are intended to:

- stimulate economic prosperity;
- facilitate the efficient movement of goods by linking intermodal facilities, international gateways, and communities within the GGH;
- revitalize downtowns;
- provide growth forecast objectives:

Forecasted Distribution of Population and Employment Within the Analysis Area of the Hwy 7&8 Transportation Corridor Planning and EA Study (figures in 000s, from Schedule 3 of the GGH Growth Plan)							
MUNICIPALITY	POPULATION				EMPLOYMENT		
	2001	2011	2021	2031	2001	2011	2021 2031
Region of Waterloo	456	526	623	729	236	282	324 366

- promote intensification - by the year 2015 and for each year thereafter to 2031, a minimum of 40 percent of all residential development in upper and single tier municipalities will be in the built-up area;
- designate urban growth centres which will generally be planned to achieve a minimum gross density target (the closest centres to which this applies are uptown Waterloo and downtown Kitchener);
- encourage more compact communities, with services, shops and businesses close to home;
- curb urban sprawl;
- preserve greenspace and agricultural lands that are under pressure in the GGH;
- cut down on car dependency by increasing modal share of alternatives to the automobile;
- contribute to better air quality;
- spur transit investment and create conditions favourable to public transit use; and
- promote a culture of conservation.

Through its policies, the GGH Growth Plan will impact the future land use / socio-economic environment in the analysis area, by establishing guidelines for future growth, land use (including greenspace and agriculture) and transportation objectives.

This study's objectives have, in part, been set in accordance with the policies of the final GGH Growth Plan, as described in Section 1.2.

### *Municipal Official Plans*

Future land uses are also governed by Official Plans for the municipalities in the analysis area, including Perth County and the Region of Waterloo. The currently approved Official Plan of the Region of Waterloo will need to be updated to reflect the population and employment guidelines and targets set out in the Growth Plan (Perth County) is outside the Greater Golden Horseshoe).

### *Trade and Tourism*

The study area can be considered a conduit for trade and tourism between the GTA and Lake Huron. Goods movement through this area into Canada's economic heartland are critical to the local, regional and provincial economies. The efficiency of the provincial highway system, in and through the study area is therefore essential to the economic prosperity of the area.

### *Land Use/ Socio Economic Environment*

An overview of the land use / socio-economic environment is provided in Section 6 of this Study Plan

## **5.2.4 Discussion of Preliminary Statement of Transportation Problems and Opportunities**

Section 1.3 of this Study Plan provides a preliminary statement of transportation problems and opportunities, based upon previous MTO reports, and the final Growth Plan for the Greater Golden Horseshoe (released by the province on June 16, 2006). This section expands upon that statement.

- 1. There are transportation capacity concerns for the movement of both people and goods along the 2-lane section of Highway 7&8 between Stratford and New Hamburg and on Highway 7&8 through the urban centres (Stratford, Shakespeare and New Hamburg).**
  - There will be an east-west capacity deficiency of one lane in each direction from 2.9 km east of the Stratford City Limits to Waterloo Road 1 (i.e. two-lane section of highway) to meet the current and projected needs of the travelling public, and to stimulate economic growth and job creation:
    - The two-lane section of Highway 7&8 currently operates at an undesirable level of service (LOS D).
    - Average daily traffic on Highway 7&8 is forecast to increase by a minimum of 30% between 2004 and 2031.
    - As a result, the existing transportation network is not capable of supporting the projected growth in population, employment, trade and tourism.
    - Failure to address these transportation deficiencies could result in unacceptable travel delay that would be costly to industry, and would deter recreational and tourist travel. The reduction in mobility and access will restrict the ability of the broader region to attract new business and promote economic growth.
    - These transportation deficiencies could occur earlier and/or increase in duration, extent or severity if higher population, tourism or economic growth scenarios are realized.
    - The City of Stratford has expressed concerns with the significant amount of truck traffic that is passing through the core of the City via Highway 7&8.
    - The County of Perth has expressed concerns with the degree of residential traffic that is destined for locations east of Stratford, and is utilizing parallel routes to the north of Highway 7&8, such as Perth Line 37, to avoid traffic delays in Stratford.

2. **Provincial / inter-regional traffic through the urban centres (Stratford and Shakespeare) along Highway 7&8 interferes with their “downtown / historic crossroads” function.**
  - There are traffic conflicts between local and longer distance trips in downtown Stratford and Shakespeare; and
  - The City of Stratford has expressed concerns with the significant amount of truck traffic that is passing through the core of the City via Highway 7&8.
3. **The connection of the analysis area to transportation corridors serving other regions in the province may be inadequate for long-term transportation and economic development needs.**
  - Highway 7&8 is experiencing increasing functional separation from the provincial highway network as development in Stratford intensifies and expands.
4. **Geometric and traffic safety characteristics along Highway 7&8 should be addressed with respect to long-term traffic needs.**
  - This is indicated in Exhibit 5.3 below, in which ideal highway geometric conditions are compared to those of the existing Highway 7&8:

<b>Exhibit 5.3:</b> <b>Highway 7&amp;8 Transportation Corridor Planning and Class EA Study</b> <b>Comparison of Ideal Highway Conditions and Those on Highway 7&amp;8</b>	
<b>Ideal Conditions</b>	<b>Highway 7&amp;8 Conditions</b>
<ul style="list-style-type: none"> <li>Design features of roadway linked to legally posted speed</li> </ul>	<ul style="list-style-type: none"> <li>Numerous vertical alignment features do not meet desirable limits for the posted speed</li> </ul>
<ul style="list-style-type: none"> <li>Lane width equal to or greater than 3.75 m where posted speed limit is 80 km/h and 3.5 m where posted speed limit is 60 km/h</li> </ul>	<ul style="list-style-type: none"> <li>Typically 3.75 m wide lanes except through Shakespeare where lane width is marginally below standard (3.35 m versus 3.5 m)</li> </ul>
<ul style="list-style-type: none"> <li>Clear shoulders equal to or wider than 2.0 m for disabled vehicle refuge</li> </ul>	<ul style="list-style-type: none"> <li>Typically 3.0 m wide granular shoulders including 0.5 m partially paved; fully paved shoulders for a short section within Shakespeare</li> </ul>
<ul style="list-style-type: none"> <li>Full passing opportunities</li> </ul>	<ul style="list-style-type: none"> <li>Limited passing opportunities due to horizontal alignment, vertical alignment and intersection spacing resulting in through vehicles spending a high proportion of time in platoons and operating at less than their desired speeds which adversely affects safety</li> </ul>
<ul style="list-style-type: none"> <li>All passenger cars in traffic stream</li> </ul>	<ul style="list-style-type: none"> <li>10-16% commercial vehicles in corridor</li> </ul>
<ul style="list-style-type: none"> <li>Directional distribution of 50/50</li> </ul>	<ul style="list-style-type: none"> <li>55% westbound / 45% eastbound</li> </ul>



<b>Exhibit 5.3:</b> <b>Highway 7&amp;8 Transportation Corridor Planning and Class EA Study</b> <b>Comparison of Ideal Highway Conditions and Those on Highway 7&amp;8</b>	
<b>Ideal Conditions</b>	<b>Highway 7&amp;8 Conditions</b>
<ul style="list-style-type: none"> <li>• Low number of intersections and entrances so that impediments to through traffic due to traffic control devices or turning traffic are minimized</li> </ul>	<ul style="list-style-type: none"> <li>• Numerous intersections and entrances within study area</li> </ul>
<ul style="list-style-type: none"> <li>• Level terrain</li> </ul>	<ul style="list-style-type: none"> <li>• Level to rolling terrain</li> </ul>

**5. There is currently no comprehensive highway access management plan for Highway 7&8 from Greater Stratford to New Hamburg to protect highway needs and to address the GGH policy of discouraging inappropriate highway-related growth.**

- A comprehensive highway access management plan is required to protect current and future highway capacity, operational and safety interests
- A highway access management plan is required to address the GGH Growth Plan policy of discouraging highway-related development in areas not designated for growth (which is most of the length of Highway 7&8 between the designated built-up areas of Stratford and Shakespeare, and between Shakespeare and New Hamburg).

**6. The GGH Growth Plan policy of co-ordinating transportation system planning and land use planning must be addressed.**

- The GGH Growth Plan promotes co-ordinated transportation system planning and land use planning. The functionality of the Highway 7&8 transportation corridor from Greater Stratford to the New Hamburg area to meet current and projected needs for various travel modes must be protected before the opportunities are precluded by development in the built-up areas of Stratford, Shakespeare and New Hamburg.
- Various transportation opportunities may be identified during this Class EA Study including (but not limited to) provision of a balanced and integrated transportation system (i.e. opportunities for higher order transit, improved linkages to urban growth centres, inter-modal facilities and gateways).

## **6 ENVIRONMENTAL CONDITIONS AND POTENTIAL EFFECTS**

The Highway 7&8 Transportation Corridor Planning and Class EA Study will utilize a study process that seeks to avoid, minimize or prevent adverse environmental effects. For the purposes of this study, the term “environment” reflects the definition in the Ontario Environmental Assessment Act, which includes natural, social, economic and cultural features. Specific mitigation measures and the approaches for management of environmental effects will be developed and addressed during the EA.

### **6.1 Overview of Existing Environmental Conditions**

A considerable amount of secondary source environmental information was obtained during preparation of the Study Design Report, as documented in December, 2005.

This study will begin by updating the information from secondary sources and will also include carrying out field investigations and seeking environmental information from external agencies, interest groups and the public through the Outreach and Consultation program as described in Section 9.0 of this Study Plan.

The information obtained through a review of the Study Design Report and secondary source investigations carried out to date as part of that study has provided a basic understanding of the existing environment and major environmental features in the area.

An overview of existing environmental conditions is provided below. Details are provided in Report “F”: Working Paper – Environmental Conditions and Constraints.

#### **6.1.1 Natural Environment**

The study area lies within the upper reaches of two major watersheds, the Upper Thames River on the west and the Grand River on the east end. The Avon River, a major tributary of the Upper Thames collects drainage from the Stratford area and lands to the north of Highway 7 and 8, running westward through the north end of the City of Stratford. The Nith River, a major tributary of the Grand River, receives drainage from most of the tributaries in the east part of the study area, and runs southward through New Hamburg before crossing Highway 7 and 8.

There are approximately 25 small watercourses along the subject section of Highway 7 and 8, most of which are municipal drains, although at least 8 of these watercourses are either confirmed fish habitat or have the potential to provide fish habitat. Species at Risk mapping recently developed by the Department of Fisheries and Oceans indicates the presence of protected mussel species in several of the Nith tributaries crossing Highway 7 and 8, and the presence of “special concern” (being considered for protection ) species of fish in several of the tributaries to the Avon River which crosses Highway 7 and 8.

The topography of the study area is generally gently rolling, becoming more pronounced to the north of the existing highway alignment. Soil conditions are generally good for a variety of agricultural operations and most of the land has been cleared, reducing forest cover to less than 5% of the land base. Areas of remaining forest are concentrated in poorly drained lowland or river valley areas, though linear strips of upland woodlot persist both to the north and south of the existing highway. A number of wetland/swamp/bog complexes around the study area have been recognized as 'environmentally sensitive areas', including the Little Lakes Bog and Swamp Forest Complex, spanning the existing highway just east of Stratford, and designated and Area of Natural and Scientific Interest (ANSI).

While the remaining wooded areas generally support species typical of upland woodlands in this area, the Nith Valley is known to support Carolinian biota in its lowland deciduous forests, and one plant Species at Risk, the Showy Goldenrod, has been found at locations between Stratford and New Hamburg. There are also deer wintering areas beyond the study area to the northeast and northwest, providing critical overwintering habitat to the deer which inhabit this area.

### **6.1.2 Land Use / Socio-Economic Environment**

Farming and agricultural land uses dominate the landscape and constitute the main economic activity between Stratford and New Hamburg. With most soils in agricultural capability classes 1-3, the land supports excellent cash crop operations and mixed farming, producing mixed grain, corn, soybeans, hay and a variety of fruits and vegetables. Major dairy and beef production operations are found throughout the area.

Highway 7 and 8 passes through three major population centres: New Hamburg at the East end of the study area, Stratford at the west end and Shakespeare, in the middle of the study area.

Stratford, with a population of approximately 30,000, is the primary urban centre in the study area, mixing a strong local tourism industry led by the Stratford Festival, with a small manufacturing base and commercial sector that serves as a local centre for retail and service industries. Highway 7 and 8 serves as a critical link to connect Stratford to major markets in the Kitchener/Waterloo/Cambridge area and to the Greater Toronto area approximately 1 hour to the east. This proximity is critical to the Stratford tourist industry and the auto parts industry centred in Stratford. Population and employment growth in the City of Stratford has been modest in recent years, while the population levels in adjacent townships have remained stable.

By contrast, New Hamburg, at the east end of the study area, with a population of about 6,000, is experiencing substantial population growth. New Hamburg and its surrounding (Wilmot) township lie within the urban shadow of the Kitchener/Waterloo/Cambridge areas, and have become major 'bedroom communities' for these major employment centres. While New Hamburg provides a full range of retail/service commercial facilities for its residents, it has also become the site of some major highway commercial

enterprises (eg. automotive dealerships) developed along Highway 7 and 8 in recent years.

The Hamlet of Shakespeare, located about half-way between Stratford and New Hamburg in the Township of Perth East, was initially established as a service centre for the surrounding agricultural community, but has since converted to serve the passing traffic to and from Stratford and the Stratford Festival. The hamlet now contains a number of fuel and food service outlets and a significant concentration of specialty shops dominated by high quality antique dealerships. Some new residential development is also occurring, especially on the north side of Shakespeare.

### **6.1.3 Cultural Environment**

The cultural environment includes archaeological features, built heritage features and heritage landscapes within the study area.

A preliminary archaeological assessment conducted during the Study Design identified 23 previously registered sites within 2km of the study area. Field surveys located fifteen historic components and three pre-historic components, with 9 of the historic and one of the pre-historic sites being registered. In addition to these sites, local sources reported two unmarked pioneer cemeteries along the highway and other historic archaeological remains including a brickyard and a cemetery south of Shakespeare. In general, there is a high potential for the recovery of pre-contact archaeological remains within the study area, especially along the streams and around wetland areas which would have been the foci for prehistoric settlement.

The cultural landscape within the study area is predominantly agricultural in nature, and both the highway and sideroads throughout the study area are lined with numerous attractive nineteenth and twentieth century farm complexes. The rural landscape is altered by the presence of the CNR line which parallels the highway and crosses it at one location, and by the presence of several crossroad hamlets and small population centres such as Shakespeare.

A number of significant built heritage features are found within the study area, including several located along the existing highway alignment. Most notable of these is the Fryfogel Inn property near Perth Road 106, which includes an 1845 brick building, a commemorative cairn and a cemetery. The Inn is protected by an Ontario Heritage Foundation heritage conservation easement and has been evaluated as a potential national historic site by the historic Sites and Monuments Board of Canada. Another significant built heritage feature, the Lingelbach Church and cemetery is located at the intersection of Highway 7 and 8 and Perth Line 104. The steel girder bridge which carries the single-lane CNR track over Highway 7 and 8 near Perth Road 102, constructed in 1936 constitutes another built heritage feature directly associated with the existing highway alignment.

Additional built heritage features are scattered throughout the study area, including a number of former church and old schoolhouse buildings. One such building, the Brocksden Museum located to the north of Highway 7 and 8 on Perth Line 37, has been designated under Part IV of the Ontario Heritage Act.

## **6.2 Environmental Work Plan**

The environmental work plan will be carried out in accordance with the:

- Class EA for Provincial Transportation Facilities; and
- MTO Environmental Reference for Highway Design.

For access to the above documents, please refer to the study web site.

These documents have been prepared for MTO undertakings and transportation projects of this type, to ensure that all ministry studies satisfy the requirements of federal and provincial EA principles and guidelines.

The environmental work plan includes further environmental investigations, including secondary source reviews and field investigations, after a study area is confirmed.

As the study progresses and the range of alternatives becomes more focussed, more detailed environmental investigations will be undertaken. The level of detail and scale of mapping will increase, as the project team begins to focus in on specific areas or corridors within the analysis area.

A full complement of environmental specialists will be working on the study to investigate factor-specific area(s) of expertise. The environmental factors, sub-factors and criteria are identified in Exhibit 7.2 of this Study Plan.

## **6.3 Environmental Conditions Documentation**

Environmental Conditions and Constraints will be documented in Report “F”: Working Paper – Environmental Conditions and Constraints. A detailed summary of the report is provided in Supporting Document #2 of this Study Plan.

Report “F” will be prepared in two parts as follows:

- Part 1 will:
  - document environmental conditions background data (existing/secondary source information – mapping / constraint mapping, data, reports, supplemented by preliminary field reconnaissance) to provide an environmental overview within the analysis area; and
  - provide overview/background level of detail that supports the selection of ‘Area Transportation System’ alternatives, and the generation and selection of preliminary planning alternatives.

- Part 2 will:
  - document environmental conditions field investigation work (inventory, survey, testing) and determination of environmental significance;
  - provide higher level of detail that supports the environmental impact assessment which is a component of generating provincial roadway detailed planning alternatives; and
  - utilize the same environmental factor-specific areas and provide the same areas of technical expertise, but at increased levels of detail.

Report “F” will present the facts without offering assessment of impacts or environmental protection/mitigation and compensation.

#### **6.4 Environmental Protection and Commitments to Mitigate**

Environmental protection principles are described in Section 2.4.2 of this Study Plan.

Environmental specialists carrying out the work on existing conditions will participate in determining the most effective means of protecting the environment during the generation and evaluation of preliminary and detailed planning alternatives. Environmental protection measures will also be discussed with external agencies and ministries as appropriate throughout the study.

If new environmental information arises during the study, it will be taken into consideration in the generation and evaluation of alternatives as the study moves forward.

Environmental protection and mitigation will be included in the final study recommendations at a preliminary design level of detail. If additional environmental investigations are required during the next study phase (i.e., detail design), a commitment to carry out the work will be included in the Transportation Environmental Study Report (TESR). The TESR will also include commitments to finalize the design work and obtain all required environmental approvals from external agencies prior to construction.

Environmental monitoring is described in Section 8.0 of this Study Plan.

## **7 ALTERNATIVES AND THEIR EVALUATION**

### **7.1 “Alternatives To the Undertaking”, and “Alternative Methods for Carrying Out the Undertaking”**

The Ontario *Environmental Assessment Act* defines both “alternatives to the undertaking” and “alternative methods for carrying out the undertaking”.

“Alternatives to the undertaking” are defined as functionally different ways of addressing identified problems and opportunities. For the Highway 7&8 Transportation Corridor Planning and Class EA Study, alternatives to the undertaking are examined under the transportation needs assessment phases of the study, as follows:

- ‘Area Transportation System’ alternatives, which are described in Sections 7.4.5 and 7.4.7; and
- preliminary planning alternatives, which are described in Section 7.4.10.

“Alternative methods for carrying out the undertaking” are defined as different ways of carrying out the undertaking once the preferred alternatives to the undertaking have been identified. For the Highway 7&8 Transportation Corridor Planning and Class EA Study, alternative methods for carrying out the undertaking are the following:

- provincial roadway (provincial highway/provincial transitway) detailed planning alternatives, which are described in Section 7.5.2; and
- provincial roadway (provincial highway/provincial transitway) preliminary design alternatives, which are described in Section 7.6.1.

### **7.2 Evaluation Methods and Their Application**

The evaluation of alternative methods is a two-stage process.

The first stage (assessment) entails the identification of advantages and disadvantages of the various alternatives under consideration. At this stage, environmental features are examined to determine the extent of impact. Net impacts will be identified; these refer to the effects on the environment that remain after standard mitigation measures have been applied to reduce the extent of the impact.

The second stage is the evaluation itself. This stage builds upon the information obtained from the impact assessment stage and involves a comparative analysis of the advantages and disadvantages of the alternatives considered to select a preferred alternative. At this stage, the relative importance of the environmental features and significance of the impacts are determined. A “Do Nothing” scenario will be carried forward to represent a base case for comparison to the preferred alternative.

## Evaluation Methods

The evaluation of alternatives is an integral component of the EA. Evaluation principles are provided in Section 2.4.3.

The Ontario Ministry of Environment recommends that the evaluation approach should be clearly described and government ministries, municipalities, agencies, First Nations and the public should be asked for their comments early in the EA study. The method(s) used to predict net environmental effects and evaluate advantages and disadvantages should clearly identify the relative differences and key impact trade-offs.

In this study, two evaluation approaches will be used to assist in the selection of alternatives at the various phases of this undertaking. A Reasoned Argument (or Trade-off) method will be the primary tool used to identify a preferred alternative. In some cases, an Arithmetic (weighting-scoring) method will be the secondary tool and will be used (except in the Transportation Needs Assessment phase) to verify the results of the trade-off method.

The Reasoned Argument (trade-off) evaluation component will provide a clear presentation to stakeholders of the key trade-offs between the various evaluation factors and the reasons why one alternative is preferred over another.

The Arithmetic evaluation provides a means to compare the alternative methods based on a numerical scaling with weights assigned by MTO and other stakeholders as determined through the EA Study consultation. A numerical approach is a good sensitivity analysis tool to determine if the conclusions of the reasoned argument approach are valid and appropriate.

During the study, the decision making process will be clearly documented to support a traceable process and to ensure that it is understandable to those who may be affected by the decisions. Details on the Reasoned Argument (trade-off) and Arithmetic evaluation methods are outlined as follows:

### *Reasoned Argument (Trade-off) Evaluation Method*

The reasoned argument method will be the primary evaluation method employed to select a preferred alternative. This method highlights the differences in net effects associated with the various alternatives. Based on these differences, the advantages and disadvantages of each alternative are identified. The relative significance of the impacts are examined to provide a clear rationale for the selection of a preferred alternative. The rationale that favours the selection of one alternative over all others will be derived from the following sources:

- Government legislation, policies and guidelines;
- Municipal policy (i.e. Official Plans);



- Issues and concerns identified during consultation with ministries and agencies, municipalities, ratepayer and interest groups and the general public (including input obtained through the weighting of the relative level of importance of evaluation criteria); and
- Project Team expertise.

### *Arithmetic Evaluation Method*

The arithmetic evaluation method will be the secondary method of evaluation and will incorporate both the level of importance of each environmental attribute (referred to as the weight) and the magnitude of the impact (or benefit) associated with an alternative (referred to as the score). Numerical values are derived for both the level of importance (weight), and the magnitude of the impact (score) associated with each alternative.

The weight is multiplied by the score to obtain a total for each factor. The totals for each alternative are compared to determine the preferred alternative method.

- **Scoring (degree of impact):** The score assigned to each environmental attribute is relative to the impact generated. Relative impacts can range from those that are positive (benefit the environment) to negative (detrimental to the environment). The assessment of impacts will be derived from field measurements, results of prediction models, secondary data sources (as appropriate) and other means as necessary.
- **Weighting (level of importance):** Generally, more weight is assigned to those features which are felt to be more important in assessing impacts generated by alternatives, and less weight is given to those features which are considered to be less important.

Weighting scenarios can be developed in consultation with the public, regulatory agencies, First Nations and municipalities. It should be noted that weighting scenarios may vary for different sections of the study area. In addition, numerous sensitivity tests can be run to reflect input received from stakeholders and the public. Such input will provide the Project Team with an understanding of community values with respect to the relative importance of each environmental feature.

The results of the weighting scenarios will be reviewed and compared to the results of the Reasoned Argument component.

The specific mathematical tool to be used for the arithmetic evaluation will be determined during the EA when the details regarding the alternative methods (preliminary planning, detailed planning and preliminary design for provincial roadways) are known.

### *Application of Evaluation Methods*

As previously noted, the Reasoned Argument method will be the primary evaluation tool used to select a preferred alternative with the Arithmetic Evaluation method used to

substantiate the findings.

These evaluation methods will be applied as indicated in the Exhibit 7.1 below.

<b>Exhibit 7.1</b> <b>Highway 7&amp;8 Transportation Corridor Planning and Class EA Study</b> <b>Summary of Application of Evaluation Methods</b>		
PHASE	EVALUATION METHOD	
	Reasoned Evaluation Method	Arithmetic Evaluation Method (as appropriate)
<b>Transportation Needs Assessment</b> <ul style="list-style-type: none"> <li><b>Area Transportation System Planning</b> (see Sections 7.4.3 through 7.4.9 of Study Plan)</li> </ul>	Evaluation method applied for this phase	Not applied to this phase
<ul style="list-style-type: none"> <li><b>Preliminary Planning</b> (see Sections 7.4.10 through 7.4.12 of Study Plan)</li> </ul>	Primary evaluation method applied for this phase	Secondary evaluation method applied (as appropriate)
<b>Provincial Roadway Detailed Planning</b> (see Section 7.5. of Study Plan)	Primary evaluation method applied for this phase	Secondary evaluation method applied (as appropriate)
<b>Provincial Roadway Preliminary Design</b> (see Section 7.6 of Study Plan)	Primary evaluation method applied for this phase	Secondary evaluation method applied (as appropriate)
<b>Summary Description of What The Evaluation Method Provides</b>	Key trade-offs between evaluation factors and reasons why one alternative is preferred over another	Numerical weighting/scoring of evaluation factors for alternatives (secondary evaluation method)

Where both evaluation methods are applied, they will be implemented concurrently. For example, the Project Team's assumptions and rationale behind its assessment of the level of importance of environmental attributes will be documented along with the corresponding arithmetic value assigned to the impact. In addition, input from stakeholders and the public will be co-ordinated through public information centres and other public consultation activities to ensure that issues, concerns and the magnitude of potential impacts are properly identified and understood by the Project Team.

The results of the two methods will be compared and the differences identified. The results of the Arithmetic Evaluation will be re-analyzed to determine the key weight-score combinations in the Arithmetic Evaluation. Similarly, the rationale for each trade-off decision will be revisited to determine if the Project Team's decision was appropriate. If the rationale supporting the trade-off decisions is valid and appropriate, the preferred alternative identified by the Reasoned Argument method will stand. However, if the results of the Arithmetic Evaluation lead to modifications to the trade-off decisions' rationale, the preferred alternative resulting from the Reasoned Argument approach may be revised. Prior to its application, the decision making process will be clearly documented and presented for stakeholders to comment on. During the study, additional evaluation methodologies may be utilized to ensure that the nature and magnitude of potential impacts (of significant community and/or environmental value) are accurately identified and mitigated.

Data necessary to support the evaluation of alternatives will be collected through consultation with ministries, agencies and other stakeholders from secondary sources, prediction models and site-specific field investigations. The precise nature and scope of field investigations will be determined during the study and outlined in work plans for review and comment by stakeholders. This information will be supplemented based on input received from interested stakeholder groups, municipalities, regulatory agencies and the general public.

### 7.3 Preliminary Identification of Evaluation Factors

The assessment of alternatives will consider broad factors, sub-factors and criteria that reflect objectives in addressing the stated transportation problems and consider potential impacts on the environment. Exhibit 7.2 provides a preliminary listing of the proposed environmental and transportation factors, sub-factors and criteria to be considered for the evaluation of alternatives during the various phases of the project. This exhibit builds on the information in the MTO Environmental Reference for Design (for access to this document, see the study web site).

Supporting Document #5 identifies which of these factors, sub-factors and criteria apply at each phase of the study, and provides preliminary evaluation criteria to be applied to each of them.

The information in Exhibit 7.2 and Supporting Document #5 represents the minimum detail to be considered for identifying the advantages and disadvantages of the alternatives during the various phases of the study. These preliminary factors, sub-factors and criteria will be refined and modified during consultation on “the proposed approach to upcoming work”, as is indicated in Exhibit 2.1 in Section 2.2 of this Study Plan. This will include, as appropriate, the development of measures for specific evaluation indicators.

<b>Exhibit 7.2</b> <b>Highway 7&amp;8 Transportation Corridor Planning and Class EA Study</b> <b>Preliminary Identification of Factors, Sub-Factors and Criteria</b> <b>To Be Considered in the Evaluation Of Alternatives</b>	
<b>FACTORS/SUB-FACTORS</b>	<b>CRITERIA</b>
<b>1. Natural Environmental Factors</b>	
<b>1.1 Fisheries and Aquatic Ecosystems</b>	1.1.1 Fish Habitat
	1.1.2 Fish Community
<b>1.2 Terrestrial Ecosystems</b>	1.2.1 Wildlife
	1.2.2 Wetlands
	1.2.3 Forests
	1.2.4 Vegetation
	1.2.5 Designated/Special Areas
<b>1.3 Groundwater</b>	1.3.1 Areas of Groundwater Recharge and Discharge
	1.3.2 Groundwater Source Areas and Wellhead Protection Areas

<b>Exhibit 7.2</b> <b>Highway 7&amp;8 Transportation Corridor Planning and Class EA Study</b> <b>Preliminary Identification of Factors, Sub-Factors and Criteria</b> <b>To Be Considered in the Evaluation Of Alternatives</b>	
<b>FACTORS/SUB-FACTORS</b>	<b>CRITERIA</b>
	1.3.3 Large Volume Wells
	1.3.4 Private Wells
	1.3.5 Groundwater-Dependent Commercial Enterprises
	1.3.6 Groundwater-Sensitive Ecosystems
<b>1.4 Surface Water</b>	1.4.1 Watershed / Subwatershed Drainage Features/Patterns
	1.4.2 Surface Water Quality and Quantity
<b>1.5 Air Quality</b>	1.5.1 Local and Regional Air Quality
	1.5.2 Sensitive Receptors to Air Pollutants and Greenhouse Gases
<b>2. Land Use / Socio-Economic Environmental Factors</b>	
<b>2.1 Land Use Planning Policies, Goals, Objectives</b>	2.1.1 First Nations' Land Claims
	2.1.2 Provincial / Federal Land Use Planning Policies/Goals/Objectives
	2.1.3 Municipal (local and regional) Land Use Planning Policies / Goals / Objectives
	2.1.4 Development Objectives of Private Property Owners
<b>2.2 Land Use – Community</b>	2.2.1 Indian Reserves
	2.2.2 First Nations' Sacred Grounds
	2.2.3 Urban and Rural Residential
	2.2.3 Commercial/Industrial
	2.2.5 Tourist Areas and Attractions
	2.2.6 Community Facilities / Institutions
	2.2.7 Municipal Infrastructure and Public Service Facilities
<b>2.3 Noise Sensitive Areas (NSA's)</b>	2.3.1 Highway Noise
	2.3.2 Construction Noise
<b>2.4 Land Use - Resources</b>	2.4.1 First Nations' Treaty Rights or Use of Land and Resources for Traditional Purposes
	2.4.2 Agriculture
	2.4.3 Parks and Recreational Areas
	2.4.4 Aggregate and Mineral Resources
<b>2.5 Major Utility Transmission Corridors</b>	
<b>2.6 Contaminated Property and Waste Management</b>	
<b>2.7 Landscape Composition</b>	2.7.1 Scenic Composition
	2.7.2 Sensitive Viewer Groups
	2.7.3 Scenic Value of Views/Vistas From the Transportation Facility
	2.7.4 Specimen Trees
<b>3. Cultural Environmental Factors</b>	
<b>3.1 Cultural Heritage – Built Heritage and Cultural Landscapes</b>	3.1.1 Buildings or “Standing” Sites of Architectural or Heritage Significance, or Ontario Heritage Easement Properties
	3.1.2 Heritage Bridges
	3.1.3 Areas of Historic 19 <sup>th</sup> Century Settlement
	3.1.4 Cultural Heritage Landscapes
	3.1.5 First Nations' Burial Sites

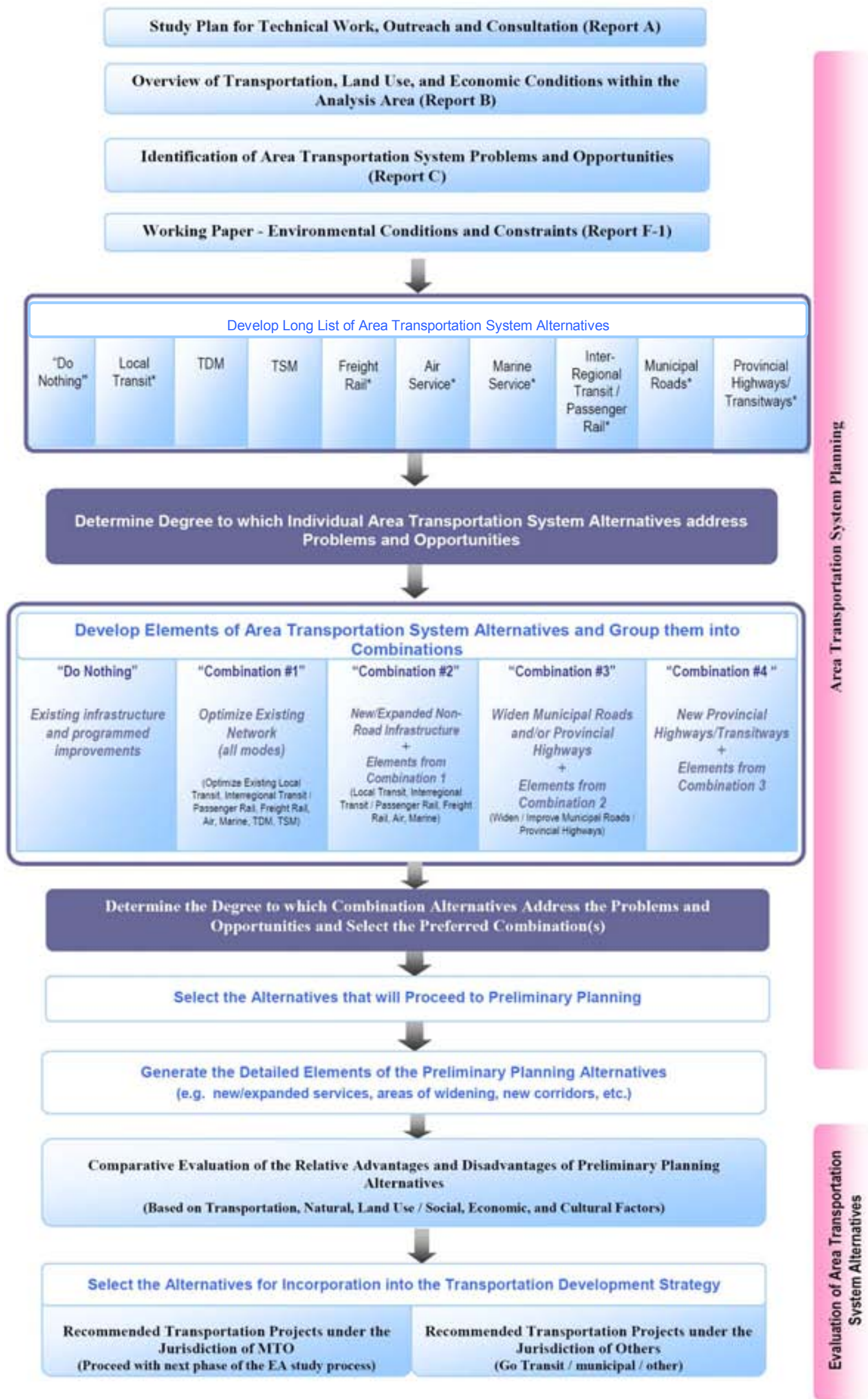
<b>Exhibit 7.2</b> <b>Highway 7&amp;8 Transportation Corridor Planning and Class EA Study</b> <b>Preliminary Identification of Factors, Sub-Factors and Criteria</b> <b>To Be Considered in the Evaluation Of Alternatives</b>	
<b>FACTORS/SUB-FACTORS</b>	<b>CRITERIA</b>
	3.1.6 Cemeteries
<b>3.2 Cultural Heritage – Archaeology</b>	3.2.1 Pre-Historic and Historic First Nations' Archaeological Sites
	3.2.2 Historic Euro-Canadian Archaeological Sites
<b>4. Area Economy Factors</b>	
4.1 First Nations' Industry	
4.2 Heavy Industry and Trade	
4.3 Tourism and Recreation Industry	
4.4 Agriculture Industry	
<b>5. Transportation Factors</b>	
5.1 Area Transportation System Capacity and Efficiency	5.1.1 Movement of People
	5.1.2 Movement of Goods
	5.1.3 System Performance During Peak Periods
5.2 Area Transportation System Reliability / Redundancy	
5.3 Safety	5.3.1 Traffic Safety
	5.3.2 Emergency Access
5.4 Mobility and Accessibility	5.4.1 Modal Integration, Balance
	5.4.2 Linkages to population and Employment Centres
	5.4.3 Recreation and Tourism Travel
	5.4.4 Accommodation for Pedestrians, Cyclists and Snowmobiles
5.5 Network Compatibility	5.5.1 Network Connectivity
	5.5.2 Flexibility for Future Expansion
5.6 Engineering	5.6.1 Constructability
	5.6.2 Compliance with Design Criteria
5.7 Construction Cost (excludes property costs and engineering costs)	
5.8 Traffic Operations	

## **7.4 'Area Transportation System' and Preliminary Planning Alternatives**

### **7.4.1 Process Overview for Transportation Needs Assessment**

The process for the identification, assessment and evaluation of the area transportation system alternatives and preliminary planning alternatives is depicted in Exhibit 7.3.

**Exhibit 7.3 Process Overview for the Development, Assessment and Evaluation of Area Transportation System Alternatives (Phase 2 of Study) and Preliminary Planning Alternatives (Phase 3 of Study)**



\* - Improved Services and/or new infrastructure

A brief description of the key elements of the process follows:

#### **7.4.2 Study Plan for Technical Work, Outreach and Consultation**

As indicated in Section 1.4, this document, Report A: Study Plan for Technical Work, Outreach and Consultation, establishes the framework and commitments to guide the study.

### **AREA TRANSPORTATION SYSTEM PLANNING**

Area Transportation System planning is outlined in Sections 7.4.3 through 7.4.9.

#### **7.4.3 Overview of Transportation, Land Use, Economic and Environmental Conditions within the Analysis Area**

The objectives and key tasks of this step are the following:

- provide an analysis area land use and economic overview and outlook, and provide a preliminary assessment of existing transportation conditions (documented in Report B: Working Paper - Overview of Transportation, Land Use, and Economic Conditions within the Analysis Area);
- provide an overview of environmental conditions and constraints within the analysis area, based upon secondary source information (documented in Report F 1<sup>st</sup> Part: Working Paper - Environmental Conditions and Constraints).

#### **7.4.4 Identify Area Transportation System Problems and Opportunities**

A preliminary statement of problems and opportunities is provided in Exhibit 1.3 in Section 1.3 of this Study Plan. The objectives and key tasks of this step are to develop additional detail through the following:

- establish travel demand forecasting approach and methodology;
- forecast future 'Area Transportation System' travel characteristics and patterns;
- provide a detailed assessment of current and future 'Area Transportation System' problems and opportunities;
- articulate the above as the basis for evaluating and selecting alternative solutions.

This work is presented in Report C: Working Paper – Area Transportation System Problems and Opportunities.

#### **7.4.5 Develop Long List of Area Transportation System Alternatives**

The following generic area transportation system alternatives have been identified:

- Do Nothing
- Travel Demand Management (TDM)

- Transportation System Management (TSM)
- Local Transit\*
- Interregional Transit and Passenger Rail\*
- Air Services\*
- Marine Services\*
- Freight Rail\*
- Municipal Roads\*
- Provincial Highways / Transitways\*

(\* new or improved operations and/or infrastructure)

These alternatives and their rationale are described below, with additional information presented in Supporting Document #3 of this Study Plan.

The “Do Nothing” alternative includes existing infrastructure and programmed improvements. The “Do Nothing” alternative is considered to be the status quo, in that no additional measures are planned to address possible shortfalls in transportation system capacity.

TDM strategies include measures that improve the operation of the current transportation system by managing travel demand, independent of other infrastructure improvements (e.g. constructing or expanding roads). The emphasis of TDM strategies is to reduce overall demands on the transportation network, especially auto trips; shift demands to time periods outside of the critical congestion periods; and shift demands from auto based trips to alternative modes of transportation, principally transit, cycling and walking.

TSM can improve the efficiency and safety of the transportation system and optimize the use of existing and planned infrastructure through such initiatives as transit priority facilities (e.g. bus priority at intersections), Intelligent Transportation Systems (ITS), High Occupancy Vehicle (HOV) lanes, Park’n’Ride facilities and intersection or signal timing improvements.

Local transit may reduce auto trips and thereby relieve congestion and increase the performance of the transportation system.

Interregional Transit and Passenger Rail would provide an alternative travel mode choice and increase the capacity of the transportation system. This could include inter-regional bus service in mixed traffic, higher order priority transit services on new infrastructure such as Bus Rapid Transit (BRT), Light Rail Transit (LRT), GO Transit, and VIA rail.

Air services can potentially result in a change in travel patterns for both passengers and freight.



Freight rail services for goods movement could encourage the diversion of freight from trucks. The ability to expand rail service and divert longer haul goods to rail may provide some relief to network congestion both on the provincial highway network, as well as on arterial roads.

Municipal Roads and Provincial Highways could be widened / improved to increase the capacity and performance of the transportation network and provide relief to forecasted network congestion. This could include:

- Provincial roads - potential to widen Highway 7&8
- Municipal roads – potential to widen local east-west roads between and through Stratford and New Hamburg.
- Access Management – access management strategies could be employed to improve the operation of existing Highway 7&8 through removal, consolidation or redirection of existing intersections and entrances and by imposing strict restrictions on future access to Highway 7&8.

In addition, new municipal roads and/or provincial highways/transitways would increase the capacity and performance of the transportation network and provide relief to forecasted network congestion. Inherent in these new facilities would be a high degree of access control in order to preserve the travel mobility characteristics of the corridor. Commercial and private entrances would be prohibited and access would be limited to at-grade highway intersections or potentially highway interchanges with key arterial roads; and to transit stations for a provincial transitway. Use of sections of existing roadways may be considered.

#### **7.4.6 Determine Degree to Which Individual Area Transportation System Alternatives Address Problems and Opportunities**

The 'Area Transportation System' alternatives will be examined to determine the degree to which they individually address problems and opportunities. On a preliminary basis, this will be determined through the following screening criteria:

- Potential to address transportation problems and opportunities;
  - Long term capacity deficiencies
  - Efficient movement of people
  - Efficient movement of goods
  - Recreational / tourist travel
  - System reliability / redundancy
  - Safety
  - Accessibility
  - Modal opportunities
- Support for provincial policies (Greater Golden Horseshoe Growth Plan, etc.)
- Supports land use and growth objectives of province and municipalities

This determination will:

- be undertaken using a reasoned argument methodology only;
- consider the environmental and transportation factors and sub-factors identified in **Exhibit 7.2** and the evaluation criteria and indicators identified in Supporting Document #5.

#### **7.4.7 Define Elements of Area Transportation System Alternatives and Group Them into Combinations**

The following generic combinations of area transportation system alternatives have been developed:

##### Do Nothing

As indicated in Section 7.4.5, the “Do Nothing” alternative includes existing infrastructure and programmed improvements.

##### Combination #1: Optimize Existing Network

Combination #1 includes:

- optimization of:
  - local transit;
  - interregional transit and passenger rail;
  - passenger rail;
  - freight rail;
- transportation system demand management (TDM)
- transportation system management (TDM)

##### Combination #2: New / Expanded Non-Road Infrastructure plus elements of Combination #1

Combination #2 includes:

- new/expanded
  - local transit
  - interregional transit and passenger rail
  - air services
  - marine services
  - freight rail
- elements of Combination #2

##### Combination #3: Widen Roads plus elements of Combination #2

Combination #3 includes:

- widen / improve:
  - municipal roads

- provincial highways
- elements of Combination #2

Combination #4: New Municipal Roads and/or Provincial Highways/ Transitways plus elements of Combination #3

Combination #4 includes:

- new municipal roads
- new provincial highways/transitways

#### **7.4.8 Determine the Degree to which Combination Alternatives Address the Problems and Opportunities and Select the Preferred Combinations**

The advantages and disadvantages of the various combination 'Area Transportation System' alternatives will be compared using a reasoned argument methodology to select recommended alternatives.

The trade-offs used to select preferred 'Area Transportation System' alternatives will reflect:

- Government legislation, policies and guidelines;
- Municipal policy (i.e. Official Plans);
- Public, Agencies, First Nations, Consultation Groups, and other stakeholder issues and concerns; and
- Project Team (staff from MTO and their Consultants) expertise.

#### **7.4.9 Identify the Alternatives that will Proceed to Preliminary Planning and those Alternatives that Require Further Study by Other Proponents**

The objectives and key tasks are:

- evaluate and select those combinations that are expected to significantly contribute to addressing 'Area Transportation System' problems and opportunities

The work outlined in Section 7.4.5 through 7.4.9 is documented in Report D: Working Paper – Area Transportation System Alternatives.

### **PRELIMINARY PLANNING**

Preliminary Planning is outlined in Sections 7.4.10 through 7.4.12

#### **7.4.10 Generate the Detailed Elements of the Preliminary Planning Alternatives**

The objective and key task of this step is to generate detailed elements of the preliminary planning alternatives based on transportation, natural, land use / social, economic and cultural factors. They may include the following:

- new/expanded services;
- general areas of geometrical improvements and widening to existing facilities;
- new corridors;
- environmental protection for the above (by minimizing intrusion into areas of environmental significance as identified through secondary source information);
- conceptual areas of limitations to highway access.

Exhibit 7.4 provides a preliminary listing of the proposed environmental and transportation factors and sub-factors to be considered for generating preliminary planning alternatives:

<b>Exhibit 7.4: Principles for Generating Preliminary and Detailed Planning Alternatives</b>
<b>Principle 1: Minimize impacts to significant natural features, functions, systems and communities</b>
<ul style="list-style-type: none"><li>• Avoid where possible, or minimize encroachment on or loss of water bodies and associated riparian zones;</li><li>• Avoid where possible, or minimize encroachment on or loss of critical fish habitat features;</li><li>• Avoid where possible, or minimize encroachment on or loss of species of conservation concern (vegetation, fish and wildlife);</li><li>• Avoid where possible, or minimize encroachment on or loss of critical habitat of Species at Risk;</li><li>• Avoid where possible, or minimize encroachment on or loss of encroachment into ecologically functional areas;</li><li>• Avoid where possible, or minimize encroachment on or loss of important wildlife areas and travel corridors. Other areas to be considered are any identified wildlife management, rehabilitation and research program sites;</li><li>• Avoid where possible, or minimize encroachment on or loss of Provincially Significant Wetlands (PSWs) and avoid impairment to wetland functions, including ecological function;</li><li>• Avoid where possible, or minimize encroachment on or loss of all other evaluated and unevaluated wetlands;</li><li>• Avoid where possible, or minimize encroachment on or loss of designated significant woodlands;</li><li>• Avoid where possible, or minimize encroachment on or loss of other important woodlands;</li><li>• Avoid where possible, or minimize encroachment on known groundwater recharge and discharge areas; as well as identified wellhead and source</li></ul>

<b>Exhibit 7.4: Principles for Generating Preliminary and Detailed Planning Alternatives</b>
<p>protection areas and areas susceptible to groundwater contamination;</p> <ul style="list-style-type: none"> <li>• Avoid where possible or minimize encroachment on, loss of, or impairment of ecological function to environmentally significant features, and where appropriate associated functions, including Significant Valleylands, ESAs, ANSIs, or other areas of provincial, regional or local significance; and</li> <li>• Avoid where possible, or minimize encroachment on loss of, or impairment of ecological function to special spaces (including recreational activity zones).</li> </ul>
<b>Principle 2: Minimize impacts to existing and planned (approved under the Planning Act) population and employment areas</b>
<ul style="list-style-type: none"> <li>• Maximize separation distance from sensitive receptor locations;</li> <li>• Avoid where possible or minimize encroachment on, or loss of developed properties;</li> <li>• Minimize access impacts;</li> <li>• Maximize the access provided to major generators of economic activity;</li> <li>• Avoid where possible, or minimize encroachment on, or loss of prime agricultural areas and agricultural infrastructure;</li> <li>• Avoid where possible, or minimize encroachment on, or loss of mineral, petroleum and mineral aggregate resources;</li> <li>• Avoid operating and "non-operating" waste disposal sites; and</li> <li>• Avoid where possible, minimize encroachment on, or loss of known archaeological sites/built heritage features/cultural heritage landscape areas of extreme significance.</li> </ul>
<b>Principle 3: Transportation service criteria</b>
<ul style="list-style-type: none"> <li>• Generate alternatives that are efficient and direct, while meeting standards for design; and</li> <li>• Select alternatives that address the transportation problems and transportation opportunities.</li> </ul>

The assessment of the preliminary planning alternatives will consider the environmental and transportation factors, sub-factors and criteria identified in Exhibit 7.2 and their evaluation indicators identified in Supporting Document #5.

#### **7.4.11 Comparative Evaluation of the Relative Advantages and Disadvantages of Preliminary Planning Alternatives**

The objective and key task of this step is to evaluate preliminary planning alternatives using reasoned argument and arithmetic methods (as appropriate), utilizing the

preliminary listing of environmental and transportation factors, sub-factors and criteria in Exhibit 7.2, and their evaluation indicators identified in Supporting Document #5.

A reasoned evaluation methodology, augmented by arithmetic methods as appropriate, will be applied.

#### **7.4.12 Identify Recommended Transportation Development Strategy**

The objectives and key tasks of this step are:

- select recommended preliminary planning alternatives based on results of comparative evaluation by the project team and taking into consideration stakeholder input received through the consultation and outreach program
- develop a transportation strategy, including definition of study area(s)
- determine next steps, including decision if study is to continue through Phases 4-6 (*if provincial roadway alternatives are selected*)

The study area is defined as the geographic area within which a reasonable range of alternatives will be generated. It is fundamental to note that the study area does not limit the potential to examine broader transportation, economic and environmental considerations, impacts and effects outside of its boundaries.

The MTO Project Team will generate a study area through consultation with affected stakeholders (including regulatory agencies and municipalities). The following inputs will be used to guide the generation of study area limits:

- identified transportation problems and opportunities;
- the nature of the alternatives selected;
- existing transportation infrastructure;
- significant natural, socio-economic and cultural environmental features (as identified through secondary source data and consultation); and
- current government land use planning policies and initiatives.

During the study, the study area limits may be refined or modified as required to accommodate any reasonable alternatives that may be developed.

To determine next steps, the selected 'Area Transportation System' Development Strategy will be placed into one or more of the following four categories:

- If the preferred 'Area Transportation System' planning alternative is "Do Nothing" – the EA process is complete and no further study will be initiated.
- If the preferred 'Area Transportation System' planning alternative is not a provincial roadway recommendation – the current EA process will be halted; MTO will refer the planning alternative to the appropriate agency or jurisdiction for further review and action.

- If the preferred 'Area Transportation System' planning alternative is a provincial roadway recommendation – the EA process continues and MTO will proceed to the preliminary planning phase as outlined in Section 2.2.
- If the preferred 'Area Transportation System' planning alternative is a combination of provincial roadway recommendations and recommendations that are not provincial roadways – the EA process continues for provincial roadway solutions, with MTO proceeding to the Preliminary Planning phase as outlined in Section 2.2; and - 'Area Transportation System' planning alternatives that are not provincial roadways are referred to the appropriate agency or jurisdiction for further review and action.

The work of Sections 7.4.10 through 7.4.12 is presented in Report E: Milestone Report – Highway 7&8 Transportation Corridor Needs Assessment.

## **7.5 Detailed Planning Alternatives For Provincial Roadways**

### **7.5.1 Process Overview for the Development, Assessment and Evaluation of Detailed Planning Alternatives For Provincial Roadways**

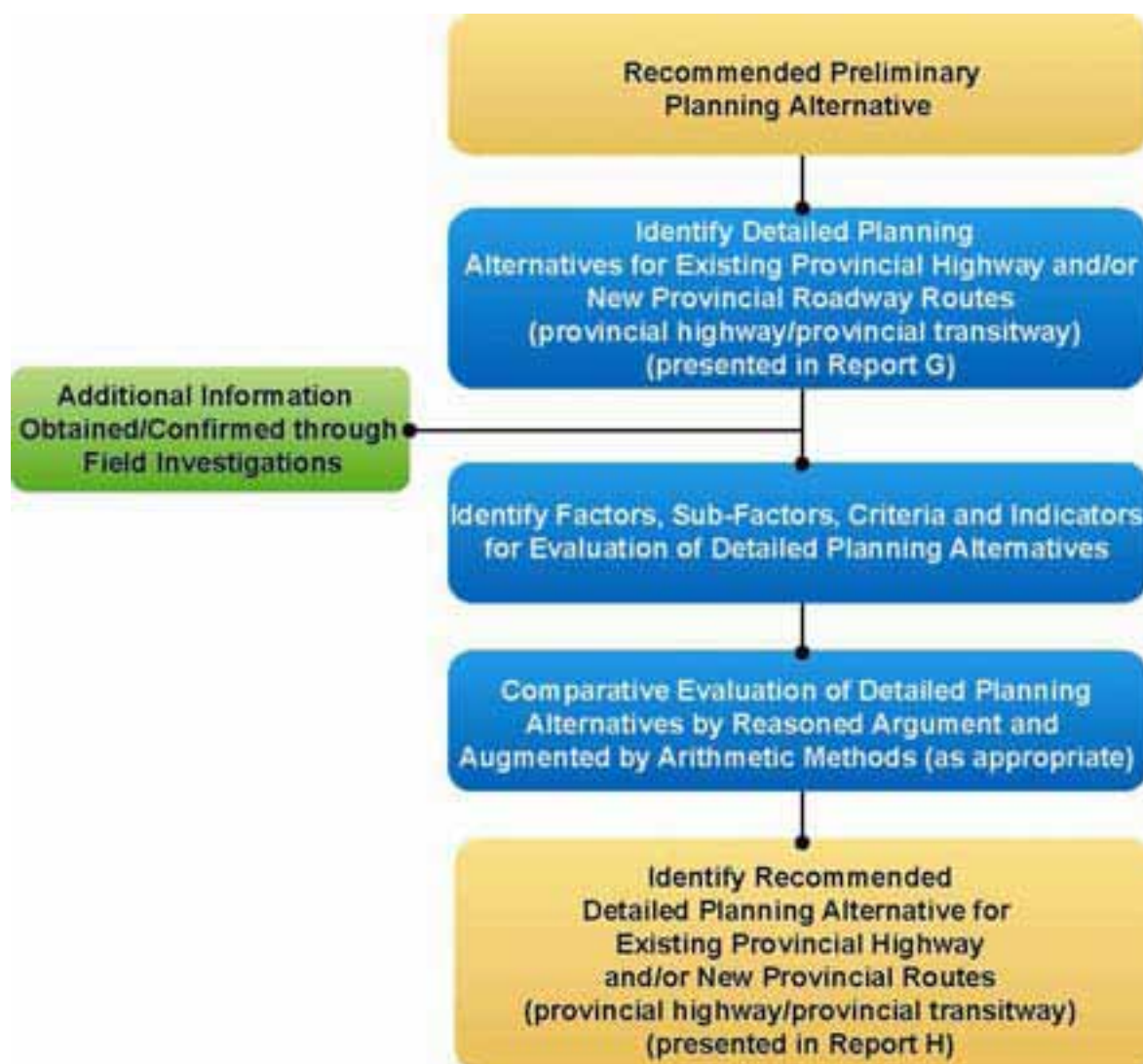
The process for the identification, assessment and evaluation of the detailed planning alternatives for provincial roadways is depicted in Exhibit 7.5. A brief description of the key elements of the process follows:

- 1 Identify Detailed Planning Alternatives for Existing Provincial Highway and/or New Provincial Roadway Routes (provincial highway/provincial transitway)
  - Description and rationale for detailed planning alternatives (presented in Report G).
- 2 Additional Information Obtained/Confirmed through Field Investigations
  - Obtain additional information regarding environmental conditions/features within the analysis area through field investigation (inventory, survey and testing, as appropriate).
- 3 Identify Factors, Sub-factors, Criteria and Indicators for Evaluation of Detailed Planning Alternatives
  - Each of the alternatives will be evaluated using reasoned argument against the environmental and transportation factors, sub-factors and criteria identified in Exhibit 7.2 and the evaluation indicators identified in Supporting Document #5
- 4 Comparative Evaluation of Detailed Planning Alternatives by Reasoned Argument and Augmented by Arithmetic Methods (as appropriate)
  - Each alternative will be evaluated using reasoned argument and arithmetic methods (as appropriate) using the identified factors, sub-factors, criteria and indicators (refer to preliminary listing of proposed factors, sub-factors and criteria in Exhibit 7.2 provided in Section 7.3; indicators will be developed during the preliminary planning phase of the study)

- 5 Identify Recommended Detailed Planning Alternative for Existing Provincial Highway and/or New Provincial Routes (provincial highway/provincial transitway)
  - Selection of recommended detailed planning alternative based on results of comparative evaluation and taking into consideration stakeholder input received through the consultation and outreach program (presented in Report H).

**Exhibit 7.5**

**Highway 7&8 Transportation Corridor Planning and Class EA Study  
Process Overview for the Development, Assessment and Evaluation  
of Detailed Planning Alternatives for Provincial Roadways (Phase 4 of Study)**





### **7.5.2 Summary Of Detailed Planning Alternatives**

Depending on the selected alternatives carried forward from the preliminary planning phase, the Highway 7&8 Transportation Corridor Planning and Class EA Study, will consider the specific location / type / character and template “footprint” for the following categories of provincial roadway detailed planning alternatives (as applicable):

- New provincial roadways
  - new provincial highway route location
  - highway type and transitway route location & technology
- Improve existing provincial highways (i.e. Highway 7&8, Highway 3)
  - specific location & type of geometrical improvements to existing provincial highway
  - specific location, extent & direction of widening to existing provincial highway
  - combinations of the above
- specialty engineering alternatives (bridge, drainage & hydrology, foundation, pavement & roadbase, traffic control & electrical infrastructure) for the above

These provincial roadway detailed planning alternatives are presented in more detail in Supporting Document #3 of this Study Plan. The rationale for the detailed planning alternatives for provincial roadways will be presented in Report “G”: Working Paper – Generation of Detailed Planning Alternatives for Provincial Roadways.

Exhibit 7.2 in Section 7.3 provides a preliminary listing of the proposed environmental and transportation factors, sub-factors and criteria to be considered for the generation, assessment and evaluation of alternatives. Supporting Document #5 provides preliminary evaluation indicators to be applied to these factors, sub-factors and criteria during the detailed planning phase. These preliminary listings will be refined and modified during consultation on the “proposed approach to upcoming work”, as is indicated in Sections 2.2 and 7.3 of this Study Plan.

The objectives and rationale for generating alternatives will ensure not only that alternatives are efficient/direct and meet technical objectives/design requirements, but also minimize/avoid impacts to significant environmental and study area features to the extent possible.

### **7.5.3 Process For Assessment Of Detailed Planning Alternatives For Provincial Roadways**

The assessment of the detailed planning alternatives for provincial roadways identified in Section 7.5.2 will:

- be undertaken using a reasoned argument methodology and augmented by arithmetic methods as appropriate ;

- consider the environmental and transportation factors, sub-factors and criteria identified in Exhibit 7.2 and the evaluation indicators identified in Supporting Document #5; and
- consider potential impacts on the environment.

The alternatives will then be reviewed with agencies and the public through the outreach and consultation process. This outreach and consultation is critical to developing a reasonable set of detailed planning alternatives. Local residents can add valuable information to the database gathered by the Project Team. Refinements to the alternatives will be integrated where warranted and a final set of detailed planning alternatives will be brought forward to the evaluation process.

#### **7.5.4 Process For Evaluation And Selection Of The Preferred Detailed Planning Alternatives For Provincial Roadways**

After the various detailed planning alternatives are generated and refined based on consultation, the evaluation of the alternatives will commence.

##### *Factor-Specific Environmental Inputs to the Evaluation of Detailed Planning Alternatives*

The data collected on the study area will assist in identifying the types of impacts each detailed planning alternative will have on each component of the environment, as indicated in Exhibit 7.2 of this Study Plan.

In addition, technical requirements and costs will be considered in the evaluation of detailed planning alternatives. Data collection for each of the environmental disciplines will be conducted consistent with the most up-to-date provincial policies and procedures. Each of these components will be defined by a set of evaluation criteria. Impacts will be quantified according to the preliminary criteria shown in Supporting Document #5 of this Study Plan.

These criteria are intended to assist the factor specific environmental specialists in determining the overall impact of the various alternatives on the natural, socio-economic and cultural environment. In determining the overall impact, the specialists will consider how the various factors and criteria interact and function together. The evaluation criteria listed represent the minimum requirements in the process of evaluating alternative methods.

A description of the rationale associated with the evaluation criteria/indicators is outlined in Supporting Document #5 of this Study Plan. The evaluation factors, sub-factors and criteria are subject to refinement and modification during the EA based on study findings, provincial policy and input received from stakeholders. Factor specific work plans for assessing potential environmental effects will be completed during the Class EA Study.

## **7.6 Preliminary Design Alternatives For Provincial Roadways**

### **7.6.1 Summary Of Preliminary Design Alternatives**

Depending upon the provincial highway and provincial transitway alternatives selected during Planning, the Preliminary Design alternatives may be generated and assessed for:

- new provincial transitway route;
- new provincial highway route;
- improvements to the existing highway; and
- combinations of the above.

The Highway 7&8 Transportation Corridor Planning and Class EA Study will consider the following preliminary design alternatives for the provincial roadway alternatives for the following categories of preliminary design (as applicable):

- calculated vertical & horizontal alignment and cross-section;
- highway interchange & intersection preliminary design;
- transitway station preliminary design;
- location/design of private entrances to highway (if applicable);
- specialty engineering alternatives for the above (bridge, drainage & hydrology, foundation, pavement & roadbase, traffic control & electrical infrastructure);
- right-of-way and property acquisition requirements;
- utility requirements (relocation etc); and
- preliminary staging of implementation.

These provincial roadway preliminary design alternatives are presented in more detail in Supporting Document #3 of this Study Plan. The rationale for the preliminary design alternatives for provincial roadways will be presented in Report “I”: Working Paper – Generation of Preliminary Design Alternatives for Provincial Roadways.

Exhibit 7.2 provides a preliminary listing of the proposed environmental and transportation factors, sub-factors and criteria to be considered for the generation, assessment and evaluation of alternatives. Supporting Document #5 provides preliminary evaluation indicators to be applied to these factors, sub-factors and criteria during the preliminary design phase. These preliminary listings will be refined and modified during consultation on the “proposed approach to upcoming work”, as is indicated in Sections 2.2 and 7.3 of this Study Plan.

### **7.6.2 Process For Generation And Assessment Of Preliminary Design Alternatives For Provincial Roadways**

The generation and assessment of preliminary design alternatives for provincial roadways will use the factors, sub-factors and criteria as were applied for the detailed planning alternatives as identified in Section 7.5.

The assessment of the preliminary design alternatives for provincial roadways identified in Section 7.6.1 will:

- be undertaken using a reasoned argument methodology and augmented by arithmetic methods as appropriate;
- consider the environmental and transportation factors, sub-factors and criteria identified in Exhibit 7.2 and the evaluation indicators identified in Supporting Document #5; and
- consider potential impacts on the environment.

### **7.6.3 Process For Evaluation And Selection Of The Preferred Preliminary Design Alternatives For Provincial Roadways**

The evaluation and selection of preliminary design alternatives for provincial roadways will use the same factors, sub-factors and criteria as were applied for the detailed planning alternatives in Section 7.5.

## **8 MONITORING STRATEGY DURING PROJECT IMPLEMENTATION**

During this Class EA study, MTO will commit to developing a monitoring program for the implementation of the selected preferred alternative. The Transportation Environmental Study Report will include a comprehensive list of all commitments made during the study to guide future environmental work and consultation as well as effects and compliance monitoring.

### **8.1 Commitment To Develop Project Technical Monitoring Program And Procedures**

During Preliminary Design of the study, a monitoring strategy will be developed to reflect how MTO proposes to ensure that the implementation of proposed mitigating measures and key design features are consistent with project commitments outlined in the Transportation Environmental Study Report and any subsequent environmental study documentation.

An environmental effects and compliance monitoring program is necessary to identify potential non-conformance with environmental design, and environmental protection requirements (as identified during this Class EA study) and to initiate corrective action to bring the work into compliance with environmental requirements committed to in the Transportation Environmental Study Report and any subsequent environmental documentation for this undertaking.

MTO will ensure that appropriate commitments to compliance monitoring are reflected in Report “J”: Milestone Report – Selection of Preliminary Design Alternatives for Provincial Roadways.

The duration of the monitoring and follow-up programs will vary and will depend on the conditions of permits and approvals granted by regulatory agencies.

### **8.2 Commitment To Develop Project EA Process Monitoring Program And Procedures**

During the planning and design processes, MTO will ensure compliance with Class EA process commitments prior to project implementation. If the preferred alternative includes a construction phase, MTO will ensure that external notification and consultations are consistent with any commitments that may have been made earlier in the Transportation Environmental Study Report or other environmental documentation. Following construction, monitoring will ensure that any follow-up information is provided to external agencies as per any outstanding environmental commitments.

## **9 OUTREACH AND CONSULTATION**

### **9.1 Key Components of Outreach and Consultation Program**

A major component of the Highway 7&8 Transportation Corridor Planning and Class EA Study will be outreach and consultation. The key components of the outreach and consultation program are as follows:

- Section 1.1 of this Study Plan indicates that outreach and consultation will be structured around six key points of decision-making, each of which will be supported by:
  - the release of a newsletter;
  - the release of draft reports for review and comment;
  - a round of Public Information Centres (PICs);
  - posting of information on the study web site; and
  - newspaper notices announcing the above.
- Section 2.2 of this Study Plan provides an overview of the planning and Class EA Study process, including objectives and key tasks, reports, and PICs at which information is presented.
- Section 2.4.4 of this Study Plan provides the principles for outreach and consultation.

The consultation program is designed such that the stakeholders will be provided reasonable timeframes for reviewing and providing comments on documentation and information made available during this Class EA study, with the PICs being the first opportunity for the public to review the information presented for each phase of the work. The consultation plan encourages proactive communication, which will allow comments and views of stakeholders to assist MTO in the decision-making process.

### **9.2 Public Information Centres (PICs)**

The six rounds of PICs are the focus points of outreach and consultation.

These PICs will be supplemented by follow-up activities where appropriate. Each round of PICs will include individual events held in Stratford and New Hamburg. The precise locations/venues and timing of each PIC will be determined during the study based on the availability of venues, etc.

The PICs will be arranged as drop-in centres (open house format) to allow stakeholders to see results, exchange information, and ask one-on-one questions of the Project Team. The setup of each round of PICs will depend on the nature of the information being presented and input being sought. The PICs serve an important function in

providing for two-way communications on specific local conditions, issues and concerns regarding the study.

Follow-up consultation activities will be held as necessary throughout the project. It is expected that these activities will be very helpful to facilitate additional dialogue and attempt to resolve any outstanding concerns and issues during the Class EA process. Follow-up activities will be arranged to address specific project issues and concerns as they arise. The format of these activities will be flexible to reflect the type of “Project Team – stakeholder” interaction required to address a particular issue but could include stakeholder group meetings, workshops, kitchen table meetings, presentations, surveys, and other.

Summary Reports for Public Information Centres, follow-up activities and other consultation events will be prepared and posted on the project website in a timely manner. The information to be presented at each PIC is summarized in the table provided in Section 2.2. The reports referred to in the table are summarized in Supporting Document #2 of this Study Plan.

### **9.3 Public Notices in Newspapers**

Newspaper notices announcing Study Commencement and PIC #1 are scheduled for posting in local newspapers in June, July and August 2007.

MTO will publish future newspaper notices as follows:

- public notices shall be placed in newspapers for each round of PICs, and the filing of the Transportation Environmental Study Report;
- each round of public notices shall include newspaper advertisements on at least 2 separate days (preferably one week-day and one weekend-day), where project scheduling/timing and newspaper circulation timing jointly permit;
- these public notices shall be placed in the following newspapers:
  - Stratford Beacon Herald;
  - New Hamburg Independent;
  - Kitchener Waterloo Record;
  - Le Regional;
  - Turtle Island News (Six Nations); and
  - Possibly two additional local newspapers.

For those newspapers which publish once per week, notices may be placed only once. For those newspapers which publish biweekly or monthly, notices will be placed only if timing/scheduling permits.

### **9.4 Project Web Site**

A project web site has been established for the Highway 7&8 Transportation Corridor Planning and Class EA Study. The web site will be maintained during the course of the

study as a source of up-to-date information. The project web site address is <http://www.7and8corridorstudy.ca>. Stakeholders are encouraged to visit the site.

## 9.5 Contacting the Study Team

The study team can be contacted at the following:

- Email to: [projectteam@7and8corridorstudy.ca](mailto:projectteam@7and8corridorstudy.ca)
- Toll free telephone call to: 1 (866) 921-9268

## 9.6 Stakeholder Contact List

The Project Team has developed a contact list that includes interested individuals, ratepayer groups, recreational groups, agricultural groups, etc. located in the analysis / study area. The mailing list developed during the Study Design was the starting point for this stakeholder list. Additions have been made based upon stakeholder contacts to the study team, and will continue to be made as the study progresses. These stakeholders will be notified by letter /e-mail of project activities including study start-up, Public Information Centres, and follow-up activities (as appropriate).

## 9.7 Stakeholder Categories

The categories of stakeholders for this study are provided in Exhibit 9.1 and then discussed below:

<b>Exhibit 9.1 Highway 7&amp;8 Transportation Corridor Planning and Class EA Study Categories of Stakeholders</b>	
• First Nations	
• Business/Commercial Interest Groups	
• Emergency Service Providers	
• General Public	
• Municipalities	
• Regulatory Agencies	
• Transportation Service Providers	
• Utility Companies	

- First Nations
  - outreach and consultation with First Nations:
    - Six Nations of the Grand River First Nation
  - comply with 'Ontario's New Approach to Aboriginal Affairs, Spring 2005; also includes compliance with Grand River Notification Agreement



- be proactive in identifying and making initial contact with Six Nations of the Grand River First Nation and with Mississaugas of the New Credit First Nation
- strive to provide appropriate and meaningful consultation and engagement with First Nations that provides them with the opportunity to be informed; and to have their opinions heard and seriously considered.
- ensure that issues of particular interest to First Nations communities are addressed, including, but not limited to:
  - identification of First Nations' land claims;
  - potential effects to Indian Reserves;
  - potential effects to First Nations' sacred grounds;
  - potential effects to First Nations' treaty rights and use of land and resources for traditional purposes (e.g. hunting, fishing, harvesting of country foods, harvesting of medical plants);
  - potential effects to First Nations' burial sites;
  - potential effects to pre-historic and historic First Nations' sites; and
  - potential effects to First Nations' industry.(For additional details on the above, please refer to Exhibit 7.2 in Section 7.3 of this Study Plan and Supporting Document #5)
- provide opportunities for two-way communication by meetings with First Nations staff, with an emphasis on draft reports developed as the study progresses;
- at key decision-making milestones during the study, offer:
  - a presentation to Councils; and
  - a community meeting on the reserves.
- Business/commercial interest groups
  - Outreach and consultation with:
    - Chambers of Commerce (New Hamburg , Stratford and District, etc), Tourism agencies and committees, business associations and individual business owners as identified during the study
  - Outreach and consultation includes discussions at PICs and meetings with groups or individuals during study. Notification of upcoming meetings and opportunities for input may also be promoted through provision of the website address to leaders of organized groups. In addition, local tourist businesses will be provided PIC notices for posting on their bulletin boards in advance of each PIC
- Emergency Service providers
  - Outreach and consultation with:
    - Police services, including OPP.
    - Ambulance services, including Perth EMS, Region of Waterloo – EMS, etc.
    - Fire departments, including Stratford, Shakespeare, Wilmot, Perth East Fire Departments
  - Outreach and consultation includes discussions at PICs with emergency service providers regarding potential impacts to emergency access routes or response time from existing facilities to residents and businesses in the analysis area.

- General Public
  - Outreach and consultation with:
    - potential users of existing Highway 7&8 from Greater Stratford to New Hamburg area
    - property owners in analysis area, both directly and indirectly impacted
    - local population who live within the analysis area and may be impacted by changes to local transportation network if provincial network changes
    - interest groups who have a specific interest in the analysis area, including Perth County and Waterloo Federation's of Agriculture, and VELO Ontario Cycling Alliance.
  - Outreach and consultation with general public includes newspaper notices for announcement of Study Commencement and PICs and TESR public review period, Canada Post notification to rural areas in advance of PICs and mailings to property owners and members of the public as they identify themselves and request to be added to the project mailing list, or attend a PIC during the study. Notification through correspondence to property owners directly impacted by proposed works will be carried out before the PIC at which the recommended preliminary design is presented and for the TESR public review period. The correspondence mailed to those directly impacted by the proposed works will indicate that they are receiving the letter because their property is directly impacted (i.e. property acquisition required and/or significant alteration to property use/access). Follow-up telephone calls will be made, as required, to ensure that as many directly affected property owners as possible attend the PICs and are aware of the opportunity to comment on the TESR.
- Municipalities:
  - Outreach and consultation with:
    - Region of Waterloo
      - Township of Wilmot
    - Perth County
      - Township of South Perth
      - Township of Perth East
      - City of Stratford
  - Outreach and consultation includes collaborative engagement that recognizes the significance of the study to municipalities and includes an invitation to join the Municipal Advisory Group (MAG) that will meet at key study milestones, in advance of each PIC. Municipalities may be interested in many aspects of the undertaking, as they relate to the work of their engineering, transportation, planning, heritage, recreation and economic development departments. Presentations to municipal Councils will be offered in advance of each PIC when requested. Councils' endorsement will be sought for the preferred alternative prior to the final set of PICs and publication of the TESR.

- Regulatory Agencies
  - Outreach and consultation with:
    - Federal agencies, including Canadian Environmental Assessment Agency (CEAA), Transport Canada, Environment Canada, Canadian Transportation Agency, Department of Fisheries and Oceans, Canada Coast Guard and Health Canada;
    - Provincial agencies, including Ministry of Natural Resources, Ministry of Environment, Ministry of Culture, Ontario Secretariat for Aboriginal Affairs, Ministry of Agriculture and Food, Ministry of Tourism, Culture and Recreation, Ministry of Community and Social Services, Ministry of Municipal Affairs and Housing and Ministry of Public Infrastructure and Renewal; and
    - Local agencies, including Grand River Conservation Authority, Upper Thames River Conservation Authority and municipal heritage planning committees/groups.
  - Outreach and consultation includes collaborative engagement that recognizes the significance of the study to regulatory agencies and includes an opportunity to join the Regulatory Advisory Group (RAG) that will meet at major study milestones, in advance of PICs. Regulatory agency interest typically relates to the study process and recommendations that relate policies, regulations and approvals, as well as environmental protection of sensitive or designated features of the natural environment (i.e., fisheries habitat, Species at Risk, ANSIs, ESAs, PSWs, etc), socio-economic environment (i.e., land use, noise, air, landscape composition, etc.) and the cultural environment (i.e., archaeological resources and built heritage features, etc.). Involvement with federal agencies in this project is required to identify issues of federal jurisdiction, effectively address Canadian Environmental Assessment Act (CEAA) requirements during the EA process and coordinate provincial and federal approvals.
- Transportation service providers
  - Outreach and consultation with:
    - Municipal Transit Operators, including Stratford City Transit,
    - Bus operators,
    - School bus operators,
    - Rail operators, including Goderich - Exeter Railway, and
    - trucking firms including Ontario Trucking Association.
  - Outreach and consultation includes discussions at PICs and may include comments on long-range planning for future bus or transit routes using Highway 7&8, or future potential new routes through analysis area. Discussions with CN and CP are expected to include potential impacts to existing rail lines or new crossings that may result from the proposed works. Transportation service providers will be encouraged to attend PICs and visit the project web site for regular study updates.

- **Utility Companies**
  - Outreach and consultation with:
    - Electrical companies including Hydro One, Tay Hydro Electric Distribution, Kitchener – Wilmot Hydro, Festival Hydro Inc.,
    - Pipelines including TransCanada Pipeline,
    - Telephone companies including Bell Canada and Call Net Technology Services Inc. (Sprint Canada),
    - Cable companies including Rogers Cable and Cogeco Cable,
    - Gas companies including Union Gas and Enbridge Gas Distribution.
  - Outreach and consultation includes discussions at PICs and may include comments on long-range planning for utility infrastructure either along existing Highway 7&8 or future new routes through the analysis area. Discussions will also include potential impacts to existing services or new crossings that may result from the proposed works. Utility company representatives will be encouraged to attend PICs and visit the project web site for regular study updates.

## **9.8 Role of Stakeholders**

Stakeholders have a major role and responsibility in determining the success of the outreach and consultation program. The extent to which the stakeholders participate, the issues they raise, and how such issues are resolved, all influence the effectiveness of the outreach and consultation program. The role of stakeholders is provided in Exhibit 9.2 below.

<b>Exhibit 9.2</b> <b>Highway 7&amp;8 Transportation Corridor Planning and Class EA Study</b> <b>Summary of Role of Stakeholders</b>	
<b>1. Get Involved! – Be Involved! – Stay Involved!</b>	
<b>2. Provide your contact information (or that of your organization) to the study team for placement on the stakeholder contact list, so that you receive letter / email notifications of project activities.</b>	
<b>3. Utilize the ‘Overview of the Study Process’ (key tasks, reports, public information centres and information presented, preliminary schedule) as the framework for your participation throughout the study (See Exhibit 2.1 of the Study Plan).</b>	

<p align="center"><b>Exhibit 9.2</b> <b>Highway 7&amp;8 Transportation Corridor Planning and Class EA Study</b> <b>Summary of Role of Stakeholders</b></p>
<p><b>4. Provide the study team with your comments (additions/deletions/errors) on draft reports, within the time period requested, so that your input can be considered in finalizing those documents for use as building blocks for upcoming work.</b></p> <ul style="list-style-type: none"> <li>For the first round of PICs, the draft reports include: <ul style="list-style-type: none"> <li>Report “A”: Study Plan for Technical Work, Outreach and Consultation;</li> <li>Report “B”: Working Paper – Overview of Transportation, Land Use and Economic Conditions Within the Analysis Area; and</li> <li>Report “F” - 1<sup>st</sup> Part: Working Paper – Environmental Conditions and Constraints.</li> </ul> </li> <li>Comments on the draft reports presented at the first round of PICs are requested by October 30, 2007.</li> </ul>
<p><b>5. Provide the study team with your comments (additions/deletions/errors) on the proposed approach to upcoming work, within the time period requested, so that your input can be considered before those approaches are applied to upcoming work.</b></p> <ul style="list-style-type: none"> <li>For the first round of PICs, the proposed approach to upcoming work includes: <ul style="list-style-type: none"> <li>Process to identify ‘Area Transportation System’ Problems and Opportunities;</li> <li>Process and Criteria for Evaluating and Selecting ‘Area Transportation System’ Alternatives; and</li> <li>Process, Factors and Criteria for Generating, Assessing, Evaluating and Selecting Preliminary Planning Alternatives.</li> </ul> </li> <li>Comments on the proposed approaches to upcoming work presented at the first round of PICs are requested by October 30, 2007.</li> </ul>
<p><b>6. When providing your comments, keep in mind the following:</b></p> <ul style="list-style-type: none"> <li><b>Study objectives (See Exhibit 1.2 of the Study Plan);</b></li> <li><b>Assumptions of EA proponency and completion of study work (See Exhibit 3.1 of the Study Plan).</b></li> </ul>
<p><b>7. If you have questions or comments, or if you wish to add your name to the study contact list:</b></p> <ul style="list-style-type: none"> <li><b>Attend Public Information Centres (PICs) and talk to the study team members that staff them;</b></li> <li><b>Complete a comment sheet provided at the PICs;</b></li> <li><b>Contact the study team at:</b> <ul style="list-style-type: none"> <li><b>Email: <a href="mailto:projectteam@7and8corridorstudy.ca">projectteam@7and8corridorstudy.ca</a></b></li> <li><b>Toll Free: 1 (866) 921-9268</b></li> </ul> </li> <li><b>Find information at the study web site at <a href="http://www.7and8corridorstudy.ca">http://www.7and8corridorstudy.ca</a></b></li> </ul>

Note: Items 4 and 5 of this exhibit are customized to the first round of Public Information Centres and will be modified to suit for each subsequent round of Public Information Centres.

## **10 FILING AND REVIEW OF TRANSPORTATION ENVIRONMENTAL STUDY REPORT (TESR)**

The Transportation Environmental Report (TESR) is an assembly of the study working papers and milestone reports into a single document. The contents of the TESR are provided in Exhibit 10.1 below:

<b>Exhibit 10.1 Highway 7&amp;8 Transportation Corridor Planning and Class EA Study Transportation Environmental Study Report Contents</b>	
1.	Purpose, Relevance and Position of Report Within The Study Process
2.	Summary Description of the Undertaking
3.	Content of final Report “A” Study Plan For Technical Work, Outreach And Consultation
4.	Content of final Report “B”: Working Paper – Overview of Transportation, Land Use and Economic Conditions Within the Analysis Area
5.	Content of final Report “C”: Working Paper – ‘Area Transportation System’ Problems and Opportunities
6.	Content of final Report “D”: Working Paper – Area Transportation System Alternatives
7.	Content of final Report “E”: Milestone Report – Highway 7&8 Transportation Corridor Needs Assessment
8.	Content of final Report “F”: Working Paper - Environmental Conditions And Constraints
9.	Content of final Report “G”: Working Paper – Generation of Detailed Planning Alternatives for Provincial Roadway
10.	Content of final Report “H”: Milestone Report - Selection of Detailed Planning Alternatives for Provincial Roadway
11.	Content of final Report “I”: Working Paper - Generation of Provincial Roadway Preliminary Design Alternatives
12.	Content of final Report “J”: Milestone Report - Selection of Preliminary/Concept Design Alternatives for Provincial Roadway
13.	Environmental Synopsis
14.	Results of Outreach and Consultation
15.	Commitments to Future Work and Consultation

The Transportation Environmental Study Report will be prepared at completion of the study and made available on the public record for a 60-day review period. If no Part 2 Order or “bump-up” requests are received by the Minister of the Environment by the completion of the review period (see Section 2.1 for details), the project would be deemed to have environmental clearance, and the Highway 7&8 Transportation Corridor Planning and Class EA Study would be completed.

As is indicated in Section 1.1, decisions on funding and timing of construction are based upon environmental clearance of the TESR, since it determines the type of transportation facilities and their location.

## **11 SUMMARY OF KEY STUDY PLAN ISSUES FROM OUTREACH AND CONSULTATION, AND MTO RESPONSE/CHANGES**

THIS SECTION TO BE COMPLETED FOLLOWING THE 60-DAY PERIOD PROVIDED FOR STAKEHOLDERS TO REVIEW AND COMMENT ON THE DRAFT STUDY PLAN

## **SUPPORTING DOCUMENTATION**



**SUPPORTING DOCUMENT #1**  
**LIST OF ABBREVIATIONS AND GLOSSARY OF TERMS**

## List of Abbreviations and Glossary of Terms Used in the Study Plan

LIST OF ABBREVIATIONS USED IN THIS STUDY PLAN	
ANSI	Area of Natural and Scientific Interest
CA	Conservation Authority
CEAA	Canadian Environmental Assessment Act
CPR	Canadian Pacific Railway
EA	Environmental Assessment
ESA	Environmentally Sensitive Areas
ETR	Electronic Toll Road
FA	Federal Authorities
FEAC	Federal Environmental Assessment Coordinator
GGH	Greater Golden Horseshoe
GHG	Green House Gas
GTA	Greater Toronto Area
HOV lanes	High Occupancy Vehicle Lanes
IBA	Important Bird Area
LACAC	Local Architectural Conservancy and Advisory Committee
MAG	Municipal Advisory Group
MMAH	Ministry of Municipal Affairs and Housing
MOE	Ministry of the Environment
MTO	Ministry of Transportation
NHIC	Natural Heritage Information Centre
NRVIS	MNR database
NTS	Not to Scale
OBM	Ontario Base Map
OEAA	Ontario Environmental Assessment Act
OMAF	Ontario Ministry of Agriculture and Food
(O)MNR	(Ontario) Ministry of Natural Resources
PIC	Public Information Centre
PSW	Provincially Sensitive Wetland
RA	Regulatory Authorities
RAAG	Regulatory Agency Advisory Group
RAP	Remedial Action Plan
SARA	Species at Risk Act
SWHTG	Significant Wildlife Habitat Technical Guide
TAC	Transportation Association of Canada
TDM	Traffic Demand Management
ToR	Terms of Reference
TSM	Traffic Systems Management

## Glossary of Terms

Term used in Terms of Reference	Explanation
Alternatives To	Functionally different ways of solving a documented transportation deficiency or taking an advantage of an opportunity.
Alternative Method	Ways of carrying out the selected alternative.
Alvar	Naturally open areas of thin or no soil over essentially flat limestone, dolostone or marble rock, supporting a sparse vegetation of mostly shrubs and herbs,.
Areas of Natural and Scientific Interest	Areas of land and water containing natural landscapes or features that have been identified as having life science or earth science values related to protection, scientific study or education.
Built Heritage Resources	One or more significant buildings, structures, monuments, installations or remains associated with architectural, cultural social, political, economic or military history and identified as being important to a community. These resources may be identified through designation or heritage conservation easement under the Ontario Heritage Act, or listed by local, provincial or federal jurisdictions.
Connectivity	The degree to which key natural heritage or key hydrologic features are connected to one another by links such as plant and animal movement corridors, hydrologic and nutrient cycling, genetic transfer and energy flow through food webs.
Cultural Heritage Landscape	A defined geographical area of heritage significance, which has been modified by human activities and is valued by a community. It involves a grouping(s) of individual heritage features such as structures, spaces, archaeological sites and natural elements, which together form a significant type of heritage form, distinctive from that of its constituent elements or parts. Examples include heritage conservation districts designated under the Ontario heritage Act; and villages, parks, gardens, battlefields, main streets and neighbourhoods, cemeteries, trail ways and industrial complexes of cultural heritage value.
Detail Design	The final stage in the design process in which the engineering and design components of preliminary design are refined and details concerning, for example, property, drainage, utility relocations and quantity estimate requirements are prepared and contract drawings and documents are produced.
Do Nothing Alternative	In the context of a transportation project, the "Do Nothing" alternative would mean that only normal operations, maintenance and repairs of existing facilities would be carried out, however, no major improvements or undertakings would be initiated.
EA Act	Environmental Assessment Act (as amended by S.O. 1996 c. 27), RSO 1980
Ecological Function	The natural processes, products or services that living or non-living environments provide or perform within or between species, ecosystems and landscapes, including hydrologic functions and biological, physical, chemical and socio-economic interactions.
Ecological Value	The value of ecology in maintaining the health of key natural heritage or key hydrologic features and the related ecological features and functions, as measured by factors such as diversity of species and habitats etc.
Endangered Species	Species that is listed or categorized as "Endangered Species" on the Ontario MNR official species at risk list.
Environment	As defined in Section 1 (c) of the EA Act. (i) air, land or water (ii) plant and animal life including man (iii) the social, economic and cultural conditions that influence the life of man or a community (iv) any building structure, machine or other device or thing made by man (v) any solid, liquid, gas, odour, heat, sound, vibration or radiation resulting directly or indirectly from the activities of man or (vi) any part of combination of the foregoing and the inter-relationships between any two of more of them, in or of Ontario.
Environmentally Sensitive Areas	Those areas identified by any agency or level of government which contain natural features, ecological functions or cultural, historical or visual amenities which are susceptible to disturbance from human activities and which warrant protection.

## Glossary of Terms

Term used in Terms of Reference	Explanation
External Agencies	Includes Federal departments and agencies, Provincial ministries and agencies, conservation authorities, municipalities, Crown corporations or other agencies other than MTO.
Freeway	Freeways are controlled access median divided highway facilities with grade separated crossings and interchanges (i.e. a vertical separation between a road/road or road/rail crossing.)
Fish Habitat	As defined in the Fisheries Act c. F-14, means spawning grounds and nursery, rearing, food supply and migration areas on which fish depend directly or indirectly in order to carry out their life processes.
Flood Plain	For river, stream and small inland lake features means the area, usually low lands adjoining a watercourse, which has been or may be subject to flooding hazard.
Greater Golden Horseshoe	A geographical area represented by the single-tier municipalities of Barrie, Brantford, Guelph, Hamilton, Kawartha Lakes, Orillia, Peterborough and Toronto; the upper-tier municipalities of Brant, Dufferin, Durham, Haldimand, Halton, Niagara, Northumberland, Peel, Peterborough, Simcoe, Waterloo, Wellington and York and the lower-tier municipalities within.
Groundwater Feature	Refers to the water-related features in the earth's sub-surface, including recharge / discharge areas, water tables, aquifers and unsaturated zones that can be defined by surface and subsurface hydrological investigation.
Habitat	The place or type of site where an organism or population naturally occurs. Species may require different habitats for different uses throughout their lifecycle.
Higher Order Transit	Transit that operates in its own dedicated right-of-way, outside of mixed traffic and therefore can achieve a frequency of service greater than mixed-traffic transit. Can include heavy rail, light rail and buses in dedicated right-of-ways.
Highways	Roadways under the jurisdiction of MTO including King's highways, secondary highways and tertiary roads. This includes all components within the associated right-of-way, e.g. structures, drainage works, traffic and safety devices.
Hydrologic function	Means the functions of the hydrological cycle that include the occurrence, circulation, distribution and chemical and physical properties of the water on the surface of the land, in the soil and underlying rocks, and in the atmosphere, and waters interactions with the environment including its relationship to living things.
Individual Environmental Assessment	An environmental assessment for an undertaking to which the EA Act applies and which requires formal review and approval under the Act.
Infrastructure	Means physical structures (facilities and corridors) that form the foundation of development. Infrastructure includes: sewage and water systems, waste management systems, electric power generation and transmission, communications and telecommunications, transit and transportation corridors and facilities, oil and gas pipelines and associated facilities.
Inter-modal Facility	A location where transfers between carriers can be made, as part of a single journey. A typical freight inter-modal facility is a rail where containers are transferred between trucks and trains.
Mitigation Measure	A measure that is incorporated into a project to reduce, eliminate or ameliorate detrimental environmental effects.
Multi-modal Transportation System	A transportation system which may include several forms of transportation such as automobiles, walking, trucks, cycling, buses, rapid transit, rail (such as commuter and freight), air and marine.
Natural Heritage Features and Area	Features and areas, including significant wetlands, significant coastal wetlands, fish habitat, significant woodlands south and east of the Canadian Shield, significant valleylands south and east of the Canadian Shield, significant habitat of endangered species and threatened species, significant wildlife habitat, and significant areas of natural and scientific interest, which are important for their environmental and social values as a legacy of the natural landscapes of an area.

## Glossary of Terms

Term used in Terms of Reference	Explanation
Natural Heritage System	A system made up of natural heritage features and areas, linked by natural corridors that are necessary to maintain biological and geological diversity, natural functions, viable populations of indigenous species and ecosystems. These systems can include lands that have been restored and areas with the potential to be restored to a natural state.
Petroleum Resources	Oil, gas, and brine resources which have been identified through exploration and verified by preliminary drilling or other forms of investigation. This may include sites of former operations where resources are still present or former sites that may be converted to underground storage for natural gas or other hydrocarbons.
Preliminary Design	That part of the planning and design process, during which various alternative design solutions are examined and evaluated including consideration of environmental effects and mitigation; the recommended design solution is then developed in sufficient detail to ensure that the horizontal and vertical controls are physically compatible with the proposed site, that the requirements for lands and right-of-ways are satisfactorily identified, and that the basic design criteria or features to be contained in the design have been fully recognized and documented is sufficient graphic detail to ensure their feasibility.
Provincial Policy Statement	The Provincial Policy Statement (PPS) sets out the Ontario Government's interests in land use planning and development and provides policy direction on matters of provincial interest to those involved in land use planning. The PPS is the complementary document to the <i>Planning Act</i> and is issued under the authority of the <i>Act</i> .
Prime Agricultural Area	Areas where prime agricultural lands predominate. This includes: areas of prime agricultural lands and associated Canada Land Inventory Class 4-7 soils; and additional areas where there is a local concentration of farms which exhibit characteristics of ongoing agriculture.
Prime Agricultural Land	Land that includes specialty crop areas and/or Canada Land Inventory Classes 1, 2, and 3 soils, in this order of priority for protection.
Proponent	A person or agency that carries or proposes to carry out an undertaking, or is the owner or person having charge, management or control of the undertaking.
Provincial Plan	A plan approved by the Lieutenant Governor in Council or the Minister of Municipal Affairs and Housing, but does not include municipal official plans.
Regulatory Agencies	Includes Federal departments and agencies, Provincial ministries and agencies, and conservation authorities.
Site Alteration	Activities such as filling, grading and excavation that would change the landform and natural vegetative characteristics of land.
Species At Risk	Wild plants and animals that have been assessed by an independent body, the Committee on the Status of Endangered Wildlife in Canada (COSEWIC), and found to be at some risk of disappearing from the wild in Canada. Species at Risk are protected by federal legislation, called the <i>Species at Risk Act</i> (SARA), proclaimed June 5, 2003.
Specialty Crop Area	Areas where specialty crops such as tender fruits, grapes, other fruit crops, vegetable crops, greenhouse crops, and crops from agriculturally developed organic soil lands are predominantly grown
Threatened Species	Species that is listed or categorized as "Threatened Species" on the Ontario MNR official species at risk list.
Transitway	A separate transit facility directly associated with a provincial freeway / highway. The transit right-of-way may be shared with a highway right-of-way.
Transportation Demand Management	Transportation demand management is a general term for strategies that result in more efficient use of existing transportation infrastructure. Examples include pricing (road tolls or transit discounts), flexible working hours, car pooling, park and ride etc.
Transportation Systems	A system consisting of corridors and rights of way for the movement of people and goods, and associated transportation facilities including transit stops and stations, cycle lanes, bus lanes, high occupancy lanes, rail facilities, inter-modal terminals, etc. and associated facilities such as storage and maintenance.

### Glossary of Terms

Term used in Terms of Reference	Explanation
Valley Lands	A natural area that occurs in a valley or other landform depression that has water flowing through or standing for some period of the year.
Watershed	An area that is drained by a river and its tributaries.
Watershed Plan	A plan used for managing human activities and natural resources in an area defined by watershed boundaries. The Plan can include a water budget and conservation plan, land and water use strategies, monitoring plan and targets.
Wellhead Protection Area	The surface and subsurface area surrounding a water well or well field that supplies a public water system and through which contaminants are likely to move so as eventually to reach the waterwell or well field.
Wetlands	Lands that are seasonally or permanently covered by shallow water, as well as lands where the water table is close to, or at the surface. The four major types of wetlands are swamps, marshes, bogs and fens. Periodically soaked or wet lands being used for agricultural purposes which no longer exhibit wetland characteristics are not considered to be wetlands for the purposes of this definition.
Wildlife Habitat	Areas where plants, animals and other organisms live, and find adequate amounts of food, water, shelter and space needed to sustain their populations.
Woodland	Woodlands include treed areas, woodlots or forested areas and vary in their level of significance at the local, regional and provincial levels

Note: Glossary of terms will be expanded to include evaluation subfactors, as appropriate.

**SUPPORTING DOCUMENT #2**

**HIGHWAY 7&8 TRANSPORTATION CORRIDOR PLANNING AND  
CLASS EA STUDY – SUMMARY OF REPORTS**

<b>Supporting Document #2</b> <b>Highway 7&amp;8 Transportation Corridor Planning and Class EA Study - Summary of Reports</b>		
STUDY PHASE	REPORTS	REPORT CONTENT
1. STUDY PLAN	<b>Report "A": 'Study Plan for Technical Work, Outreach and Consultation'</b>  (60 days provided for stakeholders to review and comment on draft Study Plan *)	a) Introduction: <ul style="list-style-type: none"> <li>• Introduction to the planning and Class EA Study</li> <li>• Study Objectives</li> <li>• Preliminary Statement of Transportation Problems and Opportunities</li> <li>• Purpose, relevance and position of report within the study process</li> </ul> b) Outline of planning & Class EA Study process: <ul style="list-style-type: none"> <li>• Overview of the Class EA Process and the Class EA for Provincial Transportation Facilities</li> <li>• Overview of planning and Class EA Study process for this provincial transportation corridor study</li> <li>• Overview of Federal/provincial EA co-ordination</li> <li>• Overview of Principles for Conducting the Study               <ul style="list-style-type: none"> <li>○ Transportation Engineering Principles</li> <li>○ Environmental Protection Principles</li> <li>○ Evaluation Principles</li> <li>○ Outreach and Consultation Principles</li> </ul> </li> <li>• Earlier and Related Work</li> </ul> c) Statement and Assumptions of Proponency <ul style="list-style-type: none"> <li>• Statement of Proponency</li> <li>• Assumptions of EA Proponency and Completion of Work</li> </ul> d) Statement of EA compliance/ Submission Statement
		e) Purpose of the Undertaking: <ul style="list-style-type: none"> <li>• Policy framework and other government initiatives</li> <li>• Transportation Problems and Opportunities               <ul style="list-style-type: none"> <li>○ Definition and Description of 'Area Transportation System'</li> <li>○ Overview of the Area Transportation System</li> <li>○ Overview of the Area Economy, Employment and Population Growth Forecasts</li> <li>○ Discussion of the Preliminary Statement of Problems &amp; Opportunities</li> </ul> </li> </ul> f) Environmental Conditions and Potential Effects
		g) Alternatives and their evaluation: <ul style="list-style-type: none"> <li>• "Alternatives To" the Undertaking and "Alternative Methods" for Carrying out the Undertaking</li> <li>• Evaluation Processes and Their Application</li> <li>• Preliminary Identification of Evaluation Factors and Sub-Factors</li> <li>• Transportation Needs Assessment               <ul style="list-style-type: none"> <li>- Area Transportation System Alternatives</li> <li>- Preliminary Planning Alternatives</li> </ul> </li> <li>• Detailed Planning Alternatives</li> <li>• Preliminary/Concept Design Alternatives</li> </ul> h) Monitoring strategy during project implementation
		i) Outreach and consultation <ul style="list-style-type: none"> <li>• Key components of outreach &amp; consultation program</li> <li>• Public Information Centres (PICs)</li> <li>• Public Notices in Newspapers</li> <li>• Project Web Site</li> <li>• Contacting the Study Team</li> <li>• Stakeholder Contact Lists</li> <li>• Stakeholder Categories</li> <li>• Role of Stakeholders</li> </ul> j) Filing and review of Transportation Environmental Study Report



<b>Supporting Document #2</b> <b>Highway 7&amp;8 Transportation Corridor Planning and Class EA Study - Summary of Reports</b>		
STUDY PHASE	REPORTS	REPORT CONTENT
<b>2. AREA TRANSPORTATION SYSTEM PLANNING</b>	<b>Report “B”: Working Paper – Overview of Transportation, Land Use and Economic Conditions within the Analysis Area</b>  (30 days provided for stakeholders to review and comment on draft working paper *)	a) Purpose, relevance and position of report within the study process b) Identification of analysis area c) Overview of provincial and municipal land use, transportation, and economic development policies (including forecasts for population and employment) d) Definition and description of ‘Area Transportation System’ e) Description of ‘Area Transportation System’ current travel characteristics and patterns (all modes) f) Description of analysis area – socio-economic existing conditions and outlooks g) Analysis Area – ‘Area Transportation System’ Modal Outlooks h) Description of current provincial highway conditions with respect to infrastructure condition, performance, compliance with current design standards, suitability for service to increased traffic, and feasibility of implementing improvements versus replacement/major reconstruction (determined through background/overview data and preliminary field reconnaissance) i) Summary of key factors that are driving ‘Area Transportation System’ needs
	<b>Report “C”: Working Paper – ‘Area Transportation System’ Problems and Opportunities</b>  (30 days provided for stakeholders to review and comment on draft working paper *)	a) Purpose, relevance and position of report within the study process b) Summary of transportation, land use and economic conditions <ul style="list-style-type: none"> <li>• Process to define ‘Area Transportation System’ problems and opportunities</li> </ul> c) Travel demand forecasting approach and methodology d) Forecasted future ‘Area Transportation System’ travel characteristics and patterns e) Detailed description and assessment of current and future ‘Area Transportation System’ problems and opportunities: <ul style="list-style-type: none"> <li>• Existing assessment</li> <li>• Horizon year assessment</li> </ul> f) Summary of ‘Area Transportation System’ needs’ g) Description and rationale of generic transportation system alternatives: <ul style="list-style-type: none"> <li>○ Area Transportation System alternatives</li> <li>○ Combination alternatives</li> </ul> h) Process and criteria for evaluating and selecting the preferred Area Transportation System Alternatives
	<b>Report “D”: Working Paper – Area Transportation System Alternatives</b>  (30 days provided for stakeholders to review and comment on draft milestone report *)	a) Purpose, relevance and position of report within the study process b) Summary of analysis area overview, transportation problems <ul style="list-style-type: none"> <li>• Summary of key factors that are driving ‘Area Transportation System’ needs</li> <li>• Process to define ‘Area Transportation System’ problems and opportunities</li> <li>• Summary – preliminary identification of existing and future ‘Area Transportation System’ problems, deficiencies and opportunities</li> </ul> c) Identify ‘Area Transportation System’ alternatives d) Select and define Area Transportation System alternatives and group them into combinations e) Determine the degree to which combination alternatives address the problems and opportunities f) Select the Alternatives that will proceed to preliminary planning

<b>Supporting Document #2</b> <b>Highway 7&amp;8 Transportation Corridor Planning and Class EA Study - Summary of Reports</b>		
STUDY PHASE	REPORTS	REPORT CONTENT
	Report "F" 1 <sup>st</sup> Part: Working Paper - Environmental Conditions and Constraints  (30 days provided for stakeholders to review and comment on draft working paper *)	a) Purpose, relevance and position of report within the study process b) Environmental overview within the analysis area based upon secondary source information for the following factor-specific areas: <ul style="list-style-type: none"> <li>• fisheries and aquatic ecosystems</li> <li>• terrestrial ecosystems</li> <li>• groundwater</li> <li>• surface water</li> <li>• air quality</li> <li>• land use / community</li> <li>• noise sensitive areas</li> <li>• land use / resources</li> <li>• landscape composition</li> <li>• contaminated property and waste management</li> <li>• cultural heritage – built heritage and cultural landscapes</li> <li>• cultural heritage – archaeology</li> </ul>

<b>Supporting Document #2</b> <b>Highway 7&amp;8 Transportation Corridor Planning and Class EA Study - Summary of Reports</b>		
STUDY PHASE	REPORTS	REPORT CONTENT
<b>3. PRELIMINARY PLANNING</b>	<b>Report "E": Milestone Report – Highway 7&amp;8 Transportation Corridor Needs Assessment</b>  (60 days provided for stakeholders to review and comment on draft milestone report *)	a) Purpose, relevance and position of report within the study process b) Summary of Report "D": Transportation Area Transportation System Alternatives: <ul style="list-style-type: none"> <li>• Area Transportation System alternatives</li> <li>• Environmental conditions and constraints</li> <li>• Outline of process and criteria for generating and assessing provincial roadway preliminary planning alternatives</li> </ul> c) Generation of preliminary planning alternatives (as applicable): <ul style="list-style-type: none"> <li>• New transportation facility location, type and capacity:               <ul style="list-style-type: none"> <li>○ conceptual corridors for a new provincial transitway</li> <li>○ conceptual corridors for a new provincial highway</li> <li>○ conceptual areas of limitations on access to provincial highway</li> </ul> </li> <li>• key specialty engineering preliminary planning alternatives for new transportation facilities               <ul style="list-style-type: none"> <li>○ minimize need for large spans &amp; lengths of major culverts</li> <li>○ minimize intrusion into major watercourses &amp; water bodies</li> <li>○ minimize intrusion into areas of extreme gradient change</li> <li>○ minimize intrusion into large areas of unstable soils</li> <li>○ possible ITS applications</li> </ul> </li> <li>• environmental protection for the above by minimizing intrusion into areas of provincial environmental interest as defined in the Provincial Policy Statement</li> <li>• preliminary study area(s)</li> </ul> d) Generation of preliminary planning alternatives for improvements to existing transportation facilities (as applicable): <ul style="list-style-type: none"> <li>• Location, type and capacity of facility improvements:               <ul style="list-style-type: none"> <li>○ general locations of geometrical improvements</li> <li>○ general locations of widening</li> <li>○ general location/configuration/template footprint of new connection points</li> <li>○ conceptual areas of limitations on access to provincial highway</li> </ul> </li> <li>• key specialty engineering preliminary planning alternatives for improvements to existing transportation facilities               <ul style="list-style-type: none"> <li>○ general type/character of structure improvements of specific bridges &amp; major culverts</li> <li>○ general locations of improvement to drainage along &amp; across ROW</li> <li>○ general nature of stability improvements to specific large cut &amp; fill embankments</li> <li>○ general locations of improvement to road base &amp; pavement</li> <li>○ general locations of improvement to line-of-sight, roadside safety &amp; traffic control</li> </ul> </li> <li>• environmental protection for the above by minimizing intrusion into areas of provincial environmental interest as defined in the Provincial Policy Statement</li> <li>• preliminary study area(s)</li> </ul> e) Evaluation and selection of provincial roadway preliminary planning alternatives and identification of type of provincial roadway detailed planning study, including description and rationale of study area(s) f) Decision to proceed with planning and Class EA Study through Phases 3-6 g) Process and criteria for generating provincial roadway detailed planning alternatives

<b>Supporting Document #2</b> <b>Highway 7&amp;8 Transportation Corridor Planning and Class EA Study - Summary of Reports</b>		
STUDY PHASE	REPORTS	REPORT CONTENT
<b>4. DETAILED PLANNING FOR PROVINCIAL ROADWAYS</b>	<b>Report "F" - 2<sup>nd</sup> Part:</b> <b>Working Paper - Environmental Conditions and Constraints</b>  (30 days provided for stakeholders to review and comment on draft working paper *)	a) Purpose, relevance and position of report within the study process b) Areas of Environmental Interest as specified in Provincial Policy Statement (from 1 <sup>st</sup> Part of Report F) c) Environmental conditions and constraints within the detailed planning study area for the following factor-specific areas: <ul style="list-style-type: none"> <li>• fisheries and aquatic ecosystems</li> <li>• terrestrial ecosystems</li> <li>• groundwater</li> <li>• surface water</li> <li>• air quality</li> <li>• land use / community</li> <li>• noise sensitive areas</li> <li>• land use / resources</li> <li>• landscape composition</li> <li>• contaminated property and waste management</li> <li>• cultural heritage – built heritage and cultural landscapes</li> <li>• cultural heritage – archaeology</li> </ul> d) Technical information for each factor-specific area: <ul style="list-style-type: none"> <li>• areas of investigation</li> <li>• background data</li> <li>• field investigations</li> <li>• determination of significance</li> </ul> e) Summary of significant environmental issues (Note: technical information builds on the content of the 1 <sup>st</sup> part of the report through field investigations and determination of environmental significance)

<b>Supporting Document #2</b> <b>Highway 7&amp;8 Transportation Corridor Planning and Class EA Study - Summary of Reports</b>		
STUDY PHASE	REPORTS	REPORT CONTENT
	<b>Report "G": Working Paper - Generation of Detailed Planning Alternatives for Provincial Roadways</b>  (30 days provided for stakeholders to review and comment on draft working paper *)	a) Purpose, relevance and position of report within the study process b) Summary of Report "E": Provincial Roadway Preliminary Planning: <ul style="list-style-type: none"> <li>Provincial roadway preliminary planning alternatives selected</li> <li>Process and criteria for generating provincial roadway detailed planning alternatives</li> </ul> c) Engineering condition field investigation work d) Refinement of study area(s) e) Description and analysis of detailed planning alternatives generated for provincial roadway (as applicable) <ul style="list-style-type: none"> <li>key roadway engineering alternatives for new provincial roadway:               <ul style="list-style-type: none"> <li>final study area</li> <li>new provincial transitway route location &amp; technology</li> <li>new provincial highway route location and highway type</li> <li>basic plan, profile, cross-section</li> <li>hwy interchange/intersection specific location, configuration, footprint</li> <li>transitway station specific location &amp; footprint</li> <li>specific nature &amp; location of limitations on access to provincial hwy</li> </ul> </li> <li>key specialty engineering detailed planning alternatives for new provincial roadway:               <ul style="list-style-type: none"> <li>specific location/ type/span/length &amp; template "footprint" of bridges &amp; major culverts</li> <li>specific location/type/character &amp; template "footprint" of major facilities for drainage along &amp; across the ROW and for stormwater management</li> <li>specific location/type/character and template "footprint" of major cut/fill embankments; foundations for bridges &amp; major culverts</li> <li>road base structure and pavement type</li> <li>specific locations/sites for traffic control signals and roadside safety barriers</li> </ul> </li> <li>combinations of the above</li> <li>environmental impact assessment for the above</li> </ul> f) Description and analysis of detailed planning alternatives generated for improvements to existing highway (as applicable) <ul style="list-style-type: none"> <li>key roadway engineering alternatives for highway improvements               <ul style="list-style-type: none"> <li>final study area</li> <li>specific location &amp; type of geometric improvements</li> <li>specific location, extent &amp; direction of widening</li> <li>basic plan, profile, cross-section</li> <li>hwy interchange/intersection specific location, configuration, footprint</li> <li>specific nature &amp; location of limitations on access to provincial hwy</li> </ul> </li> <li>key specialty engineering detailed planning alternatives for improvements to existing highway (same as for "e" above)</li> <li>environmental impact assessment for the above</li> </ul> g) Process and criteria for evaluating and selecting provincial roadway detailed planning alternatives
	<b>Report "H": Milestone Report - Selection of Detailed Planning Alternatives for Provincial Roadways</b>  (60 days provided for stakeholders to review and comment on draft milestone report *)	a) Purpose, relevance and position of report within the study process b) Summary of Report "G": Generation of Detailed Planning Alternatives for Provincial Roadways: <ul style="list-style-type: none"> <li>Detailed planning alternatives generated</li> <li>Process and criteria for evaluating and selecting provincial roadway detailed planning alternatives</li> </ul> c) Evaluation and selection of technically preferred provincial roadway detailed planning alternative(s) d) Refinement of technically preferred provincial roadway detailed planning alternative(s) e) Process and criteria for generating provincial roadway preliminary design alternatives

<b>Supporting Document #2</b> <b>Highway 7&amp;8 Transportation Corridor Planning and Class EA Study - Summary of Reports</b>		
STUDY PHASE	REPORTS	REPORT CONTENT
<b>5. PRELIMINARY / DESIGN OF PROVINCIAL ROADWAYS</b>	<b>Report "I" Working Paper - Generation of Preliminary/Concept Design Alternatives for Provincial Roadways</b>  (30 days provided for stakeholders to review and comment on draft working paper *)	a) Purpose, relevance and position of report within the study process b) Summary of Report "H": Selection of Detailed Planning Alternatives for Provincial Roadways: <ul style="list-style-type: none"> <li>Provincial roadway detailed planning alternatives selected</li> <li>Process and criteria for generating provincial roadway preliminary/concept design alternatives</li> </ul> c) Description and assessment of provincial roadway preliminary design of roadway alternatives generated (as applicable) <ul style="list-style-type: none"> <li>roadway engineering preliminary design alternatives:               <ul style="list-style-type: none"> <li>calculated horizontal &amp; vertical alignment and cross-section</li> <li>highway interchange/intersection preliminary design</li> <li>transitway station preliminary design</li> <li>location/design of private entrances to highway</li> <li>right-of-way &amp; property acquisition requirements</li> <li>utilities</li> <li>emergency access</li> </ul> </li> <li>roadway engineering preliminary design of alternatives for limitation to highway access</li> <li>environmental protection for the above</li> </ul> d) Description and assessment of provincial roadway preliminary design of specialty engineering alternatives generated (as applicable) <ul style="list-style-type: none"> <li>Bridge &amp; major culvert engineering:               <ul style="list-style-type: none"> <li>structure width, length, skew, geometry &amp; cross-section</li> <li>structure vertical clearance &amp; span arrangement</li> <li>navigable channel (if applicable)</li> </ul> </li> <li>Drainage &amp; hydrology engineering:               <ul style="list-style-type: none"> <li>channels, ditches, storm sewers &amp; outlets/outfalls for drainage of roadway</li> <li>stormwater management facilities</li> <li>hydraulics of bridges, culverts &amp; water crossing inlets/outlets</li> </ul> </li> <li>Foundation engineering:               <ul style="list-style-type: none"> <li>foundations for bridge &amp; major culvert structures</li> <li>conventional slope geometry for major cut/fill embankments</li> <li>non-conventional slope geometry for major cut/fill embankments</li> <li>settlement management &amp; excavation methods</li> </ul> </li> <li>Pavement and road base engineering:               <ul style="list-style-type: none"> <li>preliminary design of road base and pavement</li> <li>mass haul (cut/fill earth/rock material balance)</li> <li>preliminary sources of suitable granular material</li> </ul> </li> <li>Traffic &amp; electrical engineering:               <ul style="list-style-type: none"> <li>traffic control signals</li> <li>major roadside safety infrastructure</li> <li>traffic signing &amp; pavement markings</li> <li>roadway illumination</li> <li>ITS technology</li> <li>Preliminary construction traffic detour requirements</li> </ul> </li> <li>specialty engineering preliminary design of alternatives for limitation to highway access</li> <li>environmental protection for the above</li> </ul> e) Process and criteria to evaluate and select provincial roadway preliminary design alternatives

<b>Supporting Document #2</b> <b>Highway 7&amp;8 Transportation Corridor Planning and Class EA Study - Summary of Reports</b>		
STUDY PHASE	REPORTS	REPORT CONTENT
	<b>Report "J": Milestone Report - Selection of Preliminary Design Alternatives for Provincial Roadways</b>  (60 days provided for stakeholders to review and comment on draft milestone report *)	a) Purpose, relevance and position of report within the study process b) Summary of Report "I": Generation of Preliminary Design Alternatives for Provincial Roadways <ul style="list-style-type: none"> <li>Provincial roadway preliminary design alternatives generated</li> <li>Process and criteria for evaluating and selecting provincial roadway preliminary design alternatives</li> </ul> c) Evaluation and selection of provincial roadway preliminary design alternative d) Description of technically preferred provincial roadway preliminary design alternatives selected e) Value engineering assessment of the technically preferred preliminary design f) Development and refinement of the technically preferred provincial roadway preliminary design alternatives g) Preliminary staging of implementation h) Preliminary property requirements i) Agreements in principle for road assumptions, transfers, closures and the resolution of major rail and utility conflicts j) External permits anticipated to be required k) Design criteria for subsequent detail design assignments l) Preliminary assessment of technically preferred preliminary design under Ontario Infrastructure Planning, Financing and Procurement Framework m) Monitoring Strategy: <ul style="list-style-type: none"> <li>Technical monitoring program and procedures</li> <li>EA process monitoring program and procedures</li> </ul>
<b>6. TRANSPORTATION ENVIRONMENTAL STUDY REPORT</b>	<b>Report "K": Milestone Report - 'Transportation Environmental Study Report' (TESR)</b>  (60 days provided for stakeholders to review and comment on TESR after notice of filing)	a) Purpose, relevance and position of report within the study process b) Summary description of undertaking c) Content of: <ul style="list-style-type: none"> <li>final Report "A": Study Plan for Technical Work, Outreach and Consultation</li> <li>final Report "B": Working Paper – Overview of Environmental Conditions and Constraints within the Analysis Area</li> <li>final Report "C": Working Paper – 'Area Transportation System' Problems and Opportunities</li> <li>final Report "D": Milestone Report – Transportation Corridor Needs Assessment</li> <li>final Report "E": Milestone Report - Preliminary Planning for Provincial Roadways</li> <li>final Report "F": Working Paper - Environmental Conditions and Constraints</li> <li>final Report "G": Working Paper - Generation of Detailed Planning Alternatives for Provincial Roadways</li> <li>final Report "H": Milestone Report - Selection of Detailed Planning Alternatives for Provincial Roadways</li> <li>final Report "I": Working Paper - Generation of Preliminary Design Alternatives for Provincial Roadways</li> <li>final Report "J": Milestone Report - Selection of Preliminary Design Alternatives for Provincial Roadways</li> </ul> d) Environmental synopsis e) Results of outreach and consultation f) Commitments to future work and consultation
<b>NOTES</b> <ul style="list-style-type: none"> <li>* During the period provided for stakeholders to review reports, MTO will be undertaking "homework" for the next stage and report of the work</li> <li>Each report also contains the following:               <ul style="list-style-type: none"> <li>Summary of draft report key concerns identified through outreach and consultation, and MTO response/changes to those key concerns (does not apply to TESR, because it is a compilation of reports to which this previously applied)</li> <li>Supporting documentation (if applicable)</li> </ul> </li> </ul>		

## **SUPPORTING DOCUMENT #3**

### **DESCRIPTION AND RATIONALE OF ALTERNATIVES**



## DETAILED DESCRIPTION OF ALTERNATIVES

### ‘Area Transportation System’ Planning Alternatives

The Highway 7&8 Transportation Corridor Planning and Class EA Study will consider the following generic ‘Area Transportation System’ alternatives:

- Do Nothing
- Travel Demand Management (TDM)
- Transportation System Management (TSM)
- Local Transit\*
- Interregional Transit and Passenger Rail\*
- Air Services\*
- Marine Services\*
- Freight Rail\*
- Municipal Roads\*
- Provincial Highways / Transitways\*

(\* new or improved operations and/or infrastructure)

In addition, the Highway 7&8 Transportation Corridor Planning and Class EA Study will consider the following generic combinations of ‘Area Transportation System’ alternatives:

#### Do Nothing

As indicated in Section 7.4.5, the “Do Nothing” alternative includes existing infrastructure and programmed improvements.

#### Combination #1: Optimize Existing Network

Combination #1 includes:

- optimization of:
  - local transit;
  - interregional transit;
  - passenger rail;
  - freight rail;
- transportation system demand management (TDM);  
transportation system management (TDM)

#### Combination #2: New / Expanded Non-Road Infrastructure plus elements of Combination #1

Combination #2 includes:

- new/expanded
  - local transit

- interregional transit and passenger rail
  - air services
  - marine services
  - freight rail
- elements of Combination #2

Combination #3: Widen/Improve Roads plus elements of Combination #2

Combination #3 includes:

- widen / improve:
  - municipal roads
  - provincial highways
- elements of Combination #2

Combination #4: New Municipal Roads and/or Provincial Highways/ Transitways  
plus elements of Combination #3

Combination #4 includes:

- new municipal roads
- new provincial highways/transitways

## **Preliminary Planning Alternatives**

The Highway 7&8 Transportation Corridor Planning and Class EA Study will consider the following preliminary planning alternatives for the alternatives carried forward from the 'Area Transportation System' planning phase (as applicable)

a) Preliminary planning alternatives for new transportation facilities:

- new transportation facility location, type and capacity (key roadway engineering alternatives for new provincial roadways)
  - conceptual corridors for a new transportation facility, including network linkages
  - conceptual areas of limitations on access to provincial highway (see details in "d" below)
  - combinations of the above
  - preliminary study area
- key specialty engineering preliminary planning alternatives for new transportation facilities:
  - bridge engineering: minimize need for large spans & lengths of bridges and major culverts; general location of new bridges
  - drainage & hydrology engineering: minimize intrusion into major watercourses and water bodies; general location of potential significant modification to watercourses and water bodies

- foundations engineering: minimize intrusion into areas of extreme gradient change and into large areas of unstable soils; general locations where large cut and fill embankments required
    - pavement and road base engineering: minimize intrusion into large areas of unstable soils
    - traffic and electrical engineering: possible ITS applications
  - environmental protection for the above (which is focussed on minimizing intrusion into areas of provincial environmental interest as defined in the Provincial Policy Statement, recognizing that complete avoidance of all such areas is not likely to be possible)
  - preliminary study area(s)
- b) Preliminary planning alternatives for improvements to existing transportation facilities:
- Location, type and capacity of highway improvements (key roadway engineering alternatives for highway improvements):
    - general areas/locations/end-points of potential geometrical improvements to existing highway:
      - roadway gradient & alignment/curvature
      - highway intersection/interchange location/configuration
    - general areas/locations/end-points of potential widening of existing highway
      - through-lanes
      - passing lanes
      - continuous left turn lanes
      - general purpose lanes vs HOV lanes or reserved bus lanes)
    - interchanges and major intersections for 'Area Transportation System' (network) linkages
    - conceptual areas of limitations on access to provincial highway
      - locations where access to highway potentially limited in order to maintain highway functional integrity (purpose and level of service)
      - locations where access to highway potentially limited to/from areas not designated for development
    - preliminary study area
  - key specialty engineering preliminary planning alternatives for improvements to existing highway
    - bridge engineering: general type/character of structure improvements of specific bridges & major culverts
    - drainage & hydrology engineering: general locations of improvement to drainage along & across ROW
    - foundation engineering: consideration of improvements to specific structure foundations and stability improvements to specific deep cut and high fill embankments
    - pavement and road base engineering: consideration of pavement/road base modification versus replacement
    - traffic & electrical engineering: general locations of improvement to line-of-sight, roadside safety; sites where traffic control signals required

- combinations of the above
- environmental protection for the above (which is focussed on minimizing intrusion into areas of provincial environmental interest as defined in the Provincial Policy Statement, recognizing that complete avoidance of all such areas is not likely to be possible)
- preliminary study area(s)

### **Detailed Planning Alternatives**

The Highway 7&8 Transportation Corridor Planning and Class EA Study will consider the following detailed planning alternatives for the provincial roadway alternatives carried forward from the preliminary planning phase (as applicable):

- a) Detailed planning alternatives for a new provincial roadway (as applicable) are the following:
- key roadway engineering alternatives for new provincial roadway:
    - final study area
    - new provincial transitway route location & technology
    - new provincial highway route location and highway type
    - final study areas
    - roadway design speed, basic plan and profile, basic cross-section covering:
      - number of lanes/tracks
      - core/collector separation (if applicable)
      - median treatment and shoulder type
      - major drainage
    - highway interchange/intersection specific location, configuration, footprint
    - transitway station specific location & footprint
    - specific nature & location of limitations on access to provincial highway (see details in “f” below)
  - key specialty engineering detailed planning alternatives for new provincial roadway:
    - bridge engineering: specific location/ type/span/length & template “footprint” of bridges & major culverts
    - drainage & hydrology engineering: specific location/type/character & template “footprint” of major facilities for drainage along & across the ROW and for stormwater management
    - foundation engineering: specific location/type/character and template “footprint” of major cut/fill embankments; foundations for bridges & major culverts
    - pavement and road base engineering: road base structure and pavement type
    - traffic & electrical engineering: specific locations/sites for traffic control signals and roadside safety barriers
  - environmental impact assessment (see details in (b) below)
- b) Detailed planning alternatives for improvement to the existing provincial highway (as applicable), are the following:
- key roadway engineering alternatives for highway improvements

- final study area
- specific location/end-points, type/character of geometrical improvements
  - roadway gradient and alignment curvature
  - interchange/intersection location/configuration
- specific location/end-points, extent & direction of widening
  - number of lanes
  - symmetrical vs asymmetrical vs new independent centreline
- roadway design speed, basic plan and profile, basic cross-section covering:
  - number of lanes/tracks
  - core/collector separation (if applicable)
  - median treatment and shoulder type
  - major drainage
- highway interchange/intersection specific location, configuration, and template “footprint”
- specific consideration of the above to improve bus operations on the highway, and to improve highway access to regional centres of goods movement such as intermodal facilities
- specific nature & location of limitations on access to provincial highway (as applicable)
  - areas where interchanges, intersections and entrances limited
  - areas where cross-roads grade-separated
  - areas where service roads provided
  - areas of metering of traffic access to highways at interchanges and intersections
  - areas of provincial ownership to prevent access to crossing roads from being too close to highway
  - areas of staged access based upon development controls being put in place
  - highway functional classification and highway access management classification upon which the above is based (selected from the following):
    - freeway (freeway, staged freeway)
    - arterial (major arterial, minor arterial)
    - collector (major collector, minor collector)
    - local
- key specialty engineering detailed planning alternatives for highway improvements:
  - bridge engineering: specific location/ type/span/length & template “footprint” of bridges & major culverts
  - drainage & hydrology engineering: specific location/type/character & template “footprint” of major facilities for drainage along & across the ROW and for stormwater management
  - foundation engineering: specific location/type/character and template “footprint” of major cut/fill embankments; foundations for bridges & major culverts
  - pavement and road base engineering: road base structure and pavement type
  - traffic & electrical engineering: specific locations/sites for traffic control signals and roadside safety barriers

- environmental impact assessment
  - environmental constraints to design and construction
  - avoidance/prevention/minimization incorporated into development of alternatives (where avoidance is primarily with respect to “footprint” impacts during generation of alternatives to capitalize on significant transportation engineering opportunities while protecting significant environmental features as much as possible)
  - assessment of environmental impacts (to factor areas identified for Report “F”, based upon the following:
    - environmental sensitivities identified;
    - details of environmental effect / condition change, with respect to:
      - type of impact (“footprint”, interference, traffic access modification, emissions)
      - nature of impact (direction, timing, duration, frequency, magnitude, reversibility, geographic extent, probability of occurrence and cumulative impacts)
    - degree to which environmental effects / condition changes can be mitigated (based on previous and concurrent experience), including residual effects; and
    - degree to which environmental avoidance/impact prevention could be incorporated in the development of alternatives
    - net environmental effects - advantages and disadvantages (which may be limited to a short-list of alternatives if the evaluation process includes a screening component)

## **Preliminary Design Alternatives**

The Highway 7&8 Transportation Corridor Planning and Class EA Study will consider the following preliminary design alternatives for the provincial roadway alternatives carried forward from the detailed planning phase (as applicable):

- a) Roadway engineering preliminary design alternatives (as applicable)
  - roadway engineering preliminary design alternatives:
    - calculated horizontal & vertical alignment and cross-section covering:
      - lane/track arrangement
      - lane continuity & balance
      - cross-fall & super-elevation
      - median & shoulder
      - aspects of specialty engineering infrastructure such as drainage and roadside safety
    - highway interchange/intersection preliminary design
    - transitway station preliminary design
    - location/design of private entrances to highway
    - right-of-way & property acquisition requirements (“property request” follows)
    - utilities (electricity, gas, water, telecommunications)

- roadway engineering preliminary design of alternatives for limitation to highway access (as applicable):
  - preclude or limit highway interchanges with crossing roads:
    - limit new highway interchanges to key selected municipal major arterial roads
    - specify minimum distance separation between new and existing interchanges
    - preclude interchanges at crossing roads on which public/private roads and entrances do not meet specified minimum separation distances from the interchange ramp terminals
    - prohibit new interchanges
  - preclude or limit highway intersections with crossing roads:
    - eliminate turns at existing intersections
    - close existing intersections
    - specify minimum distance separation between new and existing intersections
    - specify minimum highway stopping sight distance at intersections
    - prohibit new intersections
  - preclude or limit property entrances to highway:
    - limit/prohibit intensified traffic use / upgrading of existing property entrances
    - specify maximum density (# entrances per kilometre) of property entrances and minimum distance separation between property entrances (for both commercial and non-commercial)
    - specify minimum distance separation between property entrances and crossing road intersection
    - specify minimum highway stopping sight distance at entrances
    - specify minimum “access connection depth” within entrances
    - specify conditions for traffic signals by commercial entrance applicants
    - specify minimum lot frontage for entrances
    - prohibit entrances for direct property access to highway
    - for entrances from crossing roads, specify minimum distance between entrance and highway, or prohibit entrances within highway “control area”
  - grade-separate crossing roads at highway
    - prevent highway access while maintaining local road continuity
  - provide highway service roads
    - considered in association with precluding or eliminating interchanges, intersections, entrances
  - meter traffic access to highway at interchanges and intersections
    - traffic signals at intersections timed to favour highway traffic and/or control access from crossing road traffic
    - traffic signals on interchange ramps to control access from crossing roads
  - implement provincial ownership regime on sections of crossing roads adjacent to highway in order to prevent access that is too close to the highway (could be up to 1 km from edge of highway ROW):
    - assume section of crossing road adjacent to highway as part of the Kings Highway, onto which MTO will not permit roadway intersections or private entrances
    - implement provincial land “reserves” along each side of crossing roads, through which MTO will not permit roadway intersections or private entrances (e.g. 0.3 m wide band of provincial property along each side of crossing road)
  - staged access is conditional upon suitable agreements regarding management of area growth being reached between the local municipality and one or both of the Ministry of Public Infrastructure and Renewal and the Ministry of Municipal Affairs and Housing:
    - interchange not constructed unless agreements reached
    - interchange initially constructed as a grade-separated crossing, with ramps for access not constructed unless agreements reached

- traffic access at interchange from crossing road to highway metered at specified levels unless agreement reached
  - intersections initially constructed with limited permitted turns unless agreements reached
  - cul de sac crossing roads, with intersection not constructed unless agreements reached
- private entrances not permitted unless agreements reached
- preclude or limit buildings and structures within highway “control area”
- environmental protection for the above
  - environmental preliminary design (mitigation, compensation, enhancement)
  - potential effects to interdependent components of ecosystems as well as the overall cumulative effects
  - likelihood of significant adverse environmental effects

b) Specialty engineering preliminary design alternatives (as applicable)

- Bridge & major culvert engineering:
  - structure width, length, skew, geometry & cross-section
  - structure vertical clearance & span arrangement
  - navigable channel (if applicable)
- Drainage & hydrology engineering:
  - channels, ditches, storm sewers & outlets/outfalls for drainage of roadway
  - stormwater management facilities
  - hydraulics of bridges, culverts & water crossing inlets/outlets
- Foundation engineering:
  - foundations for bridge & major culvert structures
  - conventional slope geometry for major cut/fill embankments
  - non-conventional slope geometry for major cut/fill embankments
  - settlement management & excavation methods
- Pavement and road base engineering:
  - preliminary design of road base and pavement
  - mass haul (cut/fill earth/rock material balance)
  - preliminary sources of suitable granular material
- Traffic & electrical engineering:
  - traffic control signals
  - major roadside safety infrastructure
  - traffic signing & pavement markings
  - roadway illumination
  - ITS technology
  - emergency access
  - Preliminary construction traffic detour requirements
- specialty engineering preliminary/concept design of alternatives for limitation to highway access (see details in “d” above)
- environmental protection for the above
- environmental preliminary design (mitigation, compensation, enhancement)
  - potential effects to interdependent components of ecosystems as well as the overall cumulative effects
  - likelihood of significant adverse environmental effects



*Note regarding Items (a) and (b) above: examination of preliminary design alternatives includes specific consideration of preliminary design elements that improve bus operations on the highway and that improve highway access to/from regional centres of primary goods movement such as intermodal facilities*

**SUPPORTING DOCUMENT #4**  
**FEDERAL / PROVINCIAL EA CO-ORDINATION**

## FEDERAL/PROVINCIAL EA CO-ORDINATION

Under the Canadian Environmental Assessment Act (CEAA), the following information needs to be provided in a class environmental assessment conducted as a screening (paraphrasing):

- a description of the existing environment;
- any change the project may cause in the environment including: land, water, air, organic and inorganic matter, living organisms, and the interaction of natural systems;
- any effects that the project may cause to a listed wildlife species, its critical habitat or residences of individuals of that species, as those terms are defined in subsection 2(1) of the *Species at Risk Act*;
- the effects of a project-related environmental change on: health and socio-economic conditions; physical and cultural heritage; the current use of lands and resources for traditional purposes by aboriginal persons; and any structure, site or thing that is of historical, archeological, paleontological or architectural significance;
- any such project change or effect occurring both within or outside Canada;
- all environmental effects that may result from the various phases of the project (construction, operation, modification, abandonment and decommissioning);
- the environmental effects of accidents and malfunctions;
- the effects of the environment on the project (including effects due to climate change);
- the cumulative environmental effects of this project that are likely to result from the project in combination with other projects or activities that have been or will be carried out;
- the likelihood of significant adverse environmental effects;
- the need for and requirements of a follow-up program;
- comments from the public obtained in accordance with CEAA;
- any measures to be taken that would mitigate identified environmental effects;
- any other matter that the responsible authority deems to be necessary including those required for a comprehensive study, mediation or panel.

Additional factors to be considered for a comprehensive study, mediation or panel include:

- the purpose of the project;
- alternatives means of carrying out the project;
- design of a follow up program;
- the capacity of renewable resources affected by the project to meet the needs of the present and those of the future.

If the decommissioning and abandonment phases are not currently part of the proposed project, the proponent may explain this in its EA document, and the responsible authority under *CEAA* may decide not to require further analysis on these phases of the project as part of the current assignment.

Nothing in this document will limit the prerogative of federal authorities to seek additional information as more is learned about the specifics of the projects and its potential effects. Responsible authorities will be making a judgment about the likelihood of significant adverse environmental effects after mitigation, and they have the discretion to determine what information they require before making such a judgment.

## **SUPPORTING DOCUMENT #5**

### **PRELIMINARY FACTORS, SUB-FACTORS, CRITERIA AND INDICATORS FOR EVALUATION OF AREA TRANSPORTATION SYSTEM PLANNING ALTERNATIVES AND PROVINCIAL ROADWAY ALTERNATIVES**

SUPPORTING DOCUMENT #5						
PRELIMINARY FACTORS, SUB-FACTORS, CRITERIA AND INDICATORS FOR EVALUATION OF AREA TRANSPORTATION SYSTEM PLANNING ALTERNATIVES AND PROVINCIAL ROADWAY ALTERNATIVES						
FACTOR / SUB-FACTOR	CRITERIA	PRELIMINARY EVALUATION INDICATORS FOR EACH PHASE				RATIONALE FOR FACTOR AND SUB-FACTOR EVALUATION
		TRANSPORTATION NEEDS ASSESSMENT	PRELIMINARY PLANNING	DETAILED PLANNING FOR PROVINCIAL ROADWAYS	PRELIMINARY DESIGN FOR PROVINCIAL ROADWAYS	
1. Natural Environmental Factors						
1.1 Fisheries and Aquatic Ecosystems	1.1.1 Fish Habitat	Potential to affect fish species at risk (vulnerable, threatened or endangered fish species) and their habitat	Potential to affect fish species at risk (vulnerable, threatened or endangered fish species) and their habitat	Potential and significance of: <ul style="list-style-type: none"><li>• encroachment, severance, displacement;</li><li>• long-term alteration/disruption</li></ul> as applicable to the following: <ul style="list-style-type: none"><li>• critical fish habitat features</li><li>• riparian areas</li><li>• habitat rehabilitation goals</li></ul>	Potential and significance of: <ul style="list-style-type: none"><li>• encroachment, severance, displacement;</li><li>• long-term alteration/disruption</li><li>• short-term alteration/disruption (construction impacts).</li></ul> as applicable to the following: <ul style="list-style-type: none"><li>• critical fish habitat features</li><li>• riparian areas</li><li>• habitat rehabilitation goals</li></ul>	<ul style="list-style-type: none"><li>• The crossing of water bodies by transportation facilities has the potential to affect fish and aquatic habitat features through impediments to fish passage, loss of vegetation, changes to channel geomorphology (channel form and function), substrate and cover, changes to the water quality due to erosion and sedimentation, stormwater discharge and temperature changes.</li><li>• PPS Policy 1.6.6.4 stipulates that when planning for corridors and rights-of-way for significant transportation facilities, consideration will be given to significant natural heritage, water, agricultural, mineral, cultural heritage and archaeological resources. The context is provided in other PPS policy statements_ identified below.</li><li>• PPS Policy 2.1.5 requires that development and site alteration shall not be permitted in fish habitat except in accordance with provincial and federal requirements. In addition, policy 2.1.6 restricts development and site alteration on adjacent lands to natural heritage features (e.g. significant - wetlands, woodlands, valleylands etc.) unless the ecological function of the adjacent lands has been evaluated and it has been demonstrated that there will be no negative impacts on the natural features or on their ecological functions.</li><li>• It is an objective of the PPS to protect, improve or restore the quality and quantity of surface water, including headwaters. Surface water features are an important part of the natural, economic and cultural landscape. PPS Policy 2.2.2 restricts development and site alteration in or near sensitive surface water features and groundwater features such that these features and their related hydrologic functions will be protected, improved or restored.</li><li>• The Federal Fisheries Act prohibits the harmful alteration, disruption or destruction of fish habitat, the introduction of deleterious substances to fish habitat and the blockage of fish passage. Where impacts cannot be mitigated, a Fisheries Compensation Plan is prepared in consultation with the CA/DFO to address agency concerns/requirements.</li><li>• Subsection 36(3) of the Fisheries Act prohibits the deposit of a deleterious substance, directly or indirectly, into waters frequented by fish.</li></ul>
	1.1.2 Fish Community			Potential and significance of: <ul style="list-style-type: none"><li>• encroachment, severance, displacement;</li><li>• long-term alteration/ disruption</li></ul> as applicable to the following: <ul style="list-style-type: none"><li>• fish species at risk (vulnerable, threatened or endangered fish species)</li><li>• fish movement/migration</li><li>• critical fish life stage processes (spawning, rearing, nursery, feeding)</li><li>• long-term fish community management goals</li></ul>	Potential and significance of: <ul style="list-style-type: none"><li>• encroachment, severance, displacement;</li><li>• long-term alteration/ disruption</li><li>• short-term alteration/disruption (construction impacts).</li></ul> as applicable to the following: <ul style="list-style-type: none"><li>• fish species at risk (vulnerable, threatened or endangered fish species)</li><li>• fish movement/migration</li><li>• critical fish life stage processes (spawning, rearing, nursery, feeding)</li><li>• long-term fish community management goals</li></ul>	
1.2 Terrestrial Ecosystems	1.2.1 Wildlife	Potential to affect wildlife species at risk (vulnerable, threatened or endangered wildlife species) and their habitat	Potential to affect wildlife species at risk (vulnerable, threatened or endangered wildlife species) and their habitat	Potential and significance of: <ul style="list-style-type: none"><li>• encroachment, severance, displacement;</li><li>• long-term alteration/ disruption</li></ul> as applicable to the following: <ul style="list-style-type: none"><li>• wildlife species at risk (vulnerable, threatened or endangered wildlife species)</li><li>• wildlife of local and regional importance</li><li>• migratory birds</li></ul>	Potential and significance of: <ul style="list-style-type: none"><li>• encroachment, severance, displacement;</li><li>• long-term alteration/ disruption</li><li>• short-term alteration/disruption (construction impacts).</li></ul> as applicable to the following: <ul style="list-style-type: none"><li>• wildlife species at risk (vulnerable, threatened or endangered wildlife species)</li><li>• wildlife of local and regional importance</li></ul>	<ul style="list-style-type: none"><li>• PPS Policy 1.6.6.4 stipulates that when planning for corridors and rights-of-way for significant transportation facilities, consideration will be given to significant natural heritage, water, agricultural, mineral, cultural heritage and archaeological resources. The context is provided in other PPS policy statements identified below.</li><li>• The presence of species identified by COSEWIC and COSSARO as vulnerable, threatened or endangered (VTE) requires consideration in the</li></ul>

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PRELIMINARY FACTORS, SUB-FACTORS, CRITERIA AND INDICATORS FOR EVALUATION OF AREA TRANSPORTATION SYSTEM PLANNING ALTERNATIVES AND PROVINCIAL ROADWAY ALTERNATIVES						
FACTOR / SUB-FACTOR	CRITERIA	PRELIMINARY EVALUATION INDICATORS FOR EACH PHASE				RATIONALE FOR FACTOR AND SUB-FACTOR EVALUATION
		TRANSPORTATION NEEDS ASSESSMENT	PRELIMINARY PLANNING	DETAILED PLANNING FOR PROVINCIAL ROADWAYS	PRELIMINARY DESIGN FOR PROVINCIAL ROADWAYS	
				<ul style="list-style-type: none"><li>critical wildlife habitat features</li><li>ecologically functional areas such as connective corridors or travel ways for movement/migration</li><li>important wildlife areas such as deeryards, heronries, waterfowl areas, important bird areas</li><li>wildlife management, rehabilitation/research program sites</li><li>interference with critical wildlife life stage processes (eg mating/rearing) etc</li></ul>	<ul style="list-style-type: none"><li>migratory birds</li><li>critical wildlife habitat features</li><li>ecologically functional areas such as connective corridors or travel ways for movement/migration</li><li>important wildlife areas such as deeryards, heronries, waterfowl areas, important bird areas</li><li>wildlife management, rehabilitation/research program sites</li><li>interference with critical wildlife life stage processes (eg mating/rearing) etc</li></ul>	<p>generation of route alternatives. Species or populations may be under pressure or susceptible to stress as a result of development. Since habitat for these species is often limited, impacts to areas where the presence of species at risk is suspected or confirmed should be avoided or minimized. The assessment should have regard for the PPS objective that development and site alteration will not be permitted in significant portions of the habitat of Threatened and Endangered Species. The reported presence of Species of Conservation Concern (as defined by MNR in the Significant Wildlife Habitat Technical Guides (SWHTG – MNR, 2000) and TRCA species of concern will also be considered.</p> <ul style="list-style-type: none"><li>The general prohibitions under the Species at Risk Act, which apply to federally protect migratory bird and aquatic species at risk as well as to all endangered and threatened species on federal lands.</li><li>Section 6 of the Migratory Bird Regulations under the Migratory Birds Convention Act, 1994, which prohibits the incidental take of migratory birds and the disturbance and destruction of taking of the nest of a migratory bird.</li><li>PPS Policy 2.1.4 prohibits development and site alteration in significant wetlands in the Canadian Shield north of Ecoregions 5E, 6E and 7E. The assessment should have regard for this objective. Wetlands serve ecological functions to varying degrees including groundwater recharge/discharge, flood attenuation, wildlife movement corridors, habitat for flora and fauna, and water filtration.</li><li>The Canadian Federal Policy on Wetland Conservation promotes the goal of no net loss of wetland function in areas where wetland loss has reached critical levels.</li></ul>
	1.2.2 Wetlands	Potential to affect provincially and locally significant wetlands	Potential to affect provincially and locally significant wetlands	<p>Potential and significance of:</p> <ul style="list-style-type: none"><li>encroachment, severance, displacement;</li><li>long-term alteration/ disruption</li></ul> <p>as applicable to the following:</p> <ul style="list-style-type: none"><li>provincially significant wetlands, their buffer areas, and their wetland function</li><li>evaluated and un-evaluated wetlands, their wetland buffer areas, and their wetland function</li><li>wetland management, research and/or wetland conservation programs/areas</li></ul>	<p>Potential and significance of:</p> <ul style="list-style-type: none"><li>encroachment, severance, displacement;</li><li>long-term alteration/ disruption</li><li>short-term alteration/disruption (construction impacts).</li></ul> <p>as applicable to the following:</p> <ul style="list-style-type: none"><li>provincially significant wetlands, their buffer areas, and their wetland function</li><li>evaluated and un-evaluated wetlands, their wetland buffer areas, and their wetland function</li><li>wetland management, research and/or wetland conservation programs/areas</li></ul>	<ul style="list-style-type: none"><li>PPS Policy 1.6.6.4 stipulates that when planning for corridors and rights-of-way for significant transportation facilities, consideration will be given to significant natural heritage, water, agricultural, mineral, cultural heritage and archaeological resources. The context is provided in other PPS policy statements identified below.</li><li>It is important to recognize identified ecologically functional linkages between factors and sub-factors (within a natural heritage system) that contribute to landscape connectivity. The assessment should have regard for PPS Policy 2.1.2 which states that the diversity and connectivity of natural features in an area, and the long term ecological function and biodiversity of natural heritage systems, should be maintained, restored, or where possible improved, recognizing linkages between and among natural heritage features and areas, surface water features and groundwater features. The avoidance of wildlife corridors minimizes</li></ul>

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						risks of wildlife mortality during operation of the facility. Secondary information on ecosystem linkages (aquatic and terrestrial) will be reviewed and supplemented by other available sources (including contacts with specialists, field findings).
1.2 Terrestrial Ecosystems (Cont'd)	1.2.3 Forests  (e.g. woodlands [forest stands, woodlots and interior forest habitat] and significant valley lands [valley and stream corridors])	Potential to affect significant woodlands/valley lands and areas supporting known populations of vegetation species at risk (vulnerable, threatened or endangered species)	Potential to affect significant woodlands/valley lands and areas supporting known populations of vegetation species at risk (vulnerable, threatened or endangered species)	Potential and significance of: <ul style="list-style-type: none"><li>• encroachment, severance, displacement;</li><li>• long-term alteration/ disruption</li></ul> as applicable to the following: <ul style="list-style-type: none"><li>• significant woodlands/valley lands</li><li>• forest management/research program areas</li></ul>	Potential and significance of: <ul style="list-style-type: none"><li>• encroachment, severance, displacement;</li><li>• long-term alteration/ disruption</li><li>• short-term alteration/disruption (construction impacts).</li></ul> as applicable to the following: <ul style="list-style-type: none"><li>• woodlands/valley lands</li><li>• forest management/research program areas</li></ul>	<ul style="list-style-type: none"><li>• PPS Policy 1.6.6.4 stipulates that when planning for corridors and rights-of-way for significant transportation facilities, consideration will be given to significant natural heritage, water, agricultural, mineral, cultural heritage and archaeological resources. The context is provided in other PPS policy statements identified below.</li><li>• The PPS Policy 2.1.4 only permits development and site alteration in significant woodlands south and east of the Canadian Shield where it can be demonstrated that there will be no negative impacts on the natural features or their ecological function. The assessment should have regard for the PPS protection objectives.</li><li>• The study area is located within the Carolinian Zone and may have important representations of Carolinian species assemblages. These natural heritage areas require protection.</li><li>• Small degraded, isolated remnant woodlots and wetlands can have ecological value. Large natural and relatively undisturbed features have high ecological sensitivity and value.</li></ul>
	1.2.4 Vegetation			Potential and significance of: <ul style="list-style-type: none"><li>• encroachment, severance, displacement;</li><li>• long-term alteration/ disruption</li></ul> as applicable to the following: <ul style="list-style-type: none"><li>• populations of vegetation species at risk (vulnerable, threatened or endangered species), species of conservation concern and significant regional/local flora/communities</li><li>• areas/corridors supporting known populations of vegetation species at risk (vulnerable, threatened or endangered species), species of conservation concern and significant flora/communities</li><li>• vegetation management, rehabilitation/research program sites</li></ul>	Potential and significance of: <ul style="list-style-type: none"><li>• encroachment, severance, displacement;</li><li>• long-term alteration/ disruption</li><li>• short-term alteration/disruption (construction impacts).</li></ul> as applicable to the following: <ul style="list-style-type: none"><li>• populations of vegetation species at risk (vulnerable, threatened or endangered species), species of conservation concern and significant regional/local flora/communities</li><li>• areas/corridors supporting known populations of vegetation species at risk (vulnerable, threatened or endangered species), species of conservation concern and significant flora/communities</li><li>• vegetation management, rehabilitation/research program sites</li></ul>	
	1.2.5 Designated/Special Areas (such as world biosphere reserves, heritage rivers, ESAs, ESPAs, ANSIs, environmental plan areas, conservation reserves; and the designated special areas of national parks, provincial parks, conservation areas, etc)	Potential to affect designated/special areas	Potential to affect designated/special areas	Potential and significance of: <ul style="list-style-type: none"><li>• encroachment, severance, displacement;</li><li>• long-term alteration/ disruption;</li><li>• change in area character/ aesthetics;</li><li>• nuisance impacts;</li><li>• change to access / travel time;</li><li>• change to facilities / utilities / services.</li></ul> to designated/special areas.	Potential and significance of: <ul style="list-style-type: none"><li>• encroachment, severance, displacement;</li><li>• long-term alteration/ disruption;</li><li>• short-term alteration/disruption (construction impacts);</li><li>• change in area character/ aesthetics;</li><li>• nuisance impacts;</li><li>• change to access / travel time;</li><li>• change to facilities / utilities / services.</li></ul> to designated/special areas.	



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						<p>there will be no negative impacts on the natural features or functions for which the area is identified.</p> <ul style="list-style-type: none"><li>• Areas that have been designated as Environmentally Significant Areas, Areas of Natural and Scientific Interest or Significant Valleylands may have landforms or plant communities associated with the area that are designated locally, regionally or provincially significant, or provide important corridors.</li><li>• ESAs are not explicitly included in the Provincial Policy Statement, but are often associated with other features subject to the policy statement (e.g. ANSIs, significant woodlands, significant habitat of endangered species or threatened species, significant wetlands, valleylands and wildlife habitat). They are also reflected in the MNR Land Use Guidelines, Conservation Authority Plans and municipal land use plans.</li><li>• PPS Policy 2.1.6 provides for development and site alteration on adjacent lands to listed natural heritage features and areas, only where the ecological function of the adjacent lands has been evaluated and it has been demonstrated that there will be no negative impacts on the natural features or on their ecological function.</li><li>• Policy 4.2.1.2 of the Greenbelt Plan 2005 states that the location and construction of infrastructure and expansions, extensions, operations and maintenance of infrastructure in the Protected Countryside are subject to specified criteria.</li></ul>
1.3 Groundwater	1.3.1 Areas of Ground water Recharge and Discharge	Potential to affect areas of groundwater recharge and discharge	Potential to affect areas of groundwater recharge and discharge	Potential and significance of alteration to areas of groundwater recharge and discharge due to physical intrusion or groundwater interception, draw-down, impoundment, obstruction, or soil compaction impacting groundwater base-flow and quality	Potential and significance of alteration to areas of groundwater recharge and discharge due to physical intrusion or groundwater interception, draw-down, impoundment, obstruction, or soil compaction impacting groundwater base-flow and quality	<ul style="list-style-type: none"><li>• PPS Policy 1.6.6.4 stipulates that when planning for corridors and rights-of-way for significant transportation facilities, consideration will be given to significant natural heritage, water, agricultural, mineral, cultural heritage and archaeological resources. The context is provided in other PPS policy statements identified below.</li><li>• Section 2.2 of the PPS identifies that the quality and quantity of water (including groundwater) should be protected improved or restored. The assessment should have regard for this objective. Transportation facilities have the potential to impact groundwater resources through removal of recharge areas, interference with discharge areas/shallow groundwater zones, and introduction of contaminated runoff. Consequently, impacts to areas identified as being susceptible to groundwater contamination and/or interference should be avoided/minimized to the extent possible.</li></ul>
	1.3.2 Groundwater Source Areas and Wellhead Protection Areas	Potential to affect groundwater source areas and wellhead protection areas	Potential to affect groundwater source areas and wellhead protection areas	Potential and significance of alteration to groundwater source areas and wellhead protection areas due to physical intrusion, or groundwater interception, draw-down, impoundment, obstruction and by soil compaction	Potential and significance of alteration to groundwater source areas and wellhead protection areas due to physical intrusion, or groundwater interception, draw-down, impoundment, obstruction and by soil compaction	
	1.3.3 Large Volume Wells	Potential to affect large volume wells	Potential to affect large volume wells	Potential and significance of alteration to large volume wells due to physical intrusion or groundwater interception, draw-down, impoundment, obstruction and by soil compaction	Potential and significance of alteration to large volume wells due to physical intrusion or groundwater interception, draw-down, impoundment, obstruction and by soil compaction	
	1.3.4 Private Wells	Not considered in this phase.	Not considered in this phase.	Potential and significance of alteration to private well use due to physical intrusion, or groundwater interception, draw-down, impoundment, obstruction and by soil compaction	Potential and significance of alteration to private well use due to physical intrusion, or groundwater interception, draw-down, impoundment, obstruction and by soil compaction	
	1.3.5 Groundwater-Dependent Commercial Enterprises  (e.g. water bottling operations)	Not considered in this phase.	Not considered in this phase.	Potential and significance of alteration to groundwater use by groundwater-dependent commercial enterprises due to physical intrusion, or groundwater interception, draw-down, impoundment, obstruction and by soil compaction	Potential and significance of alteration to groundwater use by groundwater-dependent commercial enterprises due to physical intrusion, or groundwater interception, draw-down, impoundment, obstruction and by soil compaction	

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	1.3.6 Groundwater-Sensitive Ecosystems  (e.g. groundwater fed wetlands, coldwater streams)	Not considered in this phase.	Not considered in this phase.	Potential and significance of alteration to groundwater-sensitive ecosystems due to physical intrusion, or groundwater interception, draw-down, impoundment, obstruction and by soil compaction	Potential and significance of alteration to groundwater-sensitive ecosystems due to physical intrusion, or groundwater interception, draw-down, impoundment, obstruction and by soil compaction	
1.4 Surface Water	1.4.1 Watershed / Sub-Watershed Drainage Features/Patterns	Potential to affect permanent watercourses	Potential to affect permanent watercourses	Potential and significance of: <ul style="list-style-type: none"><li>• encroachment, severance, displacement;</li><li>• long-term alteration/ disruption.</li></ul> as applicable to the following: <ul style="list-style-type: none"><li>• watercourse crossings (permanent, intermittent and ephemeral)</li><li>• floodplain or meander belts</li><li>• riparian areas</li><li>• sensitive headwater areas</li><li>• watershed and subwatershed management plans</li></ul>	Potential and significance of: <ul style="list-style-type: none"><li>• encroachment, severance, displacement;</li><li>• long-term alteration/ disruption.</li></ul> as applicable to the following: <ul style="list-style-type: none"><li>• watercourse crossings (permanent, intermittent and ephemeral)</li><li>• floodplain or meander belts</li><li>• riparian areas</li><li>• sensitive headwater areas</li><li>• watershed and subwatershed management plans</li></ul>	<ul style="list-style-type: none"><li>• Surface water features are an important part of the natural landscape in the Analysis Area. There are a number of permanent and intermittent watercourses flowing through the Analysis Area as well as a number of provincially and locally significant wetlands and various unnamed tributaries and agricultural swales present in the analysis area. Consequently, surface water quantity and quality could be negatively affected by the undertaking (e.g., reduction in surface water quantity, degradation of surface water quality, etc.) and therefore the ability to protect surface water quality, including the function of headwaters, need to be considered in the evaluation.</li></ul>
	1.4.2 Surface Water Quality and Quantity	Not considered in this phase	Not considered in this phase	Potential and significance of impacts on quality through direct and indirect discharges of contaminated and sediment-laden run-off  Potential and significance of impacts on hydrology due to changes in ground permeability, modifications to surface drainage patterns and alterations of water bodies	Potential and significance of impacts on quality through direct and indirect discharges of contaminated and sediment-laden run-off  Potential and significance of impacts on hydrology due to changes in ground permeability, modifications to surface drainage patterns and alterations of water bodies	
1.5 Air Quality	1.5.1 Local and Regional Air Quality  (Total contaminant and greenhouse gas emissions)	Potential to reduce the air quality consequences of traffic congestion	Potential to reduce the air quality consequences of traffic congestion	Not considered in this phase. See item below	Not considered in this phase. See item below.	<ul style="list-style-type: none"><li>• Air Quality impacts have the potential to affect human health.</li><li>• Alternatives through or near urban areas create the potential for increased contaminant levels.</li><li>• Dust emissions associated with construction related activities could cause temporary air quality issues.</li><li>• Greenhouse gases contribute to global warming.</li></ul>
	1.5.2 Sensitive receptors to air pollutants and greenhouse gas emissions	Not considered in this phase.	Not considered in this phase.	Presence and potential for impacts to sensitive receptors to air pollutants and greenhouse gas emissions	Potential and significance of effects on sensitive receptors to air pollutants and greenhouse gas emissions	
2. Land Use / Socio-Economic Environmental Factors						
2.1 Land Use Planning Policies, Goals, Objectives	2.1.1 First Nations Land Claims	Potential to affect areas for which there are First Nations outstanding land claims	Potential to affect areas for which there are First Nations outstanding land claims	Potential and significance of encroachment, severance, displacement to areas for which there are First Nations outstanding land claims	Potential and significance of encroachment, severance, displacement to areas for which there are First Nations outstanding land claims	<ul style="list-style-type: none"><li>• It is important that First Nations’s land claims within the Analysis Area are documented</li><li>• The Ontario Provincial Policy Statement notes that long-term prosperity and social well-being of Ontarians depends on maintaining strong communities, a clean and healthy environment and a strong economy. Transportation facilities play a key role in achieving these objectives.</li><li>• There is a need to co-ordinate transportation planning with municipal land planning as established through Official Plans, Secondary Plans and Zoning by-laws as these specify land uses supported by residents, municipalities and the province.</li><li>• The Greenbelt Plan notes that infrastructure is important to economic well-being, human health and quality of life in southern Ontario and the Greenbelt.</li><li>• Policy 4.2.1 of the Greenbelt Plan states that, for lands within the protected countryside, as defined by the Greenbelt Plan, 2005, infrastructure must meet one of the following policies; it supports agriculture, recreation and tourism, rural</li></ul>
	2.1.2 Provincial/Federal land use planning policies/goals/ objectives	Potential to support federal/provincial land use policies/goals/objectives	Potential to support federal/provincial land use policies/goals/objectives	Degree of compatibility with federal/provincial land use policies/goals/ objectives	Not considered in this phase.	
	2.1.3 Municipal (regional and local) land use planning policies/ goals/objectives (Official Plans)	Potential to support municipal Official Plans	Potential to support municipal Official Plans	Degree of compatibility with municipal Official Plans	Not considered in this phase.	
	2.1.4 Development Objectives of Private Property Owners	Not considered in this phase	Not considered in this phase	Potential to isolate property from current/future urban envelope  Impact on future land use	Not considered in this phase.	

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FACTOR / SUB-FACTOR	CRITERIA	PRELIMINARY EVALUATION INDICATORS FOR EACH PHASE				RATIONALE FOR FACTOR AND SUB-FACTOR EVALUATION
		TRANSPORTATION NEEDS ASSESSMENT	PRELIMINARY PLANNING	DETAILED PLANNING FOR PROVINCIAL ROADWAYS	PRELIMINARY DESIGN FOR PROVINCIAL ROADWAYS	
						settlement areas, resource use or the rural economic activity that exists and is permitted within the Greenbelt; or it serves the significant growth and economic development expected in southern Ontario beyond the Greenbelt by providing for the appropriate infrastructure connections among urban growth centers and between these centers and Ontario's borders.
2.2 Land Use / Community	2.2.1 First Nation Reserves	Potential to affect First Nation Reserves	Potential to affect First Nation Reserves	Potential and significance of: <ul style="list-style-type: none"><li>• encroachment, severance, displacement;</li><li>• long-term alteration/ disruption;</li><li>• change in area character / aesthetics;</li><li>• nuisance impacts;</li><li>• change to access / travel time.</li></ul> to First Nation Reserves	Potential and significance of: <ul style="list-style-type: none"><li>• encroachment, severance, displacement;</li><li>• long-term alteration/ disruption;</li><li>• short-term alteration/disruption (construction impacts);</li><li>• change in area character / aesthetics;</li><li>• nuisance impacts;</li><li>• change to access / travel time.</li></ul> to First Nation Reserves	<ul style="list-style-type: none"><li>• It is important that potential and significance of impacts to Indian Reservations and sacred grounds be recognized and addressed in accordance with Ontario's New Approach to Aboriginal Affairs (Spring 2005) and the Grand River Notification Agreement</li><li>• Property takings / displacements and changes / effects on local access have a significant impact on owners and tenants as well as the broader community.</li><li>• Property takings / displacements and changes / effects on local access have a significant impact on owners and tenants as well as the broader community and customer/client base.</li><li>• Disruption or displacement of institutional features may adversely affect the users of these features / facilities and the broader community.</li></ul>
	2.2.2 First Nations' Sacred Grounds	Not considered in this phase	Potential to affect First Nations' Sacred Grounds	Potential and significance of: <ul style="list-style-type: none"><li>• encroachment, severance, displacement;</li><li>• long-term alteration/ disruption;</li><li>• change in area character / aesthetics;</li><li>• nuisance impacts;</li><li>• change to access / travel time.</li></ul> To First Nations' sacred grounds	Potential and significance of: <ul style="list-style-type: none"><li>• encroachment, severance, displacement;</li><li>• long-term alteration/ disruption;</li><li>• short-term alteration/disruption (construction impacts);</li><li>• change in area character / aesthetics;</li><li>• nuisance impacts;</li><li>• change to access / travel time.</li></ul> To First Nations' sacred	
	2.2.3 Urban and Rural Residential	Potential to affect urban and residential areas	Potential to affect urban and residential areas	Potential and significance of: <ul style="list-style-type: none"><li>• encroachment, severance, displacement, property acquisition;</li><li>• long-term alteration/ disruption;</li><li>• change in area character/ aesthetics;</li><li>• nuisance impacts;</li><li>• change to access / travel time;</li><li>• change to facilities / utilities / services.</li></ul> to urban and rural residential areas (residents [owners/tenants] and community groups).	Potential and significance of: <ul style="list-style-type: none"><li>• encroachment, severance, displacement, property acquisition;</li><li>• long-term alteration/ disruption;</li><li>• short-term alteration/disruption (construction impacts);</li><li>• change in area character/ aesthetics;</li><li>• nuisance impacts;</li><li>• change to access / travel time;</li><li>• change to facilities / utilities / services.</li></ul> to urban and rural residential areas (residents [owners/tenants] and community groups).	
	2.2.4 Commercial/Industrial	Not considered in this phase	Potential to affect commercial and industrial areas	Potential and significance of: <ul style="list-style-type: none"><li>• encroachment, severance, displacement, property acquisition;</li><li>• long-term alteration/ disruption;</li><li>• change in area character/ aesthetics;</li><li>• nuisance impacts;</li><li>• change to access / travel time;</li><li>• change to facilities / utilities / services.</li></ul> to commercial and industrial areas	Potential and significance of: <ul style="list-style-type: none"><li>• encroachment, severance, displacement, property acquisition;</li><li>• long-term alteration/ disruption;</li><li>• short-term alteration/disruption (construction impacts);</li><li>• change in area character/ aesthetics;</li><li>• nuisance impacts;</li><li>• change to access / travel time;</li><li>• change to facilities / utilities / services.</li></ul>	

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FACTOR / SUB-FACTOR	CRITERIA	PRELIMINARY EVALUATION INDICATORS FOR EACH PHASE				RATIONALE FOR FACTOR AND SUB-FACTOR EVALUATION
		TRANSPORTATION NEEDS ASSESSMENT	PRELIMINARY PLANNING	DETAILED PLANNING FOR PROVINCIAL ROADWAYS	PRELIMINARY DESIGN FOR PROVINCIAL ROADWAYS	
				(business owners/tenants and customers).	to commercial and industrial areas (business owners/tenants and customers).	
	2.2.5 Tourist Areas and Attractions  (e.g. museums, theatres, etc.)	Not considered in this phase	Potential to affect tourist areas and attractions	Potential and significance of: <ul style="list-style-type: none"><li>• encroachment, severance, displacement, property acquisition;</li><li>• long-term alteration/ disruption;</li><li>• change in area character/ aesthetics;</li><li>• nuisance impacts;</li><li>• change to access / travel time;</li><li>• change to facilities / utilities / services.</li></ul> To tourist areas and attractions.	Potential and significance of: <ul style="list-style-type: none"><li>• encroachment, severance, displacement, property acquisition;</li><li>• long-term alteration/ disruption;</li><li>• short-term alteration/disruption (construction impacts);</li><li>• change in area character/ aesthetics;</li><li>• nuisance impacts;</li><li>• change to access / travel time;</li><li>• change to facilities / utilities / services.</li></ul> to tourist areas and attractions.	
2.2 Land Use / Community	2.2.6 Community Facilities / Institutions  (e.g. hospitals, schools, places of worship, unique community features)	Not considered in this phase	Potential to affect community facilities and institutions	Potential and significance of: <ul style="list-style-type: none"><li>• encroachment, severance, displacement, property acquisition;</li><li>• long-term alteration/ disruption;</li><li>• change in area character/ aesthetics;</li><li>• nuisance impacts;</li><li>• change to access / travel time;</li><li>• change to facilities / utilities / services.</li></ul> To community facilities and institutions.	Potential and significance of: <ul style="list-style-type: none"><li>• encroachment, severance, displacement, property acquisition;</li><li>• long-term alteration/ disruption;</li><li>• short-term alteration/disruption (construction impacts);</li><li>• change in area character/ aesthetics;</li><li>• nuisance impacts;</li><li>• change to access / travel time;</li><li>• change to facilities / utilities / services.</li></ul> to community facilities and institutions.	
	2.2.7 Municipal Infrastructure and Public Service Facilities  (e.g. sewage and water services, police/emergency services, local utilities)	Not considered in this phase	Not considered in this phase	Potential and significance of: <ul style="list-style-type: none"><li>• encroachment, severance, displacement;</li><li>• long-term alteration/ disruption;</li><li>• change to access / travel time;</li><li>• change to facilities / utilities / services.</li></ul> to municipal infrastructure and public service facilities.	Potential and significance of: <ul style="list-style-type: none"><li>• encroachment, severance, displacement;</li><li>• long-term alteration/ disruption;</li><li>• short-term alteration/disruption (construction impacts);</li><li>• change to access / travel time;</li><li>• change to facilities / utilities / services.</li></ul> to municipal infrastructure and public service facilities.	
2.3 Noise Sensitive Areas (NSAs)  (residential areas and sensitive institutional uses)	2.3.1 Highway Noise	Potential for increased traffic noise in NSAs	Potential for increased traffic noise in NSAs	Potential for significant traffic noise increases in NSAs	Potential for increase of traffic noise in NSAs by 5 dBA, or to above a 45 dBA ambient within 10 years of project construction	<ul style="list-style-type: none"><li>• The Ontario Ministry of the Environment (MOE) has published Noise Pollution Control (NPC) and Land Use (LU) planning guidelines. These MOE documents establish ambient noise criteria, based on one-hour average sound pressure levels (Leq), and evaluate ambient vibration levels based on either Peak or RMS velocity, as applicable. Noise levels generally rise with increased traffic volumes.</li><li>• MOE/MTO Noise Protocol requires that highway noise be considered in all Provincial (MTO) Transportation projects</li></ul>
	2.3.2 Construction Noise	Not considered in this phase	Not considered in this phase	Not considered in this phase	Potential and significance of increase in construction noise to NSAs	
2.4 Land Use / Resources	2.4.1 First Nations' Treaty Rights or Use of Land and Resources for Traditional Purposes  (e.g. hunting, fishing, harvesting of	Potential to affect First Nations' Treaty Rights or use of land and resources for traditional purposes	Potential to affect First Nations' Treaty Rights or use of land and resources for traditional purposes	Potential and significance of: <ul style="list-style-type: none"><li>• encroachment, severance, displacement;</li><li>• long-term alteration/ disruption;</li><li>• nuisance impacts;</li></ul>	Potential and significance of: <ul style="list-style-type: none"><li>• encroachment, severance, displacement;</li><li>• long-term alteration/ disruption;</li><li>• short-term alteration/disruption</li></ul>	<ul style="list-style-type: none"><li>• It is important that potential and significance of impacts to Indian Reservations and sacred grounds be recognized and addressed in accordance with Ontario's New Approach to</li></ul>

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PRELIMINARY FACTORS, SUB-FACTORS, CRITERIA AND INDICATORS FOR EVALUATION OF AREA TRANSPORTATION SYSTEM PLANNING ALTERNATIVES AND PROVINCIAL ROADWAY ALTERNATIVES						
FACTOR / SUB-FACTOR	CRITERIA	PRELIMINARY EVALUATION INDICATORS FOR EACH PHASE				RATIONALE FOR FACTOR AND SUB-FACTOR EVALUATION
		TRANSPORTATION NEEDS ASSESSMENT	PRELIMINARY PLANNING	DETAILED PLANNING FOR PROVINCIAL ROADWAYS	PRELIMINARY DESIGN FOR PROVINCIAL ROADWAYS	
	country foods, harvesting of medicinal plants)			<ul style="list-style-type: none"><li>• change to access / travel time.</li></ul> to First Nations' treaty rights or use of land and resources for traditional purposes	(construction impacts); <ul style="list-style-type: none"><li>• nuisance impacts;</li><li>• change to access / travel time.</li></ul> to First Nations' treaty rights or use of land and resources for traditional purposes	Aboriginal Affairs (Spring 2005) and the Grand River Notification Agreement <ul style="list-style-type: none"><li>• Planning of transportation facilities must address First Nations' treaty rights, and be conducted in accordance with Ontario's New Approach to Aboriginal Affairs (Spring 2005) and the Grand River Notification Agreement</li></ul>
	2.4.2 Agriculture	Potential to affect specialty crop areas and/or areas of Canada Land Inventory Classes 1, 2 and 3 soils	Potential to affect specialty crop areas and/or areas of Canada Land Inventory Classes 1, 2 and 3 soils	Potential and significance of: <ul style="list-style-type: none"><li>• encroachment, severance, displacement, property acquisition;</li><li>• long-term alteration/ disruption;</li><li>• change in area character/ aesthetics;</li><li>• nuisance impacts;</li><li>• change to access / travel time;</li><li>• change to facilities / utilities / services.</li></ul> as applicable to the following: <ul style="list-style-type: none"><li>• Canada Land Inventory Classes 1, 2 and 3 soils</li><li>• Specialty crops/cropland</li><li>• Dairy/livestock operations</li><li>• Field crop operations</li><li>• High investment agricultural operations</li><li>• Established agricultural farm communities</li></ul>	Potential and significance of: <ul style="list-style-type: none"><li>• encroachment, severance, displacement, property acquisition;</li><li>• long-term alteration/ disruption;</li><li>• short-term alteration/disruption (construction impacts);</li><li>• change in area character/ aesthetics;</li><li>• nuisance impacts;</li><li>• change to access / travel time;</li><li>• change to facilities / utilities / services.</li></ul> as applicable to the following: <ul style="list-style-type: none"><li>• Canada Land Inventory Classes 1, 2 and 3 soils</li><li>• Specialty crops/cropland</li><li>• Dairy/livestock operations</li><li>• Field crop operations</li><li>• High investment agricultural operations</li><li>• Established agricultural farm communities</li></ul>	<ul style="list-style-type: none"><li>• PPS Policy 1.6.6.4 stipulates that when planning for corridors and rights-of-way for significant transportation facilities, consideration will be given to significant natural heritage, water, agricultural, mineral, cultural heritage and archaeological resources. The context is provided in other PPS policy statements identified below.</li><li>• Section 2.3 of the Provincial Policy Statement requires prime agricultural areas be protected for long-term use for agriculture. Prime agricultural areas include specialty crop areas and Classes 1, 2 and 3 soils in this order of priority.</li><li>• Ontario Ministry of Agriculture and Food (OMAF) has provincial guidelines for protection of prime agricultural lands as well as agricultural structures or infrastructure</li></ul>
2.4 Land Use / Resources (Cont'd)	2.4.3 Parks and Recreational Areas (e.g. national/provincial parks, conservation areas, municipal parks, public spaces, golf courses, trails, greenways and open space linkages)	Potential to affect parks and recreational areas	Potential to affect parks and recreational areas.	Potential and significance of: <ul style="list-style-type: none"><li>• encroachment, severance, displacement, property acquisition;</li><li>• long-term alteration/ disruption;</li><li>• change in area character/ aesthetics;</li><li>• nuisance impacts;</li><li>• change to access / travel time;</li><li>• change to facilities / utilities / services.</li></ul> To parks and recreational areas.	Potential and significance of: <ul style="list-style-type: none"><li>• encroachment, severance, displacement, property acquisition;</li><li>• long-term alteration/ disruption;</li><li>• short-term alteration/disruption (construction impacts);</li><li>• change in area character/ aesthetics;</li><li>• nuisance impacts;</li><li>• change to access / travel time;</li><li>• change to facilities / utilities / services.</li></ul> to parks and recreational areas.	<ul style="list-style-type: none"><li>• Disruption or displacement of recreational / community features may adversely affect the users of the facility/feature. Parks are generally lands in public ownership aimed at preserving significant and sometimes unique components of the environment, and providing recreational opportunities. These areas should be avoided to the extent possible however, in some cases, transportation facilities can be situated along park boundaries without adversely affecting the park. Frequently, parts are isolated islands surrounded by development and as such they can function as wildlife refuge areas or may facilitate wildlife movement opportunities. PPS, 2005, Policy 1.5.1 states that healthy active communities shall be promoted by (d) considering the impacts of planning decisions on provincial parks, conservation reserves and conservation areas.</li></ul>
	2.4.4 Aggregates, Mineral Resources	Potential to affect aggregate and mineral resources sites	Potential to affect aggregate and mineral resources sites	Potential and significance of: <ul style="list-style-type: none"><li>• encroachment, severance, displacement, property acquisition;</li><li>• long-term alteration/ disruption;</li><li>• change to access / travel time;</li><li>• change to facilities / utilities / services.</li></ul> to current/future extraction of aggregate and mineral resources.	Potential and significance of: <ul style="list-style-type: none"><li>• encroachment, severance, displacement, property acquisition;</li><li>• long-term alteration/ disruption;</li><li>• short-term alteration/disruption (construction impacts);</li><li>• change to access / travel time;</li><li>• change to facilities / utilities / services.</li></ul> to current/future extraction of aggregate and mineral resources.	<ul style="list-style-type: none"><li>• PPS Policy 1.6.6.4 stipulates that when planning for corridors and rights-of-way for significant transportation facilities, consideration will be given to significant natural heritage, water, agricultural, mineral, cultural heritage and archaeological resources. The context is provided in other PPS policy statements identified below.</li><li>• Sections 2.4 and 2.5 of the Provincial Policy Statement have the objective of protecting mineral and aggregate resources for the long</li></ul>

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FACTOR / SUB-FACTOR	CRITERIA	PRELIMINARY EVALUATION INDICATORS FOR EACH PHASE				RATIONALE FOR FACTOR AND SUB-FACTOR EVALUATION
		TRANSPORTATION NEEDS ASSESSMENT	PRELIMINARY PLANNING	DETAILED PLANNING FOR PROVINCIAL ROADWAYS	PRELIMINARY DESIGN FOR PROVINCIAL ROADWAYS	
						<p>term. The policy statement makes provisions for the protection of both known deposits and areas of potential.</p> <ul style="list-style-type: none"><li>• MTO adheres to requirements of the Aggregates Act to protect aggregate resources while minimizing sterilization of mineral aggregate resources as much as possible.</li></ul>
<b>2.5 Major Utility Transmission Corridors</b>  (e.g. railroads, hydro, gas, oil)		Potential to affect major utility transmission corridors	Potential to affect major utility transmission corridors	Potential and significance of: <ul style="list-style-type: none"><li>• encroachment, severance, displacement;</li><li>• long-term alteration/ disruption;</li><li>• change to access / travel time;</li><li>• change to facilities / utilities / services.</li></ul> To major utility transmission corridors.	Potential and significance of: <ul style="list-style-type: none"><li>• encroachment, severance, displacement;</li><li>• long-term alteration/ disruption;</li><li>• short-term alteration/disruption (construction impacts);</li><li>• change to access / travel time;</li><li>• change to facilities / utilities / services.</li></ul> to major utility transmission corridors.	<ul style="list-style-type: none"><li>• Utility corridors are subject to regulations from owners and governing authorities for operation of utilities including National Energy Board, Ontario Energy Board, Transport Canada, Railway Safety Act, etc.</li></ul>
<b>2.6 Contaminated Property and Waste Management</b>  (e.g. Landfills, Hazardous Waste Sites, “Brownfield” Areas, other known contaminated sites, and high-risk contamination areas)		Potential to affect landfills (open and closed), hazardous waste sites “brownfield” areas, and other known contaminated sites, and high-risk contamination areas	Potential to affect landfills (open and closed), hazardous waste sites “brownfield” areas, and other known contaminated sites, and high-risk contamination areas	Potential and significance of: <ul style="list-style-type: none"><li>• encroachment, severance, displacement;</li><li>• long-term alteration/disruption;</li><li>• change to access / travel time;</li><li>• change to facilities / utilities / services.</li></ul> to contaminated property and waste management.	Potential and significance of: <ul style="list-style-type: none"><li>• encroachment, severance, displacement;</li><li>• long-term alteration/disruption;</li><li>• short-term alteration/disruption (construction impacts);</li><li>• change to access / travel time;</li><li>• change to facilities / utilities / services.</li></ul> to contaminated property and waste management.	<ul style="list-style-type: none"><li>• Localized significant sources of property contamination can be associated with operating and closed waste disposal sites, the latter being of more significance due to their difficulty in accurately locating them. Consideration should be given to avoiding/ minimizing effects in the “area of influence” of waste disposal sites.</li><li>• There is the potential that some of the lands in the project area may be contaminated due to the nature of existing and historical land use especially in older commercial/industrial areas and in areas with heavy industrial activity. Sources of potential property contamination in rural areas are most commonly associated with service stations; isolated pockets of commercial/industrial areas; unknown fill areas; scrap yards and other high-risk land uses. Impacts to these areas should be avoided / minimized to the extent possible.</li><li>• Appropriate assessments will be carried on these sites and the project will comply with the appropriate.</li></ul>
<b>2.7 Landscape Composition</b>	2.7.1 Scenic Composition (total aesthetic value of landscape components)	Not considered in this phase	Not considered in this phase	Potential and significance of change to scenic composition (total aesthetic value of landscape components).	Potential and significance of destruction / disturbance of specimen trees.	<ul style="list-style-type: none"><li>• Visual impacts on adjacent land use and effects on the visual experiences for users of the facility will be considered.</li></ul>
	2.7.2 Sensitive Viewer Groups	Not considered in this phase	Not considered in this phase	Potential and significance of change vistas/outlooks for sensitive viewer groups.	Potential and significance of change to scenic composition (total aesthetic value of landscape components).	
	2.7.3 Scenic value of views/vistas from the transportation facility	Not considered in this phase	Not considered in this phase	Potential and significance of views/vistas from the transportation facility.	Potential and significance of views/vistas from the transportation facility.	
	2.7.4 Specimen Trees	Not considered in this phase	Not considered in this phase	Not considered in this phase	Potential and significance of change vistas/outlooks for sensitive viewer groups.	
<b>3. Cultural Environmental Factors</b>						
<b>3.1 Cultural Heritage – Built Heritage and Cultural Landscapes</b>	3.1.1 Buildings or “Standing” Sites of Architectural or Heritage Significance or Ontario Heritage Foundation Easement Properties	Potential to affect buildings or “standing” sites of extreme local, provincial or national interest or Ontario Heritage Foundation easements properties	Potential to affect buildings or “standing” sites of extreme local, provincial or national interest or Ontario Heritage Foundation easements properties	Potential and significance of: <ul style="list-style-type: none"><li>• encroachment, severance, displacement, property acquisition;</li><li>• long-term alteration/ disruption;</li><li>• change in area character/ aesthetics;</li><li>• nuisance impacts;</li><li>• change to access / travel time;</li><li>• change to facilities / utilities / services.</li></ul>	Potential and significance of: <ul style="list-style-type: none"><li>• encroachment, severance, displacement, property acquisition;</li><li>• long-term alteration/ disruption;</li><li>• change in area character/ aesthetics;</li><li>• nuisance impacts;</li><li>• change to access / travel time;</li><li>• change to facilities / utilities / services.</li></ul>	<ul style="list-style-type: none"><li>• A new transportation facility may result in the loss of built heritage features resulting in a depletion of the cultural heritage resources / heritage character in the area.</li><li>• Impacts to built heritage features should be avoided to the extent possible, or as a secondary alternative relocation rather than demolition could be considered.</li></ul>

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FACTOR / SUB-FACTOR	CRITERIA	PRELIMINARY EVALUATION INDICATORS FOR EACH PHASE				RATIONALE FOR FACTOR AND SUB-FACTOR EVALUATION
		TRANSPORTATION NEEDS ASSESSMENT	PRELIMINARY PLANNING	DETAILED PLANNING FOR PROVINCIAL ROADWAYS	PRELIMINARY DESIGN FOR PROVINCIAL ROADWAYS	
				to buildings or “standing” sites of extreme local, provincial or national interest or Ontario Heritage Foundation easements properties.	to buildings or “standing” sites of extreme local, provincial or national interest or Ontario Heritage Foundation easements properties.	<ul style="list-style-type: none"><li>• MTO is required to operate in accordance with Cemeteries Act</li><li>• MTO is required to operate in accordance with Ontario Heritage Act</li></ul>
	3.1.2 Heritage Bridges	Potential to affect heritage bridges	Potential to affect heritage bridges	Potential for destruction or significant alteration of heritage bridges	Potential for destruction or significant alteration of heritage bridges	
	3.1.3 Areas of Historic 19 <sup>th</sup> Century Settlement	Potential to affect areas of historic 19 <sup>th</sup> century settlement	Potential to affect areas of historic 19 <sup>th</sup> century settlement	Potential and significance of: <ul style="list-style-type: none"><li>• encroachment, severance, displacement;</li><li>• long-term alteration/ disruption;</li><li>• change in area character/ aesthetics;</li><li>• nuisance impacts;</li><li>• change to access / travel time;</li><li>• change to facilities / utilities / services.</li></ul> to areas of historic 19 <sup>th</sup> century settlement.	Potential and significance of: <ul style="list-style-type: none"><li>• encroachment, severance, displacement;</li><li>• long-term alteration/ disruption;</li><li>• change in area character/ aesthetics;</li><li>• nuisance impacts;</li><li>• change to access / travel time;</li><li>• change to facilities / utilities / services.</li></ul> to areas of historic 19 <sup>th</sup> century settlement.	
	3.1.4 Cultural Heritage Landscapes  (collection of individual man-made features modifying pristine landscape)	Not considered in this phase	Not considered in this phase	Potential and significance of change to composition of cultural landscapes.	Potential and significance of change to composition of cultural landscapes.	
	3.1.5 First Nations’ Burial Sites	Not considered in this phase	Not considered in this phase	Potential and significance of: <ul style="list-style-type: none"><li>• encroachment, severance, displacement;</li><li>• long-term alteration/ disruption;</li><li>• change in area character / aesthetics;</li><li>• nuisance impacts;</li><li>• change to access / travel time.</li></ul> to First Nations' burial sites.	Potential and significance of: <ul style="list-style-type: none"><li>• encroachment, severance, displacement;</li><li>• long-term alteration/ disruption;</li><li>• change in area character / aesthetics;</li><li>• nuisance impacts;</li><li>• change to access / travel time.</li></ul> to First Nations' burial sites.	
	3.1.6 Cemeteries	Potential to affect cemeteries	Potential to affect cemeteries	Potential and significance of: <ul style="list-style-type: none"><li>• encroachment, severance, displacement;</li><li>• long-term alteration/ disruption;</li><li>• change in area character/ aesthetics;</li><li>• nuisance impacts;</li><li>• change to access / travel time;</li><li>• change to facilities / utilities / services.</li></ul> to cemeteries.	Potential and significance of: <ul style="list-style-type: none"><li>• encroachment, severance, displacement;</li><li>• long-term alteration/ disruption;</li><li>• short-term alteration/disruption (construction impacts);</li><li>• change in area character/ aesthetics;</li><li>• nuisance impacts;</li><li>• change to access / travel time;</li><li>• change to facilities / utilities / services.</li></ul> to cemeteries.	
3.2 Cultural Heritage - Archaeology	3.2.1 Pre-Historic and Historic First Nations Sites	Potential to affect significant pre-historic and historic First Nations archaeological sites of extreme local, provincial or national interest	Potential to affect significant pre-historic and historic First Nations archaeological sites of extreme local, provincial or national interest	Potential for destruction or disturbance of pre-historic and historic First Nations archaeological sites of extreme local, provincial or national interest	Potential for destruction or disturbance of pre-historic and historic First Nations archaeological sites of extreme local, provincial or national interest	<ul style="list-style-type: none"><li>• Disturbance or destruction of certain archaeological sites of extreme local, provincial or national interest represents a significant cultural loss.</li><li>• Impacts to archaeological resources/sites should be avoided or minimized to the extent possible.</li><li>• Significant archaeological sites shall be preserved and avoided in accordance with Ontario Ministry of Culture (OMC), and Aboriginal People’s policies and procedures, and all others shall be excavated to OMC standards</li></ul>
	3.2.2 Historic Euro-Canadian Archaeological Sites	Potential to affect significant historic Euro-Canadian archaeological sites of extreme local, provincial or national interest	Potential to affect significant historic Euro-Canadian archaeological sites of extreme local, provincial or national interest	Potential for destruction or disturbance of historic Euro-Canadian archaeological sites of extreme local, provincial or national interest	Potential for destruction or disturbance of historic Euro-Canadian archaeological sites of extreme local, provincial or national interest	
4. Area Economy						
4.1 First Nations Industry		Potential to support First Nations industry in the area by efficient and reliable movement of people and goods	Potential to support First Nations industry in the area by efficient and reliable movement of people and goods	Not considered in this phase	Not considered in this phase	<ul style="list-style-type: none"><li>• Transportation congestion negatively affects existing business, industry and trade, adding significant costs to doing business and is a deterrent to new businesses considering locating</li></ul>
4.2 Heavy Industry and Trade		Potential to support area heavy industry and	Potential to support heavy industry and trade	Not considered in this phase	Not considered in this phase	

SUPPORTING DOCUMENT #5						
PRELIMINARY FACTORS, SUB-FACTORS, CRITERIA AND INDICATORS FOR EVALUATION OF AREA TRANSPORTATION SYSTEM PLANNING ALTERNATIVES AND PROVINCIAL ROADWAY ALTERNATIVES						
FACTOR / SUB-FACTOR	CRITERIA	PRELIMINARY EVALUATION INDICATORS FOR EACH PHASE				RATIONALE FOR FACTOR AND SUB-FACTOR EVALUATION
		TRANSPORTATION NEEDS ASSESSMENT	PRELIMINARY PLANNING	DETAILED PLANNING FOR PROVINCIAL ROADWAYS	PRELIMINARY DESIGN FOR PROVINCIAL ROADWAYS	
		trade by efficient and reliable goods movement	by efficient and reliable goods movement			<ul style="list-style-type: none"><li>or expanding in the Analysis Area.</li><li>Travel reliability for commercial vehicles is a concern given the impacts of construction, maintenance or collisions on the already congested transportation system.</li><li>A large proportion of recreational travel is based on longer distance auto based trips, therefore tourism and recreational travel is significantly affected by congestion on the area roadway network. Tourism is currently Ontario's fifth largest export industry and is projected to become the fourth largest in the near future. Tourism includes recreation and the cottage sector.</li><li>Agriculture is an important component of the overall economic base of the Analysis Area. Travel for agricultural equipment on local roads is severely affected by longer distance trips diverted from congested highways. Transportation of agricultural supplies and products is affected by congestion on the area road network.</li><li>PPS Policy 1.6.6.4 stipulates that when planning for corridors and rights-of-way for significant transportation facilities, consideration will be given to significant natural heritage, water, agricultural, mineral, cultural heritage and archaeological resources. The context is provided in other PPS policy statements identified below.</li><li>The Provincial Policy Statement, 2005 stipulates that prime agricultural areas shall be protected for long-term use for agriculture. Prime agricultural areas are areas where prime agricultural lands predominate. Specialty crop areas shall be given the highest priority for protection followed by Classes 1, 2 and 3 soils, in this order of priority.</li></ul>
4.3 Tourism and Recreation Industry		Potential to support area tourism and recreation industry by efficient and reliable movement of people	Potential to support tourism and recreation industry by efficient and reliable movement of people	Not considered in this phase	Not considered in this phase	
4.4 Agriculture Industry		Potential to support area agriculture industry by efficient movement of goods	Potential to support area agriculture industry by efficient movement of goods	Not considered in this phase	Not considered in this phase	
5. Transportation Factors						
5.1 Federal/Provincial/Municipal transportation planning policies/goals/objectives		Potential to support federal/provincial/municipal transportation planning policies/goals/objectives	Potential to support federal/provincial/municipal transportation planning policies/goals/objectives	Not considered in this phase.	Not considered in this phase.	<ul style="list-style-type: none"><li>The Official Plans of municipalities within the Analysis Area, and the strategic growth policies and targets embodied in the Provincial Growth Plan, suggest that population and employment growth will continue over time and will be important to future economic prosperity. In order for this economic growth to be realized, an efficient transportation system to move both people and goods within and through the Analysis Area is considered fundamental.</li><li>The effectiveness of each alternative needs to be determined.</li><li>There is a need to determine how transportation solutions address future needs in relation to existing and proposed future transportation infrastructure.</li><li>There is a need to determine how well transportation solutions operate during peak periods.</li></ul>
5.2 Efficient movement of people		Potential to support the efficient movement of people between communities and regions based on network, screenline and critical link performance measures including Level of Service (LOS) and volume to capacity (v/c)	Potential to support the efficient movement of people between communities and regions based on Level of Service (LOS) and volume to capacity (v/c) on a network, screenline and critical link basis	Potential to support the efficient movement of people between communities and regions based on Level of Service (LOS) and volume to capacity (v/c) on a network, screenline and critical link basis	Not considered in this phase.	
5.3 Efficient movement of goods		Potential to support efficient movement of goods between urban growth centres and regional intermodal facilities based on road network and Highway 7&8 corridor performance measures (LOS and travel speed)	Potential to support efficient movement of goods between urban growth centres and regional intermodal facilities based on road network and Highway 7&8 corridor performance measures (LOS and travel speed)	Potential to support efficient movement of goods between urban growth centres and regional intermodal facilities based on road network and Highway 7&8 corridor performance measures (LOS and travel speed)	Not considered in this phase.	
5.4 System reliability / redundancy		Potential to support system reliability and redundancy for travel (people and goods) between regions and communities during adverse conditions	Potential to support system reliability and redundancy for travel (people and goods) between regions and communities during adverse conditions	Potential to support system reliability and redundancy for travel (people and goods) between regions and communities during adverse conditions	Not considered in this phase	



SUPPORTING DOCUMENT #5						
PRELIMINARY FACTORS, SUB-FACTORS, CRITERIA AND INDICATORS FOR EVALUATION OF AREA TRANSPORTATION SYSTEM PLANNING ALTERNATIVES AND PROVINCIAL ROADWAY ALTERNATIVES						
FACTOR / SUB-FACTOR	CRITERIA	PRELIMINARY EVALUATION INDICATORS FOR EACH PHASE				RATIONALE FOR FACTOR AND SUB-FACTOR EVALUATION
		TRANSPORTATION NEEDS ASSESSMENT	PRELIMINARY PLANNING	DETAILED PLANNING FOR PROVINCIAL ROADWAYS	PRELIMINARY DESIGN FOR PROVINCIAL ROADWAYS	
5.5 Safety		Potential to improve traffic safety based on opportunity to reduce congestion on area road network (LOS and v/c) and reduce the frequency of intersections and entrances in the Highway 7&8 corridor	Potential to improve traffic safety based on opportunity to reduce congestion on area road network (LOS and v/c) and reduce the frequency of intersections and entrances in the Highway 7&8 corridor	Potential to improve traffic safety based on opportunity to reduce congestion on area road network (LOS and v/c) and reduce the frequency of intersections and entrances in the Highway 7&8 corridor	Potential for collisions recognizing side road intersections, presence of auxiliary lanes, number/spacing of entrances, available sight distance, storage for disabled vehicles, etc.	<ul style="list-style-type: none"><li>• Transportation agencies have developed design standards to ensure that safety objectives are reflected in all new/expanded infrastructure. These standards are not subject to modification or compromise to avoid/reduce impacts, costs, etc.</li><li>• Goods movement between economic centres and growth areas incurs out-of-way travel and delay due to congestion through the Analysis Area. Reducing travel times, out-of-way travel and improving travel time reliability would lead to lower transportation costs and benefit the local, provincial and national economy.</li><li>• There is a need to determine how well transportation solutions operate during peak periods.</li><li>• There is a need to determine emergency access and safety issues related to transportation solutions.</li><li>• There is a need to determine the flexibility of transportation solutions to address future needs beyond the forecasted planning horizon.</li><li>• Physical conditions and staging issues can affect the feasibility of implementing transportation solutions.</li><li>• There is the need identify the costs associated with possible transportation solutions. Construction costs can influence the feasibility of a given alternative</li></ul>
5.6 Modal integration, balance and efficiency		Potential to improve modal choice and increase mode split for person trips between communities, regions and major transit station areas based on travel performance indicators (LOS, v/c, travel speed) at critical screenlines and on potential to provide higher order transit service in the Highway 7&8 corridor.	Potential to improve modal choice and increase mode split for person trips between communities, regions and major transit station areas based on travel performance indicators (LOS, v/c, travel speed) at critical screenlines and on potential to provide higher order transit service in the Highway 7&8 corridor.	Potential to improve modal choice and increase mode split between communities, regions and intermodal facilities based on travel performance indicators (LOS, v/c, travel speed) at critical screenlines and for Highway 7&8 corridor.	Not considered in this phase.	
5.7 Linkages to Population and Employment Centres		Potential to improve accessibility to urban growth centres for people and goods movement based on higher order network (roads and transit) continuity and connectivity	Potential to improve accessibility to urban growth centres for people and goods movement based on higher order network continuity and connectivity	Potential to improve accessibility to urban growth centres for people and goods movement based on higher order network continuity and connectivity	Not considered in this phase.	
5.8 Recreation and Tourism Travel		Potential to support recreation and tourism travel within and to/from the Analysis Area by provision of higher order network (roads and transit) continuity and connectivity and through network performance indicators (LOS, v/c, travel speed)	Potential to support recreation and tourism travel within and to/from the Analysis Area by provision of higher order network (roads and transit) continuity and connectivity and through network performance indicators (LOS, v/c, travel speed)	Potential to support recreation and tourism travel within and to/from the Analysis Area by provision of higher order network (roads and transit) continuity and connectivity and through network performance indicators (LOS, v/c, travel speed)	Not considered in this phase.	
5.9 Accommodation for pedestrians, cyclists and snowmobiles		Potential to accommodate pedestrians, cyclists within critical travel corridors in urbanized areas and snowmobiles in recognized rural trails	Potential to accommodate pedestrians, cyclists within critical travel corridors in urbanized areas and snowmobiles in recognized rural trails	Potential to accommodate pedestrians, cyclists within critical travel corridors in urbanized areas and snowmobiles in recognized rural trails	Not considered in this phase.	
5.10 Constructability		Not considered in this phase.	Potential ease of implementation considering feasibility/difficulty of physical, property or environmental constraints	Potential ease of implementation considering feasibility/difficulty of physical, property or environmental constraints	Potential ease of implementation considering feasibility/difficulty of physical, property or environmental constraints	
5.11 Construction Cost (excludes property costs and engineering costs)		Not considered in this phase.	Not considered in this phase.	Relative road construction cost, excluding property and engineering costs	Relative road construction cost, excluding property and engineering costs	
5.12 Traffic Operations		Not considered in this phase.	Potential impact on traffic operations due to factors such as design features, private access, and transportation network connections	Potential impact on traffic operations due to factors such as design features, private access, and transportation network connections	Potential impact on traffic operations due to factors such as design features, private access, and transportation network connections	
NOTES:		Notes regarding evaluation criteria for transportation needs assessment and the preliminary planning phases: <ul style="list-style-type: none"><li>• information to support evaluation is drawn from secondary source information and preliminary field reconnaissance (the environmental information is documented in Report “F” – 1<sup>st</sup> Part)</li></ul>		Notes regarding evaluation criteria for the detailed planning and the preliminary design phases: <ul style="list-style-type: none"><li>• information to support evaluation is enhanced by field investigation work as appropriate (the environmental information is documented in Report “F” – 2<sup>nd</sup> Part)</li><li>• “Measures” for detailed planning evaluation criteria will be developed during preliminary planning</li><li>• “Measures” for preliminary design evaluation criteria will be developed during detailed planning</li></ul>		

**SUPPORTING DOCUMENT #6**

**RECORD OF CONSULTATION DURING PREPARATION  
OF THE STUDY PLAN**

**RECORD OF CONSULTATION DURING PREPARATION OF THE STUDY PLAN**

TO BE COMPLETED AS PART OF FINAL STUDY PLAN



Ministry of Transportation

# **Highway 7&8 Transportation Corridor Planning and Class EA Study**

From Greater Stratford to New Hamburg Area  
MTO Group Work Project # 13-00-00

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## Report A: Study Plan for Technical Work, Outreach and Consultation

# DRAFT

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July, 2007

[www.7and8corridorstudy.ca](http://www.7and8corridorstudy.ca)



This report is presented in draft format in order to obtain information and comments from stakeholders. Your input is requested by October 30, 2007 so the report can be finalized.

"Ce document hautement spécialisé n'est disponible qu'en anglais en vertu du règlement 411/97, qui en exempte l'application de la Loi sur les services en français. Pour de l'aide en français, veuillez communiquer avec le ministère des Transports, Bureau des services en français au: 905-704-2045 ou 905-704-2046."

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## **SUPPORTING DOCUMENTATION**

- Supporting Document #1: List of Abbreviations and Glossary of Terms
- Supporting Document #2: Highway 7&8 Transportation Corridor Planning and Class EA Study, Summary of Reports
- Supporting Document #3: Detailed Description of Alternatives
- Supporting Document #4: Federal/Provincial EA Co-ordination
- Supporting Document #5: Preliminary Factors, Sub-Factors, Criteria and Indicators for Evaluation of Area Transportation System Alternatives and Provincial Roadway Alternatives
- Supporting Document #6: Record of Consultation During Preparation of the Study Plan (to be completed before finalizing the Study Plan)

## LIST OF EXHIBITS

- Exhibit 1.1: Map of Analysis Area
- Exhibit 1.2: Summary of Study Objectives
- Exhibit 1.3: Preliminary Statement of Transportation Problems and Opportunities
- Exhibit 2.1: Overview of Planning and Class EA Study Process (Key Tasks, Reports, PICs and Information Presented, Preliminary Schedule)
- Exhibit 3.1: Assumptions of EA Proponency and Completion of Work
- Exhibit 5.1: Application of GGH Growth Plan and Provincial Policy Statement Policy Framework
- Exhibit 5.2: 'Area Transportation System' Context
- Exhibit 5.3: Comparison of Ideal Highway Geometric Conditions and Those on Highway 7&8
- Exhibit 7.1: Summary of Application Of Evaluation Methodologies
- Exhibit 7.2: Preliminary Identification Of Factors, Sub-factors And Criteria To Be Considered In The Generation, Assessment And Evaluation Of Alternatives
- Exhibit 7.3: Process Overview for the Development, Assessment and Evaluation of the Area Transportation System Alternatives (Phase 2 of Study) and Preliminary Planning Alternatives (Phase 3 of Study)
- Exhibit 7.4: Principles for Generating Preliminary and Detailed Planning Alternatives
- Exhibit 7.4: Process Overview for the Development, Assessment and Evaluation of Detailed Planning Alternatives for Provincial Roadway (Phase 4 of Study)
- Exhibit 9.1: Categories of Stakeholders
- Exhibit 9.2: Role of Stakeholders
- Exhibit 10.1: Transportation Environmental Study Report Contents

## **1 INTRODUCTION**

### **1.1 Introduction To The Highway 7&8 Transportation Corridor Planning And Class EA Study**

The Ministry of Transportation (MTO) has initiated a Highway 7&8 Transportation Corridor Planning and Class Environmental Assessment (Class EA) Study, from Greater Stratford to the New Hamburg area. The study will:

- develop a plan that addresses:
  - capacity, operation and safety needs along the 2-lane section of Highway 7&8 between Stratford and the New Hamburg area and through the urban centres (Stratford, Shakespeare and New Hamburg) along Highway 7&8 for the movement of people and goods; and
  - linkage needs between the analysis area to transportation corridors serving other regions in the province.
- prepare a preliminary design for the provincial roadway components of that plan; and
- be documented in a Transportation Environmental Study Report for public review at study completion.

This study will also:

- Review and build on the MTO Highway 7&8 Study Design – Greater Stratford to New Hamburg Area, December 2005;
- Address the transportation policies and directions of the ‘Growth Plan for the Greater Golden Horseshoe’ (recognizing that a portion of the analysis area for this project lies within the GGH);
- Recognize several municipal transportation initiatives in the area;
- Recognize other relevant transportation corridor studies being undertaken by MTO; and
- Be carried out as a Group ‘A’ project, in accordance with the Class Environmental Assessment for Provincial Transportation Facilities.

Access to the above documents can be obtained through the project website at [www.7and8corridorstudy.ca](http://www.7and8corridorstudy.ca).

A major component of the study will be an outreach and consultation program structured around six key points of decision-making, each of which will be supported by:

- the release of a newsletter;
- the release of draft reports for review and comment;
- a round of Public Information Centres (PICs);
- posting of information on the study web site; and
- newspaper notices announcing the above.

At the completion of the study, the filing of a Transportation Environmental Study Report (TESR) will be announced through newspaper notices. Decisions on funding and timing

of detail design and construction are based upon environmental clearance of the TESR, since it determines the type of transportation facilities and their location.

This Study Plan is designed to provide a comprehensive framework to guide the study. For an overview of this framework, readers are referred to the following exhibits in the Study Plan:

- Exhibit 1.1: Map of Analysis Area
- Exhibit 1.2: Summary of Study Objectives
- Exhibit 1.3: Preliminary Statement of Transportation Problems and Opportunities
- Exhibit 2.1: Overview of Planning and Class EA Study Process (Key Tasks, Reports, PICs and Information Presented, Preliminary Schedule)
- Exhibit 3.1: Assumptions of EA Proponency and Completion of Work
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- Exhibit 7.4: Principles for Generating Preliminary and Detailed Planning Alternatives
- Exhibit 7.5: Process Overview for the Development, Assessment and Evaluation of Detailed Planning Alternatives for Provincial Roadway (Phase 4 of Study)
- Exhibit 9.1: Categories of Stakeholders
- Exhibit 9.2: Summary of Role of Stakeholders
- Exhibit 10.1: Transportation Environmental Study Report Contents

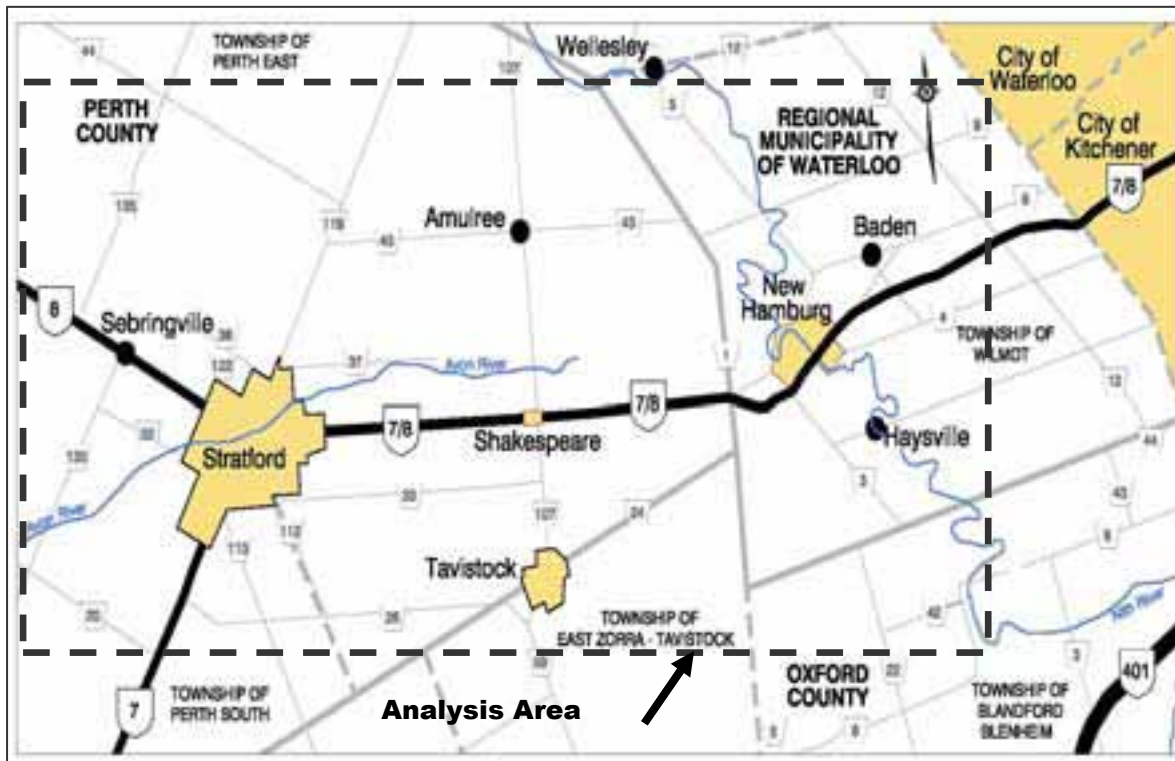
These exhibits may be presented at the first round of Public Information Centres.

For orientation and reference, a map of the Analysis Area follows. The Analysis Area has been established to identify transportation problems and opportunities associated with Highway 7&8 from Greater Stratford to the New Hamburg area plus the broader 'Area Transportation System'. The Analysis Area is not intended to represent a Study Area for the planning alternatives to be generated during the course of the study. The Study Area will be generated by the MTO Project Team through consultation with affected stakeholders as described in Sections 2.2 and 7.5.1.5 of this Study Plan.

## Exhibit 1.1

### HIGHWAY 7&8 TRANSPORTATION CORRIDOR PLANNING & CLASS EA STUDY

#### MAP OF ANALYSIS AREA



## 1.2 Study Objectives

The objectives of the Highway 7&8 Transportation Corridor Planning and Class EA Study are, in part, based upon the policies of the final Growth Plan for the Greater Golden Horseshoe, released by the province on June 16, 2006. The study objectives are summarized in Exhibit 1.2 and then discussed below:

<b>Exhibit 1.2</b> <b>Highway 7&amp;8 Transportation Corridor Planning and Class EA Study</b> <b>Summary of Study Objectives</b>	
1.	To identify and assess the factors that are driving 'Area Transportation System' needs
2.	To apply those driving factors in preparing a Transportation Development Strategy to address long-term multi-year needs for the movement of people and goods
3.	To undertake the planning and preliminary design of the provincial roadway components (provincial highways and provincial transitways) of those strategies
4.	To conduct the planning and preliminary design of provincial roadways with an inherent approach of avoiding or minimizing overall environmental impacts
5.	To identify highway access management measures for growth management and highway protection
6.	To engage public and stakeholders early in the study process and continue to engage them throughout the study process

The study objectives are the following:

- 1. To identify and assess the factors that are driving 'Area Transportation System' needs:**
  - to identify and assess factors that are driving 'Area Transportation System' needs, including area travel characteristics and the state of the existing provincial highway infrastructure (physical and operational); land use, area economics, employment, population, technology, environmental, socio-economic and cultural factors; and related programs, policy and legislation (for a definition and description of 'Area Transportation System', see Section 5.2.1 of this Study Plan);
- 2. To apply those driving factors in preparing a Transportation Development Strategy to address long-term multi-year needs for the movement of people and goods:**

- to apply those driving factors in preparing a Transportation Development Strategy to address long-term multi-year needs for the movement of people and goods within the context of a balanced and integrated 'Area Transportation System', which:
  - a) provides adequate 'Area Transportation System' capacity in order to serve current and projected needs of the travelling public, stimulate economic growth, and create jobs;
  - b) ensures that the corridors necessary for the various travel modes of the 'Area Transportation System' are identified and protected, in order to maintain and improve transportation linkages;
  - c) is co-ordinated and consistent with land-use related growth objectives and growth forecasts, in order to reflect the impact of designation of areas as urban growth centres, major transit station areas, settlement areas, built-up areas, intensification areas and corridors, non-urban areas, greenfield areas and greenbelt; and
  - d) has the following attributes:
    - (i) considers both the connectivity of modes, and the separation of modes within corridors, in order to provide travel choice for the various modes of the 'Area Transportation System' and thereby reduce reliance on any single mode;
    - (ii) puts the transit component of the 'Area Transportation System' (GO Transit, provincial transitways, other inter-city transit) as the first investment priority in order to support growth in a compact and efficient form;
    - (iii) puts goods movement as the first investment priority in the provincial highway component of the 'Area Transportation System', for service to cities, other major centres of population and other regions of the province, priority truck routes leading into those communities, and major regional goods movement facilities such as intermodal facilities.

**3. To undertake the planning and design of the provincial roadway components (provincial highways and provincial transitways) of those strategies:**

- to pursue the provincial roadway components (provincial highways and provincial transitways) of the Transportation Development Strategy by undertaking their planning, design and protection as modern, safe, efficient and effective facilities.

**4. To conduct the planning and design of provincial roadways with an inherent approach of avoiding or minimizing overall environmental impacts:**

- to conduct the planning and design of provincial roadways with an inherent approach of avoiding or minimizing overall environmental impacts (ie To avoid

natural, socio-economic and cultural environmental impacts) through consideration of alternatives and “mitigation measures”;

**5. To identify highway access management measures for growth management and highway protection:**

- to identify highway access management measures in order to:
  - discourage highway-related development in areas not designated for growth;
  - protect the purpose and level of service of ‘Area Transportation System’ provincial highways; and
  - protect the benefits of any new provincial highway capacity; and

**6. To engage public and stakeholders early in the study process and continue to engage them throughout the study process:**

- to engage public and stakeholders early in the study process and continue to engage them, in order to provide meaningful and regular outreach and consultation that is integrated with and supports the study work and decision-making process.

**1.3 Preliminary Statement of Transportation Problems and Opportunities**

Based upon previous MTO studies, and the final Growth Plan for the Greater Golden Horseshoe (released by the province on June 16, 2006), a preliminary statement of problems and opportunities for the Highway 7&8 Transportation Corridor Planning and Class EA Study is provided in Exhibit 1.3 below:

<b>Exhibit 1.3</b> <b>Highway 7&amp;8 Transportation Corridor Planning and Class EA Study</b> <b>Preliminary Statement of Transportation Problems and Opportunities</b>	
1.	There are transportation capacity concerns for the movement of both people and goods along the 2-lane section of Highway 7&8 between Stratford and the New Hamburg area and on Highway 7&8 through the urban centres (Stratford, Shakespeare and New Hamburg).
2.	Provincial / inter-regional traffic through the urban centres (Stratford and Shakespeare) along Highway 7&8 interferes with their “downtown / historic crossroads” function.
3.	The connection of the analysis area to transportation corridors serving other regions in the province may be inadequate for long-term transportation and economic development needs.
4.	Geometric and traffic safety characteristics along Highway 7&8 should be addressed with respect to long-term traffic needs.



<b>Exhibit 1.3</b> <b>Highway 7&amp;8 Transportation Corridor Planning and Class EA Study</b> <b>Preliminary Statement of Transportation Problems and Opportunities</b>	
5.	There is currently no comprehensive highway access management plan for Highway 7&8 from Greater Stratford to New Hamburg to protect highway needs and to address the GGH policy of discouraging inappropriate highway-related growth.
6.	The GGH Growth Plan policy of co-ordinating transportation system planning and land use planning must be addressed.

Highway 7&8 transportation corridor problems and opportunities are discussed in further detail in Section 5.2.4 of this Study Plan.

#### **1.4 Purpose Of This Study Plan and its Relevance to the Overall Planning & EA Process**

This Study Plan is the first deliverable of the planning and Class EA Study. The Study Plan establishes the framework and commitments for conducting the planning and Class EA Study, particularly in the areas of:

- study purpose and objectives;
- study process;
- study reports;
- outreach and consultation program;
- study schedule; and
- processes to generate and evaluate alternatives.

The Study Plan builds on the principles and processes for transportation engineering, environmental protection, evaluation, consultation and documentation that are specified in the 'Class EA for Provincial Transportation Facilities'. Further details of the Class EA process and the rationale for the framework of the Study Plan are provided in Sections 2.1 and 4.0.

In addition, the Study Plan provides the role of a scoping document under the *Canadian Environmental Assessment Act* (CEAA), to:

- confirm the "scope of project" that is being assessed (project description);
- establish the scope of factors to be considered in the EA process;
- describe the methodology to assess the environmental effects of the project, including the specific methodologies for assessing cumulative effects and for determining significance; and
- provide the basis for requesting federal authorities to "trigger" CEAA as early as is practicable in the planning process before "irrevocable decisions" are made.

## **2 OUTLINE OF PLANNING AND CLASS EA STUDY PROCESS**

### **2.1 Overview of the Class EA Process and the Class Environmental Assessment For Provincial Transportation Facilities**

The *Environmental Assessment Act* (EA Act) provides for the preparation of a Class Environmental Assessment (Class EA) for submission to the Minister of the Environment for review and a decision by the provincial cabinet regarding approval through order-in-council. A Class EA is an approved planning document that defines groups of projects and activities and the environmental assessment (EA) processes which the proponent commits to following for each of these undertakings.

The Ontario Ministry of Transportation developed the 'Class Environmental Assessment for Provincial Transportation Facilities', which was approved by Order in Council 1653/99 on October 6, 1999, as amended on July 14, 2000. It provides, in part, the following:

- classification of projects and activities;
- study stages and phases;
- transportation engineering and environmental protection principles;
- consultation principles and processes;
- documentation and "bump-up" principles and processes; and
- environmental clearance process.

This Highway 7&8 Transportation Corridor Planning and Class EA Study will comply with the Class EA process for 'Group A' projects (as defined under the Class Environmental Assessment for Provincial Transportation Facilities) for MTO undertakings in which highway widening, a major realignment and bypass of sections of existing highway, a new provincial highway (provided it is not a new 400-series highway), a new provincial transitway, or combinations of the above are possible outcomes.

By following the Class EA process, the Highway 7&8 Transportation Corridor Planning and Class EA Study does not require formal review and approval under the *Ontario Environmental Assessment Act*. The approved process itself is extensive, with significant consultation and outreach to agencies, stakeholders and the public.

If, at the completion of the Class EA study process, a stakeholder is not satisfied with MTO attempts to reach a resolution regarding concerns brought forward, that stakeholder may challenge the study by making a request to the Minister of the Environment to determine if a Part 2 order or "bump-up" is required. If the Minister agrees that a bump-up is required, the project would be re-designated to an individual environmental assessment, and would be subject to the formal review and approval processes noted above.

If, during the course of the study, it is determined that a new 400-series highway should be pursued, the Highway 7&8 Transportation Corridor Planning and Class EA Study would no longer be eligible to follow the Class EA process. Under such circumstances, the study would have to be converted to an “Individual EA” study, with the extended timeframes associated with formal review and approvals (which include the possibility of public hearings) required by the Ontario *Environmental Assessment Act*, as follows:

- the Study Plan would be converted to an Environmental Assessment Terms of Reference, and would be submitted to the Minister of the Environment for review and a decision by the Minister regarding approval; and
- the Transportation Environmental Study Report would be replaced by an Environmental Assessment Report, and would be submitted to the Minister of the Environment for review and a decision by the provincial cabinet regarding approval through order-in-council.

Because this Study Plan has been structured to be consistent with the requirements of a Terms of Reference, it provides the basis for an efficient transition to an individual Environmental Assessment in the event that the Study identifies a new 400-series highway as the preferred solution.

The overview of the planning and EA process for the Highway 7&8 Transportation Corridor Study that is provided in Section 2.2 below builds on the requirements provided in the Class Environmental Assessment for Provincial Transportation Facilities. A more detailed summary of the reports that will be produced for this study (both working papers and milestone reports) is provided in Supporting Document #2 for this Study Plan.

Environmental clearance of the Transportation Environmental Study Report (TESR) marks completion of the Highway 7&8 Transportation Corridor Planning and Class EA Study. If the TESR is cleared, the next stage of the project under the terms of the Class Environmental Assessment for Provincial Transportation Facilities, is detail design for provincial roadways (provincial highways and/or transitways). Detail design will follow the design and consultation processes outlined in the Class Environmental Assessment for Provincial Transportation Facilities, and will be documented in a Design and Construction Report (DCR).

## **2.2 Overview of the Planning and Class EA Study Process for The Highway 7&8 Transportation Corridor Study (Key Tasks, Reports, PICs and Information Presented, and Preliminary Schedule)**

Exhibit 2.1 below provides an overview of the planning and Class EA study process that will be used for the Highway 7&8 Transportation Corridor Study.

<b>Exhibit 2.1</b> <b>Highway 7&amp;8 Transportation Corridor Planning and Class EA Study</b> <b>Overview of the Study Process</b>				
STUDY PHASE	OBJECTIVES AND KEY TASKS	REPORTS	PUBLIC INFORMATION CENTRES (PICs) + INFORMATION PRESENTED	PRELIMINARY SCHEDULE
<b>1. STUDY PLAN</b>	<ul style="list-style-type: none"> <li>Establish framework to guide the study work, including: <ul style="list-style-type: none"> <li>study purpose and objectives</li> <li>overview of study process</li> <li>overview of study reports</li> <li>overview of outreach and consultation</li> <li>study schedule</li> <li>overview of processes, factors &amp; criteria to generate, assess &amp; evaluate alternatives</li> </ul> </li> </ul>	Report "A": Study Plan for Technical Work, Outreach and Consultation	PIC #1: <ul style="list-style-type: none"> <li>Study Newsletter #1</li> <li>Recently completed work: <ul style="list-style-type: none"> <li>drafts of Reports "A", "B" and 1<sup>st</sup> part of "F"</li> </ul> </li> <li>Proposed approach to upcoming work: <ul style="list-style-type: none"> <li>process to define 'Area Transportation System' problems and opportunities</li> <li>process and criteria for evaluating and selecting 'Area Transportation System' alternatives</li> <li>process, factors, and criteria for generating, assessing, and evaluating preliminary planning alternatives</li> </ul> </li> </ul>	April 2007 to August 2007  (PIC #1 July/August, 2007)
<b>EA STAGE 1: ALTERNATIVES TO THE UNDERTAKING - TRANSPORTATION NEEDS ASSESSMENT</b>				
<b>2. AREA TRANSPORTATION SYSTEM PLANNING</b>	<ul style="list-style-type: none"> <li>Overview of Transportation, Land Use, Economic and Environmental Conditions within the Analysis Area <ul style="list-style-type: none"> <li>description and assessment of land use and economic conditions</li> <li>description and assessment of existing transportation conditions</li> <li>preliminary assessment of problems and opportunities based on the above</li> <li>overview of environmental conditions and constraints within analysis area (based upon secondary source information)</li> </ul> </li> </ul>	Report "B": Working Paper – Overview of Transportation, Land Use and Economic Conditions within the Analysis Area  Report "F" – 1 <sup>st</sup> Part: Working Paper –Environmental Conditions and Constraints		
	<ul style="list-style-type: none"> <li>Identification of Area Transportation System Problems and Opportunities: <ul style="list-style-type: none"> <li>Establish travel demand forecasting approach and methodology</li> <li>Forecast future 'Area Transportation System' travel characteristics and patterns</li> <li>Detailed description and assessment of current and future 'Area Transportation System' problems and opportunities</li> </ul> </li> </ul>	Report "C": Working Paper – 'Area Transportation System' Problems and Opportunities	PIC#2: <ul style="list-style-type: none"> <li>Study Newsletter #2</li> <li>Recently Completed work: <ul style="list-style-type: none"> <li>drafts of Reports "C", "D", &amp; "E"</li> </ul> </li> <li>Proposed approach to upcoming work: <ul style="list-style-type: none"> <li>process and criteria for generating provincial roadway detailed planning alternatives</li> </ul> </li> </ul>	August 2007 to Spring 2008  (PIC #2 in Spring 2008)

**Exhibit 2.1**  
**Highway 7&8 Transportation Corridor Planning and Class EA Study**  
**Overview of the Study Process**

STUDY PHASE	OBJECTIVES AND KEY TASKS	REPORTS	PUBLIC INFORMATION CENTRES (PICs) + INFORMATION PRESENTED	PRELIMINARY SCHEDULE
	<ul style="list-style-type: none"> <li>• Identify 'Area Transportation System' alternatives:               <ul style="list-style-type: none"> <li>○ Do Nothing</li> <li>○ Transportation Demand Management (TDM)</li> <li>○ Transportation System Management (TSM)</li> <li>○ Local Transit*</li> <li>○ Inter-regional transit and passenger rail*</li> <li>○ Air Services*</li> <li>○ Marine Services*</li> <li>○ Freight Rail*</li> <li>○ Municipal Roads*</li> <li>○ Provincial Highways/Transitways*</li> </ul>               (* new or improved operations and/or infrastructure)             </li> <li>• Determine degree to which individual 'Area Transportation System' alternatives address problems and opportunities</li> <li>• Select and define elements of area transportation system alternatives and group them into combinations:               <ul style="list-style-type: none"> <li>○ Do nothing</li> <li>○ Combination #1: Optimize Existing Network</li> <li>○ Combination #2: New / Expanded Non-Road Infrastructure + Elements of Combination #1</li> <li>○ Combination #3: Widen/Improve Roads + Elements of Combination #2</li> <li>○ Combination #4: New Municipal Roads and/or Provincial Highways/Transitways + Elements of Combination #3</li> </ul> </li> <li>• Determine the degree to which combination alternatives address the problems and opportunities and select the preferred combination(s)</li> <li>• Select the alternatives that will proceed to Preliminary Planning</li> </ul>	Report "D": Working Paper – Area Transportation System Alternatives		

<b>Exhibit 2.1</b> <b>Highway 7&amp;8 Transportation Corridor Planning and Class EA Study</b> <b>Overview of the Study Process</b>				
STUDY PHASE	OBJECTIVES AND KEY TASKS	REPORTS	PUBLIC INFORMATION CENTRES (PICs) + INFORMATION PRESENTED	PRELIMINARY SCHEDULE
<b>3. PRELIMINARY PLANNING</b> (plans at 1:20,000 scale)	<ul style="list-style-type: none"> <li>• Generate the detailed elements of the preliminary planning alternatives (as applicable) based on transportation, natural, land use / social, economic and cultural factors:               <ul style="list-style-type: none"> <li>○ new/expanded services</li> <li>○ general areas of geometrical improvements and widening to existing facilities</li> <li>○ new corridors</li> <li>○ environmental protection for the above (by minimizing intrusion into areas of environmental significance as identified through secondary source information</li> <li>○ conceptual areas of limitations to highway access</li> </ul> </li> <li>• Comparative evaluation of the relative advantages and disadvantages of preliminary planning alternatives</li> <li>• Select alternatives for incorporation into transportation development strategy (including preliminary study area(s))</li> <li>• Decision if study is to continue through Phases 4-6 (<i>if provincial roadway alternatives are selected</i>)</li> </ul>	Report "E": Milestone Report – Highway 7&8 Transportation Corridor Needs Assessment		

**Exhibit 2.1**  
**Highway 7&8 Transportation Corridor Planning and Class EA Study**  
**Overview of the Study Process**

STUDY PHASE	OBJECTIVES AND KEY TASKS	REPORTS	PUBLIC INFORMATION CENTRES (PICs) + INFORMATION PRESENTED	PRELIMINARY SCHEDULE
<b>EA STAGE 2: ALTERNATIVE METHODS FOR CARRYING OUT THE UNDERTAKING</b>				
<b>4. DETAILED PLANNING FOR PROVINCIAL ROADWAYS</b>  (plans at 1:10,000 scale)	<ul style="list-style-type: none"> <li>Identify environmental conditions and constraints within the detailed planning study area (as identified through field investigations to augment secondary source information)</li> <li>Establish final study area(s) for provincial roadways for the preliminary planning alternatives carried forward from Phase 3</li> <li>Generate, specific location / type / character and template "footprint" for the following categories of provincial roadway detailed planning alternatives (as applicable): <ul style="list-style-type: none"> <li>new provincial transitway route location &amp; technology</li> <li>new provincial highway route location &amp; highway type</li> <li>specific location and type of geometrical improvements to existing highways</li> <li>specific location, extent and direction of widening to existing highways</li> </ul> </li> <li>Generate specialty engineering alternatives (bridge, drainage &amp; hydrology, foundation, pavement &amp; road base, traffic control &amp; electrical infrastructure) for the above</li> <li>For highway alternatives, establish specific nature &amp; location of limitations to highway access</li> <li>Undertake environmental impact assessment for the above (by striving to avoid or prevent major "footprint"-based environmental impacts to the area and its features, including fisheries and aquatic ecosystems, terrestrial ecosystems, groundwater, land use factors, contaminated property, built heritage &amp; cultural landscapes, archaeology, landscape composition, surface water, and designated areas; and by striving to avoid intrusion into noise-sensitive areas)</li> </ul>	Report "F" - 2 <sup>nd</sup> Part: Working Paper - Environmental Conditions and Constraints  Report "G": Working Paper - Generation of Detailed Planning Alternatives for Provincial Roadways	PIC#3: <ul style="list-style-type: none"> <li>Study Newsletter #3</li> <li>Recently completed work: <ul style="list-style-type: none"> <li>draft of Reports "G" &amp; 2<sup>nd</sup> part of "F"</li> </ul> </li> <li>Proposed approach to upcoming work: <ul style="list-style-type: none"> <li>process and criteria for evaluating &amp; selecting provincial roadway detailed planning alternatives</li> </ul> </li> </ul>	Spring 2008 to Fall 2008  (PIC #3 in Fall 2008)
	<ul style="list-style-type: none"> <li>Evaluate and select specific location / type / character and template "footprint" of the provincial roadway detailed planning alternatives</li> </ul>	Report "H": Milestone Report - Selection of Detailed Planning Alternatives for Provincial Roadways	PIC#4: <ul style="list-style-type: none"> <li>Study Newsletter #4</li> <li>Recently completed work: <ul style="list-style-type: none"> <li>draft of Report "H"</li> </ul> </li> <li>Proposed approach to upcoming work: <ul style="list-style-type: none"> <li>process and criteria for generating provincial roadway preliminary design alternatives</li> </ul> </li> </ul>	Fall 2008 to Fall 2009  (PIC #4 in Spring 2008)

**Exhibit 2.1**  
**Highway 7&8 Transportation Corridor Planning and Class EA Study**  
**Overview of the Study Process**

STUDY PHASE	OBJECTIVES AND KEY TASKS	REPORTS	PUBLIC INFORMATION CENTRES (PICs) + INFORMATION PRESENTED	PRELIMINARY SCHEDULE
<b>5. PRELIMINARY DESIGN FOR PROVINCIAL ROADWAYS</b>  (plans at 1:2,000 scale)	<ul style="list-style-type: none"> <li>For the detailed planning alternatives carried forward from Phase 4, generate provincial roadway alternatives for the following categories of preliminary design (as applicable): <ul style="list-style-type: none"> <li>calculated vertical &amp; horizontal alignment and cross-section</li> <li>highway interchange &amp; intersection preliminary design</li> <li>transitway station preliminary design</li> <li>location/design of private entrances to highway</li> </ul> </li> <li>Generate specialty engineering alternatives for the above (bridge, drainage &amp; hydrology, foundation, pavement &amp; road base, traffic control &amp; electrical infrastructure)</li> <li>For the above, develop environmental protection for the area and its features (as identified in Phase 4), including environmental control/mitigation, compensation and/or enhancement to address "footprint" impacts, interference impacts, traffic access modification impacts to property and neighbourhood/commercial areas, timing impacts; and by addressing effects of malfunctions or accidents, cumulative effects from the project in combination with other projects</li> <li>Identify right-of-way and property acquisition requirements</li> <li>Identify utility requirements (relocation etc)</li> <li>Develop preliminary staging of implementation</li> </ul>	Report "I": Working Paper – Generation of Preliminary Design Alternatives for Provincial Roadways	PIC#5: <ul style="list-style-type: none"> <li>Study Newsletter #5</li> <li>Recently completed work: <ul style="list-style-type: none"> <li>draft of Report "I"</li> </ul> </li> <li>Proposed approach to upcoming work: <ul style="list-style-type: none"> <li>process and criteria for evaluating &amp; selecting provincial roadway preliminary design alternatives</li> <li>process and criteria for evaluating and selecting provincial highway access management alternatives</li> </ul> </li> </ul>	Spring 2009 to Fall 2009  (PIC #5 in Fall 2009)
	<ul style="list-style-type: none"> <li>Evaluate and select provincial roadway preliminary design alternatives, and develop final access management plan</li> </ul>	Report "J": Milestone Report – Selection of Preliminary Design Alternatives for Provincial Roadways	PIC#6: <ul style="list-style-type: none"> <li>Study Newsletter #6</li> <li>Recently Completed Work <ul style="list-style-type: none"> <li>drafts of Reports "J" and "K"</li> </ul> </li> </ul>	Fall 2009 to Winter 2010  (PIC #6 in Winter 2010)
<b>6. TRANSPORTATION ENVIRONMENTAL STUDY REPORT</b>	<ul style="list-style-type: none"> <li>Filing of report, formal public review, and environmental "clearance"</li> </ul>	Report "K": Transportation Environmental Study Report (documentations overall study)	NO PIC <ul style="list-style-type: none"> <li>Study Newsletter #7</li> </ul>	TESR filed in Spring 2010
<b>PHASE 7: DETAIL DESIGN (documented in a Design and Construction Report) - NOT PART OF THIS STUDY</b>				



## **2.3 Federal/Provincial EA Co-ordination**

The Highway 7&8 Transportation Corridor Planning and EA Study is subject to the requirements of the *Ontario Environmental Assessment Act*. The requirements of the *Canadian Environmental Assessment Act* (CEAA) may also apply. Both governments have agreed to coordinate their respective EA processes as outlined in the Canada-Ontario Agreement on EA Cooperation, November 2004 (Harmonization Agreement).

The federal/provincial co-ordination process outlined in Supporting Document #4 of this Study Plan will guide the study. This approach is designed to address the information requirements of both federal and provincial environmental assessment Acts, in accordance with the harmonization agreement.

It is recognized by both the Canadian Environmental Assessment Agency (on behalf of the federal authorities) and MTO that ongoing dialogue on the information requirements should continue as the project progresses. As such, it may be necessary to provide additional or more detailed information as the EA process proceeds. The intent is to produce a single body of documentation on environmental effects to meet all of the information needs of both the federal and provincial governments. To the extent practical, federal/provincial information requirements regarding potential factors to be assessed in the context of this study have been integrated. General information requirements under CEAA can be found in Supporting Document #4 of this Study Plan.

## **2.4 Overview of Principles for Conducting the Study**

The Highway 7&8 Transportation Corridor Planning and Class EA Study will be conducted under the following areas of study principles:

- transportation engineering principles;
- environmental protection principles;
- evaluation principles; and
- stakeholder outreach, consultation and documentation principles.

These principles, which build on those specified in the Class Environmental Assessment for Provincial Transportation Facilities, are outlined in the subsections below.

### **2.4.1 Transportation Engineering Principles**

The transportation engineering principles that will be applied to the alternatives examined in the Highway 7&8 Transportation Corridor Planning and Class EA Study are based on the 'Class Environmental Assessment for Provincial Transportation Facilities', and include the following:

- a) provide for the efficient movement of people and goods;

- b) meet the needs of the travelling public as a whole, by maximizing opportunities for mobility;
- c) address the identified 'Area Transportation System' problems and opportunities, and maximize the opportunity to satisfy existing and future provincial travel demand;
- d) ensure compatibility, connectivity and consistency with the existing and future provincial and municipal transportation system;
- e) improve the level of service, safety and operation for the provincial transportation system users;
- f) ensure that sound engineering and scientific principles and judgement are applied to the best available data in the analysis, assessment and evaluation of transportation engineering problems, opportunities and solutions in order to meet or exceed current provincial design standards and practices;
- g) maximize opportunities to make the facility "more safe";
- h) avoid directing large volumes of long-distance provincial traffic through settlement areas;
- i) ensure the technical feasibility of planned construction, operation and maintenance;
- j) minimize property requirements and impacts on adjacent properties;
- k) use highway access management principles in order to preserve and protect the functional integrity of the provincial transportation system; and
- l) co-ordinate with municipal transportation studies and with other MTO transportation studies.

#### **2.4.2 Environmental Protection Principles**

The environmental protection principles that will be applied to the alternatives examined in the Highway 7&8 Transportation Corridor Planning and Class EA Study are based on the 'Class Environmental Assessment for Provincial Transportation Facilities', and include the following:

- a) conduct the study with an inherent approach of avoiding or minimizing overall environmental impacts through consideration of alternatives, with the objective of avoiding significant environmental areas;

- b) conduct the study to address the content of the following:
  - the Ministry of Transportation 'Environmental Protection Requirements for Transportation Planning and Highway Design, Construction, Operation and Maintenance'; and
  - the Ministry of Transportation 'Environmental Reference for Highway Design';
- c) meet the requirements of federal and provincial environmental legislation;
- d) meet the intent of government-approved policy and inter-ministerial protocols that relate to environmental protection;
- e) balance environmental protection considerations with transportation engineering considerations during each stage of the study process, recognizing that safety and effectiveness of the transportation system is fundamental to such decisions;
- f) recognize that it is seldom possible to satisfy all interests when making the tradeoffs necessary in the EA process, and that no single environmental factor is "paramount";
- g) identify existing environmental conditions and potential impacts relevant to the study, recognizing the following general categories of impacts at the appropriate study phase:
  - footprint impacts (to the area and its features)
  - interference impacts (to the area and its features)
  - traffic access modification impacts (to property, neighbourhoods, commercial areas)
  - emissions impacts (to air, water, soil and utilization of same)
  - ecological impacts
  - timing impacts (relative to season, week, day, hour, duration of the impacts above)
  - effects of malfunctions or accidents that may occur in connection with the project
  - cumulative environmental effects that are likely to result from the project in combination with other projects or activities;
- h) balance the approaches to environmental protection, recognizing that the general order of decreasing preference is as follows:
  - avoidance/prevention
  - control / mitigation (reducing the severity of environmental impacts)
  - compensation (provision of "equivalent" or countervailing environmental features)
  - enhancement (improvement over previous environmental conditions);
- i) provide mitigation effort in proportion to environmental significance and ability to reasonably mitigate with environmental mitigation measures that are technically and economically feasible;
- j) recognize that environmental mitigation measures themselves may have impacts to be considered;

- k) address the Ministry of Transportation's 'Statement of Environmental Values' (for access to this document, please see the study web site); and
- l) consider the Provincial Policy Statement related to land use planning and development issued under Section 3 of the Planning Act (for access to this document, please see the study web site).

### **2.4.3 Evaluation Principles**

The evaluation principles that will be applied to the alternatives examined in the Highway 7&8 Transportation Corridor Planning and Class EA Study are based on the 'Class Environmental Assessment for Provincial Transportation Facilities', and include the following:

- a) conduct the study with an underlying comparative evaluation process which starts with a broad perspective, and narrows to the more focussed, on a phased and iterative basis, as the study proceeds:
  - phasing of evaluation is the following:
    - evaluate and select 'Area Transportation System' alternatives;
    - evaluate and select preliminary planning alternatives;
    - evaluate and select provincial roadway detailed planning alternatives;
    - evaluate and select provincial roadway preliminary design and highway access management alternatives;
  - based on an overview representation evaluation process as provided in the Study Plan, the process will be reviewed and confirmed at each phase of evaluation to:
    - present technical information which is the subject of the evaluation process
    - present and obtain comment from external stakeholders on the proposed definition and refinement of the process to be applied at that phase of evaluation
    - present and obtain comment from external stakeholders on the results of the evaluation process;
- b) multiple alternatives to be considered;
- c) evaluation process to be comprehensive, traceable and replicable, and to be understandable by those who may be affected by the decisions;
- d) evaluation process at some phases may include a screening / short-listing component to improve efficiency and clarity;
- e) evaluation criteria to be comprehensive, fundamental, relevant, independent, measurable, well-defined;

- f) relevant factors, including natural environment, land use / socio-economic environment, cultural environment, area economy, and transportation to be given due consideration (for details, see Section 7.3 of this Study Plan); and
- g) appropriate areas of emphasis to recognized study area features and character, with evaluation factors/criteria to be refined if appropriate to reflect different sections of the study area and different stages of the study process.

#### **2.4.4 Stakeholder Outreach And Consultation Principles**

Outreach and consultation is a major component of the Highway 7&8 Transportation Corridor Planning and Class EA Study. The principles for outreach and consultation are the following:

- a) Comprehensive outreach and consultation plan:
  - is systematic, innovative and flexible;
  - is open, inclusive, responsive, transparent, traceable and defensible;
  - provides early and proactive explanation of “process” and policy requirements and how/why they are effectively/efficiently addressed by the Study Plan for Technical Work, Outreach and Consultation;
  - is structured around and focussed on points of key decision-making (for details see Section 2.2 of this Study Plan);
- b) Study work and decision-making process is integrated with and built upon the direct involvement and contributions of stakeholders:
  - structured decision-making process established through this Study Plan at the beginning of the study process
  - meaningful consultation with stakeholders at points of focused outreach and consultation before significant decisions are made. At each round of public information centres the following information will be presented:
    - recently completed study work (in draft – eg. preliminary findings and decisions)
    - the proposed approach to undertake upcoming study work (eg. generation and/or evaluation of alternatives)
  - consultation scheduled and implemented in a manner that permits stakeholders to make informed contributions to study decisions;
- c) Stakeholder examination/comment is encouraged:
  - notify stakeholders of intention to carry out the study and in advance of key study milestones (for details see Section 9.1 of this Study Plan)
  - comprehensive effort to identify and engage stakeholders
  - early outreach to stakeholder groups, and continued engagement during the study
  - explain stakeholder role, and importance of stakeholder participation

- enable stakeholders to understand the process and follow the study through its various stages
  - facilitate understanding of process and issues, which may include divergent or competing stakeholder interests
  - make information accessible and understandable
  - constructively address stakeholder input, with all relevant evidence, opinion and perspectives considered
  - reasonable effort made to resolve concerns
  - role and effect of outreach and consultation documented during the study (eg in each report), showing the effect of input received on the Study discussions/directions (within limits imposed by the *Freedom of Information and Protection of Privacy Act*);
- d) Clear outreach and consultation to each stakeholder category (for details see Section 9.7 of this Study Plan):
- First Nations
  - Business/commercial interest groups
  - Emergency service providers
  - General public
  - Municipalities
  - Regulatory agencies
  - Transportation service providers
  - Utility companies
- e) Effective documentation of study work and decision-making:
- documents prepared to support each point of key decision-making and focused outreach and consultation, and structured as inserts to the TESR (for details see Section 2.2 and Supporting Document #2 of this Study Plan)
  - documents organized for ease of access to information and reference, and in relation to relevance and in the overall planning and Class EA Study process
  - document content (e.g. exhibits) presented in a manner that facilitates use for PIC display boards, newsletters, etc
  - timely opportunity to review relevant information and documentation;
- f) Effective/innovative presentation of study information:
- use of a project website to inform / consult with stakeholders on an ongoing and timely basis
  - high quality mapping and graphics
  - newsletters, factsheets, questionnaires, etc. to effectively summarize study process and technical information presented, and to solicit input; and
- g) Effective consultation events (PICs, and as applicable, workshops and public meetings) to ensure that stakeholders understand and respond to key decision points:
- events appropriately scheduled

- events well advertised with appropriate lead time (for details see Section 9.2 of this Study Plan)
- events advertised through newspaper advertisements, and as appropriate, portable message signs, mail drops, etc.
- newspapers used for advertisements to reflect readership in First Nations communities, local and area communities, municipal boundaries, weekday and weekend exposure
- venue locations for each round of PICs to reflect municipal boundaries and centres/distribution of population within the study area
- venue/facility to have appropriate space, facilities, parking, external signing
- venue/facility to be universally accessible
- display and information material prepared to effectively present information and communicate issues at hand
- events to be appropriately staffed.

## **2.5 Earlier And Related Work**

The Highway 7&8 Transportation Corridor Planning and Class EA Study will build on the previous transportation planning work undertaken by MTO.

### **Strategic Transportation Directions for Southwestern Ontario (2002)**

In concert with other levels of governments, MTO developed the '*Strategic Transportation Directions for Southwestern Ontario*' (2002) to provide a vision for tomorrow's transportation system (for access to this document, see the study web site).

*The Strategic Transportation Directions* document sets out a course of action for transportation, taking into account the different needs of the region, based on extensive research, relevant factors such as Smart Growth principles, infrastructure decisions and announcements, transportation studies conducted by MTO and other pertinent information. In brief, the *Strategic Transportation Directions* document provides the following:

- an overview of the transportation network of the region;
- identification of the contribution of different transportation modes to the region's overall transportation system;
- identification of social and economic factors in the region that affect transportation;
- identification of growth patterns and their effect on future transportation needs;
- strategic directions for the development of the provincial transportation system; and
- strategies that MTO may pursue in relation to the region's overall transportation network.

The findings of the 2002 Strategic Directions document are incorporated into Section 5.2.4 of this Study Plan.

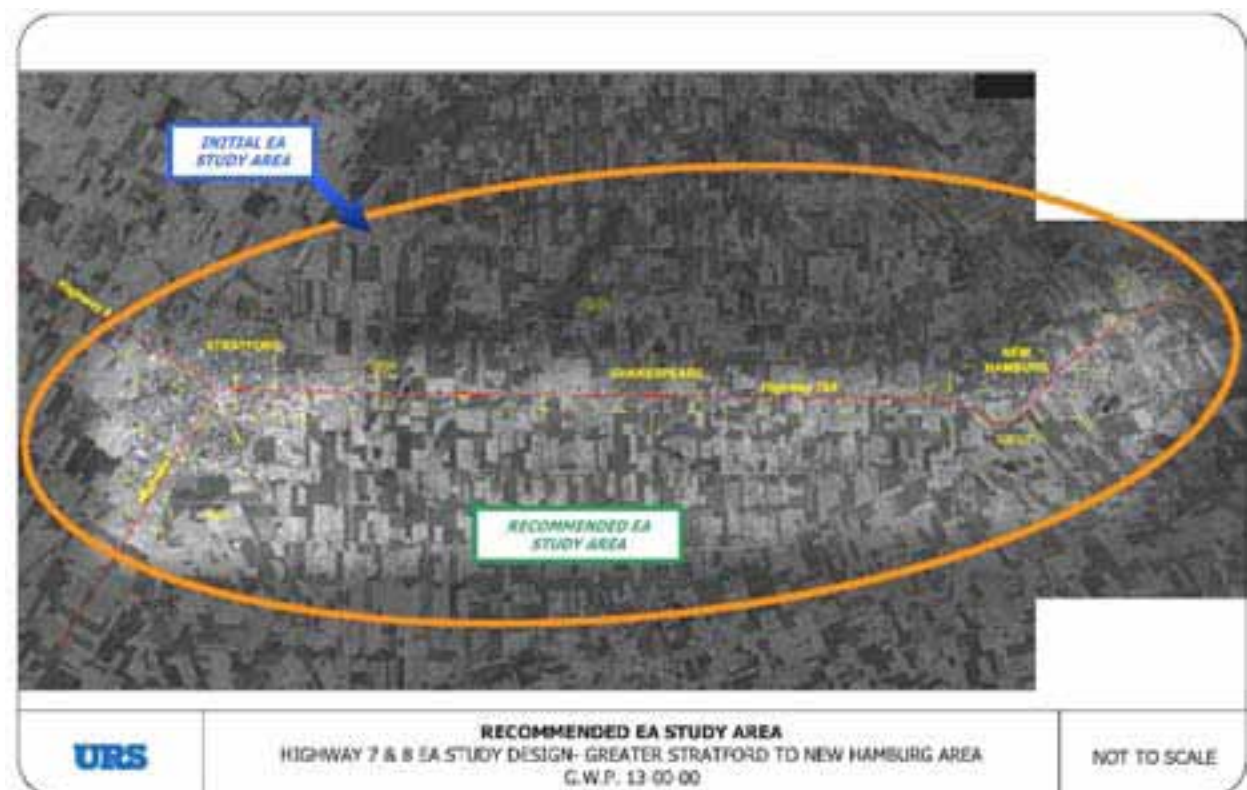
## **Highway 7&8 Corridor Planning Study Design Report (December 2005)**

MTO developed the 'Highway 7&8 Corridor Planning Study Design Report' (December 2005) to assess the present and future role and function of the Highway 7&8 Corridor between Greater Stratford and the New Hamburg area (for access to this document, see the study web site). Development of the study design report, in part, involved consultation with stakeholders, including two rounds of public information centres and the opportunity to comment on the report.

In brief, the Highway 7&8 Study Design Report provides the following:

- roadway role and function;
- engineering conditions;
- traffic conditions;
- traffic safety;
- origin-destination survey to accurately determine vehicle patterns between Greater Stratford and the New Hamburg area;
- assessment of transportation planning alternatives; and
- recommended preliminary study area as a factor for the identification of potential transportation solutions to address identified needs.

The findings of the 2005 Study Design Report are incorporated into Section 5.2.4 of this Study Plan. The preliminary study area identified in the Study Design Report is provided below:





This preliminary study area falls within the following municipalities:

- City of Stratford;
- County of Perth;
- Township of Perth East;
- Township of Perth South;
- Township of Wilmot; and
- Regional Municipality of Waterloo.

The preliminary study area recommended in the Study Design Report will be subject to review and modification as the Highway 7&8 Transportation Corridor Planning and Class EA Study proceeds.

### **3 STATEMENT AND ASSUMPTIONS OF PROPONENCY**

#### **3.1 Statement of Proponency**

The Ontario Ministry of Transportation is the proponent for this Study Plan for the Highway 7&8 Transportation Corridor Planning and Class EA Study.

#### **3.2 Assumptions Of EA Proponency And Completion Of Study Work**

MTO is conducting the Highway 7&8 Transportation Corridor Planning and Class EA Study under the assumptions of EA proponency and completion of study work provided in Exhibit 3.1 below:

<b>Exhibit 3.1 Highway 7&amp;8 Transportation Corridor Planning and Class EA Study Assumptions of EA Proponency and Completion of Study Work</b>	
<b>1.</b>	The current roles and relationships of different government levels and transportation service providers are maintained, consistent with their responsibility and authority.
<b>2.</b>	The consideration of 'Area Transportation System' and preliminary planning alternatives, and the development of a Transportation Development Strategy to address problems and opportunities are not restricted by these current roles.
<b>3.</b>	If 'Area Transportation System' and preliminary planning alternatives involving provincial roadways (provincial highways and/or provincial transitways) are selected, MTO will make the decision on the pursuit of further study through preliminary planning, detailed planning, and preliminary design.
<b>4.</b>	If 'Area Transportation System' and preliminary planning alternatives involving municipal roads, rail/air/water/intermodal facilities, municipal/private transit, or GO Transit are selected, MTO will refer the alternative recommendations to the appropriate government agency and/or transportation service provider for independent decision on further action.
<b>5.</b>	Depending upon the circumstances, the province may, as a separate initiative following completion of the Planning and Class EA Study, pursue innovative funding, and public and private partnerships for undertaking the following: <ul style="list-style-type: none"><li>• further study, design and construction of 'Area Transportation System' and preliminary planning alternatives identified in the planning and Class EA Study, for which MTO is not the EA proponent;</li><li>• design and construction of the provincial roadway (provincial highway and/or provincial transitway) that is the product of a planning and Class EA Study.</li></ul>
<b>6.</b>	The interaction of provincial transportation planning and growth management is a shared responsibility as follows: <ul style="list-style-type: none"><li>• municipalities, the Ministry of Municipal Affairs and Housing, and the Ministry of Public Infrastructure and Renewal are responsible for managing growth in a manner that encourages good development and discourages sprawl;</li></ul>

<p style="text-align: center;"><b>Exhibit 3.1</b> <b>Highway 7&amp;8 Transportation Corridor Planning and Class EA Study</b> <b>Assumptions of EA Proponency and Completion of Study Work</b></p>
<ul style="list-style-type: none"><li>• MTO is responsible for planning of the provincial roadways (provincial highways/provincial transitways) components of the Transportation Development Strategy; and</li><li>• in association with the planning of provincial highways/transitways, MTO is also responsible for provincial highway access management to discourage development in areas not designated for growth.</li></ul>
<p>7. The Highway 7&amp;8 Transportation Corridor Planning and Class EA Study will not address “over-arching issues” such as the following:</p> <ul style="list-style-type: none"><li>• statutes, policies and standards of governments;</li><li>• municipal official plans;</li><li>• responsibility, authority and decisions for transportation functions/modes that rest with government agencies and service providers other than MTO;</li><li>• ownership of lands and infrastructure; and</li><li>• funding policies and commitments of governments and the private sector.</li></ul>
<p>8. Although the Highway 7&amp;8 Transportation Corridor Planning and Class EA Study Process will not investigate concerns, suggestions or changes to such “overarching issues”, the study team will document input received during the Highway 7&amp;8 Transportation Corridor Planning and Class EA Study and refer it to the appropriate authority for information/consideration.</p>

## **4 STATEMENT OF EA COMPLIANCE**

This Highway 7&8 Transportation Corridor Planning and Class EA Study will follow and comply with the Class Environmental Assessment for Provincial Transportation facilities outlined in Section 2.1 of this Study Plan.

Although this is a Class EA study, the requirements of Section 6 (2)(a) of the Ontario *Environmental Assessment Act* have been addressed as an appropriate standard for this Study Plan. Accordingly, the Study Plan specifically addresses the following:

- Identification of the Proponent (Chapter 3 of this Study Plan);
- The purpose of the undertaking (Chapter 5);
- The process for selecting preferred alternatives to the undertaking (Chapter 7);
- The process for generating the study area (Chapter 7);
- The process for generating and selecting preferred alternative methods (Chapter 7);
- A commitment to carry out compliance monitoring (Chapter 8); and,
- A description of the Consultation Plan proposed for the Environmental Assessment (Chapter 9).

The Study Plan also includes Supporting Documents, one of which is a Record of Consultation During Preparation of the Study Plan (to be completed before finalizing the Study Plan).

## 5 PURPOSE OF UNDERTAKING

### 5.1 Policy Framework And Other Government Initiatives

The Highway 7&8 Transportation Corridor Planning and Class EA Study builds on the policy framework provided by:

- the '2005 Provincial Policy Statement' (PPS) under Section 3 of the *Planning Act*; and
- the final 'Growth Plan for the Greater Golden Horseshoe' (GGH Growth Plan) released in June, 2006 under the *Places to Grow Act*.

This policy framework has direct impact on the following:

- study plan;
- identification of Area Transportation System problems and opportunities;
- evaluation and selection of Area Transportation System alternatives;
- evaluation and selection of preliminary planning alternatives; and
- evaluation and selection of detailed planning alternatives for provincial roadways.

The application of this policy framework is presented in Exhibit 5.1 below.

<b>Exhibit 5.1 Highway 7&amp;8 Transportation Corridor Planning And Class Ea Study Application Of GGH Growth Plan And Provincial Policy Statement Policy Framework</b>	
<b>POLICY DOCUMENT</b>	<b>POLICY STATEMENT</b>
<b>Study Plan</b>	
<b>Study Objectives</b>	Study objectives are based upon the policies of the GGH Growth Plan
<b>Identification of Area Transportation System Problems and Opportunities</b>	
<b>GGH Growth Plan</b>  - Growth Forecasts, Where and How to Grow	Population and employment forecasts of the Plan will be used for planning
	A significant portion of new population and employment growth will be directed to the (designated) built-up areas of the community through intensification
	(Designated) urban growth centres, and their gross density targets for residents and jobs will be as identified in the Plan
<b>Evaluation and Selection of Area Transportation System Functional and Modal Alternatives</b>	
<b>Provincial Policy Statement</b>  - Transportation Systems	Transportation system should be provided which are safe, energy efficient, facilitate the movement of people and goods, and are appropriate to address projected needs

<b>Exhibit 5.1</b> <b>Highway 7&amp;8 Transportation Corridor Planning And Class Ea Study</b> <b>Application Of GGH Growth Plan And Provincial Policy Statement</b> <b>Policy Framework</b>	
<b>POLICY DOCUMENT</b>	<b>POLICY STATEMENT</b>
<b>GGH Growth Plan</b>	Ensure that corridors are identified and protected to meet current and projected needs for various travel modes
- General Transportation Policies	Provide balance, choice, access and connectivity among transportation modes for moving people and goods
<b>GGH Growth Plan</b>	Provide linkages to planned or existing intermodal facilities and to other major regional facilities for primary goods movement
- Policies for Moving Goods	Improve corridors for moving goods, consistent with the transportation infrastructure designated in the Plan
<b>Evaluation and Selection of Preliminary Planning Alternatives and Detailed Planning Alternatives for Provincial Roadways</b> (Policy statements indicated above also apply)	
<b>GGH Growth Plan</b>	Provide for safety of the system users
- General Transportation Policies	Support opportunities for multi-modal use within corridors where appropriate
	Consider separation of modes within corridors where appropriate
<b>Provincial Policy Statement</b>	When planning for corridors and rights-of-way for significant transportation facilities, consideration will be given to significant natural heritage, water, agricultural, mineral, cultural heritage and archaeological resources.
- Planning Transportation Corridors	

The influence on this study of the Growth Plan for the Greater Golden Horseshoe is further discussed in Section 5.2.2 and 5.2.3 of this Study Plan.

## 5.2 Transportation Problems And Opportunities

### 5.2.1 Definition And Description Of 'Area Transportation System'

The Highway 7&8 Transportation Corridor Planning and Class EA Study is being conducted in the context provided in Exhibit 5.2 below:

**Exhibit 5.2**  
**Highway 7&8 Transportation Corridor Planning and Class EA Study**  
**‘Area Transportation System’ Context**

- The Highway 7&8 Transportation Corridor Planning and Class EA Study is being conducted in the context of the ‘*Area Transportation System*’.
- The ‘*Area Transportation System*’ is composed of the area transportation facilities which have the primary function of providing transportation linkages for the movement of people and goods, by all modes and all jurisdictions, between multiple regions of the province and/or between cities and other major centres of population, or which function to complete such primary transportation linkages, with an emphasis on connections to:
  - cities and other major centres of population that contain designated urban growth centres;
  - cities and other major centres of population that contain designated major transit station areas;
  - major regional facilities for primary goods movement, such as intermodal facilities; and
  - international airports, major ports and international gateways.

### **5.2.2 Overview Of The Area Transportation System**

The analysis carried out for the *Strategic Transportation Directions* for Southwestern Ontario (2002) identified several trends:

- As in the rest of the province, the automobile (including vans and light trucks) is the dominant intercity travel mode in Southwestern Ontario, accounting for over 90% of passenger kilometres travelled. The remaining transportation modes (bus, rail, GO Transit, marine and air) account for 7.5% of passenger kilometres travelled.
- The primary modes used for the transportation of goods in and through the region, based on tonnes shipped, are truck (68%), rail (18%) and marine (15%). Mode usage varies with the particular commodity transported, the market served, the need for “just in time” service, and the industry distribution system. Market trends indicate that truck transport will play a greater goods movement role in the future.
- Trucking is the primary means of moving goods in Southwestern Ontario. Since the highway system links industry and markets in Southern Ontario and the U.S., there is substantial international truck freight movement on freeways in the region. The accessibility provided by the provincial and municipal road network makes trucking very competitive with other modes, except in the case of certain bulk goods and long distance hauls to markets outside Ontario.

- Provincial and regional roadways play a key role in the movement of intercity passengers and goods, and by 2026 will carry over 75% of the total system traffic in vehicle kilometres.
- A reduced level of service is forecast for the entire system, with provincial and regional routes showing substantial increases in the vehicle kilometres operating at congested conditions.
- All major urban centres show improved commuter containment (i.e. live-work arrangements); however, total commuter kilometres will continue to increase.

The Growth Plan for the Greater Golden Horseshoe (2006) in part provides the following direction with respect to the Area Transportation System for the analysis area:

- Future goods movement corridors are envisioned to provide links between the Niagara Frontier and the GTA.

### 5.2.3 Overview Of Area Economy, Employment And Population Growth Forecasts

Growth in the transportation corridor is dependent on a number of discreet but related socio-economic factors, such as: population and employment, demographic characteristics, and national, provincial and regional trends. Each of these factors acts upon the characteristics of travel demand with different and varying effects. In order to assess the needs of the Area Transportation System, the first step is to establish the factors that define the environments in the study area. These factors become the framework for the quantification of role and function of the transportation system.

#### *Growth Plan for the Greater Golden Horseshoe*

A major influence to the socio-economic environment in the analysis area is the recently published Growth Plan for the Greater Golden Horseshoe (GGH Growth Plan), released by the province on June 16, 2006, which reflects the *Places to Grow Act's* underlying principles of intensification and reduced urban sprawl. The Growth Plan promotes planning on a more regional level and sets the stage for future growth and land use scenarios by providing guidelines for municipal planning that are intended to:

- stimulate economic prosperity;
- facilitate the efficient movement of goods by linking intermodal facilities, international gateways, and communities within the GGH;
- revitalize downtowns;
- provide growth forecast objectives:

Forecasted Distribution of Population and Employment Within the Analysis Area of the Hwy 7&8 Transportation Corridor Planning and EA Study (figures in 000s, from Schedule 3 of the GGH Growth Plan)								
MUNICIPALITY	POPULATION				EMPLOYMENT			
	2001	2011	2021	2031	2001	2011	2021	2031
Region of Waterloo	456	526	623	729	236	282	324	366



- promote intensification - by the year 2015 and for each year thereafter to 2031, a minimum of 40 percent of all residential development in upper and single tier municipalities will be in the built-up area;
- designate urban growth centres which will generally be planned to achieve a minimum gross density target (the closest centres to which this applies are uptown Waterloo and downtown Kitchener);
- encourage more compact communities, with services, shops and businesses close to home;
- curb urban sprawl;
- preserve greenspace and agricultural lands that are under pressure in the GGH;
- cut down on car dependency by increasing modal share of alternatives to the automobile;
- contribute to better air quality;
- spur transit investment and create conditions favourable to public transit use; and
- promote a culture of conservation.

Through its policies, the GGH Growth Plan will impact the future land use / socio-economic environment in the analysis area, by establishing guidelines for future growth, land use (including greenspace and agriculture) and transportation objectives.

This study's objectives have, in part, been set in accordance with the policies of the final GGH Growth Plan, as described in Section 1.2.

### *Municipal Official Plans*

Future land uses are also governed by Official Plans for the municipalities in the analysis area, including Perth County and the Region of Waterloo. The currently approved Official Plan of the Region of Waterloo will need to be updated to reflect the population and employment guidelines and targets set out in the Growth Plan (Perth County is outside the Greater Golden Horseshoe).

### *Trade and Tourism*

The study area can be considered a conduit for trade and tourism between the GTA and Lake Huron. Goods movement through this area into Canada's economic heartland are critical to the local, regional and provincial economies. The efficiency of the provincial highway system, in and through the study area is therefore essential to the economic prosperity of the area.

### *Land Use/ Socio Economic Environment*

An overview of the land use / socio-economic environment is provided in Section 6 of this Study Plan

## **5.2.4 Discussion of Preliminary Statement of Transportation Problems and Opportunities**

Section 1.3 of this Study Plan provides a preliminary statement of transportation problems and opportunities, based upon previous MTO reports, and the final Growth Plan for the Greater Golden Horseshoe (released by the province on June 16, 2006). This section expands upon that statement.

### **1. There are transportation capacity concerns for the movement of both people and goods along the 2-lane section of Highway 7&8 between Stratford and New Hamburg and on Highway 7&8 through the urban centres (Stratford, Shakespeare and New Hamburg).**

- There will be an east-west capacity deficiency of one lane in each direction from 2.9 km east of the Stratford City Limits to Waterloo Road 1 (i.e. two-lane section of highway) to meet the current and projected needs of the travelling public, and to stimulate economic growth and job creation:
  - The two-lane section of Highway 7&8 currently operates at an undesirable level of service (LOS D).
  - Average daily traffic on Highway 7&8 is forecast to increase by a minimum of 30% between 2004 and 2031.
  - As a result, the existing transportation network is not capable of supporting the projected growth in population, employment, trade and tourism.
  - Failure to address these transportation deficiencies could result in unacceptable travel delay that would be costly to industry, and would deter recreational and tourist travel. The reduction in mobility and access will restrict the ability of the broader region to attract new business and promote economic growth.
  - These transportation deficiencies could occur earlier and/or increase in duration, extent or severity if higher population, tourism or economic growth scenarios are realized.
  - The City of Stratford has expressed concerns with the significant amount of truck traffic that is passing through the core of the City via Highway 7&8.
  - The County of Perth has expressed concerns with the degree of residential traffic that is destined for locations east of Stratford, and is utilizing parallel routes to the north of Highway 7&8, such as Perth Line 37, to avoid traffic delays in Stratford.

2. **Provincial / inter-regional traffic through the urban centres (Stratford and Shakespeare) along Highway 7&8 interferes with their “downtown / historic crossroads” function.**
  - There are traffic conflicts between local and longer distance trips in downtown Stratford and Shakespeare; and
  - The City of Stratford has expressed concerns with the significant amount of truck traffic that is passing through the core of the City via Highway 7&8.
3. **The connection of the analysis area to transportation corridors serving other regions in the province may be inadequate for long-term transportation and economic development needs.**
  - Highway 7&8 is experiencing increasing functional separation from the provincial highway network as development in Stratford intensifies and expands.
4. **Geometric and traffic safety characteristics along Highway 7&8 should be addressed with respect to long-term traffic needs.**
  - This is indicated in Exhibit 5.3 below, in which ideal highway geometric conditions are compared to those of the existing Highway 7&8:

<b>Exhibit 5.3: Highway 7&amp;8 Transportation Corridor Planning and Class EA Study Comparison of Ideal Highway Conditions and Those on Highway 7&amp;8</b>	
<b>Ideal Conditions</b>	<b>Highway 7&amp;8 Conditions</b>
<ul style="list-style-type: none"> <li>• Design features of roadway linked to legally posted speed</li> </ul>	<ul style="list-style-type: none"> <li>• Numerous vertical alignment features do not meet desirable limits for the posted speed</li> </ul>
<ul style="list-style-type: none"> <li>• Lane width equal to or greater than 3.75 m where posted speed limit is 80 km/h and 3.5 m where posted speed limit is 60 km/h</li> </ul>	<ul style="list-style-type: none"> <li>• Typically 3.75 m wide lanes except through Shakespeare where lane width is marginally below standard (3.35 m versus 3.5 m)</li> </ul>
<ul style="list-style-type: none"> <li>• Clear shoulders equal to or wider than 2.0 m for disabled vehicle refuge</li> </ul>	<ul style="list-style-type: none"> <li>• Typically 3.0 m wide granular shoulders including 0.5 m partially paved; fully paved shoulders for a short section within Shakespeare</li> </ul>
<ul style="list-style-type: none"> <li>• Full passing opportunities</li> </ul>	<ul style="list-style-type: none"> <li>• Limited passing opportunities due to horizontal alignment, vertical alignment and intersection spacing resulting in through vehicles spending a high proportion of time in platoons and operating at less than their desired speeds which adversely affects safety</li> </ul>
<ul style="list-style-type: none"> <li>• All passenger cars in traffic stream</li> </ul>	<ul style="list-style-type: none"> <li>• 10-16% commercial vehicles in corridor</li> </ul>
<ul style="list-style-type: none"> <li>• Directional distribution of 50/50</li> </ul>	<ul style="list-style-type: none"> <li>• 55% westbound / 45% eastbound</li> </ul>

<b>Exhibit 5.3:</b> <b>Highway 7&amp;8 Transportation Corridor Planning and Class EA Study</b> <b>Comparison of Ideal Highway Conditions and Those on Highway 7&amp;8</b>	
<b>Ideal Conditions</b>	<b>Highway 7&amp;8 Conditions</b>
<ul style="list-style-type: none"> <li>• Low number of intersections and entrances so that impediments to through traffic due to traffic control devices or turning traffic are minimized</li> </ul>	<ul style="list-style-type: none"> <li>• Numerous intersections and entrances within study area</li> </ul>
<ul style="list-style-type: none"> <li>• Level terrain</li> </ul>	<ul style="list-style-type: none"> <li>• Level to rolling terrain</li> </ul>

**5. There is currently no comprehensive highway access management plan for Highway 7&8 from Greater Stratford to New Hamburg to protect highway needs and to address the GGH policy of discouraging inappropriate highway-related growth.**

- A comprehensive highway access management plan is required to protect current and future highway capacity, operational and safety interests
- A highway access management plan is required to address the GGH Growth Plan policy of discouraging highway-related development in areas not designated for growth (which is most of the length of Highway 7&8 between the designated built-up areas of Stratford and Shakespeare, and between Shakespeare and New Hamburg).

**6. The GGH Growth Plan policy of co-ordinating transportation system planning and land use planning must be addressed.**

- The GGH Growth Plan promotes co-ordinated transportation system planning and land use planning. The functionality of the Highway 7&8 transportation corridor from Greater Stratford to the New Hamburg area to meet current and projected needs for various travel modes must be protected before the opportunities are precluded by development in the built-up areas of Stratford, Shakespeare and New Hamburg.
- Various transportation opportunities may be identified during this Class EA Study including (but not limited to) provision of a balanced and integrated transportation system (i.e. opportunities for higher order transit, improved linkages to urban growth centres, inter-modal facilities and gateways).

## **6 ENVIRONMENTAL CONDITIONS AND POTENTIAL EFFECTS**

The Highway 7&8 Transportation Corridor Planning and Class EA Study will utilize a study process that seeks to avoid, minimize or prevent adverse environmental effects. For the purposes of this study, the term “environment” reflects the definition in the Ontario Environmental Assessment Act, which includes natural, social, economic and cultural features. Specific mitigation measures and the approaches for management of environmental effects will be developed and addressed during the EA.

### **6.1 Overview of Existing Environmental Conditions**

A considerable amount of secondary source environmental information was obtained during preparation of the Study Design Report, as documented in December, 2005.

This study will begin by updating the information from secondary sources and will also include carrying out field investigations and seeking environmental information from external agencies, interest groups and the public through the Outreach and Consultation program as described in Section 9.0 of this Study Plan.

The information obtained through a review of the Study Design Report and secondary source investigations carried out to date as part of that study has provided a basic understanding of the existing environment and major environmental features in the area.

An overview of existing environmental conditions is provided below. Details are provided in Report “F”: Working Paper – Environmental Conditions and Constraints.

#### **6.1.1 Natural Environment**

The study area lies within the upper reaches of two major watersheds, the Upper Thames River on the west and the Grand River on the east end. The Avon River, a major tributary of the Upper Thames collects drainage from the Stratford area and lands to the north of Highway 7 and 8, running westward through the north end of the City of Stratford. The Nith River, a major tributary of the Grand River, receives drainage from most of the tributaries in the east part of the study area, and runs southward through New Hamburg before crossing Highway 7 and 8.

There are approximately 25 small watercourses along the subject section of Highway 7 and 8, most of which are municipal drains, although at least 8 of these watercourses are either confirmed fish habitat or have the potential to provide fish habitat. Species at Risk mapping recently developed by the Department of Fisheries and Oceans indicates the presence of protected mussel species in several of the Nith tributaries crossing Highway 7 and 8, and the presence of “special concern” (being considered for protection ) species of fish in several of the tributaries to the Avon River which crosses Highway 7 and 8.

The topography of the study area is generally gently rolling, becoming more pronounced to the north of the existing highway alignment. Soil conditions are generally good for a variety of agricultural operations and most of the land has been cleared, reducing forest cover to less than 5% of the land base. Areas of remaining forest are concentrated in poorly drained lowland or river valley areas, though linear strips of upland woodlot persist both to the north and south of the existing highway. A number of wetland/swamp/bog complexes around the study area have been recognized as 'environmentally sensitive areas', including the Little Lakes Bog and Swamp Forest Complex, spanning the existing highway just east of Stratford, and designated an Area of Natural and Scientific Interest (ANSI).

While the remaining wooded areas generally support species typical of upland woodlands in this area, the Nith Valley is known to support Carolinian biota in its lowland deciduous forests, and one plant Species at Risk, the Showy Goldenrod, has been found at locations between Stratford and New Hamburg. There are also deer wintering areas beyond the study area to the northeast and northwest, providing critical overwintering habitat to the deer which inhabit this area.

### **6.1.2 Land Use / Socio-Economic Environment**

Farming and agricultural land uses dominate the landscape and constitute the main economic activity between Stratford and New Hamburg. With most soils in agricultural capability classes 1-3, the land supports excellent cash crop operations and mixed farming, producing mixed grain, corn, soybeans, hay and a variety of fruits and vegetables. Major dairy and beef production operations are found throughout the area.

Highway 7 and 8 passes through three major population centres: New Hamburg at the East end of the study area, Stratford at the west end and Shakespeare, in the middle of the study area.

Stratford, with a population of approximately 30,000, is the primary urban centre in the study area, mixing a strong local tourism industry led by the Stratford Festival, with a small manufacturing base and commercial sector that serves as a local centre for retail and service industries. Highway 7 and 8 serves as a critical link to connect Stratford to major markets in the Kitchener/Waterloo/Cambridge area and to the Greater Toronto area approximately 1 hour to the east. This proximity is critical to the Stratford tourist industry and the auto parts industry centred in Stratford. Population and employment growth in the City of Stratford has been modest in recent years, while the population levels in adjacent townships have remained stable.

By contrast, New Hamburg, at the east end of the study area, with a population of about 6,000, is experiencing substantial population growth. New Hamburg and its surrounding (Wilmot) township lie within the urban shadow of the Kitchener/Waterloo/Cambridge areas, and have become major 'bedroom communities' for these major employment centres. While New Hamburg provides a full range of retail/service commercial facilities for its residents, it has also become the site of some major highway commercial

enterprises (eg. automotive dealerships) developed along Highway 7 and 8 in recent years.

The Hamlet of Shakespeare, located about half-way between Stratford and New Hamburg in the Township of Perth East, was initially established as a service centre for the surrounding agricultural community, but has since converted to serve the passing traffic to and from Stratford and the Stratford Festival. The hamlet now contains a number of fuel and food service outlets and a significant concentration of specialty shops dominated by high quality antique dealerships. Some new residential development is also occurring, especially on the north side of Shakespeare.

### **6.1.3 Cultural Environment**

The cultural environment includes archaeological features, built heritage features and heritage landscapes within the study area.

A preliminary archaeological assessment conducted during the Study Design identified 23 previously registered sites within 2km of the study area. Field surveys located fifteen historic components and three pre-historic components, with 9 of the historic and one of the pre-historic sites being registered. In addition to these sites, local sources reported two unmarked pioneer cemeteries along the highway and other historic archaeological remains including a brickyard and a cemetery south of Shakespeare. In general, there is a high potential for the recovery of pre-contact archaeological remains within the study area, especially along the streams and around wetland areas which would have been the foci for prehistoric settlement.

The cultural landscape within the study area is predominantly agricultural in nature, and both the highway and sideroads throughout the study area are lined with numerous attractive nineteenth and twentieth century farm complexes. The rural landscape is altered by the presence of the CNR line which parallels the highway and crosses it at one location, and by the presence of several crossroad hamlets and small population centres such as Shakespeare.

A number of significant built heritage features are found within the study area, including several located along the existing highway alignment. Most notable of these is the Fryfogel Inn property near Perth Road 106, which includes an 1845 brick building, a commemorative cairn and a cemetery. The Inn is protected by an Ontario Heritage Foundation heritage conservation easement and has been evaluated as a potential national historic site by the historic Sites and Monuments Board of Canada. Another significant built heritage feature, the Lingelbach Church and cemetery is located at the intersection of Highway 7 and 8 and Perth Line 104. The steel girder bridge which carries the single-lane CNR track over Highway 7 and 8 near Perth Road 102, constructed in 1936 constitutes another built heritage feature directly associated with the existing highway alignment.

Additional built heritage features are scattered throughout the study area, including a number of former church and old schoolhouse buildings. One such building, the Brocksden Museum located to the north of Highway 7 and 8 on Perth Line 37, has been designated under Part IV of the Ontario Heritage Act.

## **6.2 Environmental Work Plan**

The environmental work plan will be carried out in accordance with the:

- Class EA for Provincial Transportation Facilities; and
- MTO Environmental Reference for Highway Design.

For access to the above documents, please refer to the study web site.

These documents have been prepared for MTO undertakings and transportation projects of this type, to ensure that all ministry studies satisfy the requirements of federal and provincial EA principles and guidelines.

The environmental work plan includes further environmental investigations, including secondary source reviews and field investigations, after a study area is confirmed.

As the study progresses and the range of alternatives becomes more focussed, more detailed environmental investigations will be undertaken. The level of detail and scale of mapping will increase, as the project team begins to focus in on specific areas or corridors within the analysis area.

A full complement of environmental specialists will be working on the study to investigate factor-specific area(s) of expertise. The environmental factors, sub-factors and criteria are identified in Exhibit 7.2 of this Study Plan.

## **6.3 Environmental Conditions Documentation**

Environmental Conditions and Constraints will be documented in Report “F”: Working Paper – Environmental Conditions and Constraints. A detailed summary of the report is provided in Supporting Document #2 of this Study Plan.

Report “F” will be prepared in two parts as follows:

- Part 1 will:
  - document environmental conditions background data (existing/secondary source information – mapping / constraint mapping, data, reports, supplemented by preliminary field reconnaissance) to provide an environmental overview within the analysis area; and
  - provide overview/background level of detail that supports the selection of ‘Area Transportation System’ alternatives, and the generation and selection of preliminary planning alternatives.



- Part 2 will:
  - document environmental conditions field investigation work (inventory, survey, testing) and determination of environmental significance;
  - provide higher level of detail that supports the environmental impact assessment which is a component of generating provincial roadway detailed planning alternatives; and
  - utilize the same environmental factor-specific areas and provide the same areas of technical expertise, but at increased levels of detail.

Report “F” will present the facts without offering assessment of impacts or environmental protection/mitigation and compensation.

#### **6.4 Environmental Protection and Commitments to Mitigate**

Environmental protection principles are described in Section 2.4.2 of this Study Plan.

Environmental specialists carrying out the work on existing conditions will participate in determining the most effective means of protecting the environment during the generation and evaluation of preliminary and detailed planning alternatives. Environmental protection measures will also be discussed with external agencies and ministries as appropriate throughout the study.

If new environmental information arises during the study, it will be taken into consideration in the generation and evaluation of alternatives as the study moves forward.

Environmental protection and mitigation will be included in the final study recommendations at a preliminary design level of detail. If additional environmental investigations are required during the next study phase (i.e., detail design), a commitment to carry out the work will be included in the Transportation Environmental Study Report (TESR). The TESR will also include commitments to finalize the design work and obtain all required environmental approvals from external agencies prior to construction.

Environmental monitoring is described in Section 8.0 of this Study Plan.

## **7 ALTERNATIVES AND THEIR EVALUATION**

### **7.1 “Alternatives To the Undertaking”, and “Alternative Methods for Carrying Out the Undertaking”**

The Ontario *Environmental Assessment Act* defines both “alternatives to the undertaking” and “alternative methods for carrying out the undertaking”.

“Alternatives to the undertaking” are defined as functionally different ways of addressing identified problems and opportunities. For the Highway 7&8 Transportation Corridor Planning and Class EA Study, alternatives to the undertaking are examined under the transportation needs assessment phases of the study, as follows:

- ‘Area Transportation System’ alternatives, which are described in Sections 7.4.5 and 7.4.7; and
- preliminary planning alternatives, which are described in Section 7.4.10.

“Alternative methods for carrying out the undertaking” are defined as different ways of carrying out the undertaking once the preferred alternatives to the undertaking have been identified. For the Highway 7&8 Transportation Corridor Planning and Class EA Study, alternative methods for carrying out the undertaking are the following:

- provincial roadway (provincial highway/provincial transitway) detailed planning alternatives, which are described in Section 7.5.2; and
- provincial roadway (provincial highway/provincial transitway) preliminary design alternatives, which are described in Section 7.6.1.

### **7.2 Evaluation Methods and Their Application**

The evaluation of alternative methods is a two-stage process.

The first stage (assessment) entails the identification of advantages and disadvantages of the various alternatives under consideration. At this stage, environmental features are examined to determine the extent of impact. Net impacts will be identified; these refer to the effects on the environment that remain after standard mitigation measures have been applied to reduce the extent of the impact.

The second stage is the evaluation itself. This stage builds upon the information obtained from the impact assessment stage and involves a comparative analysis of the advantages and disadvantages of the alternatives considered to select a preferred alternative. At this stage, the relative importance of the environmental features and significance of the impacts are determined. A “Do Nothing” scenario will be carried forward to represent a base case for comparison to the preferred alternative.

## Evaluation Methods

The evaluation of alternatives is an integral component of the EA. Evaluation principles are provided in Section 2.4.3.

The Ontario Ministry of Environment recommends that the evaluation approach should be clearly described and government ministries, municipalities, agencies, First Nations and the public should be asked for their comments early in the EA study. The method(s) used to predict net environmental effects and evaluate advantages and disadvantages should clearly identify the relative differences and key impact trade-offs.

In this study, two evaluation approaches will be used to assist in the selection of alternatives at the various phases of this undertaking. A Reasoned Argument (or Trade-off) method will be the primary tool used to identify a preferred alternative. In some cases, an Arithmetic (weighting-scoring) method will be the secondary tool and will be used (except in the Transportation Needs Assessment phase) to verify the results of the trade-off method.

The Reasoned Argument (trade-off) evaluation component will provide a clear presentation to stakeholders of the key trade-offs between the various evaluation factors and the reasons why one alternative is preferred over another.

The Arithmetic evaluation provides a means to compare the alternative methods based on a numerical scaling with weights assigned by MTO and other stakeholders as determined through the EA Study consultation. A numerical approach is a good sensitivity analysis tool to determine if the conclusions of the reasoned argument approach are valid and appropriate.

During the study, the decision making process will be clearly documented to support a traceable process and to ensure that it is understandable to those who may be affected by the decisions. Details on the Reasoned Argument (trade-off) and Arithmetic evaluation methods are outlined as follows:

### *Reasoned Argument (Trade-off) Evaluation Method*

The reasoned argument method will be the primary evaluation method employed to select a preferred alternative. This method highlights the differences in net effects associated with the various alternatives. Based on these differences, the advantages and disadvantages of each alternative are identified. The relative significance of the impacts are examined to provide a clear rationale for the selection of a preferred alternative. The rationale that favours the selection of one alternative over all others will be derived from the following sources:

- Government legislation, policies and guidelines;
- Municipal policy (i.e. Official Plans);

- Issues and concerns identified during consultation with ministries and agencies, municipalities, ratepayer and interest groups and the general public (including input obtained through the weighting of the relative level of importance of evaluation criteria); and
- Project Team expertise.

### *Arithmetic Evaluation Method*

The arithmetic evaluation method will be the secondary method of evaluation and will incorporate both the level of importance of each environmental attribute (referred to as the weight) and the magnitude of the impact (or benefit) associated with an alternative (referred to as the score). Numerical values are derived for both the level of importance (weight), and the magnitude of the impact (score) associated with each alternative.

The weight is multiplied by the score to obtain a total for each factor. The totals for each alternative are compared to determine the preferred alternative method.

- **Scoring (degree of impact):** The score assigned to each environmental attribute is relative to the impact generated. Relative impacts can range from those that are positive (benefit the environment) to negative (detrimental to the environment). The assessment of impacts will be derived from field measurements, results of prediction models, secondary data sources (as appropriate) and other means as necessary.
- **Weighting (level of importance):** Generally, more weight is assigned to those features which are felt to be more important in assessing impacts generated by alternatives, and less weight is given to those features which are considered to be less important.

Weighting scenarios can be developed in consultation with the public, regulatory agencies, First Nations and municipalities. It should be noted that weighting scenarios may vary for different sections of the study area. In addition, numerous sensitivity tests can be run to reflect input received from stakeholders and the public. Such input will provide the Project Team with an understanding of community values with respect to the relative importance of each environmental feature.

The results of the weighting scenarios will be reviewed and compared to the results of the Reasoned Argument component.

The specific mathematical tool to be used for the arithmetic evaluation will be determined during the EA when the details regarding the alternative methods (preliminary planning, detailed planning and preliminary design for provincial roadways) are known.

### *Application of Evaluation Methods*

As previously noted, the Reasoned Argument method will be the primary evaluation tool used to select a preferred alternative with the Arithmetic Evaluation method used to

substantiate the findings.

These evaluation methods will be applied as indicated in the Exhibit 7.1 below.

<b>Exhibit 7.1</b> <b>Highway 7&amp;8 Transportation Corridor Planning and Class EA Study</b> <b>Summary of Application of Evaluation Methods</b>		
PHASE	EVALUATION METHOD	
	Reasoned Evaluation Method	Arithmetic Evaluation Method (as appropriate)
<b>Transportation Needs Assessment</b> <ul style="list-style-type: none"> <li>• <b>Area Transportation System Planning</b> (see Sections 7.4.3 through 7.4.9 of Study Plan)</li> </ul>	Evaluation method applied for this phase	Not applied to this phase
<ul style="list-style-type: none"> <li>• <b>Preliminary Planning</b> (see Sections 7.4.10 through 7.4.12 of Study Plan)</li> </ul>	Primary evaluation method applied for this phase	Secondary evaluation method applied (as appropriate)
<b>Provincial Roadway Detailed Planning</b> (see Section 7.5. of Study Plan)	Primary evaluation method applied for this phase	Secondary evaluation method applied (as appropriate)
<b>Provincial Roadway Preliminary Design</b> (see Section 7.6 of Study Plan)	Primary evaluation method applied for this phase	Secondary evaluation method applied (as appropriate)
<b>Summary Description of What The Evaluation Method Provides</b>	Key trade-offs between evaluation factors and reasons why one alternative is preferred over another	Numerical weighting/scoring of evaluation factors for alternatives (secondary evaluation method)

Where both evaluation methods are applied, they will be implemented concurrently. For example, the Project Team's assumptions and rationale behind its assessment of the level of importance of environmental attributes will be documented along with the corresponding arithmetic value assigned to the impact. In addition, input from stakeholders and the public will be co-ordinated through public information centres and other public consultation activities to ensure that issues, concerns and the magnitude of potential impacts are properly identified and understood by the Project Team.

The results of the two methods will be compared and the differences identified. The results of the Arithmetic Evaluation will be re-analyzed to determine the key weight-score combinations in the Arithmetic Evaluation. Similarly, the rationale for each trade-off decision will be revisited to determine if the Project Team's decision was appropriate. If the rationale supporting the trade-off decisions is valid and appropriate, the preferred alternative identified by the Reasoned Argument method will stand. However, if the results of the Arithmetic Evaluation lead to modifications to the trade-off decisions' rationale, the preferred alternative resulting from the Reasoned Argument approach may be revised. Prior to its application, the decision making process will be clearly documented and presented for stakeholders to comment on. During the study, additional evaluation methodologies may be utilized to ensure that the nature and magnitude of potential impacts (of significant community and/or environmental value) are accurately identified and mitigated.

Data necessary to support the evaluation of alternatives will be collected through consultation with ministries, agencies and other stakeholders from secondary sources, prediction models and site-specific field investigations. The precise nature and scope of field investigations will be determined during the study and outlined in work plans for review and comment by stakeholders. This information will be supplemented based on input received from interested stakeholder groups, municipalities, regulatory agencies and the general public.

### 7.3 Preliminary Identification of Evaluation Factors

The assessment of alternatives will consider broad factors, sub-factors and criteria that reflect objectives in addressing the stated transportation problems and consider potential impacts on the environment. Exhibit 7.2 provides a preliminary listing of the proposed environmental and transportation factors, sub-factors and criteria to be considered for the evaluation of alternatives during the various phases of the project. This exhibit builds on the information in the MTO Environmental Reference for Design (for access to this document, see the study web site).

Supporting Document #5 identifies which of these factors, sub-factors and criteria apply at each phase of the study, and provides preliminary evaluation criteria to be applied to each of them.

The information in Exhibit 7.2 and Supporting Document #5 represents the minimum detail to be considered for identifying the advantages and disadvantages of the alternatives during the various phases of the study. These preliminary factors, sub-factors and criteria will be refined and modified during consultation on “the proposed approach to upcoming work”, as is indicated in Exhibit 2.1 in Section 2.2 of this Study Plan. This will include, as appropriate, the development of measures for specific evaluation indicators.

<b>Exhibit 7.2</b> <b>Highway 7&amp;8 Transportation Corridor Planning and Class EA Study</b> <b>Preliminary Identification of Factors, Sub-Factors and Criteria</b> <b>To Be Considered in the Evaluation Of Alternatives</b>	
<b>FACTORS/SUB-FACTORS</b>	<b>CRITERIA</b>
<b>1. Natural Environmental Factors</b>	
<b>1.1 Fisheries and Aquatic Ecosystems</b>	1.1.1 Fish Habitat
	1.1.2 Fish Community
<b>1.2 Terrestrial Ecosystems</b>	1.2.1 Wildlife
	1.2.2 Wetlands
	1.2.3 Forests
	1.2.4 Vegetation
	1.2.5 Designated/Special Areas
<b>1.3 Groundwater</b>	1.3.1 Areas of Groundwater Recharge and Discharge
	1.3.2 Groundwater Source Areas and Wellhead Protection Areas

<b>Exhibit 7.2</b> <b>Highway 7&amp;8 Transportation Corridor Planning and Class EA Study</b> <b>Preliminary Identification of Factors, Sub-Factors and Criteria</b> <b>To Be Considered in the Evaluation Of Alternatives</b>	
<b>FACTORS/SUB-FACTORS</b>	<b>CRITERIA</b>
	1.3.3 Large Volume Wells
	1.3.4 Private Wells
	1.3.5 Groundwater-Dependent Commercial Enterprises
	1.3.6 Groundwater-Sensitive Ecosystems
<b>1.4 Surface Water</b>	1.4.1 Watershed / Subwatershed Drainage Features/Patterns
	1.4.2 Surface Water Quality and Quantity
<b>1.5 Air Quality</b>	1.5.1 Local and Regional Air Quality
	1.5.2 Sensitive Receptors to Air Pollutants and Greenhouse Gases
<b>2. Land Use / Socio-Economic Environmental Factors</b>	
<b>2.1 Land Use Planning Policies, Goals, Objectives</b>	2.1.1 First Nations' Land Claims
	2.1.2 Provincial / Federal Land Use Planning Policies/Goals/Objectives
	2.1.3 Municipal (local and regional) Land Use Planning Policies / Goals / Objectives
	2.1.4 Development Objectives of Private Property Owners
<b>2.2 Land Use – Community</b>	2.2.1 Indian Reserves
	2.2.2 First Nations' Sacred Grounds
	2.2.3 Urban and Rural Residential
	2.2.3 Commercial/Industrial
	2.2.5 Tourist Areas and Attractions
	2.2.6 Community Facilities / Institutions
	2.2.7 Municipal Infrastructure and Public Service Facilities
<b>2.3 Noise Sensitive Areas (NSA's)</b>	2.3.1 Highway Noise
	2.3.2 Construction Noise
<b>2.4 Land Use - Resources</b>	2.4.1 First Nations' Treaty Rights or Use of Land and Resources for Traditional Purposes
	2.4.2 Agriculture
	2.4.3 Parks and Recreational Areas
	2.4.4 Aggregate and Mineral Resources
<b>2.5 Major Utility Transmission Corridors</b>	
<b>2.6 Contaminated Property and Waste Management</b>	
<b>2.7 Landscape Composition</b>	2.7.1 Scenic Composition
	2.7.2 Sensitive Viewer Groups
	2.7.3 Scenic Value of Views/Vistas From the Transportation Facility
	2.7.4 Specimen Trees
<b>3. Cultural Environmental Factors</b>	
<b>3.1 Cultural Heritage – Built Heritage and Cultural Landscapes</b>	3.1.1 Buildings or “Standing” Sites of Architectural or Heritage Significance, or Ontario Heritage Easement Properties
	3.1.2 Heritage Bridges
	3.1.3 Areas of Historic 19 <sup>th</sup> Century Settlement
	3.1.4 Cultural Heritage Landscapes
	3.1.5 First Nations' Burial Sites

<b>Exhibit 7.2</b> <b>Highway 7&amp;8 Transportation Corridor Planning and Class EA Study</b> <b>Preliminary Identification of Factors, Sub-Factors and Criteria</b> <b>To Be Considered in the Evaluation Of Alternatives</b>	
<b>FACTORS/SUB-FACTORS</b>	<b>CRITERIA</b>
	3.1.6 Cemeteries
<b>3.2 Cultural Heritage – Archaeology</b>	3.2.1 Pre-Historic and Historic First Nations' Archaeological Sites
	3.2.2 Historic Euro-Canadian Archaeological Sites
<b>4. Area Economy Factors</b>	
4.1 First Nations' Industry	
4.2 Heavy Industry and Trade	
4.3 Tourism and Recreation Industry	
4.4 Agriculture Industry	
<b>5. Transportation Factors</b>	
5.1 Area Transportation System Capacity and Efficiency	5.1.1 Movement of People
	5.1.2 Movement of Goods
	5.1.3 System Performance During Peak Periods
5.2 Area Transportation System Reliability / Redundancy	
5.3 Safety	5.3.1 Traffic Safety
	5.3.2 Emergency Access
5.4 Mobility and Accessibility	5.4.1 Modal Integration, Balance
	5.4.2 Linkages to population and Employment Centres
	5.4.3 Recreation and Tourism Travel
	5.4.4 Accommodation for Pedestrians, Cyclists and Snowmobiles
5.5 Network Compatibility	5.5.1 Network Connectivity
	5.5.2 Flexibility for Future Expansion
5.6 Engineering	5.6.1 Constructability
	5.6.2 Compliance with Design Criteria
5.7 Construction Cost (excludes property costs and engineering costs)	
5.8 Traffic Operations	

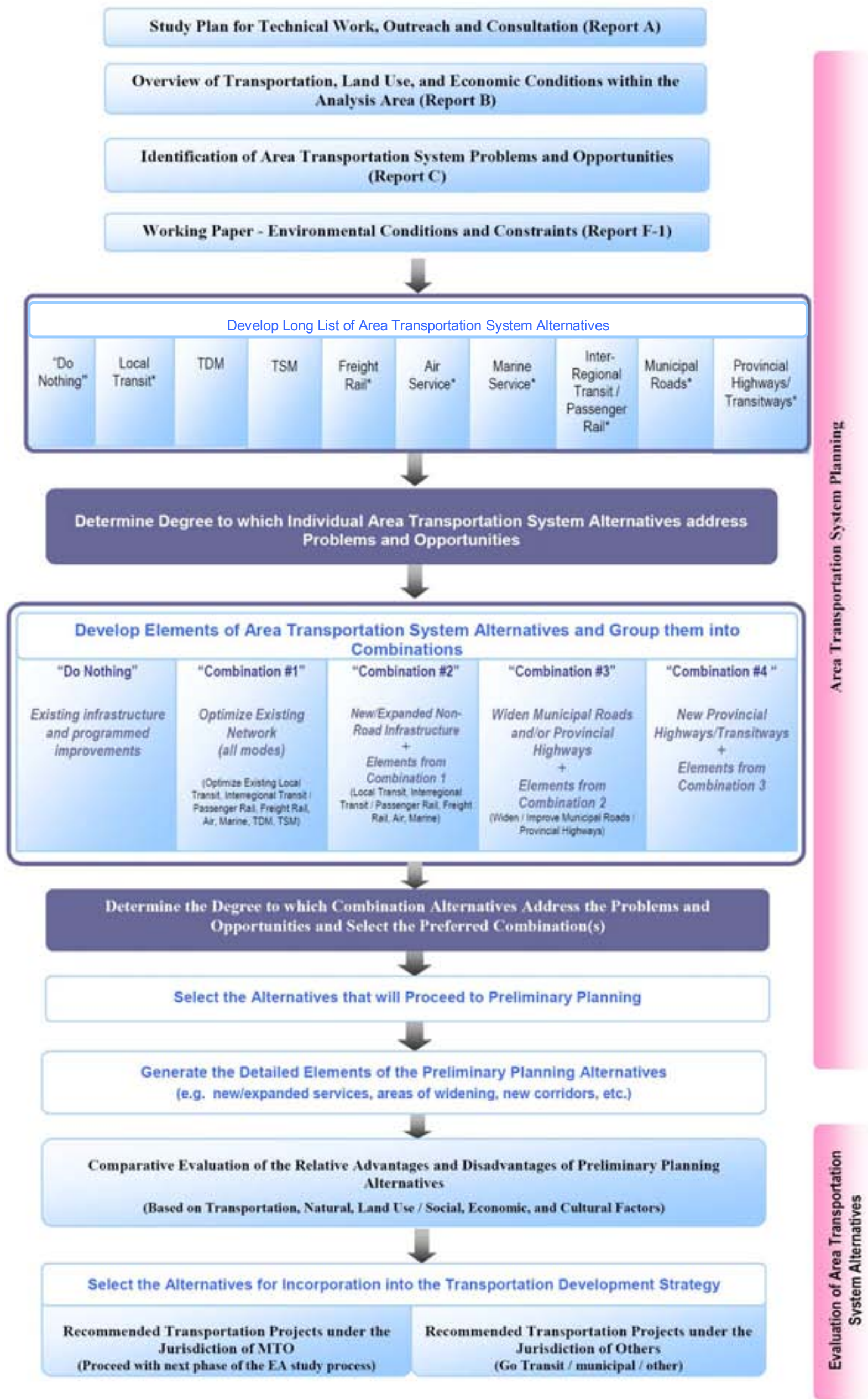
## 7.4 'Area Transportation System' and Preliminary Planning Alternatives

### 7.4.1 Process Overview for Transportation Needs Assessment

The process for the identification, assessment and evaluation of the area transportation system alternatives and preliminary planning alternatives is depicted in Exhibit 7.3.



**Exhibit 7.3 Process Overview for the Development, Assessment and Evaluation of Area Transportation System Alternatives (Phase 2 of Study) and Preliminary Planning Alternatives (Phase 3 of Study)**



\* - Improved Services and/or new infrastructure

A brief description of the key elements of the process follows:

#### **7.4.2 Study Plan for Technical Work, Outreach and Consultation**

As indicated in Section 1.4, this document, Report A: Study Plan for Technical Work, Outreach and Consultation, establishes the framework and commitments to guide the study.

### **AREA TRANSPORTATION SYSTEM PLANNING**

Area Transportation System planning is outlined in Sections 7.4.3 through 7.4.9.

#### **7.4.3 Overview of Transportation, Land Use, Economic and Environmental Conditions within the Analysis Area**

The objectives and key tasks of this step are the following:

- provide an analysis area land use and economic overview and outlook, and provide a preliminary assessment of existing transportation conditions (documented in Report B: Working Paper - Overview of Transportation, Land Use, and Economic Conditions within the Analysis Area);
- provide an overview of environmental conditions and constraints within the analysis area, based upon secondary source information (documented in Report F 1<sup>st</sup> Part: Working Paper - Environmental Conditions and Constraints).

#### **7.4.4 Identify Area Transportation System Problems and Opportunities**

A preliminary statement of problems and opportunities is provided in Exhibit 1.3 in Section 1.3 of this Study Plan. The objectives and key tasks of this step are to develop additional detail through the following:

- establish travel demand forecasting approach and methodology;
- forecast future 'Area Transportation System' travel characteristics and patterns;
- provide a detailed assessment of current and future 'Area Transportation System' problems and opportunities;
- articulate the above as the basis for evaluating and selecting alternative solutions.

This work is presented in Report C: Working Paper – Area Transportation System Problems and Opportunities.

#### **7.4.5 Develop Long List of Area Transportation System Alternatives**

The following generic area transportation system alternatives have been identified:

- Do Nothing
- Travel Demand Management (TDM)

- Transportation System Management (TSM)
- Local Transit\*
- Interregional Transit and Passenger Rail\*
- Air Services\*
- Marine Services\*
- Freight Rail\*
- Municipal Roads\*
- Provincial Highways / Transitways\*

(\* new or improved operations and/or infrastructure)

These alternatives and their rationale are described below, with additional information presented in Supporting Document #3 of this Study Plan.

The “Do Nothing” alternative includes existing infrastructure and programmed improvements. The “Do Nothing” alternative is considered to be the status quo, in that no additional measures are planned to address possible shortfalls in transportation system capacity.

TDM strategies include measures that improve the operation of the current transportation system by managing travel demand, independent of other infrastructure improvements (e.g. constructing or expanding roads). The emphasis of TDM strategies is to reduce overall demands on the transportation network, especially auto trips; shift demands to time periods outside of the critical congestion periods; and shift demands from auto based trips to alternative modes of transportation, principally transit, cycling and walking.

TSM can improve the efficiency and safety of the transportation system and optimize the use of existing and planned infrastructure through such initiatives as transit priority facilities (e.g. bus priority at intersections), Intelligent Transportation Systems (ITS), High Occupancy Vehicle (HOV) lanes, Park’n’Ride facilities and intersection or signal timing improvements.

Local transit may reduce auto trips and thereby relieve congestion and increase the performance of the transportation system.

Interregional Transit and Passenger Rail would provide an alternative travel mode choice and increase the capacity of the transportation system. This could include inter-regional bus service in mixed traffic, higher order priority transit services on new infrastructure such as Bus Rapid Transit (BRT), Light Rail Transit (LRT), GO Transit, and VIA rail.

Air services can potentially result in a change in travel patterns for both passengers and freight.

Freight rail services for goods movement could encourage the diversion of freight from trucks. The ability to expand rail service and divert longer haul goods to rail may provide some relief to network congestion both on the provincial highway network, as well as on arterial roads.

Municipal Roads and Provincial Highways could be widened / improved to increase the capacity and performance of the transportation network and provide relief to forecasted network congestion. This could include:

- Provincial roads - potential to widen Highway 7&8
- Municipal roads – potential to widen local east-west roads between and through Stratford and New Hamburg.
- Access Management – access management strategies could be employed to improve the operation of existing Highway 7&8 through removal, consolidation or redirection of existing intersections and entrances and by imposing strict restrictions on future access to Highway 7&8.

In addition, new municipal roads and/or provincial highways/transitways would increase the capacity and performance of the transportation network and provide relief to forecasted network congestion. Inherent in these new facilities would be a high degree of access control in order to preserve the travel mobility characteristics of the corridor. Commercial and private entrances would be prohibited and access would be limited to at-grade highway intersections or potentially highway interchanges with key arterial roads; and to transit stations for a provincial transitway. Use of sections of existing roadways may be considered.

#### **7.4.6 Determine Degree to Which Individual Area Transportation System Alternatives Address Problems and Opportunities**

The 'Area Transportation System' alternatives will be examined to determine the degree to which they individually address problems and opportunities. On a preliminary basis, this will be determined through the following screening criteria:

- Potential to address transportation problems and opportunities;
  - Long term capacity deficiencies
  - Efficient movement of people
  - Efficient movement of goods
  - Recreational / tourist travel
  - System reliability / redundancy
  - Safety
  - Accessibility
  - Modal opportunities
- Support for provincial policies (Greater Golden Horseshoe Growth Plan, etc.)
- Supports land use and growth objectives of province and municipalities

This determination will:

- be undertaken using a reasoned argument methodology only;
- consider the environmental and transportation factors and sub-factors identified in **Exhibit 7.2** and the evaluation criteria and indicators identified in Supporting Document #5.

#### **7.4.7 Define Elements of Area Transportation System Alternatives and Group Them into Combinations**

The following generic combinations of area transportation system alternatives have been developed:

##### Do Nothing

As indicated in Section 7.4.5, the “Do Nothing” alternative includes existing infrastructure and programmed improvements.

##### Combination #1: Optimize Existing Network

Combination #1 includes:

- optimization of:
  - local transit;
  - interregional transit and passenger rail;
  - passenger rail;
  - freight rail;
- transportation system demand management (TDM)
- transportation system management (TDM)

##### Combination #2: New / Expanded Non-Road Infrastructure plus elements of Combination #1

Combination #2 includes:

- new/expanded
  - local transit
  - interregional transit and passenger rail
  - air services
  - marine services
  - freight rail
- elements of Combination #2

##### Combination #3: Widen Roads plus elements of Combination #2

Combination #3 includes:

- widen / improve:
  - municipal roads

- provincial highways
- elements of Combination #2

Combination #4: New Municipal Roads and/or Provincial Highways/ Transitways plus elements of Combination #3

Combination #4 includes:

- new municipal roads
- new provincial highways/transitways

#### **7.4.8 Determine the Degree to which Combination Alternatives Address the Problems and Opportunities and Select the Preferred Combinations**

The advantages and disadvantages of the various combination 'Area Transportation System' alternatives will be compared using a reasoned argument methodology to select recommended alternatives.

The trade-offs used to select preferred 'Area Transportation System' alternatives will reflect:

- Government legislation, policies and guidelines;
- Municipal policy (i.e. Official Plans);
- Public, Agencies, First Nations, Consultation Groups, and other stakeholder issues and concerns; and
- Project Team (staff from MTO and their Consultants) expertise.

#### **7.4.9 Identify the Alternatives that will Proceed to Preliminary Planning and those Alternatives that Require Further Study by Other Proponents**

The objectives and key tasks are:

- evaluate and select those combinations that are expected to significantly contribute to addressing 'Area Transportation System' problems and opportunities

The work outlined in Section 7.4.5 through 7.4.9 is documented in Report D: Working Paper – Area Transportation System Alternatives.

### **PRELIMINARY PLANNING**

Preliminary Planning is outlined in Sections 7.4.10 through 7.4.12

#### **7.4.10 Generate the Detailed Elements of the Preliminary Planning Alternatives**

The objective and key task of this step is to generate detailed elements of the preliminary planning alternatives based on transportation, natural, land use / social, economic and cultural factors. They may include the following:

- new/expanded services;
- general areas of geometrical improvements and widening to existing facilities;
- new corridors;
- environmental protection for the above (by minimizing intrusion into areas of environmental significance as identified through secondary source information);
- conceptual areas of limitations to highway access.

Exhibit 7.4 provides a preliminary listing of the proposed environmental and transportation factors and sub-factors to be considered for generating preliminary planning alternatives:

<b>Exhibit 7.4: Principles for Generating Preliminary and Detailed Planning Alternatives</b>
<p><b>Principle 1: Minimize impacts to significant natural features, functions, systems and communities</b></p> <ul style="list-style-type: none"><li>• Avoid where possible, or minimize encroachment on or loss of water bodies and associated riparian zones;</li><li>• Avoid where possible, or minimize encroachment on or loss of critical fish habitat features;</li><li>• Avoid where possible, or minimize encroachment on or loss of species of conservation concern (vegetation, fish and wildlife);</li><li>• Avoid where possible, or minimize encroachment on or loss of critical habitat of Species at Risk;</li><li>• Avoid where possible, or minimize encroachment on or loss of encroachment into ecologically functional areas;</li><li>• Avoid where possible, or minimize encroachment on or loss of important wildlife areas and travel corridors. Other areas to be considered are any identified wildlife management, rehabilitation and research program sites;</li><li>• Avoid where possible, or minimize encroachment on or loss of Provincially Significant Wetlands (PSWs) and avoid impairment to wetland functions, including ecological function;</li><li>• Avoid where possible, or minimize encroachment on or loss of all other evaluated and unevaluated wetlands;</li><li>• Avoid where possible, or minimize encroachment on or loss of designated significant woodlands;</li><li>• Avoid where possible, or minimize encroachment on or loss of other important woodlands;</li><li>• Avoid where possible, or minimize encroachment on known groundwater recharge and discharge areas; as well as identified wellhead and source</li></ul>

<b>Exhibit 7.4: Principles for Generating Preliminary and Detailed Planning Alternatives</b>
<p>protection areas and areas susceptible to groundwater contamination;</p> <ul style="list-style-type: none"> <li>• Avoid where possible or minimize encroachment on, loss of, or impairment of ecological function to environmentally significant features, and where appropriate associated functions, including Significant Valleylands, ESAs, ANSIs, or other areas of provincial, regional or local significance; and</li> <li>• Avoid where possible, or minimize encroachment on loss of, or impairment of ecological function to special spaces (including recreational activity zones).</li> </ul>
<b>Principle 2: Minimize impacts to existing and planned (approved under the Planning Act) population and employment areas</b>
<ul style="list-style-type: none"> <li>• Maximize separation distance from sensitive receptor locations;</li> <li>• Avoid where possible or minimize encroachment on, or loss of developed properties;</li> <li>• Minimize access impacts;</li> <li>• Maximize the access provided to major generators of economic activity;</li> <li>• Avoid where possible, or minimize encroachment on, or loss of prime agricultural areas and agricultural infrastructure;</li> <li>• Avoid where possible, or minimize encroachment on, or loss of mineral, petroleum and mineral aggregate resources;</li> <li>• Avoid operating and "non-operating" waste disposal sites; and</li> <li>• Avoid where possible, minimize encroachment on, or loss of known archaeological sites/built heritage features/cultural heritage landscape areas of extreme significance.</li> </ul>
<b>Principle 3: Transportation service criteria</b>
<ul style="list-style-type: none"> <li>• Generate alternatives that are efficient and direct, while meeting standards for design; and</li> <li>• Select alternatives that address the transportation problems and transportation opportunities.</li> </ul>

The assessment of the preliminary planning alternatives will consider the environmental and transportation factors, sub-factors and criteria identified in Exhibit 7.2 and their evaluation indicators identified in Supporting Document #5.

#### **7.4.11 Comparative Evaluation of the Relative Advantages and Disadvantages of Preliminary Planning Alternatives**

The objective and key task of this step is to evaluate preliminary planning alternatives using reasoned argument and arithmetic methods (as appropriate), utilizing the



preliminary listing of environmental and transportation factors, sub-factors and criteria in Exhibit 7.2, and their evaluation indicators identified in Supporting Document #5.

A reasoned evaluation methodology, augmented by arithmetic methods as appropriate, will be applied.

#### **7.4.12 Identify Recommended Transportation Development Strategy**

The objectives and key tasks of this step are:

- select recommended preliminary planning alternatives based on results of comparative evaluation by the project team and taking into consideration stakeholder input received through the consultation and outreach program
- develop a transportation strategy, including definition of study area(s)
- determine next steps, including decision if study is to continue through Phases 4-6 (*if provincial roadway alternatives are selected*)

The study area is defined as the geographic area within which a reasonable range of alternatives will be generated. It is fundamental to note that the study area does not limit the potential to examine broader transportation, economic and environmental considerations, impacts and effects outside of its boundaries.

The MTO Project Team will generate a study area through consultation with affected stakeholders (including regulatory agencies and municipalities). The following inputs will be used to guide the generation of study area limits:

- identified transportation problems and opportunities;
- the nature of the alternatives selected;
- existing transportation infrastructure;
- significant natural, socio-economic and cultural environmental features (as identified through secondary source data and consultation); and
- current government land use planning policies and initiatives.

During the study, the study area limits may be refined or modified as required to accommodate any reasonable alternatives that may be developed.

To determine next steps, the selected 'Area Transportation System' Development Strategy will be placed into one or more of the following four categories:

- If the preferred 'Area Transportation System' planning alternative is "Do Nothing" – the EA process is complete and no further study will be initiated.
- If the preferred 'Area Transportation System' planning alternative is not a provincial roadway recommendation – the current EA process will be halted; MTO will refer the planning alternative to the appropriate agency or jurisdiction for further review and action.

- If the preferred 'Area Transportation System' planning alternative is a provincial roadway recommendation – the EA process continues and MTO will proceed to the preliminary planning phase as outlined in Section 2.2.
- If the preferred 'Area Transportation System' planning alternative is a combination of provincial roadway recommendations and recommendations that are not provincial roadways – the EA process continues for provincial roadway solutions, with MTO proceeding to the Preliminary Planning phase as outlined in Section 2.2; and - 'Area Transportation System' planning alternatives that are not provincial roadways are referred to the appropriate agency or jurisdiction for further review and action.

The work of Sections 7.4.10 through 7.4.12 is presented in Report E: Milestone Report – Highway 7&8 Transportation Corridor Needs Assessment.

## **7.5 Detailed Planning Alternatives For Provincial Roadways**

### **7.5.1 Process Overview for the Development, Assessment and Evaluation of Detailed Planning Alternatives For Provincial Roadways**

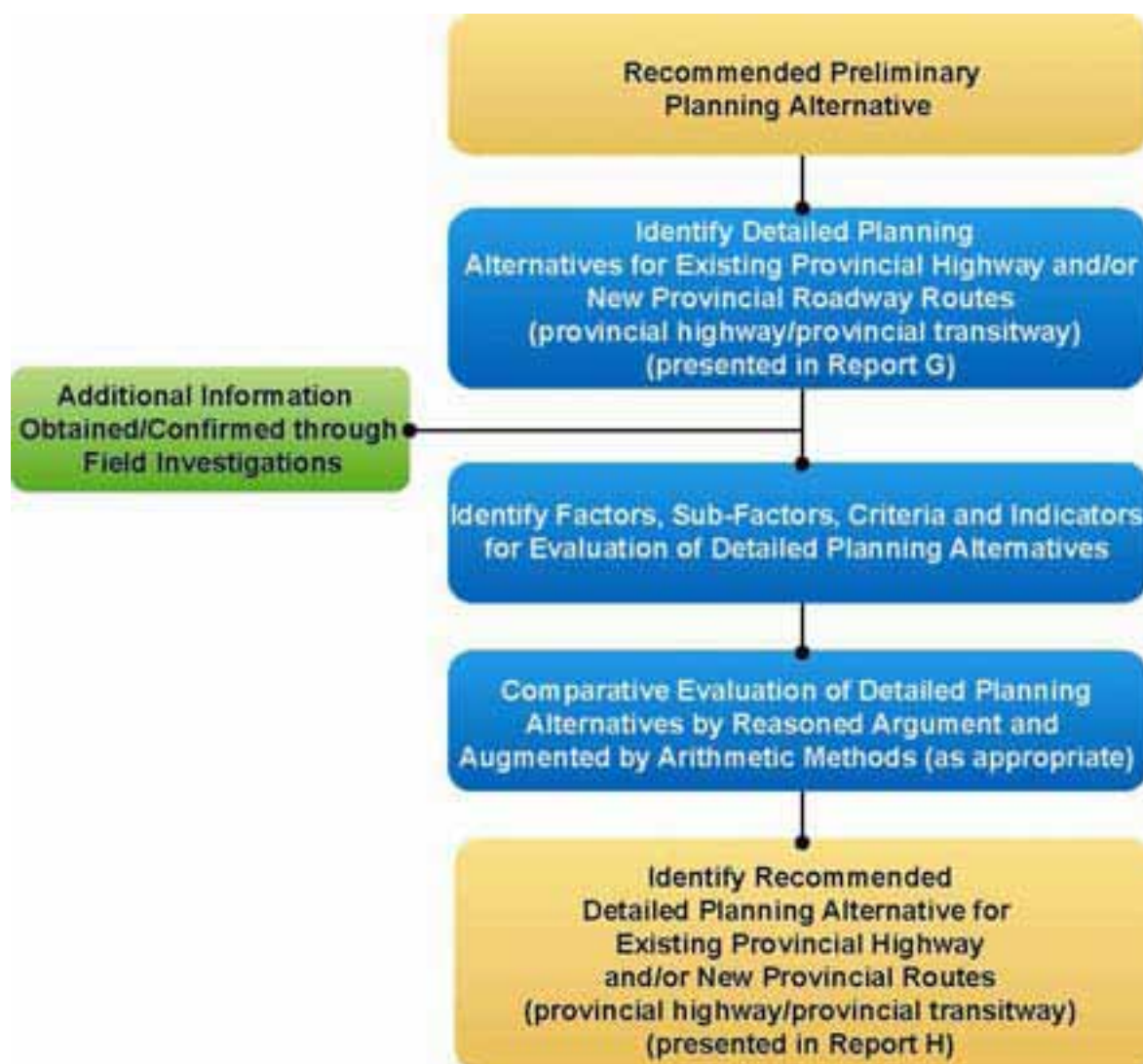
The process for the identification, assessment and evaluation of the detailed planning alternatives for provincial roadways is depicted in Exhibit 7.5. A brief description of the key elements of the process follows:

- 1 Identify Detailed Planning Alternatives for Existing Provincial Highway and/or New Provincial Roadway Routes (provincial highway/provincial transitway)
  - Description and rationale for detailed planning alternatives (presented in Report G).
- 2 Additional Information Obtained/Confirmed through Field Investigations
  - Obtain additional information regarding environmental conditions/features within the analysis area through field investigation (inventory, survey and testing, as appropriate).
- 3 Identify Factors, Sub-factors, Criteria and Indicators for Evaluation of Detailed Planning Alternatives
  - Each of the alternatives will be evaluated using reasoned argument against the environmental and transportation factors, sub-factors and criteria identified in Exhibit 7.2 and the evaluation indicators identified in Supporting Document #5
- 4 Comparative Evaluation of Detailed Planning Alternatives by Reasoned Argument and Augmented by Arithmetic Methods (as appropriate)
  - Each alternative will be evaluated using reasoned argument and arithmetic methods (as appropriate) using the identified factors, sub-factors, criteria and indicators (refer to preliminary listing of proposed factors, sub-factors and criteria in Exhibit 7.2 provided in Section 7.3; indicators will be developed during the preliminary planning phase of the study)

- 5 Identify Recommended Detailed Planning Alternative for Existing Provincial Highway and/or New Provincial Routes (provincial highway/provincial transitway)
  - Selection of recommended detailed planning alternative based on results of comparative evaluation and taking into consideration stakeholder input received through the consultation and outreach program (presented in Report H).

#### **Exhibit 7.5**

#### **Highway 7&8 Transportation Corridor Planning and Class EA Study Process Overview for the Development, Assessment and Evaluation of Detailed Planning Alternatives for Provincial Roadways (Phase 4 of Study)**



### **7.5.2 Summary Of Detailed Planning Alternatives**

Depending on the selected alternatives carried forward from the preliminary planning phase, the Highway 7&8 Transportation Corridor Planning and Class EA Study, will consider the specific location / type / character and template “footprint” for the following categories of provincial roadway detailed planning alternatives (as applicable):

- New provincial roadways
  - new provincial highway route location
  - highway type and transitway route location & technology
- Improve existing provincial highways (i.e. Highway 7&8, Highway 3)
  - specific location & type of geometrical improvements to existing provincial highway
  - specific location, extent & direction of widening to existing provincial highway
  - combinations of the above
- specialty engineering alternatives (bridge, drainage & hydrology, foundation, pavement & roadbase, traffic control & electrical infrastructure) for the above

These provincial roadway detailed planning alternatives are presented in more detail in Supporting Document #3 of this Study Plan. The rationale for the detailed planning alternatives for provincial roadways will be presented in Report “G”: Working Paper – Generation of Detailed Planning Alternatives for Provincial Roadways.

Exhibit 7.2 in Section 7.3 provides a preliminary listing of the proposed environmental and transportation factors, sub-factors and criteria to be considered for the generation, assessment and evaluation of alternatives. Supporting Document #5 provides preliminary evaluation indicators to be applied to these factors, sub-factors and criteria during the detailed planning phase. These preliminary listings will be refined and modified during consultation on the “proposed approach to upcoming work”, as is indicated in Sections 2.2 and 7.3 of this Study Plan.

The objectives and rationale for generating alternatives will ensure not only that alternatives are efficient/direct and meet technical objectives/design requirements, but also minimize/avoid impacts to significant environmental and study area features to the extent possible.

### **7.5.3 Process For Assessment Of Detailed Planning Alternatives For Provincial Roadways**

The assessment of the detailed planning alternatives for provincial roadways identified in Section 7.5.2 will:

- be undertaken using a reasoned argument methodology and augmented by arithmetic methods as appropriate ;

- consider the environmental and transportation factors, sub-factors and criteria identified in Exhibit 7.2 and the evaluation indicators identified in Supporting Document #5; and
- consider potential impacts on the environment.

The alternatives will then be reviewed with agencies and the public through the outreach and consultation process. This outreach and consultation is critical to developing a reasonable set of detailed planning alternatives. Local residents can add valuable information to the database gathered by the Project Team. Refinements to the alternatives will be integrated where warranted and a final set of detailed planning alternatives will be brought forward to the evaluation process.

#### **7.5.4 Process For Evaluation And Selection Of The Preferred Detailed Planning Alternatives For Provincial Roadways**

After the various detailed planning alternatives are generated and refined based on consultation, the evaluation of the alternatives will commence.

##### *Factor-Specific Environmental Inputs to the Evaluation of Detailed Planning Alternatives*

The data collected on the study area will assist in identifying the types of impacts each detailed planning alternative will have on each component of the environment, as indicated in Exhibit 7.2 of this Study Plan.

In addition, technical requirements and costs will be considered in the evaluation of detailed planning alternatives. Data collection for each of the environmental disciplines will be conducted consistent with the most up-to-date provincial policies and procedures. Each of these components will be defined by a set of evaluation criteria. Impacts will be quantified according to the preliminary criteria shown in Supporting Document #5 of this Study Plan.

These criteria are intended to assist the factor specific environmental specialists in determining the overall impact of the various alternatives on the natural, socio-economic and cultural environment. In determining the overall impact, the specialists will consider how the various factors and criteria interact and function together. The evaluation criteria listed represent the minimum requirements in the process of evaluating alternative methods.

A description of the rationale associated with the evaluation criteria/indicators is outlined in Supporting Document #5 of this Study Plan. The evaluation factors, sub-factors and criteria are subject to refinement and modification during the EA based on study findings, provincial policy and input received from stakeholders. Factor specific work plans for assessing potential environmental effects will be completed during the Class EA Study.

## **7.6 Preliminary Design Alternatives For Provincial Roadways**

### **7.6.1 Summary Of Preliminary Design Alternatives**

Depending upon the provincial highway and provincial transitway alternatives selected during Planning, the Preliminary Design alternatives may be generated and assessed for:

- new provincial transitway route;
- new provincial highway route;
- improvements to the existing highway; and
- combinations of the above.

The Highway 7&8 Transportation Corridor Planning and Class EA Study will consider the following preliminary design alternatives for the provincial roadway alternatives for the following categories of preliminary design (as applicable):

- calculated vertical & horizontal alignment and cross-section;
- highway interchange & intersection preliminary design;
- transitway station preliminary design;
- location/design of private entrances to highway (if applicable);
- specialty engineering alternatives for the above (bridge, drainage & hydrology, foundation, pavement & roadbase, traffic control & electrical infrastructure);
- right-of-way and property acquisition requirements;
- utility requirements (relocation etc); and
- preliminary staging of implementation.

These provincial roadway preliminary design alternatives are presented in more detail in Supporting Document #3 of this Study Plan. The rationale for the preliminary design alternatives for provincial roadways will be presented in Report “I”: Working Paper – Generation of Preliminary Design Alternatives for Provincial Roadways.

Exhibit 7.2 provides a preliminary listing of the proposed environmental and transportation factors, sub-factors and criteria to be considered for the generation, assessment and evaluation of alternatives. Supporting Document #5 provides preliminary evaluation indicators to be applied to these factors, sub-factors and criteria during the preliminary design phase. These preliminary listings will be refined and modified during consultation on the “proposed approach to upcoming work”, as is indicated in Sections 2.2 and 7.3 of this Study Plan.

### **7.6.2 Process For Generation And Assessment Of Preliminary Design Alternatives For Provincial Roadways**

The generation and assessment of preliminary design alternatives for provincial roadways will use the factors, sub-factors and criteria as were applied for the detailed planning alternatives as identified in Section 7.5.

The assessment of the preliminary design alternatives for provincial roadways identified in Section 7.6.1 will:

- be undertaken using a reasoned argument methodology and augmented by arithmetic methods as appropriate;
- consider the environmental and transportation factors, sub-factors and criteria identified in Exhibit 7.2 and the evaluation indicators identified in Supporting Document #5; and
- consider potential impacts on the environment.

### **7.6.3 Process For Evaluation And Selection Of The Preferred Preliminary Design Alternatives For Provincial Roadways**

The evaluation and selection of preliminary design alternatives for provincial roadways will use the same factors, sub-factors and criteria as were applied for the detailed planning alternatives in Section 7.5.

## **8 MONITORING STRATEGY DURING PROJECT IMPLEMENTATION**

During this Class EA study, MTO will commit to developing a monitoring program for the implementation of the selected preferred alternative. The Transportation Environmental Study Report will include a comprehensive list of all commitments made during the study to guide future environmental work and consultation as well as effects and compliance monitoring.

### **8.1 Commitment To Develop Project Technical Monitoring Program And Procedures**

During Preliminary Design of the study, a monitoring strategy will be developed to reflect how MTO proposes to ensure that the implementation of proposed mitigating measures and key design features are consistent with project commitments outlined in the Transportation Environmental Study Report and any subsequent environmental study documentation.

An environmental effects and compliance monitoring program is necessary to identify potential non-conformance with environmental design, and environmental protection requirements (as identified during this Class EA study) and to initiate corrective action to bring the work into compliance with environmental requirements committed to in the Transportation Environmental Study Report and any subsequent environmental documentation for this undertaking.

MTO will ensure that appropriate commitments to compliance monitoring are reflected in Report “J”: Milestone Report – Selection of Preliminary Design Alternatives for Provincial Roadways.

The duration of the monitoring and follow-up programs will vary and will depend on the conditions of permits and approvals granted by regulatory agencies.

### **8.2 Commitment To Develop Project EA Process Monitoring Program And Procedures**

During the planning and design processes, MTO will ensure compliance with Class EA process commitments prior to project implementation. If the preferred alternative includes a construction phase, MTO will ensure that external notification and consultations are consistent with any commitments that may have been made earlier in the Transportation Environmental Study Report or other environmental documentation. Following construction, monitoring will ensure that any follow-up information is provided to external agencies as per any outstanding environmental commitments.



## **9 OUTREACH AND CONSULTATION**

### **9.1 Key Components of Outreach and Consultation Program**

A major component of the Highway 7&8 Transportation Corridor Planning and Class EA Study will be outreach and consultation. The key components of the outreach and consultation program are as follows:

- Section 1.1 of this Study Plan indicates that outreach and consultation will be structured around six key points of decision-making, each of which will be supported by:
  - the release of a newsletter;
  - the release of draft reports for review and comment;
  - a round of Public Information Centres (PICs);
  - posting of information on the study web site; and
  - newspaper notices announcing the above.
- Section 2.2 of this Study Plan provides an overview of the planning and Class EA Study process, including objectives and key tasks, reports, and PICs at which information is presented.
- Section 2.4.4 of this Study Plan provides the principles for outreach and consultation.

The consultation program is designed such that the stakeholders will be provided reasonable timeframes for reviewing and providing comments on documentation and information made available during this Class EA study, with the PICs being the first opportunity for the public to review the information presented for each phase of the work. The consultation plan encourages proactive communication, which will allow comments and views of stakeholders to assist MTO in the decision-making process.

### **9.2 Public Information Centres (PICs)**

The six rounds of PICs are the focus points of outreach and consultation.

These PICs will be supplemented by follow-up activities where appropriate. Each round of PICs will include individual events held in Stratford and New Hamburg. The precise locations/venues and timing of each PIC will be determined during the study based on the availability of venues, etc.

The PICs will be arranged as drop-in centres (open house format) to allow stakeholders to see results, exchange information, and ask one-on-one questions of the Project Team. The setup of each round of PICs will depend on the nature of the information being presented and input being sought. The PICs serve an important function in

providing for two-way communications on specific local conditions, issues and concerns regarding the study.

Follow-up consultation activities will be held as necessary throughout the project. It is expected that these activities will be very helpful to facilitate additional dialogue and attempt to resolve any outstanding concerns and issues during the Class EA process. Follow-up activities will be arranged to address specific project issues and concerns as they arise. The format of these activities will be flexible to reflect the type of “Project Team – stakeholder” interaction required to address a particular issue but could include stakeholder group meetings, workshops, kitchen table meetings, presentations, surveys, and other.

Summary Reports for Public Information Centres, follow-up activities and other consultation events will be prepared and posted on the project website in a timely manner. The information to be presented at each PIC is summarized in the table provided in Section 2.2. The reports referred to in the table are summarized in Supporting Document #2 of this Study Plan.

### **9.3 Public Notices in Newspapers**

Newspaper notices announcing Study Commencement and PIC #1 are scheduled for posting in local newspapers in June, July and August 2007.

MTO will publish future newspaper notices as follows:

- public notices shall be placed in newspapers for each round of PICs, and the filing of the Transportation Environmental Study Report;
- each round of public notices shall include newspaper advertisements on at least 2 separate days (preferably one week-day and one weekend-day), where project scheduling/timing and newspaper circulation timing jointly permit;
- these public notices shall be placed in the following newspapers:
  - Stratford Beacon Herald;
  - New Hamburg Independent;
  - Kitchener Waterloo Record;
  - Le Regional;
  - Turtle Island News (Six Nations); and
  - Possibly two additional local newspapers.

For those newspapers which publish once per week, notices may be placed only once. For those newspapers which publish biweekly or monthly, notices will be placed only if timing/scheduling permits.

### **9.4 Project Web Site**

A project web site has been established for the Highway 7&8 Transportation Corridor Planning and Class EA Study. The web site will be maintained during the course of the

study as a source of up-to-date information. The project web site address is <http://www.7and8corridorstudy.ca>. Stakeholders are encouraged to visit the site.

## 9.5 Contacting the Study Team

The study team can be contacted at the following:

- Email to: [projectteam@7and8corridorstudy.ca](mailto:projectteam@7and8corridorstudy.ca)
- Toll free telephone call to: 1 (866) 921-9268

## 9.6 Stakeholder Contact List

The Project Team has developed a contact list that includes interested individuals, ratepayer groups, recreational groups, agricultural groups, etc. located in the analysis / study area. The mailing list developed during the Study Design was the starting point for this stakeholder list. Additions have been made based upon stakeholder contacts to the study team, and will continue to be made as the study progresses. These stakeholders will be notified by letter /e-mail of project activities including study start-up, Public Information Centres, and follow-up activities (as appropriate).

## 9.7 Stakeholder Categories

The categories of stakeholders for this study are provided in Exhibit 9.1 and then discussed below:

<b>Exhibit 9.1 Highway 7&amp;8 Transportation Corridor Planning and Class EA Study Categories of Stakeholders</b>	
• First Nations	
• Business/Commercial Interest Groups	
• Emergency Service Providers	
• General Public	
• Municipalities	
• Regulatory Agencies	
• Transportation Service Providers	
• Utility Companies	

- First Nations
  - outreach and consultation with First Nations:
    - Six Nations of the Grand River First Nation
  - comply with 'Ontario's New Approach to Aboriginal Affairs, Spring 2005; also includes compliance with Grand River Notification Agreement

- be proactive in identifying and making initial contact with Six Nations of the Grand River First Nation and with Mississaugas of the New Credit First Nation
- strive to provide appropriate and meaningful consultation and engagement with First Nations that provides them with the opportunity to be informed; and to have their opinions heard and seriously considered.
- ensure that issues of particular interest to First Nations communities are addressed, including, but not limited to:
  - identification of First Nations' land claims;
  - potential effects to Indian Reserves;
  - potential effects to First Nations' sacred grounds;
  - potential effects to First Nations' treaty rights and use of land and resources for traditional purposes (e.g. hunting, fishing, harvesting of country foods, harvesting of medical plants);
  - potential effects to First Nations' burial sites;
  - potential effects to pre-historic and historic First Nations' sites; and
  - potential effects to First Nations' industry.(For additional details on the above, please refer to Exhibit 7.2 in Section 7.3 of this Study Plan and Supporting Document #5)
- provide opportunities for two-way communication by meetings with First Nations staff, with an emphasis on draft reports developed as the study progresses;
- at key decision-making milestones during the study, offer:
  - a presentation to Councils; and
  - a community meeting on the reserves.
- Business/commercial interest groups
  - Outreach and consultation with:
    - Chambers of Commerce (New Hamburg , Stratford and District, etc), Tourism agencies and committees, business associations and individual business owners as identified during the study
  - Outreach and consultation includes discussions at PICs and meetings with groups or individuals during study. Notification of upcoming meetings and opportunities for input may also be promoted through provision of the website address to leaders of organized groups. In addition, local tourist businesses will be provided PIC notices for posting on their bulletin boards in advance of each PIC
- Emergency Service providers
  - Outreach and consultation with:
    - Police services, including OPP.
    - Ambulance services, including Perth EMS, Region of Waterloo – EMS, etc.
    - Fire departments, including Stratford, Shakespeare, Wilmot, Perth East Fire Departments
  - Outreach and consultation includes discussions at PICs with emergency service providers regarding potential impacts to emergency access routes or response time from existing facilities to residents and businesses in the analysis area.

- General Public
  - Outreach and consultation with:
    - potential users of existing Highway 7&8 from Greater Stratford to New Hamburg area
    - property owners in analysis area, both directly and indirectly impacted
    - local population who live within the analysis area and may be impacted by changes to local transportation network if provincial network changes
    - interest groups who have a specific interest in the analysis area, including Perth County and Waterloo Federation's of Agriculture, and VELO Ontario Cycling Alliance.
  - Outreach and consultation with general public includes newspaper notices for announcement of Study Commencement and PICs and TESR public review period, Canada Post notification to rural areas in advance of PICs and mailings to property owners and members of the public as they identify themselves and request to be added to the project mailing list, or attend a PIC during the study. Notification through correspondence to property owners directly impacted by proposed works will be carried out before the PIC at which the recommended preliminary design is presented and for the TESR public review period. The correspondence mailed to those directly impacted by the proposed works will indicate that they are receiving the letter because their property is directly impacted (i.e. property acquisition required and/or significant alteration to property use/access). Follow-up telephone calls will be made, as required, to ensure that as many directly affected property owners as possible attend the PICs and are aware of the opportunity to comment on the TESR.
- Municipalities:
  - Outreach and consultation with:
    - Region of Waterloo
      - Township of Wilmot
    - Perth County
      - Township of South Perth
      - Township of Perth East
      - City of Stratford
  - Outreach and consultation includes collaborative engagement that recognizes the significance of the study to municipalities and includes an invitation to join the Municipal Advisory Group (MAG) that will meet at key study milestones, in advance of each PIC. Municipalities may be interested in many aspects of the undertaking, as they relate to the work of their engineering, transportation, planning, heritage, recreation and economic development departments. Presentations to municipal Councils will be offered in advance of each PIC when requested. Councils' endorsement will be sought for the preferred alternative prior to the final set of PICs and publication of the TESR.

- Regulatory Agencies
  - Outreach and consultation with:
    - Federal agencies, including Canadian Environmental Assessment Agency (CEAA), Transport Canada, Environment Canada, Canadian Transportation Agency, Department of Fisheries and Oceans, Canada Coast Guard and Health Canada;
    - Provincial agencies, including Ministry of Natural Resources, Ministry of Environment, Ministry of Culture, Ontario Secretariat for Aboriginal Affairs, Ministry of Agriculture and Food, Ministry of Tourism, Culture and Recreation, Ministry of Community and Social Services, Ministry of Municipal Affairs and Housing and Ministry of Public Infrastructure and Renewal; and
    - Local agencies, including Grand River Conservation Authority, Upper Thames River Conservation Authority and municipal heritage planning committees/groups.
  - Outreach and consultation includes collaborative engagement that recognizes the significance of the study to regulatory agencies and includes an opportunity to join the Regulatory Advisory Group (RAG) that will meet at major study milestones, in advance of PICs. Regulatory agency interest typically relates to the study process and recommendations that relate policies, regulations and approvals, as well as environmental protection of sensitive or designated features of the natural environment (i.e., fisheries habitat, Species at Risk, ANSIs, ESAs, PSWs, etc), socio-economic environment (i.e., land use, noise, air, landscape composition, etc.) and the cultural environment (i.e., archaeological resources and built heritage features, etc.). Involvement with federal agencies in this project is required to identify issues of federal jurisdiction, effectively address Canadian Environmental Assessment Act (CEAA) requirements during the EA process and coordinate provincial and federal approvals.
- Transportation service providers
  - Outreach and consultation with:
    - Municipal Transit Operators, including Stratford City Transit,
    - Bus operators,
    - School bus operators,
    - Rail operators, including Goderich - Exeter Railway, and
    - trucking firms including Ontario Trucking Association.
  - Outreach and consultation includes discussions at PICs and may include comments on long-range planning for future bus or transit routes using Highway 7&8, or future potential new routes through analysis area. Discussions with CN and CP are expected to include potential impacts to existing rail lines or new crossings that may result from the proposed works. Transportation service providers will be encouraged to attend PICs and visit the project web site for regular study updates.

- **Utility Companies**
  - Outreach and consultation with:
    - Electrical companies including Hydro One, Tay Hydro Electric Distribution, Kitchener – Wilmot Hydro, Festival Hydro Inc.,
    - Pipelines including TransCanada Pipeline,
    - Telephone companies including Bell Canada and Call Net Technology Services Inc. (Sprint Canada),
    - Cable companies including Rogers Cable and Cogeco Cable,
    - Gas companies including Union Gas and Enbridge Gas Distribution.
  - Outreach and consultation includes discussions at PICs and may include comments on long-range planning for utility infrastructure either along existing Highway 7&8 or future new routes through the analysis area. Discussions will also include potential impacts to existing services or new crossings that may result from the proposed works. Utility company representatives will be encouraged to attend PICs and visit the project web site for regular study updates.

## **9.8 Role of Stakeholders**

Stakeholders have a major role and responsibility in determining the success of the outreach and consultation program. The extent to which the stakeholders participate, the issues they raise, and how such issues are resolved, all influence the effectiveness of the outreach and consultation program. The role of stakeholders is provided in Exhibit 9.2 below.

<b>Exhibit 9.2</b> <b>Highway 7&amp;8 Transportation Corridor Planning and Class EA Study</b> <b>Summary of Role of Stakeholders</b>	
<b>1. Get Involved! – Be Involved! – Stay Involved!</b>	
<b>2. Provide your contact information (or that of your organization) to the study team for placement on the stakeholder contact list, so that you receive letter / email notifications of project activities.</b>	
<b>3. Utilize the ‘Overview of the Study Process’ (key tasks, reports, public information centres and information presented, preliminary schedule) as the framework for your participation throughout the study (See Exhibit 2.1 of the Study Plan).</b>	

<p align="center"><b>Exhibit 9.2</b> <b>Highway 7&amp;8 Transportation Corridor Planning and Class EA Study</b> <b>Summary of Role of Stakeholders</b></p>
<p><b>4. Provide the study team with your comments (additions/deletions/errors) on draft reports, within the time period requested, so that your input can be considered in finalizing those documents for use as building blocks for upcoming work.</b></p> <ul style="list-style-type: none"> <li>For the first round of PICs, the draft reports include: <ul style="list-style-type: none"> <li>Report “A”: Study Plan for Technical Work, Outreach and Consultation;</li> <li>Report “B”: Working Paper – Overview of Transportation, Land Use and Economic Conditions Within the Analysis Area; and</li> <li>Report “F” - 1<sup>st</sup> Part: Working Paper – Environmental Conditions and Constraints.</li> </ul> </li> <li>Comments on the draft reports presented at the first round of PICs are requested by October 30, 2007.</li> </ul>
<p><b>5. Provide the study team with your comments (additions/deletions/errors) on the proposed approach to upcoming work, within the time period requested, so that your input can be considered before those approaches are applied to upcoming work.</b></p> <ul style="list-style-type: none"> <li>For the first round of PICs, the proposed approach to upcoming work includes: <ul style="list-style-type: none"> <li>Process to identify ‘Area Transportation System’ Problems and Opportunities;</li> <li>Process and Criteria for Evaluating and Selecting ‘Area Transportation System’ Alternatives; and</li> <li>Process, Factors and Criteria for Generating, Assessing, Evaluating and Selecting Preliminary Planning Alternatives.</li> </ul> </li> <li>Comments on the proposed approaches to upcoming work presented at the first round of PICs are requested by October 30, 2007.</li> </ul>
<p><b>6. When providing your comments, keep in mind the following:</b></p> <ul style="list-style-type: none"> <li><b>Study objectives (See Exhibit 1.2 of the Study Plan);</b></li> <li><b>Assumptions of EA proponentcy and completion of study work (See Exhibit 3.1 of the Study Plan).</b></li> </ul>
<p><b>7. If you have questions or comments, or if you wish to add your name to the study contact list:</b></p> <ul style="list-style-type: none"> <li><b>Attend Public Information Centres (PICs) and talk to the study team members that staff them;</b></li> <li><b>Complete a comment sheet provided at the PICs;</b></li> <li><b>Contact the study team at:</b> <ul style="list-style-type: none"> <li><b>Email: <a href="mailto:projectteam@7and8corridorstudy.ca">projectteam@7and8corridorstudy.ca</a></b></li> <li><b>Toll Free: 1 (866) 921-9268</b></li> </ul> </li> <li><b>Find information at the study web site at <a href="http://www.7and8corridorstudy.ca">http://www.7and8corridorstudy.ca</a></b></li> </ul>

Note: Items 4 and 5 of this exhibit are customized to the first round of Public Information Centres and will be modified to suit for each subsequent round of Public Information Centres.



## 10 FILING AND REVIEW OF TRANSPORTATION ENVIRONMENTAL STUDY REPORT (TESR)

The Transportation Environmental Report (TESR) is an assembly of the study working papers and milestone reports into a single document. The contents of the TESR are provided in Exhibit 10.1 below:

<b>Exhibit 10.1</b> <b>Highway 7&amp;8 Transportation Corridor Planning and Class EA Study</b> <b>Transportation Environmental Study Report Contents</b>	
1.	Purpose, Relevance and Position of Report Within The Study Process
2.	Summary Description of the Undertaking
3.	Content of final Report “A” Study Plan For Technical Work, Outreach And Consultation
4.	Content of final Report “B”: Working Paper – Overview of Transportation, Land Use and Economic Conditions Within the Analysis Area
5.	Content of final Report “C”: Working Paper – ‘Area Transportation System’ Problems and Opportunities
6.	Content of final Report “D”: Working Paper – Area Transportation System Alternatives
7.	Content of final Report “E”: Milestone Report – Highway 7&8 Transportation Corridor Needs Assessment
8.	Content of final Report “F”: Working Paper - Environmental Conditions And Constraints
9.	Content of final Report “G”: Working Paper – Generation of Detailed Planning Alternatives for Provincial Roadway
10.	Content of final Report “H”: Milestone Report - Selection of Detailed Planning Alternatives for Provincial Roadway
11.	Content of final Report “I”: Working Paper - Generation of Provincial Roadway Preliminary Design Alternatives
12.	Content of final Report “J”: Milestone Report - Selection of Preliminary/Concept Design Alternatives for Provincial Roadway
13.	Environmental Synopsis
14.	Results of Outreach and Consultation
15.	Commitments to Future Work and Consultation

The Transportation Environmental Study Report will be prepared at completion of the study and made available on the public record for a 60-day review period. If no Part 2 Order or “bump-up” requests are received by the Minister of the Environment by the completion of the review period (see Section 2.1 for details), the project would be deemed to have environmental clearance, and the Highway 7&8 Transportation Corridor Planning and Class EA Study would be completed.

As is indicated in Section 1.1, decisions on funding and timing of construction are based upon environmental clearance of the TESR, since it determines the type of transportation facilities and their location.

## **11 SUMMARY OF KEY STUDY PLAN ISSUES FROM OUTREACH AND CONSULTATION, AND MTO RESPONSE/CHANGES**

THIS SECTION TO BE COMPLETED FOLLOWING THE 60-DAY PERIOD PROVIDED FOR STAKEHOLDERS TO REVIEW AND COMMENT ON THE DRAFT STUDY PLAN

## **SUPPORTING DOCUMENTATION**

**SUPPORTING DOCUMENT #1**  
**LIST OF ABBREVIATIONS AND GLOSSARY OF TERMS**

## List of Abbreviations and Glossary of Terms Used in the Study Plan

LIST OF ABBREVIATIONS USED IN THIS STUDY PLAN	
ANSI	Area of Natural and Scientific Interest
CA	Conservation Authority
CEAA	Canadian Environmental Assessment Act
CPR	Canadian Pacific Railway
EA	Environmental Assessment
ESA	Environmentally Sensitive Areas
ETR	Electronic Toll Road
FA	Federal Authorities
FEAC	Federal Environmental Assessment Coordinator
GGH	Greater Golden Horseshoe
GHG	Green House Gas
GTA	Greater Toronto Area
HOV lanes	High Occupancy Vehicle Lanes
IBA	Important Bird Area
LACAC	Local Architectural Conservancy and Advisory Committee
MAG	Municipal Advisory Group
MMAH	Ministry of Municipal Affairs and Housing
MOE	Ministry of the Environment
MTO	Ministry of Transportation
NHIC	Natural Heritage Information Centre
NRVIS	MNR database
NTS	Not to Scale
OBM	Ontario Base Map
OEAA	Ontario Environmental Assessment Act
OMAF	Ontario Ministry of Agriculture and Food
(O)MNR	(Ontario) Ministry of Natural Resources
PIC	Public Information Centre
PSW	Provincially Sensitive Wetland
RA	Regulatory Authorities
RAAG	Regulatory Agency Advisory Group
RAP	Remedial Action Plan
SARA	Species at Risk Act
SWHTG	Significant Wildlife Habitat Technical Guide
TAC	Transportation Association of Canada
TDM	Traffic Demand Management
ToR	Terms of Reference
TSM	Traffic Systems Management

## Glossary of Terms

Term used in Terms of Reference	Explanation
Alternatives To	Functionally different ways of solving a documented transportation deficiency or taking an advantage of an opportunity.
Alternative Method	Ways of carrying out the selected alternative.
Alvar	Naturally open areas of thin or no soil over essentially flat limestone, dolostone or marble rock, supporting a sparse vegetation of mostly shrubs and herbs,.
Areas of Natural and Scientific Interest	Areas of land and water containing natural landscapes or features that have been identified as having life science or earth science values related to protection, scientific study or education.
Built Heritage Resources	One or more significant buildings, structures, monuments, installations or remains associated with architectural, cultural social, political, economic or military history and identified as being important to a community. These resources may be identified through designation or heritage conservation easement under the Ontario Heritage Act, or listed by local, provincial or federal jurisdictions.
Connectivity	The degree to which key natural heritage or key hydrologic features are connected to one another by links such as plant and animal movement corridors, hydrologic and nutrient cycling, genetic transfer and energy flow through food webs.
Cultural Heritage Landscape	A defined geographical area of heritage significance, which has been modified by human activities and is valued by a community. It involves a grouping(s) of individual heritage features such as structures, spaces, archaeological sites and natural elements, which together form a significant type of heritage form, distinctive from that of its constituent elements or parts. Examples include heritage conservation districts designated under the Ontario heritage Act; and villages, parks, gardens, battlefields, main streets and neighbourhoods, cemeteries, trail ways and industrial complexes of cultural heritage value.
Detail Design	The final stage in the design process in which the engineering and design components of preliminary design are refined and details concerning, for example, property, drainage, utility relocations and quantity estimate requirements are prepared and contract drawings and documents are produced.
Do Nothing Alternative	In the context of a transportation project, the "Do Nothing" alternative would mean that only normal operations, maintenance and repairs of existing facilities would be carried out, however, no major improvements or undertakings would be initiated.
EA Act	Environmental Assessment Act (as amended by S.O. 1996 c. 27), RSO 1980
Ecological Function	The natural processes, products or services that living or non-living environments provide or perform within or between species, ecosystems and landscapes, including hydrologic functions and biological, physical, chemical and socio-economic interactions.
Ecological Value	The value of ecology in maintaining the health of key natural heritage or key hydrologic features and the related ecological features and functions, as measured by factors such as diversity of species and habitats etc.
Endangered Species	Species that is listed or categorized as "Endangered Species" on the Ontario MNR official species at risk list.
Environment	As defined in Section 1 (c) of the EA Act. (i) air, land or water (ii) plant and animal life including man (iii) the social, economic and cultural conditions that influence the life of man or a community (iv) any building structure, machine or other device or thing made by man (v) any solid, liquid, gas, odour, heat, sound, vibration or radiation resulting directly or indirectly from the activities of man or (vi) any part of combination of the foregoing and the inter-relationships between any two of more of them, in or of Ontario.
Environmentally Sensitive Areas	Those areas identified by any agency or level of government which contain natural features, ecological functions or cultural, historical or visual amenities which are susceptible to disturbance from human activities and which warrant protection.

## Glossary of Terms

Term used in Terms of Reference	Explanation
External Agencies	Includes Federal departments and agencies, Provincial ministries and agencies, conservation authorities, municipalities, Crown corporations or other agencies other than MTO.
Freeway	Freeways are controlled access median divided highway facilities with grade separated crossings and interchanges (i.e. a vertical separation between a road/road or road/rail crossing.)
Fish Habitat	As defined in the Fisheries Act c. F-14, means spawning grounds and nursery, rearing, food supply and migration areas on which fish depend directly or indirectly in order to carry out their life processes.
Flood Plain	For river, stream and small inland lake features means the area, usually low lands adjoining a watercourse, which has been or may be subject to flooding hazard.
Greater Golden Horseshoe	A geographical area represented by the single-tier municipalities of Barrie, Brantford, Guelph, Hamilton, Kawartha Lakes, Orillia, Peterborough and Toronto; the upper-tier municipalities of Brant, Dufferin, Durham, Haldimand, Halton, Niagara, Northumberland, Peel, Peterborough, Simcoe, Waterloo, Wellington and York and the lower-tier municipalities within.
Groundwater Feature	Refers to the water-related features in the earth's sub-surface, including recharge / discharge areas, water tables, aquifers and unsaturated zones that can be defined by surface and subsurface hydrological investigation.
Habitat	The place or type of site where an organism or population naturally occurs. Species may require different habitats for different uses throughout their lifecycle.
Higher Order Transit	Transit that operates in its own dedicated right-of-way, outside of mixed traffic and therefore can achieve a frequency of service greater than mixed-traffic transit. Can include heavy rail, light rail and buses in dedicated right-of-ways.
Highways	Roadways under the jurisdiction of MTO including King's highways, secondary highways and tertiary roads. This includes all components within the associated right-of-way, e.g. structures, drainage works, traffic and safety devices.
Hydrologic function	Means the functions of the hydrological cycle that include the occurrence, circulation, distribution and chemical and physical properties of the water on the surface of the land, in the soil and underlying rocks, and in the atmosphere, and waters interactions with the environment including its relationship to living things.
Individual Environmental Assessment	An environmental assessment for an undertaking to which the EA Act applies and which requires formal review and approval under the Act.
Infrastructure	Means physical structures (facilities and corridors) that form the foundation of development. Infrastructure includes: sewage and water systems, waste management systems, electric power generation and transmission, communications and telecommunications, transit and transportation corridors and facilities, oil and gas pipelines and associated facilities.
Inter-modal Facility	A location where transfers between carriers can be made, as part of a single journey. A typical freight inter-modal facility is a rail where containers are transferred between trucks and trains.
Mitigation Measure	A measure that is incorporated into a project to reduce, eliminate or ameliorate detrimental environmental effects.
Multi-modal Transportation System	A transportation system which may include several forms of transportation such as automobiles, walking, trucks, cycling, buses, rapid transit, rail (such as commuter and freight), air and marine.
Natural Heritage Features and Area	Features and areas, including significant wetlands, significant coastal wetlands, fish habitat, significant woodlands south and east of the Canadian Shield, significant valleylands south and east of the Canadian Shield, significant habitat of endangered species and threatened species, significant wildlife habitat, and significant areas of natural and scientific interest, which are important for their environmental and social values as a legacy of the natural landscapes of an area.

## Glossary of Terms

Term used in Terms of Reference	Explanation
Natural Heritage System	A system made up of natural heritage features and areas, linked by natural corridors that are necessary to maintain biological and geological diversity, natural functions, viable populations of indigenous species and ecosystems. These systems can include lands that have been restored and areas with the potential to be restored to a natural state.
Petroleum Resources	Oil, gas, and brine resources which have been identified through exploration and verified by preliminary drilling or other forms of investigation. This may include sites of former operations where resources are still present or former sites that may be converted to underground storage for natural gas or other hydrocarbons.
Preliminary Design	That part of the planning and design process, during which various alternative design solutions are examined and evaluated including consideration of environmental effects and mitigation; the recommended design solution is then developed in sufficient detail to ensure that the horizontal and vertical controls are physically compatible with the proposed site, that the requirements for lands and right-of-ways are satisfactorily identified, and that the basic design criteria or features to be contained in the design have been fully recognized and documented is sufficient graphic detail to ensure their feasibility.
Provincial Policy Statement	The Provincial Policy Statement (PPS) sets out the Ontario Government's interests in land use planning and development and provides policy direction on matters of provincial interest to those involved in land use planning. The PPS is the complementary document to the <i>Planning Act</i> and is issued under the authority of the <i>Act</i> .
Prime Agricultural Area	Areas where prime agricultural lands predominate. This includes: areas of prime agricultural lands and associated Canada Land Inventory Class 4-7 soils; and additional areas where there is a local concentration of farms which exhibit characteristics of ongoing agriculture.
Prime Agricultural Land	Land that includes specialty crop areas and/or Canada Land Inventory Classes 1, 2, and 3 soils, in this order of priority for protection.
Proponent	A person or agency that carries or proposes to carry out an undertaking, or is the owner or person having charge, management or control of the undertaking.
Provincial Plan	A plan approved by the Lieutenant Governor in Council or the Minister of Municipal Affairs and Housing, but does not include municipal official plans.
Regulatory Agencies	Includes Federal departments and agencies, Provincial ministries and agencies, and conservation authorities.
Site Alteration	Activities such as filling, grading and excavation that would change the landform and natural vegetative characteristics of land.
Species At Risk	Wild plants and animals that have been assessed by an independent body, the Committee on the Status of Endangered Wildlife in Canada (COSEWIC), and found to be at some risk of disappearing from the wild in Canada. Species at Risk are protected by federal legislation, called the <i>Species at Risk Act</i> (SARA), proclaimed June 5, 2003.
Specialty Crop Area	Areas where specialty crops such as tender fruits, grapes, other fruit crops, vegetable crops, greenhouse crops, and crops from agriculturally developed organic soil lands are predominantly grown
Threatened Species	Species that is listed or categorized as "Threatened Species" on the Ontario MNR official species at risk list.
Transitway	A separate transit facility directly associated with a provincial freeway / highway. The transit right-of-way may be shared with a highway right-of-way.
Transportation Demand Management	Transportation demand management is a general term for strategies that result in more efficient use of existing transportation infrastructure. Examples include pricing (road tolls or transit discounts), flexible working hours, car pooling, park and ride etc.
Transportation Systems	A system consisting of corridors and rights of way for the movement of people and goods, and associated transportation facilities including transit stops and stations, cycle lanes, bus lanes, high occupancy lanes, rail facilities, inter-modal terminals, etc. and associated facilities such as storage and maintenance.



### Glossary of Terms

Term used in Terms of Reference	Explanation
Valley Lands	A natural area that occurs in a valley or other landform depression that has water flowing through or standing for some period of the year.
Watershed	An area that is drained by a river and its tributaries.
Watershed Plan	A plan used for managing human activities and natural resources in an area defined by watershed boundaries. The Plan can include a water budget and conservation plan, land and water use strategies, monitoring plan and targets.
Wellhead Protection Area	The surface and subsurface area surrounding a water well or well field that supplies a public water system and through which contaminants are likely to move so as eventually to reach the waterwell or well field.
Wetlands	Lands that are seasonally or permanently covered by shallow water, as well as lands where the water table is close to, or at the surface. The four major types of wetlands are swamps, marshes, bogs and fens. Periodically soaked or wet lands being used for agricultural purposes which no longer exhibit wetland characteristics are not considered to be wetlands for the purposes of this definition.
Wildlife Habitat	Areas where plants, animals and other organisms live, and find adequate amounts of food, water, shelter and space needed to sustain their populations.
Woodland	Woodlands include treed areas, woodlots or forested areas and vary in their level of significance at the local, regional and provincial levels

Note: Glossary of terms will be expanded to include evaluation subfactors, as appropriate.

**SUPPORTING DOCUMENT #2**

**HIGHWAY 7&8 TRANSPORTATION CORRIDOR PLANNING AND  
CLASS EA STUDY – SUMMARY OF REPORTS**

<b>Supporting Document #2</b> <b>Highway 7&amp;8 Transportation Corridor Planning and Class EA Study - Summary of Reports</b>		
STUDY PHASE	REPORTS	REPORT CONTENT
<b>1. STUDY PLAN</b>	<b>Report "A": 'Study Plan for Technical Work, Outreach and Consultation'</b>  (60 days provided for stakeholders to review and comment on draft Study Plan *)	a) Introduction: <ul style="list-style-type: none"> <li>• Introduction to the planning and Class EA Study</li> <li>• Study Objectives</li> <li>• Preliminary Statement of Transportation Problems and Opportunities</li> <li>• Purpose, relevance and position of report within the study process</li> </ul> b) Outline of planning & Class EA Study process: <ul style="list-style-type: none"> <li>• Overview of the Class EA Process and the Class EA for Provincial Transportation Facilities</li> <li>• Overview of planning and Class EA Study process for this provincial transportation corridor study</li> <li>• Overview of Federal/provincial EA co-ordination</li> <li>• Overview of Principles for Conducting the Study               <ul style="list-style-type: none"> <li>○ Transportation Engineering Principles</li> <li>○ Environmental Protection Principles</li> <li>○ Evaluation Principles</li> <li>○ Outreach and Consultation Principles</li> </ul> </li> <li>• Earlier and Related Work</li> </ul> c) Statement and Assumptions of Proponency <ul style="list-style-type: none"> <li>• Statement of Proponency</li> <li>• Assumptions of EA Proponency and Completion of Work</li> </ul> d) Statement of EA compliance/ Submission Statement
		e) Purpose of the Undertaking: <ul style="list-style-type: none"> <li>• Policy framework and other government initiatives</li> <li>• Transportation Problems and Opportunities               <ul style="list-style-type: none"> <li>○ Definition and Description of 'Area Transportation System'</li> <li>○ Overview of the Area Transportation System</li> <li>○ Overview of the Area Economy, Employment and Population Growth Forecasts</li> <li>○ Discussion of the Preliminary Statement of Problems &amp; Opportunities</li> </ul> </li> </ul> f) Environmental Conditions and Potential Effects
		g) Alternatives and their evaluation: <ul style="list-style-type: none"> <li>• "Alternatives To" the Undertaking and "Alternative Methods" for Carrying out the Undertaking</li> <li>• Evaluation Processes and Their Application</li> <li>• Preliminary Identification of Evaluation Factors and Sub-Factors</li> <li>• Transportation Needs Assessment               <ul style="list-style-type: none"> <li>- Area Transportation System Alternatives</li> <li>- Preliminary Planning Alternatives</li> </ul> </li> <li>• Detailed Planning Alternatives</li> <li>• Preliminary/Concept Design Alternatives</li> </ul> h) Monitoring strategy during project implementation
		i) Outreach and consultation <ul style="list-style-type: none"> <li>• Key components of outreach &amp; consultation program</li> <li>• Public Information Centres (PICs)</li> <li>• Public Notices in Newspapers</li> <li>• Project Web Site</li> <li>• Contacting the Study Team</li> <li>• Stakeholder Contact Lists</li> <li>• Stakeholder Categories</li> <li>• Role of Stakeholders</li> </ul> j) Filing and review of Transportation Environmental Study Report

<b>Supporting Document #2</b> <b>Highway 7&amp;8 Transportation Corridor Planning and Class EA Study - Summary of Reports</b>		
STUDY PHASE	REPORTS	REPORT CONTENT
<b>2. AREA TRANSPORTATION SYSTEM PLANNING</b>	<b>Report “B”: Working Paper – Overview of Transportation, Land Use and Economic Conditions within the Analysis Area</b>  (30 days provided for stakeholders to review and comment on draft working paper *)	a) Purpose, relevance and position of report within the study process b) Identification of analysis area c) Overview of provincial and municipal land use, transportation, and economic development policies (including forecasts for population and employment) d) Definition and description of ‘Area Transportation System’ e) Description of ‘Area Transportation System’ current travel characteristics and patterns (all modes) f) Description of analysis area – socio-economic existing conditions and outlooks g) Analysis Area – ‘Area Transportation System’ Modal Outlooks h) Description of current provincial highway conditions with respect to infrastructure condition, performance, compliance with current design standards, suitability for service to increased traffic, and feasibility of implementing improvements versus replacement/major reconstruction (determined through background/overview data and preliminary field reconnaissance) i) Summary of key factors that are driving ‘Area Transportation System’ needs
	<b>Report “C”: Working Paper – ‘Area Transportation System’ Problems and Opportunities</b>  (30 days provided for stakeholders to review and comment on draft working paper *)	a) Purpose, relevance and position of report within the study process b) Summary of transportation, land use and economic conditions <ul style="list-style-type: none"> <li>• Process to define ‘Area Transportation System’ problems and opportunities</li> </ul> c) Travel demand forecasting approach and methodology d) Forecasted future ‘Area Transportation System’ travel characteristics and patterns e) Detailed description and assessment of current and future ‘Area Transportation System’ problems and opportunities: <ul style="list-style-type: none"> <li>• Existing assessment</li> <li>• Horizon year assessment</li> </ul> f) Summary of ‘Area Transportation System’ needs’ g) Description and rationale of generic transportation system alternatives: <ul style="list-style-type: none"> <li>○ Area Transportation System alternatives</li> <li>○ Combination alternatives</li> </ul> h) Process and criteria for evaluating and selecting the preferred Area Transportation System Alternatives
	<b>Report “D”: Working Paper – Area Transportation System Alternatives</b>  (30 days provided for stakeholders to review and comment on draft milestone report *)	a) Purpose, relevance and position of report within the study process b) Summary of analysis area overview, transportation problems <ul style="list-style-type: none"> <li>• Summary of key factors that are driving ‘Area Transportation System’ needs</li> <li>• Process to define ‘Area Transportation System’ problems and opportunities</li> <li>• Summary – preliminary identification of existing and future ‘Area Transportation System’ problems, deficiencies and opportunities</li> </ul> c) Identify ‘Area Transportation System’ alternatives d) Select and define Area Transportation System alternatives and group them into combinations e) Determine the degree to which combination alternatives address the problems and opportunities f) Select the Alternatives that will proceed to preliminary planning

<b>Supporting Document #2</b> <b>Highway 7&amp;8 Transportation Corridor Planning and Class EA Study - Summary of Reports</b>		
STUDY PHASE	REPORTS	REPORT CONTENT
	Report "F" 1 <sup>st</sup> Part: Working Paper - Environmental Conditions and Constraints  (30 days provided for stakeholders to review and comment on draft working paper *)	a) Purpose, relevance and position of report within the study process b) Environmental overview within the analysis area based upon secondary source information for the following factor-specific areas: <ul style="list-style-type: none"> <li>• fisheries and aquatic ecosystems</li> <li>• terrestrial ecosystems</li> <li>• groundwater</li> <li>• surface water</li> <li>• air quality</li> <li>• land use / community</li> <li>• noise sensitive areas</li> <li>• land use / resources</li> <li>• landscape composition</li> <li>• contaminated property and waste management</li> <li>• cultural heritage – built heritage and cultural landscapes</li> <li>• cultural heritage – archaeology</li> </ul>

<b>Supporting Document #2</b> <b>Highway 7&amp;8 Transportation Corridor Planning and Class EA Study - Summary of Reports</b>		
STUDY PHASE	REPORTS	REPORT CONTENT
<b>3. PRELIMINARY PLANNING</b>	<b>Report "E": Milestone Report – Highway 7&amp;8 Transportation Corridor Needs Assessment</b>  (60 days provided for stakeholders to review and comment on draft milestone report *)	a) Purpose, relevance and position of report within the study process b) Summary of Report "D": Transportation Area Transportation System Alternatives: <ul style="list-style-type: none"> <li>• Area Transportation System alternatives</li> <li>• Environmental conditions and constraints</li> <li>• Outline of process and criteria for generating and assessing provincial roadway preliminary planning alternatives</li> </ul> c) Generation of preliminary planning alternatives (as applicable): <ul style="list-style-type: none"> <li>• New transportation facility location, type and capacity:               <ul style="list-style-type: none"> <li>○ conceptual corridors for a new provincial transitway</li> <li>○ conceptual corridors for a new provincial highway</li> <li>○ conceptual areas of limitations on access to provincial highway</li> </ul> </li> <li>• key specialty engineering preliminary planning alternatives for new transportation facilities               <ul style="list-style-type: none"> <li>○ minimize need for large spans &amp; lengths of major culverts</li> <li>○ minimize intrusion into major watercourses &amp; water bodies</li> <li>○ minimize intrusion into areas of extreme gradient change</li> <li>○ minimize intrusion into large areas of unstable soils</li> <li>○ possible ITS applications</li> </ul> </li> <li>• environmental protection for the above by minimizing intrusion into areas of provincial environmental interest as defined in the Provincial Policy Statement</li> <li>• preliminary study area(s)</li> </ul> d) Generation of preliminary planning alternatives for improvements to existing transportation facilities (as applicable): <ul style="list-style-type: none"> <li>• Location, type and capacity of facility improvements:               <ul style="list-style-type: none"> <li>○ general locations of geometrical improvements</li> <li>○ general locations of widening</li> <li>○ general location/configuration/template footprint of new connection points</li> <li>○ conceptual areas of limitations on access to provincial highway</li> </ul> </li> <li>• key specialty engineering preliminary planning alternatives for improvements to existing transportation facilities               <ul style="list-style-type: none"> <li>○ general type/character of structure improvements of specific bridges &amp; major culverts</li> <li>○ general locations of improvement to drainage along &amp; across ROW</li> <li>○ general nature of stability improvements to specific large cut &amp; fill embankments</li> <li>○ general locations of improvement to road base &amp; pavement</li> <li>○ general locations of improvement to line-of-sight, roadside safety &amp; traffic control</li> </ul> </li> <li>• environmental protection for the above by minimizing intrusion into areas of provincial environmental interest as defined in the Provincial Policy Statement</li> <li>• preliminary study area(s)</li> </ul> e) Evaluation and selection of provincial roadway preliminary planning alternatives and identification of type of provincial roadway detailed planning study, including description and rationale of study area(s) f) Decision to proceed with planning and Class EA Study through Phases 3-6 g) Process and criteria for generating provincial roadway detailed planning alternatives

<b>Supporting Document #2</b> <b>Highway 7&amp;8 Transportation Corridor Planning and Class EA Study - Summary of Reports</b>		
STUDY PHASE	REPORTS	REPORT CONTENT
<b>4. DETAILED PLANNING FOR PROVINCIAL ROADWAYS</b>	<b>Report "F" - 2<sup>nd</sup> Part:</b> <b>Working Paper - Environmental Conditions and Constraints</b>  (30 days provided for stakeholders to review and comment on draft working paper *)	a) Purpose, relevance and position of report within the study process b) Areas of Environmental Interest as specified in Provincial Policy Statement (from 1 <sup>st</sup> Part of Report F) c) Environmental conditions and constraints within the detailed planning study area for the following factor-specific areas: <ul style="list-style-type: none"> <li>• fisheries and aquatic ecosystems</li> <li>• terrestrial ecosystems</li> <li>• groundwater</li> <li>• surface water</li> <li>• air quality</li> <li>• land use / community</li> <li>• noise sensitive areas</li> <li>• land use / resources</li> <li>• landscape composition</li> <li>• contaminated property and waste management</li> <li>• cultural heritage – built heritage and cultural landscapes</li> <li>• cultural heritage – archaeology</li> </ul> d) Technical information for each factor-specific area: <ul style="list-style-type: none"> <li>• areas of investigation</li> <li>• background data</li> <li>• field investigations</li> <li>• determination of significance</li> </ul> e) Summary of significant environmental issues (Note: technical information builds on the content of the 1 <sup>st</sup> part of the report through field investigations and determination of environmental significance)

<b>Supporting Document #2</b> <b>Highway 7&amp;8 Transportation Corridor Planning and Class EA Study - Summary of Reports</b>		
STUDY PHASE	REPORTS	REPORT CONTENT
	<b>Report "G": Working Paper - Generation of Detailed Planning Alternatives for Provincial Roadways</b>  (30 days provided for stakeholders to review and comment on draft working paper *)	a) Purpose, relevance and position of report within the study process b) Summary of Report "E": Provincial Roadway Preliminary Planning: <ul style="list-style-type: none"> <li>Provincial roadway preliminary planning alternatives selected</li> <li>Process and criteria for generating provincial roadway detailed planning alternatives</li> </ul> c) Engineering condition field investigation work d) Refinement of study area(s) e) Description and analysis of detailed planning alternatives generated for provincial roadway (as applicable) <ul style="list-style-type: none"> <li>key roadway engineering alternatives for new provincial roadway:               <ul style="list-style-type: none"> <li>final study area</li> <li>new provincial transitway route location &amp; technology</li> <li>new provincial highway route location and highway type</li> <li>basic plan, profile, cross-section</li> <li>hwy interchange/intersection specific location, configuration, footprint</li> <li>transitway station specific location &amp; footprint</li> <li>specific nature &amp; location of limitations on access to provincial hwy</li> </ul> </li> <li>key specialty engineering detailed planning alternatives for new provincial roadway:               <ul style="list-style-type: none"> <li>specific location/ type/span/length &amp; template "footprint" of bridges &amp; major culverts</li> <li>specific location/type/character &amp; template "footprint" of major facilities for drainage along &amp; across the ROW and for stormwater management</li> <li>specific location/type/character and template "footprint" of major cut/fill embankments; foundations for bridges &amp; major culverts</li> <li>road base structure and pavement type</li> <li>specific locations/sites for traffic control signals and roadside safety barriers</li> </ul> </li> <li>combinations of the above</li> <li>environmental impact assessment for the above</li> </ul> f) Description and analysis of detailed planning alternatives generated for improvements to existing highway (as applicable) <ul style="list-style-type: none"> <li>key roadway engineering alternatives for highway improvements               <ul style="list-style-type: none"> <li>final study area</li> <li>specific location &amp; type of geometric improvements</li> <li>specific location, extent &amp; direction of widening</li> <li>basic plan, profile, cross-section</li> <li>hwy interchange/intersection specific location, configuration, footprint</li> <li>specific nature &amp; location of limitations on access to provincial hwy</li> </ul> </li> <li>key specialty engineering detailed planning alternatives for improvements to existing highway (same as for "e" above)</li> <li>environmental impact assessment for the above</li> </ul> g) Process and criteria for evaluating and selecting provincial roadway detailed planning alternatives
	<b>Report "H": Milestone Report - Selection of Detailed Planning Alternatives for Provincial Roadways</b>  (60 days provided for stakeholders to review and comment on draft milestone report *)	a) Purpose, relevance and position of report within the study process b) Summary of Report "G": Generation of Detailed Planning Alternatives for Provincial Roadways: <ul style="list-style-type: none"> <li>Detailed planning alternatives generated</li> <li>Process and criteria for evaluating and selecting provincial roadway detailed planning alternatives</li> </ul> c) Evaluation and selection of technically preferred provincial roadway detailed planning alternative(s) d) Refinement of technically preferred provincial roadway detailed planning alternative(s) e) Process and criteria for generating provincial roadway preliminary design alternatives



<b>Supporting Document #2</b> <b>Highway 7&amp;8 Transportation Corridor Planning and Class EA Study - Summary of Reports</b>		
STUDY PHASE	REPORTS	REPORT CONTENT
<b>5. PRELIMINARY / DESIGN OF PROVINCIAL ROADWAYS</b>	<b>Report "I" Working Paper - Generation of Preliminary/Concept Design Alternatives for Provincial Roadways</b>  (30 days provided for stakeholders to review and comment on draft working paper *)	a) Purpose, relevance and position of report within the study process b) Summary of Report "H": Selection of Detailed Planning Alternatives for Provincial Roadways: <ul style="list-style-type: none"> <li>Provincial roadway detailed planning alternatives selected</li> <li>Process and criteria for generating provincial roadway preliminary/concept design alternatives</li> </ul> c) Description and assessment of provincial roadway preliminary design of roadway alternatives generated (as applicable) <ul style="list-style-type: none"> <li>roadway engineering preliminary design alternatives:               <ul style="list-style-type: none"> <li>calculated horizontal &amp; vertical alignment and cross-section</li> <li>highway interchange/intersection preliminary design</li> <li>transitway station preliminary design</li> <li>location/design of private entrances to highway</li> <li>right-of-way &amp; property acquisition requirements</li> <li>utilities</li> <li>emergency access</li> </ul> </li> <li>roadway engineering preliminary design of alternatives for limitation to highway access</li> <li>environmental protection for the above</li> </ul> d) Description and assessment of provincial roadway preliminary design of specialty engineering alternatives generated (as applicable) <ul style="list-style-type: none"> <li>Bridge &amp; major culvert engineering:               <ul style="list-style-type: none"> <li>structure width, length, skew, geometry &amp; cross-section</li> <li>structure vertical clearance &amp; span arrangement</li> <li>navigable channel (if applicable)</li> </ul> </li> <li>Drainage &amp; hydrology engineering:               <ul style="list-style-type: none"> <li>channels, ditches, storm sewers &amp; outlets/outfalls for drainage of roadway</li> <li>stormwater management facilities</li> <li>hydraulics of bridges, culverts &amp; water crossing inlets/outlets</li> </ul> </li> <li>Foundation engineering:               <ul style="list-style-type: none"> <li>foundations for bridge &amp; major culvert structures</li> <li>conventional slope geometry for major cut/fill embankments</li> <li>non-conventional slope geometry for major cut/fill embankments</li> <li>settlement management &amp; excavation methods</li> </ul> </li> <li>Pavement and road base engineering:               <ul style="list-style-type: none"> <li>preliminary design of road base and pavement</li> <li>mass haul (cut/fill earth/rock material balance)</li> <li>preliminary sources of suitable granular material</li> </ul> </li> <li>Traffic &amp; electrical engineering:               <ul style="list-style-type: none"> <li>traffic control signals</li> <li>major roadside safety infrastructure</li> <li>traffic signing &amp; pavement markings</li> <li>roadway illumination</li> <li>ITS technology</li> <li>Preliminary construction traffic detour requirements</li> </ul> </li> <li>specialty engineering preliminary design of alternatives for limitation to highway access</li> <li>environmental protection for the above</li> </ul> e) Process and criteria to evaluate and select provincial roadway preliminary design alternatives

<b>Supporting Document #2</b> <b>Highway 7&amp;8 Transportation Corridor Planning and Class EA Study - Summary of Reports</b>		
STUDY PHASE	REPORTS	REPORT CONTENT
	<b>Report "J": Milestone Report - Selection of Preliminary Design Alternatives for Provincial Roadways</b>  (60 days provided for stakeholders to review and comment on draft milestone report *)	a) Purpose, relevance and position of report within the study process b) Summary of Report "I": Generation of Preliminary Design Alternatives for Provincial Roadways <ul style="list-style-type: none"> <li>Provincial roadway preliminary design alternatives generated</li> <li>Process and criteria for evaluating and selecting provincial roadway preliminary design alternatives</li> </ul> c) Evaluation and selection of provincial roadway preliminary design alternative d) Description of technically preferred provincial roadway preliminary design alternatives selected e) Value engineering assessment of the technically preferred preliminary design f) Development and refinement of the technically preferred provincial roadway preliminary design alternatives g) Preliminary staging of implementation h) Preliminary property requirements i) Agreements in principle for road assumptions, transfers, closures and the resolution of major rail and utility conflicts j) External permits anticipated to be required k) Design criteria for subsequent detail design assignments l) Preliminary assessment of technically preferred preliminary design under Ontario Infrastructure Planning, Financing and Procurement Framework m) Monitoring Strategy: <ul style="list-style-type: none"> <li>Technical monitoring program and procedures</li> <li>EA process monitoring program and procedures</li> </ul>
<b>6. TRANSPORTATION ENVIRONMENTAL STUDY REPORT</b>	<b>Report "K": Milestone Report - 'Transportation Environmental Study Report' (TESR)</b>  (60 days provided for stakeholders to review and comment on TESR after notice of filing)	a) Purpose, relevance and position of report within the study process b) Summary description of undertaking c) Content of: <ul style="list-style-type: none"> <li>final Report "A": Study Plan for Technical Work, Outreach and Consultation</li> <li>final Report "B": Working Paper – Overview of Environmental Conditions and Constraints within the Analysis Area</li> <li>final Report "C": Working Paper – 'Area Transportation System' Problems and Opportunities</li> <li>final Report "D": Milestone Report – Transportation Corridor Needs Assessment</li> <li>final Report "E": Milestone Report - Preliminary Planning for Provincial Roadways</li> <li>final Report "F": Working Paper - Environmental Conditions and Constraints</li> <li>final Report "G": Working Paper - Generation of Detailed Planning Alternatives for Provincial Roadways</li> <li>final Report "H": Milestone Report - Selection of Detailed Planning Alternatives for Provincial Roadways</li> <li>final Report "I": Working Paper - Generation of Preliminary Design Alternatives for Provincial Roadways</li> <li>final Report "J": Milestone Report - Selection of Preliminary Design Alternatives for Provincial Roadways</li> </ul> d) Environmental synopsis e) Results of outreach and consultation f) Commitments to future work and consultation
<b>NOTES</b> <ul style="list-style-type: none"> <li>* During the period provided for stakeholders to review reports, MTO will be undertaking "homework" for the next stage and report of the work</li> <li>Each report also contains the following:               <ul style="list-style-type: none"> <li>Summary of draft report key concerns identified through outreach and consultation, and MTO response/changes to those key concerns (does not apply to TESR, because it is a compilation of reports to which this previously applied)</li> <li>Supporting documentation (if applicable)</li> </ul> </li> </ul>		

## **SUPPORTING DOCUMENT #3**

### **DESCRIPTION AND RATIONALE OF ALTERNATIVES**

## DETAILED DESCRIPTION OF ALTERNATIVES

### ‘Area Transportation System’ Planning Alternatives

The Highway 7&8 Transportation Corridor Planning and Class EA Study will consider the following generic ‘Area Transportation System’ alternatives:

- Do Nothing
- Travel Demand Management (TDM)
- Transportation System Management (TSM)
- Local Transit\*
- Interregional Transit and Passenger Rail\*
- Air Services\*
- Marine Services\*
- Freight Rail\*
- Municipal Roads\*
- Provincial Highways / Transitways\*

(\* new or improved operations and/or infrastructure)

In addition, the Highway 7&8 Transportation Corridor Planning and Class EA Study will consider the following generic combinations of ‘Area Transportation System’ alternatives:

#### Do Nothing

As indicated in Section 7.4.5, the “Do Nothing” alternative includes existing infrastructure and programmed improvements.

#### Combination #1: Optimize Existing Network

Combination #1 includes:

- optimization of:
  - local transit;
  - interregional transit;
  - passenger rail;
  - freight rail;
- transportation system demand management (TDM);  
transportation system management (TDM)

#### Combination #2: New / Expanded Non-Road Infrastructure plus elements of Combination #1

Combination #2 includes:

- new/expanded
  - local transit

- interregional transit and passenger rail
  - air services
  - marine services
  - freight rail
- elements of Combination #2

Combination #3: Widen/Improve Roads plus elements of Combination #2

Combination #3 includes:

- widen / improve:
  - municipal roads
  - provincial highways
- elements of Combination #2

Combination #4: New Municipal Roads and/or Provincial Highways/ Transitways plus elements of Combination #3

Combination #4 includes:

- new municipal roads
- new provincial highways/transitways

## **Preliminary Planning Alternatives**

The Highway 7&8 Transportation Corridor Planning and Class EA Study will consider the following preliminary planning alternatives for the alternatives carried forward from the 'Area Transportation System' planning phase (as applicable)

a) Preliminary planning alternatives for new transportation facilities:

- new transportation facility location, type and capacity (key roadway engineering alternatives for new provincial roadways)
  - conceptual corridors for a new transportation facility, including network linkages
  - conceptual areas of limitations on access to provincial highway (see details in "d" below)
  - combinations of the above
  - preliminary study area
- key specialty engineering preliminary planning alternatives for new transportation facilities:
  - bridge engineering: minimize need for large spans & lengths of bridges and major culverts; general location of new bridges
  - drainage & hydrology engineering: minimize intrusion into major watercourses and water bodies; general location of potential significant modification to watercourses and water bodies

- foundations engineering: minimize intrusion into areas of extreme gradient change and into large areas of unstable soils; general locations where large cut and fill embankments required
    - pavement and road base engineering: minimize intrusion into large areas of unstable soils
    - traffic and electrical engineering: possible ITS applications
  - environmental protection for the above (which is focussed on minimizing intrusion into areas of provincial environmental interest as defined in the Provincial Policy Statement, recognizing that complete avoidance of all such areas is not likely to be possible)
  - preliminary study area(s)
- b) Preliminary planning alternatives for improvements to existing transportation facilities:
- Location, type and capacity of highway improvements (key roadway engineering alternatives for highway improvements):
    - general areas/locations/end-points of potential geometrical improvements to existing highway:
      - roadway gradient & alignment/curvature
      - highway intersection/interchange location/configuration
    - general areas/locations/end-points of potential widening of existing highway
      - through-lanes
      - passing lanes
      - continuous left turn lanes
      - general purpose lanes vs HOV lanes or reserved bus lanes)
    - interchanges and major intersections for 'Area Transportation System' (network) linkages
    - conceptual areas of limitations on access to provincial highway
      - locations where access to highway potentially limited in order to maintain highway functional integrity (purpose and level of service)
      - locations where access to highway potentially limited to/from areas not designated for development
    - preliminary study area
  - key specialty engineering preliminary planning alternatives for improvements to existing highway
    - bridge engineering: general type/character of structure improvements of specific bridges & major culverts
    - drainage & hydrology engineering: general locations of improvement to drainage along & across ROW
    - foundation engineering: consideration of improvements to specific structure foundations and stability improvements to specific deep cut and high fill embankments
    - pavement and road base engineering: consideration of pavement/road base modification versus replacement
    - traffic & electrical engineering: general locations of improvement to line-of-sight, roadside safety; sites where traffic control signals required

- combinations of the above
- environmental protection for the above (which is focussed on minimizing intrusion into areas of provincial environmental interest as defined in the Provincial Policy Statement, recognizing that complete avoidance of all such areas is not likely to be possible)
- preliminary study area(s)

## **Detailed Planning Alternatives**

The Highway 7&8 Transportation Corridor Planning and Class EA Study will consider the following detailed planning alternatives for the provincial roadway alternatives carried forward from the preliminary planning phase (as applicable):

- a) Detailed planning alternatives for a new provincial roadway (as applicable) are the following:
- key roadway engineering alternatives for new provincial roadway:
    - final study area
    - new provincial transitway route location & technology
    - new provincial highway route location and highway type
    - final study areas
    - roadway design speed, basic plan and profile, basic cross-section covering:
      - number of lanes/tracks
      - core/collector separation (if applicable)
      - median treatment and shoulder type
      - major drainage
    - highway interchange/intersection specific location, configuration, footprint
    - transitway station specific location & footprint
    - specific nature & location of limitations on access to provincial highway (see details in “f” below)
  - key specialty engineering detailed planning alternatives for new provincial roadway:
    - bridge engineering: specific location/ type/span/length & template “footprint” of bridges & major culverts
    - drainage & hydrology engineering: specific location/type/character & template “footprint” of major facilities for drainage along & across the ROW and for stormwater management
    - foundation engineering: specific location/type/character and template “footprint” of major cut/fill embankments; foundations for bridges & major culverts
    - pavement and road base engineering: road base structure and pavement type
    - traffic & electrical engineering: specific locations/sites for traffic control signals and roadside safety barriers
  - environmental impact assessment (see details in (b) below)
- b) Detailed planning alternatives for improvement to the existing provincial highway (as applicable), are the following:
- key roadway engineering alternatives for highway improvements

- final study area
- specific location/end-points, type/character of geometrical improvements
  - roadway gradient and alignment curvature
  - interchange/intersection location/configuration
- specific location/end-points, extent & direction of widening
  - number of lanes
  - symmetrical vs asymmetrical vs new independent centreline
- roadway design speed, basic plan and profile, basic cross-section covering:
  - number of lanes/tracks
  - core/collector separation (if applicable)
  - median treatment and shoulder type
  - major drainage
- highway interchange/intersection specific location, configuration, and template “footprint”
- specific consideration of the above to improve bus operations on the highway, and to improve highway access to regional centres of goods movement such as intermodal facilities
- specific nature & location of limitations on access to provincial highway (as applicable)
  - areas where interchanges, intersections and entrances limited
  - areas where cross-roads grade-separated
  - areas where service roads provided
  - areas of metering of traffic access to highways at interchanges and intersections
  - areas of provincial ownership to prevent access to crossing roads from being too close to highway
  - areas of staged access based upon development controls being put in place
  - highway functional classification and highway access management classification upon which the above is based (selected from the following):
    - freeway (freeway, staged freeway)
    - arterial (major arterial, minor arterial)
    - collector (major collector, minor collector)
    - local
- key specialty engineering detailed planning alternatives for highway improvements:
  - bridge engineering: specific location/ type/span/length & template “footprint” of bridges & major culverts
  - drainage & hydrology engineering: specific location/type/character & template “footprint” of major facilities for drainage along & across the ROW and for stormwater management
  - foundation engineering: specific location/type/character and template “footprint” of major cut/fill embankments; foundations for bridges & major culverts
  - pavement and road base engineering: road base structure and pavement type
  - traffic & electrical engineering: specific locations/sites for traffic control signals and roadside safety barriers



- environmental impact assessment
  - environmental constraints to design and construction
  - avoidance/prevention/minimization incorporated into development of alternatives (where avoidance is primarily with respect to “footprint” impacts during generation of alternatives to capitalize on significant transportation engineering opportunities while protecting significant environmental features as much as possible)
  - assessment of environmental impacts (to factor areas identified for Report “F”, based upon the following:
    - environmental sensitivities identified;
    - details of environmental effect / condition change, with respect to:
      - type of impact (“footprint”, interference, traffic access modification, emissions)
      - nature of impact (direction, timing, duration, frequency, magnitude, reversibility, geographic extent, probability of occurrence and cumulative impacts)
    - degree to which environmental effects / condition changes can be mitigated (based on previous and concurrent experience), including residual effects; and
    - degree to which environmental avoidance/impact prevention could be incorporated in the development of alternatives
    - net environmental effects - advantages and disadvantages (which may be limited to a short-list of alternatives if the evaluation process includes a screening component)

## **Preliminary Design Alternatives**

The Highway 7&8 Transportation Corridor Planning and Class EA Study will consider the following preliminary design alternatives for the provincial roadway alternatives carried forward from the detailed planning phase (as applicable):

- a) Roadway engineering preliminary design alternatives (as applicable)
  - roadway engineering preliminary design alternatives:
    - calculated horizontal & vertical alignment and cross-section covering:
      - lane/track arrangement
      - lane continuity & balance
      - cross-fall & super-elevation
      - median & shoulder
      - aspects of specialty engineering infrastructure such as drainage and roadside safety
    - highway interchange/intersection preliminary design
    - transitway station preliminary design
    - location/design of private entrances to highway
    - right-of-way & property acquisition requirements (“property request” follows)
    - utilities (electricity, gas, water, telecommunications)

- roadway engineering preliminary design of alternatives for limitation to highway access (as applicable):
  - preclude or limit highway interchanges with crossing roads:
    - limit new highway interchanges to key selected municipal major arterial roads
    - specify minimum distance separation between new and existing interchanges
    - preclude interchanges at crossing roads on which public/private roads and entrances do not meet specified minimum separation distances from the interchange ramp terminals
    - prohibit new interchanges
  - preclude or limit highway intersections with crossing roads:
    - eliminate turns at existing intersections
    - close existing intersections
    - specify minimum distance separation between new and existing intersections
    - specify minimum highway stopping sight distance at intersections
    - prohibit new intersections
  - preclude or limit property entrances to highway:
    - limit/prohibit intensified traffic use / upgrading of existing property entrances
    - specify maximum density (# entrances per kilometre) of property entrances and minimum distance separation between property entrances (for both commercial and non-commercial)
    - specify minimum distance separation between property entrances and crossing road intersection
    - specify minimum highway stopping sight distance at entrances
    - specify minimum “access connection depth” within entrances
    - specify conditions for traffic signals by commercial entrance applicants
    - specify minimum lot frontage for entrances
    - prohibit entrances for direct property access to highway
    - for entrances from crossing roads, specify minimum distance between entrance and highway, or prohibit entrances within highway “control area”
  - grade-separate crossing roads at highway
    - prevent highway access while maintaining local road continuity
  - provide highway service roads
    - considered in association with precluding or eliminating interchanges, intersections, entrances
  - meter traffic access to highway at interchanges and intersections
    - traffic signals at intersections timed to favour highway traffic and/or control access from crossing road traffic
    - traffic signals on interchange ramps to control access from crossing roads
  - implement provincial ownership regime on sections of crossing roads adjacent to highway in order to prevent access that is too close to the highway (could be up to 1 km from edge of highway ROW):
    - assume section of crossing road adjacent to highway as part of the Kings Highway, onto which MTO will not permit roadway intersections or private entrances
    - implement provincial land “reserves” along each side of crossing roads, through which MTO will not permit roadway intersections or private entrances (e.g. 0.3 m wide band of provincial property along each side of crossing road)
  - staged access is conditional upon suitable agreements regarding management of area growth being reached between the local municipality and one or both of the Ministry of Public Infrastructure and Renewal and the Ministry of Municipal Affairs and Housing:
    - interchange not constructed unless agreements reached
    - interchange initially constructed as a grade-separated crossing, with ramps for access not constructed unless agreements reached

- traffic access at interchange from crossing road to highway metered at specified levels unless agreement reached
  - intersections initially constructed with limited permitted turns unless agreements reached
  - cul de sac crossing roads, with intersection not constructed unless agreements reached
- private entrances not permitted unless agreements reached
- preclude or limit buildings and structures within highway “control area”
- environmental protection for the above
  - environmental preliminary design (mitigation, compensation, enhancement)
  - potential effects to interdependent components of ecosystems as well as the overall cumulative effects
  - likelihood of significant adverse environmental effects

b) Specialty engineering preliminary design alternatives (as applicable)

- Bridge & major culvert engineering:
  - structure width, length, skew, geometry & cross-section
  - structure vertical clearance & span arrangement
  - navigable channel (if applicable)
- Drainage & hydrology engineering:
  - channels, ditches, storm sewers & outlets/outfalls for drainage of roadway
  - stormwater management facilities
  - hydraulics of bridges, culverts & water crossing inlets/outlets
- Foundation engineering:
  - foundations for bridge & major culvert structures
  - conventional slope geometry for major cut/fill embankments
  - non-conventional slope geometry for major cut/fill embankments
  - settlement management & excavation methods
- Pavement and road base engineering:
  - preliminary design of road base and pavement
  - mass haul (cut/fill earth/rock material balance)
  - preliminary sources of suitable granular material
- Traffic & electrical engineering:
  - traffic control signals
  - major roadside safety infrastructure
  - traffic signing & pavement markings
  - roadway illumination
  - ITS technology
  - emergency access
  - Preliminary construction traffic detour requirements
- specialty engineering preliminary/concept design of alternatives for limitation to highway access (see details in “d” above)
- environmental protection for the above
- environmental preliminary design (mitigation, compensation, enhancement)
  - potential effects to interdependent components of ecosystems as well as the overall cumulative effects
  - likelihood of significant adverse environmental effects

*Note regarding Items (a) and (b) above: examination of preliminary design alternatives includes specific consideration of preliminary design elements that improve bus operations on the highway and that improve highway access to/from regional centres of primary goods movement such as intermodal facilities*

**SUPPORTING DOCUMENT #4**  
**FEDERAL / PROVINCIAL EA CO-ORDINATION**

## FEDERAL/PROVINCIAL EA CO-ORDINATION

Under the Canadian Environmental Assessment Act (CEAA), the following information needs to be provided in a class environmental assessment conducted as a screening (paraphrasing):

- a description of the existing environment;
- any change the project may cause in the environment including: land, water, air, organic and inorganic matter, living organisms, and the interaction of natural systems;
- any effects that the project may cause to a listed wildlife species, its critical habitat or residences of individuals of that species, as those terms are defined in subsection 2(1) of the *Species at Risk Act*;
- the effects of a project-related environmental change on: health and socio-economic conditions; physical and cultural heritage; the current use of lands and resources for traditional purposes by aboriginal persons; and any structure, site or thing that is of historical, archeological, paleontological or architectural significance;
- any such project change or effect occurring both within or outside Canada;
- all environmental effects that may result from the various phases of the project (construction, operation, modification, abandonment and decommissioning);
- the environmental effects of accidents and malfunctions;
- the effects of the environment on the project (including effects due to climate change);
- the cumulative environmental effects of this project that are likely to result from the project in combination with other projects or activities that have been or will be carried out;
- the likelihood of significant adverse environmental effects;
- the need for and requirements of a follow-up program;
- comments from the public obtained in accordance with CEAA;
- any measures to be taken that would mitigate identified environmental effects;
- any other matter that the responsible authority deems to be necessary including those required for a comprehensive study, mediation or panel.

Additional factors to be considered for a comprehensive study, mediation or panel include:

- the purpose of the project;
- alternatives means of carrying out the project;
- design of a follow up program;
- the capacity of renewable resources affected by the project to meet the needs of the present and those of the future.

If the decommissioning and abandonment phases are not currently part of the proposed project, the proponent may explain this in its EA document, and the responsible authority under *CEAA* may decide not to require further analysis on these phases of the project as part of the current assignment.

Nothing in this document will limit the prerogative of federal authorities to seek additional information as more is learned about the specifics of the projects and its potential effects. Responsible authorities will be making a judgment about the likelihood of significant adverse environmental effects after mitigation, and they have the discretion to determine what information they require before making such a judgment.

## **SUPPORTING DOCUMENT #5**

### **PRELIMINARY FACTORS, SUB-FACTORS, CRITERIA AND INDICATORS FOR EVALUATION OF AREA TRANSPORTATION SYSTEM PLANNING ALTERNATIVES AND PROVINCIAL ROADWAY ALTERNATIVES**



SUPPORTING DOCUMENT #5						
PRELIMINARY FACTORS, SUB-FACTORS, CRITERIA AND INDICATORS FOR EVALUATION OF AREA TRANSPORTATION SYSTEM PLANNING ALTERNATIVES AND PROVINCIAL ROADWAY ALTERNATIVES						
FACTOR / SUB-FACTOR	CRITERIA	PRELIMINARY EVALUATION INDICATORS FOR EACH PHASE				RATIONALE FOR FACTOR AND SUB-FACTOR EVALUATION
		TRANSPORTATION NEEDS ASSESSMENT	PRELIMINARY PLANNING	DETAILED PLANNING FOR PROVINCIAL ROADWAYS	PRELIMINARY DESIGN FOR PROVINCIAL ROADWAYS	
1. Natural Environmental Factors						
1.1 Fisheries and Aquatic Ecosystems	1.1.1 Fish Habitat	Potential to affect fish species at risk (vulnerable, threatened or endangered fish species) and their habitat	Potential to affect fish species at risk (vulnerable, threatened or endangered fish species) and their habitat	Potential and significance of: <ul style="list-style-type: none"><li>• encroachment, severance, displacement;</li><li>• long-term alteration/disruption</li></ul> as applicable to the following: <ul style="list-style-type: none"><li>• critical fish habitat features</li><li>• riparian areas</li><li>• habitat rehabilitation goals</li></ul>	Potential and significance of: <ul style="list-style-type: none"><li>• encroachment, severance, displacement;</li><li>• long-term alteration/disruption</li><li>• short-term alteration/disruption (construction impacts).</li></ul> as applicable to the following: <ul style="list-style-type: none"><li>• critical fish habitat features</li><li>• riparian areas</li><li>• habitat rehabilitation goals</li></ul>	<ul style="list-style-type: none"><li>• The crossing of water bodies by transportation facilities has the potential to affect fish and aquatic habitat features through impediments to fish passage, loss of vegetation, changes to channel geomorphology (channel form and function), substrate and cover, changes to the water quality due to erosion and sedimentation, stormwater discharge and temperature changes.</li><li>• PPS Policy 1.6.6.4 stipulates that when planning for corridors and rights-of-way for significant transportation facilities, consideration will be given to significant natural heritage, water, agricultural, mineral, cultural heritage and archaeological resources. The context is provided in other PPS policy statements_ identified below.</li><li>• PPS Policy 2.1.5 requires that development and site alteration shall not be permitted in fish habitat except in accordance with provincial and federal requirements. In addition, policy 2.1.6 restricts development and site alteration on adjacent lands to natural heritage features (e.g. significant - wetlands, woodlands, valleylands etc.) unless the ecological function of the adjacent lands has been evaluated and it has been demonstrated that there will be no negative impacts on the natural features or on their ecological functions.</li><li>• It is an objective of the PPS to protect, improve or restore the quality and quantity of surface water, including headwaters. Surface water features are an important part of the natural, economic and cultural landscape. PPS Policy 2.2.2 restricts development and site alteration in or near sensitive surface water features and groundwater features such that these features and their related hydrologic functions will be protected, improved or restored.</li><li>• The Federal Fisheries Act prohibits the harmful alteration, disruption or destruction of fish habitat, the introduction of deleterious substances to fish habitat and the blockage of fish passage. Where impacts cannot be mitigated, a Fisheries Compensation Plan is prepared in consultation with the CA/DFO to address agency concerns/requirements.</li><li>• Subsection 36(3) of the Fisheries Act prohibits the deposit of a deleterious substance, directly or indirectly, into waters frequented by fish.</li></ul>
	1.1.2 Fish Community			Potential and significance of: <ul style="list-style-type: none"><li>• encroachment, severance, displacement;</li><li>• long-term alteration/ disruption</li></ul> as applicable to the following: <ul style="list-style-type: none"><li>• fish species at risk (vulnerable, threatened or endangered fish species)</li><li>• fish movement/migration</li><li>• critical fish life stage processes (spawning, rearing, nursery, feeding)</li><li>• long-term fish community management goals</li></ul>	Potential and significance of: <ul style="list-style-type: none"><li>• encroachment, severance, displacement;</li><li>• long-term alteration/ disruption</li><li>• short-term alteration/disruption (construction impacts).</li></ul> as applicable to the following: <ul style="list-style-type: none"><li>• fish species at risk (vulnerable, threatened or endangered fish species)</li><li>• fish movement/migration</li><li>• critical fish life stage processes (spawning, rearing, nursery, feeding)</li><li>• long-term fish community management goals</li></ul>	
1.2 Terrestrial Ecosystems	1.2.1 Wildlife	Potential to affect wildlife species at risk (vulnerable, threatened or endangered wildlife species) and their habitat	Potential to affect wildlife species at risk (vulnerable, threatened or endangered wildlife species) and their habitat	Potential and significance of: <ul style="list-style-type: none"><li>• encroachment, severance, displacement;</li><li>• long-term alteration/ disruption</li></ul> as applicable to the following: <ul style="list-style-type: none"><li>• wildlife species at risk (vulnerable, threatened or endangered wildlife species)</li><li>• wildlife of local and regional importance</li><li>• migratory birds</li></ul>	Potential and significance of: <ul style="list-style-type: none"><li>• encroachment, severance, displacement;</li><li>• long-term alteration/ disruption</li><li>• short-term alteration/disruption (construction impacts).</li></ul> as applicable to the following: <ul style="list-style-type: none"><li>• wildlife species at risk (vulnerable, threatened or endangered wildlife species)</li><li>• wildlife of local and regional importance</li></ul>	<ul style="list-style-type: none"><li>• PPS Policy 1.6.6.4 stipulates that when planning for corridors and rights-of-way for significant transportation facilities, consideration will be given to significant natural heritage, water, agricultural, mineral, cultural heritage and archaeological resources. The context is provided in other PPS policy statements identified below.</li><li>• The presence of species identified by COSEWIC and COSSARO as vulnerable, threatened or endangered (VTE) requires consideration in the</li></ul>

SUPPORTING DOCUMENT #5						
PRELIMINARY FACTORS, SUB-FACTORS, CRITERIA AND INDICATORS FOR EVALUATION OF AREA TRANSPORTATION SYSTEM PLANNING ALTERNATIVES AND PROVINCIAL ROADWAY ALTERNATIVES						
FACTOR / SUB-FACTOR	CRITERIA	PRELIMINARY EVALUATION INDICATORS FOR EACH PHASE				RATIONALE FOR FACTOR AND SUB-FACTOR EVALUATION
		TRANSPORTATION NEEDS ASSESSMENT	PRELIMINARY PLANNING	DETAILED PLANNING FOR PROVINCIAL ROADWAYS	PRELIMINARY DESIGN FOR PROVINCIAL ROADWAYS	
				<ul style="list-style-type: none"><li>critical wildlife habitat features</li><li>ecologically functional areas such as connective corridors or travel ways for movement/migration</li><li>important wildlife areas such as deeryards, heronries, waterfowl areas, important bird areas</li><li>wildlife management, rehabilitation/research program sites</li><li>interference with critical wildlife life stage processes (eg mating/rearing) etc</li></ul>	<ul style="list-style-type: none"><li>migratory birds</li><li>critical wildlife habitat features</li><li>ecologically functional areas such as connective corridors or travel ways for movement/migration</li><li>important wildlife areas such as deeryards, heronries, waterfowl areas, important bird areas</li><li>wildlife management, rehabilitation/research program sites</li><li>interference with critical wildlife life stage processes (eg mating/rearing) etc</li></ul>	<p>generation of route alternatives. Species or populations may be under pressure or susceptible to stress as a result of development. Since habitat for these species is often limited, impacts to areas where the presence of species at risk is suspected or confirmed should be avoided or minimized. The assessment should have regard for the PPS objective that development and site alteration will not be permitted in significant portions of the habitat of Threatened and Endangered Species. The reported presence of Species of Conservation Concern (as defined by MNR in the Significant Wildlife Habitat Technical Guides (SWHTG – MNR, 2000) and TRCA species of concern will also be considered.</p> <ul style="list-style-type: none"><li>The general prohibitions under the Species at Risk Act, which apply to federally protect migratory bird and aquatic species at risk as well as to all endangered and threatened species on federal lands.</li><li>Section 6 of the Migratory Bird Regulations under the Migratory Birds Convention Act, 1994, which prohibits the incidental take of migratory birds and the disturbance and destruction of taking of the nest of a migratory bird.</li><li>PPS Policy 2.1.4 prohibits development and site alteration in significant wetlands in the Canadian Shield north of Ecoregions 5E, 6E and 7E. The assessment should have regard for this objective. Wetlands serve ecological functions to varying degrees including groundwater recharge/discharge, flood attenuation, wildlife movement corridors, habitat for flora and fauna, and water filtration.</li><li>The Canadian Federal Policy on Wetland Conservation promotes the goal of no net loss of wetland function in areas where wetland loss has reached critical levels.</li></ul>
	1.2.2 Wetlands	Potential to affect provincially and locally significant wetlands	Potential to affect provincially and locally significant wetlands	<p>Potential and significance of:</p> <ul style="list-style-type: none"><li>encroachment, severance, displacement;</li><li>long-term alteration/ disruption</li></ul> <p>as applicable to the following:</p> <ul style="list-style-type: none"><li>provincially significant wetlands, their buffer areas, and their wetland function</li><li>evaluated and un-evaluated wetlands, their wetland buffer areas, and their wetland function</li><li>wetland management, research and/or wetland conservation programs/areas</li></ul>	<p>Potential and significance of:</p> <ul style="list-style-type: none"><li>encroachment, severance, displacement;</li><li>long-term alteration/ disruption</li><li>short-term alteration/disruption (construction impacts).</li></ul> <p>as applicable to the following:</p> <ul style="list-style-type: none"><li>provincially significant wetlands, their buffer areas, and their wetland function</li><li>evaluated and un-evaluated wetlands, their wetland buffer areas, and their wetland function</li><li>wetland management, research and/or wetland conservation programs/areas</li></ul>	<ul style="list-style-type: none"><li>PPS Policy 1.6.6.4 stipulates that when planning for corridors and rights-of-way for significant transportation facilities, consideration will be given to significant natural heritage, water, agricultural, mineral, cultural heritage and archaeological resources. The context is provided in other PPS policy statements identified below.</li><li>It is important to recognize identified ecologically functional linkages between factors and sub-factors (within a natural heritage system) that contribute to landscape connectivity. The assessment should have regard for PPS Policy 2.1.2 which states that the diversity and connectivity of natural features in an area, and the long term ecological function and biodiversity of natural heritage systems, should be maintained, restored, or where possible improved, recognizing linkages between and among natural heritage features and areas, surface water features and groundwater features. The avoidance of wildlife corridors minimizes</li></ul>

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FACTOR / SUB-FACTOR	CRITERIA	PRELIMINARY EVALUATION INDICATORS FOR EACH PHASE				RATIONALE FOR FACTOR AND SUB-FACTOR EVALUATION
		TRANSPORTATION NEEDS ASSESSMENT	PRELIMINARY PLANNING	DETAILED PLANNING FOR PROVINCIAL ROADWAYS	PRELIMINARY DESIGN FOR PROVINCIAL ROADWAYS	
						risks of wildlife mortality during operation of the facility. Secondary information on ecosystem linkages (aquatic and terrestrial) will be reviewed and supplemented by other available sources (including contacts with specialists, field findings).
1.2 Terrestrial Ecosystems (Cont'd)	1.2.3 Forests  (e.g. woodlands [forest stands, woodlots and interior forest habitat] and significant valley lands [valley and stream corridors])	Potential to affect significant woodlands/valley lands and areas supporting known populations of vegetation species at risk (vulnerable, threatened or endangered species)	Potential to affect significant woodlands/valley lands and areas supporting known populations of vegetation species at risk (vulnerable, threatened or endangered species)	Potential and significance of: <ul style="list-style-type: none"><li>• encroachment, severance, displacement;</li><li>• long-term alteration/ disruption</li></ul> as applicable to the following: <ul style="list-style-type: none"><li>• significant woodlands/valley lands</li><li>• forest management/research program areas</li></ul>	Potential and significance of: <ul style="list-style-type: none"><li>• encroachment, severance, displacement;</li><li>• long-term alteration/ disruption</li><li>• short-term alteration/disruption (construction impacts).</li></ul> as applicable to the following: <ul style="list-style-type: none"><li>• woodlands/valley lands</li><li>• forest management/research program areas</li></ul>	<ul style="list-style-type: none"><li>• PPS Policy 1.6.6.4 stipulates that when planning for corridors and rights-of-way for significant transportation facilities, consideration will be given to significant natural heritage, water, agricultural, mineral, cultural heritage and archaeological resources. The context is provided in other PPS policy statements identified below.</li><li>• The PPS Policy 2.1.4 only permits development and site alteration in significant woodlands south and east of the Canadian Shield where it can be demonstrated that there will be no negative impacts on the natural features or their ecological function. The assessment should have regard for the PPS protection objectives.</li><li>• The study area is located within the Carolinian Zone and may have important representations of Carolinian species assemblages. These natural heritage areas require protection.</li><li>• Small degraded, isolated remnant woodlots and wetlands can have ecological value. Large natural and relatively undisturbed features have high ecological sensitivity and value.</li></ul>
	1.2.4 Vegetation			Potential and significance of: <ul style="list-style-type: none"><li>• encroachment, severance, displacement;</li><li>• long-term alteration/ disruption</li></ul> as applicable to the following: <ul style="list-style-type: none"><li>• populations of vegetation species at risk (vulnerable, threatened or endangered species), species of conservation concern and significant regional/local flora/communities</li><li>• areas/corridors supporting known populations of vegetation species at risk (vulnerable, threatened or endangered species), species of conservation concern and significant flora/communities</li><li>• vegetation management, rehabilitation/research program sites</li></ul>	Potential and significance of: <ul style="list-style-type: none"><li>• encroachment, severance, displacement;</li><li>• long-term alteration/ disruption</li><li>• short-term alteration/disruption (construction impacts).</li></ul> as applicable to the following: <ul style="list-style-type: none"><li>• populations of vegetation species at risk (vulnerable, threatened or endangered species), species of conservation concern and significant regional/local flora/communities</li><li>• areas/corridors supporting known populations of vegetation species at risk (vulnerable, threatened or endangered species), species of conservation concern and significant flora/communities</li><li>• vegetation management, rehabilitation/research program sites</li></ul>	
	1.2.5 Designated/Special Areas (such as world biosphere reserves, heritage rivers, ESAs, ESPAs, ANSIs, environmental plan areas, conservation reserves; and the designated special areas of national parks, provincial parks, conservation areas, etc)	Potential to affect designated/special areas	Potential to affect designated/special areas	Potential and significance of: <ul style="list-style-type: none"><li>• encroachment, severance, displacement;</li><li>• long-term alteration/ disruption;</li><li>• change in area character/ aesthetics;</li><li>• nuisance impacts;</li><li>• change to access / travel time;</li><li>• change to facilities / utilities / services.</li></ul> to designated/special areas.	Potential and significance of: <ul style="list-style-type: none"><li>• encroachment, severance, displacement;</li><li>• long-term alteration/ disruption;</li><li>• short-term alteration/disruption (construction impacts);</li><li>• change in area character/ aesthetics;</li><li>• nuisance impacts;</li><li>• change to access / travel time;</li><li>• change to facilities / utilities / services.</li></ul> to designated/special areas.	

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FACTOR / SUB-FACTOR	CRITERIA	PRELIMINARY EVALUATION INDICATORS FOR EACH PHASE				RATIONALE FOR FACTOR AND SUB-FACTOR EVALUATION
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						<p>there will be no negative impacts on the natural features or functions for which the area is identified.</p> <ul style="list-style-type: none"><li>• Areas that have been designated as Environmentally Significant Areas, Areas of Natural and Scientific Interest or Significant Valleylands may have landforms or plant communities associated with the area that are designated locally, regionally or provincially significant, or provide important corridors.</li><li>• ESAs are not explicitly included in the Provincial Policy Statement, but are often associated with other features subject to the policy statement (e.g. ANSIs, significant woodlands, significant habitat of endangered species or threatened species, significant wetlands, valleylands and wildlife habitat). They are also reflected in the MNR Land Use Guidelines, Conservation Authority Plans and municipal land use plans.</li><li>• PPS Policy 2.1.6 provides for development and site alteration on adjacent lands to listed natural heritage features and areas, only where the ecological function of the adjacent lands has been evaluated and it has been demonstrated that there will be no negative impacts on the natural features or on their ecological function.</li><li>• Policy 4.2.1.2 of the Greenbelt Plan 2005 states that the location and construction of infrastructure and expansions, extensions, operations and maintenance of infrastructure in the Protected Countryside are subject to specified criteria.</li></ul>
1.3 Groundwater	1.3.1 Areas of Ground water Recharge and Discharge	Potential to affect areas of groundwater recharge and discharge	Potential to affect areas of groundwater recharge and discharge	Potential and significance of alteration to areas of groundwater recharge and discharge due to physical intrusion or groundwater interception, draw-down, impoundment, obstruction, or soil compaction impacting groundwater base-flow and quality	Potential and significance of alteration to areas of groundwater recharge and discharge due to physical intrusion or groundwater interception, draw-down, impoundment, obstruction, or soil compaction impacting groundwater base-flow and quality	<ul style="list-style-type: none"><li>• PPS Policy 1.6.6.4 stipulates that when planning for corridors and rights-of-way for significant transportation facilities, consideration will be given to significant natural heritage, water, agricultural, mineral, cultural heritage and archaeological resources. The context is provided in other PPS policy statements identified below.</li><li>• Section 2.2 of the PPS identifies that the quality and quantity of water (including groundwater) should be protected improved or restored. The assessment should have regard for this objective. Transportation facilities have the potential to impact groundwater resources through removal of recharge areas, interference with discharge areas/shallow groundwater zones, and introduction of contaminated runoff. Consequently, impacts to areas identified as being susceptible to groundwater contamination and/or interference should be avoided/minimized to the extent possible.</li></ul>
	1.3.2 Groundwater Source Areas and Wellhead Protection Areas	Potential to affect groundwater source areas and wellhead protection areas	Potential to affect groundwater source areas and wellhead protection areas	Potential and significance of alteration to groundwater source areas and wellhead protection areas due to physical intrusion, or groundwater interception, draw-down, impoundment, obstruction and by soil compaction	Potential and significance of alteration to groundwater source areas and wellhead protection areas due to physical intrusion, or groundwater interception, draw-down, impoundment, obstruction and by soil compaction	
	1.3.3 Large Volume Wells	Potential to affect large volume wells	Potential to affect large volume wells	Potential and significance of alteration to large volume wells due to physical intrusion or groundwater interception, draw-down, impoundment, obstruction and by soil compaction	Potential and significance of alteration to large volume wells due to physical intrusion or groundwater interception, draw-down, impoundment, obstruction and by soil compaction	
	1.3.4 Private Wells	Not considered in this phase.	Not considered in this phase.	Potential and significance of alteration to private well use due to physical intrusion, or groundwater interception, draw-down, impoundment, obstruction and by soil compaction	Potential and significance of alteration to private well use due to physical intrusion, or groundwater interception, draw-down, impoundment, obstruction and by soil compaction	
	1.3.5 Groundwater-Dependent Commercial Enterprises  (e.g. water bottling operations)	Not considered in this phase.	Not considered in this phase.	Potential and significance of alteration to groundwater use by groundwater-dependent commercial enterprises due to physical intrusion, or groundwater interception, draw-down, impoundment, obstruction and by soil compaction	Potential and significance of alteration to groundwater use by groundwater-dependent commercial enterprises due to physical intrusion, or groundwater interception, draw-down, impoundment, obstruction and by soil compaction	

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	1.3.6 Groundwater-Sensitive Ecosystems  (e.g. groundwater fed wetlands, coldwater streams)	Not considered in this phase.	Not considered in this phase.	Potential and significance of alteration to groundwater-sensitive ecosystems due to physical intrusion, or groundwater interception, draw-down, impoundment, obstruction and by soil compaction	Potential and significance of alteration to groundwater-sensitive ecosystems due to physical intrusion, or groundwater interception, draw-down, impoundment, obstruction and by soil compaction	
1.4 Surface Water	1.4.1 Watershed / Sub-Watershed Drainage Features/Patterns	Potential to affect permanent watercourses	Potential to affect permanent watercourses	Potential and significance of: <ul style="list-style-type: none"><li>• encroachment, severance, displacement;</li><li>• long-term alteration/ disruption.</li></ul> as applicable to the following: <ul style="list-style-type: none"><li>• watercourse crossings (permanent, intermittent and ephemeral)</li><li>• floodplain or meander belts</li><li>• riparian areas</li><li>• sensitive headwater areas</li><li>• watershed and subwatershed management plans</li></ul>	Potential and significance of: <ul style="list-style-type: none"><li>• encroachment, severance, displacement;</li><li>• long-term alteration/ disruption.</li></ul> as applicable to the following: <ul style="list-style-type: none"><li>• watercourse crossings (permanent, intermittent and ephemeral)</li><li>• floodplain or meander belts</li><li>• riparian areas</li><li>• sensitive headwater areas</li><li>• watershed and subwatershed management plans</li></ul>	<ul style="list-style-type: none"><li>• Surface water features are an important part of the natural landscape in the Analysis Area. There are a number of permanent and intermittent watercourses flowing through the Analysis Area as well as a number of provincially and locally significant wetlands and various unnamed tributaries and agricultural swales present in the analysis area. Consequently, surface water quantity and quality could be negatively affected by the undertaking (e.g., reduction in surface water quantity, degradation of surface water quality, etc.) and therefore the ability to protect surface water quality, including the function of headwaters, need to be considered in the evaluation.</li></ul>
	1.4.2 Surface Water Quality and Quantity	Not considered in this phase	Not considered in this phase	Potential and significance of impacts on quality through direct and indirect discharges of contaminated and sediment-laden run-off  Potential and significance of impacts on hydrology due to changes in ground permeability, modifications to surface drainage patterns and alterations of water bodies	Potential and significance of impacts on quality through direct and indirect discharges of contaminated and sediment-laden run-off  Potential and significance of impacts on hydrology due to changes in ground permeability, modifications to surface drainage patterns and alterations of water bodies	
1.5 Air Quality	1.5.1 Local and Regional Air Quality  (Total contaminant and greenhouse gas emissions)	Potential to reduce the air quality consequences of traffic congestion	Potential to reduce the air quality consequences of traffic congestion	Not considered in this phase. See item below	Not considered in this phase. See item below.	<ul style="list-style-type: none"><li>• Air Quality impacts have the potential to affect human health.</li><li>• Alternatives through or near urban areas create the potential for increased contaminant levels.</li><li>• Dust emissions associated with construction related activities could cause temporary air quality issues.</li><li>• Greenhouse gases contribute to global warming.</li></ul>
	1.5.2 Sensitive receptors to air pollutants and greenhouse gas emissions	Not considered in this phase.	Not considered in this phase.	Presence and potential for impacts to sensitive receptors to air pollutants and greenhouse gas emissions	Potential and significance of effects on sensitive receptors to air pollutants and greenhouse gas emissions	
2. Land Use / Socio-Economic Environmental Factors						
2.1 Land Use Planning Policies, Goals, Objectives	2.1.1 First Nations Land Claims	Potential to affect areas for which there are First Nations outstanding land claims	Potential to affect areas for which there are First Nations outstanding land claims	Potential and significance of encroachment, severance, displacement to areas for which there are First Nations outstanding land claims	Potential and significance of encroachment, severance, displacement to areas for which there are First Nations outstanding land claims	<ul style="list-style-type: none"><li>• It is important that First Nations’s land claims within the Analysis Area are documented</li><li>• The Ontario Provincial Policy Statement notes that long-term prosperity and social well-being of Ontarians depends on maintaining strong communities, a clean and healthy environment and a strong economy. Transportation facilities play a key role in achieving these objectives.</li><li>• There is a need to co-ordinate transportation planning with municipal land planning as established through Official Plans, Secondary Plans and Zoning by-laws as these specify land uses supported by residents, municipalities and the province.</li><li>• The Greenbelt Plan notes that infrastructure is important to economic well-being, human health and quality of life in southern Ontario and the Greenbelt.</li><li>• Policy 4.2.1 of the Greenbelt Plan states that, for lands within the protected countryside, as defined by the Greenbelt Plan, 2005, infrastructure must meet one of the following policies; it supports agriculture, recreation and tourism, rural</li></ul>
	2.1.2 Provincial/Federal land use planning policies/goals/ objectives	Potential to support federal/provincial land use policies/goals/objectives	Potential to support federal/provincial land use policies/goals/objectives	Degree of compatibility with federal/provincial land use policies/goals/ objectives	Not considered in this phase.	
	2.1.3 Municipal (regional and local) land use planning policies/ goals/objectives (Official Plans)	Potential to support municipal Official Plans	Potential to support municipal Official Plans	Degree of compatibility with municipal Official Plans	Not considered in this phase.	
	2.1.4 Development Objectives of Private Property Owners	Not considered in this phase	Not considered in this phase	Potential to isolate property from current/future urban envelope  Impact on future land use	Not considered in this phase.	

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FACTOR / SUB-FACTOR	CRITERIA	PRELIMINARY EVALUATION INDICATORS FOR EACH PHASE				RATIONALE FOR FACTOR AND SUB-FACTOR EVALUATION
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						settlement areas, resource use or the rural economic activity that exists and is permitted within the Greenbelt; or it serves the significant growth and economic development expected in southern Ontario beyond the Greenbelt by providing for the appropriate infrastructure connections among urban growth centers and between these centers and Ontario's borders.
2.2 Land Use / Community	2.2.1 First Nation Reserves	Potential to affect First Nation Reserves	Potential to affect First Nation Reserves	Potential and significance of: <ul style="list-style-type: none"><li>• encroachment, severance, displacement;</li><li>• long-term alteration/ disruption;</li><li>• change in area character / aesthetics;</li><li>• nuisance impacts;</li><li>• change to access / travel time.</li></ul> to First Nation Reserves	Potential and significance of: <ul style="list-style-type: none"><li>• encroachment, severance, displacement;</li><li>• long-term alteration/ disruption;</li><li>• short-term alteration/disruption (construction impacts);</li><li>• change in area character / aesthetics;</li><li>• nuisance impacts;</li><li>• change to access / travel time.</li></ul> to First Nation Reserves	<ul style="list-style-type: none"><li>• It is important that potential and significance of impacts to Indian Reservations and sacred grounds be recognized and addressed in accordance with Ontario's New Approach to Aboriginal Affairs (Spring 2005) and the Grand River Notification Agreement</li><li>• Property takings / displacements and changes / effects on local access have a significant impact on owners and tenants as well as the broader community.</li><li>• Property takings / displacements and changes / effects on local access have a significant impact on owners and tenants as well as the broader community and customer/client base.</li><li>• Disruption or displacement of institutional features may adversely affect the users of these features / facilities and the broader community.</li></ul>
	2.2.2 First Nations' Sacred Grounds	Not considered in this phase	Potential to affect First Nations' Sacred Grounds	Potential and significance of: <ul style="list-style-type: none"><li>• encroachment, severance, displacement;</li><li>• long-term alteration/ disruption;</li><li>• change in area character / aesthetics;</li><li>• nuisance impacts;</li><li>• change to access / travel time.</li></ul> To First Nations' sacred grounds	Potential and significance of: <ul style="list-style-type: none"><li>• encroachment, severance, displacement;</li><li>• long-term alteration/ disruption;</li><li>• short-term alteration/disruption (construction impacts);</li><li>• change in area character / aesthetics;</li><li>• nuisance impacts;</li><li>• change to access / travel time.</li></ul> To First Nations' sacred	
	2.2.3 Urban and Rural Residential	Potential to affect urban and residential areas	Potential to affect urban and residential areas	Potential and significance of: <ul style="list-style-type: none"><li>• encroachment, severance, displacement, property acquisition;</li><li>• long-term alteration/ disruption;</li><li>• change in area character/ aesthetics;</li><li>• nuisance impacts;</li><li>• change to access / travel time;</li><li>• change to facilities / utilities / services.</li></ul> to urban and rural residential areas (residents [owners/tenants] and community groups).	Potential and significance of: <ul style="list-style-type: none"><li>• encroachment, severance, displacement, property acquisition;</li><li>• long-term alteration/ disruption;</li><li>• short-term alteration/disruption (construction impacts);</li><li>• change in area character/ aesthetics;</li><li>• nuisance impacts;</li><li>• change to access / travel time;</li><li>• change to facilities / utilities / services.</li></ul> to urban and rural residential areas (residents [owners/tenants] and community groups).	
	2.2.4 Commercial/Industrial	Not considered in this phase	Potential to affect commercial and industrial areas	Potential and significance of: <ul style="list-style-type: none"><li>• encroachment, severance, displacement, property acquisition;</li><li>• long-term alteration/ disruption;</li><li>• change in area character/ aesthetics;</li><li>• nuisance impacts;</li><li>• change to access / travel time;</li><li>• change to facilities / utilities / services.</li></ul> to commercial and industrial areas	Potential and significance of: <ul style="list-style-type: none"><li>• encroachment, severance, displacement, property acquisition;</li><li>• long-term alteration/ disruption;</li><li>• short-term alteration/disruption (construction impacts);</li><li>• change in area character/ aesthetics;</li><li>• nuisance impacts;</li><li>• change to access / travel time;</li><li>• change to facilities / utilities / services.</li></ul>	

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FACTOR / SUB-FACTOR	CRITERIA	PRELIMINARY EVALUATION INDICATORS FOR EACH PHASE				RATIONALE FOR FACTOR AND SUB-FACTOR EVALUATION
		TRANSPORTATION NEEDS ASSESSMENT	PRELIMINARY PLANNING	DETAILED PLANNING FOR PROVINCIAL ROADWAYS	PRELIMINARY DESIGN FOR PROVINCIAL ROADWAYS	
				(business owners/tenants and customers).	to commercial and industrial areas (business owners/tenants and customers).	
	2.2.5 Tourist Areas and Attractions  (e.g. museums, theatres, etc.)	Not considered in this phase	Potential to affect tourist areas and attractions	Potential and significance of: <ul style="list-style-type: none"><li>• encroachment, severance, displacement, property acquisition;</li><li>• long-term alteration/ disruption;</li><li>• change in area character/ aesthetics;</li><li>• nuisance impacts;</li><li>• change to access / travel time;</li><li>• change to facilities / utilities / services.</li></ul> To tourist areas and attractions.	Potential and significance of: <ul style="list-style-type: none"><li>• encroachment, severance, displacement, property acquisition;</li><li>• long-term alteration/ disruption;</li><li>• short-term alteration/disruption (construction impacts);</li><li>• change in area character/ aesthetics;</li><li>• nuisance impacts;</li><li>• change to access / travel time;</li><li>• change to facilities / utilities / services.</li></ul> to tourist areas and attractions.	
2.2 Land Use / Community	2.2.6 Community Facilities / Institutions  (e.g. hospitals, schools, places of worship, unique community features)	Not considered in this phase	Potential to affect community facilities and institutions	Potential and significance of: <ul style="list-style-type: none"><li>• encroachment, severance, displacement, property acquisition;</li><li>• long-term alteration/ disruption;</li><li>• change in area character/ aesthetics;</li><li>• nuisance impacts;</li><li>• change to access / travel time;</li><li>• change to facilities / utilities / services.</li></ul> To community facilities and institutions.	Potential and significance of: <ul style="list-style-type: none"><li>• encroachment, severance, displacement, property acquisition;</li><li>• long-term alteration/ disruption;</li><li>• short-term alteration/disruption (construction impacts);</li><li>• change in area character/ aesthetics;</li><li>• nuisance impacts;</li><li>• change to access / travel time;</li><li>• change to facilities / utilities / services.</li></ul> to community facilities and institutions.	
	2.2.7 Municipal Infrastructure and Public Service Facilities  (e.g. sewage and water services, police/emergency services, local utilities)	Not considered in this phase	Not considered in this phase	Potential and significance of: <ul style="list-style-type: none"><li>• encroachment, severance, displacement;</li><li>• long-term alteration/ disruption;</li><li>• change to access / travel time;</li><li>• change to facilities / utilities / services.</li></ul> to municipal infrastructure and public service facilities.	Potential and significance of: <ul style="list-style-type: none"><li>• encroachment, severance, displacement;</li><li>• long-term alteration/ disruption;</li><li>• short-term alteration/disruption (construction impacts);</li><li>• change to access / travel time;</li><li>• change to facilities / utilities / services.</li></ul> to municipal infrastructure and public service facilities.	
2.3 Noise Sensitive Areas (NSAs)  (residential areas and sensitive institutional uses)	2.3.1 Highway Noise	Potential for increased traffic noise in NSAs	Potential for increased traffic noise in NSAs	Potential for significant traffic noise increases in NSAs	Potential for increase of traffic noise in NSAs by 5 dBA, or to above a 45 dBA ambient within 10 years of project construction	<ul style="list-style-type: none"><li>• The Ontario Ministry of the Environment (MOE) has published Noise Pollution Control (NPC) and Land Use (LU) planning guidelines. These MOE documents establish ambient noise criteria, based on one-hour average sound pressure levels (Leq), and evaluate ambient vibration levels based on either Peak or RMS velocity, as applicable. Noise levels generally rise with increased traffic volumes.</li><li>• MOE/MTO Noise Protocol requires that highway noise be considered in all Provincial (MTO) Transportation projects</li></ul>
	2.3.2 Construction Noise	Not considered in this phase	Not considered in this phase	Not considered in this phase	Potential and significance of increase in construction noise to NSAs	
2.4 Land Use / Resources	2.4.1 First Nations' Treaty Rights or Use of Land and Resources for Traditional Purposes  (e.g. hunting, fishing, harvesting of	Potential to affect First Nations' Treaty Rights or use of land and resources for traditional purposes	Potential to affect First Nations' Treaty Rights or use of land and resources for traditional purposes	Potential and significance of: <ul style="list-style-type: none"><li>• encroachment, severance, displacement;</li><li>• long-term alteration/ disruption;</li><li>• nuisance impacts;</li></ul>	Potential and significance of: <ul style="list-style-type: none"><li>• encroachment, severance, displacement;</li><li>• long-term alteration/ disruption;</li><li>• short-term alteration/disruption</li></ul>	<ul style="list-style-type: none"><li>• It is important that potential and significance of impacts to Indian Reservations and sacred grounds be recognized and addressed in accordance with Ontario's New Approach to</li></ul>

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FACTOR / SUB-FACTOR	CRITERIA	PRELIMINARY EVALUATION INDICATORS FOR EACH PHASE				RATIONALE FOR FACTOR AND SUB-FACTOR EVALUATION
		TRANSPORTATION NEEDS ASSESSMENT	PRELIMINARY PLANNING	DETAILED PLANNING FOR PROVINCIAL ROADWAYS	PRELIMINARY DESIGN FOR PROVINCIAL ROADWAYS	
	country foods, harvesting of medicinal plants)			<ul style="list-style-type: none"><li>• change to access / travel time.</li></ul> to First Nations' treaty rights or use of land and resources for traditional purposes	(construction impacts); <ul style="list-style-type: none"><li>• nuisance impacts;</li><li>• change to access / travel time.</li></ul> to First Nations' treaty rights or use of land and resources for traditional purposes	Aboriginal Affairs (Spring 2005) and the Grand River Notification Agreement <ul style="list-style-type: none"><li>• Planning of transportation facilities must address First Nations' treaty rights, and be conducted in accordance with Ontario's New Approach to Aboriginal Affairs (Spring 2005) and the Grand River Notification Agreement</li></ul>
	2.4.2 Agriculture	Potential to affect specialty crop areas and/or areas of Canada Land Inventory Classes 1, 2 and 3 soils	Potential to affect specialty crop areas and/or areas of Canada Land Inventory Classes 1, 2 and 3 soils	Potential and significance of: <ul style="list-style-type: none"><li>• encroachment, severance, displacement, property acquisition;</li><li>• long-term alteration/ disruption;</li><li>• change in area character/ aesthetics;</li><li>• nuisance impacts;</li><li>• change to access / travel time;</li><li>• change to facilities / utilities / services.</li></ul> as applicable to the following: <ul style="list-style-type: none"><li>• Canada Land Inventory Classes 1, 2 and 3 soils</li><li>• Specialty crops/cropland</li><li>• Dairy/livestock operations</li><li>• Field crop operations</li><li>• High investment agricultural operations</li><li>• Established agricultural farm communities</li></ul>	Potential and significance of: <ul style="list-style-type: none"><li>• encroachment, severance, displacement, property acquisition;</li><li>• long-term alteration/ disruption;</li><li>• short-term alteration/disruption (construction impacts);</li><li>• change in area character/ aesthetics;</li><li>• nuisance impacts;</li><li>• change to access / travel time;</li><li>• change to facilities / utilities / services.</li></ul> as applicable to the following: <ul style="list-style-type: none"><li>• Canada Land Inventory Classes 1, 2 and 3 soils</li><li>• Specialty crops/cropland</li><li>• Dairy/livestock operations</li><li>• Field crop operations</li><li>• High investment agricultural operations</li><li>• Established agricultural farm communities</li></ul>	<ul style="list-style-type: none"><li>• PPS Policy 1.6.6.4 stipulates that when planning for corridors and rights-of-way for significant transportation facilities, consideration will be given to significant natural heritage, water, agricultural, mineral, cultural heritage and archaeological resources. The context is provided in other PPS policy statements identified below.</li><li>• Section 2.3 of the Provincial Policy Statement requires prime agricultural areas be protected for long-term use for agriculture. Prime agricultural areas include specialty crop areas and Classes 1, 2 and 3 soils in this order of priority.</li><li>• Ontario Ministry of Agriculture and Food (OMAF) has provincial guidelines for protection of prime agricultural lands as well as agricultural structures or infrastructure</li></ul>
2.4 Land Use / Resources (Cont'd)	2.4.3 Parks and Recreational Areas (e.g. national/provincial parks, conservation areas, municipal parks, public spaces, golf courses, trails, greenways and open space linkages)	Potential to affect parks and recreational areas	Potential to affect parks and recreational areas.	Potential and significance of: <ul style="list-style-type: none"><li>• encroachment, severance, displacement, property acquisition;</li><li>• long-term alteration/ disruption;</li><li>• change in area character/ aesthetics;</li><li>• nuisance impacts;</li><li>• change to access / travel time;</li><li>• change to facilities / utilities / services.</li></ul> To parks and recreational areas.	Potential and significance of: <ul style="list-style-type: none"><li>• encroachment, severance, displacement, property acquisition;</li><li>• long-term alteration/ disruption;</li><li>• short-term alteration/disruption (construction impacts);</li><li>• change in area character/ aesthetics;</li><li>• nuisance impacts;</li><li>• change to access / travel time;</li><li>• change to facilities / utilities / services.</li></ul> to parks and recreational areas.	<ul style="list-style-type: none"><li>• Disruption or displacement of recreational / community features may adversely affect the users of the facility/feature. Parks are generally lands in public ownership aimed at preserving significant and sometimes unique components of the environment, and providing recreational opportunities. These areas should be avoided to the extent possible however, in some cases, transportation facilities can be situated along park boundaries without adversely affecting the park. Frequently, parts are isolated islands surrounded by development and as such they can function as wildlife refuge areas or may facilitate wildlife movement opportunities. PPS, 2005, Policy 1.5.1 states that healthy active communities shall be promoted by (d) considering the impacts of planning decisions on provincial parks, conservation reserves and conservation areas.</li></ul>
	2.4.4 Aggregates, Mineral Resources	Potential to affect aggregate and mineral resources sites	Potential to affect aggregate and mineral resources sites	Potential and significance of: <ul style="list-style-type: none"><li>• encroachment, severance, displacement, property acquisition;</li><li>• long-term alteration/ disruption;</li><li>• change to access / travel time;</li><li>• change to facilities / utilities / services.</li></ul> to current/future extraction of aggregate and mineral resources.	Potential and significance of: <ul style="list-style-type: none"><li>• encroachment, severance, displacement, property acquisition;</li><li>• long-term alteration/ disruption;</li><li>• short-term alteration/disruption (construction impacts);</li><li>• change to access / travel time;</li><li>• change to facilities / utilities / services.</li></ul> to current/future extraction of aggregate and mineral resources.	<ul style="list-style-type: none"><li>• PPS Policy 1.6.6.4 stipulates that when planning for corridors and rights-of-way for significant transportation facilities, consideration will be given to significant natural heritage, water, agricultural, mineral, cultural heritage and archaeological resources. The context is provided in other PPS policy statements identified below.</li><li>• Sections 2.4 and 2.5 of the Provincial Policy Statement have the objective of protecting mineral and aggregate resources for the long</li></ul>



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						<p>term. The policy statement makes provisions for the protection of both known deposits and areas of potential.</p> <ul style="list-style-type: none"><li>• MTO adheres to requirements of the Aggregates Act to protect aggregate resources while minimizing sterilization of mineral aggregate resources as much as possible.</li></ul>
<b>2.5 Major Utility Transmission Corridors</b>  (e.g. railroads, hydro, gas, oil)		Potential to affect major utility transmission corridors	Potential to affect major utility transmission corridors	Potential and significance of: <ul style="list-style-type: none"><li>• encroachment, severance, displacement;</li><li>• long-term alteration/ disruption;</li><li>• change to access / travel time;</li><li>• change to facilities / utilities / services.</li></ul> To major utility transmission corridors.	Potential and significance of: <ul style="list-style-type: none"><li>• encroachment, severance, displacement;</li><li>• long-term alteration/ disruption;</li><li>• short-term alteration/disruption (construction impacts);</li><li>• change to access / travel time;</li><li>• change to facilities / utilities / services.</li></ul> to major utility transmission corridors.	<ul style="list-style-type: none"><li>• Utility corridors are subject to regulations from owners and governing authorities for operation of utilities including National Energy Board, Ontario Energy Board, Transport Canada, Railway Safety Act, etc.</li></ul>
<b>2.6 Contaminated Property and Waste Management</b>  (e.g. Landfills, Hazardous Waste Sites, “Brownfield” Areas, other known contaminated sites, and high-risk contamination areas)		Potential to affect landfills (open and closed), hazardous waste sites “brownfield” areas, and other known contaminated sites, and high-risk contamination areas	Potential to affect landfills (open and closed), hazardous waste sites “brownfield” areas, and other known contaminated sites, and high-risk contamination areas	Potential and significance of: <ul style="list-style-type: none"><li>• encroachment, severance, displacement;</li><li>• long-term alteration/disruption;</li><li>• change to access / travel time;</li><li>• change to facilities / utilities / services.</li></ul> to contaminated property and waste management.	Potential and significance of: <ul style="list-style-type: none"><li>• encroachment, severance, displacement;</li><li>• long-term alteration/disruption;</li><li>• short-term alteration/disruption (construction impacts);</li><li>• change to access / travel time;</li><li>• change to facilities / utilities / services.</li></ul> to contaminated property and waste management.	<ul style="list-style-type: none"><li>• Localized significant sources of property contamination can be associated with operating and closed waste disposal sites, the latter being of more significance due to their difficulty in accurately locating them. Consideration should be given to avoiding/ minimizing effects in the “area of influence” of waste disposal sites.</li><li>• There is the potential that some of the lands in the project area may be contaminated due to the nature of existing and historical land use especially in older commercial/industrial areas and in areas with heavy industrial activity. Sources of potential property contamination in rural areas are most commonly associated with service stations; isolated pockets of commercial/industrial areas; unknown fill areas; scrap yards and other high-risk land uses. Impacts to these areas should be avoided / minimized to the extent possible.</li><li>• Appropriate assessments will be carried on these sites and the project will comply with the appropriate.</li></ul>
<b>2.7 Landscape Composition</b>	2.7.1 Scenic Composition (total aesthetic value of landscape components)	Not considered in this phase	Not considered in this phase	Potential and significance of change to scenic composition (total aesthetic value of landscape components).	Potential and significance of destruction / disturbance of specimen trees.	<ul style="list-style-type: none"><li>• Visual impacts on adjacent land use and effects on the visual experiences for users of the facility will be considered.</li></ul>
	2.7.2 Sensitive Viewer Groups	Not considered in this phase	Not considered in this phase	Potential and significance of change vistas/outlooks for sensitive viewer groups.	Potential and significance of change to scenic composition (total aesthetic value of landscape components).	
	2.7.3 Scenic value of views/vistas from the transportation facility	Not considered in this phase	Not considered in this phase	Potential and significance of views/vistas from the transportation facility.	Potential and significance of views/vistas from the transportation facility.	
	2.7.4 Specimen Trees	Not considered in this phase	Not considered in this phase	Not considered in this phase	Potential and significance of change vistas/outlooks for sensitive viewer groups.	
<b>3. Cultural Environmental Factors</b>						
<b>3.1 Cultural Heritage – Built Heritage and Cultural Landscapes</b>	3.1.1 Buildings or “Standing” Sites of Architectural or Heritage Significance or Ontario Heritage Foundation Easement Properties	Potential to affect buildings or “standing” sites of extreme local, provincial or national interest or Ontario Heritage Foundation easements properties	Potential to affect buildings or “standing” sites of extreme local, provincial or national interest or Ontario Heritage Foundation easements properties	Potential and significance of: <ul style="list-style-type: none"><li>• encroachment, severance, displacement, property acquisition;</li><li>• long-term alteration/ disruption;</li><li>• change in area character/ aesthetics;</li><li>• nuisance impacts;</li><li>• change to access / travel time;</li><li>• change to facilities / utilities / services.</li></ul>	Potential and significance of: <ul style="list-style-type: none"><li>• encroachment, severance, displacement, property acquisition;</li><li>• long-term alteration/ disruption;</li><li>• change in area character/ aesthetics;</li><li>• nuisance impacts;</li><li>• change to access / travel time;</li><li>• change to facilities / utilities / services.</li></ul>	<ul style="list-style-type: none"><li>• A new transportation facility may result in the loss of built heritage features resulting in a depletion of the cultural heritage resources / heritage character in the area.</li><li>• Impacts to built heritage features should be avoided to the extent possible, or as a secondary alternative relocation rather than demolition could be considered.</li></ul>

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				to buildings or “standing” sites of extreme local, provincial or national interest or Ontario Heritage Foundation easements properties.	to buildings or “standing” sites of extreme local, provincial or national interest or Ontario Heritage Foundation easements properties.	<ul style="list-style-type: none"><li>• MTO is required to operate in accordance with Cemeteries Act</li><li>• MTO is required to operate in accordance with Ontario Heritage Act</li></ul>
	3.1.2 Heritage Bridges	Potential to affect heritage bridges	Potential to affect heritage bridges	Potential for destruction or significant alteration of heritage bridges	Potential for destruction or significant alteration of heritage bridges	
	3.1.3 Areas of Historic 19 <sup>th</sup> Century Settlement	Potential to affect areas of historic 19 <sup>th</sup> century settlement	Potential to affect areas of historic 19 <sup>th</sup> century settlement	Potential and significance of: <ul style="list-style-type: none"><li>• encroachment, severance, displacement;</li><li>• long-term alteration/ disruption;</li><li>• change in area character/ aesthetics;</li><li>• nuisance impacts;</li><li>• change to access / travel time;</li><li>• change to facilities / utilities / services.</li></ul> to areas of historic 19 <sup>th</sup> century settlement.	Potential and significance of: <ul style="list-style-type: none"><li>• encroachment, severance, displacement;</li><li>• long-term alteration/ disruption;</li><li>• change in area character/ aesthetics;</li><li>• nuisance impacts;</li><li>• change to access / travel time;</li><li>• change to facilities / utilities / services.</li></ul> to areas of historic 19 <sup>th</sup> century settlement.	
	3.1.4 Cultural Heritage Landscapes  (collection of individual man-made features modifying pristine landscape)	Not considered in this phase	Not considered in this phase	Potential and significance of change to composition of cultural landscapes.	Potential and significance of change to composition of cultural landscapes.	
	3.1.5 First Nations’ Burial Sites	Not considered in this phase	Not considered in this phase	Potential and significance of: <ul style="list-style-type: none"><li>• encroachment, severance, displacement;</li><li>• long-term alteration/ disruption;</li><li>• change in area character / aesthetics;</li><li>• nuisance impacts;</li><li>• change to access / travel time.</li></ul> to First Nations' burial sites.	Potential and significance of: <ul style="list-style-type: none"><li>• encroachment, severance, displacement;</li><li>• long-term alteration/ disruption;</li><li>• change in area character / aesthetics;</li><li>• nuisance impacts;</li><li>• change to access / travel time.</li></ul> to First Nations' burial sites.	
	3.1.6 Cemeteries	Potential to affect cemeteries	Potential to affect cemeteries	Potential and significance of: <ul style="list-style-type: none"><li>• encroachment, severance, displacement;</li><li>• long-term alteration/ disruption;</li><li>• change in area character/ aesthetics;</li><li>• nuisance impacts;</li><li>• change to access / travel time;</li><li>• change to facilities / utilities / services.</li></ul> to cemeteries.	Potential and significance of: <ul style="list-style-type: none"><li>• encroachment, severance, displacement;</li><li>• long-term alteration/ disruption;</li><li>• short-term alteration/disruption (construction impacts);</li><li>• change in area character/ aesthetics;</li><li>• nuisance impacts;</li><li>• change to access / travel time;</li><li>• change to facilities / utilities / services.</li></ul> to cemeteries.	
3.2 Cultural Heritage - Archaeology	3.2.1 Pre-Historic and Historic First Nations Sites	Potential to affect significant pre-historic and historic First Nations archaeological sites of extreme local, provincial or national interest	Potential to affect significant pre-historic and historic First Nations archaeological sites of extreme local, provincial or national interest	Potential for destruction or disturbance of pre-historic and historic First Nations archaeological sites of extreme local, provincial or national interest	Potential for destruction or disturbance of pre-historic and historic First Nations archaeological sites of extreme local, provincial or national interest	<ul style="list-style-type: none"><li>• Disturbance or destruction of certain archaeological sites of extreme local, provincial or national interest represents a significant cultural loss.</li><li>• Impacts to archaeological resources/sites should be avoided or minimized to the extent possible.</li><li>• Significant archaeological sites shall be preserved and avoided in accordance with Ontario Ministry of Culture (OMC), and Aboriginal People’s policies and procedures, and all others shall be excavated to OMC standards</li></ul>
	3.2.2 Historic Euro-Canadian Archaeological Sites	Potential to affect significant historic Euro-Canadian archaeological sites of extreme local, provincial or national interest	Potential to affect significant historic Euro-Canadian archaeological sites of extreme local, provincial or national interest	Potential for destruction or disturbance of historic Euro-Canadian archaeological sites of extreme local, provincial or national interest	Potential for destruction or disturbance of historic Euro-Canadian archaeological sites of extreme local, provincial or national interest	
4. Area Economy						
4.1 First Nations Industry		Potential to support First Nations industry in the area by efficient and reliable movement of people and goods	Potential to support First Nations industry in the area by efficient and reliable movement of people and goods	Not considered in this phase	Not considered in this phase	<ul style="list-style-type: none"><li>• Transportation congestion negatively affects existing business, industry and trade, adding significant costs to doing business and is a deterrent to new businesses considering locating</li></ul>
4.2 Heavy Industry and Trade		Potential to support area heavy industry and	Potential to support heavy industry and trade	Not considered in this phase	Not considered in this phase	

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		trade by efficient and reliable goods movement	by efficient and reliable goods movement			<ul style="list-style-type: none"><li>or expanding in the Analysis Area.</li><li>Travel reliability for commercial vehicles is a concern given the impacts of construction, maintenance or collisions on the already congested transportation system.</li><li>A large proportion of recreational travel is based on longer distance auto based trips, therefore tourism and recreational travel is significantly affected by congestion on the area roadway network. Tourism is currently Ontario's fifth largest export industry and is projected to become the fourth largest in the near future. Tourism includes recreation and the cottage sector.</li><li>Agriculture is an important component of the overall economic base of the Analysis Area. Travel for agricultural equipment on local roads is severely affected by longer distance trips diverted from congested highways. Transportation of agricultural supplies and products is affected by congestion on the area road network.</li><li>PPS Policy 1.6.6.4 stipulates that when planning for corridors and rights-of-way for significant transportation facilities, consideration will be given to significant natural heritage, water, agricultural, mineral, cultural heritage and archaeological resources. The context is provided in other PPS policy statements identified below.</li><li>The Provincial Policy Statement, 2005 stipulates that prime agricultural areas shall be protected for long-term use for agriculture. Prime agricultural areas are areas where prime agricultural lands predominate. Specialty crop areas shall be given the highest priority for protection followed by Classes 1, 2 and 3 soils, in this order of priority.</li></ul>
4.3 Tourism and Recreation Industry		Potential to support area tourism and recreation industry by efficient and reliable movement of people	Potential to support tourism and recreation industry by efficient and reliable movement of people	Not considered in this phase	Not considered in this phase	
4.4 Agriculture Industry		Potential to support area agriculture industry by efficient movement of goods	Potential to support area agriculture industry by efficient movement of goods	Not considered in this phase	Not considered in this phase	
5. Transportation Factors						
5.1 Federal/Provincial/Municipal transportation planning policies/goals/objectives		Potential to support federal/provincial/municipal transportation planning policies/goals/objectives	Potential to support federal/provincial/municipal transportation planning policies/goals/objectives	Not considered in this phase.	Not considered in this phase.	<ul style="list-style-type: none"><li>The Official Plans of municipalities within the Analysis Area, and the strategic growth policies and targets embodied in the Provincial Growth Plan, suggest that population and employment growth will continue over time and will be important to future economic prosperity. In order for this economic growth to be realized, an efficient transportation system to move both people and goods within and through the Analysis Area is considered fundamental.</li><li>The effectiveness of each alternative needs to be determined.</li><li>There is a need to determine how transportation solutions address future needs in relation to existing and proposed future transportation infrastructure.</li><li>There is a need to determine how well transportation solutions operate during peak periods.</li></ul>
5.2 Efficient movement of people		Potential to support the efficient movement of people between communities and regions based on network, screenline and critical link performance measures including Level of Service (LOS) and volume to capacity (v/c)	Potential to support the efficient movement of people between communities and regions based on Level of Service (LOS) and volume to capacity (v/c) on a network, screenline and critical link basis	Potential to support the efficient movement of people between communities and regions based on Level of Service (LOS) and volume to capacity (v/c) on a network, screenline and critical link basis	Not considered in this phase.	
5.3 Efficient movement of goods		Potential to support efficient movement of goods between urban growth centres and regional intermodal facilities based on road network and Highway 7&8 corridor performance measures (LOS and travel speed)	Potential to support efficient movement of goods between urban growth centres and regional intermodal facilities based on road network and Highway 7&8 corridor performance measures (LOS and travel speed)	Potential to support efficient movement of goods between urban growth centres and regional intermodal facilities based on road network and Highway 7&8 corridor performance measures (LOS and travel speed)	Not considered in this phase.	
5.4 System reliability / redundancy		Potential to support system reliability and redundancy for travel (people and goods) between regions and communities during adverse conditions	Potential to support system reliability and redundancy for travel (people and goods) between regions and communities during adverse conditions	Potential to support system reliability and redundancy for travel (people and goods) between regions and communities during adverse conditions	Not considered in this phase	

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5.5 Safety		Potential to improve traffic safety based on opportunity to reduce congestion on area road network (LOS and v/c) and reduce the frequency of intersections and entrances in the Highway 7&8 corridor	Potential to improve traffic safety based on opportunity to reduce congestion on area road network (LOS and v/c) and reduce the frequency of intersections and entrances in the Highway 7&8 corridor	Potential to improve traffic safety based on opportunity to reduce congestion on area road network (LOS and v/c) and reduce the frequency of intersections and entrances in the Highway 7&8 corridor	Potential for collisions recognizing side road intersections, presence of auxiliary lanes, number/spacing of entrances, available sight distance, storage for disabled vehicles, etc.	<ul style="list-style-type: none"><li>• Transportation agencies have developed design standards to ensure that safety objectives are reflected in all new/expanded infrastructure. These standards are not subject to modification or compromise to avoid/reduce impacts, costs, etc.</li><li>• Goods movement between economic centres and growth areas incurs out-of-way travel and delay due to congestion through the Analysis Area. Reducing travel times, out-of-way travel and improving travel time reliability would lead to lower transportation costs and benefit the local, provincial and national economy.</li><li>• There is a need to determine how well transportation solutions operate during peak periods.</li><li>• There is a need to determine emergency access and safety issues related to transportation solutions.</li><li>• There is a need to determine the flexibility of transportation solutions to address future needs beyond the forecasted planning horizon.</li><li>• Physical conditions and staging issues can affect the feasibility of implementing transportation solutions.</li><li>• There is the need identify the costs associated with possible transportation solutions. Construction costs can influence the feasibility of a given alternative</li></ul>
5.6 Modal integration, balance and efficiency		Potential to improve modal choice and increase mode split for person trips between communities, regions and major transit station areas based on travel performance indicators (LOS, v/c, travel speed) at critical screenlines and on potential to provide higher order transit service in the Highway 7&8 corridor.	Potential to improve modal choice and increase mode split for person trips between communities, regions and major transit station areas based on travel performance indicators (LOS, v/c, travel speed) at critical screenlines and on potential to provide higher order transit service in the Highway 7&8 corridor.	Potential to improve modal choice and increase mode split between communities, regions and intermodal facilities based on travel performance indicators (LOS, v/c, travel speed) at critical screenlines and for Highway 7&8 corridor.	Not considered in this phase.	
5.7 Linkages to Population and Employment Centres		Potential to improve accessibility to urban growth centres for people and goods movement based on higher order network (roads and transit) continuity and connectivity	Potential to improve accessibility to urban growth centres for people and goods movement based on higher order network continuity and connectivity	Potential to improve accessibility to urban growth centres for people and goods movement based on higher order network continuity and connectivity	Not considered in this phase.	
5.8 Recreation and Tourism Travel		Potential to support recreation and tourism travel within and to/from the Analysis Area by provision of higher order network (roads and transit) continuity and connectivity and through network performance indicators (LOS, v/c, travel speed)	Potential to support recreation and tourism travel within and to/from the Analysis Area by provision of higher order network (roads and transit) continuity and connectivity and through network performance indicators (LOS, v/c, travel speed)	Potential to support recreation and tourism travel within and to/from the Analysis Area by provision of higher order network (roads and transit) continuity and connectivity and through network performance indicators (LOS, v/c, travel speed)	Not considered in this phase.	
5.9 Accommodation for pedestrians, cyclists and snowmobiles		Potential to accommodate pedestrians, cyclists within critical travel corridors in urbanized areas and snowmobiles in recognized rural trails	Potential to accommodate pedestrians, cyclists within critical travel corridors in urbanized areas and snowmobiles in recognized rural trails	Potential to accommodate pedestrians, cyclists within critical travel corridors in urbanized areas and snowmobiles in recognized rural trails	Not considered in this phase.	
5.10 Constructability		Not considered in this phase.	Potential ease of implementation considering feasibility/difficulty of physical, property or environmental constraints	Potential ease of implementation considering feasibility/difficulty of physical, property or environmental constraints	Potential ease of implementation considering feasibility/difficulty of physical, property or environmental constraints	
5.11 Construction Cost (excludes property costs and engineering costs)		Not considered in this phase.	Not considered in this phase.	Relative road construction cost, excluding property and engineering costs	Relative road construction cost, excluding property and engineering costs	
5.12 Traffic Operations		Not considered in this phase.	Potential impact on traffic operations due to factors such as design features, private access, and transportation network connections	Potential impact on traffic operations due to factors such as design features, private access, and transportation network connections	Potential impact on traffic operations due to factors such as design features, private access, and transportation network connections	
NOTES:		Notes regarding evaluation criteria for transportation needs assessment and the preliminary planning phases: <ul style="list-style-type: none"><li>• information to support evaluation is drawn from secondary source information and preliminary field reconnaissance (the environmental information is documented in Report “F” – 1<sup>st</sup> Part)</li></ul>		Notes regarding evaluation criteria for the detailed planning and the preliminary design phases: <ul style="list-style-type: none"><li>• information to support evaluation is enhanced by field investigation work as appropriate (the environmental information is documented in Report “F” – 2<sup>nd</sup> Part)</li><li>• “Measures” for detailed planning evaluation criteria will be developed during preliminary planning</li><li>• “Measures” for preliminary design evaluation criteria will be developed during detailed planning</li></ul>		

**SUPPORTING DOCUMENT #6**

**RECORD OF CONSULTATION DURING PREPARATION  
OF THE STUDY PLAN**

**RECORD OF CONSULTATION DURING PREPARATION OF THE STUDY PLAN**

TO BE COMPLETED AS PART OF FINAL STUDY PLAN



Ministry of Transportation

# **Highway 7&8 Transportation Corridor Planning and Class EA Study**

From Greater Stratford to New Hamburg Area  
MTO Group Work Project # 13-00-00

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## Report A: Study Plan for Technical Work, Outreach and Consultation

# DRAFT

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July, 2007

[www.7and8corridorstudy.ca](http://www.7and8corridorstudy.ca)



This report is presented in draft format in order to obtain information and comments from stakeholders. Your input is requested by October 30, 2007 so the report can be finalized.

"Ce document hautement spécialisé n'est disponible qu'en anglais en vertu du règlement 411/97, qui en exempte l'application de la Loi sur les services en français. Pour de l'aide en français, veuillez communiquer avec le ministère des Transports, Bureau des services en français au: 905-704-2045 ou 905-704-2046."



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## **SUPPORTING DOCUMENTATION**

- Supporting Document #1: List of Abbreviations and Glossary of Terms
- Supporting Document #2: Highway 7&8 Transportation Corridor Planning and Class EA Study, Summary of Reports
- Supporting Document #3: Detailed Description of Alternatives
- Supporting Document #4: Federal/Provincial EA Co-ordination
- Supporting Document #5: Preliminary Factors, Sub-Factors, Criteria and Indicators for Evaluation of Area Transportation System Alternatives and Provincial Roadway Alternatives
- Supporting Document #6: Record of Consultation During Preparation of the Study Plan (to be completed before finalizing the Study Plan)

## LIST OF EXHIBITS

- Exhibit 1.1: Map of Analysis Area
- Exhibit 1.2: Summary of Study Objectives
- Exhibit 1.3: Preliminary Statement of Transportation Problems and Opportunities
- Exhibit 2.1: Overview of Planning and Class EA Study Process (Key Tasks, Reports, PICs and Information Presented, Preliminary Schedule)
- Exhibit 3.1: Assumptions of EA Proponency and Completion of Work
- Exhibit 5.1: Application of GGH Growth Plan and Provincial Policy Statement Policy Framework
- Exhibit 5.2: 'Area Transportation System' Context
- Exhibit 5.3: Comparison of Ideal Highway Geometric Conditions and Those on Highway 7&8
- Exhibit 7.1: Summary of Application Of Evaluation Methodologies
- Exhibit 7.2: Preliminary Identification Of Factors, Sub-factors And Criteria To Be Considered In The Generation, Assessment And Evaluation Of Alternatives
- Exhibit 7.3: Process Overview for the Development, Assessment and Evaluation of the Area Transportation System Alternatives (Phase 2 of Study) and Preliminary Planning Alternatives (Phase 3 of Study)
- Exhibit 7.4: Principles for Generating Preliminary and Detailed Planning Alternatives
- Exhibit 7.4: Process Overview for the Development, Assessment and Evaluation of Detailed Planning Alternatives for Provincial Roadway (Phase 4 of Study)
- Exhibit 9.1: Categories of Stakeholders
- Exhibit 9.2: Role of Stakeholders
- Exhibit 10.1: Transportation Environmental Study Report Contents

## **1 INTRODUCTION**

### **1.1 Introduction To The Highway 7&8 Transportation Corridor Planning And Class EA Study**

The Ministry of Transportation (MTO) has initiated a Highway 7&8 Transportation Corridor Planning and Class Environmental Assessment (Class EA) Study, from Greater Stratford to the New Hamburg area. The study will:

- develop a plan that addresses:
  - capacity, operation and safety needs along the 2-lane section of Highway 7&8 between Stratford and the New Hamburg area and through the urban centres (Stratford, Shakespeare and New Hamburg) along Highway 7&8 for the movement of people and goods; and
  - linkage needs between the analysis area to transportation corridors serving other regions in the province.
- prepare a preliminary design for the provincial roadway components of that plan; and
- be documented in a Transportation Environmental Study Report for public review at study completion.

This study will also:

- Review and build on the MTO Highway 7&8 Study Design – Greater Stratford to New Hamburg Area, December 2005;
- Address the transportation policies and directions of the ‘Growth Plan for the Greater Golden Horseshoe’ (recognizing that a portion of the analysis area for this project lies within the GGH);
- Recognize several municipal transportation initiatives in the area;
- Recognize other relevant transportation corridor studies being undertaken by MTO; and
- Be carried out as a Group ‘A’ project, in accordance with the Class Environmental Assessment for Provincial Transportation Facilities.

Access to the above documents can be obtained through the project website at [www.7and8corridorstudy.ca](http://www.7and8corridorstudy.ca).

A major component of the study will be an outreach and consultation program structured around six key points of decision-making, each of which will be supported by:

- the release of a newsletter;
- the release of draft reports for review and comment;
- a round of Public Information Centres (PICs);
- posting of information on the study web site; and
- newspaper notices announcing the above.

At the completion of the study, the filing of a Transportation Environmental Study Report (TESR) will be announced through newspaper notices. Decisions on funding and timing

of detail design and construction are based upon environmental clearance of the TESR, since it determines the type of transportation facilities and their location.

This Study Plan is designed to provide a comprehensive framework to guide the study. For an overview of this framework, readers are referred to the following exhibits in the Study Plan:

- Exhibit 1.1: Map of Analysis Area
- Exhibit 1.2: Summary of Study Objectives
- Exhibit 1.3: Preliminary Statement of Transportation Problems and Opportunities
- Exhibit 2.1: Overview of Planning and Class EA Study Process (Key Tasks, Reports, PICs and Information Presented, Preliminary Schedule)
- Exhibit 3.1: Assumptions of EA Proponency and Completion of Work
- Exhibit 5.1: Application of GGH Growth Plan and Provincial Policy Statement Policy Framework
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- Exhibit 7.2: Preliminary Identification Of Factors, Sub-factors And Criteria To Be Considered In The Generation, Assessment And Evaluation Of Alternatives
- Exhibit 7.3: Process Overview for the Development, Assessment and Evaluation of the Area Transportation System Alternatives and Preliminary Planning Alternatives (Phases 2 and 3 of Study)
- Exhibit 7.4: Principles for Generating Preliminary and Detailed Planning Alternatives
- Exhibit 7.5: Process Overview for the Development, Assessment and Evaluation of Detailed Planning Alternatives for Provincial Roadway (Phase 4 of Study)
- Exhibit 9.1: Categories of Stakeholders
- Exhibit 9.2: Summary of Role of Stakeholders
- Exhibit 10.1: Transportation Environmental Study Report Contents

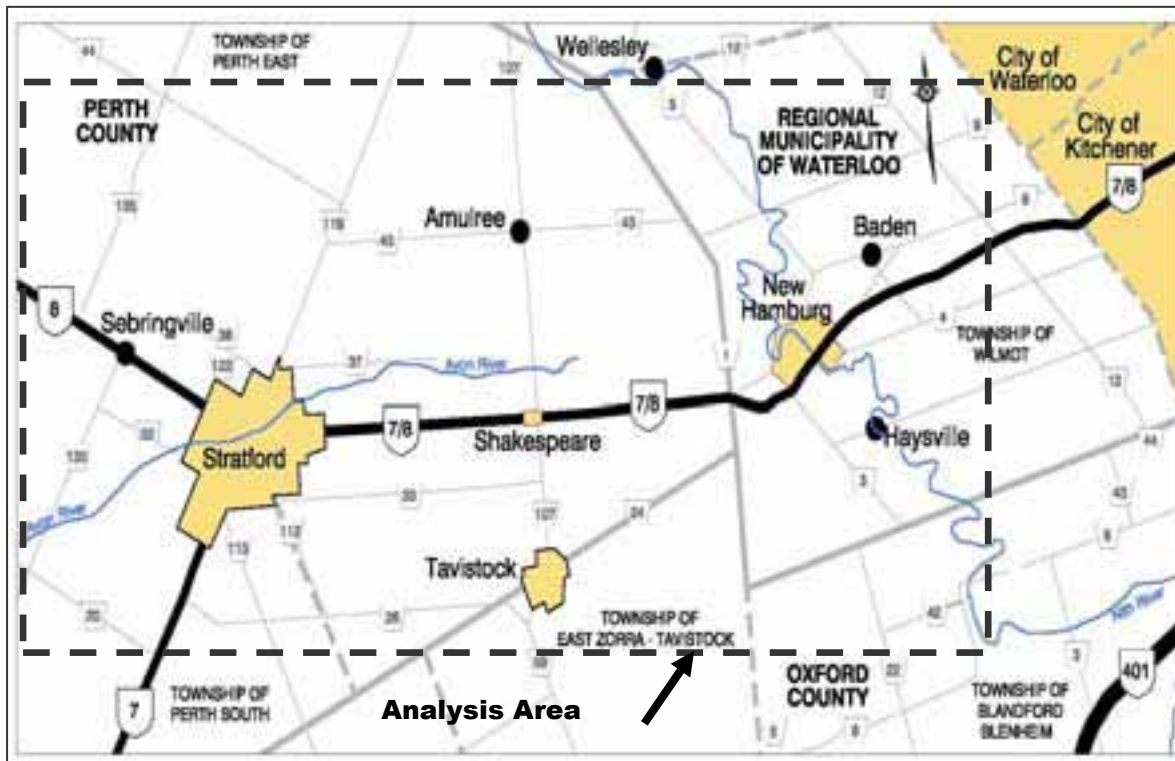
These exhibits may be presented at the first round of Public Information Centres.

For orientation and reference, a map of the Analysis Area follows. The Analysis Area has been established to identify transportation problems and opportunities associated with Highway 7&8 from Greater Stratford to the New Hamburg area plus the broader 'Area Transportation System'. The Analysis Area is not intended to represent a Study Area for the planning alternatives to be generated during the course of the study. The Study Area will be generated by the MTO Project Team through consultation with affected stakeholders as described in Sections 2.2 and 7.5.1.5 of this Study Plan.

## Exhibit 1.1

### HIGHWAY 7&8 TRANSPORTATION CORRIDOR PLANNING & CLASS EA STUDY

#### MAP OF ANALYSIS AREA





## 1.2 Study Objectives

The objectives of the Highway 7&8 Transportation Corridor Planning and Class EA Study are, in part, based upon the policies of the final Growth Plan for the Greater Golden Horseshoe, released by the province on June 16, 2006. The study objectives are summarized in Exhibit 1.2 and then discussed below:

<b>Exhibit 1.2</b> <b>Highway 7&amp;8 Transportation Corridor Planning and Class EA Study</b> <b>Summary of Study Objectives</b>
1. To identify and assess the factors that are driving 'Area Transportation System' needs
2. To apply those driving factors in preparing a Transportation Development Strategy to address long-term multi-year needs for the movement of people and goods
3. To undertake the planning and preliminary design of the provincial roadway components (provincial highways and provincial transitways) of those strategies
4. To conduct the planning and preliminary design of provincial roadways with an inherent approach of avoiding or minimizing overall environmental impacts
5. To identify highway access management measures for growth management and highway protection
6. To engage public and stakeholders early in the study process and continue to engage them throughout the study process

The study objectives are the following:

- 1. To identify and assess the factors that are driving 'Area Transportation System' needs:**
  - to identify and assess factors that are driving 'Area Transportation System' needs, including area travel characteristics and the state of the existing provincial highway infrastructure (physical and operational); land use, area economics, employment, population, technology, environmental, socio-economic and cultural factors; and related programs, policy and legislation (for a definition and description of 'Area Transportation System', see Section 5.2.1 of this Study Plan);
- 2. To apply those driving factors in preparing a Transportation Development Strategy to address long-term multi-year needs for the movement of people and goods:**

- to apply those driving factors in preparing a Transportation Development Strategy to address long-term multi-year needs for the movement of people and goods within the context of a balanced and integrated 'Area Transportation System', which:
  - a) provides adequate 'Area Transportation System' capacity in order to serve current and projected needs of the travelling public, stimulate economic growth, and create jobs;
  - b) ensures that the corridors necessary for the various travel modes of the 'Area Transportation System' are identified and protected, in order to maintain and improve transportation linkages;
  - c) is co-ordinated and consistent with land-use related growth objectives and growth forecasts, in order to reflect the impact of designation of areas as urban growth centres, major transit station areas, settlement areas, built-up areas, intensification areas and corridors, non-urban areas, greenfield areas and greenbelt; and
  - d) has the following attributes:
    - (i) considers both the connectivity of modes, and the separation of modes within corridors, in order to provide travel choice for the various modes of the 'Area Transportation System' and thereby reduce reliance on any single mode;
    - (ii) puts the transit component of the 'Area Transportation System' (GO Transit, provincial transitways, other inter-city transit) as the first investment priority in order to support growth in a compact and efficient form;
    - (iii) puts goods movement as the first investment priority in the provincial highway component of the 'Area Transportation System', for service to cities, other major centres of population and other regions of the province, priority truck routes leading into those communities, and major regional goods movement facilities such as intermodal facilities.

**3. To undertake the planning and design of the provincial roadway components (provincial highways and provincial transitways) of those strategies:**

- to pursue the provincial roadway components (provincial highways and provincial transitways) of the Transportation Development Strategy by undertaking their planning, design and protection as modern, safe, efficient and effective facilities.

**4. To conduct the planning and design of provincial roadways with an inherent approach of avoiding or minimizing overall environmental impacts:**

- to conduct the planning and design of provincial roadways with an inherent approach of avoiding or minimizing overall environmental impacts (ie To avoid

natural, socio-economic and cultural environmental impacts) through consideration of alternatives and “mitigation measures”;

**5. To identify highway access management measures for growth management and highway protection:**

- to identify highway access management measures in order to:
  - discourage highway-related development in areas not designated for growth;
  - protect the purpose and level of service of ‘Area Transportation System’ provincial highways; and
  - protect the benefits of any new provincial highway capacity; and

**6. To engage public and stakeholders early in the study process and continue to engage them throughout the study process:**

- to engage public and stakeholders early in the study process and continue to engage them, in order to provide meaningful and regular outreach and consultation that is integrated with and supports the study work and decision-making process.

**1.3 Preliminary Statement of Transportation Problems and Opportunities**

Based upon previous MTO studies, and the final Growth Plan for the Greater Golden Horseshoe (released by the province on June 16, 2006), a preliminary statement of problems and opportunities for the Highway 7&8 Transportation Corridor Planning and Class EA Study is provided in Exhibit 1.3 below:

<b>Exhibit 1.3</b> <b>Highway 7&amp;8 Transportation Corridor Planning and Class EA Study</b> <b>Preliminary Statement of Transportation Problems and Opportunities</b>	
1.	There are transportation capacity concerns for the movement of both people and goods along the 2-lane section of Highway 7&8 between Stratford and the New Hamburg area and on Highway 7&8 through the urban centres (Stratford, Shakespeare and New Hamburg).
2.	Provincial / inter-regional traffic through the urban centres (Stratford and Shakespeare) along Highway 7&8 interferes with their “downtown / historic crossroads” function.
3.	The connection of the analysis area to transportation corridors serving other regions in the province may be inadequate for long-term transportation and economic development needs.
4.	Geometric and traffic safety characteristics along Highway 7&8 should be addressed with respect to long-term traffic needs.

<b>Exhibit 1.3</b> <b>Highway 7&amp;8 Transportation Corridor Planning and Class EA Study</b> <b>Preliminary Statement of Transportation Problems and Opportunities</b>	
5.	There is currently no comprehensive highway access management plan for Highway 7&8 from Greater Stratford to New Hamburg to protect highway needs and to address the GGH policy of discouraging inappropriate highway-related growth.
6.	The GGH Growth Plan policy of co-ordinating transportation system planning and land use planning must be addressed.

Highway 7&8 transportation corridor problems and opportunities are discussed in further detail in Section 5.2.4 of this Study Plan.

#### **1.4 Purpose Of This Study Plan and its Relevance to the Overall Planning & EA Process**

This Study Plan is the first deliverable of the planning and Class EA Study. The Study Plan establishes the framework and commitments for conducting the planning and Class EA Study, particularly in the areas of:

- study purpose and objectives;
- study process;
- study reports;
- outreach and consultation program;
- study schedule; and
- processes to generate and evaluate alternatives.

The Study Plan builds on the principles and processes for transportation engineering, environmental protection, evaluation, consultation and documentation that are specified in the 'Class EA for Provincial Transportation Facilities'. Further details of the Class EA process and the rationale for the framework of the Study Plan are provided in Sections 2.1 and 4.0.

In addition, the Study Plan provides the role of a scoping document under the *Canadian Environmental Assessment Act* (CEAA), to:

- confirm the "scope of project" that is being assessed (project description);
- establish the scope of factors to be considered in the EA process;
- describe the methodology to assess the environmental effects of the project, including the specific methodologies for assessing cumulative effects and for determining significance; and
- provide the basis for requesting federal authorities to "trigger" CEAA as early as is practicable in the planning process before "irrevocable decisions" are made.

## **2 OUTLINE OF PLANNING AND CLASS EA STUDY PROCESS**

### **2.1 Overview of the Class EA Process and the Class Environmental Assessment For Provincial Transportation Facilities**

The *Environmental Assessment Act* (EA Act) provides for the preparation of a Class Environmental Assessment (Class EA) for submission to the Minister of the Environment for review and a decision by the provincial cabinet regarding approval through order-in-council. A Class EA is an approved planning document that defines groups of projects and activities and the environmental assessment (EA) processes which the proponent commits to following for each of these undertakings.

The Ontario Ministry of Transportation developed the 'Class Environmental Assessment for Provincial Transportation Facilities', which was approved by Order in Council 1653/99 on October 6, 1999, as amended on July 14, 2000. It provides, in part, the following:

- classification of projects and activities;
- study stages and phases;
- transportation engineering and environmental protection principles;
- consultation principles and processes;
- documentation and "bump-up" principles and processes; and
- environmental clearance process.

This Highway 7&8 Transportation Corridor Planning and Class EA Study will comply with the Class EA process for 'Group A' projects (as defined under the Class Environmental Assessment for Provincial Transportation Facilities) for MTO undertakings in which highway widening, a major realignment and bypass of sections of existing highway, a new provincial highway (provided it is not a new 400-series highway), a new provincial transitway, or combinations of the above are possible outcomes.

By following the Class EA process, the Highway 7&8 Transportation Corridor Planning and Class EA Study does not require formal review and approval under the *Ontario Environmental Assessment Act*. The approved process itself is extensive, with significant consultation and outreach to agencies, stakeholders and the public.

If, at the completion of the Class EA study process, a stakeholder is not satisfied with MTO attempts to reach a resolution regarding concerns brought forward, that stakeholder may challenge the study by making a request to the Minister of the Environment to determine if a Part 2 order or "bump-up" is required. If the Minister agrees that a bump-up is required, the project would be re-designated to an individual environmental assessment, and would be subject to the formal review and approval processes noted above.

If, during the course of the study, it is determined that a new 400-series highway should be pursued, the Highway 7&8 Transportation Corridor Planning and Class EA Study would no longer be eligible to follow the Class EA process. Under such circumstances, the study would have to be converted to an “Individual EA” study, with the extended timeframes associated with formal review and approvals (which include the possibility of public hearings) required by the Ontario *Environmental Assessment Act*, as follows:

- the Study Plan would be converted to an Environmental Assessment Terms of Reference, and would be submitted to the Minister of the Environment for review and a decision by the Minister regarding approval; and
- the Transportation Environmental Study Report would be replaced by an Environmental Assessment Report, and would be submitted to the Minister of the Environment for review and a decision by the provincial cabinet regarding approval through order-in-council.

Because this Study Plan has been structured to be consistent with the requirements of a Terms of Reference, it provides the basis for an efficient transition to an individual Environmental Assessment in the event that the Study identifies a new 400-series highway as the preferred solution.

The overview of the planning and EA process for the Highway 7&8 Transportation Corridor Study that is provided in Section 2.2 below builds on the requirements provided in the Class Environmental Assessment for Provincial Transportation Facilities. A more detailed summary of the reports that will be produced for this study (both working papers and milestone reports) is provided in Supporting Document #2 for this Study Plan.

Environmental clearance of the Transportation Environmental Study Report (TESR) marks completion of the Highway 7&8 Transportation Corridor Planning and Class EA Study. If the TESR is cleared, the next stage of the project under the terms of the Class Environmental Assessment for Provincial Transportation Facilities, is detail design for provincial roadways (provincial highways and/or transitways). Detail design will follow the design and consultation processes outlined in the Class Environmental Assessment for Provincial Transportation Facilities, and will be documented in a Design and Construction Report (DCR).

## **2.2 Overview of the Planning and Class EA Study Process for The Highway 7&8 Transportation Corridor Study (Key Tasks, Reports, PICs and Information Presented, and Preliminary Schedule)**

Exhibit 2.1 below provides an overview of the planning and Class EA study process that will be used for the Highway 7&8 Transportation Corridor Study.

<b>Exhibit 2.1</b> <b>Highway 7&amp;8 Transportation Corridor Planning and Class EA Study</b> <b>Overview of the Study Process</b>				
STUDY PHASE	OBJECTIVES AND KEY TASKS	REPORTS	PUBLIC INFORMATION CENTRES (PICs) + INFORMATION PRESENTED	PRELIMINARY SCHEDULE
<b>1. STUDY PLAN</b>	<ul style="list-style-type: none"> <li>Establish framework to guide the study work, including: <ul style="list-style-type: none"> <li>study purpose and objectives</li> <li>overview of study process</li> <li>overview of study reports</li> <li>overview of outreach and consultation</li> <li>study schedule</li> <li>overview of processes, factors &amp; criteria to generate, assess &amp; evaluate alternatives</li> </ul> </li> </ul>	Report "A": Study Plan for Technical Work, Outreach and Consultation	PIC #1: <ul style="list-style-type: none"> <li>Study Newsletter #1</li> <li>Recently completed work: <ul style="list-style-type: none"> <li>drafts of Reports "A", "B" and 1<sup>st</sup> part of "F"</li> </ul> </li> <li>Proposed approach to upcoming work: <ul style="list-style-type: none"> <li>process to define 'Area Transportation System' problems and opportunities</li> <li>process and criteria for evaluating and selecting 'Area Transportation System' alternatives</li> <li>process, factors, and criteria for generating, assessing, and evaluating preliminary planning alternatives</li> </ul> </li> </ul>	April 2007 to August 2007  (PIC #1 July/August, 2007)
<b>EA STAGE 1: ALTERNATIVES TO THE UNDERTAKING - TRANSPORTATION NEEDS ASSESSMENT</b>				
<b>2. AREA TRANSPORTATION SYSTEM PLANNING</b>	<ul style="list-style-type: none"> <li>Overview of Transportation, Land Use, Economic and Environmental Conditions within the Analysis Area <ul style="list-style-type: none"> <li>description and assessment of land use and economic conditions</li> <li>description and assessment of existing transportation conditions</li> <li>preliminary assessment of problems and opportunities based on the above</li> <li>overview of environmental conditions and constraints within analysis area (based upon secondary source information)</li> </ul> </li> </ul>	Report "B": Working Paper – Overview of Transportation, Land Use and Economic Conditions within the Analysis Area  Report "F" – 1 <sup>st</sup> Part: Working Paper –Environmental Conditions and Constraints		
	<ul style="list-style-type: none"> <li>Identification of Area Transportation System Problems and Opportunities: <ul style="list-style-type: none"> <li>Establish travel demand forecasting approach and methodology</li> <li>Forecast future 'Area Transportation System' travel characteristics and patterns</li> <li>Detailed description and assessment of current and future 'Area Transportation System' problems and opportunities</li> </ul> </li> </ul>	Report "C": Working Paper – 'Area Transportation System' Problems and Opportunities	PIC#2: <ul style="list-style-type: none"> <li>Study Newsletter #2</li> <li>Recently Completed work: <ul style="list-style-type: none"> <li>drafts of Reports "C", "D", &amp; "E"</li> </ul> </li> <li>Proposed approach to upcoming work: <ul style="list-style-type: none"> <li>process and criteria for generating provincial roadway detailed planning alternatives</li> </ul> </li> </ul>	August 2007 to Spring 2008  (PIC #2 in Spring 2008)

<b>Exhibit 2.1</b> <b>Highway 7&amp;8 Transportation Corridor Planning and Class EA Study</b> <b>Overview of the Study Process</b>				
STUDY PHASE	OBJECTIVES AND KEY TASKS	REPORTS	PUBLIC INFORMATION CENTRES (PICs) + INFORMATION PRESENTED	PRELIMINARY SCHEDULE
	<ul style="list-style-type: none"> <li>Identify 'Area Transportation System' alternatives: <ul style="list-style-type: none"> <li>Do Nothing</li> <li>Transportation Demand Management (TDM)</li> <li>Transportation System Management (TSM)</li> <li>Local Transit*</li> <li>Inter-regional transit and passenger rail*</li> <li>Air Services*</li> <li>Marine Services*</li> <li>Freight Rail*</li> <li>Municipal Roads*</li> <li>Provincial Highways/Transitways*</li> </ul> (* new or improved operations and/or infrastructure) </li> <li>Determine degree to which individual 'Area Transportation System' alternatives address problems and opportunities</li> <li>Select and define elements of area transportation system alternatives and group them into combinations: <ul style="list-style-type: none"> <li>Do nothing</li> <li>Combination #1: Optimize Existing Network</li> <li>Combination #2: New / Expanded Non-Road Infrastructure + Elements of Combination #1</li> <li>Combination #3: Widen/Improve Roads + Elements of Combination #2</li> <li>Combination #4: New Municipal Roads and/or Provincial Highways/Transitways + Elements of Combination #3</li> </ul> </li> <li>Determine the degree to which combination alternatives address the problems and opportunities and select the preferred combination(s)</li> <li>Select the alternatives that will proceed to Preliminary Planning</li> </ul>	Report "D": Working Paper – Area Transportation System Alternatives		



<b>Exhibit 2.1</b> <b>Highway 7&amp;8 Transportation Corridor Planning and Class EA Study</b> <b>Overview of the Study Process</b>				
STUDY PHASE	OBJECTIVES AND KEY TASKS	REPORTS	PUBLIC INFORMATION CENTRES (PICs) + INFORMATION PRESENTED	PRELIMINARY SCHEDULE
<b>3. PRELIMINARY PLANNING</b> (plans at 1:20,000 scale)	<ul style="list-style-type: none"> <li>• Generate the detailed elements of the preliminary planning alternatives (as applicable) based on transportation, natural, land use / social, economic and cultural factors:               <ul style="list-style-type: none"> <li>○ new/expanded services</li> <li>○ general areas of geometrical improvements and widening to existing facilities</li> <li>○ new corridors</li> <li>○ environmental protection for the above (by minimizing intrusion into areas of environmental significance as identified through secondary source information</li> <li>○ conceptual areas of limitations to highway access</li> </ul> </li> <li>• Comparative evaluation of the relative advantages and disadvantages of preliminary planning alternatives</li> <li>• Select alternatives for incorporation into transportation development strategy (including preliminary study area(s))</li> <li>• Decision if study is to continue through Phases 4-6 (<i>if provincial roadway alternatives are selected</i>)</li> </ul>	Report "E": Milestone Report – Highway 7&8 Transportation Corridor Needs Assessment		

**Exhibit 2.1**  
**Highway 7&8 Transportation Corridor Planning and Class EA Study**  
**Overview of the Study Process**

STUDY PHASE	OBJECTIVES AND KEY TASKS	REPORTS	PUBLIC INFORMATION CENTRES (PICs) + INFORMATION PRESENTED	PRELIMINARY SCHEDULE
<b>EA STAGE 2: ALTERNATIVE METHODS FOR CARRYING OUT THE UNDERTAKING</b>				
<b>4. DETAILED PLANNING FOR PROVINCIAL ROADWAYS</b>  (plans at 1:10,000 scale)	<ul style="list-style-type: none"> <li>Identify environmental conditions and constraints within the detailed planning study area (as identified through field investigations to augment secondary source information)</li> <li>Establish final study area(s) for provincial roadways for the preliminary planning alternatives carried forward from Phase 3</li> <li>Generate, specific location / type / character and template "footprint" for the following categories of provincial roadway detailed planning alternatives (as applicable): <ul style="list-style-type: none"> <li>new provincial transitway route location &amp; technology</li> <li>new provincial highway route location &amp; highway type</li> <li>specific location and type of geometrical improvements to existing highways</li> <li>specific location, extent and direction of widening to existing highways</li> </ul> </li> <li>Generate specialty engineering alternatives (bridge, drainage &amp; hydrology, foundation, pavement &amp; road base, traffic control &amp; electrical infrastructure) for the above</li> <li>For highway alternatives, establish specific nature &amp; location of limitations to highway access</li> <li>Undertake environmental impact assessment for the above (by striving to avoid or prevent major "footprint"-based environmental impacts to the area and its features, including fisheries and aquatic ecosystems, terrestrial ecosystems, groundwater, land use factors, contaminated property, built heritage &amp; cultural landscapes, archaeology, landscape composition, surface water, and designated areas; and by striving to avoid intrusion into noise-sensitive areas)</li> </ul>	Report "F" - 2 <sup>nd</sup> Part: Working Paper - Environmental Conditions and Constraints  Report "G": Working Paper - Generation of Detailed Planning Alternatives for Provincial Roadways	PIC#3: <ul style="list-style-type: none"> <li>Study Newsletter #3</li> <li>Recently completed work: <ul style="list-style-type: none"> <li>draft of Reports "G" &amp; 2<sup>nd</sup> part of "F"</li> </ul> </li> <li>Proposed approach to upcoming work: <ul style="list-style-type: none"> <li>process and criteria for evaluating &amp; selecting provincial roadway detailed planning alternatives</li> </ul> </li> </ul>	Spring 2008 to Fall 2008  (PIC #3 in Fall 2008)
	<ul style="list-style-type: none"> <li>Evaluate and select specific location / type / character and template "footprint" of the provincial roadway detailed planning alternatives</li> </ul>	Report "H": Milestone Report - Selection of Detailed Planning Alternatives for Provincial Roadways	PIC#4: <ul style="list-style-type: none"> <li>Study Newsletter #4</li> <li>Recently completed work: <ul style="list-style-type: none"> <li>draft of Report "H"</li> </ul> </li> <li>Proposed approach to upcoming work: <ul style="list-style-type: none"> <li>process and criteria for generating provincial roadway preliminary design alternatives</li> </ul> </li> </ul>	Fall 2008 to Fall 2009  (PIC #4 in Spring 2008)

**Exhibit 2.1**  
**Highway 7&8 Transportation Corridor Planning and Class EA Study**  
**Overview of the Study Process**

STUDY PHASE	OBJECTIVES AND KEY TASKS	REPORTS	PUBLIC INFORMATION CENTRES (PICs) + INFORMATION PRESENTED	PRELIMINARY SCHEDULE
<b>5. PRELIMINARY DESIGN FOR PROVINCIAL ROADWAYS</b>  (plans at 1:2,000 scale)	<ul style="list-style-type: none"> <li>For the detailed planning alternatives carried forward from Phase 4, generate provincial roadway alternatives for the following categories of preliminary design (as applicable):                             <ul style="list-style-type: none"> <li>calculated vertical &amp; horizontal alignment and cross-section</li> <li>highway interchange &amp; intersection preliminary design</li> <li>transitway station preliminary design</li> <li>location/design of private entrances to highway</li> </ul> </li> <li>Generate specialty engineering alternatives for the above (bridge, drainage &amp; hydrology, foundation, pavement &amp; road base, traffic control &amp; electrical infrastructure)</li> <li>For the above, develop environmental protection for the area and its features (as identified in Phase 4), including environmental control/mitigation, compensation and/or enhancement to address "footprint" impacts, interference impacts, traffic access modification impacts to property and neighbourhood/commercial areas, timing impacts; and by addressing effects of malfunctions or accidents, cumulative effects from the project in combination with other projects</li> <li>Identify right-of-way and property acquisition requirements</li> <li>Identify utility requirements (relocation etc)</li> <li>Develop preliminary staging of implementation</li> </ul>	Report "I": Working Paper – Generation of Preliminary Design Alternatives for Provincial Roadways	PIC#5: <ul style="list-style-type: none"> <li>Study Newsletter #5</li> <li>Recently completed work:                             <ul style="list-style-type: none"> <li>draft of Report "I"</li> </ul> </li> <li>Proposed approach to upcoming work:                             <ul style="list-style-type: none"> <li>process and criteria for evaluating &amp; selecting provincial roadway preliminary design alternatives</li> <li>process and criteria for evaluating and selecting provincial highway access management alternatives</li> </ul> </li> </ul>	Spring 2009 to Fall 2009  (PIC #5 in Fall 2009)
	<ul style="list-style-type: none"> <li>Evaluate and select provincial roadway preliminary design alternatives, and develop final access management plan</li> </ul>	Report "J": Milestone Report – Selection of Preliminary Design Alternatives for Provincial Roadways	PIC#6: <ul style="list-style-type: none"> <li>Study Newsletter #6</li> <li>Recently Completed Work                             <ul style="list-style-type: none"> <li>drafts of Reports "J" and "K"</li> </ul> </li> </ul>	Fall 2009 to Winter 2010  (PIC #6 in Winter 2010)
<b>6. TRANSPORTATION ENVIRONMENTAL STUDY REPORT</b>	<ul style="list-style-type: none"> <li>Filing of report, formal public review, and environmental "clearance"</li> </ul>	Report "K": Transportation Environmental Study Report (documentations overall study)	NO PIC <ul style="list-style-type: none"> <li>Study Newsletter #7</li> </ul>	TESR filed in Spring 2010
<b>PHASE 7: DETAIL DESIGN (documented in a Design and Construction Report) - NOT PART OF THIS STUDY</b>				

## **2.3 Federal/Provincial EA Co-ordination**

The Highway 7&8 Transportation Corridor Planning and EA Study is subject to the requirements of the *Ontario Environmental Assessment Act*. The requirements of the *Canadian Environmental Assessment Act* (CEAA) may also apply. Both governments have agreed to coordinate their respective EA processes as outlined in the Canada-Ontario Agreement on EA Cooperation, November 2004 (Harmonization Agreement).

The federal/provincial co-ordination process outlined in Supporting Document #4 of this Study Plan will guide the study. This approach is designed to address the information requirements of both federal and provincial environmental assessment Acts, in accordance with the harmonization agreement.

It is recognized by both the Canadian Environmental Assessment Agency (on behalf of the federal authorities) and MTO that ongoing dialogue on the information requirements should continue as the project progresses. As such, it may be necessary to provide additional or more detailed information as the EA process proceeds. The intent is to produce a single body of documentation on environmental effects to meet all of the information needs of both the federal and provincial governments. To the extent practical, federal/provincial information requirements regarding potential factors to be assessed in the context of this study have been integrated. General information requirements under CEAA can be found in Supporting Document #4 of this Study Plan.

## **2.4 Overview of Principles for Conducting the Study**

The Highway 7&8 Transportation Corridor Planning and Class EA Study will be conducted under the following areas of study principles:

- transportation engineering principles;
- environmental protection principles;
- evaluation principles; and
- stakeholder outreach, consultation and documentation principles.

These principles, which build on those specified in the Class Environmental Assessment for Provincial Transportation Facilities, are outlined in the subsections below.

### **2.4.1 Transportation Engineering Principles**

The transportation engineering principles that will be applied to the alternatives examined in the Highway 7&8 Transportation Corridor Planning and Class EA Study are based on the 'Class Environmental Assessment for Provincial Transportation Facilities', and include the following:

- a) provide for the efficient movement of people and goods;

- b) meet the needs of the travelling public as a whole, by maximizing opportunities for mobility;
- c) address the identified 'Area Transportation System' problems and opportunities, and maximize the opportunity to satisfy existing and future provincial travel demand;
- d) ensure compatibility, connectivity and consistency with the existing and future provincial and municipal transportation system;
- e) improve the level of service, safety and operation for the provincial transportation system users;
- f) ensure that sound engineering and scientific principles and judgement are applied to the best available data in the analysis, assessment and evaluation of transportation engineering problems, opportunities and solutions in order to meet or exceed current provincial design standards and practices;
- g) maximize opportunities to make the facility "more safe";
- h) avoid directing large volumes of long-distance provincial traffic through settlement areas;
- i) ensure the technical feasibility of planned construction, operation and maintenance;
- j) minimize property requirements and impacts on adjacent properties;
- k) use highway access management principles in order to preserve and protect the functional integrity of the provincial transportation system; and
- l) co-ordinate with municipal transportation studies and with other MTO transportation studies.

#### **2.4.2 Environmental Protection Principles**

The environmental protection principles that will be applied to the alternatives examined in the Highway 7&8 Transportation Corridor Planning and Class EA Study are based on the 'Class Environmental Assessment for Provincial Transportation Facilities', and include the following:

- a) conduct the study with an inherent approach of avoiding or minimizing overall environmental impacts through consideration of alternatives, with the objective of avoiding significant environmental areas;

- b) conduct the study to address the content of the following:
  - the Ministry of Transportation 'Environmental Protection Requirements for Transportation Planning and Highway Design, Construction, Operation and Maintenance'; and
  - the Ministry of Transportation 'Environmental Reference for Highway Design';
- c) meet the requirements of federal and provincial environmental legislation;
- d) meet the intent of government-approved policy and inter-ministerial protocols that relate to environmental protection;
- e) balance environmental protection considerations with transportation engineering considerations during each stage of the study process, recognizing that safety and effectiveness of the transportation system is fundamental to such decisions;
- f) recognize that it is seldom possible to satisfy all interests when making the tradeoffs necessary in the EA process, and that no single environmental factor is "paramount";
- g) identify existing environmental conditions and potential impacts relevant to the study, recognizing the following general categories of impacts at the appropriate study phase:
  - footprint impacts (to the area and its features)
  - interference impacts (to the area and its features)
  - traffic access modification impacts (to property, neighbourhoods, commercial areas)
  - emissions impacts (to air, water, soil and utilization of same)
  - ecological impacts
  - timing impacts (relative to season, week, day, hour, duration of the impacts above)
  - effects of malfunctions or accidents that may occur in connection with the project
  - cumulative environmental effects that are likely to result from the project in combination with other projects or activities;
- h) balance the approaches to environmental protection, recognizing that the general order of decreasing preference is as follows:
  - avoidance/prevention
  - control / mitigation (reducing the severity of environmental impacts)
  - compensation (provision of "equivalent" or countervailing environmental features)
  - enhancement (improvement over previous environmental conditions);
- i) provide mitigation effort in proportion to environmental significance and ability to reasonably mitigate with environmental mitigation measures that are technically and economically feasible;
- j) recognize that environmental mitigation measures themselves may have impacts to be considered;

- k) address the Ministry of Transportation's 'Statement of Environmental Values' (for access to this document, please see the study web site); and
- l) consider the Provincial Policy Statement related to land use planning and development issued under Section 3 of the Planning Act (for access to this document, please see the study web site).

### **2.4.3 Evaluation Principles**

The evaluation principles that will be applied to the alternatives examined in the Highway 7&8 Transportation Corridor Planning and Class EA Study are based on the 'Class Environmental Assessment for Provincial Transportation Facilities', and include the following:

- a) conduct the study with an underlying comparative evaluation process which starts with a broad perspective, and narrows to the more focussed, on a phased and iterative basis, as the study proceeds:
  - phasing of evaluation is the following:
    - evaluate and select 'Area Transportation System' alternatives;
    - evaluate and select preliminary planning alternatives;
    - evaluate and select provincial roadway detailed planning alternatives;
    - evaluate and select provincial roadway preliminary design and highway access management alternatives;
  - based on an overview representation evaluation process as provided in the Study Plan, the process will be reviewed and confirmed at each phase of evaluation to:
    - present technical information which is the subject of the evaluation process
    - present and obtain comment from external stakeholders on the proposed definition and refinement of the process to be applied at that phase of evaluation
    - present and obtain comment from external stakeholders on the results of the evaluation process;
- b) multiple alternatives to be considered;
- c) evaluation process to be comprehensive, traceable and replicable, and to be understandable by those who may be affected by the decisions;
- d) evaluation process at some phases may include a screening / short-listing component to improve efficiency and clarity;
- e) evaluation criteria to be comprehensive, fundamental, relevant, independent, measurable, well-defined;

- f) relevant factors, including natural environment, land use / socio-economic environment, cultural environment, area economy, and transportation to be given due consideration (for details, see Section 7.3 of this Study Plan); and
- g) appropriate areas of emphasis to recognized study area features and character, with evaluation factors/criteria to be refined if appropriate to reflect different sections of the study area and different stages of the study process.

#### **2.4.4 Stakeholder Outreach And Consultation Principles**

Outreach and consultation is a major component of the Highway 7&8 Transportation Corridor Planning and Class EA Study. The principles for outreach and consultation are the following:

- a) Comprehensive outreach and consultation plan:
  - is systematic, innovative and flexible;
  - is open, inclusive, responsive, transparent, traceable and defensible;
  - provides early and proactive explanation of “process” and policy requirements and how/why they are effectively/efficiently addressed by the Study Plan for Technical Work, Outreach and Consultation;
  - is structured around and focussed on points of key decision-making (for details see Section 2.2 of this Study Plan);
- b) Study work and decision-making process is integrated with and built upon the direct involvement and contributions of stakeholders:
  - structured decision-making process established through this Study Plan at the beginning of the study process
  - meaningful consultation with stakeholders at points of focused outreach and consultation before significant decisions are made. At each round of public information centres the following information will be presented:
    - recently completed study work (in draft – eg. preliminary findings and decisions)
    - the proposed approach to undertake upcoming study work (eg. generation and/or evaluation of alternatives)
  - consultation scheduled and implemented in a manner that permits stakeholders to make informed contributions to study decisions;
- c) Stakeholder examination/comment is encouraged:
  - notify stakeholders of intention to carry out the study and in advance of key study milestones (for details see Section 9.1 of this Study Plan)
  - comprehensive effort to identify and engage stakeholders
  - early outreach to stakeholder groups, and continued engagement during the study
  - explain stakeholder role, and importance of stakeholder participation



- enable stakeholders to understand the process and follow the study through its various stages
  - facilitate understanding of process and issues, which may include divergent or competing stakeholder interests
  - make information accessible and understandable
  - constructively address stakeholder input, with all relevant evidence, opinion and perspectives considered
  - reasonable effort made to resolve concerns
  - role and effect of outreach and consultation documented during the study (eg in each report), showing the effect of input received on the Study discussions/directions (within limits imposed by the *Freedom of Information and Protection of Privacy Act*);
- d) Clear outreach and consultation to each stakeholder category (for details see Section 9.7 of this Study Plan):
- First Nations
  - Business/commercial interest groups
  - Emergency service providers
  - General public
  - Municipalities
  - Regulatory agencies
  - Transportation service providers
  - Utility companies
- e) Effective documentation of study work and decision-making:
- documents prepared to support each point of key decision-making and focused outreach and consultation, and structured as inserts to the TESR (for details see Section 2.2 and Supporting Document #2 of this Study Plan)
  - documents organized for ease of access to information and reference, and in relation to relevance and in the overall planning and Class EA Study process
  - document content (e.g. exhibits) presented in a manner that facilitates use for PIC display boards, newsletters, etc
  - timely opportunity to review relevant information and documentation;
- f) Effective/innovative presentation of study information:
- use of a project website to inform / consult with stakeholders on an ongoing and timely basis
  - high quality mapping and graphics
  - newsletters, factsheets, questionnaires, etc. to effectively summarize study process and technical information presented, and to solicit input; and
- g) Effective consultation events (PICs, and as applicable, workshops and public meetings) to ensure that stakeholders understand and respond to key decision points:
- events appropriately scheduled

- events well advertised with appropriate lead time (for details see Section 9.2 of this Study Plan)
- events advertised through newspaper advertisements, and as appropriate, portable message signs, mail drops, etc.
- newspapers used for advertisements to reflect readership in First Nations communities, local and area communities, municipal boundaries, weekday and weekend exposure
- venue locations for each round of PICs to reflect municipal boundaries and centres/distribution of population within the study area
- venue/facility to have appropriate space, facilities, parking, external signing
- venue/facility to be universally accessible
- display and information material prepared to effectively present information and communicate issues at hand
- events to be appropriately staffed.

## **2.5 Earlier And Related Work**

The Highway 7&8 Transportation Corridor Planning and Class EA Study will build on the previous transportation planning work undertaken by MTO.

### **Strategic Transportation Directions for Southwestern Ontario (2002)**

In concert with other levels of governments, MTO developed the '*Strategic Transportation Directions for Southwestern Ontario*' (2002) to provide a vision for tomorrow's transportation system (for access to this document, see the study web site).

*The Strategic Transportation Directions* document sets out a course of action for transportation, taking into account the different needs of the region, based on extensive research, relevant factors such as Smart Growth principles, infrastructure decisions and announcements, transportation studies conducted by MTO and other pertinent information. In brief, the *Strategic Transportation Directions* document provides the following:

- an overview of the transportation network of the region;
- identification of the contribution of different transportation modes to the region's overall transportation system;
- identification of social and economic factors in the region that affect transportation;
- identification of growth patterns and their effect on future transportation needs;
- strategic directions for the development of the provincial transportation system; and
- strategies that MTO may pursue in relation to the region's overall transportation network.

The findings of the 2002 Strategic Directions document are incorporated into Section 5.2.4 of this Study Plan.

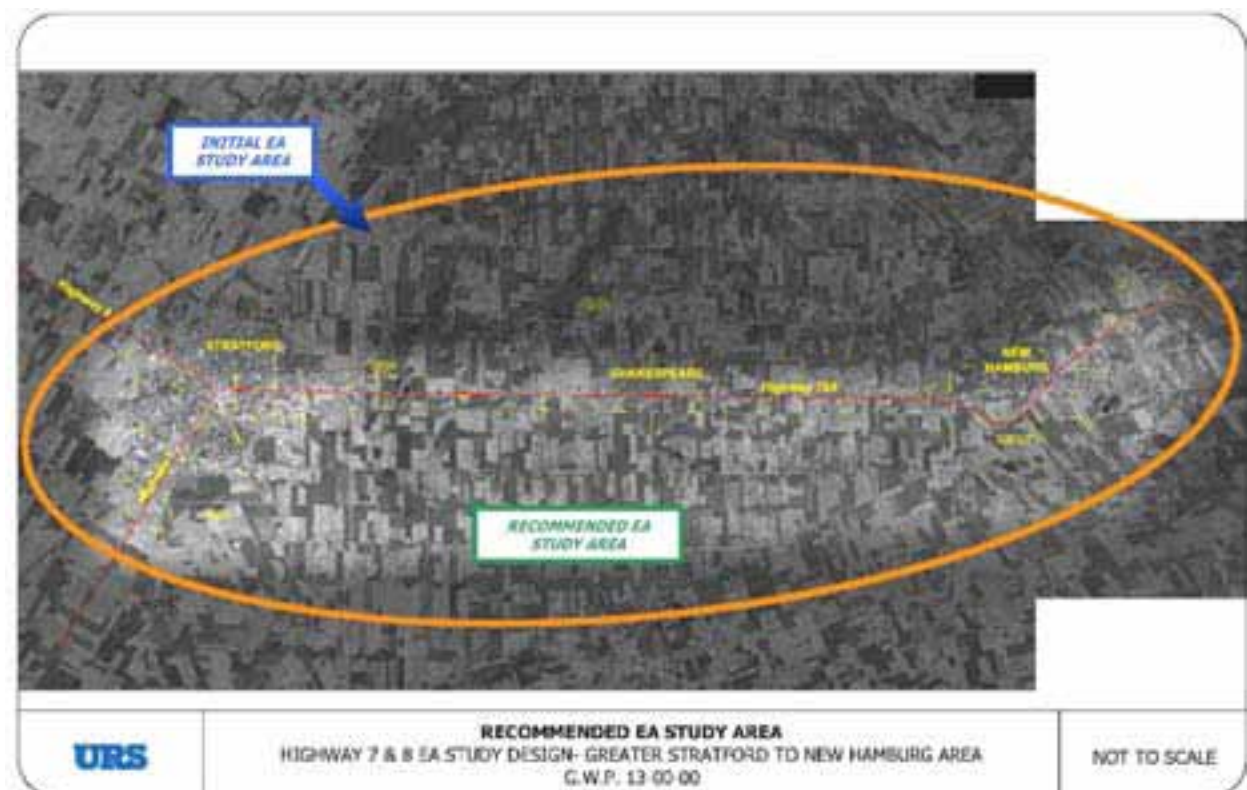
## **Highway 7&8 Corridor Planning Study Design Report (December 2005)**

MTO developed the 'Highway 7&8 Corridor Planning Study Design Report' (December 2005) to assess the present and future role and function of the Highway 7&8 Corridor between Greater Stratford and the New Hamburg area (for access to this document, see the study web site). Development of the study design report, in part, involved consultation with stakeholders, including two rounds of public information centres and the opportunity to comment on the report.

In brief, the Highway 7&8 Study Design Report provides the following:

- roadway role and function;
- engineering conditions;
- traffic conditions;
- traffic safety;
- origin-destination survey to accurately determine vehicle patterns between Greater Stratford and the New Hamburg area;
- assessment of transportation planning alternatives; and
- recommended preliminary study area as a factor for the identification of potential transportation solutions to address identified needs.

The findings of the 2005 Study Design Report are incorporated into Section 5.2.4 of this Study Plan. The preliminary study area identified in the Study Design Report is provided below:



This preliminary study area falls within the following municipalities:

- City of Stratford;
- County of Perth;
- Township of Perth East;
- Township of Perth South;
- Township of Wilmot; and
- Regional Municipality of Waterloo.

The preliminary study area recommended in the Study Design Report will be subject to review and modification as the Highway 7&8 Transportation Corridor Planning and Class EA Study proceeds.

### **3 STATEMENT AND ASSUMPTIONS OF PROPONENCY**

#### **3.1 Statement of Proponency**

The Ontario Ministry of Transportation is the proponent for this Study Plan for the Highway 7&8 Transportation Corridor Planning and Class EA Study.

#### **3.2 Assumptions Of EA Proponency And Completion Of Study Work**

MTO is conducting the Highway 7&8 Transportation Corridor Planning and Class EA Study under the assumptions of EA proponency and completion of study work provided in Exhibit 3.1 below:

<b>Exhibit 3.1 Highway 7&amp;8 Transportation Corridor Planning and Class EA Study Assumptions of EA Proponency and Completion of Study Work</b>	
<b>1.</b>	The current roles and relationships of different government levels and transportation service providers are maintained, consistent with their responsibility and authority.
<b>2.</b>	The consideration of 'Area Transportation System' and preliminary planning alternatives, and the development of a Transportation Development Strategy to address problems and opportunities are not restricted by these current roles.
<b>3.</b>	If 'Area Transportation System' and preliminary planning alternatives involving provincial roadways (provincial highways and/or provincial transitways) are selected, MTO will make the decision on the pursuit of further study through preliminary planning, detailed planning, and preliminary design.
<b>4.</b>	If 'Area Transportation System' and preliminary planning alternatives involving municipal roads, rail/air/water/intermodal facilities, municipal/private transit, or GO Transit are selected, MTO will refer the alternative recommendations to the appropriate government agency and/or transportation service provider for independent decision on further action.
<b>5.</b>	Depending upon the circumstances, the province may, as a separate initiative following completion of the Planning and Class EA Study, pursue innovative funding, and public and private partnerships for undertaking the following: <ul style="list-style-type: none"><li>• further study, design and construction of 'Area Transportation System' and preliminary planning alternatives identified in the planning and Class EA Study, for which MTO is not the EA proponent;</li><li>• design and construction of the provincial roadway (provincial highway and/or provincial transitway) that is the product of a planning and Class EA Study.</li></ul>
<b>6.</b>	The interaction of provincial transportation planning and growth management is a shared responsibility as follows: <ul style="list-style-type: none"><li>• municipalities, the Ministry of Municipal Affairs and Housing, and the Ministry of Public Infrastructure and Renewal are responsible for managing growth in a manner that encourages good development and discourages sprawl;</li></ul>

<p style="text-align: center;"><b>Exhibit 3.1</b> <b>Highway 7&amp;8 Transportation Corridor Planning and Class EA Study</b> <b>Assumptions of EA Proponency and Completion of Study Work</b></p>
<ul style="list-style-type: none"><li>• MTO is responsible for planning of the provincial roadways (provincial highways/provincial transitways) components of the Transportation Development Strategy; and</li><li>• in association with the planning of provincial highways/transitways, MTO is also responsible for provincial highway access management to discourage development in areas not designated for growth.</li></ul>
<p>7. The Highway 7&amp;8 Transportation Corridor Planning and Class EA Study will not address “over-arching issues” such as the following:</p> <ul style="list-style-type: none"><li>• statutes, policies and standards of governments;</li><li>• municipal official plans;</li><li>• responsibility, authority and decisions for transportation functions/modes that rest with government agencies and service providers other than MTO;</li><li>• ownership of lands and infrastructure; and</li><li>• funding policies and commitments of governments and the private sector.</li></ul>
<p>8. Although the Highway 7&amp;8 Transportation Corridor Planning and Class EA Study Process will not investigate concerns, suggestions or changes to such “overarching issues”, the study team will document input received during the Highway 7&amp;8 Transportation Corridor Planning and Class EA Study and refer it to the appropriate authority for information/consideration.</p>

## **4 STATEMENT OF EA COMPLIANCE**

This Highway 7&8 Transportation Corridor Planning and Class EA Study will follow and comply with the Class Environmental Assessment for Provincial Transportation facilities outlined in Section 2.1 of this Study Plan.

Although this is a Class EA study, the requirements of Section 6 (2)(a) of the Ontario *Environmental Assessment Act* have been addressed as an appropriate standard for this Study Plan. Accordingly, the Study Plan specifically addresses the following:

- Identification of the Proponent (Chapter 3 of this Study Plan);
- The purpose of the undertaking (Chapter 5);
- The process for selecting preferred alternatives to the undertaking (Chapter 7);
- The process for generating the study area (Chapter 7);
- The process for generating and selecting preferred alternative methods (Chapter 7);
- A commitment to carry out compliance monitoring (Chapter 8); and,
- A description of the Consultation Plan proposed for the Environmental Assessment (Chapter 9).

The Study Plan also includes Supporting Documents, one of which is a Record of Consultation During Preparation of the Study Plan (to be completed before finalizing the Study Plan).

## 5 PURPOSE OF UNDERTAKING

### 5.1 Policy Framework And Other Government Initiatives

The Highway 7&8 Transportation Corridor Planning and Class EA Study builds on the policy framework provided by:

- the '2005 Provincial Policy Statement' (PPS) under Section 3 of the *Planning Act*; and
- the final 'Growth Plan for the Greater Golden Horseshoe' (GGH Growth Plan) released in June, 2006 under the *Places to Grow Act*.

This policy framework has direct impact on the following:

- study plan;
- identification of Area Transportation System problems and opportunities;
- evaluation and selection of Area Transportation System alternatives;
- evaluation and selection of preliminary planning alternatives; and
- evaluation and selection of detailed planning alternatives for provincial roadways.

The application of this policy framework is presented in Exhibit 5.1 below.

<b>Exhibit 5.1</b> <b>Highway 7&amp;8 Transportation Corridor Planning And Class Ea Study</b> <b>Application Of GGH Growth Plan And Provincial Policy Statement</b> <b>Policy Framework</b>	
<b>POLICY DOCUMENT</b>	<b>POLICY STATEMENT</b>
<b>Study Plan</b>	
<b>Study Objectives</b>	Study objectives are based upon the policies of the GGH Growth Plan
<b>Identification of Area Transportation System Problems and Opportunities</b>	
<b>GGH Growth Plan</b>	Population and employment forecasts of the Plan will be used for planning
- Growth Forecasts, Where and How to Grow	A significant portion of new population and employment growth will be directed to the (designated) built-up areas of the community through intensification
	(Designated) urban growth centres, and their gross density targets for residents and jobs will be as identified in the Plan
<b>Evaluation and Selection of Area Transportation System Functional and Modal Alternatives</b>	
<b>Provincial Policy Statement</b>	Transportation system should be provided which are safe, energy efficient, facilitate the movement of people and goods, and are appropriate to address projected needs
- Transportation Systems	



<b>Exhibit 5.1</b> <b>Highway 7&amp;8 Transportation Corridor Planning And Class Ea Study</b> <b>Application Of GGH Growth Plan And Provincial Policy Statement</b> <b>Policy Framework</b>	
<b>POLICY DOCUMENT</b>	<b>POLICY STATEMENT</b>
<b>GGH Growth Plan</b>	Ensure that corridors are identified and protected to meet current and projected needs for various travel modes
- General Transportation Policies	Provide balance, choice, access and connectivity among transportation modes for moving people and goods
<b>GGH Growth Plan</b>	Provide linkages to planned or existing intermodal facilities and to other major regional facilities for primary goods movement
- Policies for Moving Goods	Improve corridors for moving goods, consistent with the transportation infrastructure designated in the Plan
<b>Evaluation and Selection of Preliminary Planning Alternatives and Detailed Planning Alternatives for Provincial Roadways</b> (Policy statements indicated above also apply)	
<b>GGH Growth Plan</b>	Provide for safety of the system users
- General Transportation Policies	Support opportunities for multi-modal use within corridors where appropriate
	Consider separation of modes within corridors where appropriate
<b>Provincial Policy Statement</b>	When planning for corridors and rights-of-way for significant transportation facilities, consideration will be given to significant natural heritage, water, agricultural, mineral, cultural heritage and archaeological resources.
- Planning Transportation Corridors	

The influence on this study of the Growth Plan for the Greater Golden Horseshoe is further discussed in Section 5.2.2 and 5.2.3 of this Study Plan.

## 5.2 Transportation Problems And Opportunities

### 5.2.1 Definition And Description Of 'Area Transportation System'

The Highway 7&8 Transportation Corridor Planning and Class EA Study is being conducted in the context provided in Exhibit 5.2 below:

**Exhibit 5.2**  
**Highway 7&8 Transportation Corridor Planning and Class EA Study**  
**'Area Transportation System' Context**

- The Highway 7&8 Transportation Corridor Planning and Class EA Study is being conducted in the context of the '*Area Transportation System*'.
- The '*Area Transportation System*' is composed of the area transportation facilities which have the primary function of providing transportation linkages for the movement of people and goods, by all modes and all jurisdictions, between multiple regions of the province and/or between cities and other major centres of population, or which function to complete such primary transportation linkages, with an emphasis on connections to:
  - cities and other major centres of population that contain designated urban growth centres;
  - cities and other major centres of population that contain designated major transit station areas;
  - major regional facilities for primary goods movement, such as intermodal facilities; and
  - international airports, major ports and international gateways.

### **5.2.2 Overview Of The Area Transportation System**

The analysis carried out for the *Strategic Transportation Directions* for Southwestern Ontario (2002) identified several trends:

- As in the rest of the province, the automobile (including vans and light trucks) is the dominant intercity travel mode in Southwestern Ontario, accounting for over 90% of passenger kilometres travelled. The remaining transportation modes (bus, rail, GO Transit, marine and air) account for 7.5% of passenger kilometres travelled.
- The primary modes used for the transportation of goods in and through the region, based on tonnes shipped, are truck (68%), rail (18%) and marine (15%). Mode usage varies with the particular commodity transported, the market served, the need for "just in time" service, and the industry distribution system. Market trends indicate that truck transport will play a greater goods movement role in the future.
- Trucking is the primary means of moving goods in Southwestern Ontario. Since the highway system links industry and markets in Southern Ontario and the U.S., there is substantial international truck freight movement on freeways in the region. The accessibility provided by the provincial and municipal road network makes trucking very competitive with other modes, except in the case of certain bulk goods and long distance hauls to markets outside Ontario.

- Provincial and regional roadways play a key role in the movement of intercity passengers and goods, and by 2026 will carry over 75% of the total system traffic in vehicle kilometres.
- A reduced level of service is forecast for the entire system, with provincial and regional routes showing substantial increases in the vehicle kilometres operating at congested conditions.
- All major urban centres show improved commuter containment (i.e. live-work arrangements); however, total commuter kilometres will continue to increase.

The Growth Plan for the Greater Golden Horseshoe (2006) in part provides the following direction with respect to the Area Transportation System for the analysis area:

- Future goods movement corridors are envisioned to provide links between the Niagara Frontier and the GTA.

### 5.2.3 Overview Of Area Economy, Employment And Population Growth Forecasts

Growth in the transportation corridor is dependent on a number of discreet but related socio-economic factors, such as: population and employment, demographic characteristics, and national, provincial and regional trends. Each of these factors acts upon the characteristics of travel demand with different and varying effects. In order to assess the needs of the Area Transportation System, the first step is to establish the factors that define the environments in the study area. These factors become the framework for the quantification of role and function of the transportation system.

#### *Growth Plan for the Greater Golden Horseshoe*

A major influence to the socio-economic environment in the analysis area is the recently published Growth Plan for the Greater Golden Horseshoe (GGH Growth Plan), released by the province on June 16, 2006, which reflects the *Places to Grow Act's* underlying principles of intensification and reduced urban sprawl. The Growth Plan promotes planning on a more regional level and sets the stage for future growth and land use scenarios by providing guidelines for municipal planning that are intended to:

- stimulate economic prosperity;
- facilitate the efficient movement of goods by linking intermodal facilities, international gateways, and communities within the GGH;
- revitalize downtowns;
- provide growth forecast objectives:

Forecasted Distribution of Population and Employment Within the Analysis Area of the Hwy 7&8 Transportation Corridor Planning and EA Study (figures in 000s, from Schedule 3 of the GGH Growth Plan)							
MUNICIPALITY	POPULATION				EMPLOYMENT		
	2001	2011	2021	2031	2001	2011	2021 2031
Region of Waterloo	456	526	623	729	236	282	324 366

- promote intensification - by the year 2015 and for each year thereafter to 2031, a minimum of 40 percent of all residential development in upper and single tier municipalities will be in the built-up area;
- designate urban growth centres which will generally be planned to achieve a minimum gross density target (the closest centres to which this applies are uptown Waterloo and downtown Kitchener);
- encourage more compact communities, with services, shops and businesses close to home;
- curb urban sprawl;
- preserve greenspace and agricultural lands that are under pressure in the GGH;
- cut down on car dependency by increasing modal share of alternatives to the automobile;
- contribute to better air quality;
- spur transit investment and create conditions favourable to public transit use; and
- promote a culture of conservation.

Through its policies, the GGH Growth Plan will impact the future land use / socio-economic environment in the analysis area, by establishing guidelines for future growth, land use (including greenspace and agriculture) and transportation objectives.

This study's objectives have, in part, been set in accordance with the policies of the final GGH Growth Plan, as described in Section 1.2.

### *Municipal Official Plans*

Future land uses are also governed by Official Plans for the municipalities in the analysis area, including Perth County and the Region of Waterloo. The currently approved Official Plan of the Region of Waterloo will need to be updated to reflect the population and employment guidelines and targets set out in the Growth Plan (Perth County) is outside the Greater Golden Horseshoe).

### *Trade and Tourism*

The study area can be considered a conduit for trade and tourism between the GTA and Lake Huron. Goods movement through this area into Canada's economic heartland are critical to the local, regional and provincial economies. The efficiency of the provincial highway system, in and through the study area is therefore essential to the economic prosperity of the area.

### *Land Use/ Socio Economic Environment*

An overview of the land use / socio-economic environment is provided in Section 6 of this Study Plan

## **5.2.4 Discussion of Preliminary Statement of Transportation Problems and Opportunities**

Section 1.3 of this Study Plan provides a preliminary statement of transportation problems and opportunities, based upon previous MTO reports, and the final Growth Plan for the Greater Golden Horseshoe (released by the province on June 16, 2006). This section expands upon that statement.

- 1. There are transportation capacity concerns for the movement of both people and goods along the 2-lane section of Highway 7&8 between Stratford and New Hamburg and on Highway 7&8 through the urban centres (Stratford, Shakespeare and New Hamburg).**
  - There will be an east-west capacity deficiency of one lane in each direction from 2.9 km east of the Stratford City Limits to Waterloo Road 1 (i.e. two-lane section of highway) to meet the current and projected needs of the travelling public, and to stimulate economic growth and job creation:
    - The two-lane section of Highway 7&8 currently operates at an undesirable level of service (LOS D).
    - Average daily traffic on Highway 7&8 is forecast to increase by a minimum of 30% between 2004 and 2031.
    - As a result, the existing transportation network is not capable of supporting the projected growth in population, employment, trade and tourism.
    - Failure to address these transportation deficiencies could result in unacceptable travel delay that would be costly to industry, and would deter recreational and tourist travel. The reduction in mobility and access will restrict the ability of the broader region to attract new business and promote economic growth.
    - These transportation deficiencies could occur earlier and/or increase in duration, extent or severity if higher population, tourism or economic growth scenarios are realized.
    - The City of Stratford has expressed concerns with the significant amount of truck traffic that is passing through the core of the City via Highway 7&8.
    - The County of Perth has expressed concerns with the degree of residential traffic that is destined for locations east of Stratford, and is utilizing parallel routes to the north of Highway 7&8, such as Perth Line 37, to avoid traffic delays in Stratford.

2. **Provincial / inter-regional traffic through the urban centres (Stratford and Shakespeare) along Highway 7&8 interferes with their “downtown / historic crossroads” function.**
  - There are traffic conflicts between local and longer distance trips in downtown Stratford and Shakespeare; and
  - The City of Stratford has expressed concerns with the significant amount of truck traffic that is passing through the core of the City via Highway 7&8.
3. **The connection of the analysis area to transportation corridors serving other regions in the province may be inadequate for long-term transportation and economic development needs.**
  - Highway 7&8 is experiencing increasing functional separation from the provincial highway network as development in Stratford intensifies and expands.
4. **Geometric and traffic safety characteristics along Highway 7&8 should be addressed with respect to long-term traffic needs.**
  - This is indicated in Exhibit 5.3 below, in which ideal highway geometric conditions are compared to those of the existing Highway 7&8:

<b>Exhibit 5.3:</b> <b>Highway 7&amp;8 Transportation Corridor Planning and Class EA Study</b> <b>Comparison of Ideal Highway Conditions and Those on Highway 7&amp;8</b>	
<b>Ideal Conditions</b>	<b>Highway 7&amp;8 Conditions</b>
<ul style="list-style-type: none"> <li>• Design features of roadway linked to legally posted speed</li> </ul>	<ul style="list-style-type: none"> <li>• Numerous vertical alignment features do not meet desirable limits for the posted speed</li> </ul>
<ul style="list-style-type: none"> <li>• Lane width equal to or greater than 3.75 m where posted speed limit is 80 km/h and 3.5 m where posted speed limit is 60 km/h</li> </ul>	<ul style="list-style-type: none"> <li>• Typically 3.75 m wide lanes except through Shakespeare where lane width is marginally below standard (3.35 m versus 3.5 m)</li> </ul>
<ul style="list-style-type: none"> <li>• Clear shoulders equal to or wider than 2.0 m for disabled vehicle refuge</li> </ul>	<ul style="list-style-type: none"> <li>• Typically 3.0 m wide granular shoulders including 0.5 m partially paved; fully paved shoulders for a short section within Shakespeare</li> </ul>
<ul style="list-style-type: none"> <li>• Full passing opportunities</li> </ul>	<ul style="list-style-type: none"> <li>• Limited passing opportunities due to horizontal alignment, vertical alignment and intersection spacing resulting in through vehicles spending a high proportion of time in platoons and operating at less than their desired speeds which adversely affects safety</li> </ul>
<ul style="list-style-type: none"> <li>• All passenger cars in traffic stream</li> </ul>	<ul style="list-style-type: none"> <li>• 10-16% commercial vehicles in corridor</li> </ul>
<ul style="list-style-type: none"> <li>• Directional distribution of 50/50</li> </ul>	<ul style="list-style-type: none"> <li>• 55% westbound / 45% eastbound</li> </ul>

<b>Exhibit 5.3:</b> <b>Highway 7&amp;8 Transportation Corridor Planning and Class EA Study</b> <b>Comparison of Ideal Highway Conditions and Those on Highway 7&amp;8</b>	
<b>Ideal Conditions</b>	<b>Highway 7&amp;8 Conditions</b>
<ul style="list-style-type: none"> <li>• Low number of intersections and entrances so that impediments to through traffic due to traffic control devices or turning traffic are minimized</li> </ul>	<ul style="list-style-type: none"> <li>• Numerous intersections and entrances within study area</li> </ul>
<ul style="list-style-type: none"> <li>• Level terrain</li> </ul>	<ul style="list-style-type: none"> <li>• Level to rolling terrain</li> </ul>

**5. There is currently no comprehensive highway access management plan for Highway 7&8 from Greater Stratford to New Hamburg to protect highway needs and to address the GGH policy of discouraging inappropriate highway-related growth.**

- A comprehensive highway access management plan is required to protect current and future highway capacity, operational and safety interests
- A highway access management plan is required to address the GGH Growth Plan policy of discouraging highway-related development in areas not designated for growth (which is most of the length of Highway 7&8 between the designated built-up areas of Stratford and Shakespeare, and between Shakespeare and New Hamburg).

**6. The GGH Growth Plan policy of co-ordinating transportation system planning and land use planning must be addressed.**

- The GGH Growth Plan promotes co-ordinated transportation system planning and land use planning. The functionality of the Highway 7&8 transportation corridor from Greater Stratford to the New Hamburg area to meet current and projected needs for various travel modes must be protected before the opportunities are precluded by development in the built-up areas of Stratford, Shakespeare and New Hamburg.
- Various transportation opportunities may be identified during this Class EA Study including (but not limited to) provision of a balanced and integrated transportation system (i.e. opportunities for higher order transit, improved linkages to urban growth centres, inter-modal facilities and gateways).

## **6 ENVIRONMENTAL CONDITIONS AND POTENTIAL EFFECTS**

The Highway 7&8 Transportation Corridor Planning and Class EA Study will utilize a study process that seeks to avoid, minimize or prevent adverse environmental effects. For the purposes of this study, the term “environment” reflects the definition in the Ontario Environmental Assessment Act, which includes natural, social, economic and cultural features. Specific mitigation measures and the approaches for management of environmental effects will be developed and addressed during the EA.

### **6.1 Overview of Existing Environmental Conditions**

A considerable amount of secondary source environmental information was obtained during preparation of the Study Design Report, as documented in December, 2005.

This study will begin by updating the information from secondary sources and will also include carrying out field investigations and seeking environmental information from external agencies, interest groups and the public through the Outreach and Consultation program as described in Section 9.0 of this Study Plan.

The information obtained through a review of the Study Design Report and secondary source investigations carried out to date as part of that study has provided a basic understanding of the existing environment and major environmental features in the area.

An overview of existing environmental conditions is provided below. Details are provided in Report “F”: Working Paper – Environmental Conditions and Constraints.

#### **6.1.1 Natural Environment**

The study area lies within the upper reaches of two major watersheds, the Upper Thames River on the west and the Grand River on the east end. The Avon River, a major tributary of the Upper Thames collects drainage from the Stratford area and lands to the north of Highway 7 and 8, running westward through the north end of the City of Stratford. The Nith River, a major tributary of the Grand River, receives drainage from most of the tributaries in the east part of the study area, and runs southward through New Hamburg before crossing Highway 7 and 8.

There are approximately 25 small watercourses along the subject section of Highway 7 and 8, most of which are municipal drains, although at least 8 of these watercourses are either confirmed fish habitat or have the potential to provide fish habitat. Species at Risk mapping recently developed by the Department of Fisheries and Oceans indicates the presence of protected mussel species in several of the Nith tributaries crossing Highway 7 and 8, and the presence of “special concern” (being considered for protection ) species of fish in several of the tributaries to the Avon River which crosses Highway 7 and 8.



The topography of the study area is generally gently rolling, becoming more pronounced to the north of the existing highway alignment. Soil conditions are generally good for a variety of agricultural operations and most of the land has been cleared, reducing forest cover to less than 5% of the land base. Areas of remaining forest are concentrated in poorly drained lowland or river valley areas, though linear strips of upland woodlot persist both to the north and south of the existing highway. A number of wetland/swamp/bog complexes around the study area have been recognized as 'environmentally sensitive areas', including the Little Lakes Bog and Swamp Forest Complex, spanning the existing highway just east of Stratford, and designated an Area of Natural and Scientific Interest (ANSI).

While the remaining wooded areas generally support species typical of upland woodlands in this area, the Nith Valley is known to support Carolinian biota in its lowland deciduous forests, and one plant Species at Risk, the Showy Goldenrod, has been found at locations between Stratford and New Hamburg. There are also deer wintering areas beyond the study area to the northeast and northwest, providing critical overwintering habitat to the deer which inhabit this area.

### **6.1.2 Land Use / Socio-Economic Environment**

Farming and agricultural land uses dominate the landscape and constitute the main economic activity between Stratford and New Hamburg. With most soils in agricultural capability classes 1-3, the land supports excellent cash crop operations and mixed farming, producing mixed grain, corn, soybeans, hay and a variety of fruits and vegetables. Major dairy and beef production operations are found throughout the area.

Highway 7 and 8 passes through three major population centres: New Hamburg at the East end of the study area, Stratford at the west end and Shakespeare, in the middle of the study area.

Stratford, with a population of approximately 30,000, is the primary urban centre in the study area, mixing a strong local tourism industry led by the Stratford Festival, with a small manufacturing base and commercial sector that serves as a local centre for retail and service industries. Highway 7 and 8 serves as a critical link to connect Stratford to major markets in the Kitchener/Waterloo/Cambridge area and to the Greater Toronto area approximately 1 hour to the east. This proximity is critical to the Stratford tourist industry and the auto parts industry centred in Stratford. Population and employment growth in the City of Stratford has been modest in recent years, while the population levels in adjacent townships have remained stable.

By contrast, New Hamburg, at the east end of the study area, with a population of about 6,000, is experiencing substantial population growth. New Hamburg and its surrounding (Wilmot) township lie within the urban shadow of the Kitchener/Waterloo/Cambridge areas, and have become major 'bedroom communities' for these major employment centres. While New Hamburg provides a full range of retail/service commercial facilities for its residents, it has also become the site of some major highway commercial

enterprises (eg. automotive dealerships) developed along Highway 7 and 8 in recent years.

The Hamlet of Shakespeare, located about half-way between Stratford and New Hamburg in the Township of Perth East, was initially established as a service centre for the surrounding agricultural community, but has since converted to serve the passing traffic to and from Stratford and the Stratford Festival. The hamlet now contains a number of fuel and food service outlets and a significant concentration of specialty shops dominated by high quality antique dealerships. Some new residential development is also occurring, especially on the north side of Shakespeare.

### **6.1.3 Cultural Environment**

The cultural environment includes archaeological features, built heritage features and heritage landscapes within the study area.

A preliminary archaeological assessment conducted during the Study Design identified 23 previously registered sites within 2km of the study area. Field surveys located fifteen historic components and three pre-historic components, with 9 of the historic and one of the pre-historic sites being registered. In addition to these sites, local sources reported two unmarked pioneer cemeteries along the highway and other historic archaeological remains including a brickyard and a cemetery south of Shakespeare. In general, there is a high potential for the recovery of pre-contact archaeological remains within the study area, especially along the streams and around wetland areas which would have been the foci for prehistoric settlement.

The cultural landscape within the study area is predominantly agricultural in nature, and both the highway and sideroads throughout the study area are lined with numerous attractive nineteenth and twentieth century farm complexes. The rural landscape is altered by the presence of the CNR line which parallels the highway and crosses it at one location, and by the presence of several crossroad hamlets and small population centres such as Shakespeare.

A number of significant built heritage features are found within the study area, including several located along the existing highway alignment. Most notable of these is the Fryfogel Inn property near Perth Road 106, which includes an 1845 brick building, a commemorative cairn and a cemetery. The Inn is protected by an Ontario Heritage Foundation heritage conservation easement and has been evaluated as a potential national historic site by the historic Sites and Monuments Board of Canada. Another significant built heritage feature, the Lingelbach Church and cemetery is located at the intersection of Highway 7 and 8 and Perth Line 104. The steel girder bridge which carries the single-lane CNR track over Highway 7 and 8 near Perth Road 102, constructed in 1936 constitutes another built heritage feature directly associated with the existing highway alignment.

Additional built heritage features are scattered throughout the study area, including a number of former church and old schoolhouse buildings. One such building, the Brocksden Museum located to the north of Highway 7 and 8 on Perth Line 37, has been designated under Part IV of the Ontario Heritage Act.

## **6.2 Environmental Work Plan**

The environmental work plan will be carried out in accordance with the:

- Class EA for Provincial Transportation Facilities; and
- MTO Environmental Reference for Highway Design.

For access to the above documents, please refer to the study web site.

These documents have been prepared for MTO undertakings and transportation projects of this type, to ensure that all ministry studies satisfy the requirements of federal and provincial EA principles and guidelines.

The environmental work plan includes further environmental investigations, including secondary source reviews and field investigations, after a study area is confirmed.

As the study progresses and the range of alternatives becomes more focussed, more detailed environmental investigations will be undertaken. The level of detail and scale of mapping will increase, as the project team begins to focus in on specific areas or corridors within the analysis area.

A full complement of environmental specialists will be working on the study to investigate factor-specific area(s) of expertise. The environmental factors, sub-factors and criteria are identified in Exhibit 7.2 of this Study Plan.

## **6.3 Environmental Conditions Documentation**

Environmental Conditions and Constraints will be documented in Report “F”: Working Paper – Environmental Conditions and Constraints. A detailed summary of the report is provided in Supporting Document #2 of this Study Plan.

Report “F” will be prepared in two parts as follows:

- Part 1 will:
  - document environmental conditions background data (existing/secondary source information – mapping / constraint mapping, data, reports, supplemented by preliminary field reconnaissance) to provide an environmental overview within the analysis area; and
  - provide overview/background level of detail that supports the selection of ‘Area Transportation System’ alternatives, and the generation and selection of preliminary planning alternatives.

- Part 2 will:
  - document environmental conditions field investigation work (inventory, survey, testing) and determination of environmental significance;
  - provide higher level of detail that supports the environmental impact assessment which is a component of generating provincial roadway detailed planning alternatives; and
  - utilize the same environmental factor-specific areas and provide the same areas of technical expertise, but at increased levels of detail.

Report “F” will present the facts without offering assessment of impacts or environmental protection/mitigation and compensation.

#### **6.4 Environmental Protection and Commitments to Mitigate**

Environmental protection principles are described in Section 2.4.2 of this Study Plan.

Environmental specialists carrying out the work on existing conditions will participate in determining the most effective means of protecting the environment during the generation and evaluation of preliminary and detailed planning alternatives. Environmental protection measures will also be discussed with external agencies and ministries as appropriate throughout the study.

If new environmental information arises during the study, it will be taken into consideration in the generation and evaluation of alternatives as the study moves forward.

Environmental protection and mitigation will be included in the final study recommendations at a preliminary design level of detail. If additional environmental investigations are required during the next study phase (i.e., detail design), a commitment to carry out the work will be included in the Transportation Environmental Study Report (TESR). The TESR will also include commitments to finalize the design work and obtain all required environmental approvals from external agencies prior to construction.

Environmental monitoring is described in Section 8.0 of this Study Plan.

## **7 ALTERNATIVES AND THEIR EVALUATION**

### **7.1 “Alternatives To the Undertaking”, and “Alternative Methods for Carrying Out the Undertaking”**

The Ontario *Environmental Assessment Act* defines both “alternatives to the undertaking” and “alternative methods for carrying out the undertaking”.

“Alternatives to the undertaking” are defined as functionally different ways of addressing identified problems and opportunities. For the Highway 7&8 Transportation Corridor Planning and Class EA Study, alternatives to the undertaking are examined under the transportation needs assessment phases of the study, as follows:

- ‘Area Transportation System’ alternatives, which are described in Sections 7.4.5 and 7.4.7; and
- preliminary planning alternatives, which are described in Section 7.4.10.

“Alternative methods for carrying out the undertaking” are defined as different ways of carrying out the undertaking once the preferred alternatives to the undertaking have been identified. For the Highway 7&8 Transportation Corridor Planning and Class EA Study, alternative methods for carrying out the undertaking are the following:

- provincial roadway (provincial highway/provincial transitway) detailed planning alternatives, which are described in Section 7.5.2; and
- provincial roadway (provincial highway/provincial transitway) preliminary design alternatives, which are described in Section 7.6.1.

### **7.2 Evaluation Methods and Their Application**

The evaluation of alternative methods is a two-stage process.

The first stage (assessment) entails the identification of advantages and disadvantages of the various alternatives under consideration. At this stage, environmental features are examined to determine the extent of impact. Net impacts will be identified; these refer to the effects on the environment that remain after standard mitigation measures have been applied to reduce the extent of the impact.

The second stage is the evaluation itself. This stage builds upon the information obtained from the impact assessment stage and involves a comparative analysis of the advantages and disadvantages of the alternatives considered to select a preferred alternative. At this stage, the relative importance of the environmental features and significance of the impacts are determined. A “Do Nothing” scenario will be carried forward to represent a base case for comparison to the preferred alternative.

## Evaluation Methods

The evaluation of alternatives is an integral component of the EA. Evaluation principles are provided in Section 2.4.3.

The Ontario Ministry of Environment recommends that the evaluation approach should be clearly described and government ministries, municipalities, agencies, First Nations and the public should be asked for their comments early in the EA study. The method(s) used to predict net environmental effects and evaluate advantages and disadvantages should clearly identify the relative differences and key impact trade-offs.

In this study, two evaluation approaches will be used to assist in the selection of alternatives at the various phases of this undertaking. A Reasoned Argument (or Trade-off) method will be the primary tool used to identify a preferred alternative. In some cases, an Arithmetic (weighting-scoring) method will be the secondary tool and will be used (except in the Transportation Needs Assessment phase) to verify the results of the trade-off method.

The Reasoned Argument (trade-off) evaluation component will provide a clear presentation to stakeholders of the key trade-offs between the various evaluation factors and the reasons why one alternative is preferred over another.

The Arithmetic evaluation provides a means to compare the alternative methods based on a numerical scaling with weights assigned by MTO and other stakeholders as determined through the EA Study consultation. A numerical approach is a good sensitivity analysis tool to determine if the conclusions of the reasoned argument approach are valid and appropriate.

During the study, the decision making process will be clearly documented to support a traceable process and to ensure that it is understandable to those who may be affected by the decisions. Details on the Reasoned Argument (trade-off) and Arithmetic evaluation methods are outlined as follows:

### *Reasoned Argument (Trade-off) Evaluation Method*

The reasoned argument method will be the primary evaluation method employed to select a preferred alternative. This method highlights the differences in net effects associated with the various alternatives. Based on these differences, the advantages and disadvantages of each alternative are identified. The relative significance of the impacts are examined to provide a clear rationale for the selection of a preferred alternative. The rationale that favours the selection of one alternative over all others will be derived from the following sources:

- Government legislation, policies and guidelines;
- Municipal policy (i.e. Official Plans);

- Issues and concerns identified during consultation with ministries and agencies, municipalities, ratepayer and interest groups and the general public (including input obtained through the weighting of the relative level of importance of evaluation criteria); and
- Project Team expertise.

### *Arithmetic Evaluation Method*

The arithmetic evaluation method will be the secondary method of evaluation and will incorporate both the level of importance of each environmental attribute (referred to as the weight) and the magnitude of the impact (or benefit) associated with an alternative (referred to as the score). Numerical values are derived for both the level of importance (weight), and the magnitude of the impact (score) associated with each alternative.

The weight is multiplied by the score to obtain a total for each factor. The totals for each alternative are compared to determine the preferred alternative method.

- **Scoring (degree of impact):** The score assigned to each environmental attribute is relative to the impact generated. Relative impacts can range from those that are positive (benefit the environment) to negative (detrimental to the environment). The assessment of impacts will be derived from field measurements, results of prediction models, secondary data sources (as appropriate) and other means as necessary.
- **Weighting (level of importance):** Generally, more weight is assigned to those features which are felt to be more important in assessing impacts generated by alternatives, and less weight is given to those features which are considered to be less important.

Weighting scenarios can be developed in consultation with the public, regulatory agencies, First Nations and municipalities. It should be noted that weighting scenarios may vary for different sections of the study area. In addition, numerous sensitivity tests can be run to reflect input received from stakeholders and the public. Such input will provide the Project Team with an understanding of community values with respect to the relative importance of each environmental feature.

The results of the weighting scenarios will be reviewed and compared to the results of the Reasoned Argument component.

The specific mathematical tool to be used for the arithmetic evaluation will be determined during the EA when the details regarding the alternative methods (preliminary planning, detailed planning and preliminary design for provincial roadways) are known.

### *Application of Evaluation Methods*

As previously noted, the Reasoned Argument method will be the primary evaluation tool used to select a preferred alternative with the Arithmetic Evaluation method used to

substantiate the findings.

These evaluation methods will be applied as indicated in the Exhibit 7.1 below.

<b>Exhibit 7.1</b> <b>Highway 7&amp;8 Transportation Corridor Planning and Class EA Study</b> <b>Summary of Application of Evaluation Methods</b>		
PHASE	EVALUATION METHOD	
	Reasoned Evaluation Method	Arithmetic Evaluation Method (as appropriate)
<b>Transportation Needs Assessment</b> <ul style="list-style-type: none"> <li><b>Area Transportation System Planning</b> (see Sections 7.4.3 through 7.4.9 of Study Plan)</li> </ul>	Evaluation method applied for this phase	Not applied to this phase
<ul style="list-style-type: none"> <li><b>Preliminary Planning</b> (see Sections 7.4.10 through 7.4.12 of Study Plan)</li> </ul>	Primary evaluation method applied for this phase	Secondary evaluation method applied (as appropriate)
<b>Provincial Roadway Detailed Planning</b> (see Section 7.5. of Study Plan)	Primary evaluation method applied for this phase	Secondary evaluation method applied (as appropriate)
<b>Provincial Roadway Preliminary Design</b> (see Section 7.6 of Study Plan)	Primary evaluation method applied for this phase	Secondary evaluation method applied (as appropriate)
<b>Summary Description of What The Evaluation Method Provides</b>	Key trade-offs between evaluation factors and reasons why one alternative is preferred over another	Numerical weighting/scoring of evaluation factors for alternatives (secondary evaluation method)

Where both evaluation methods are applied, they will be implemented concurrently. For example, the Project Team's assumptions and rationale behind its assessment of the level of importance of environmental attributes will be documented along with the corresponding arithmetic value assigned to the impact. In addition, input from stakeholders and the public will be co-ordinated through public information centres and other public consultation activities to ensure that issues, concerns and the magnitude of potential impacts are properly identified and understood by the Project Team.

The results of the two methods will be compared and the differences identified. The results of the Arithmetic Evaluation will be re-analyzed to determine the key weight-score combinations in the Arithmetic Evaluation. Similarly, the rationale for each trade-off decision will be revisited to determine if the Project Team's decision was appropriate. If the rationale supporting the trade-off decisions is valid and appropriate, the preferred alternative identified by the Reasoned Argument method will stand. However, if the results of the Arithmetic Evaluation lead to modifications to the trade-off decisions' rationale, the preferred alternative resulting from the Reasoned Argument approach may be revised. Prior to its application, the decision making process will be clearly documented and presented for stakeholders to comment on. During the study, additional evaluation methodologies may be utilized to ensure that the nature and magnitude of potential impacts (of significant community and/or environmental value) are accurately identified and mitigated.



Data necessary to support the evaluation of alternatives will be collected through consultation with ministries, agencies and other stakeholders from secondary sources, prediction models and site-specific field investigations. The precise nature and scope of field investigations will be determined during the study and outlined in work plans for review and comment by stakeholders. This information will be supplemented based on input received from interested stakeholder groups, municipalities, regulatory agencies and the general public.

### 7.3 Preliminary Identification of Evaluation Factors

The assessment of alternatives will consider broad factors, sub-factors and criteria that reflect objectives in addressing the stated transportation problems and consider potential impacts on the environment. Exhibit 7.2 provides a preliminary listing of the proposed environmental and transportation factors, sub-factors and criteria to be considered for the evaluation of alternatives during the various phases of the project. This exhibit builds on the information in the MTO Environmental Reference for Design (for access to this document, see the study web site).

Supporting Document #5 identifies which of these factors, sub-factors and criteria apply at each phase of the study, and provides preliminary evaluation criteria to be applied to each of them.

The information in Exhibit 7.2 and Supporting Document #5 represents the minimum detail to be considered for identifying the advantages and disadvantages of the alternatives during the various phases of the study. These preliminary factors, sub-factors and criteria will be refined and modified during consultation on “the proposed approach to upcoming work”, as is indicated in Exhibit 2.1 in Section 2.2 of this Study Plan. This will include, as appropriate, the development of measures for specific evaluation indicators.

<b>Exhibit 7.2</b> <b>Highway 7&amp;8 Transportation Corridor Planning and Class EA Study</b> <b>Preliminary Identification of Factors, Sub-Factors and Criteria</b> <b>To Be Considered in the Evaluation Of Alternatives</b>	
<b>FACTORS/SUB-FACTORS</b>	<b>CRITERIA</b>
<b>1. Natural Environmental Factors</b>	
<b>1.1 Fisheries and Aquatic Ecosystems</b>	1.1.1 Fish Habitat
	1.1.2 Fish Community
<b>1.2 Terrestrial Ecosystems</b>	1.2.1 Wildlife
	1.2.2 Wetlands
	1.2.3 Forests
	1.2.4 Vegetation
	1.2.5 Designated/Special Areas
<b>1.3 Groundwater</b>	1.3.1 Areas of Groundwater Recharge and Discharge
	1.3.2 Groundwater Source Areas and Wellhead Protection Areas

<b>Exhibit 7.2</b> <b>Highway 7&amp;8 Transportation Corridor Planning and Class EA Study</b> <b>Preliminary Identification of Factors, Sub-Factors and Criteria</b> <b>To Be Considered in the Evaluation Of Alternatives</b>	
<b>FACTORS/SUB-FACTORS</b>	<b>CRITERIA</b>
	1.3.3 Large Volume Wells
	1.3.4 Private Wells
	1.3.5 Groundwater-Dependent Commercial Enterprises
	1.3.6 Groundwater-Sensitive Ecosystems
<b>1.4 Surface Water</b>	1.4.1 Watershed / Subwatershed Drainage Features/Patterns
	1.4.2 Surface Water Quality and Quantity
<b>1.5 Air Quality</b>	1.5.1 Local and Regional Air Quality
	1.5.2 Sensitive Receptors to Air Pollutants and Greenhouse Gases
<b>2. Land Use / Socio-Economic Environmental Factors</b>	
<b>2.1 Land Use Planning Policies, Goals, Objectives</b>	2.1.1 First Nations' Land Claims
	2.1.2 Provincial / Federal Land Use Planning Policies/Goals/Objectives
	2.1.3 Municipal (local and regional) Land Use Planning Policies / Goals / Objectives
	2.1.4 Development Objectives of Private Property Owners
<b>2.2 Land Use – Community</b>	2.2.1 Indian Reserves
	2.2.2 First Nations' Sacred Grounds
	2.2.3 Urban and Rural Residential
	2.2.3 Commercial/Industrial
	2.2.5 Tourist Areas and Attractions
	2.2.6 Community Facilities / Institutions
	2.2.7 Municipal Infrastructure and Public Service Facilities
<b>2.3 Noise Sensitive Areas (NSA's)</b>	2.3.1 Highway Noise
	2.3.2 Construction Noise
<b>2.4 Land Use - Resources</b>	2.4.1 First Nations' Treaty Rights or Use of Land and Resources for Traditional Purposes
	2.4.2 Agriculture
	2.4.3 Parks and Recreational Areas
	2.4.4 Aggregate and Mineral Resources
<b>2.5 Major Utility Transmission Corridors</b>	
<b>2.6 Contaminated Property and Waste Management</b>	
<b>2.7 Landscape Composition</b>	2.7.1 Scenic Composition
	2.7.2 Sensitive Viewer Groups
	2.7.3 Scenic Value of Views/Vistas From the Transportation Facility
	2.7.4 Specimen Trees
<b>3. Cultural Environmental Factors</b>	
<b>3.1 Cultural Heritage – Built Heritage and Cultural Landscapes</b>	3.1.1 Buildings or “Standing” Sites of Architectural or Heritage Significance, or Ontario Heritage Easement Properties
	3.1.2 Heritage Bridges
	3.1.3 Areas of Historic 19 <sup>th</sup> Century Settlement
	3.1.4 Cultural Heritage Landscapes
	3.1.5 First Nations' Burial Sites

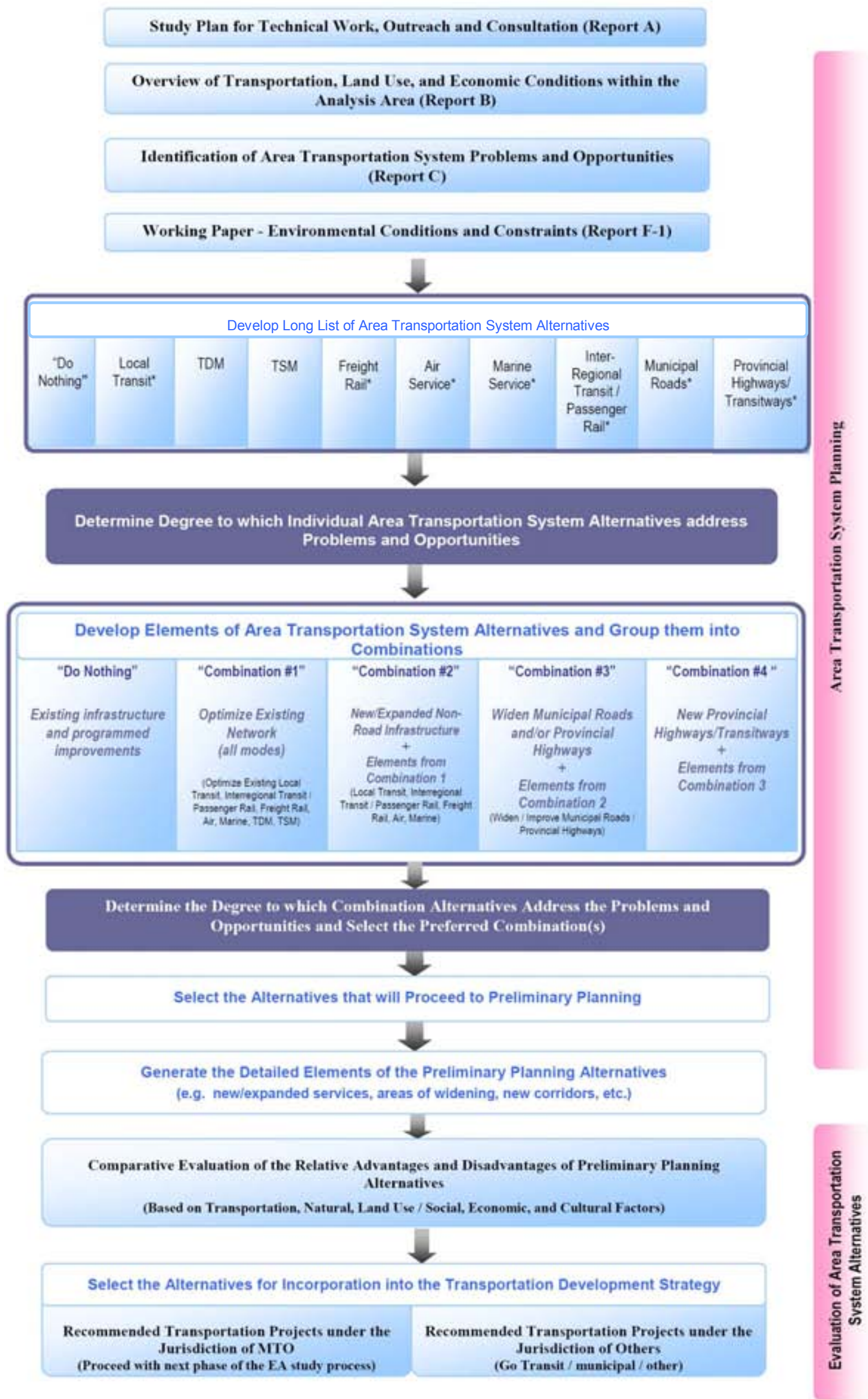
<b>Exhibit 7.2</b> <b>Highway 7&amp;8 Transportation Corridor Planning and Class EA Study</b> <b>Preliminary Identification of Factors, Sub-Factors and Criteria</b> <b>To Be Considered in the Evaluation Of Alternatives</b>	
<b>FACTORS/SUB-FACTORS</b>	<b>CRITERIA</b>
	3.1.6 Cemeteries
<b>3.2 Cultural Heritage – Archaeology</b>	3.2.1 Pre-Historic and Historic First Nations' Archaeological Sites
	3.2.2 Historic Euro-Canadian Archaeological Sites
<b>4. Area Economy Factors</b>	
4.1 First Nations' Industry	
4.2 Heavy Industry and Trade	
4.3 Tourism and Recreation Industry	
4.4 Agriculture Industry	
<b>5. Transportation Factors</b>	
5.1 Area Transportation System Capacity and Efficiency	5.1.1 Movement of People
	5.1.2 Movement of Goods
	5.1.3 System Performance During Peak Periods
5.2 Area Transportation System Reliability / Redundancy	
5.3 Safety	5.3.1 Traffic Safety
	5.3.2 Emergency Access
5.4 Mobility and Accessibility	5.4.1 Modal Integration, Balance
	5.4.2 Linkages to population and Employment Centres
	5.4.3 Recreation and Tourism Travel
	5.4.4 Accommodation for Pedestrians, Cyclists and Snowmobiles
5.5 Network Compatibility	5.5.1 Network Connectivity
	5.5.2 Flexibility for Future Expansion
5.6 Engineering	5.6.1 Constructability
	5.6.2 Compliance with Design Criteria
5.7 Construction Cost (excludes property costs and engineering costs)	
5.8 Traffic Operations	

## 7.4 'Area Transportation System' and Preliminary Planning Alternatives

### 7.4.1 Process Overview for Transportation Needs Assessment

The process for the identification, assessment and evaluation of the area transportation system alternatives and preliminary planning alternatives is depicted in Exhibit 7.3.

**Exhibit 7.3 Process Overview for the Development, Assessment and Evaluation of Area Transportation System Alternatives (Phase 2 of Study) and Preliminary Planning Alternatives (Phase 3 of Study)**



\* - Improved Services and/or new infrastructure

A brief description of the key elements of the process follows:

#### **7.4.2 Study Plan for Technical Work, Outreach and Consultation**

As indicated in Section 1.4, this document, Report A: Study Plan for Technical Work, Outreach and Consultation, establishes the framework and commitments to guide the study.

### **AREA TRANSPORTATION SYSTEM PLANNING**

Area Transportation System planning is outlined in Sections 7.4.3 through 7.4.9.

#### **7.4.3 Overview of Transportation, Land Use, Economic and Environmental Conditions within the Analysis Area**

The objectives and key tasks of this step are the following:

- provide an analysis area land use and economic overview and outlook, and provide a preliminary assessment of existing transportation conditions (documented in Report B: Working Paper - Overview of Transportation, Land Use, and Economic Conditions within the Analysis Area);
- provide an overview of environmental conditions and constraints within the analysis area, based upon secondary source information (documented in Report F 1<sup>st</sup> Part: Working Paper - Environmental Conditions and Constraints).

#### **7.4.4 Identify Area Transportation System Problems and Opportunities**

A preliminary statement of problems and opportunities is provided in Exhibit 1.3 in Section 1.3 of this Study Plan. The objectives and key tasks of this step are to develop additional detail through the following:

- establish travel demand forecasting approach and methodology;
- forecast future 'Area Transportation System' travel characteristics and patterns;
- provide a detailed assessment of current and future 'Area Transportation System' problems and opportunities;
- articulate the above as the basis for evaluating and selecting alternative solutions.

This work is presented in Report C: Working Paper – Area Transportation System Problems and Opportunities.

#### **7.4.5 Develop Long List of Area Transportation System Alternatives**

The following generic area transportation system alternatives have been identified:

- Do Nothing
- Travel Demand Management (TDM)

- Transportation System Management (TSM)
- Local Transit\*
- Interregional Transit and Passenger Rail\*
- Air Services\*
- Marine Services\*
- Freight Rail\*
- Municipal Roads\*
- Provincial Highways / Transitways\*

(\* new or improved operations and/or infrastructure)

These alternatives and their rationale are described below, with additional information presented in Supporting Document #3 of this Study Plan.

The “Do Nothing” alternative includes existing infrastructure and programmed improvements. The “Do Nothing” alternative is considered to be the status quo, in that no additional measures are planned to address possible shortfalls in transportation system capacity.

TDM strategies include measures that improve the operation of the current transportation system by managing travel demand, independent of other infrastructure improvements (e.g. constructing or expanding roads). The emphasis of TDM strategies is to reduce overall demands on the transportation network, especially auto trips; shift demands to time periods outside of the critical congestion periods; and shift demands from auto based trips to alternative modes of transportation, principally transit, cycling and walking.

TSM can improve the efficiency and safety of the transportation system and optimize the use of existing and planned infrastructure through such initiatives as transit priority facilities (e.g. bus priority at intersections), Intelligent Transportation Systems (ITS), High Occupancy Vehicle (HOV) lanes, Park’n’Ride facilities and intersection or signal timing improvements.

Local transit may reduce auto trips and thereby relieve congestion and increase the performance of the transportation system.

Interregional Transit and Passenger Rail would provide an alternative travel mode choice and increase the capacity of the transportation system. This could include inter-regional bus service in mixed traffic, higher order priority transit services on new infrastructure such as Bus Rapid Transit (BRT), Light Rail Transit (LRT), GO Transit, and VIA rail.

Air services can potentially result in a change in travel patterns for both passengers and freight.

Freight rail services for goods movement could encourage the diversion of freight from trucks. The ability to expand rail service and divert longer haul goods to rail may provide some relief to network congestion both on the provincial highway network, as well as on arterial roads.

Municipal Roads and Provincial Highways could be widened / improved to increase the capacity and performance of the transportation network and provide relief to forecasted network congestion. This could include:

- Provincial roads - potential to widen Highway 7&8
- Municipal roads – potential to widen local east-west roads between and through Stratford and New Hamburg.
- Access Management – access management strategies could be employed to improve the operation of existing Highway 7&8 through removal, consolidation or redirection of existing intersections and entrances and by imposing strict restrictions on future access to Highway 7&8.

In addition, new municipal roads and/or provincial highways/transitways would increase the capacity and performance of the transportation network and provide relief to forecasted network congestion. Inherent in these new facilities would be a high degree of access control in order to preserve the travel mobility characteristics of the corridor. Commercial and private entrances would be prohibited and access would be limited to at-grade highway intersections or potentially highway interchanges with key arterial roads; and to transit stations for a provincial transitway. Use of sections of existing roadways may be considered.

#### **7.4.6 Determine Degree to Which Individual Area Transportation System Alternatives Address Problems and Opportunities**

The 'Area Transportation System' alternatives will be examined to determine the degree to which they individually address problems and opportunities. On a preliminary basis, this will be determined through the following screening criteria:

- Potential to address transportation problems and opportunities;
  - Long term capacity deficiencies
  - Efficient movement of people
  - Efficient movement of goods
  - Recreational / tourist travel
  - System reliability / redundancy
  - Safety
  - Accessibility
  - Modal opportunities
- Support for provincial policies (Greater Golden Horseshoe Growth Plan, etc.)
- Supports land use and growth objectives of province and municipalities

This determination will:

- be undertaken using a reasoned argument methodology only;
- consider the environmental and transportation factors and sub-factors identified in **Exhibit 7.2** and the evaluation criteria and indicators identified in Supporting Document #5.

#### **7.4.7 Define Elements of Area Transportation System Alternatives and Group Them into Combinations**

The following generic combinations of area transportation system alternatives have been developed:

##### Do Nothing

As indicated in Section 7.4.5, the “Do Nothing” alternative includes existing infrastructure and programmed improvements.

##### Combination #1: Optimize Existing Network

Combination #1 includes:

- optimization of:
  - local transit;
  - interregional transit and passenger rail;
  - passenger rail;
  - freight rail;
- transportation system demand management (TDM)
- transportation system management (TDM)

##### Combination #2: New / Expanded Non-Road Infrastructure plus elements of Combination #1

Combination #2 includes:

- new/expanded
  - local transit
  - interregional transit and passenger rail
  - air services
  - marine services
  - freight rail
- elements of Combination #2

##### Combination #3: Widen Roads plus elements of Combination #2

Combination #3 includes:

- widen / improve:
  - municipal roads



- provincial highways
- elements of Combination #2

Combination #4: New Municipal Roads and/or Provincial Highways/ Transitways plus elements of Combination #3

Combination #4 includes:

- new municipal roads
- new provincial highways/transitways

#### **7.4.8 Determine the Degree to which Combination Alternatives Address the Problems and Opportunities and Select the Preferred Combinations**

The advantages and disadvantages of the various combination 'Area Transportation System' alternatives will be compared using a reasoned argument methodology to select recommended alternatives.

The trade-offs used to select preferred 'Area Transportation System' alternatives will reflect:

- Government legislation, policies and guidelines;
- Municipal policy (i.e. Official Plans);
- Public, Agencies, First Nations, Consultation Groups, and other stakeholder issues and concerns; and
- Project Team (staff from MTO and their Consultants) expertise.

#### **7.4.9 Identify the Alternatives that will Proceed to Preliminary Planning and those Alternatives that Require Further Study by Other Proponents**

The objectives and key tasks are:

- evaluate and select those combinations that are expected to significantly contribute to addressing 'Area Transportation System' problems and opportunities

The work outlined in Section 7.4.5 through 7.4.9 is documented in Report D: Working Paper – Area Transportation System Alternatives.

### **PRELIMINARY PLANNING**

Preliminary Planning is outlined in Sections 7.4.10 through 7.4.12

#### **7.4.10 Generate the Detailed Elements of the Preliminary Planning Alternatives**

The objective and key task of this step is to generate detailed elements of the preliminary planning alternatives based on transportation, natural, land use / social, economic and cultural factors. They may include the following:

- new/expanded services;
- general areas of geometrical improvements and widening to existing facilities;
- new corridors;
- environmental protection for the above (by minimizing intrusion into areas of environmental significance as identified through secondary source information);
- conceptual areas of limitations to highway access.

Exhibit 7.4 provides a preliminary listing of the proposed environmental and transportation factors and sub-factors to be considered for generating preliminary planning alternatives:

<b>Exhibit 7.4: Principles for Generating Preliminary and Detailed Planning Alternatives</b>
<b>Principle 1: Minimize impacts to significant natural features, functions, systems and communities</b>
<ul style="list-style-type: none"><li>• Avoid where possible, or minimize encroachment on or loss of water bodies and associated riparian zones;</li><li>• Avoid where possible, or minimize encroachment on or loss of critical fish habitat features;</li><li>• Avoid where possible, or minimize encroachment on or loss of species of conservation concern (vegetation, fish and wildlife);</li><li>• Avoid where possible, or minimize encroachment on or loss of critical habitat of Species at Risk;</li><li>• Avoid where possible, or minimize encroachment on or loss of encroachment into ecologically functional areas;</li><li>• Avoid where possible, or minimize encroachment on or loss of important wildlife areas and travel corridors. Other areas to be considered are any identified wildlife management, rehabilitation and research program sites;</li><li>• Avoid where possible, or minimize encroachment on or loss of Provincially Significant Wetlands (PSWs) and avoid impairment to wetland functions, including ecological function;</li><li>• Avoid where possible, or minimize encroachment on or loss of all other evaluated and unevaluated wetlands;</li><li>• Avoid where possible, or minimize encroachment on or loss of designated significant woodlands;</li><li>• Avoid where possible, or minimize encroachment on or loss of other important woodlands;</li><li>• Avoid where possible, or minimize encroachment on known groundwater recharge and discharge areas; as well as identified wellhead and source</li></ul>

<b>Exhibit 7.4: Principles for Generating Preliminary and Detailed Planning Alternatives</b>
<p>protection areas and areas susceptible to groundwater contamination;</p> <ul style="list-style-type: none"> <li>• Avoid where possible or minimize encroachment on, loss of, or impairment of ecological function to environmentally significant features, and where appropriate associated functions, including Significant Valleylands, ESAs, ANSIs, or other areas of provincial, regional or local significance; and</li> <li>• Avoid where possible, or minimize encroachment on loss of, or impairment of ecological function to special spaces (including recreational activity zones).</li> </ul>
<b>Principle 2: Minimize impacts to existing and planned (approved under the Planning Act) population and employment areas</b>
<ul style="list-style-type: none"> <li>• Maximize separation distance from sensitive receptor locations;</li> <li>• Avoid where possible or minimize encroachment on, or loss of developed properties;</li> <li>• Minimize access impacts;</li> <li>• Maximize the access provided to major generators of economic activity;</li> <li>• Avoid where possible, or minimize encroachment on, or loss of prime agricultural areas and agricultural infrastructure;</li> <li>• Avoid where possible, or minimize encroachment on, or loss of mineral, petroleum and mineral aggregate resources;</li> <li>• Avoid operating and "non-operating" waste disposal sites; and</li> <li>• Avoid where possible, minimize encroachment on, or loss of known archaeological sites/built heritage features/cultural heritage landscape areas of extreme significance.</li> </ul>
<b>Principle 3: Transportation service criteria</b>
<ul style="list-style-type: none"> <li>• Generate alternatives that are efficient and direct, while meeting standards for design; and</li> <li>• Select alternatives that address the transportation problems and transportation opportunities.</li> </ul>

The assessment of the preliminary planning alternatives will consider the environmental and transportation factors, sub-factors and criteria identified in Exhibit 7.2 and their evaluation indicators identified in Supporting Document #5.

#### **7.4.11 Comparative Evaluation of the Relative Advantages and Disadvantages of Preliminary Planning Alternatives**

The objective and key task of this step is to evaluate preliminary planning alternatives using reasoned argument and arithmetic methods (as appropriate), utilizing the

preliminary listing of environmental and transportation factors, sub-factors and criteria in Exhibit 7.2, and their evaluation indicators identified in Supporting Document #5.

A reasoned evaluation methodology, augmented by arithmetic methods as appropriate, will be applied.

#### **7.4.12 Identify Recommended Transportation Development Strategy**

The objectives and key tasks of this step are:

- select recommended preliminary planning alternatives based on results of comparative evaluation by the project team and taking into consideration stakeholder input received through the consultation and outreach program
- develop a transportation strategy, including definition of study area(s)
- determine next steps, including decision if study is to continue through Phases 4-6 (*if provincial roadway alternatives are selected*)

The study area is defined as the geographic area within which a reasonable range of alternatives will be generated. It is fundamental to note that the study area does not limit the potential to examine broader transportation, economic and environmental considerations, impacts and effects outside of its boundaries.

The MTO Project Team will generate a study area through consultation with affected stakeholders (including regulatory agencies and municipalities). The following inputs will be used to guide the generation of study area limits:

- identified transportation problems and opportunities;
- the nature of the alternatives selected;
- existing transportation infrastructure;
- significant natural, socio-economic and cultural environmental features (as identified through secondary source data and consultation); and
- current government land use planning policies and initiatives.

During the study, the study area limits may be refined or modified as required to accommodate any reasonable alternatives that may be developed.

To determine next steps, the selected 'Area Transportation System' Development Strategy will be placed into one or more of the following four categories:

- If the preferred 'Area Transportation System' planning alternative is "Do Nothing" – the EA process is complete and no further study will be initiated.
- If the preferred 'Area Transportation System' planning alternative is not a provincial roadway recommendation – the current EA process will be halted; MTO will refer the planning alternative to the appropriate agency or jurisdiction for further review and action.

- If the preferred 'Area Transportation System' planning alternative is a provincial roadway recommendation – the EA process continues and MTO will proceed to the preliminary planning phase as outlined in Section 2.2.
- If the preferred 'Area Transportation System' planning alternative is a combination of provincial roadway recommendations and recommendations that are not provincial roadways – the EA process continues for provincial roadway solutions, with MTO proceeding to the Preliminary Planning phase as outlined in Section 2.2; and - 'Area Transportation System' planning alternatives that are not provincial roadways are referred to the appropriate agency or jurisdiction for further review and action.

The work of Sections 7.4.10 through 7.4.12 is presented in Report E: Milestone Report – Highway 7&8 Transportation Corridor Needs Assessment.

## **7.5 Detailed Planning Alternatives For Provincial Roadways**

### **7.5.1 Process Overview for the Development, Assessment and Evaluation of Detailed Planning Alternatives For Provincial Roadways**

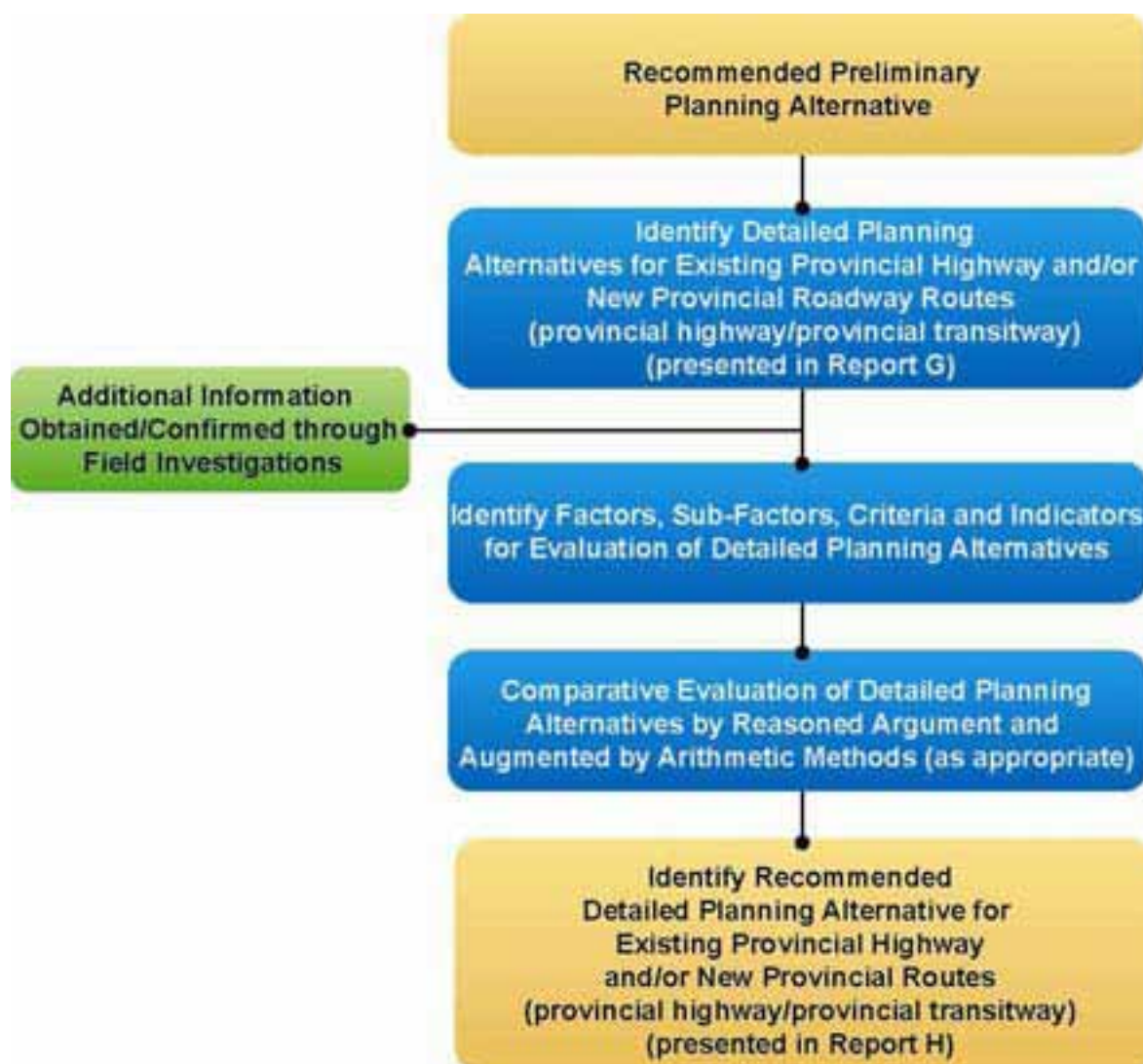
The process for the identification, assessment and evaluation of the detailed planning alternatives for provincial roadways is depicted in Exhibit 7.5. A brief description of the key elements of the process follows:

- 1 Identify Detailed Planning Alternatives for Existing Provincial Highway and/or New Provincial Roadway Routes (provincial highway/provincial transitway)
  - Description and rationale for detailed planning alternatives (presented in Report G).
- 2 Additional Information Obtained/Confirmed through Field Investigations
  - Obtain additional information regarding environmental conditions/features within the analysis area through field investigation (inventory, survey and testing, as appropriate).
- 3 Identify Factors, Sub-factors, Criteria and Indicators for Evaluation of Detailed Planning Alternatives
  - Each of the alternatives will be evaluated using reasoned argument against the environmental and transportation factors, sub-factors and criteria identified in Exhibit 7.2 and the evaluation indicators identified in Supporting Document #5
- 4 Comparative Evaluation of Detailed Planning Alternatives by Reasoned Argument and Augmented by Arithmetic Methods (as appropriate)
  - Each alternative will be evaluated using reasoned argument and arithmetic methods (as appropriate) using the identified factors, sub-factors, criteria and indicators (refer to preliminary listing of proposed factors, sub-factors and criteria in Exhibit 7.2 provided in Section 7.3; indicators will be developed during the preliminary planning phase of the study)

- 5 Identify Recommended Detailed Planning Alternative for Existing Provincial Highway and/or New Provincial Routes (provincial highway/provincial transitway)
  - Selection of recommended detailed planning alternative based on results of comparative evaluation and taking into consideration stakeholder input received through the consultation and outreach program (presented in Report H).

**Exhibit 7.5**

**Highway 7&8 Transportation Corridor Planning and Class EA Study  
Process Overview for the Development, Assessment and Evaluation  
of Detailed Planning Alternatives for Provincial Roadways (Phase 4 of Study)**



### **7.5.2 Summary Of Detailed Planning Alternatives**

Depending on the selected alternatives carried forward from the preliminary planning phase, the Highway 7&8 Transportation Corridor Planning and Class EA Study, will consider the specific location / type / character and template “footprint” for the following categories of provincial roadway detailed planning alternatives (as applicable):

- New provincial roadways
  - new provincial highway route location
  - highway type and transitway route location & technology
- Improve existing provincial highways (i.e. Highway 7&8, Highway 3)
  - specific location & type of geometrical improvements to existing provincial highway
  - specific location, extent & direction of widening to existing provincial highway
  - combinations of the above
- specialty engineering alternatives (bridge, drainage & hydrology, foundation, pavement & roadbase, traffic control & electrical infrastructure) for the above

These provincial roadway detailed planning alternatives are presented in more detail in Supporting Document #3 of this Study Plan. The rationale for the detailed planning alternatives for provincial roadways will be presented in Report “G”: Working Paper – Generation of Detailed Planning Alternatives for Provincial Roadways.

Exhibit 7.2 in Section 7.3 provides a preliminary listing of the proposed environmental and transportation factors, sub-factors and criteria to be considered for the generation, assessment and evaluation of alternatives. Supporting Document #5 provides preliminary evaluation indicators to be applied to these factors, sub-factors and criteria during the detailed planning phase. These preliminary listings will be refined and modified during consultation on the “proposed approach to upcoming work”, as is indicated in Sections 2.2 and 7.3 of this Study Plan.

The objectives and rationale for generating alternatives will ensure not only that alternatives are efficient/direct and meet technical objectives/design requirements, but also minimize/avoid impacts to significant environmental and study area features to the extent possible.

### **7.5.3 Process For Assessment Of Detailed Planning Alternatives For Provincial Roadways**

The assessment of the detailed planning alternatives for provincial roadways identified in Section 7.5.2 will:

- be undertaken using a reasoned argument methodology and augmented by arithmetic methods as appropriate ;

- consider the environmental and transportation factors, sub-factors and criteria identified in Exhibit 7.2 and the evaluation indicators identified in Supporting Document #5; and
- consider potential impacts on the environment.

The alternatives will then be reviewed with agencies and the public through the outreach and consultation process. This outreach and consultation is critical to developing a reasonable set of detailed planning alternatives. Local residents can add valuable information to the database gathered by the Project Team. Refinements to the alternatives will be integrated where warranted and a final set of detailed planning alternatives will be brought forward to the evaluation process.

#### **7.5.4 Process For Evaluation And Selection Of The Preferred Detailed Planning Alternatives For Provincial Roadways**

After the various detailed planning alternatives are generated and refined based on consultation, the evaluation of the alternatives will commence.

##### *Factor-Specific Environmental Inputs to the Evaluation of Detailed Planning Alternatives*

The data collected on the study area will assist in identifying the types of impacts each detailed planning alternative will have on each component of the environment, as indicated in Exhibit 7.2 of this Study Plan.

In addition, technical requirements and costs will be considered in the evaluation of detailed planning alternatives. Data collection for each of the environmental disciplines will be conducted consistent with the most up-to-date provincial policies and procedures. Each of these components will be defined by a set of evaluation criteria. Impacts will be quantified according to the preliminary criteria shown in Supporting Document #5 of this Study Plan.

These criteria are intended to assist the factor specific environmental specialists in determining the overall impact of the various alternatives on the natural, socio-economic and cultural environment. In determining the overall impact, the specialists will consider how the various factors and criteria interact and function together. The evaluation criteria listed represent the minimum requirements in the process of evaluating alternative methods.

A description of the rationale associated with the evaluation criteria/indicators is outlined in Supporting Document #5 of this Study Plan. The evaluation factors, sub-factors and criteria are subject to refinement and modification during the EA based on study findings, provincial policy and input received from stakeholders. Factor specific work plans for assessing potential environmental effects will be completed during the Class EA Study.



## **7.6 Preliminary Design Alternatives For Provincial Roadways**

### **7.6.1 Summary Of Preliminary Design Alternatives**

Depending upon the provincial highway and provincial transitway alternatives selected during Planning, the Preliminary Design alternatives may be generated and assessed for:

- new provincial transitway route;
- new provincial highway route;
- improvements to the existing highway; and
- combinations of the above.

The Highway 7&8 Transportation Corridor Planning and Class EA Study will consider the following preliminary design alternatives for the provincial roadway alternatives for the following categories of preliminary design (as applicable):

- calculated vertical & horizontal alignment and cross-section;
- highway interchange & intersection preliminary design;
- transitway station preliminary design;
- location/design of private entrances to highway (if applicable);
- specialty engineering alternatives for the above (bridge, drainage & hydrology, foundation, pavement & roadbase, traffic control & electrical infrastructure);
- right-of-way and property acquisition requirements;
- utility requirements (relocation etc); and
- preliminary staging of implementation.

These provincial roadway preliminary design alternatives are presented in more detail in Supporting Document #3 of this Study Plan. The rationale for the preliminary design alternatives for provincial roadways will be presented in Report “I”: Working Paper – Generation of Preliminary Design Alternatives for Provincial Roadways.

Exhibit 7.2 provides a preliminary listing of the proposed environmental and transportation factors, sub-factors and criteria to be considered for the generation, assessment and evaluation of alternatives. Supporting Document #5 provides preliminary evaluation indicators to be applied to these factors, sub-factors and criteria during the preliminary design phase. These preliminary listings will be refined and modified during consultation on the “proposed approach to upcoming work”, as is indicated in Sections 2.2 and 7.3 of this Study Plan.

### **7.6.2 Process For Generation And Assessment Of Preliminary Design Alternatives For Provincial Roadways**

The generation and assessment of preliminary design alternatives for provincial roadways will use the factors, sub-factors and criteria as were applied for the detailed planning alternatives as identified in Section 7.5.

The assessment of the preliminary design alternatives for provincial roadways identified in Section 7.6.1 will:

- be undertaken using a reasoned argument methodology and augmented by arithmetic methods as appropriate;
- consider the environmental and transportation factors, sub-factors and criteria identified in Exhibit 7.2 and the evaluation indicators identified in Supporting Document #5; and
- consider potential impacts on the environment.

### **7.6.3 Process For Evaluation And Selection Of The Preferred Preliminary Design Alternatives For Provincial Roadways**

The evaluation and selection of preliminary design alternatives for provincial roadways will use the same factors, sub-factors and criteria as were applied for the detailed planning alternatives in Section 7.5.

## **8 MONITORING STRATEGY DURING PROJECT IMPLEMENTATION**

During this Class EA study, MTO will commit to developing a monitoring program for the implementation of the selected preferred alternative. The Transportation Environmental Study Report will include a comprehensive list of all commitments made during the study to guide future environmental work and consultation as well as effects and compliance monitoring.

### **8.1 Commitment To Develop Project Technical Monitoring Program And Procedures**

During Preliminary Design of the study, a monitoring strategy will be developed to reflect how MTO proposes to ensure that the implementation of proposed mitigating measures and key design features are consistent with project commitments outlined in the Transportation Environmental Study Report and any subsequent environmental study documentation.

An environmental effects and compliance monitoring program is necessary to identify potential non-conformance with environmental design, and environmental protection requirements (as identified during this Class EA study) and to initiate corrective action to bring the work into compliance with environmental requirements committed to in the Transportation Environmental Study Report and any subsequent environmental documentation for this undertaking.

MTO will ensure that appropriate commitments to compliance monitoring are reflected in Report “J”: Milestone Report – Selection of Preliminary Design Alternatives for Provincial Roadways.

The duration of the monitoring and follow-up programs will vary and will depend on the conditions of permits and approvals granted by regulatory agencies.

### **8.2 Commitment To Develop Project EA Process Monitoring Program And Procedures**

During the planning and design processes, MTO will ensure compliance with Class EA process commitments prior to project implementation. If the preferred alternative includes a construction phase, MTO will ensure that external notification and consultations are consistent with any commitments that may have been made earlier in the Transportation Environmental Study Report or other environmental documentation. Following construction, monitoring will ensure that any follow-up information is provided to external agencies as per any outstanding environmental commitments.

## **9 OUTREACH AND CONSULTATION**

### **9.1 Key Components of Outreach and Consultation Program**

A major component of the Highway 7&8 Transportation Corridor Planning and Class EA Study will be outreach and consultation. The key components of the outreach and consultation program are as follows:

- Section 1.1 of this Study Plan indicates that outreach and consultation will be structured around six key points of decision-making, each of which will be supported by:
  - the release of a newsletter;
  - the release of draft reports for review and comment;
  - a round of Public Information Centres (PICs);
  - posting of information on the study web site; and
  - newspaper notices announcing the above.
- Section 2.2 of this Study Plan provides an overview of the planning and Class EA Study process, including objectives and key tasks, reports, and PICs at which information is presented.
- Section 2.4.4 of this Study Plan provides the principles for outreach and consultation.

The consultation program is designed such that the stakeholders will be provided reasonable timeframes for reviewing and providing comments on documentation and information made available during this Class EA study, with the PICs being the first opportunity for the public to review the information presented for each phase of the work. The consultation plan encourages proactive communication, which will allow comments and views of stakeholders to assist MTO in the decision-making process.

### **9.2 Public Information Centres (PICs)**

The six rounds of PICs are the focus points of outreach and consultation.

These PICs will be supplemented by follow-up activities where appropriate. Each round of PICs will include individual events held in Stratford and New Hamburg. The precise locations/venues and timing of each PIC will be determined during the study based on the availability of venues, etc.

The PICs will be arranged as drop-in centres (open house format) to allow stakeholders to see results, exchange information, and ask one-on-one questions of the Project Team. The setup of each round of PICs will depend on the nature of the information being presented and input being sought. The PICs serve an important function in

providing for two-way communications on specific local conditions, issues and concerns regarding the study.

Follow-up consultation activities will be held as necessary throughout the project. It is expected that these activities will be very helpful to facilitate additional dialogue and attempt to resolve any outstanding concerns and issues during the Class EA process. Follow-up activities will be arranged to address specific project issues and concerns as they arise. The format of these activities will be flexible to reflect the type of “Project Team – stakeholder” interaction required to address a particular issue but could include stakeholder group meetings, workshops, kitchen table meetings, presentations, surveys, and other.

Summary Reports for Public Information Centres, follow-up activities and other consultation events will be prepared and posted on the project website in a timely manner. The information to be presented at each PIC is summarized in the table provided in Section 2.2. The reports referred to in the table are summarized in Supporting Document #2 of this Study Plan.

### **9.3 Public Notices in Newspapers**

Newspaper notices announcing Study Commencement and PIC #1 are scheduled for posting in local newspapers in June, July and August 2007.

MTO will publish future newspaper notices as follows:

- public notices shall be placed in newspapers for each round of PICs, and the filing of the Transportation Environmental Study Report;
- each round of public notices shall include newspaper advertisements on at least 2 separate days (preferably one week-day and one weekend-day), where project scheduling/timing and newspaper circulation timing jointly permit;
- these public notices shall be placed in the following newspapers:
  - Stratford Beacon Herald;
  - New Hamburg Independent;
  - Kitchener Waterloo Record;
  - Le Regional;
  - Turtle Island News (Six Nations); and
  - Possibly two additional local newspapers.

For those newspapers which publish once per week, notices may be placed only once. For those newspapers which publish biweekly or monthly, notices will be placed only if timing/scheduling permits.

### **9.4 Project Web Site**

A project web site has been established for the Highway 7&8 Transportation Corridor Planning and Class EA Study. The web site will be maintained during the course of the

study as a source of up-to-date information. The project web site address is <http://www.7and8corridorstudy.ca>. Stakeholders are encouraged to visit the site.

## 9.5 Contacting the Study Team

The study team can be contacted at the following:

- Email to: [projectteam@7and8corridorstudy.ca](mailto:projectteam@7and8corridorstudy.ca)
- Toll free telephone call to: 1 (866) 921-9268

## 9.6 Stakeholder Contact List

The Project Team has developed a contact list that includes interested individuals, ratepayer groups, recreational groups, agricultural groups, etc. located in the analysis / study area. The mailing list developed during the Study Design was the starting point for this stakeholder list. Additions have been made based upon stakeholder contacts to the study team, and will continue to be made as the study progresses. These stakeholders will be notified by letter /e-mail of project activities including study start-up, Public Information Centres, and follow-up activities (as appropriate).

## 9.7 Stakeholder Categories

The categories of stakeholders for this study are provided in Exhibit 9.1 and then discussed below:

<b>Exhibit 9.1 Highway 7&amp;8 Transportation Corridor Planning and Class EA Study Categories of Stakeholders</b>	
•	First Nations
•	Business/Commercial Interest Groups
•	Emergency Service Providers
•	General Public
•	Municipalities
•	Regulatory Agencies
•	Transportation Service Providers
•	Utility Companies

- First Nations
  - outreach and consultation with First Nations:
    - Six Nations of the Grand River First Nation
  - comply with 'Ontario's New Approach to Aboriginal Affairs, Spring 2005; also includes compliance with Grand River Notification Agreement

- be proactive in identifying and making initial contact with Six Nations of the Grand River First Nation and with Mississaugas of the New Credit First Nation
- strive to provide appropriate and meaningful consultation and engagement with First Nations that provides them with the opportunity to be informed; and to have their opinions heard and seriously considered.
- ensure that issues of particular interest to First Nations communities are addressed, including, but not limited to:
  - identification of First Nations' land claims;
  - potential effects to Indian Reserves;
  - potential effects to First Nations' sacred grounds;
  - potential effects to First Nations' treaty rights and use of land and resources for traditional purposes (e.g. hunting, fishing, harvesting of country foods, harvesting of medical plants);
  - potential effects to First Nations' burial sites;
  - potential effects to pre-historic and historic First Nations' sites; and
  - potential effects to First Nations' industry.(For additional details on the above, please refer to Exhibit 7.2 in Section 7.3 of this Study Plan and Supporting Document #5)
- provide opportunities for two-way communication by meetings with First Nations staff, with an emphasis on draft reports developed as the study progresses;
- at key decision-making milestones during the study, offer:
  - a presentation to Councils; and
  - a community meeting on the reserves.
- Business/commercial interest groups
  - Outreach and consultation with:
    - Chambers of Commerce (New Hamburg , Stratford and District, etc), Tourism agencies and committees, business associations and individual business owners as identified during the study
  - Outreach and consultation includes discussions at PICs and meetings with groups or individuals during study. Notification of upcoming meetings and opportunities for input may also be promoted through provision of the website address to leaders of organized groups. In addition, local tourist businesses will be provided PIC notices for posting on their bulletin boards in advance of each PIC
- Emergency Service providers
  - Outreach and consultation with:
    - Police services, including OPP.
    - Ambulance services, including Perth EMS, Region of Waterloo – EMS, etc.
    - Fire departments, including Stratford, Shakespeare, Wilmot, Perth East Fire Departments
  - Outreach and consultation includes discussions at PICs with emergency service providers regarding potential impacts to emergency access routes or response time from existing facilities to residents and businesses in the analysis area.

- General Public
  - Outreach and consultation with:
    - potential users of existing Highway 7&8 from Greater Stratford to New Hamburg area
    - property owners in analysis area, both directly and indirectly impacted
    - local population who live within the analysis area and may be impacted by changes to local transportation network if provincial network changes
    - interest groups who have a specific interest in the analysis area, including Perth County and Waterloo Federation's of Agriculture, and VELO Ontario Cycling Alliance.
  - Outreach and consultation with general public includes newspaper notices for announcement of Study Commencement and PICs and TESR public review period, Canada Post notification to rural areas in advance of PICs and mailings to property owners and members of the public as they identify themselves and request to be added to the project mailing list, or attend a PIC during the study. Notification through correspondence to property owners directly impacted by proposed works will be carried out before the PIC at which the recommended preliminary design is presented and for the TESR public review period. The correspondence mailed to those directly impacted by the proposed works will indicate that they are receiving the letter because their property is directly impacted (i.e. property acquisition required and/or significant alteration to property use/access). Follow-up telephone calls will be made, as required, to ensure that as many directly affected property owners as possible attend the PICs and are aware of the opportunity to comment on the TESR.
- Municipalities:
  - Outreach and consultation with:
    - Region of Waterloo
      - Township of Wilmot
    - Perth County
      - Township of South Perth
      - Township of Perth East
      - City of Stratford
  - Outreach and consultation includes collaborative engagement that recognizes the significance of the study to municipalities and includes an invitation to join the Municipal Advisory Group (MAG) that will meet at key study milestones, in advance of each PIC. Municipalities may be interested in many aspects of the undertaking, as they relate to the work of their engineering, transportation, planning, heritage, recreation and economic development departments. Presentations to municipal Councils will be offered in advance of each PIC when requested. Councils' endorsement will be sought for the preferred alternative prior to the final set of PICs and publication of the TESR.



- Regulatory Agencies
  - Outreach and consultation with:
    - Federal agencies, including Canadian Environmental Assessment Agency (CEAA), Transport Canada, Environment Canada, Canadian Transportation Agency, Department of Fisheries and Oceans, Canada Coast Guard and Health Canada;
    - Provincial agencies, including Ministry of Natural Resources, Ministry of Environment, Ministry of Culture, Ontario Secretariat for Aboriginal Affairs, Ministry of Agriculture and Food, Ministry of Tourism, Culture and Recreation, Ministry of Community and Social Services, Ministry of Municipal Affairs and Housing and Ministry of Public Infrastructure and Renewal; and
    - Local agencies, including Grand River Conservation Authority, Upper Thames River Conservation Authority and municipal heritage planning committees/groups.
  - Outreach and consultation includes collaborative engagement that recognizes the significance of the study to regulatory agencies and includes an opportunity to join the Regulatory Advisory Group (RAG) that will meet at major study milestones, in advance of PICs. Regulatory agency interest typically relates to the study process and recommendations that relate policies, regulations and approvals, as well as environmental protection of sensitive or designated features of the natural environment (i.e., fisheries habitat, Species at Risk, ANSIs, ESAs, PSWs, etc), socio-economic environment (i.e., land use, noise, air, landscape composition, etc.) and the cultural environment (i.e., archaeological resources and built heritage features, etc.). Involvement with federal agencies in this project is required to identify issues of federal jurisdiction, effectively address Canadian Environmental Assessment Act (CEAA) requirements during the EA process and coordinate provincial and federal approvals.
- Transportation service providers
  - Outreach and consultation with:
    - Municipal Transit Operators, including Stratford City Transit,
    - Bus operators,
    - School bus operators,
    - Rail operators, including Goderich - Exeter Railway, and
    - trucking firms including Ontario Trucking Association.
  - Outreach and consultation includes discussions at PICs and may include comments on long-range planning for future bus or transit routes using Highway 7&8, or future potential new routes through analysis area. Discussions with CN and CP are expected to include potential impacts to existing rail lines or new crossings that may result from the proposed works. Transportation service providers will be encouraged to attend PICs and visit the project web site for regular study updates.

- **Utility Companies**
  - Outreach and consultation with:
    - Electrical companies including Hydro One, Tay Hydro Electric Distribution, Kitchener – Wilmot Hydro, Festival Hydro Inc.,
    - Pipelines including TransCanada Pipeline,
    - Telephone companies including Bell Canada and Call Net Technology Services Inc. (Sprint Canada),
    - Cable companies including Rogers Cable and Cogeco Cable,
    - Gas companies including Union Gas and Enbridge Gas Distribution.
  - Outreach and consultation includes discussions at PICs and may include comments on long-range planning for utility infrastructure either along existing Highway 7&8 or future new routes through the analysis area. Discussions will also include potential impacts to existing services or new crossings that may result from the proposed works. Utility company representatives will be encouraged to attend PICs and visit the project web site for regular study updates.

## **9.8 Role of Stakeholders**

Stakeholders have a major role and responsibility in determining the success of the outreach and consultation program. The extent to which the stakeholders participate, the issues they raise, and how such issues are resolved, all influence the effectiveness of the outreach and consultation program. The role of stakeholders is provided in Exhibit 9.2 below.

<b>Exhibit 9.2</b> <b>Highway 7&amp;8 Transportation Corridor Planning and Class EA Study</b> <b>Summary of Role of Stakeholders</b>	
<b>1. Get Involved! – Be Involved! – Stay Involved!</b>	
<b>2. Provide your contact information (or that of your organization) to the study team for placement on the stakeholder contact list, so that you receive letter / email notifications of project activities.</b>	
<b>3. Utilize the ‘Overview of the Study Process’ (key tasks, reports, public information centres and information presented, preliminary schedule) as the framework for your participation throughout the study (See Exhibit 2.1 of the Study Plan).</b>	

**Exhibit 9.2**  
**Highway 7&8 Transportation Corridor Planning and Class EA Study**  
**Summary of Role of Stakeholders**

- 4. Provide the study team with your comments (additions/deletions/errors) on draft reports, within the time period requested, so that your input can be considered in finalizing those documents for use as building blocks for upcoming work.**
  - For the first round of PICs, the draft reports include:
    - Report “A”: Study Plan for Technical Work, Outreach and Consultation;
    - Report “B”: Working Paper – Overview of Transportation, Land Use and Economic Conditions Within the Analysis Area; and
    - Report “F” - 1<sup>st</sup> Part: Working Paper – Environmental Conditions and Constraints.
  - Comments on the draft reports presented at the first round of PICs are requested by October 30, 2007.
- 5. Provide the study team with your comments (additions/deletions/errors) on the proposed approach to upcoming work, within the time period requested, so that your input can be considered before those approaches are applied to upcoming work.**
  - For the first round of PICs, the proposed approach to upcoming work includes:
    - Process to identify ‘Area Transportation System’ Problems and Opportunities;
    - Process and Criteria for Evaluating and Selecting ‘Area Transportation System’ Alternatives; and
    - Process, Factors and Criteria for Generating, Assessing, Evaluating and Selecting Preliminary Planning Alternatives.
  - Comments on the proposed approaches to upcoming work presented at the first round of PICs are requested by October 30, 2007.
- 6. When providing your comments, keep in mind the following:**
  - **Study objectives (See Exhibit 1.2 of the Study Plan);**
  - **Assumptions of EA proponency and completion of study work (See Exhibit 3.1 of the Study Plan).**
- 7. If you have questions or comments, or if you wish to add your name to the study contact list:**
  - **Attend Public Information Centres (PICs) and talk to the study team members that staff them;**
  - **Complete a comment sheet provided at the PICs;**
  - **Contact the study team at:**
    - **Email: [projectteam@7and8corridorstudy.ca](mailto:projectteam@7and8corridorstudy.ca)**
    - **Toll Free: 1 (866) 921-9268**
  - **Find information at the study web site at <http://www.7and8corridorstudy.ca>**

Note: Items 4 and 5 of this exhibit are customized to the first round of Public Information Centres and will be modified to suit for each subsequent round of Public Information Centres.

## **10 FILING AND REVIEW OF TRANSPORTATION ENVIRONMENTAL STUDY REPORT (TESR)**

The Transportation Environmental Report (TESR) is an assembly of the study working papers and milestone reports into a single document. The contents of the TESR are provided in Exhibit 10.1 below:

<b>Exhibit 10.1 Highway 7&amp;8 Transportation Corridor Planning and Class EA Study Transportation Environmental Study Report Contents</b>	
1.	Purpose, Relevance and Position of Report Within The Study Process
2.	Summary Description of the Undertaking
3.	Content of final Report “A” Study Plan For Technical Work, Outreach And Consultation
4.	Content of final Report “B”: Working Paper – Overview of Transportation, Land Use and Economic Conditions Within the Analysis Area
5.	Content of final Report “C”: Working Paper – ‘Area Transportation System’ Problems and Opportunities
6.	Content of final Report “D”: Working Paper – Area Transportation System Alternatives
7.	Content of final Report “E”: Milestone Report – Highway 7&8 Transportation Corridor Needs Assessment
8.	Content of final Report “F”: Working Paper - Environmental Conditions And Constraints
9.	Content of final Report “G”: Working Paper – Generation of Detailed Planning Alternatives for Provincial Roadway
10.	Content of final Report “H”: Milestone Report - Selection of Detailed Planning Alternatives for Provincial Roadway
11.	Content of final Report “I”: Working Paper - Generation of Provincial Roadway Preliminary Design Alternatives
12.	Content of final Report “J”: Milestone Report - Selection of Preliminary/Concept Design Alternatives for Provincial Roadway
13.	Environmental Synopsis
14.	Results of Outreach and Consultation
15.	Commitments to Future Work and Consultation

The Transportation Environmental Study Report will be prepared at completion of the study and made available on the public record for a 60-day review period. If no Part 2 Order or “bump-up” requests are received by the Minister of the Environment by the completion of the review period (see Section 2.1 for details), the project would be deemed to have environmental clearance, and the Highway 7&8 Transportation Corridor Planning and Class EA Study would be completed.

As is indicated in Section 1.1, decisions on funding and timing of construction are based upon environmental clearance of the TESR, since it determines the type of transportation facilities and their location.

## **11 SUMMARY OF KEY STUDY PLAN ISSUES FROM OUTREACH AND CONSULTATION, AND MTO RESPONSE/CHANGES**

THIS SECTION TO BE COMPLETED FOLLOWING THE 60-DAY PERIOD PROVIDED FOR STAKEHOLDERS TO REVIEW AND COMMENT ON THE DRAFT STUDY PLAN

## **SUPPORTING DOCUMENTATION**

**SUPPORTING DOCUMENT #1**  
**LIST OF ABBREVIATIONS AND GLOSSARY OF TERMS**

## List of Abbreviations and Glossary of Terms Used in the Study Plan

LIST OF ABBREVIATIONS USED IN THIS STUDY PLAN	
ANSI	Area of Natural and Scientific Interest
CA	Conservation Authority
CEAA	Canadian Environmental Assessment Act
CPR	Canadian Pacific Railway
EA	Environmental Assessment
ESA	Environmentally Sensitive Areas
ETR	Electronic Toll Road
FA	Federal Authorities
FEAC	Federal Environmental Assessment Coordinator
GGH	Greater Golden Horseshoe
GHG	Green House Gas
GTA	Greater Toronto Area
HOV lanes	High Occupancy Vehicle Lanes
IBA	Important Bird Area
LACAC	Local Architectural Conservancy and Advisory Committee
MAG	Municipal Advisory Group
MMAH	Ministry of Municipal Affairs and Housing
MOE	Ministry of the Environment
MTO	Ministry of Transportation
NHIC	Natural Heritage Information Centre
NRVIS	MNR database
NTS	Not to Scale
OBM	Ontario Base Map
OEAA	Ontario Environmental Assessment Act
OMAF	Ontario Ministry of Agriculture and Food
(O)MNR	(Ontario) Ministry of Natural Resources
PIC	Public Information Centre
PSW	Provincially Sensitive Wetland
RA	Regulatory Authorities
RAAG	Regulatory Agency Advisory Group
RAP	Remedial Action Plan
SARA	Species at Risk Act
SWHTG	Significant Wildlife Habitat Technical Guide
TAC	Transportation Association of Canada
TDM	Traffic Demand Management
ToR	Terms of Reference
TSM	Traffic Systems Management



## Glossary of Terms

Term used in Terms of Reference	Explanation
Alternatives To	Functionally different ways of solving a documented transportation deficiency or taking an advantage of an opportunity.
Alternative Method	Ways of carrying out the selected alternative.
Alvar	Naturally open areas of thin or no soil over essentially flat limestone, dolostone or marble rock, supporting a sparse vegetation of mostly shrubs and herbs,.
Areas of Natural and Scientific Interest	Areas of land and water containing natural landscapes or features that have been identified as having life science or earth science values related to protection, scientific study or education.
Built Heritage Resources	One or more significant buildings, structures, monuments, installations or remains associated with architectural, cultural social, political, economic or military history and identified as being important to a community. These resources may be identified through designation or heritage conservation easement under the Ontario Heritage Act, or listed by local, provincial or federal jurisdictions.
Connectivity	The degree to which key natural heritage or key hydrologic features are connected to one another by links such as plant and animal movement corridors, hydrologic and nutrient cycling, genetic transfer and energy flow through food webs.
Cultural Heritage Landscape	A defined geographical area of heritage significance, which has been modified by human activities and is valued by a community. It involves a grouping(s) of individual heritage features such as structures, spaces, archaeological sites and natural elements, which together form a significant type of heritage form, distinctive from that of its constituent elements or parts. Examples include heritage conservation districts designated under the Ontario heritage Act; and villages, parks, gardens, battlefields, main streets and neighbourhoods, cemeteries, trail ways and industrial complexes of cultural heritage value.
Detail Design	The final stage in the design process in which the engineering and design components of preliminary design are refined and details concerning, for example, property, drainage, utility relocations and quantity estimate requirements are prepared and contract drawings and documents are produced.
Do Nothing Alternative	In the context of a transportation project, the "Do Nothing" alternative would mean that only normal operations, maintenance and repairs of existing facilities would be carried out, however, no major improvements or undertakings would be initiated.
EA Act	Environmental Assessment Act (as amended by S.O. 1996 c. 27), RSO 1980
Ecological Function	The natural processes, products or services that living or non-living environments provide or perform within or between species, ecosystems and landscapes, including hydrologic functions and biological, physical, chemical and socio-economic interactions.
Ecological Value	The value of ecology in maintaining the health of key natural heritage or key hydrologic features and the related ecological features and functions, as measured by factors such as diversity of species and habitats etc.
Endangered Species	Species that is listed or categorized as "Endangered Species" on the Ontario MNR official species at risk list.
Environment	As defined in Section 1 (c) of the EA Act. (i) air, land or water (ii) plant and animal life including man (iii) the social, economic and cultural conditions that influence the life of man or a community (iv) any building structure, machine or other device or thing made by man (v) any solid, liquid, gas, odour, heat, sound, vibration or radiation resulting directly or indirectly from the activities of man or (vi) any part of combination of the foregoing and the inter-relationships between any two of more of them, in or of Ontario.
Environmentally Sensitive Areas	Those areas identified by any agency or level of government which contain natural features, ecological functions or cultural, historical or visual amenities which are susceptible to disturbance from human activities and which warrant protection.

## Glossary of Terms

Term used in Terms of Reference	Explanation
External Agencies	Includes Federal departments and agencies, Provincial ministries and agencies, conservation authorities, municipalities, Crown corporations or other agencies other than MTO.
Freeway	Freeways are controlled access median divided highway facilities with grade separated crossings and interchanges (i.e. a vertical separation between a road/road or road/rail crossing.)
Fish Habitat	As defined in the Fisheries Act c. F-14, means spawning grounds and nursery, rearing, food supply and migration areas on which fish depend directly or indirectly in order to carry out their life processes.
Flood Plain	For river, stream and small inland lake features means the area, usually low lands adjoining a watercourse, which has been or may be subject to flooding hazard.
Greater Golden Horseshoe	A geographical area represented by the single-tier municipalities of Barrie, Brantford, Guelph, Hamilton, Kawartha Lakes, Orillia, Peterborough and Toronto; the upper-tier municipalities of Brant, Dufferin, Durham, Haldimand, Halton, Niagara, Northumberland, Peel, Peterborough, Simcoe, Waterloo, Wellington and York and the lower-tier municipalities within.
Groundwater Feature	Refers to the water-related features in the earth's sub-surface, including recharge / discharge areas, water tables, aquifers and unsaturated zones that can be defined by surface and subsurface hydrological investigation.
Habitat	The place or type of site where an organism or population naturally occurs. Species may require different habitats for different uses throughout their lifecycle.
Higher Order Transit	Transit that operates in its own dedicated right-of-way, outside of mixed traffic and therefore can achieve a frequency of service greater than mixed-traffic transit. Can include heavy rail, light rail and buses in dedicated right-of-ways.
Highways	Roadways under the jurisdiction of MTO including King's highways, secondary highways and tertiary roads. This includes all components within the associated right-of-way, e.g. structures, drainage works, traffic and safety devices.
Hydrologic function	Means the functions of the hydrological cycle that include the occurrence, circulation, distribution and chemical and physical properties of the water on the surface of the land, in the soil and underlying rocks, and in the atmosphere, and waters interactions with the environment including its relationship to living things.
Individual Environmental Assessment	An environmental assessment for an undertaking to which the EA Act applies and which requires formal review and approval under the Act.
Infrastructure	Means physical structures (facilities and corridors) that form the foundation of development. Infrastructure includes: sewage and water systems, waste management systems, electric power generation and transmission, communications and telecommunications, transit and transportation corridors and facilities, oil and gas pipelines and associated facilities.
Inter-modal Facility	A location where transfers between carriers can be made, as part of a single journey. A typical freight inter-modal facility is a rail where containers are transferred between trucks and trains.
Mitigation Measure	A measure that is incorporated into a project to reduce, eliminate or ameliorate detrimental environmental effects.
Multi-modal Transportation System	A transportation system which may include several forms of transportation such as automobiles, walking, trucks, cycling, buses, rapid transit, rail (such as commuter and freight), air and marine.
Natural Heritage Features and Area	Features and areas, including significant wetlands, significant coastal wetlands, fish habitat, significant woodlands south and east of the Canadian Shield, significant valleylands south and east of the Canadian Shield, significant habitat of endangered species and threatened species, significant wildlife habitat, and significant areas of natural and scientific interest, which are important for their environmental and social values as a legacy of the natural landscapes of an area.

## Glossary of Terms

Term used in Terms of Reference	Explanation
Natural Heritage System	A system made up of natural heritage features and areas, linked by natural corridors that are necessary to maintain biological and geological diversity, natural functions, viable populations of indigenous species and ecosystems. These systems can include lands that have been restored and areas with the potential to be restored to a natural state.
Petroleum Resources	Oil, gas, and brine resources which have been identified through exploration and verified by preliminary drilling or other forms of investigation. This may include sites of former operations where resources are still present or former sites that may be converted to underground storage for natural gas or other hydrocarbons.
Preliminary Design	That part of the planning and design process, during which various alternative design solutions are examined and evaluated including consideration of environmental effects and mitigation; the recommended design solution is then developed in sufficient detail to ensure that the horizontal and vertical controls are physically compatible with the proposed site, that the requirements for lands and right-of-ways are satisfactorily identified, and that the basic design criteria or features to be contained in the design have been fully recognized and documented is sufficient graphic detail to ensure their feasibility.
Provincial Policy Statement	The Provincial Policy Statement (PPS) sets out the Ontario Government's interests in land use planning and development and provides policy direction on matters of provincial interest to those involved in land use planning. The PPS is the complementary document to the <i>Planning Act</i> and is issued under the authority of the <i>Act</i> .
Prime Agricultural Area	Areas where prime agricultural lands predominate. This includes: areas of prime agricultural lands and associated Canada Land Inventory Class 4-7 soils; and additional areas where there is a local concentration of farms which exhibit characteristics of ongoing agriculture.
Prime Agricultural Land	Land that includes specialty crop areas and/or Canada Land Inventory Classes 1, 2, and 3 soils, in this order of priority for protection.
Proponent	A person or agency that carries or proposes to carry out an undertaking, or is the owner or person having charge, management or control of the undertaking.
Provincial Plan	A plan approved by the Lieutenant Governor in Council or the Minister of Municipal Affairs and Housing, but does not include municipal official plans.
Regulatory Agencies	Includes Federal departments and agencies, Provincial ministries and agencies, and conservation authorities.
Site Alteration	Activities such as filling, grading and excavation that would change the landform and natural vegetative characteristics of land.
Species At Risk	Wild plants and animals that have been assessed by an independent body, the Committee on the Status of Endangered Wildlife in Canada (COSEWIC), and found to be at some risk of disappearing from the wild in Canada. Species at Risk are protected by federal legislation, called the <i>Species at Risk Act</i> (SARA), proclaimed June 5, 2003.
Specialty Crop Area	Areas where specialty crops such as tender fruits, grapes, other fruit crops, vegetable crops, greenhouse crops, and crops from agriculturally developed organic soil lands are predominantly grown
Threatened Species	Species that is listed or categorized as "Threatened Species" on the Ontario MNR official species at risk list.
Transitway	A separate transit facility directly associated with a provincial freeway / highway. The transit right-of-way may be shared with a highway right-of-way.
Transportation Demand Management	Transportation demand management is a general term for strategies that result in more efficient use of existing transportation infrastructure. Examples include pricing (road tolls or transit discounts), flexible working hours, car pooling, park and ride etc.
Transportation Systems	A system consisting of corridors and rights of way for the movement of people and goods, and associated transportation facilities including transit stops and stations, cycle lanes, bus lanes, high occupancy lanes, rail facilities, inter-modal terminals, etc. and associated facilities such as storage and maintenance.

### Glossary of Terms

Term used in Terms of Reference	Explanation
Valley Lands	A natural area that occurs in a valley or other landform depression that has water flowing through or standing for some period of the year.
Watershed	An area that is drained by a river and its tributaries.
Watershed Plan	A plan used for managing human activities and natural resources in an area defined by watershed boundaries. The Plan can include a water budget and conservation plan, land and water use strategies, monitoring plan and targets.
Wellhead Protection Area	The surface and subsurface area surrounding a water well or well field that supplies a public water system and through which contaminants are likely to move so as eventually to reach the waterwell or well field.
Wetlands	Lands that are seasonally or permanently covered by shallow water, as well as lands where the water table is close to, or at the surface. The four major types of wetlands are swamps, marshes, bogs and fens. Periodically soaked or wet lands being used for agricultural purposes which no longer exhibit wetland characteristics are not considered to be wetlands for the purposes of this definition.
Wildlife Habitat	Areas where plants, animals and other organisms live, and find adequate amounts of food, water, shelter and space needed to sustain their populations.
Woodland	Woodlands include treed areas, woodlots or forested areas and vary in their level of significance at the local, regional and provincial levels

Note: Glossary of terms will be expanded to include evaluation subfactors, as appropriate.

**SUPPORTING DOCUMENT #2**

**HIGHWAY 7&8 TRANSPORTATION CORRIDOR PLANNING AND  
CLASS EA STUDY – SUMMARY OF REPORTS**

<b>Supporting Document #2</b> <b>Highway 7&amp;8 Transportation Corridor Planning and Class EA Study - Summary of Reports</b>		
STUDY PHASE	REPORTS	REPORT CONTENT
1. STUDY PLAN	<b>Report "A": 'Study Plan for Technical Work, Outreach and Consultation'</b>  (60 days provided for stakeholders to review and comment on draft Study Plan *)	a) Introduction: <ul style="list-style-type: none"> <li>• Introduction to the planning and Class EA Study</li> <li>• Study Objectives</li> <li>• Preliminary Statement of Transportation Problems and Opportunities</li> <li>• Purpose, relevance and position of report within the study process</li> </ul> b) Outline of planning & Class EA Study process: <ul style="list-style-type: none"> <li>• Overview of the Class EA Process and the Class EA for Provincial Transportation Facilities</li> <li>• Overview of planning and Class EA Study process for this provincial transportation corridor study</li> <li>• Overview of Federal/provincial EA co-ordination</li> <li>• Overview of Principles for Conducting the Study               <ul style="list-style-type: none"> <li>○ Transportation Engineering Principles</li> <li>○ Environmental Protection Principles</li> <li>○ Evaluation Principles</li> <li>○ Outreach and Consultation Principles</li> </ul> </li> <li>• Earlier and Related Work</li> </ul> c) Statement and Assumptions of Proponency <ul style="list-style-type: none"> <li>• Statement of Proponency</li> <li>• Assumptions of EA Proponency and Completion of Work</li> </ul> d) Statement of EA compliance/ Submission Statement
		e) Purpose of the Undertaking: <ul style="list-style-type: none"> <li>• Policy framework and other government initiatives</li> <li>• Transportation Problems and Opportunities               <ul style="list-style-type: none"> <li>○ Definition and Description of 'Area Transportation System'</li> <li>○ Overview of the Area Transportation System</li> <li>○ Overview of the Area Economy, Employment and Population Growth Forecasts</li> <li>○ Discussion of the Preliminary Statement of Problems &amp; Opportunities</li> </ul> </li> </ul> f) Environmental Conditions and Potential Effects
		g) Alternatives and their evaluation: <ul style="list-style-type: none"> <li>• "Alternatives To" the Undertaking and "Alternative Methods" for Carrying out the Undertaking</li> <li>• Evaluation Processes and Their Application</li> <li>• Preliminary Identification of Evaluation Factors and Sub-Factors</li> <li>• Transportation Needs Assessment               <ul style="list-style-type: none"> <li>- Area Transportation System Alternatives</li> <li>- Preliminary Planning Alternatives</li> </ul> </li> <li>• Detailed Planning Alternatives</li> <li>• Preliminary/Concept Design Alternatives</li> </ul> h) Monitoring strategy during project implementation
		i) Outreach and consultation <ul style="list-style-type: none"> <li>• Key components of outreach &amp; consultation program</li> <li>• Public Information Centres (PICs)</li> <li>• Public Notices in Newspapers</li> <li>• Project Web Site</li> <li>• Contacting the Study Team</li> <li>• Stakeholder Contact Lists</li> <li>• Stakeholder Categories</li> <li>• Role of Stakeholders</li> </ul> j) Filing and review of Transportation Environmental Study Report

<b>Supporting Document #2</b> <b>Highway 7&amp;8 Transportation Corridor Planning and Class EA Study - Summary of Reports</b>		
STUDY PHASE	REPORTS	REPORT CONTENT
<b>2. AREA TRANSPORTATION SYSTEM PLANNING</b>	<b>Report “B”: Working Paper – Overview of Transportation, Land Use and Economic Conditions within the Analysis Area</b>  (30 days provided for stakeholders to review and comment on draft working paper *)	a) Purpose, relevance and position of report within the study process b) Identification of analysis area c) Overview of provincial and municipal land use, transportation, and economic development policies (including forecasts for population and employment) d) Definition and description of ‘Area Transportation System’ e) Description of ‘Area Transportation System’ current travel characteristics and patterns (all modes) f) Description of analysis area – socio-economic existing conditions and outlooks g) Analysis Area – ‘Area Transportation System’ Modal Outlooks h) Description of current provincial highway conditions with respect to infrastructure condition, performance, compliance with current design standards, suitability for service to increased traffic, and feasibility of implementing improvements versus replacement/major reconstruction (determined through background/overview data and preliminary field reconnaissance) i) Summary of key factors that are driving ‘Area Transportation System’ needs
	<b>Report “C”: Working Paper – ‘Area Transportation System’ Problems and Opportunities</b>  (30 days provided for stakeholders to review and comment on draft working paper *)	a) Purpose, relevance and position of report within the study process b) Summary of transportation, land use and economic conditions <ul style="list-style-type: none"> <li>• Process to define ‘Area Transportation System’ problems and opportunities</li> </ul> c) Travel demand forecasting approach and methodology d) Forecasted future ‘Area Transportation System’ travel characteristics and patterns e) Detailed description and assessment of current and future ‘Area Transportation System’ problems and opportunities: <ul style="list-style-type: none"> <li>• Existing assessment</li> <li>• Horizon year assessment</li> </ul> f) Summary of ‘Area Transportation System’ needs’ g) Description and rationale of generic transportation system alternatives: <ul style="list-style-type: none"> <li>○ Area Transportation System alternatives</li> <li>○ Combination alternatives</li> </ul> h) Process and criteria for evaluating and selecting the preferred Area Transportation System Alternatives
	<b>Report “D”: Working Paper – Area Transportation System Alternatives</b>  (30 days provided for stakeholders to review and comment on draft milestone report *)	a) Purpose, relevance and position of report within the study process b) Summary of analysis area overview, transportation problems <ul style="list-style-type: none"> <li>• Summary of key factors that are driving ‘Area Transportation System’ needs</li> <li>• Process to define ‘Area Transportation System’ problems and opportunities</li> <li>• Summary – preliminary identification of existing and future ‘Area Transportation System’ problems, deficiencies and opportunities</li> </ul> c) Identify ‘Area Transportation System’ alternatives d) Select and define Area Transportation System alternatives and group them into combinations e) Determine the degree to which combination alternatives address the problems and opportunities f) Select the Alternatives that will proceed to preliminary planning

<b>Supporting Document #2</b> <b>Highway 7&amp;8 Transportation Corridor Planning and Class EA Study - Summary of Reports</b>		
STUDY PHASE	REPORTS	REPORT CONTENT
	Report "F" 1 <sup>st</sup> Part: Working Paper - Environmental Conditions and Constraints  (30 days provided for stakeholders to review and comment on draft working paper *)	a) Purpose, relevance and position of report within the study process b) Environmental overview within the analysis area based upon secondary source information for the following factor-specific areas: <ul style="list-style-type: none"> <li>• fisheries and aquatic ecosystems</li> <li>• terrestrial ecosystems</li> <li>• groundwater</li> <li>• surface water</li> <li>• air quality</li> <li>• land use / community</li> <li>• noise sensitive areas</li> <li>• land use / resources</li> <li>• landscape composition</li> <li>• contaminated property and waste management</li> <li>• cultural heritage – built heritage and cultural landscapes</li> <li>• cultural heritage – archaeology</li> </ul>



<b>Supporting Document #2</b> <b>Highway 7&amp;8 Transportation Corridor Planning and Class EA Study - Summary of Reports</b>		
STUDY PHASE	REPORTS	REPORT CONTENT
<b>3. PRELIMINARY PLANNING</b>	<b>Report "E": Milestone Report – Highway 7&amp;8 Transportation Corridor Needs Assessment</b>  (60 days provided for stakeholders to review and comment on draft milestone report *)	a) Purpose, relevance and position of report within the study process b) Summary of Report "D": Transportation Area Transportation System Alternatives: <ul style="list-style-type: none"> <li>• Area Transportation System alternatives</li> <li>• Environmental conditions and constraints</li> <li>• Outline of process and criteria for generating and assessing provincial roadway preliminary planning alternatives</li> </ul> c) Generation of preliminary planning alternatives (as applicable): <ul style="list-style-type: none"> <li>• New transportation facility location, type and capacity:               <ul style="list-style-type: none"> <li>○ conceptual corridors for a new provincial transitway</li> <li>○ conceptual corridors for a new provincial highway</li> <li>○ conceptual areas of limitations on access to provincial highway</li> </ul> </li> <li>• key specialty engineering preliminary planning alternatives for new transportation facilities               <ul style="list-style-type: none"> <li>○ minimize need for large spans &amp; lengths of major culverts</li> <li>○ minimize intrusion into major watercourses &amp; water bodies</li> <li>○ minimize intrusion into areas of extreme gradient change</li> <li>○ minimize intrusion into large areas of unstable soils</li> <li>○ possible ITS applications</li> </ul> </li> <li>• environmental protection for the above by minimizing intrusion into areas of provincial environmental interest as defined in the Provincial Policy Statement</li> <li>• preliminary study area(s)</li> </ul> d) Generation of preliminary planning alternatives for improvements to existing transportation facilities (as applicable): <ul style="list-style-type: none"> <li>• Location, type and capacity of facility improvements:               <ul style="list-style-type: none"> <li>○ general locations of geometrical improvements</li> <li>○ general locations of widening</li> <li>○ general location/configuration/template footprint of new connection points</li> <li>○ conceptual areas of limitations on access to provincial highway</li> </ul> </li> <li>• key specialty engineering preliminary planning alternatives for improvements to existing transportation facilities               <ul style="list-style-type: none"> <li>○ general type/character of structure improvements of specific bridges &amp; major culverts</li> <li>○ general locations of improvement to drainage along &amp; across ROW</li> <li>○ general nature of stability improvements to specific large cut &amp; fill embankments</li> <li>○ general locations of improvement to road base &amp; pavement</li> <li>○ general locations of improvement to line-of-sight, roadside safety &amp; traffic control</li> </ul> </li> <li>• environmental protection for the above by minimizing intrusion into areas of provincial environmental interest as defined in the Provincial Policy Statement</li> <li>• preliminary study area(s)</li> </ul> e) Evaluation and selection of provincial roadway preliminary planning alternatives and identification of type of provincial roadway detailed planning study, including description and rationale of study area(s) f) Decision to proceed with planning and Class EA Study through Phases 3-6 g) Process and criteria for generating provincial roadway detailed planning alternatives

<b>Supporting Document #2</b> <b>Highway 7&amp;8 Transportation Corridor Planning and Class EA Study - Summary of Reports</b>		
STUDY PHASE	REPORTS	REPORT CONTENT
<b>4. DETAILED PLANNING FOR PROVINCIAL ROADWAYS</b>	<b>Report "F" - 2<sup>nd</sup> Part:</b> <b>Working Paper - Environmental Conditions and Constraints</b>  (30 days provided for stakeholders to review and comment on draft working paper *)	a) Purpose, relevance and position of report within the study process b) Areas of Environmental Interest as specified in Provincial Policy Statement (from 1 <sup>st</sup> Part of Report F) c) Environmental conditions and constraints within the detailed planning study area for the following factor-specific areas: <ul style="list-style-type: none"> <li>• fisheries and aquatic ecosystems</li> <li>• terrestrial ecosystems</li> <li>• groundwater</li> <li>• surface water</li> <li>• air quality</li> <li>• land use / community</li> <li>• noise sensitive areas</li> <li>• land use / resources</li> <li>• landscape composition</li> <li>• contaminated property and waste management</li> <li>• cultural heritage – built heritage and cultural landscapes</li> <li>• cultural heritage – archaeology</li> </ul> d) Technical information for each factor-specific area: <ul style="list-style-type: none"> <li>• areas of investigation</li> <li>• background data</li> <li>• field investigations</li> <li>• determination of significance</li> </ul> e) Summary of significant environmental issues (Note: technical information builds on the content of the 1 <sup>st</sup> part of the report through field investigations and determination of environmental significance)

<b>Supporting Document #2</b> <b>Highway 7&amp;8 Transportation Corridor Planning and Class EA Study - Summary of Reports</b>		
STUDY PHASE	REPORTS	REPORT CONTENT
	<b>Report "G": Working Paper - Generation of Detailed Planning Alternatives for Provincial Roadways</b>  (30 days provided for stakeholders to review and comment on draft working paper *)	a) Purpose, relevance and position of report within the study process b) Summary of Report "E": Provincial Roadway Preliminary Planning: <ul style="list-style-type: none"> <li>Provincial roadway preliminary planning alternatives selected</li> <li>Process and criteria for generating provincial roadway detailed planning alternatives</li> </ul> c) Engineering condition field investigation work d) Refinement of study area(s) e) Description and analysis of detailed planning alternatives generated for provincial roadway (as applicable) <ul style="list-style-type: none"> <li>key roadway engineering alternatives for new provincial roadway:               <ul style="list-style-type: none"> <li>final study area</li> <li>new provincial transitway route location &amp; technology</li> <li>new provincial highway route location and highway type</li> <li>basic plan, profile, cross-section</li> <li>hwy interchange/intersection specific location, configuration, footprint</li> <li>transitway station specific location &amp; footprint</li> <li>specific nature &amp; location of limitations on access to provincial hwy</li> </ul> </li> <li>key specialty engineering detailed planning alternatives for new provincial roadway:               <ul style="list-style-type: none"> <li>specific location/ type/span/length &amp; template "footprint" of bridges &amp; major culverts</li> <li>specific location/type/character &amp; template "footprint" of major facilities for drainage along &amp; across the ROW and for stormwater management</li> <li>specific location/type/character and template "footprint" of major cut/fill embankments; foundations for bridges &amp; major culverts</li> <li>road base structure and pavement type</li> <li>specific locations/sites for traffic control signals and roadside safety barriers</li> </ul> </li> <li>combinations of the above</li> <li>environmental impact assessment for the above</li> </ul> f) Description and analysis of detailed planning alternatives generated for improvements to existing highway (as applicable) <ul style="list-style-type: none"> <li>key roadway engineering alternatives for highway improvements               <ul style="list-style-type: none"> <li>final study area</li> <li>specific location &amp; type of geometric improvements</li> <li>specific location, extent &amp; direction of widening</li> <li>basic plan, profile, cross-section</li> <li>hwy interchange/intersection specific location, configuration, footprint</li> <li>specific nature &amp; location of limitations on access to provincial hwy</li> </ul> </li> <li>key specialty engineering detailed planning alternatives for improvements to existing highway (same as for "e" above)</li> <li>environmental impact assessment for the above</li> </ul> g) Process and criteria for evaluating and selecting provincial roadway detailed planning alternatives
	<b>Report "H": Milestone Report - Selection of Detailed Planning Alternatives for Provincial Roadways</b>  (60 days provided for stakeholders to review and comment on draft milestone report *)	a) Purpose, relevance and position of report within the study process b) Summary of Report "G": Generation of Detailed Planning Alternatives for Provincial Roadways: <ul style="list-style-type: none"> <li>Detailed planning alternatives generated</li> <li>Process and criteria for evaluating and selecting provincial roadway detailed planning alternatives</li> </ul> c) Evaluation and selection of technically preferred provincial roadway detailed planning alternative(s) d) Refinement of technically preferred provincial roadway detailed planning alternative(s) e) Process and criteria for generating provincial roadway preliminary design alternatives

<b>Supporting Document #2</b> <b>Highway 7&amp;8 Transportation Corridor Planning and Class EA Study - Summary of Reports</b>		
STUDY PHASE	REPORTS	REPORT CONTENT
<b>5. PRELIMINARY / DESIGN OF PROVINCIAL ROADWAYS</b>	<b>Report "I" Working Paper - Generation of Preliminary/Concept Design Alternatives for Provincial Roadways</b>  (30 days provided for stakeholders to review and comment on draft working paper *)	a) Purpose, relevance and position of report within the study process b) Summary of Report "H": Selection of Detailed Planning Alternatives for Provincial Roadways: <ul style="list-style-type: none"> <li>Provincial roadway detailed planning alternatives selected</li> <li>Process and criteria for generating provincial roadway preliminary/concept design alternatives</li> </ul> c) Description and assessment of provincial roadway preliminary design of roadway alternatives generated (as applicable) <ul style="list-style-type: none"> <li>roadway engineering preliminary design alternatives:               <ul style="list-style-type: none"> <li>calculated horizontal &amp; vertical alignment and cross-section</li> <li>highway interchange/intersection preliminary design</li> <li>transitway station preliminary design</li> <li>location/design of private entrances to highway</li> <li>right-of-way &amp; property acquisition requirements</li> <li>utilities</li> <li>emergency access</li> </ul> </li> <li>roadway engineering preliminary design of alternatives for limitation to highway access</li> <li>environmental protection for the above</li> </ul> d) Description and assessment of provincial roadway preliminary design of specialty engineering alternatives generated (as applicable) <ul style="list-style-type: none"> <li>Bridge &amp; major culvert engineering:               <ul style="list-style-type: none"> <li>structure width, length, skew, geometry &amp; cross-section</li> <li>structure vertical clearance &amp; span arrangement</li> <li>navigable channel (if applicable)</li> </ul> </li> <li>Drainage &amp; hydrology engineering:               <ul style="list-style-type: none"> <li>channels, ditches, storm sewers &amp; outlets/outfalls for drainage of roadway</li> <li>stormwater management facilities</li> <li>hydraulics of bridges, culverts &amp; water crossing inlets/outlets</li> </ul> </li> <li>Foundation engineering:               <ul style="list-style-type: none"> <li>foundations for bridge &amp; major culvert structures</li> <li>conventional slope geometry for major cut/fill embankments</li> <li>non-conventional slope geometry for major cut/fill embankments</li> <li>settlement management &amp; excavation methods</li> </ul> </li> <li>Pavement and road base engineering:               <ul style="list-style-type: none"> <li>preliminary design of road base and pavement</li> <li>mass haul (cut/fill earth/rock material balance)</li> <li>preliminary sources of suitable granular material</li> </ul> </li> <li>Traffic &amp; electrical engineering:               <ul style="list-style-type: none"> <li>traffic control signals</li> <li>major roadside safety infrastructure</li> <li>traffic signing &amp; pavement markings</li> <li>roadway illumination</li> <li>ITS technology</li> <li>Preliminary construction traffic detour requirements</li> </ul> </li> <li>specialty engineering preliminary design of alternatives for limitation to highway access</li> <li>environmental protection for the above</li> </ul> e) Process and criteria to evaluate and select provincial roadway preliminary design alternatives

<b>Supporting Document #2</b> <b>Highway 7&amp;8 Transportation Corridor Planning and Class EA Study - Summary of Reports</b>		
STUDY PHASE	REPORTS	REPORT CONTENT
	<b>Report "J": Milestone Report - Selection of Preliminary Design Alternatives for Provincial Roadways</b>  (60 days provided for stakeholders to review and comment on draft milestone report *)	a) Purpose, relevance and position of report within the study process b) Summary of Report "I": Generation of Preliminary Design Alternatives for Provincial Roadways <ul style="list-style-type: none"> <li>Provincial roadway preliminary design alternatives generated</li> <li>Process and criteria for evaluating and selecting provincial roadway preliminary design alternatives</li> </ul> c) Evaluation and selection of provincial roadway preliminary design alternative d) Description of technically preferred provincial roadway preliminary design alternatives selected e) Value engineering assessment of the technically preferred preliminary design f) Development and refinement of the technically preferred provincial roadway preliminary design alternatives g) Preliminary staging of implementation h) Preliminary property requirements i) Agreements in principle for road assumptions, transfers, closures and the resolution of major rail and utility conflicts j) External permits anticipated to be required k) Design criteria for subsequent detail design assignments l) Preliminary assessment of technically preferred preliminary design under Ontario Infrastructure Planning, Financing and Procurement Framework m) Monitoring Strategy: <ul style="list-style-type: none"> <li>Technical monitoring program and procedures</li> <li>EA process monitoring program and procedures</li> </ul>
<b>6. TRANSPORTATION ENVIRONMENTAL STUDY REPORT</b>	<b>Report "K": Milestone Report - 'Transportation Environmental Study Report' (TESR)</b>  (60 days provided for stakeholders to review and comment on TESR after notice of filing)	a) Purpose, relevance and position of report within the study process b) Summary description of undertaking c) Content of: <ul style="list-style-type: none"> <li>final Report "A": Study Plan for Technical Work, Outreach and Consultation</li> <li>final Report "B": Working Paper – Overview of Environmental Conditions and Constraints within the Analysis Area</li> <li>final Report "C": Working Paper – 'Area Transportation System' Problems and Opportunities</li> <li>final Report "D": Milestone Report – Transportation Corridor Needs Assessment</li> <li>final Report "E": Milestone Report - Preliminary Planning for Provincial Roadways</li> <li>final Report "F": Working Paper - Environmental Conditions and Constraints</li> <li>final Report "G": Working Paper - Generation of Detailed Planning Alternatives for Provincial Roadways</li> <li>final Report "H": Milestone Report - Selection of Detailed Planning Alternatives for Provincial Roadways</li> <li>final Report "I": Working Paper - Generation of Preliminary Design Alternatives for Provincial Roadways</li> <li>final Report "J": Milestone Report - Selection of Preliminary Design Alternatives for Provincial Roadways</li> </ul> d) Environmental synopsis e) Results of outreach and consultation f) Commitments to future work and consultation
<b>NOTES</b> <ul style="list-style-type: none"> <li>* During the period provided for stakeholders to review reports, MTO will be undertaking "homework" for the next stage and report of the work</li> <li>Each report also contains the following:               <ul style="list-style-type: none"> <li>Summary of draft report key concerns identified through outreach and consultation, and MTO response/changes to those key concerns (does not apply to TESR, because it is a compilation of reports to which this previously applied)</li> <li>Supporting documentation (if applicable)</li> </ul> </li> </ul>		

## **SUPPORTING DOCUMENT #3**

### **DESCRIPTION AND RATIONALE OF ALTERNATIVES**

## DETAILED DESCRIPTION OF ALTERNATIVES

### ‘Area Transportation System’ Planning Alternatives

The Highway 7&8 Transportation Corridor Planning and Class EA Study will consider the following generic ‘Area Transportation System’ alternatives:

- Do Nothing
- Travel Demand Management (TDM)
- Transportation System Management (TSM)
- Local Transit\*
- Interregional Transit and Passenger Rail\*
- Air Services\*
- Marine Services\*
- Freight Rail\*
- Municipal Roads\*
- Provincial Highways / Transitways\*

(\* new or improved operations and/or infrastructure)

In addition, the Highway 7&8 Transportation Corridor Planning and Class EA Study will consider the following generic combinations of ‘Area Transportation System’ alternatives:

#### Do Nothing

As indicated in Section 7.4.5, the “Do Nothing” alternative includes existing infrastructure and programmed improvements.

#### Combination #1: Optimize Existing Network

Combination #1 includes:

- optimization of:
  - local transit;
  - interregional transit;
  - passenger rail;
  - freight rail;
- transportation system demand management (TDM);  
transportation system management (TDM)

#### Combination #2: New / Expanded Non-Road Infrastructure plus elements of Combination #1

Combination #2 includes:

- new/expanded
  - local transit

- interregional transit and passenger rail
  - air services
  - marine services
  - freight rail
- elements of Combination #2

Combination #3: Widen/Improve Roads plus elements of Combination #2

Combination #3 includes:

- widen / improve:
  - municipal roads
  - provincial highways
- elements of Combination #2

Combination #4: New Municipal Roads and/or Provincial Highways/ Transitways  
plus elements of Combination #3

Combination #4 includes:

- new municipal roads
- new provincial highways/transitways

## **Preliminary Planning Alternatives**

The Highway 7&8 Transportation Corridor Planning and Class EA Study will consider the following preliminary planning alternatives for the alternatives carried forward from the 'Area Transportation System' planning phase (as applicable)

a) Preliminary planning alternatives for new transportation facilities:

- new transportation facility location, type and capacity (key roadway engineering alternatives for new provincial roadways)
  - conceptual corridors for a new transportation facility, including network linkages
  - conceptual areas of limitations on access to provincial highway (see details in "d" below)
  - combinations of the above
  - preliminary study area
- key specialty engineering preliminary planning alternatives for new transportation facilities:
  - bridge engineering: minimize need for large spans & lengths of bridges and major culverts; general location of new bridges
  - drainage & hydrology engineering: minimize intrusion into major watercourses and water bodies; general location of potential significant modification to watercourses and water bodies



- foundations engineering: minimize intrusion into areas of extreme gradient change and into large areas of unstable soils; general locations where large cut and fill embankments required
    - pavement and road base engineering: minimize intrusion into large areas of unstable soils
    - traffic and electrical engineering: possible ITS applications
  - environmental protection for the above (which is focussed on minimizing intrusion into areas of provincial environmental interest as defined in the Provincial Policy Statement, recognizing that complete avoidance of all such areas is not likely to be possible)
  - preliminary study area(s)
- b) Preliminary planning alternatives for improvements to existing transportation facilities:
- Location, type and capacity of highway improvements (key roadway engineering alternatives for highway improvements):
    - general areas/locations/end-points of potential geometrical improvements to existing highway:
      - roadway gradient & alignment/curvature
      - highway intersection/interchange location/configuration
    - general areas/locations/end-points of potential widening of existing highway
      - through-lanes
      - passing lanes
      - continuous left turn lanes
      - general purpose lanes vs HOV lanes or reserved bus lanes)
    - interchanges and major intersections for 'Area Transportation System' (network) linkages
    - conceptual areas of limitations on access to provincial highway
      - locations where access to highway potentially limited in order to maintain highway functional integrity (purpose and level of service)
      - locations where access to highway potentially limited to/from areas not designated for development
    - preliminary study area
  - key specialty engineering preliminary planning alternatives for improvements to existing highway
    - bridge engineering: general type/character of structure improvements of specific bridges & major culverts
    - drainage & hydrology engineering: general locations of improvement to drainage along & across ROW
    - foundation engineering: consideration of improvements to specific structure foundations and stability improvements to specific deep cut and high fill embankments
    - pavement and road base engineering: consideration of pavement/road base modification versus replacement
    - traffic & electrical engineering: general locations of improvement to line-of-sight, roadside safety; sites where traffic control signals required

- combinations of the above
- environmental protection for the above (which is focussed on minimizing intrusion into areas of provincial environmental interest as defined in the Provincial Policy Statement, recognizing that complete avoidance of all such areas is not likely to be possible)
- preliminary study area(s)

### **Detailed Planning Alternatives**

The Highway 7&8 Transportation Corridor Planning and Class EA Study will consider the following detailed planning alternatives for the provincial roadway alternatives carried forward from the preliminary planning phase (as applicable):

- a) Detailed planning alternatives for a new provincial roadway (as applicable) are the following:
- key roadway engineering alternatives for new provincial roadway:
    - final study area
    - new provincial transitway route location & technology
    - new provincial highway route location and highway type
    - final study areas
    - roadway design speed, basic plan and profile, basic cross-section covering:
      - number of lanes/tracks
      - core/collector separation (if applicable)
      - median treatment and shoulder type
      - major drainage
    - highway interchange/intersection specific location, configuration, footprint
    - transitway station specific location & footprint
    - specific nature & location of limitations on access to provincial highway (see details in “f” below)
  - key specialty engineering detailed planning alternatives for new provincial roadway:
    - bridge engineering: specific location/ type/span/length & template “footprint” of bridges & major culverts
    - drainage & hydrology engineering: specific location/type/character & template “footprint” of major facilities for drainage along & across the ROW and for stormwater management
    - foundation engineering: specific location/type/character and template “footprint” of major cut/fill embankments; foundations for bridges & major culverts
    - pavement and road base engineering: road base structure and pavement type
    - traffic & electrical engineering: specific locations/sites for traffic control signals and roadside safety barriers
  - environmental impact assessment (see details in (b) below)
- b) Detailed planning alternatives for improvement to the existing provincial highway (as applicable), are the following:
- key roadway engineering alternatives for highway improvements

- final study area
- specific location/end-points, type/character of geometrical improvements
  - roadway gradient and alignment curvature
  - interchange/intersection location/configuration
- specific location/end-points, extent & direction of widening
  - number of lanes
  - symmetrical vs asymmetrical vs new independent centreline
- roadway design speed, basic plan and profile, basic cross-section covering:
  - number of lanes/tracks
  - core/collector separation (if applicable)
  - median treatment and shoulder type
  - major drainage
- highway interchange/intersection specific location, configuration, and template “footprint”
- specific consideration of the above to improve bus operations on the highway, and to improve highway access to regional centres of goods movement such as intermodal facilities
- specific nature & location of limitations on access to provincial highway (as applicable)
  - areas where interchanges, intersections and entrances limited
  - areas where cross-roads grade-separated
  - areas where service roads provided
  - areas of metering of traffic access to highways at interchanges and intersections
  - areas of provincial ownership to prevent access to crossing roads from being too close to highway
  - areas of staged access based upon development controls being put in place
  - highway functional classification and highway access management classification upon which the above is based (selected from the following):
    - freeway (freeway, staged freeway)
    - arterial (major arterial, minor arterial)
    - collector (major collector, minor collector)
    - local
- key specialty engineering detailed planning alternatives for highway improvements:
  - bridge engineering: specific location/ type/span/length & template “footprint” of bridges & major culverts
  - drainage & hydrology engineering: specific location/type/character & template “footprint” of major facilities for drainage along & across the ROW and for stormwater management
  - foundation engineering: specific location/type/character and template “footprint” of major cut/fill embankments; foundations for bridges & major culverts
  - pavement and road base engineering: road base structure and pavement type
  - traffic & electrical engineering: specific locations/sites for traffic control signals and roadside safety barriers

- environmental impact assessment
  - environmental constraints to design and construction
  - avoidance/prevention/minimization incorporated into development of alternatives (where avoidance is primarily with respect to “footprint” impacts during generation of alternatives to capitalize on significant transportation engineering opportunities while protecting significant environmental features as much as possible)
  - assessment of environmental impacts (to factor areas identified for Report “F”, based upon the following:
    - environmental sensitivities identified;
    - details of environmental effect / condition change, with respect to:
      - type of impact (“footprint”, interference, traffic access modification, emissions)
      - nature of impact (direction, timing, duration, frequency, magnitude, reversibility, geographic extent, probability of occurrence and cumulative impacts)
    - degree to which environmental effects / condition changes can be mitigated (based on previous and concurrent experience), including residual effects; and
    - degree to which environmental avoidance/impact prevention could be incorporated in the development of alternatives
    - net environmental effects - advantages and disadvantages (which may be limited to a short-list of alternatives if the evaluation process includes a screening component)

## **Preliminary Design Alternatives**

The Highway 7&8 Transportation Corridor Planning and Class EA Study will consider the following preliminary design alternatives for the provincial roadway alternatives carried forward from the detailed planning phase (as applicable):

- a) Roadway engineering preliminary design alternatives (as applicable)
  - roadway engineering preliminary design alternatives:
    - calculated horizontal & vertical alignment and cross-section covering:
      - lane/track arrangement
      - lane continuity & balance
      - cross-fall & super-elevation
      - median & shoulder
      - aspects of specialty engineering infrastructure such as drainage and roadside safety
    - highway interchange/intersection preliminary design
    - transitway station preliminary design
    - location/design of private entrances to highway
    - right-of-way & property acquisition requirements (“property request” follows)
    - utilities (electricity, gas, water, telecommunications)

- roadway engineering preliminary design of alternatives for limitation to highway access (as applicable):
  - preclude or limit highway interchanges with crossing roads:
    - limit new highway interchanges to key selected municipal major arterial roads
    - specify minimum distance separation between new and existing interchanges
    - preclude interchanges at crossing roads on which public/private roads and entrances do not meet specified minimum separation distances from the interchange ramp terminals
    - prohibit new interchanges
  - preclude or limit highway intersections with crossing roads:
    - eliminate turns at existing intersections
    - close existing intersections
    - specify minimum distance separation between new and existing intersections
    - specify minimum highway stopping sight distance at intersections
    - prohibit new intersections
  - preclude or limit property entrances to highway:
    - limit/prohibit intensified traffic use / upgrading of existing property entrances
    - specify maximum density (# entrances per kilometre) of property entrances and minimum distance separation between property entrances (for both commercial and non-commercial)
    - specify minimum distance separation between property entrances and crossing road intersection
    - specify minimum highway stopping sight distance at entrances
    - specify minimum “access connection depth” within entrances
    - specify conditions for traffic signals by commercial entrance applicants
    - specify minimum lot frontage for entrances
    - prohibit entrances for direct property access to highway
    - for entrances from crossing roads, specify minimum distance between entrance and highway, or prohibit entrances within highway “control area”
  - grade-separate crossing roads at highway
    - prevent highway access while maintaining local road continuity
  - provide highway service roads
    - considered in association with precluding or eliminating interchanges, intersections, entrances
  - meter traffic access to highway at interchanges and intersections
    - traffic signals at intersections timed to favour highway traffic and/or control access from crossing road traffic
    - traffic signals on interchange ramps to control access from crossing roads
  - implement provincial ownership regime on sections of crossing roads adjacent to highway in order to prevent access that is too close to the highway (could be up to 1 km from edge of highway ROW):
    - assume section of crossing road adjacent to highway as part of the Kings Highway, onto which MTO will not permit roadway intersections or private entrances
    - implement provincial land “reserves” along each side of crossing roads, through which MTO will not permit roadway intersections or private entrances (e.g. 0.3 m wide band of provincial property along each side of crossing road)
  - staged access is conditional upon suitable agreements regarding management of area growth being reached between the local municipality and one or both of the Ministry of Public Infrastructure and Renewal and the Ministry of Municipal Affairs and Housing:
    - interchange not constructed unless agreements reached
    - interchange initially constructed as a grade-separated crossing, with ramps for access not constructed unless agreements reached

- traffic access at interchange from crossing road to highway metered at specified levels unless agreement reached
  - intersections initially constructed with limited permitted turns unless agreements reached
  - cul de sac crossing roads, with intersection not constructed unless agreements reached
- private entrances not permitted unless agreements reached
- preclude or limit buildings and structures within highway “control area”
- environmental protection for the above
  - environmental preliminary design (mitigation, compensation, enhancement)
  - potential effects to interdependent components of ecosystems as well as the overall cumulative effects
  - likelihood of significant adverse environmental effects

b) Specialty engineering preliminary design alternatives (as applicable)

- Bridge & major culvert engineering:
  - structure width, length, skew, geometry & cross-section
  - structure vertical clearance & span arrangement
  - navigable channel (if applicable)
- Drainage & hydrology engineering:
  - channels, ditches, storm sewers & outlets/outfalls for drainage of roadway
  - stormwater management facilities
  - hydraulics of bridges, culverts & water crossing inlets/outlets
- Foundation engineering:
  - foundations for bridge & major culvert structures
  - conventional slope geometry for major cut/fill embankments
  - non-conventional slope geometry for major cut/fill embankments
  - settlement management & excavation methods
- Pavement and road base engineering:
  - preliminary design of road base and pavement
  - mass haul (cut/fill earth/rock material balance)
  - preliminary sources of suitable granular material
- Traffic & electrical engineering:
  - traffic control signals
  - major roadside safety infrastructure
  - traffic signing & pavement markings
  - roadway illumination
  - ITS technology
  - emergency access
  - Preliminary construction traffic detour requirements
- specialty engineering preliminary/concept design of alternatives for limitation to highway access (see details in “d” above)
- environmental protection for the above
- environmental preliminary design (mitigation, compensation, enhancement)
  - potential effects to interdependent components of ecosystems as well as the overall cumulative effects
  - likelihood of significant adverse environmental effects

*Note regarding Items (a) and (b) above: examination of preliminary design alternatives includes specific consideration of preliminary design elements that improve bus operations on the highway and that improve highway access to/from regional centres of primary goods movement such as intermodal facilities*

**SUPPORTING DOCUMENT #4**  
**FEDERAL / PROVINCIAL EA CO-ORDINATION**



## FEDERAL/PROVINCIAL EA CO-ORDINATION

Under the Canadian Environmental Assessment Act (CEAA), the following information needs to be provided in a class environmental assessment conducted as a screening (paraphrasing):

- a description of the existing environment;
- any change the project may cause in the environment including: land, water, air, organic and inorganic matter, living organisms, and the interaction of natural systems;
- any effects that the project may cause to a listed wildlife species, its critical habitat or residences of individuals of that species, as those terms are defined in subsection 2(1) of the *Species at Risk Act*;
- the effects of a project-related environmental change on: health and socio-economic conditions; physical and cultural heritage; the current use of lands and resources for traditional purposes by aboriginal persons; and any structure, site or thing that is of historical, archeological, paleontological or architectural significance;
- any such project change or effect occurring both within or outside Canada;
- all environmental effects that may result from the various phases of the project (construction, operation, modification, abandonment and decommissioning);
- the environmental effects of accidents and malfunctions;
- the effects of the environment on the project (including effects due to climate change);
- the cumulative environmental effects of this project that are likely to result from the project in combination with other projects or activities that have been or will be carried out;
- the likelihood of significant adverse environmental effects;
- the need for and requirements of a follow-up program;
- comments from the public obtained in accordance with CEAA;
- any measures to be taken that would mitigate identified environmental effects;
- any other matter that the responsible authority deems to be necessary including those required for a comprehensive study, mediation or panel.

Additional factors to be considered for a comprehensive study, mediation or panel include:

- the purpose of the project;
- alternatives means of carrying out the project;
- design of a follow up program;
- the capacity of renewable resources affected by the project to meet the needs of the present and those of the future.

If the decommissioning and abandonment phases are not currently part of the proposed project, the proponent may explain this in its EA document, and the responsible authority under *CEAA* may decide not to require further analysis on these phases of the project as part of the current assignment.

Nothing in this document will limit the prerogative of federal authorities to seek additional information as more is learned about the specifics of the projects and its potential effects. Responsible authorities will be making a judgment about the likelihood of significant adverse environmental effects after mitigation, and they have the discretion to determine what information they require before making such a judgment.

## **SUPPORTING DOCUMENT #5**

### **PRELIMINARY FACTORS, SUB-FACTORS, CRITERIA AND INDICATORS FOR EVALUATION OF AREA TRANSPORTATION SYSTEM PLANNING ALTERNATIVES AND PROVINCIAL ROADWAY ALTERNATIVES**

SUPPORTING DOCUMENT #5						
PRELIMINARY FACTORS, SUB-FACTORS, CRITERIA AND INDICATORS FOR EVALUATION OF AREA TRANSPORTATION SYSTEM PLANNING ALTERNATIVES AND PROVINCIAL ROADWAY ALTERNATIVES						
FACTOR / SUB-FACTOR	CRITERIA	PRELIMINARY EVALUATION INDICATORS FOR EACH PHASE				RATIONALE FOR FACTOR AND SUB-FACTOR EVALUATION
		TRANSPORTATION NEEDS ASSESSMENT	PRELIMINARY PLANNING	DETAILED PLANNING FOR PROVINCIAL ROADWAYS	PRELIMINARY DESIGN FOR PROVINCIAL ROADWAYS	
1. Natural Environmental Factors						
1.1 Fisheries and Aquatic Ecosystems	1.1.1 Fish Habitat	Potential to affect fish species at risk (vulnerable, threatened or endangered fish species) and their habitat	Potential to affect fish species at risk (vulnerable, threatened or endangered fish species) and their habitat	Potential and significance of: <ul style="list-style-type: none"><li>• encroachment, severance, displacement;</li><li>• long-term alteration/disruption</li></ul> as applicable to the following: <ul style="list-style-type: none"><li>• critical fish habitat features</li><li>• riparian areas</li><li>• habitat rehabilitation goals</li></ul>	Potential and significance of: <ul style="list-style-type: none"><li>• encroachment, severance, displacement;</li><li>• long-term alteration/disruption</li><li>• short-term alteration/disruption (construction impacts).</li></ul> as applicable to the following: <ul style="list-style-type: none"><li>• critical fish habitat features</li><li>• riparian areas</li><li>• habitat rehabilitation goals</li></ul>	<ul style="list-style-type: none"><li>• The crossing of water bodies by transportation facilities has the potential to affect fish and aquatic habitat features through impediments to fish passage, loss of vegetation, changes to channel geomorphology (channel form and function), substrate and cover, changes to the water quality due to erosion and sedimentation, stormwater discharge and temperature changes.</li><li>• PPS Policy 1.6.6.4 stipulates that when planning for corridors and rights-of-way for significant transportation facilities, consideration will be given to significant natural heritage, water, agricultural, mineral, cultural heritage and archaeological resources. The context is provided in other PPS policy statements_ identified below.</li><li>• PPS Policy 2.1.5 requires that development and site alteration shall not be permitted in fish habitat except in accordance with provincial and federal requirements. In addition, policy 2.1.6 restricts development and site alteration on adjacent lands to natural heritage features (e.g. significant - wetlands, woodlands, valleylands etc.) unless the ecological function of the adjacent lands has been evaluated and it has been demonstrated that there will be no negative impacts on the natural features or on their ecological functions.</li><li>• It is an objective of the PPS to protect, improve or restore the quality and quantity of surface water, including headwaters. Surface water features are an important part of the natural, economic and cultural landscape. PPS Policy 2.2.2 restricts development and site alteration in or near sensitive surface water features and groundwater features such that these features and their related hydrologic functions will be protected, improved or restored.</li><li>• The Federal Fisheries Act prohibits the harmful alteration, disruption or destruction of fish habitat, the introduction of deleterious substances to fish habitat and the blockage of fish passage. Where impacts cannot be mitigated, a Fisheries Compensation Plan is prepared in consultation with the CA/DFO to address agency concerns/requirements.</li><li>• Subsection 36(3) of the Fisheries Act prohibits the deposit of a deleterious substance, directly or indirectly, into waters frequented by fish.</li></ul>
	1.1.2 Fish Community			Potential and significance of: <ul style="list-style-type: none"><li>• encroachment, severance, displacement;</li><li>• long-term alteration/ disruption</li></ul> as applicable to the following: <ul style="list-style-type: none"><li>• fish species at risk (vulnerable, threatened or endangered fish species)</li><li>• fish movement/migration</li><li>• critical fish life stage processes (spawning, rearing, nursery, feeding)</li><li>• long-term fish community management goals</li></ul>	Potential and significance of: <ul style="list-style-type: none"><li>• encroachment, severance, displacement;</li><li>• long-term alteration/ disruption</li><li>• short-term alteration/disruption (construction impacts).</li></ul> as applicable to the following: <ul style="list-style-type: none"><li>• fish species at risk (vulnerable, threatened or endangered fish species)</li><li>• fish movement/migration</li><li>• critical fish life stage processes (spawning, rearing, nursery, feeding)</li><li>• long-term fish community management goals</li></ul>	
1.2 Terrestrial Ecosystems	1.2.1 Wildlife	Potential to affect wildlife species at risk (vulnerable, threatened or endangered wildlife species) and their habitat	Potential to affect wildlife species at risk (vulnerable, threatened or endangered wildlife species) and their habitat	Potential and significance of: <ul style="list-style-type: none"><li>• encroachment, severance, displacement;</li><li>• long-term alteration/ disruption</li></ul> as applicable to the following: <ul style="list-style-type: none"><li>• wildlife species at risk (vulnerable, threatened or endangered wildlife species)</li><li>• wildlife of local and regional importance</li><li>• migratory birds</li></ul>	Potential and significance of: <ul style="list-style-type: none"><li>• encroachment, severance, displacement;</li><li>• long-term alteration/ disruption</li><li>• short-term alteration/disruption (construction impacts).</li></ul> as applicable to the following: <ul style="list-style-type: none"><li>• wildlife species at risk (vulnerable, threatened or endangered wildlife species)</li><li>• wildlife of local and regional importance</li></ul>	<ul style="list-style-type: none"><li>• PPS Policy 1.6.6.4 stipulates that when planning for corridors and rights-of-way for significant transportation facilities, consideration will be given to significant natural heritage, water, agricultural, mineral, cultural heritage and archaeological resources. The context is provided in other PPS policy statements identified below.</li><li>• The presence of species identified by COSEWIC and COSSARO as vulnerable, threatened or endangered (VTE) requires consideration in the</li></ul>

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PRELIMINARY FACTORS, SUB-FACTORS, CRITERIA AND INDICATORS FOR EVALUATION OF AREA TRANSPORTATION SYSTEM PLANNING ALTERNATIVES AND PROVINCIAL ROADWAY ALTERNATIVES						
FACTOR / SUB-FACTOR	CRITERIA	PRELIMINARY EVALUATION INDICATORS FOR EACH PHASE				RATIONALE FOR FACTOR AND SUB-FACTOR EVALUATION
		TRANSPORTATION NEEDS ASSESSMENT	PRELIMINARY PLANNING	DETAILED PLANNING FOR PROVINCIAL ROADWAYS	PRELIMINARY DESIGN FOR PROVINCIAL ROADWAYS	
				<ul style="list-style-type: none"><li>critical wildlife habitat features</li><li>ecologically functional areas such as connective corridors or travel ways for movement/migration</li><li>important wildlife areas such as deeryards, heronries, waterfowl areas, important bird areas</li><li>wildlife management, rehabilitation/research program sites</li><li>interference with critical wildlife life stage processes (eg mating/rearing) etc</li></ul>	<ul style="list-style-type: none"><li>migratory birds</li><li>critical wildlife habitat features</li><li>ecologically functional areas such as connective corridors or travel ways for movement/migration</li><li>important wildlife areas such as deeryards, heronries, waterfowl areas, important bird areas</li><li>wildlife management, rehabilitation/research program sites</li><li>interference with critical wildlife life stage processes (eg mating/rearing) etc</li></ul>	<p>generation of route alternatives. Species or populations may be under pressure or susceptible to stress as a result of development. Since habitat for these species is often limited, impacts to areas where the presence of species at risk is suspected or confirmed should be avoided or minimized. The assessment should have regard for the PPS objective that development and site alteration will not be permitted in significant portions of the habitat of Threatened and Endangered Species. The reported presence of Species of Conservation Concern (as defined by MNR in the Significant Wildlife Habitat Technical Guides (SWHTG – MNR, 2000) and TRCA species of concern will also be considered.</p> <ul style="list-style-type: none"><li>The general prohibitions under the Species at Risk Act, which apply to federally protect migratory bird and aquatic species at risk as well as to all endangered and threatened species on federal lands.</li><li>Section 6 of the Migratory Bird Regulations under the Migratory Birds Convention Act, 1994, which prohibits the incidental take of migratory birds and the disturbance and destruction of taking of the nest of a migratory bird.</li><li>PPS Policy 2.1.4 prohibits development and site alteration in significant wetlands in the Canadian Shield north of Ecoregions 5E, 6E and 7E. The assessment should have regard for this objective. Wetlands serve ecological functions to varying degrees including groundwater recharge/discharge, flood attenuation, wildlife movement corridors, habitat for flora and fauna, and water filtration.</li><li>The Canadian Federal Policy on Wetland Conservation promotes the goal of no net loss of wetland function in areas where wetland loss has reached critical levels.</li></ul>
	1.2.2 Wetlands	Potential to affect provincially and locally significant wetlands	Potential to affect provincially and locally significant wetlands	<p>Potential and significance of:</p> <ul style="list-style-type: none"><li>encroachment, severance, displacement;</li><li>long-term alteration/ disruption</li></ul> <p>as applicable to the following:</p> <ul style="list-style-type: none"><li>provincially significant wetlands, their buffer areas, and their wetland function</li><li>evaluated and un-evaluated wetlands, their wetland buffer areas, and their wetland function</li><li>wetland management, research and/or wetland conservation programs/areas</li></ul>	<p>Potential and significance of:</p> <ul style="list-style-type: none"><li>encroachment, severance, displacement;</li><li>long-term alteration/ disruption</li><li>short-term alteration/disruption (construction impacts).</li></ul> <p>as applicable to the following:</p> <ul style="list-style-type: none"><li>provincially significant wetlands, their buffer areas, and their wetland function</li><li>evaluated and un-evaluated wetlands, their wetland buffer areas, and their wetland function</li><li>wetland management, research and/or wetland conservation programs/areas</li></ul>	<ul style="list-style-type: none"><li>PPS Policy 1.6.6.4 stipulates that when planning for corridors and rights-of-way for significant transportation facilities, consideration will be given to significant natural heritage, water, agricultural, mineral, cultural heritage and archaeological resources. The context is provided in other PPS policy statements identified below.</li><li>It is important to recognize identified ecologically functional linkages between factors and sub-factors (within a natural heritage system) that contribute to landscape connectivity. The assessment should have regard for PPS Policy 2.1.2 which states that the diversity and connectivity of natural features in an area, and the long term ecological function and biodiversity of natural heritage systems, should be maintained, restored, or where possible improved, recognizing linkages between and among natural heritage features and areas, surface water features and groundwater features. The avoidance of wildlife corridors minimizes</li></ul>

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FACTOR / SUB-FACTOR	CRITERIA	PRELIMINARY EVALUATION INDICATORS FOR EACH PHASE				RATIONALE FOR FACTOR AND SUB-FACTOR EVALUATION
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						risks of wildlife mortality during operation of the facility. Secondary information on ecosystem linkages (aquatic and terrestrial) will be reviewed and supplemented by other available sources (including contacts with specialists, field findings).
1.2 Terrestrial Ecosystems (Cont'd)	1.2.3 Forests  (e.g. woodlands [forest stands, woodlots and interior forest habitat] and significant valley lands [valley and stream corridors])	Potential to affect significant woodlands/valley lands and areas supporting known populations of vegetation species at risk (vulnerable, threatened or endangered species)	Potential to affect significant woodlands/valley lands and areas supporting known populations of vegetation species at risk (vulnerable, threatened or endangered species)	Potential and significance of: <ul style="list-style-type: none"><li>• encroachment, severance, displacement;</li><li>• long-term alteration/ disruption</li></ul> as applicable to the following: <ul style="list-style-type: none"><li>• significant woodlands/valley lands</li><li>• forest management/research program areas</li></ul>	Potential and significance of: <ul style="list-style-type: none"><li>• encroachment, severance, displacement;</li><li>• long-term alteration/ disruption</li><li>• short-term alteration/disruption (construction impacts).</li></ul> as applicable to the following: <ul style="list-style-type: none"><li>• woodlands/valley lands</li><li>• forest management/research program areas</li></ul>	<ul style="list-style-type: none"><li>• PPS Policy 1.6.6.4 stipulates that when planning for corridors and rights-of-way for significant transportation facilities, consideration will be given to significant natural heritage, water, agricultural, mineral, cultural heritage and archaeological resources. The context is provided in other PPS policy statements identified below.</li><li>• The PPS Policy 2.1.4 only permits development and site alteration in significant woodlands south and east of the Canadian Shield where it can be demonstrated that there will be no negative impacts on the natural features or their ecological function. The assessment should have regard for the PPS protection objectives.</li><li>• The study area is located within the Carolinian Zone and may have important representations of Carolinian species assemblages. These natural heritage areas require protection.</li><li>• Small degraded, isolated remnant woodlots and wetlands can have ecological value. Large natural and relatively undisturbed features have high ecological sensitivity and value.</li></ul>
	1.2.4 Vegetation			Potential and significance of: <ul style="list-style-type: none"><li>• encroachment, severance, displacement;</li><li>• long-term alteration/ disruption</li></ul> as applicable to the following: <ul style="list-style-type: none"><li>• populations of vegetation species at risk (vulnerable, threatened or endangered species), species of conservation concern and significant regional/local flora/communities</li><li>• areas/corridors supporting known populations of vegetation species at risk (vulnerable, threatened or endangered species), species of conservation concern and significant flora/communities</li><li>• vegetation management, rehabilitation/research program sites</li></ul>	Potential and significance of: <ul style="list-style-type: none"><li>• encroachment, severance, displacement;</li><li>• long-term alteration/ disruption</li><li>• short-term alteration/disruption (construction impacts).</li></ul> as applicable to the following: <ul style="list-style-type: none"><li>• populations of vegetation species at risk (vulnerable, threatened or endangered species), species of conservation concern and significant regional/local flora/communities</li><li>• areas/corridors supporting known populations of vegetation species at risk (vulnerable, threatened or endangered species), species of conservation concern and significant flora/communities</li><li>• vegetation management, rehabilitation/research program sites</li></ul>	
	1.2.5 Designated/Special Areas (such as world biosphere reserves, heritage rivers, ESAs, ESPAs, ANSIs, environmental plan areas, conservation reserves; and the designated special areas of national parks, provincial parks, conservation areas, etc)	Potential to affect designated/special areas	Potential to affect designated/special areas	Potential and significance of: <ul style="list-style-type: none"><li>• encroachment, severance, displacement;</li><li>• long-term alteration/ disruption;</li><li>• change in area character/ aesthetics;</li><li>• nuisance impacts;</li><li>• change to access / travel time;</li><li>• change to facilities / utilities / services.</li></ul> to designated/special areas.	Potential and significance of: <ul style="list-style-type: none"><li>• encroachment, severance, displacement;</li><li>• long-term alteration/ disruption;</li><li>• short-term alteration/disruption (construction impacts);</li><li>• change in area character/ aesthetics;</li><li>• nuisance impacts;</li><li>• change to access / travel time;</li><li>• change to facilities / utilities / services.</li></ul> to designated/special areas.	

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PRELIMINARY FACTORS, SUB-FACTORS, CRITERIA AND INDICATORS FOR EVALUATION OF AREA TRANSPORTATION SYSTEM PLANNING ALTERNATIVES AND PROVINCIAL ROADWAY ALTERNATIVES						
FACTOR / SUB-FACTOR	CRITERIA	PRELIMINARY EVALUATION INDICATORS FOR EACH PHASE				RATIONALE FOR FACTOR AND SUB-FACTOR EVALUATION
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						<p>there will be no negative impacts on the natural features or functions for which the area is identified.</p> <ul style="list-style-type: none"><li>• Areas that have been designated as Environmentally Significant Areas, Areas of Natural and Scientific Interest or Significant Valleylands may have landforms or plant communities associated with the area that are designated locally, regionally or provincially significant, or provide important corridors.</li><li>• ESAs are not explicitly included in the Provincial Policy Statement, but are often associated with other features subject to the policy statement (e.g. ANSIs, significant woodlands, significant habitat of endangered species or threatened species, significant wetlands, valleylands and wildlife habitat). They are also reflected in the MNR Land Use Guidelines, Conservation Authority Plans and municipal land use plans.</li><li>• PPS Policy 2.1.6 provides for development and site alteration on adjacent lands to listed natural heritage features and areas, only where the ecological function of the adjacent lands has been evaluated and it has been demonstrated that there will be no negative impacts on the natural features or on their ecological function.</li><li>• Policy 4.2.1.2 of the Greenbelt Plan 2005 states that the location and construction of infrastructure and expansions, extensions, operations and maintenance of infrastructure in the Protected Countryside are subject to specified criteria.</li></ul>
1.3 Groundwater	1.3.1 Areas of Ground water Recharge and Discharge	Potential to affect areas of groundwater recharge and discharge	Potential to affect areas of groundwater recharge and discharge	Potential and significance of alteration to areas of groundwater recharge and discharge due to physical intrusion or groundwater interception, draw-down, impoundment, obstruction, or soil compaction impacting groundwater base-flow and quality	Potential and significance of alteration to areas of groundwater recharge and discharge due to physical intrusion or groundwater interception, draw-down, impoundment, obstruction, or soil compaction impacting groundwater base-flow and quality	<ul style="list-style-type: none"><li>• PPS Policy 1.6.6.4 stipulates that when planning for corridors and rights-of-way for significant transportation facilities, consideration will be given to significant natural heritage, water, agricultural, mineral, cultural heritage and archaeological resources. The context is provided in other PPS policy statements identified below.</li><li>• Section 2.2 of the PPS identifies that the quality and quantity of water (including groundwater) should be protected improved or restored. The assessment should have regard for this objective. Transportation facilities have the potential to impact groundwater resources through removal of recharge areas, interference with discharge areas/shallow groundwater zones, and introduction of contaminated runoff. Consequently, impacts to areas identified as being susceptible to groundwater contamination and/or interference should be avoided/minimized to the extent possible.</li></ul>
	1.3.2 Groundwater Source Areas and Wellhead Protection Areas	Potential to affect groundwater source areas and wellhead protection areas	Potential to affect groundwater source areas and wellhead protection areas	Potential and significance of alteration to groundwater source areas and wellhead protection areas due to physical intrusion, or groundwater interception, draw-down, impoundment, obstruction and by soil compaction	Potential and significance of alteration to groundwater source areas and wellhead protection areas due to physical intrusion, or groundwater interception, draw-down, impoundment, obstruction and by soil compaction	
	1.3.3 Large Volume Wells	Potential to affect large volume wells	Potential to affect large volume wells	Potential and significance of alteration to large volume wells due to physical intrusion or groundwater interception, draw-down, impoundment, obstruction and by soil compaction	Potential and significance of alteration to large volume wells due to physical intrusion or groundwater interception, draw-down, impoundment, obstruction and by soil compaction	
	1.3.4 Private Wells	Not considered in this phase.	Not considered in this phase.	Potential and significance of alteration to private well use due to physical intrusion, or groundwater interception, draw-down, impoundment, obstruction and by soil compaction	Potential and significance of alteration to private well use due to physical intrusion, or groundwater interception, draw-down, impoundment, obstruction and by soil compaction	
	1.3.5 Groundwater-Dependent Commercial Enterprises  (e.g. water bottling operations)	Not considered in this phase.	Not considered in this phase.	Potential and significance of alteration to groundwater use by groundwater-dependent commercial enterprises due to physical intrusion, or groundwater interception, draw-down, impoundment, obstruction and by soil compaction	Potential and significance of alteration to groundwater use by groundwater-dependent commercial enterprises due to physical intrusion, or groundwater interception, draw-down, impoundment, obstruction and by soil compaction	

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PRELIMINARY FACTORS, SUB-FACTORS, CRITERIA AND INDICATORS FOR EVALUATION OF AREA TRANSPORTATION SYSTEM PLANNING ALTERNATIVES AND PROVINCIAL ROADWAY ALTERNATIVES						
FACTOR / SUB-FACTOR	CRITERIA	PRELIMINARY EVALUATION INDICATORS FOR EACH PHASE				RATIONALE FOR FACTOR AND SUB-FACTOR EVALUATION
		TRANSPORTATION NEEDS ASSESSMENT	PRELIMINARY PLANNING	DETAILED PLANNING FOR PROVINCIAL ROADWAYS	PRELIMINARY DESIGN FOR PROVINCIAL ROADWAYS	
	1.3.6 Groundwater-Sensitive Ecosystems  (e.g. groundwater fed wetlands, coldwater streams)	Not considered in this phase.	Not considered in this phase.	Potential and significance of alteration to groundwater-sensitive ecosystems due to physical intrusion, or groundwater interception, draw-down, impoundment, obstruction and by soil compaction	Potential and significance of alteration to groundwater-sensitive ecosystems due to physical intrusion, or groundwater interception, draw-down, impoundment, obstruction and by soil compaction	
1.4 Surface Water	1.4.1 Watershed / Sub-Watershed Drainage Features/Patterns	Potential to affect permanent watercourses	Potential to affect permanent watercourses	Potential and significance of: <ul style="list-style-type: none"><li>• encroachment, severance, displacement;</li><li>• long-term alteration/ disruption.</li></ul> as applicable to the following: <ul style="list-style-type: none"><li>• watercourse crossings (permanent, intermittent and ephemeral)</li><li>• floodplain or meander belts</li><li>• riparian areas</li><li>• sensitive headwater areas</li><li>• watershed and subwatershed management plans</li></ul>	Potential and significance of: <ul style="list-style-type: none"><li>• encroachment, severance, displacement;</li><li>• long-term alteration/ disruption.</li></ul> as applicable to the following: <ul style="list-style-type: none"><li>• watercourse crossings (permanent, intermittent and ephemeral)</li><li>• floodplain or meander belts</li><li>• riparian areas</li><li>• sensitive headwater areas</li><li>• watershed and subwatershed management plans</li></ul>	<ul style="list-style-type: none"><li>• Surface water features are an important part of the natural landscape in the Analysis Area. There are a number of permanent and intermittent watercourses flowing through the Analysis Area as well as a number of provincially and locally significant wetlands and various unnamed tributaries and agricultural swales present in the analysis area. Consequently, surface water quantity and quality could be negatively affected by the undertaking (e.g., reduction in surface water quantity, degradation of surface water quality, etc.) and therefore the ability to protect surface water quality, including the function of headwaters, need to be considered in the evaluation.</li></ul>
	1.4.2 Surface Water Quality and Quantity	Not considered in this phase	Not considered in this phase	Potential and significance of impacts on quality through direct and indirect discharges of contaminated and sediment-laden run-off  Potential and significance of impacts on hydrology due to changes in ground permeability, modifications to surface drainage patterns and alterations of water bodies	Potential and significance of impacts on quality through direct and indirect discharges of contaminated and sediment-laden run-off  Potential and significance of impacts on hydrology due to changes in ground permeability, modifications to surface drainage patterns and alterations of water bodies	
1.5 Air Quality	1.5.1 Local and Regional Air Quality  (Total contaminant and greenhouse gas emissions)	Potential to reduce the air quality consequences of traffic congestion	Potential to reduce the air quality consequences of traffic congestion	Not considered in this phase. See item below	Not considered in this phase. See item below.	<ul style="list-style-type: none"><li>• Air Quality impacts have the potential to affect human health.</li><li>• Alternatives through or near urban areas create the potential for increased contaminant levels.</li><li>• Dust emissions associated with construction related activities could cause temporary air quality issues.</li><li>• Greenhouse gases contribute to global warming.</li></ul>
	1.5.2 Sensitive receptors to air pollutants and greenhouse gas emissions	Not considered in this phase.	Not considered in this phase.	Presence and potential for impacts to sensitive receptors to air pollutants and greenhouse gas emissions	Potential and significance of effects on sensitive receptors to air pollutants and greenhouse gas emissions	
2. Land Use / Socio-Economic Environmental Factors						
2.1 Land Use Planning Policies, Goals, Objectives	2.1.1 First Nations Land Claims	Potential to affect areas for which there are First Nations outstanding land claims	Potential to affect areas for which there are First Nations outstanding land claims	Potential and significance of encroachment, severance, displacement to areas for which there are First Nations outstanding land claims	Potential and significance of encroachment, severance, displacement to areas for which there are First Nations outstanding land claims	<ul style="list-style-type: none"><li>• It is important that First Nations’s land claims within the Analysis Area are documented</li><li>• The Ontario Provincial Policy Statement notes that long-term prosperity and social well-being of Ontarians depends on maintaining strong communities, a clean and healthy environment and a strong economy. Transportation facilities play a key role in achieving these objectives.</li><li>• There is a need to co-ordinate transportation planning with municipal land planning as established through Official Plans, Secondary Plans and Zoning by-laws as these specify land uses supported by residents, municipalities and the province.</li><li>• The Greenbelt Plan notes that infrastructure is important to economic well-being, human health and quality of life in southern Ontario and the Greenbelt.</li><li>• Policy 4.2.1 of the Greenbelt Plan states that, for lands within the protected countryside, as defined by the Greenbelt Plan, 2005, infrastructure must meet one of the following policies; it supports agriculture, recreation and tourism, rural</li></ul>
	2.1.2 Provincial/Federal land use planning policies/goals/ objectives	Potential to support federal/provincial land use policies/goals/objectives	Potential to support federal/provincial land use policies/goals/objectives	Degree of compatibility with federal/provincial land use policies/goals/ objectives	Not considered in this phase.	
	2.1.3 Municipal (regional and local) land use planning policies/ goals/objectives (Official Plans)	Potential to support municipal Official Plans	Potential to support municipal Official Plans	Degree of compatibility with municipal Official Plans	Not considered in this phase.	
	2.1.4 Development Objectives of Private Property Owners	Not considered in this phase	Not considered in this phase	Potential to isolate property from current/future urban envelope  Impact on future land use	Not considered in this phase.	



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FACTOR / SUB-FACTOR	CRITERIA	PRELIMINARY EVALUATION INDICATORS FOR EACH PHASE				RATIONALE FOR FACTOR AND SUB-FACTOR EVALUATION
		TRANSPORTATION NEEDS ASSESSMENT	PRELIMINARY PLANNING	DETAILED PLANNING FOR PROVINCIAL ROADWAYS	PRELIMINARY DESIGN FOR PROVINCIAL ROADWAYS	
						settlement areas, resource use or the rural economic activity that exists and is permitted within the Greenbelt; or it serves the significant growth and economic development expected in southern Ontario beyond the Greenbelt by providing for the appropriate infrastructure connections among urban growth centers and between these centers and Ontario's borders.
2.2 Land Use / Community	2.2.1 First Nation Reserves	Potential to affect First Nation Reserves	Potential to affect First Nation Reserves	Potential and significance of: <ul style="list-style-type: none"><li>• encroachment, severance, displacement;</li><li>• long-term alteration/ disruption;</li><li>• change in area character / aesthetics;</li><li>• nuisance impacts;</li><li>• change to access / travel time.</li></ul> to First Nation Reserves	Potential and significance of: <ul style="list-style-type: none"><li>• encroachment, severance, displacement;</li><li>• long-term alteration/ disruption;</li><li>• short-term alteration/disruption (construction impacts);</li><li>• change in area character / aesthetics;</li><li>• nuisance impacts;</li><li>• change to access / travel time.</li></ul> to First Nation Reserves	<ul style="list-style-type: none"><li>• It is important that potential and significance of impacts to Indian Reservations and sacred grounds be recognized and addressed in accordance with Ontario's New Approach to Aboriginal Affairs (Spring 2005) and the Grand River Notification Agreement</li><li>• Property takings / displacements and changes / effects on local access have a significant impact on owners and tenants as well as the broader community.</li><li>• Property takings / displacements and changes / effects on local access have a significant impact on owners and tenants as well as the broader community and customer/client base.</li><li>• Disruption or displacement of institutional features may adversely affect the users of these features / facilities and the broader community.</li></ul>
	2.2.2 First Nations' Sacred Grounds	Not considered in this phase	Potential to affect First Nations' Sacred Grounds	Potential and significance of: <ul style="list-style-type: none"><li>• encroachment, severance, displacement;</li><li>• long-term alteration/ disruption;</li><li>• change in area character / aesthetics;</li><li>• nuisance impacts;</li><li>• change to access / travel time.</li></ul> To First Nations' sacred grounds	Potential and significance of: <ul style="list-style-type: none"><li>• encroachment, severance, displacement;</li><li>• long-term alteration/ disruption;</li><li>• short-term alteration/disruption (construction impacts);</li><li>• change in area character / aesthetics;</li><li>• nuisance impacts;</li><li>• change to access / travel time.</li></ul> To First Nations' sacred	
	2.2.3 Urban and Rural Residential	Potential to affect urban and residential areas	Potential to affect urban and residential areas	Potential and significance of: <ul style="list-style-type: none"><li>• encroachment, severance, displacement, property acquisition;</li><li>• long-term alteration/ disruption;</li><li>• change in area character/ aesthetics;</li><li>• nuisance impacts;</li><li>• change to access / travel time;</li><li>• change to facilities / utilities / services.</li></ul> to urban and rural residential areas (residents [owners/tenants] and community groups).	Potential and significance of: <ul style="list-style-type: none"><li>• encroachment, severance, displacement, property acquisition;</li><li>• long-term alteration/ disruption;</li><li>• short-term alteration/disruption (construction impacts);</li><li>• change in area character/ aesthetics;</li><li>• nuisance impacts;</li><li>• change to access / travel time;</li><li>• change to facilities / utilities / services.</li></ul> to urban and rural residential areas (residents [owners/tenants] and community groups).	
	2.2.4 Commercial/Industrial	Not considered in this phase	Potential to affect commercial and industrial areas	Potential and significance of: <ul style="list-style-type: none"><li>• encroachment, severance, displacement, property acquisition;</li><li>• long-term alteration/ disruption;</li><li>• change in area character/ aesthetics;</li><li>• nuisance impacts;</li><li>• change to access / travel time;</li><li>• change to facilities / utilities / services.</li></ul> to commercial and industrial areas	Potential and significance of: <ul style="list-style-type: none"><li>• encroachment, severance, displacement, property acquisition;</li><li>• long-term alteration/ disruption;</li><li>• short-term alteration/disruption (construction impacts);</li><li>• change in area character/ aesthetics;</li><li>• nuisance impacts;</li><li>• change to access / travel time;</li><li>• change to facilities / utilities / services.</li></ul>	

SUPPORTING DOCUMENT #5 PRELIMINARY FACTORS, SUB-FACTORS, CRITERIA AND INDICATORS FOR EVALUATION OF AREA TRANSPORTATION SYSTEM PLANNING ALTERNATIVES AND PROVINCIAL ROADWAY ALTERNATIVES						
FACTOR / SUB-FACTOR	CRITERIA	PRELIMINARY EVALUATION INDICATORS FOR EACH PHASE				RATIONALE FOR FACTOR AND SUB-FACTOR EVALUATION
		TRANSPORTATION NEEDS ASSESSMENT	PRELIMINARY PLANNING	DETAILED PLANNING FOR PROVINCIAL ROADWAYS	PRELIMINARY DESIGN FOR PROVINCIAL ROADWAYS	
				(business owners/tenants and customers).	to commercial and industrial areas (business owners/tenants and customers).	
	2.2.5 Tourist Areas and Attractions  (e.g. museums, theatres, etc.)	Not considered in this phase	Potential to affect tourist areas and attractions	Potential and significance of: <ul style="list-style-type: none"><li>• encroachment, severance, displacement, property acquisition;</li><li>• long-term alteration/ disruption;</li><li>• change in area character/ aesthetics;</li><li>• nuisance impacts;</li><li>• change to access / travel time;</li><li>• change to facilities / utilities / services.</li></ul> To tourist areas and attractions.	Potential and significance of: <ul style="list-style-type: none"><li>• encroachment, severance, displacement, property acquisition;</li><li>• long-term alteration/ disruption;</li><li>• short-term alteration/disruption (construction impacts);</li><li>• change in area character/ aesthetics;</li><li>• nuisance impacts;</li><li>• change to access / travel time;</li><li>• change to facilities / utilities / services.</li></ul> to tourist areas and attractions.	
2.2 Land Use / Community	2.2.6 Community Facilities / Institutions  (e.g. hospitals, schools, places of worship, unique community features)	Not considered in this phase	Potential to affect community facilities and institutions	Potential and significance of: <ul style="list-style-type: none"><li>• encroachment, severance, displacement, property acquisition;</li><li>• long-term alteration/ disruption;</li><li>• change in area character/ aesthetics;</li><li>• nuisance impacts;</li><li>• change to access / travel time;</li><li>• change to facilities / utilities / services.</li></ul> To community facilities and institutions.	Potential and significance of: <ul style="list-style-type: none"><li>• encroachment, severance, displacement, property acquisition;</li><li>• long-term alteration/ disruption;</li><li>• short-term alteration/disruption (construction impacts);</li><li>• change in area character/ aesthetics;</li><li>• nuisance impacts;</li><li>• change to access / travel time;</li><li>• change to facilities / utilities / services.</li></ul> to community facilities and institutions.	
	2.2.7 Municipal Infrastructure and Public Service Facilities  (e.g. sewage and water services, police/emergency services, local utilities)	Not considered in this phase	Not considered in this phase	Potential and significance of: <ul style="list-style-type: none"><li>• encroachment, severance, displacement;</li><li>• long-term alteration/ disruption;</li><li>• change to access / travel time;</li><li>• change to facilities / utilities / services.</li></ul> to municipal infrastructure and public service facilities.	Potential and significance of: <ul style="list-style-type: none"><li>• encroachment, severance, displacement;</li><li>• long-term alteration/ disruption;</li><li>• short-term alteration/disruption (construction impacts);</li><li>• change to access / travel time;</li><li>• change to facilities / utilities / services.</li></ul> to municipal infrastructure and public service facilities.	
2.3 Noise Sensitive Areas (NSAs)  (residential areas and sensitive institutional uses)	2.3.1 Highway Noise	Potential for increased traffic noise in NSAs	Potential for increased traffic noise in NSAs	Potential for significant traffic noise increases in NSAs	Potential for increase of traffic noise in NSAs by 5 dBA, or to above a 45 dBA ambient within 10 years of project construction	<ul style="list-style-type: none"><li>• The Ontario Ministry of the Environment (MOE) has published Noise Pollution Control (NPC) and Land Use (LU) planning guidelines. These MOE documents establish ambient noise criteria, based on one-hour average sound pressure levels (Leq), and evaluate ambient vibration levels based on either Peak or RMS velocity, as applicable. Noise levels generally rise with increased traffic volumes.</li><li>• MOE/MTO Noise Protocol requires that highway noise be considered in all Provincial (MTO) Transportation projects</li></ul>
	2.3.2 Construction Noise	Not considered in this phase	Not considered in this phase	Not considered in this phase	Potential and significance of increase in construction noise to NSAs	
2.4 Land Use / Resources	2.4.1 First Nations' Treaty Rights or Use of Land and Resources for Traditional Purposes  (e.g. hunting, fishing, harvesting of	Potential to affect First Nations' Treaty Rights or use of land and resources for traditional purposes	Potential to affect First Nations' Treaty Rights or use of land and resources for traditional purposes	Potential and significance of: <ul style="list-style-type: none"><li>• encroachment, severance, displacement;</li><li>• long-term alteration/ disruption;</li><li>• nuisance impacts;</li></ul>	Potential and significance of: <ul style="list-style-type: none"><li>• encroachment, severance, displacement;</li><li>• long-term alteration/ disruption;</li><li>• short-term alteration/disruption</li></ul>	<ul style="list-style-type: none"><li>• It is important that potential and significance of impacts to Indian Reservations and sacred grounds be recognized and addressed in accordance with Ontario's New Approach to</li></ul>

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PRELIMINARY FACTORS, SUB-FACTORS, CRITERIA AND INDICATORS FOR EVALUATION OF AREA TRANSPORTATION SYSTEM PLANNING ALTERNATIVES AND PROVINCIAL ROADWAY ALTERNATIVES						
FACTOR / SUB-FACTOR	CRITERIA	PRELIMINARY EVALUATION INDICATORS FOR EACH PHASE				RATIONALE FOR FACTOR AND SUB-FACTOR EVALUATION
		TRANSPORTATION NEEDS ASSESSMENT	PRELIMINARY PLANNING	DETAILED PLANNING FOR PROVINCIAL ROADWAYS	PRELIMINARY DESIGN FOR PROVINCIAL ROADWAYS	
	country foods, harvesting of medicinal plants)			<ul style="list-style-type: none"><li>• change to access / travel time.</li></ul> to First Nations' treaty rights or use of land and resources for traditional purposes	(construction impacts); <ul style="list-style-type: none"><li>• nuisance impacts;</li><li>• change to access / travel time.</li></ul> to First Nations' treaty rights or use of land and resources for traditional purposes	Aboriginal Affairs (Spring 2005) and the Grand River Notification Agreement <ul style="list-style-type: none"><li>• Planning of transportation facilities must address First Nations' treaty rights, and be conducted in accordance with Ontario's New Approach to Aboriginal Affairs (Spring 2005) and the Grand River Notification Agreement</li></ul>
	2.4.2 Agriculture	Potential to affect specialty crop areas and/or areas of Canada Land Inventory Classes 1, 2 and 3 soils	Potential to affect specialty crop areas and/or areas of Canada Land Inventory Classes 1, 2 and 3 soils	Potential and significance of: <ul style="list-style-type: none"><li>• encroachment, severance, displacement, property acquisition;</li><li>• long-term alteration/ disruption;</li><li>• change in area character/ aesthetics;</li><li>• nuisance impacts;</li><li>• change to access / travel time;</li><li>• change to facilities / utilities / services.</li></ul> as applicable to the following: <ul style="list-style-type: none"><li>• Canada Land Inventory Classes 1, 2 and 3 soils</li><li>• Specialty crops/cropland</li><li>• Dairy/livestock operations</li><li>• Field crop operations</li><li>• High investment agricultural operations</li><li>• Established agricultural farm communities</li></ul>	Potential and significance of: <ul style="list-style-type: none"><li>• encroachment, severance, displacement, property acquisition;</li><li>• long-term alteration/ disruption;</li><li>• short-term alteration/disruption (construction impacts);</li><li>• change in area character/ aesthetics;</li><li>• nuisance impacts;</li><li>• change to access / travel time;</li><li>• change to facilities / utilities / services.</li></ul> as applicable to the following: <ul style="list-style-type: none"><li>• Canada Land Inventory Classes 1, 2 and 3 soils</li><li>• Specialty crops/cropland</li><li>• Dairy/livestock operations</li><li>• Field crop operations</li><li>• High investment agricultural operations</li><li>• Established agricultural farm communities</li></ul>	<ul style="list-style-type: none"><li>• PPS Policy 1.6.6.4 stipulates that when planning for corridors and rights-of-way for significant transportation facilities, consideration will be given to significant natural heritage, water, agricultural, mineral, cultural heritage and archaeological resources. The context is provided in other PPS policy statements identified below.</li><li>• Section 2.3 of the Provincial Policy Statement requires prime agricultural areas be protected for long-term use for agriculture. Prime agricultural areas include specialty crop areas and Classes 1, 2 and 3 soils in this order of priority.</li><li>• Ontario Ministry of Agriculture and Food (OMAF) has provincial guidelines for protection of prime agricultural lands as well as agricultural structures or infrastructure</li></ul>
2.4 Land Use / Resources (Cont'd)	2.4.3 Parks and Recreational Areas  (e.g. national/provincial parks, conservation areas, municipal parks, public spaces, golf courses, trails, greenways and open space linkages)	Potential to affect parks and recreational areas	Potential to affect parks and recreational areas.	Potential and significance of: <ul style="list-style-type: none"><li>• encroachment, severance, displacement, property acquisition;</li><li>• long-term alteration/ disruption;</li><li>• change in area character/ aesthetics;</li><li>• nuisance impacts;</li><li>• change to access / travel time;</li><li>• change to facilities / utilities / services.</li></ul> To parks and recreational areas.	Potential and significance of: <ul style="list-style-type: none"><li>• encroachment, severance, displacement, property acquisition;</li><li>• long-term alteration/ disruption;</li><li>• short-term alteration/disruption (construction impacts);</li><li>• change in area character/ aesthetics;</li><li>• nuisance impacts;</li><li>• change to access / travel time;</li><li>• change to facilities / utilities / services.</li></ul> to parks and recreational areas.	<ul style="list-style-type: none"><li>• Disruption or displacement of recreational / community features may adversely affect the users of the facility/feature. Parks are generally lands in public ownership aimed at preserving significant and sometimes unique components of the environment, and providing recreational opportunities. These areas should be avoided to the extent possible however, in some cases, transportation facilities can be situated along park boundaries without adversely affecting the park. Frequently, parts are isolated islands surrounded by development and as such they can function as wildlife refuge areas or may facilitate wildlife movement opportunities. PPS, 2005, Policy 1.5.1 states that healthy active communities shall be promoted by (d) considering the impacts of planning decisions on provincial parks, conservation reserves and conservation areas.</li></ul>
	2.4.4 Aggregates, Mineral Resources	Potential to affect aggregate and mineral resources sites	Potential to affect aggregate and mineral resources sites	Potential and significance of: <ul style="list-style-type: none"><li>• encroachment, severance, displacement, property acquisition;</li><li>• long-term alteration/ disruption;</li><li>• change to access / travel time;</li><li>• change to facilities / utilities / services.</li></ul> to current/future extraction of aggregate and mineral resources.	Potential and significance of: <ul style="list-style-type: none"><li>• encroachment, severance, displacement, property acquisition;</li><li>• long-term alteration/ disruption;</li><li>• short-term alteration/disruption (construction impacts);</li><li>• change to access / travel time;</li><li>• change to facilities / utilities / services.</li></ul> to current/future extraction of aggregate and mineral resources.	<ul style="list-style-type: none"><li>• PPS Policy 1.6.6.4 stipulates that when planning for corridors and rights-of-way for significant transportation facilities, consideration will be given to significant natural heritage, water, agricultural, mineral, cultural heritage and archaeological resources. The context is provided in other PPS policy statements identified below.</li><li>• Sections 2.4 and 2.5 of the Provincial Policy Statement have the objective of protecting mineral and aggregate resources for the long</li></ul>

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FACTOR / SUB-FACTOR	CRITERIA	PRELIMINARY EVALUATION INDICATORS FOR EACH PHASE				RATIONALE FOR FACTOR AND SUB-FACTOR EVALUATION
		TRANSPORTATION NEEDS ASSESSMENT	PRELIMINARY PLANNING	DETAILED PLANNING FOR PROVINCIAL ROADWAYS	PRELIMINARY DESIGN FOR PROVINCIAL ROADWAYS	
						<p>term. The policy statement makes provisions for the protection of both known deposits and areas of potential.</p> <ul style="list-style-type: none"><li>• MTO adheres to requirements of the Aggregates Act to protect aggregate resources while minimizing sterilization of mineral aggregate resources as much as possible.</li></ul>
<b>2.5 Major Utility Transmission Corridors</b>  (e.g. railroads, hydro, gas, oil)		Potential to affect major utility transmission corridors	Potential to affect major utility transmission corridors	Potential and significance of: <ul style="list-style-type: none"><li>• encroachment, severance, displacement;</li><li>• long-term alteration/ disruption;</li><li>• change to access / travel time;</li><li>• change to facilities / utilities / services.</li></ul> To major utility transmission corridors.	Potential and significance of: <ul style="list-style-type: none"><li>• encroachment, severance, displacement;</li><li>• long-term alteration/ disruption;</li><li>• short-term alteration/disruption (construction impacts);</li><li>• change to access / travel time;</li><li>• change to facilities / utilities / services.</li></ul> to major utility transmission corridors.	<ul style="list-style-type: none"><li>• Utility corridors are subject to regulations from owners and governing authorities for operation of utilities including National Energy Board, Ontario Energy Board, Transport Canada, Railway Safety Act, etc.</li></ul>
<b>2.6 Contaminated Property and Waste Management</b>  (e.g. Landfills, Hazardous Waste Sites, “Brownfield” Areas, other known contaminated sites, and high-risk contamination areas)		Potential to affect landfills (open and closed), hazardous waste sites “brownfield” areas, and other known contaminated sites, and high-risk contamination areas	Potential to affect landfills (open and closed), hazardous waste sites “brownfield” areas, and other known contaminated sites, and high-risk contamination areas	Potential and significance of: <ul style="list-style-type: none"><li>• encroachment, severance, displacement;</li><li>• long-term alteration/disruption;</li><li>• change to access / travel time;</li><li>• change to facilities / utilities / services.</li></ul> to contaminated property and waste management.	Potential and significance of: <ul style="list-style-type: none"><li>• encroachment, severance, displacement;</li><li>• long-term alteration/disruption;</li><li>• short-term alteration/disruption (construction impacts);</li><li>• change to access / travel time;</li><li>• change to facilities / utilities / services.</li></ul> to contaminated property and waste management.	<ul style="list-style-type: none"><li>• Localized significant sources of property contamination can be associated with operating and closed waste disposal sites, the latter being of more significance due to their difficulty in accurately locating them. Consideration should be given to avoiding/ minimizing effects in the “area of influence” of waste disposal sites.</li><li>• There is the potential that some of the lands in the project area may be contaminated due to the nature of existing and historical land use especially in older commercial/industrial areas and in areas with heavy industrial activity. Sources of potential property contamination in rural areas are most commonly associated with service stations; isolated pockets of commercial/industrial areas; unknown fill areas; scrap yards and other high-risk land uses. Impacts to these areas should be avoided / minimized to the extent possible.</li><li>• Appropriate assessments will be carried on these sites and the project will comply with the appropriate.</li></ul>
<b>2.7 Landscape Composition</b>	2.7.1 Scenic Composition (total aesthetic value of landscape components)	Not considered in this phase	Not considered in this phase	Potential and significance of change to scenic composition (total aesthetic value of landscape components).	Potential and significance of destruction / disturbance of specimen trees.	<ul style="list-style-type: none"><li>• Visual impacts on adjacent land use and effects on the visual experiences for users of the facility will be considered.</li></ul>
	2.7.2 Sensitive Viewer Groups	Not considered in this phase	Not considered in this phase	Potential and significance of change vistas/outlooks for sensitive viewer groups.	Potential and significance of change to scenic composition (total aesthetic value of landscape components).	
	2.7.3 Scenic value of views/vistas from the transportation facility	Not considered in this phase	Not considered in this phase	Potential and significance of views/vistas from the transportation facility.	Potential and significance of views/vistas from the transportation facility.	
	2.7.4 Specimen Trees	Not considered in this phase	Not considered in this phase	Not considered in this phase	Potential and significance of change vistas/outlooks for sensitive viewer groups.	
<b>3. Cultural Environmental Factors</b>						
<b>3.1 Cultural Heritage – Built Heritage and Cultural Landscapes</b>	3.1.1 Buildings or “Standing” Sites of Architectural or Heritage Significance or Ontario Heritage Foundation Easement Properties	Potential to affect buildings or “standing” sites of extreme local, provincial or national interest or Ontario Heritage Foundation easements properties	Potential to affect buildings or “standing” sites of extreme local, provincial or national interest or Ontario Heritage Foundation easements properties	Potential and significance of: <ul style="list-style-type: none"><li>• encroachment, severance, displacement, property acquisition;</li><li>• long-term alteration/ disruption;</li><li>• change in area character/ aesthetics;</li><li>• nuisance impacts;</li><li>• change to access / travel time;</li><li>• change to facilities / utilities / services.</li></ul>	Potential and significance of: <ul style="list-style-type: none"><li>• encroachment, severance, displacement, property acquisition;</li><li>• long-term alteration/ disruption;</li><li>• change in area character/ aesthetics;</li><li>• nuisance impacts;</li><li>• change to access / travel time;</li><li>• change to facilities / utilities / services.</li></ul>	<ul style="list-style-type: none"><li>• A new transportation facility may result in the loss of built heritage features resulting in a depletion of the cultural heritage resources / heritage character in the area.</li><li>• Impacts to built heritage features should be avoided to the extent possible, or as a secondary alternative relocation rather than demolition could be considered.</li></ul>

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FACTOR / SUB-FACTOR	CRITERIA	PRELIMINARY EVALUATION INDICATORS FOR EACH PHASE				RATIONALE FOR FACTOR AND SUB-FACTOR EVALUATION
		TRANSPORTATION NEEDS ASSESSMENT	PRELIMINARY PLANNING	DETAILED PLANNING FOR PROVINCIAL ROADWAYS	PRELIMINARY DESIGN FOR PROVINCIAL ROADWAYS	
				to buildings or “standing” sites of extreme local, provincial or national interest or Ontario Heritage Foundation easements properties.	to buildings or “standing” sites of extreme local, provincial or national interest or Ontario Heritage Foundation easements properties.	<ul style="list-style-type: none"><li>• MTO is required to operate in accordance with Cemeteries Act</li><li>• MTO is required to operate in accordance with Ontario Heritage Act</li></ul>
	3.1.2 Heritage Bridges	Potential to affect heritage bridges	Potential to affect heritage bridges	Potential for destruction or significant alteration of heritage bridges	Potential for destruction or significant alteration of heritage bridges	
	3.1.3 Areas of Historic 19 <sup>th</sup> Century Settlement	Potential to affect areas of historic 19 <sup>th</sup> century settlement	Potential to affect areas of historic 19 <sup>th</sup> century settlement	Potential and significance of: <ul style="list-style-type: none"><li>• encroachment, severance, displacement;</li><li>• long-term alteration/ disruption;</li><li>• change in area character/ aesthetics;</li><li>• nuisance impacts;</li><li>• change to access / travel time;</li><li>• change to facilities / utilities / services.</li></ul> to areas of historic 19 <sup>th</sup> century settlement.	Potential and significance of: <ul style="list-style-type: none"><li>• encroachment, severance, displacement;</li><li>• long-term alteration/ disruption;</li><li>• change in area character/ aesthetics;</li><li>• nuisance impacts;</li><li>• change to access / travel time;</li><li>• change to facilities / utilities / services.</li></ul> to areas of historic 19 <sup>th</sup> century settlement.	
	3.1.4 Cultural Heritage Landscapes  (collection of individual man-made features modifying pristine landscape)	Not considered in this phase	Not considered in this phase	Potential and significance of change to composition of cultural landscapes.	Potential and significance of change to composition of cultural landscapes.	
	3.1.5 First Nations’ Burial Sites	Not considered in this phase	Not considered in this phase	Potential and significance of: <ul style="list-style-type: none"><li>• encroachment, severance, displacement;</li><li>• long-term alteration/ disruption;</li><li>• change in area character / aesthetics;</li><li>• nuisance impacts;</li><li>• change to access / travel time.</li></ul> to First Nations' burial sites.	Potential and significance of: <ul style="list-style-type: none"><li>• encroachment, severance, displacement;</li><li>• long-term alteration/ disruption;</li><li>• change in area character / aesthetics;</li><li>• nuisance impacts;</li><li>• change to access / travel time.</li></ul> to First Nations' burial sites.	
	3.1.6 Cemeteries	Potential to affect cemeteries	Potential to affect cemeteries	Potential and significance of: <ul style="list-style-type: none"><li>• encroachment, severance, displacement;</li><li>• long-term alteration/ disruption;</li><li>• change in area character/ aesthetics;</li><li>• nuisance impacts;</li><li>• change to access / travel time;</li><li>• change to facilities / utilities / services.</li></ul> to cemeteries.	Potential and significance of: <ul style="list-style-type: none"><li>• encroachment, severance, displacement;</li><li>• long-term alteration/ disruption;</li><li>• short-term alteration/disruption (construction impacts);</li><li>• change in area character/ aesthetics;</li><li>• nuisance impacts;</li><li>• change to access / travel time;</li><li>• change to facilities / utilities / services.</li></ul> to cemeteries.	
3.2 Cultural Heritage - Archaeology	3.2.1 Pre-Historic and Historic First Nations Sites	Potential to affect significant pre-historic and historic First Nations archaeological sites of extreme local, provincial or national interest	Potential to affect significant pre-historic and historic First Nations archaeological sites of extreme local, provincial or national interest	Potential for destruction or disturbance of pre-historic and historic First Nations archaeological sites of extreme local, provincial or national interest	Potential for destruction or disturbance of pre-historic and historic First Nations archaeological sites of extreme local, provincial or national interest	<ul style="list-style-type: none"><li>• Disturbance or destruction of certain archaeological sites of extreme local, provincial or national interest represents a significant cultural loss.</li><li>• Impacts to archaeological resources/sites should be avoided or minimized to the extent possible.</li><li>• Significant archaeological sites shall be preserved and avoided in accordance with Ontario Ministry of Culture (OMC), and Aboriginal People’s policies and procedures, and all others shall be excavated to OMC standards</li></ul>
	3.2.2 Historic Euro-Canadian Archaeological Sites	Potential to affect significant historic Euro-Canadian archaeological sites of extreme local, provincial or national interest	Potential to affect significant historic Euro-Canadian archaeological sites of extreme local, provincial or national interest	Potential for destruction or disturbance of historic Euro-Canadian archaeological sites of extreme local, provincial or national interest	Potential for destruction or disturbance of historic Euro-Canadian archaeological sites of extreme local, provincial or national interest	
4. Area Economy						
4.1 First Nations Industry		Potential to support First Nations industry in the area by efficient and reliable movement of people and goods	Potential to support First Nations industry in the area by efficient and reliable movement of people and goods	Not considered in this phase	Not considered in this phase	<ul style="list-style-type: none"><li>• Transportation congestion negatively affects existing business, industry and trade, adding significant costs to doing business and is a deterrent to new businesses considering locating</li></ul>
4.2 Heavy Industry and Trade		Potential to support area heavy industry and	Potential to support heavy industry and trade	Not considered in this phase	Not considered in this phase	

SUPPORTING DOCUMENT #5						
PRELIMINARY FACTORS, SUB-FACTORS, CRITERIA AND INDICATORS FOR EVALUATION OF AREA TRANSPORTATION SYSTEM PLANNING ALTERNATIVES AND PROVINCIAL ROADWAY ALTERNATIVES						
FACTOR / SUB-FACTOR	CRITERIA	PRELIMINARY EVALUATION INDICATORS FOR EACH PHASE				RATIONALE FOR FACTOR AND SUB-FACTOR EVALUATION
		TRANSPORTATION NEEDS ASSESSMENT	PRELIMINARY PLANNING	DETAILED PLANNING FOR PROVINCIAL ROADWAYS	PRELIMINARY DESIGN FOR PROVINCIAL ROADWAYS	
		trade by efficient and reliable goods movement	by efficient and reliable goods movement			<ul style="list-style-type: none"><li>or expanding in the Analysis Area.</li><li>Travel reliability for commercial vehicles is a concern given the impacts of construction, maintenance or collisions on the already congested transportation system.</li><li>A large proportion of recreational travel is based on longer distance auto based trips, therefore tourism and recreational travel is significantly affected by congestion on the area roadway network. Tourism is currently Ontario's fifth largest export industry and is projected to become the fourth largest in the near future. Tourism includes recreation and the cottage sector.</li><li>Agriculture is an important component of the overall economic base of the Analysis Area. Travel for agricultural equipment on local roads is severely affected by longer distance trips diverted from congested highways. Transportation of agricultural supplies and products is affected by congestion on the area road network.</li><li>PPS Policy 1.6.6.4 stipulates that when planning for corridors and rights-of-way for significant transportation facilities, consideration will be given to significant natural heritage, water, agricultural, mineral, cultural heritage and archaeological resources. The context is provided in other PPS policy statements identified below.</li><li>The Provincial Policy Statement, 2005 stipulates that prime agricultural areas shall be protected for long-term use for agriculture. Prime agricultural areas are areas where prime agricultural lands predominate. Specialty crop areas shall be given the highest priority for protection followed by Classes 1, 2 and 3 soils, in this order of priority.</li></ul>
4.3 Tourism and Recreation Industry		Potential to support area tourism and recreation industry by efficient and reliable movement of people	Potential to support tourism and recreation industry by efficient and reliable movement of people	Not considered in this phase	Not considered in this phase	
4.4 Agriculture Industry		Potential to support area agriculture industry by efficient movement of goods	Potential to support area agriculture industry by efficient movement of goods	Not considered in this phase	Not considered in this phase	
5. Transportation Factors						
5.1 Federal/Provincial/Municipal transportation planning policies/goals/objectives		Potential to support federal/provincial/municipal transportation planning policies/goals/objectives	Potential to support federal/provincial/municipal transportation planning policies/goals/objectives	Not considered in this phase.	Not considered in this phase.	<ul style="list-style-type: none"><li>The Official Plans of municipalities within the Analysis Area, and the strategic growth policies and targets embodied in the Provincial Growth Plan, suggest that population and employment growth will continue over time and will be important to future economic prosperity. In order for this economic growth to be realized, an efficient transportation system to move both people and goods within and through the Analysis Area is considered fundamental.</li><li>The effectiveness of each alternative needs to be determined.</li><li>There is a need to determine how transportation solutions address future needs in relation to existing and proposed future transportation infrastructure.</li><li>There is a need to determine how well transportation solutions operate during peak periods.</li></ul>
5.2 Efficient movement of people		Potential to support the efficient movement of people between communities and regions based on network, screenline and critical link performance measures including Level of Service (LOS) and volume to capacity (v/c)	Potential to support the efficient movement of people between communities and regions based on Level of Service (LOS) and volume to capacity (v/c) on a network, screenline and critical link basis	Potential to support the efficient movement of people between communities and regions based on Level of Service (LOS) and volume to capacity (v/c) on a network, screenline and critical link basis	Not considered in this phase.	
5.3 Efficient movement of goods		Potential to support efficient movement of goods between urban growth centres and regional intermodal facilities based on road network and Highway 7&8 corridor performance measures (LOS and travel speed)	Potential to support efficient movement of goods between urban growth centres and regional intermodal facilities based on road network and Highway 7&8 corridor performance measures (LOS and travel speed)	Potential to support efficient movement of goods between urban growth centres and regional intermodal facilities based on road network and Highway 7&8 corridor performance measures (LOS and travel speed)	Not considered in this phase.	
5.4 System reliability / redundancy		Potential to support system reliability and redundancy for travel (people and goods) between regions and communities during adverse conditions	Potential to support system reliability and redundancy for travel (people and goods) between regions and communities during adverse conditions	Potential to support system reliability and redundancy for travel (people and goods) between regions and communities during adverse conditions	Not considered in this phase	

SUPPORTING DOCUMENT #5						
PRELIMINARY FACTORS, SUB-FACTORS, CRITERIA AND INDICATORS FOR EVALUATION OF AREA TRANSPORTATION SYSTEM PLANNING ALTERNATIVES AND PROVINCIAL ROADWAY ALTERNATIVES						
FACTOR / SUB-FACTOR	CRITERIA	PRELIMINARY EVALUATION INDICATORS FOR EACH PHASE				RATIONALE FOR FACTOR AND SUB-FACTOR EVALUATION
		TRANSPORTATION NEEDS ASSESSMENT	PRELIMINARY PLANNING	DETAILED PLANNING FOR PROVINCIAL ROADWAYS	PRELIMINARY DESIGN FOR PROVINCIAL ROADWAYS	
5.5 Safety		Potential to improve traffic safety based on opportunity to reduce congestion on area road network (LOS and v/c) and reduce the frequency of intersections and entrances in the Highway 7&8 corridor	Potential to improve traffic safety based on opportunity to reduce congestion on area road network (LOS and v/c) and reduce the frequency of intersections and entrances in the Highway 7&8 corridor	Potential to improve traffic safety based on opportunity to reduce congestion on area road network (LOS and v/c) and reduce the frequency of intersections and entrances in the Highway 7&8 corridor	Potential for collisions recognizing side road intersections, presence of auxiliary lanes, number/spacing of entrances, available sight distance, storage for disabled vehicles, etc.	<ul style="list-style-type: none"><li>• Transportation agencies have developed design standards to ensure that safety objectives are reflected in all new/expanded infrastructure. These standards are not subject to modification or compromise to avoid/reduce impacts, costs, etc.</li><li>• Goods movement between economic centres and growth areas incurs out-of-way travel and delay due to congestion through the Analysis Area. Reducing travel times, out-of-way travel and improving travel time reliability would lead to lower transportation costs and benefit the local, provincial and national economy.</li><li>• There is a need to determine how well transportation solutions operate during peak periods.</li><li>• There is a need to determine emergency access and safety issues related to transportation solutions.</li><li>• There is a need to determine the flexibility of transportation solutions to address future needs beyond the forecasted planning horizon.</li><li>• Physical conditions and staging issues can affect the feasibility of implementing transportation solutions.</li><li>• There is the need identify the costs associated with possible transportation solutions. Construction costs can influence the feasibility of a given alternative</li></ul>
5.6 Modal integration, balance and efficiency		Potential to improve modal choice and increase mode split for person trips between communities, regions and major transit station areas based on travel performance indicators (LOS, v/c, travel speed) at critical screenlines and on potential to provide higher order transit service in the Highway 7&8 corridor.	Potential to improve modal choice and increase mode split for person trips between communities, regions and major transit station areas based on travel performance indicators (LOS, v/c, travel speed) at critical screenlines and on potential to provide higher order transit service in the Highway 7&8 corridor.	Potential to improve modal choice and increase mode split between communities, regions and intermodal facilities based on travel performance indicators (LOS, v/c, travel speed) at critical screenlines and for Highway 7&8 corridor.	Not considered in this phase.	
5.7 Linkages to Population and Employment Centres		Potential to improve accessibility to urban growth centres for people and goods movement based on higher order network (roads and transit) continuity and connectivity	Potential to improve accessibility to urban growth centres for people and goods movement based on higher order network continuity and connectivity	Potential to improve accessibility to urban growth centres for people and goods movement based on higher order network continuity and connectivity	Not considered in this phase.	
5.8 Recreation and Tourism Travel		Potential to support recreation and tourism travel within and to/from the Analysis Area by provision of higher order network (roads and transit) continuity and connectivity and through network performance indicators (LOS, v/c, travel speed)	Potential to support recreation and tourism travel within and to/from the Analysis Area by provision of higher order network (roads and transit) continuity and connectivity and through network performance indicators (LOS, v/c, travel speed)	Potential to support recreation and tourism travel within and to/from the Analysis Area by provision of higher order network (roads and transit) continuity and connectivity and through network performance indicators (LOS, v/c, travel speed)	Not considered in this phase.	
5.9 Accommodation for pedestrians, cyclists and snowmobiles		Potential to accommodate pedestrians, cyclists within critical travel corridors in urbanized areas and snowmobiles in recognized rural trails	Potential to accommodate pedestrians, cyclists within critical travel corridors in urbanized areas and snowmobiles in recognized rural trails	Potential to accommodate pedestrians, cyclists within critical travel corridors in urbanized areas and snowmobiles in recognized rural trails	Not considered in this phase.	
5.10 Constructability		Not considered in this phase.	Potential ease of implementation considering feasibility/difficulty of physical, property or environmental constraints	Potential ease of implementation considering feasibility/difficulty of physical, property or environmental constraints	Potential ease of implementation considering feasibility/difficulty of physical, property or environmental constraints	
5.11 Construction Cost (excludes property costs and engineering costs)		Not considered in this phase.	Not considered in this phase.	Relative road construction cost, excluding property and engineering costs	Relative road construction cost, excluding property and engineering costs	
5.12 Traffic Operations		Not considered in this phase.	Potential impact on traffic operations due to factors such as design features, private access, and transportation network connections	Potential impact on traffic operations due to factors such as design features, private access, and transportation network connections	Potential impact on traffic operations due to factors such as design features, private access, and transportation network connections	
NOTES:		Notes regarding evaluation criteria for transportation needs assessment and the preliminary planning phases: <ul style="list-style-type: none"><li>• information to support evaluation is drawn from secondary source information and preliminary field reconnaissance (the environmental information is documented in Report “F” – 1<sup>st</sup> Part)</li></ul>		Notes regarding evaluation criteria for the detailed planning and the preliminary design phases: <ul style="list-style-type: none"><li>• information to support evaluation is enhanced by field investigation work as appropriate (the environmental information is documented in Report “F” – 2<sup>nd</sup> Part)</li><li>• “Measures” for detailed planning evaluation criteria will be developed during preliminary planning</li><li>• “Measures” for preliminary design evaluation criteria will be developed during detailed planning</li></ul>		

**SUPPORTING DOCUMENT #6**

**RECORD OF CONSULTATION DURING PREPARATION  
OF THE STUDY PLAN**



**RECORD OF CONSULTATION DURING PREPARATION OF THE STUDY PLAN**

TO BE COMPLETED AS PART OF FINAL STUDY PLAN



Ministry of Transportation

# **Highway 7&8 Transportation Corridor Planning and Class EA Study**

From Greater Stratford to New Hamburg Area  
MTO Group Work Project # 13-00-00

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## Report A: Study Plan for Technical Work, Outreach and Consultation

# DRAFT

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July, 2007

[www.7and8corridorstudy.ca](http://www.7and8corridorstudy.ca)



This report is presented in draft format in order to obtain information and comments from stakeholders. Your input is requested by October 30, 2007 so the report can be finalized.

"Ce document hautement spécialisé n'est disponible qu'en anglais en vertu du règlement 411/97, qui en exempte l'application de la Loi sur les services en français. Pour de l'aide en français, veuillez communiquer avec le ministère des Transports, Bureau des services en français au: 905-704-2045 ou 905-704-2046."

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## **SUPPORTING DOCUMENTATION**

- Supporting Document #1: List of Abbreviations and Glossary of Terms
- Supporting Document #2: Highway 7&8 Transportation Corridor Planning and Class EA Study, Summary of Reports
- Supporting Document #3: Detailed Description of Alternatives
- Supporting Document #4: Federal/Provincial EA Co-ordination
- Supporting Document #5: Preliminary Factors, Sub-Factors, Criteria and Indicators for Evaluation of Area Transportation System Alternatives and Provincial Roadway Alternatives
- Supporting Document #6: Record of Consultation During Preparation of the Study Plan (to be completed before finalizing the Study Plan)

## LIST OF EXHIBITS

- Exhibit 1.1: Map of Analysis Area
- Exhibit 1.2: Summary of Study Objectives
- Exhibit 1.3: Preliminary Statement of Transportation Problems and Opportunities
- Exhibit 2.1: Overview of Planning and Class EA Study Process (Key Tasks, Reports, PICs and Information Presented, Preliminary Schedule)
- Exhibit 3.1: Assumptions of EA Proponency and Completion of Work
- Exhibit 5.1: Application of GGH Growth Plan and Provincial Policy Statement Policy Framework
- Exhibit 5.2: 'Area Transportation System' Context
- Exhibit 5.3: Comparison of Ideal Highway Geometric Conditions and Those on Highway 7&8
- Exhibit 7.1: Summary of Application Of Evaluation Methodologies
- Exhibit 7.2: Preliminary Identification Of Factors, Sub-factors And Criteria To Be Considered In The Generation, Assessment And Evaluation Of Alternatives
- Exhibit 7.3: Process Overview for the Development, Assessment and Evaluation of the Area Transportation System Alternatives (Phase 2 of Study) and Preliminary Planning Alternatives (Phase 3 of Study)
- Exhibit 7.4: Principles for Generating Preliminary and Detailed Planning Alternatives
- Exhibit 7.4: Process Overview for the Development, Assessment and Evaluation of Detailed Planning Alternatives for Provincial Roadway (Phase 4 of Study)
- Exhibit 9.1: Categories of Stakeholders
- Exhibit 9.2: Role of Stakeholders
- Exhibit 10.1: Transportation Environmental Study Report Contents



## **1 INTRODUCTION**

### **1.1 Introduction To The Highway 7&8 Transportation Corridor Planning And Class EA Study**

The Ministry of Transportation (MTO) has initiated a Highway 7&8 Transportation Corridor Planning and Class Environmental Assessment (Class EA) Study, from Greater Stratford to the New Hamburg area. The study will:

- develop a plan that addresses:
  - capacity, operation and safety needs along the 2-lane section of Highway 7&8 between Stratford and the New Hamburg area and through the urban centres (Stratford, Shakespeare and New Hamburg) along Highway 7&8 for the movement of people and goods; and
  - linkage needs between the analysis area to transportation corridors serving other regions in the province.
- prepare a preliminary design for the provincial roadway components of that plan; and
- be documented in a Transportation Environmental Study Report for public review at study completion.

This study will also:

- Review and build on the MTO Highway 7&8 Study Design – Greater Stratford to New Hamburg Area, December 2005;
- Address the transportation policies and directions of the ‘Growth Plan for the Greater Golden Horseshoe’ (recognizing that a portion of the analysis area for this project lies within the GGH);
- Recognize several municipal transportation initiatives in the area;
- Recognize other relevant transportation corridor studies being undertaken by MTO; and
- Be carried out as a Group ‘A’ project, in accordance with the Class Environmental Assessment for Provincial Transportation Facilities.

Access to the above documents can be obtained through the project website at [www.7and8corridorstudy.ca](http://www.7and8corridorstudy.ca).

A major component of the study will be an outreach and consultation program structured around six key points of decision-making, each of which will be supported by:

- the release of a newsletter;
- the release of draft reports for review and comment;
- a round of Public Information Centres (PICs);
- posting of information on the study web site; and
- newspaper notices announcing the above.

At the completion of the study, the filing of a Transportation Environmental Study Report (TESR) will be announced through newspaper notices. Decisions on funding and timing

of detail design and construction are based upon environmental clearance of the TESR, since it determines the type of transportation facilities and their location.

This Study Plan is designed to provide a comprehensive framework to guide the study. For an overview of this framework, readers are referred to the following exhibits in the Study Plan:

- Exhibit 1.1: Map of Analysis Area
- Exhibit 1.2: Summary of Study Objectives
- Exhibit 1.3: Preliminary Statement of Transportation Problems and Opportunities
- Exhibit 2.1: Overview of Planning and Class EA Study Process (Key Tasks, Reports, PICs and Information Presented, Preliminary Schedule)
- Exhibit 3.1: Assumptions of EA Proponency and Completion of Work
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- Exhibit 7.4: Principles for Generating Preliminary and Detailed Planning Alternatives
- Exhibit 7.5: Process Overview for the Development, Assessment and Evaluation of Detailed Planning Alternatives for Provincial Roadway (Phase 4 of Study)
- Exhibit 9.1: Categories of Stakeholders
- Exhibit 9.2: Summary of Role of Stakeholders
- Exhibit 10.1: Transportation Environmental Study Report Contents

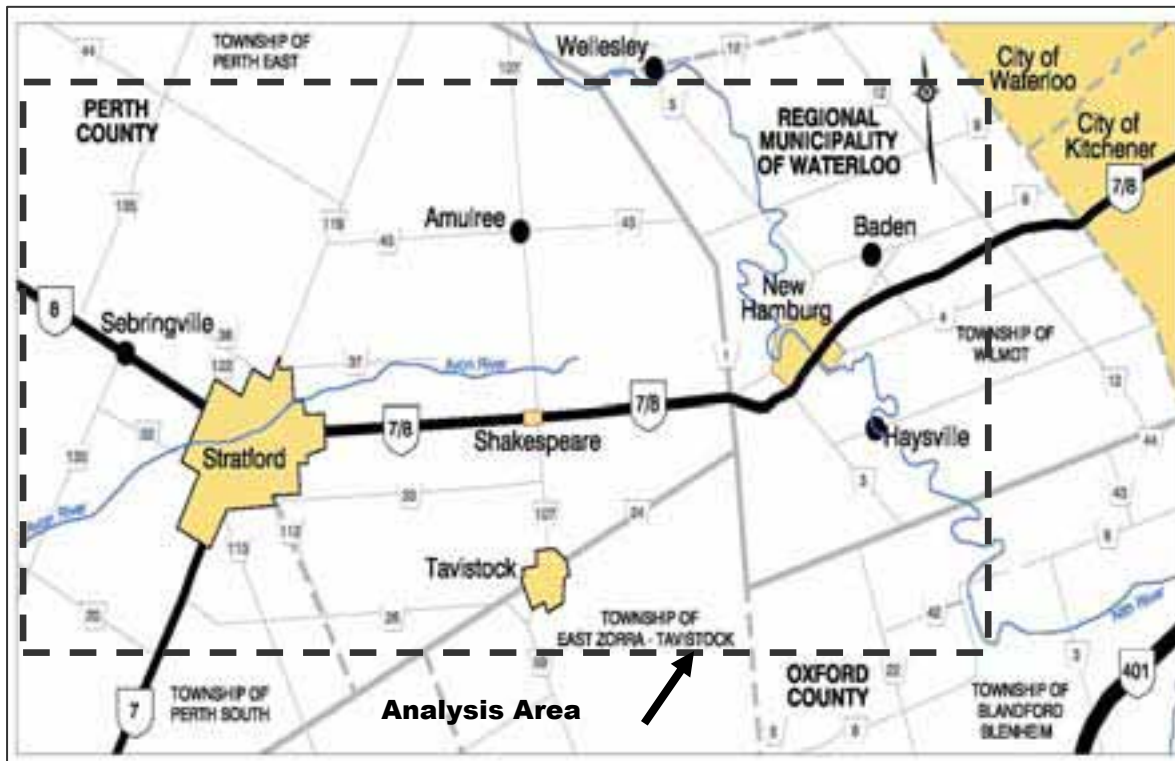
These exhibits may be presented at the first round of Public Information Centres.

For orientation and reference, a map of the Analysis Area follows. The Analysis Area has been established to identify transportation problems and opportunities associated with Highway 7&8 from Greater Stratford to the New Hamburg area plus the broader 'Area Transportation System'. The Analysis Area is not intended to represent a Study Area for the planning alternatives to be generated during the course of the study. The Study Area will be generated by the MTO Project Team through consultation with affected stakeholders as described in Sections 2.2 and 7.5.1.5 of this Study Plan.

## Exhibit 1.1

### HIGHWAY 7&8 TRANSPORTATION CORRIDOR PLANNING & CLASS EA STUDY

#### MAP OF ANALYSIS AREA



## 1.2 Study Objectives

The objectives of the Highway 7&8 Transportation Corridor Planning and Class EA Study are, in part, based upon the policies of the final Growth Plan for the Greater Golden Horseshoe, released by the province on June 16, 2006. The study objectives are summarized in Exhibit 1.2 and then discussed below:

<b>Exhibit 1.2</b> <b>Highway 7&amp;8 Transportation Corridor Planning and Class EA Study</b> <b>Summary of Study Objectives</b>	
1.	To identify and assess the factors that are driving 'Area Transportation System' needs
2.	To apply those driving factors in preparing a Transportation Development Strategy to address long-term multi-year needs for the movement of people and goods
3.	To undertake the planning and preliminary design of the provincial roadway components (provincial highways and provincial transitways) of those strategies
4.	To conduct the planning and preliminary design of provincial roadways with an inherent approach of avoiding or minimizing overall environmental impacts
5.	To identify highway access management measures for growth management and highway protection
6.	To engage public and stakeholders early in the study process and continue to engage them throughout the study process

The study objectives are the following:

- 1. To identify and assess the factors that are driving 'Area Transportation System' needs:**
  - to identify and assess factors that are driving 'Area Transportation System' needs, including area travel characteristics and the state of the existing provincial highway infrastructure (physical and operational); land use, area economics, employment, population, technology, environmental, socio-economic and cultural factors; and related programs, policy and legislation (for a definition and description of 'Area Transportation System', see Section 5.2.1 of this Study Plan);
- 2. To apply those driving factors in preparing a Transportation Development Strategy to address long-term multi-year needs for the movement of people and goods:**

- to apply those driving factors in preparing a Transportation Development Strategy to address long-term multi-year needs for the movement of people and goods within the context of a balanced and integrated 'Area Transportation System', which:
  - a) provides adequate 'Area Transportation System' capacity in order to serve current and projected needs of the travelling public, stimulate economic growth, and create jobs;
  - b) ensures that the corridors necessary for the various travel modes of the 'Area Transportation System' are identified and protected, in order to maintain and improve transportation linkages;
  - c) is co-ordinated and consistent with land-use related growth objectives and growth forecasts, in order to reflect the impact of designation of areas as urban growth centres, major transit station areas, settlement areas, built-up areas, intensification areas and corridors, non-urban areas, greenfield areas and greenbelt; and
  - d) has the following attributes:
    - (i) considers both the connectivity of modes, and the separation of modes within corridors, in order to provide travel choice for the various modes of the 'Area Transportation System' and thereby reduce reliance on any single mode;
    - (ii) puts the transit component of the 'Area Transportation System' (GO Transit, provincial transitways, other inter-city transit) as the first investment priority in order to support growth in a compact and efficient form;
    - (iii) puts goods movement as the first investment priority in the provincial highway component of the 'Area Transportation System', for service to cities, other major centres of population and other regions of the province, priority truck routes leading into those communities, and major regional goods movement facilities such as intermodal facilities.

**3. To undertake the planning and design of the provincial roadway components (provincial highways and provincial transitways) of those strategies:**

- to pursue the provincial roadway components (provincial highways and provincial transitways) of the Transportation Development Strategy by undertaking their planning, design and protection as modern, safe, efficient and effective facilities.

**4. To conduct the planning and design of provincial roadways with an inherent approach of avoiding or minimizing overall environmental impacts:**

- to conduct the planning and design of provincial roadways with an inherent approach of avoiding or minimizing overall environmental impacts (ie To avoid

natural, socio-economic and cultural environmental impacts) through consideration of alternatives and “mitigation measures”;

**5. To identify highway access management measures for growth management and highway protection:**

- to identify highway access management measures in order to:
  - discourage highway-related development in areas not designated for growth;
  - protect the purpose and level of service of ‘Area Transportation System’ provincial highways; and
  - protect the benefits of any new provincial highway capacity; and

**6. To engage public and stakeholders early in the study process and continue to engage them throughout the study process:**

- to engage public and stakeholders early in the study process and continue to engage them, in order to provide meaningful and regular outreach and consultation that is integrated with and supports the study work and decision-making process.

**1.3 Preliminary Statement of Transportation Problems and Opportunities**

Based upon previous MTO studies, and the final Growth Plan for the Greater Golden Horseshoe (released by the province on June 16, 2006), a preliminary statement of problems and opportunities for the Highway 7&8 Transportation Corridor Planning and Class EA Study is provided in Exhibit 1.3 below:

<b>Exhibit 1.3</b> <b>Highway 7&amp;8 Transportation Corridor Planning and Class EA Study</b> <b>Preliminary Statement of Transportation Problems and Opportunities</b>	
1.	There are transportation capacity concerns for the movement of both people and goods along the 2-lane section of Highway 7&8 between Stratford and the New Hamburg area and on Highway 7&8 through the urban centres (Stratford, Shakespeare and New Hamburg).
2.	Provincial / inter-regional traffic through the urban centres (Stratford and Shakespeare) along Highway 7&8 interferes with their “downtown / historic crossroads” function.
3.	The connection of the analysis area to transportation corridors serving other regions in the province may be inadequate for long-term transportation and economic development needs.
4.	Geometric and traffic safety characteristics along Highway 7&8 should be addressed with respect to long-term traffic needs.

<b>Exhibit 1.3</b> <b>Highway 7&amp;8 Transportation Corridor Planning and Class EA Study</b> <b>Preliminary Statement of Transportation Problems and Opportunities</b>	
5.	There is currently no comprehensive highway access management plan for Highway 7&8 from Greater Stratford to New Hamburg to protect highway needs and to address the GGH policy of discouraging inappropriate highway-related growth.
6.	The GGH Growth Plan policy of co-ordinating transportation system planning and land use planning must be addressed.

Highway 7&8 transportation corridor problems and opportunities are discussed in further detail in Section 5.2.4 of this Study Plan.

#### **1.4 Purpose Of This Study Plan and its Relevance to the Overall Planning & EA Process**

This Study Plan is the first deliverable of the planning and Class EA Study. The Study Plan establishes the framework and commitments for conducting the planning and Class EA Study, particularly in the areas of:

- study purpose and objectives;
- study process;
- study reports;
- outreach and consultation program;
- study schedule; and
- processes to generate and evaluate alternatives.

The Study Plan builds on the principles and processes for transportation engineering, environmental protection, evaluation, consultation and documentation that are specified in the 'Class EA for Provincial Transportation Facilities'. Further details of the Class EA process and the rationale for the framework of the Study Plan are provided in Sections 2.1 and 4.0.

In addition, the Study Plan provides the role of a scoping document under the *Canadian Environmental Assessment Act* (CEAA), to:

- confirm the "scope of project" that is being assessed (project description);
- establish the scope of factors to be considered in the EA process;
- describe the methodology to assess the environmental effects of the project, including the specific methodologies for assessing cumulative effects and for determining significance; and
- provide the basis for requesting federal authorities to "trigger" CEAA as early as is practicable in the planning process before "irrevocable decisions" are made.

## **2 OUTLINE OF PLANNING AND CLASS EA STUDY PROCESS**

### **2.1 Overview of the Class EA Process and the Class Environmental Assessment For Provincial Transportation Facilities**

The *Environmental Assessment Act* (EA Act) provides for the preparation of a Class Environmental Assessment (Class EA) for submission to the Minister of the Environment for review and a decision by the provincial cabinet regarding approval through order-in-council. A Class EA is an approved planning document that defines groups of projects and activities and the environmental assessment (EA) processes which the proponent commits to following for each of these undertakings.

The Ontario Ministry of Transportation developed the 'Class Environmental Assessment for Provincial Transportation Facilities', which was approved by Order in Council 1653/99 on October 6, 1999, as amended on July 14, 2000. It provides, in part, the following:

- classification of projects and activities;
- study stages and phases;
- transportation engineering and environmental protection principles;
- consultation principles and processes;
- documentation and "bump-up" principles and processes; and
- environmental clearance process.

This Highway 7&8 Transportation Corridor Planning and Class EA Study will comply with the Class EA process for 'Group A' projects (as defined under the Class Environmental Assessment for Provincial Transportation Facilities) for MTO undertakings in which highway widening, a major realignment and bypass of sections of existing highway, a new provincial highway (provided it is not a new 400-series highway), a new provincial transitway, or combinations of the above are possible outcomes.

By following the Class EA process, the Highway 7&8 Transportation Corridor Planning and Class EA Study does not require formal review and approval under the *Ontario Environmental Assessment Act*. The approved process itself is extensive, with significant consultation and outreach to agencies, stakeholders and the public.

If, at the completion of the Class EA study process, a stakeholder is not satisfied with MTO attempts to reach a resolution regarding concerns brought forward, that stakeholder may challenge the study by making a request to the Minister of the Environment to determine if a Part 2 order or "bump-up" is required. If the Minister agrees that a bump-up is required, the project would be re-designated to an individual environmental assessment, and would be subject to the formal review and approval processes noted above.



If, during the course of the study, it is determined that a new 400-series highway should be pursued, the Highway 7&8 Transportation Corridor Planning and Class EA Study would no longer be eligible to follow the Class EA process. Under such circumstances, the study would have to be converted to an “Individual EA” study, with the extended timeframes associated with formal review and approvals (which include the possibility of public hearings) required by the Ontario *Environmental Assessment Act*, as follows:

- the Study Plan would be converted to an Environmental Assessment Terms of Reference, and would be submitted to the Minister of the Environment for review and a decision by the Minister regarding approval; and
- the Transportation Environmental Study Report would be replaced by an Environmental Assessment Report, and would be submitted to the Minister of the Environment for review and a decision by the provincial cabinet regarding approval through order-in-council.

Because this Study Plan has been structured to be consistent with the requirements of a Terms of Reference, it provides the basis for an efficient transition to an individual Environmental Assessment in the event that the Study identifies a new 400-series highway as the preferred solution.

The overview of the planning and EA process for the Highway 7&8 Transportation Corridor Study that is provided in Section 2.2 below builds on the requirements provided in the Class Environmental Assessment for Provincial Transportation Facilities. A more detailed summary of the reports that will be produced for this study (both working papers and milestone reports) is provided in Supporting Document #2 for this Study Plan.

Environmental clearance of the Transportation Environmental Study Report (TESR) marks completion of the Highway 7&8 Transportation Corridor Planning and Class EA Study. If the TESR is cleared, the next stage of the project under the terms of the Class Environmental Assessment for Provincial Transportation Facilities, is detail design for provincial roadways (provincial highways and/or transitways). Detail design will follow the design and consultation processes outlined in the Class Environmental Assessment for Provincial Transportation Facilities, and will be documented in a Design and Construction Report (DCR).

## **2.2 Overview of the Planning and Class EA Study Process for The Highway 7&8 Transportation Corridor Study (Key Tasks, Reports, PICs and Information Presented, and Preliminary Schedule)**

Exhibit 2.1 below provides an overview of the planning and Class EA study process that will be used for the Highway 7&8 Transportation Corridor Study.

**Exhibit 2.1**  
**Highway 7&8 Transportation Corridor Planning and Class EA Study**  
**Overview of the Study Process**

STUDY PHASE	OBJECTIVES AND KEY TASKS	REPORTS	PUBLIC INFORMATION CENTRES (PICs) + INFORMATION PRESENTED	PRELIMINARY SCHEDULE
<b>1. STUDY PLAN</b>	<ul style="list-style-type: none"> <li>Establish framework to guide the study work, including: <ul style="list-style-type: none"> <li>study purpose and objectives</li> <li>overview of study process</li> <li>overview of study reports</li> <li>overview of outreach and consultation</li> <li>study schedule</li> <li>overview of processes, factors &amp; criteria to generate, assess &amp; evaluate alternatives</li> </ul> </li> </ul>	Report "A": Study Plan for Technical Work, Outreach and Consultation	PIC #1: <ul style="list-style-type: none"> <li>Study Newsletter #1</li> <li>Recently completed work: <ul style="list-style-type: none"> <li>drafts of Reports "A", "B" and 1<sup>st</sup> part of "F"</li> </ul> </li> <li>Proposed approach to upcoming work: <ul style="list-style-type: none"> <li>process to define 'Area Transportation System' problems and opportunities</li> <li>process and criteria for evaluating and selecting 'Area Transportation System' alternatives</li> <li>process, factors, and criteria for generating, assessing, and evaluating preliminary planning alternatives</li> </ul> </li> </ul>	April 2007 to August 2007  (PIC #1 July/August, 2007)
<b>EA STAGE 1: ALTERNATIVES TO THE UNDERTAKING - TRANSPORTATION NEEDS ASSESSMENT</b>				
<b>2. AREA TRANSPORTATION SYSTEM PLANNING</b>	<ul style="list-style-type: none"> <li>Overview of Transportation, Land Use, Economic and Environmental Conditions within the Analysis Area <ul style="list-style-type: none"> <li>description and assessment of land use and economic conditions</li> <li>description and assessment of existing transportation conditions</li> <li>preliminary assessment of problems and opportunities based on the above</li> <li>overview of environmental conditions and constraints within analysis area (based upon secondary source information)</li> </ul> </li> </ul>	Report "B": Working Paper – Overview of Transportation, Land Use and Economic Conditions within the Analysis Area  Report "F" – 1 <sup>st</sup> Part: Working Paper –Environmental Conditions and Constraints		
	<ul style="list-style-type: none"> <li>Identification of Area Transportation System Problems and Opportunities: <ul style="list-style-type: none"> <li>Establish travel demand forecasting approach and methodology</li> <li>Forecast future 'Area Transportation System' travel characteristics and patterns</li> <li>Detailed description and assessment of current and future 'Area Transportation System' problems and opportunities</li> </ul> </li> </ul>	Report "C": Working Paper – 'Area Transportation System' Problems and Opportunities	PIC#2: <ul style="list-style-type: none"> <li>Study Newsletter #2</li> <li>Recently Completed work: <ul style="list-style-type: none"> <li>drafts of Reports "C", "D", &amp; "E"</li> </ul> </li> <li>Proposed approach to upcoming work: <ul style="list-style-type: none"> <li>process and criteria for generating provincial roadway detailed planning alternatives</li> </ul> </li> </ul>	August 2007 to Spring 2008  (PIC #2 in Spring 2008)

**Exhibit 2.1**  
**Highway 7&8 Transportation Corridor Planning and Class EA Study**  
**Overview of the Study Process**

STUDY PHASE	OBJECTIVES AND KEY TASKS	REPORTS	PUBLIC INFORMATION CENTRES (PICs) + INFORMATION PRESENTED	PRELIMINARY SCHEDULE
	<ul style="list-style-type: none"> <li>• Identify 'Area Transportation System' alternatives:               <ul style="list-style-type: none"> <li>○ Do Nothing</li> <li>○ Transportation Demand Management (TDM)</li> <li>○ Transportation System Management (TSM)</li> <li>○ Local Transit*</li> <li>○ Inter-regional transit and passenger rail*</li> <li>○ Air Services*</li> <li>○ Marine Services*</li> <li>○ Freight Rail*</li> <li>○ Municipal Roads*</li> <li>○ Provincial Highways/Transitways*</li> </ul>               (* new or improved operations and/or infrastructure)             </li> <li>• Determine degree to which individual 'Area Transportation System' alternatives address problems and opportunities</li> <li>• Select and define elements of area transportation system alternatives and group them into combinations:               <ul style="list-style-type: none"> <li>○ Do nothing</li> <li>○ Combination #1: Optimize Existing Network</li> <li>○ Combination #2: New / Expanded Non-Road Infrastructure + Elements of Combination #1</li> <li>○ Combination #3: Widen/Improve Roads + Elements of Combination #2</li> <li>○ Combination #4: New Municipal Roads and/or Provincial Highways/Transitways + Elements of Combination #3</li> </ul> </li> <li>• Determine the degree to which combination alternatives address the problems and opportunities and select the preferred combination(s)</li> <li>• Select the alternatives that will proceed to Preliminary Planning</li> </ul>	Report "D": Working Paper – Area Transportation System Alternatives		

<b>Exhibit 2.1</b> <b>Highway 7&amp;8 Transportation Corridor Planning and Class EA Study</b> <b>Overview of the Study Process</b>				
STUDY PHASE	OBJECTIVES AND KEY TASKS	REPORTS	PUBLIC INFORMATION CENTRES (PICs) + INFORMATION PRESENTED	PRELIMINARY SCHEDULE
<b>3. PRELIMINARY PLANNING</b> (plans at 1:20,000 scale)	<ul style="list-style-type: none"> <li>• Generate the detailed elements of the preliminary planning alternatives (as applicable) based on transportation, natural, land use / social, economic and cultural factors:               <ul style="list-style-type: none"> <li>○ new/expanded services</li> <li>○ general areas of geometrical improvements and widening to existing facilities</li> <li>○ new corridors</li> <li>○ environmental protection for the above (by minimizing intrusion into areas of environmental significance as identified through secondary source information</li> <li>○ conceptual areas of limitations to highway access</li> </ul> </li> <li>• Comparative evaluation of the relative advantages and disadvantages of preliminary planning alternatives</li> <li>• Select alternatives for incorporation into transportation development strategy (including preliminary study area(s))</li> <li>• Decision if study is to continue through Phases 4-6 (<i>if provincial roadway alternatives are selected</i>)</li> </ul>	Report "E": Milestone Report – Highway 7&8 Transportation Corridor Needs Assessment		

**Exhibit 2.1**  
**Highway 7&8 Transportation Corridor Planning and Class EA Study**  
**Overview of the Study Process**

STUDY PHASE	OBJECTIVES AND KEY TASKS	REPORTS	PUBLIC INFORMATION CENTRES (PICs) + INFORMATION PRESENTED	PRELIMINARY SCHEDULE
<b>EA STAGE 2: ALTERNATIVE METHODS FOR CARRYING OUT THE UNDERTAKING</b>				
<b>4. DETAILED PLANNING FOR PROVINCIAL ROADWAYS</b>  (plans at 1:10,000 scale)	<ul style="list-style-type: none"> <li>Identify environmental conditions and constraints within the detailed planning study area (as identified through field investigations to augment secondary source information)</li> <li>Establish final study area(s) for provincial roadways for the preliminary planning alternatives carried forward from Phase 3</li> <li>Generate, specific location / type / character and template "footprint" for the following categories of provincial roadway detailed planning alternatives (as applicable): <ul style="list-style-type: none"> <li>new provincial transitway route location &amp; technology</li> <li>new provincial highway route location &amp; highway type</li> <li>specific location and type of geometrical improvements to existing highways</li> <li>specific location, extent and direction of widening to existing highways</li> </ul> </li> <li>Generate specialty engineering alternatives (bridge, drainage &amp; hydrology, foundation, pavement &amp; road base, traffic control &amp; electrical infrastructure) for the above</li> <li>For highway alternatives, establish specific nature &amp; location of limitations to highway access</li> <li>Undertake environmental impact assessment for the above (by striving to avoid or prevent major "footprint"-based environmental impacts to the area and its features, including fisheries and aquatic ecosystems, terrestrial ecosystems, groundwater, land use factors, contaminated property, built heritage &amp; cultural landscapes, archaeology, landscape composition, surface water, and designated areas; and by striving to avoid intrusion into noise-sensitive areas)</li> </ul>	Report "F" - 2 <sup>nd</sup> Part: Working Paper - Environmental Conditions and Constraints  Report "G": Working Paper - Generation of Detailed Planning Alternatives for Provincial Roadways	PIC#3: <ul style="list-style-type: none"> <li>Study Newsletter #3</li> <li>Recently completed work: <ul style="list-style-type: none"> <li>draft of Reports "G" &amp; 2<sup>nd</sup> part of "F"</li> </ul> </li> <li>Proposed approach to upcoming work: <ul style="list-style-type: none"> <li>process and criteria for evaluating &amp; selecting provincial roadway detailed planning alternatives</li> </ul> </li> </ul>	Spring 2008 to Fall 2008  (PIC #3 in Fall 2008)
	<ul style="list-style-type: none"> <li>Evaluate and select specific location / type / character and template "footprint" of the provincial roadway detailed planning alternatives</li> </ul>	Report "H": Milestone Report - Selection of Detailed Planning Alternatives for Provincial Roadways	PIC#4: <ul style="list-style-type: none"> <li>Study Newsletter #4</li> <li>Recently completed work: <ul style="list-style-type: none"> <li>draft of Report "H"</li> </ul> </li> <li>Proposed approach to upcoming work: <ul style="list-style-type: none"> <li>process and criteria for generating provincial roadway preliminary design alternatives</li> </ul> </li> </ul>	Fall 2008 to Fall 2009  (PIC #4 in Spring 2008)

**Exhibit 2.1**  
**Highway 7&8 Transportation Corridor Planning and Class EA Study**  
**Overview of the Study Process**

STUDY PHASE	OBJECTIVES AND KEY TASKS	REPORTS	PUBLIC INFORMATION CENTRES (PICs) + INFORMATION PRESENTED	PRELIMINARY SCHEDULE
<b>5. PRELIMINARY DESIGN FOR PROVINCIAL ROADWAYS</b>  (plans at 1:2,000 scale)	<ul style="list-style-type: none"> <li>For the detailed planning alternatives carried forward from Phase 4, generate provincial roadway alternatives for the following categories of preliminary design (as applicable):                             <ul style="list-style-type: none"> <li>calculated vertical &amp; horizontal alignment and cross-section</li> <li>highway interchange &amp; intersection preliminary design</li> <li>transitway station preliminary design</li> <li>location/design of private entrances to highway</li> </ul> </li> <li>Generate specialty engineering alternatives for the above (bridge, drainage &amp; hydrology, foundation, pavement &amp; road base, traffic control &amp; electrical infrastructure)</li> <li>For the above, develop environmental protection for the area and its features (as identified in Phase 4), including environmental control/mitigation, compensation and/or enhancement to address "footprint" impacts, interference impacts, traffic access modification impacts to property and neighbourhood/commercial areas, timing impacts; and by addressing effects of malfunctions or accidents, cumulative effects from the project in combination with other projects</li> <li>Identify right-of-way and property acquisition requirements</li> <li>Identify utility requirements (relocation etc)</li> <li>Develop preliminary staging of implementation</li> </ul>	Report "I": Working Paper – Generation of Preliminary Design Alternatives for Provincial Roadways	PIC#5: <ul style="list-style-type: none"> <li>Study Newsletter #5</li> <li>Recently completed work:                             <ul style="list-style-type: none"> <li>draft of Report "I"</li> </ul> </li> <li>Proposed approach to upcoming work:                             <ul style="list-style-type: none"> <li>process and criteria for evaluating &amp; selecting provincial roadway preliminary design alternatives</li> <li>process and criteria for evaluating and selecting provincial highway access management alternatives</li> </ul> </li> </ul>	Spring 2009 to Fall 2009  (PIC #5 in Fall 2009)
	<ul style="list-style-type: none"> <li>Evaluate and select provincial roadway preliminary design alternatives, and develop final access management plan</li> </ul>	Report "J": Milestone Report – Selection of Preliminary Design Alternatives for Provincial Roadways	PIC#6: <ul style="list-style-type: none"> <li>Study Newsletter #6</li> <li>Recently Completed Work                             <ul style="list-style-type: none"> <li>drafts of Reports "J" and "K"</li> </ul> </li> </ul>	Fall 2009 to Winter 2010  (PIC #6 in Winter 2010)
<b>6. TRANSPORTATION ENVIRONMENTAL STUDY REPORT</b>	<ul style="list-style-type: none"> <li>Filing of report, formal public review, and environmental "clearance"</li> </ul>	Report "K": Transportation Environmental Study Report (documentations overall study)	NO PIC <ul style="list-style-type: none"> <li>Study Newsletter #7</li> </ul>	TESR filed in Spring 2010
<b>PHASE 7: DETAIL DESIGN (documented in a Design and Construction Report) - NOT PART OF THIS STUDY</b>				

## **2.3 Federal/Provincial EA Co-ordination**

The Highway 7&8 Transportation Corridor Planning and EA Study is subject to the requirements of the *Ontario Environmental Assessment Act*. The requirements of the *Canadian Environmental Assessment Act* (CEAA) may also apply. Both governments have agreed to coordinate their respective EA processes as outlined in the Canada-Ontario Agreement on EA Cooperation, November 2004 (Harmonization Agreement).

The federal/provincial co-ordination process outlined in Supporting Document #4 of this Study Plan will guide the study. This approach is designed to address the information requirements of both federal and provincial environmental assessment Acts, in accordance with the harmonization agreement.

It is recognized by both the Canadian Environmental Assessment Agency (on behalf of the federal authorities) and MTO that ongoing dialogue on the information requirements should continue as the project progresses. As such, it may be necessary to provide additional or more detailed information as the EA process proceeds. The intent is to produce a single body of documentation on environmental effects to meet all of the information needs of both the federal and provincial governments. To the extent practical, federal/provincial information requirements regarding potential factors to be assessed in the context of this study have been integrated. General information requirements under CEAA can be found in Supporting Document #4 of this Study Plan.

## **2.4 Overview of Principles for Conducting the Study**

The Highway 7&8 Transportation Corridor Planning and Class EA Study will be conducted under the following areas of study principles:

- transportation engineering principles;
- environmental protection principles;
- evaluation principles; and
- stakeholder outreach, consultation and documentation principles.

These principles, which build on those specified in the Class Environmental Assessment for Provincial Transportation Facilities, are outlined in the subsections below.

### **2.4.1 Transportation Engineering Principles**

The transportation engineering principles that will be applied to the alternatives examined in the Highway 7&8 Transportation Corridor Planning and Class EA Study are based on the 'Class Environmental Assessment for Provincial Transportation Facilities', and include the following:

- a) provide for the efficient movement of people and goods;

- b) meet the needs of the travelling public as a whole, by maximizing opportunities for mobility;
- c) address the identified 'Area Transportation System' problems and opportunities, and maximize the opportunity to satisfy existing and future provincial travel demand;
- d) ensure compatibility, connectivity and consistency with the existing and future provincial and municipal transportation system;
- e) improve the level of service, safety and operation for the provincial transportation system users;
- f) ensure that sound engineering and scientific principles and judgement are applied to the best available data in the analysis, assessment and evaluation of transportation engineering problems, opportunities and solutions in order to meet or exceed current provincial design standards and practices;
- g) maximize opportunities to make the facility "more safe";
- h) avoid directing large volumes of long-distance provincial traffic through settlement areas;
- i) ensure the technical feasibility of planned construction, operation and maintenance;
- j) minimize property requirements and impacts on adjacent properties;
- k) use highway access management principles in order to preserve and protect the functional integrity of the provincial transportation system; and
- l) co-ordinate with municipal transportation studies and with other MTO transportation studies.

#### **2.4.2 Environmental Protection Principles**

The environmental protection principles that will be applied to the alternatives examined in the Highway 7&8 Transportation Corridor Planning and Class EA Study are based on the 'Class Environmental Assessment for Provincial Transportation Facilities', and include the following:

- a) conduct the study with an inherent approach of avoiding or minimizing overall environmental impacts through consideration of alternatives, with the objective of avoiding significant environmental areas;



- b) conduct the study to address the content of the following:
  - the Ministry of Transportation 'Environmental Protection Requirements for Transportation Planning and Highway Design, Construction, Operation and Maintenance'; and
  - the Ministry of Transportation 'Environmental Reference for Highway Design';
- c) meet the requirements of federal and provincial environmental legislation;
- d) meet the intent of government-approved policy and inter-ministerial protocols that relate to environmental protection;
- e) balance environmental protection considerations with transportation engineering considerations during each stage of the study process, recognizing that safety and effectiveness of the transportation system is fundamental to such decisions;
- f) recognize that it is seldom possible to satisfy all interests when making the tradeoffs necessary in the EA process, and that no single environmental factor is "paramount";
- g) identify existing environmental conditions and potential impacts relevant to the study, recognizing the following general categories of impacts at the appropriate study phase:
  - footprint impacts (to the area and its features)
  - interference impacts (to the area and its features)
  - traffic access modification impacts (to property, neighbourhoods, commercial areas)
  - emissions impacts (to air, water, soil and utilization of same)
  - ecological impacts
  - timing impacts (relative to season, week, day, hour, duration of the impacts above)
  - effects of malfunctions or accidents that may occur in connection with the project
  - cumulative environmental effects that are likely to result from the project in combination with other projects or activities;
- h) balance the approaches to environmental protection, recognizing that the general order of decreasing preference is as follows:
  - avoidance/prevention
  - control / mitigation (reducing the severity of environmental impacts)
  - compensation (provision of "equivalent" or countervailing environmental features)
  - enhancement (improvement over previous environmental conditions);
- i) provide mitigation effort in proportion to environmental significance and ability to reasonably mitigate with environmental mitigation measures that are technically and economically feasible;
- j) recognize that environmental mitigation measures themselves may have impacts to be considered;

- k) address the Ministry of Transportation's 'Statement of Environmental Values' (for access to this document, please see the study web site); and
- l) consider the Provincial Policy Statement related to land use planning and development issued under Section 3 of the Planning Act (for access to this document, please see the study web site).

### **2.4.3 Evaluation Principles**

The evaluation principles that will be applied to the alternatives examined in the Highway 7&8 Transportation Corridor Planning and Class EA Study are based on the 'Class Environmental Assessment for Provincial Transportation Facilities', and include the following:

- a) conduct the study with an underlying comparative evaluation process which starts with a broad perspective, and narrows to the more focussed, on a phased and iterative basis, as the study proceeds:
  - phasing of evaluation is the following:
    - evaluate and select 'Area Transportation System' alternatives;
    - evaluate and select preliminary planning alternatives;
    - evaluate and select provincial roadway detailed planning alternatives;
    - evaluate and select provincial roadway preliminary design and highway access management alternatives;
  - based on an overview representation evaluation process as provided in the Study Plan, the process will be reviewed and confirmed at each phase of evaluation to:
    - present technical information which is the subject of the evaluation process
    - present and obtain comment from external stakeholders on the proposed definition and refinement of the process to be applied at that phase of evaluation
    - present and obtain comment from external stakeholders on the results of the evaluation process;
- b) multiple alternatives to be considered;
- c) evaluation process to be comprehensive, traceable and replicable, and to be understandable by those who may be affected by the decisions;
- d) evaluation process at some phases may include a screening / short-listing component to improve efficiency and clarity;
- e) evaluation criteria to be comprehensive, fundamental, relevant, independent, measurable, well-defined;

- f) relevant factors, including natural environment, land use / socio-economic environment, cultural environment, area economy, and transportation to be given due consideration (for details, see Section 7.3 of this Study Plan); and
- g) appropriate areas of emphasis to recognized study area features and character, with evaluation factors/criteria to be refined if appropriate to reflect different sections of the study area and different stages of the study process.

#### **2.4.4 Stakeholder Outreach And Consultation Principles**

Outreach and consultation is a major component of the Highway 7&8 Transportation Corridor Planning and Class EA Study. The principles for outreach and consultation are the following:

- a) Comprehensive outreach and consultation plan:
  - is systematic, innovative and flexible;
  - is open, inclusive, responsive, transparent, traceable and defensible;
  - provides early and proactive explanation of “process” and policy requirements and how/why they are effectively/efficiently addressed by the Study Plan for Technical Work, Outreach and Consultation;
  - is structured around and focussed on points of key decision-making (for details see Section 2.2 of this Study Plan);
- b) Study work and decision-making process is integrated with and built upon the direct involvement and contributions of stakeholders:
  - structured decision-making process established through this Study Plan at the beginning of the study process
  - meaningful consultation with stakeholders at points of focused outreach and consultation before significant decisions are made. At each round of public information centres the following information will be presented:
    - recently completed study work (in draft – eg. preliminary findings and decisions)
    - the proposed approach to undertake upcoming study work (eg. generation and/or evaluation of alternatives)
  - consultation scheduled and implemented in a manner that permits stakeholders to make informed contributions to study decisions;
- c) Stakeholder examination/comment is encouraged:
  - notify stakeholders of intention to carry out the study and in advance of key study milestones (for details see Section 9.1 of this Study Plan)
  - comprehensive effort to identify and engage stakeholders
  - early outreach to stakeholder groups, and continued engagement during the study
  - explain stakeholder role, and importance of stakeholder participation

- enable stakeholders to understand the process and follow the study through its various stages
  - facilitate understanding of process and issues, which may include divergent or competing stakeholder interests
  - make information accessible and understandable
  - constructively address stakeholder input, with all relevant evidence, opinion and perspectives considered
  - reasonable effort made to resolve concerns
  - role and effect of outreach and consultation documented during the study (eg in each report), showing the effect of input received on the Study discussions/directions (within limits imposed by the *Freedom of Information and Protection of Privacy Act*);
- d) Clear outreach and consultation to each stakeholder category (for details see Section 9.7 of this Study Plan):
- First Nations
  - Business/commercial interest groups
  - Emergency service providers
  - General public
  - Municipalities
  - Regulatory agencies
  - Transportation service providers
  - Utility companies
- e) Effective documentation of study work and decision-making:
- documents prepared to support each point of key decision-making and focused outreach and consultation, and structured as inserts to the TESR (for details see Section 2.2 and Supporting Document #2 of this Study Plan)
  - documents organized for ease of access to information and reference, and in relation to relevance and in the overall planning and Class EA Study process
  - document content (e.g. exhibits) presented in a manner that facilitates use for PIC display boards, newsletters, etc
  - timely opportunity to review relevant information and documentation;
- f) Effective/innovative presentation of study information:
- use of a project website to inform / consult with stakeholders on an ongoing and timely basis
  - high quality mapping and graphics
  - newsletters, factsheets, questionnaires, etc. to effectively summarize study process and technical information presented, and to solicit input; and
- g) Effective consultation events (PICs, and as applicable, workshops and public meetings) to ensure that stakeholders understand and respond to key decision points:
- events appropriately scheduled

- events well advertised with appropriate lead time (for details see Section 9.2 of this Study Plan)
- events advertised through newspaper advertisements, and as appropriate, portable message signs, mail drops, etc.
- newspapers used for advertisements to reflect readership in First Nations communities, local and area communities, municipal boundaries, weekday and weekend exposure
- venue locations for each round of PICs to reflect municipal boundaries and centres/distribution of population within the study area
- venue/facility to have appropriate space, facilities, parking, external signing
- venue/facility to be universally accessible
- display and information material prepared to effectively present information and communicate issues at hand
- events to be appropriately staffed.

## **2.5 Earlier And Related Work**

The Highway 7&8 Transportation Corridor Planning and Class EA Study will build on the previous transportation planning work undertaken by MTO.

### **Strategic Transportation Directions for Southwestern Ontario (2002)**

In concert with other levels of governments, MTO developed the '*Strategic Transportation Directions for Southwestern Ontario*' (2002) to provide a vision for tomorrow's transportation system (for access to this document, see the study web site).

*The Strategic Transportation Directions* document sets out a course of action for transportation, taking into account the different needs of the region, based on extensive research, relevant factors such as Smart Growth principles, infrastructure decisions and announcements, transportation studies conducted by MTO and other pertinent information. In brief, the *Strategic Transportation Directions* document provides the following:

- an overview of the transportation network of the region;
- identification of the contribution of different transportation modes to the region's overall transportation system;
- identification of social and economic factors in the region that affect transportation;
- identification of growth patterns and their effect on future transportation needs;
- strategic directions for the development of the provincial transportation system; and
- strategies that MTO may pursue in relation to the region's overall transportation network.

The findings of the 2002 Strategic Directions document are incorporated into Section 5.2.4 of this Study Plan.

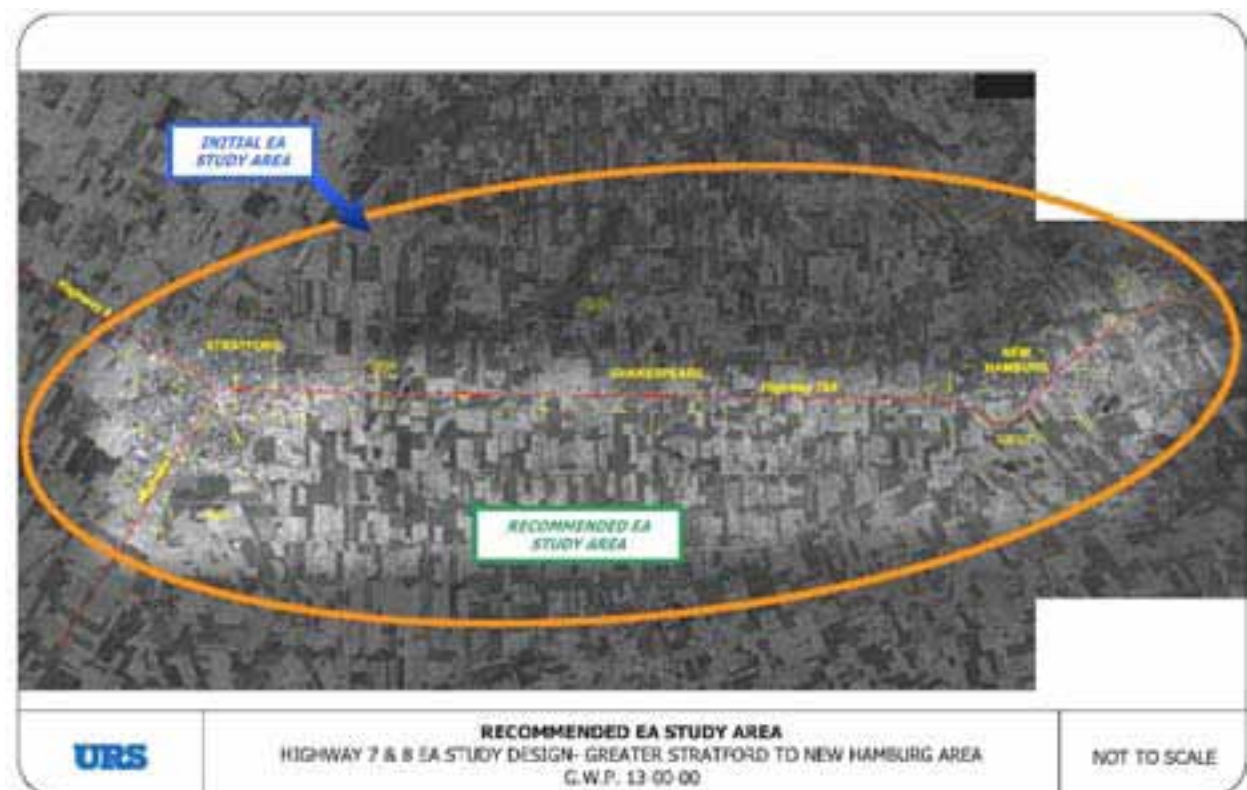
## **Highway 7&8 Corridor Planning Study Design Report (December 2005)**

MTO developed the 'Highway 7&8 Corridor Planning Study Design Report' (December 2005) to assess the present and future role and function of the Highway 7&8 Corridor between Greater Stratford and the New Hamburg area (for access to this document, see the study web site). Development of the study design report, in part, involved consultation with stakeholders, including two rounds of public information centres and the opportunity to comment on the report.

In brief, the Highway 7&8 Study Design Report provides the following:

- roadway role and function;
- engineering conditions;
- traffic conditions;
- traffic safety;
- origin-destination survey to accurately determine vehicle patterns between Greater Stratford and the New Hamburg area;
- assessment of transportation planning alternatives; and
- recommended preliminary study area as a factor for the identification of potential transportation solutions to address identified needs.

The findings of the 2005 Study Design Report are incorporated into Section 5.2.4 of this Study Plan. The preliminary study area identified in the Study Design Report is provided below:



This preliminary study area falls within the following municipalities:

- City of Stratford;
- County of Perth;
- Township of Perth East;
- Township of Perth South;
- Township of Wilmot; and
- Regional Municipality of Waterloo.

The preliminary study area recommended in the Study Design Report will be subject to review and modification as the Highway 7&8 Transportation Corridor Planning and Class EA Study proceeds.

### **3 STATEMENT AND ASSUMPTIONS OF PROPONENCY**

#### **3.1 Statement of Proponency**

The Ontario Ministry of Transportation is the proponent for this Study Plan for the Highway 7&8 Transportation Corridor Planning and Class EA Study.

#### **3.2 Assumptions Of EA Proponency And Completion Of Study Work**

MTO is conducting the Highway 7&8 Transportation Corridor Planning and Class EA Study under the assumptions of EA proponency and completion of study work provided in Exhibit 3.1 below:

<b>Exhibit 3.1 Highway 7&amp;8 Transportation Corridor Planning and Class EA Study Assumptions of EA Proponency and Completion of Study Work</b>	
<b>1.</b>	The current roles and relationships of different government levels and transportation service providers are maintained, consistent with their responsibility and authority.
<b>2.</b>	The consideration of 'Area Transportation System' and preliminary planning alternatives, and the development of a Transportation Development Strategy to address problems and opportunities are not restricted by these current roles.
<b>3.</b>	If 'Area Transportation System' and preliminary planning alternatives involving provincial roadways (provincial highways and/or provincial transitways) are selected, MTO will make the decision on the pursuit of further study through preliminary planning, detailed planning, and preliminary design.
<b>4.</b>	If 'Area Transportation System' and preliminary planning alternatives involving municipal roads, rail/air/water/intermodal facilities, municipal/private transit, or GO Transit are selected, MTO will refer the alternative recommendations to the appropriate government agency and/or transportation service provider for independent decision on further action.
<b>5.</b>	Depending upon the circumstances, the province may, as a separate initiative following completion of the Planning and Class EA Study, pursue innovative funding, and public and private partnerships for undertaking the following: <ul style="list-style-type: none"><li>• further study, design and construction of 'Area Transportation System' and preliminary planning alternatives identified in the planning and Class EA Study, for which MTO is not the EA proponent;</li><li>• design and construction of the provincial roadway (provincial highway and/or provincial transitway) that is the product of a planning and Class EA Study.</li></ul>
<b>6.</b>	The interaction of provincial transportation planning and growth management is a shared responsibility as follows: <ul style="list-style-type: none"><li>• municipalities, the Ministry of Municipal Affairs and Housing, and the Ministry of Public Infrastructure and Renewal are responsible for managing growth in a manner that encourages good development and discourages sprawl;</li></ul>



**Exhibit 3.1**  
**Highway 7&8 Transportation Corridor Planning and Class EA Study**  
**Assumptions of EA Proponency and Completion of Study Work**

- MTO is responsible for planning of the provincial roadways (provincial highways/provincial transitways) components of the Transportation Development Strategy; and
- in association with the planning of provincial highways/transitways, MTO is also responsible for provincial highway access management to discourage development in areas not designated for growth.

7. The Highway 7&8 Transportation Corridor Planning and Class EA Study will not address “over-arching issues” such as the following:
- statutes, policies and standards of governments;
  - municipal official plans;
  - responsibility, authority and decisions for transportation functions/modes that rest with government agencies and service providers other than MTO;
  - ownership of lands and infrastructure; and
  - funding policies and commitments of governments and the private sector.

8. Although the Highway 7&8 Transportation Corridor Planning and Class EA Study Process will not investigate concerns, suggestions or changes to such “overarching issues”, the study team will document input received during the Highway 7&8 Transportation Corridor Planning and Class EA Study and refer it to the appropriate authority for information/consideration.

## **4 STATEMENT OF EA COMPLIANCE**

This Highway 7&8 Transportation Corridor Planning and Class EA Study will follow and comply with the Class Environmental Assessment for Provincial Transportation facilities outlined in Section 2.1 of this Study Plan.

Although this is a Class EA study, the requirements of Section 6 (2)(a) of the Ontario *Environmental Assessment Act* have been addressed as an appropriate standard for this Study Plan. Accordingly, the Study Plan specifically addresses the following:

- Identification of the Proponent (Chapter 3 of this Study Plan);
- The purpose of the undertaking (Chapter 5);
- The process for selecting preferred alternatives to the undertaking (Chapter 7);
- The process for generating the study area (Chapter 7);
- The process for generating and selecting preferred alternative methods (Chapter 7);
- A commitment to carry out compliance monitoring (Chapter 8); and,
- A description of the Consultation Plan proposed for the Environmental Assessment (Chapter 9).

The Study Plan also includes Supporting Documents, one of which is a Record of Consultation During Preparation of the Study Plan (to be completed before finalizing the Study Plan).

## 5 PURPOSE OF UNDERTAKING

### 5.1 Policy Framework And Other Government Initiatives

The Highway 7&8 Transportation Corridor Planning and Class EA Study builds on the policy framework provided by:

- the '2005 Provincial Policy Statement' (PPS) under Section 3 of the *Planning Act*; and
- the final 'Growth Plan for the Greater Golden Horseshoe' (GGH Growth Plan) released in June, 2006 under the *Places to Grow Act*.

This policy framework has direct impact on the following:

- study plan;
- identification of Area Transportation System problems and opportunities;
- evaluation and selection of Area Transportation System alternatives;
- evaluation and selection of preliminary planning alternatives; and
- evaluation and selection of detailed planning alternatives for provincial roadways.

The application of this policy framework is presented in Exhibit 5.1 below.

<b>Exhibit 5.1 Highway 7&amp;8 Transportation Corridor Planning And Class Ea Study Application Of GGH Growth Plan And Provincial Policy Statement Policy Framework</b>	
<b>POLICY DOCUMENT</b>	<b>POLICY STATEMENT</b>
<b>Study Plan</b>	
<b>Study Objectives</b>	Study objectives are based upon the policies of the GGH Growth Plan
<b>Identification of Area Transportation System Problems and Opportunities</b>	
<b>GGH Growth Plan</b>  - Growth Forecasts, Where and How to Grow	Population and employment forecasts of the Plan will be used for planning
	A significant portion of new population and employment growth will be directed to the (designated) built-up areas of the community through intensification
	(Designated) urban growth centres, and their gross density targets for residents and jobs will be as identified in the Plan
<b>Evaluation and Selection of Area Transportation System Functional and Modal Alternatives</b>	
<b>Provincial Policy Statement</b>  - Transportation Systems	Transportation system should be provided which are safe, energy efficient, facilitate the movement of people and goods, and are appropriate to address projected needs

<b>Exhibit 5.1</b> <b>Highway 7&amp;8 Transportation Corridor Planning And Class Ea Study</b> <b>Application Of GGH Growth Plan And Provincial Policy Statement</b> <b>Policy Framework</b>	
<b>POLICY DOCUMENT</b>	<b>POLICY STATEMENT</b>
<b>GGH Growth Plan</b>	Ensure that corridors are identified and protected to meet current and projected needs for various travel modes
- General Transportation Policies	Provide balance, choice, access and connectivity among transportation modes for moving people and goods
<b>GGH Growth Plan</b>	Provide linkages to planned or existing intermodal facilities and to other major regional facilities for primary goods movement
- Policies for Moving Goods	Improve corridors for moving goods, consistent with the transportation infrastructure designated in the Plan
<b>Evaluation and Selection of Preliminary Planning Alternatives and Detailed Planning Alternatives for Provincial Roadways</b> (Policy statements indicated above also apply)	
<b>GGH Growth Plan</b>	Provide for safety of the system users
- General Transportation Policies	Support opportunities for multi-modal use within corridors where appropriate
	Consider separation of modes within corridors where appropriate
<b>Provincial Policy Statement</b>	When planning for corridors and rights-of-way for significant transportation facilities, consideration will be given to significant natural heritage, water, agricultural, mineral, cultural heritage and archaeological resources.
- Planning Transportation Corridors	

The influence on this study of the Growth Plan for the Greater Golden Horseshoe is further discussed in Section 5.2.2 and 5.2.3 of this Study Plan.

## 5.2 Transportation Problems And Opportunities

### 5.2.1 Definition And Description Of 'Area Transportation System'

The Highway 7&8 Transportation Corridor Planning and Class EA Study is being conducted in the context provided in Exhibit 5.2 below:

**Exhibit 5.2**  
**Highway 7&8 Transportation Corridor Planning and Class EA Study**  
**‘Area Transportation System’ Context**

- The Highway 7&8 Transportation Corridor Planning and Class EA Study is being conducted in the context of the ‘*Area Transportation System*’.
- The ‘*Area Transportation System*’ is composed of the area transportation facilities which have the primary function of providing transportation linkages for the movement of people and goods, by all modes and all jurisdictions, between multiple regions of the province and/or between cities and other major centres of population, or which function to complete such primary transportation linkages, with an emphasis on connections to:
  - cities and other major centres of population that contain designated urban growth centres;
  - cities and other major centres of population that contain designated major transit station areas;
  - major regional facilities for primary goods movement, such as intermodal facilities; and
  - international airports, major ports and international gateways.

### **5.2.2 Overview Of The Area Transportation System**

The analysis carried out for the *Strategic Transportation Directions* for Southwestern Ontario (2002) identified several trends:

- As in the rest of the province, the automobile (including vans and light trucks) is the dominant intercity travel mode in Southwestern Ontario, accounting for over 90% of passenger kilometres travelled. The remaining transportation modes (bus, rail, GO Transit, marine and air) account for 7.5% of passenger kilometres travelled.
- The primary modes used for the transportation of goods in and through the region, based on tonnes shipped, are truck (68%), rail (18%) and marine (15%). Mode usage varies with the particular commodity transported, the market served, the need for “just in time” service, and the industry distribution system. Market trends indicate that truck transport will play a greater goods movement role in the future.
- Trucking is the primary means of moving goods in Southwestern Ontario. Since the highway system links industry and markets in Southern Ontario and the U.S., there is substantial international truck freight movement on freeways in the region. The accessibility provided by the provincial and municipal road network makes trucking very competitive with other modes, except in the case of certain bulk goods and long distance hauls to markets outside Ontario.

- Provincial and regional roadways play a key role in the movement of intercity passengers and goods, and by 2026 will carry over 75% of the total system traffic in vehicle kilometres.
- A reduced level of service is forecast for the entire system, with provincial and regional routes showing substantial increases in the vehicle kilometres operating at congested conditions.
- All major urban centres show improved commuter containment (i.e. live-work arrangements); however, total commuter kilometres will continue to increase.

The Growth Plan for the Greater Golden Horseshoe (2006) in part provides the following direction with respect to the Area Transportation System for the analysis area:

- Future goods movement corridors are envisioned to provide links between the Niagara Frontier and the GTA.

### 5.2.3 Overview Of Area Economy, Employment And Population Growth Forecasts

Growth in the transportation corridor is dependent on a number of discreet but related socio-economic factors, such as: population and employment, demographic characteristics, and national, provincial and regional trends. Each of these factors acts upon the characteristics of travel demand with different and varying effects. In order to assess the needs of the Area Transportation System, the first step is to establish the factors that define the environments in the study area. These factors become the framework for the quantification of role and function of the transportation system.

#### *Growth Plan for the Greater Golden Horseshoe*

A major influence to the socio-economic environment in the analysis area is the recently published Growth Plan for the Greater Golden Horseshoe (GGH Growth Plan), released by the province on June 16, 2006, which reflects the *Places to Grow Act's* underlying principles of intensification and reduced urban sprawl. The Growth Plan promotes planning on a more regional level and sets the stage for future growth and land use scenarios by providing guidelines for municipal planning that are intended to:

- stimulate economic prosperity;
- facilitate the efficient movement of goods by linking intermodal facilities, international gateways, and communities within the GGH;
- revitalize downtowns;
- provide growth forecast objectives:

Forecasted Distribution of Population and Employment Within the Analysis Area of the Hwy 7&8 Transportation Corridor Planning and EA Study (figures in 000s, from Schedule 3 of the GGH Growth Plan)							
MUNICIPALITY	POPULATION				EMPLOYMENT		
	2001	2011	2021	2031	2001	2011	2021 2031
Region of Waterloo	456	526	623	729	236	282	324 366

- promote intensification - by the year 2015 and for each year thereafter to 2031, a minimum of 40 percent of all residential development in upper and single tier municipalities will be in the built-up area;
- designate urban growth centres which will generally be planned to achieve a minimum gross density target (the closest centres to which this applies are uptown Waterloo and downtown Kitchener);
- encourage more compact communities, with services, shops and businesses close to home;
- curb urban sprawl;
- preserve greenspace and agricultural lands that are under pressure in the GGH;
- cut down on car dependency by increasing modal share of alternatives to the automobile;
- contribute to better air quality;
- spur transit investment and create conditions favourable to public transit use; and
- promote a culture of conservation.

Through its policies, the GGH Growth Plan will impact the future land use / socio-economic environment in the analysis area, by establishing guidelines for future growth, land use (including greenspace and agriculture) and transportation objectives.

This study's objectives have, in part, been set in accordance with the policies of the final GGH Growth Plan, as described in Section 1.2.

### *Municipal Official Plans*

Future land uses are also governed by Official Plans for the municipalities in the analysis area, including Perth County and the Region of Waterloo. The currently approved Official Plan of the Region of Waterloo will need to be updated to reflect the population and employment guidelines and targets set out in the Growth Plan (Perth County) is outside the Greater Golden Horseshoe).

### *Trade and Tourism*

The study area can be considered a conduit for trade and tourism between the GTA and Lake Huron. Goods movement through this area into Canada's economic heartland are critical to the local, regional and provincial economies. The efficiency of the provincial highway system, in and through the study area is therefore essential to the economic prosperity of the area.

### *Land Use/ Socio Economic Environment*

An overview of the land use / socio-economic environment is provided in Section 6 of this Study Plan

## **5.2.4 Discussion of Preliminary Statement of Transportation Problems and Opportunities**

Section 1.3 of this Study Plan provides a preliminary statement of transportation problems and opportunities, based upon previous MTO reports, and the final Growth Plan for the Greater Golden Horseshoe (released by the province on June 16, 2006). This section expands upon that statement.

### **1. There are transportation capacity concerns for the movement of both people and goods along the 2-lane section of Highway 7&8 between Stratford and New Hamburg and on Highway 7&8 through the urban centres (Stratford, Shakespeare and New Hamburg).**

- There will be an east-west capacity deficiency of one lane in each direction from 2.9 km east of the Stratford City Limits to Waterloo Road 1 (i.e. two-lane section of highway) to meet the current and projected needs of the travelling public, and to stimulate economic growth and job creation:
  - The two-lane section of Highway 7&8 currently operates at an undesirable level of service (LOS D).
  - Average daily traffic on Highway 7&8 is forecast to increase by a minimum of 30% between 2004 and 2031.
  - As a result, the existing transportation network is not capable of supporting the projected growth in population, employment, trade and tourism.
  - Failure to address these transportation deficiencies could result in unacceptable travel delay that would be costly to industry, and would deter recreational and tourist travel. The reduction in mobility and access will restrict the ability of the broader region to attract new business and promote economic growth.
  - These transportation deficiencies could occur earlier and/or increase in duration, extent or severity if higher population, tourism or economic growth scenarios are realized.
  - The City of Stratford has expressed concerns with the significant amount of truck traffic that is passing through the core of the City via Highway 7&8.
  - The County of Perth has expressed concerns with the degree of residential traffic that is destined for locations east of Stratford, and is utilizing parallel routes to the north of Highway 7&8, such as Perth Line 37, to avoid traffic delays in Stratford.



2. **Provincial / inter-regional traffic through the urban centres (Stratford and Shakespeare) along Highway 7&8 interferes with their “downtown / historic crossroads” function.**
  - There are traffic conflicts between local and longer distance trips in downtown Stratford and Shakespeare; and
  - The City of Stratford has expressed concerns with the significant amount of truck traffic that is passing through the core of the City via Highway 7&8.
3. **The connection of the analysis area to transportation corridors serving other regions in the province may be inadequate for long-term transportation and economic development needs.**
  - Highway 7&8 is experiencing increasing functional separation from the provincial highway network as development in Stratford intensifies and expands.
4. **Geometric and traffic safety characteristics along Highway 7&8 should be addressed with respect to long-term traffic needs.**
  - This is indicated in Exhibit 5.3 below, in which ideal highway geometric conditions are compared to those of the existing Highway 7&8:

<b>Exhibit 5.3:</b> <b>Highway 7&amp;8 Transportation Corridor Planning and Class EA Study</b> <b>Comparison of Ideal Highway Conditions and Those on Highway 7&amp;8</b>	
<b>Ideal Conditions</b>	<b>Highway 7&amp;8 Conditions</b>
<ul style="list-style-type: none"> <li>• Design features of roadway linked to legally posted speed</li> </ul>	<ul style="list-style-type: none"> <li>• Numerous vertical alignment features do not meet desirable limits for the posted speed</li> </ul>
<ul style="list-style-type: none"> <li>• Lane width equal to or greater than 3.75 m where posted speed limit is 80 km/h and 3.5 m where posted speed limit is 60 km/h</li> </ul>	<ul style="list-style-type: none"> <li>• Typically 3.75 m wide lanes except through Shakespeare where lane width is marginally below standard (3.35 m versus 3.5 m)</li> </ul>
<ul style="list-style-type: none"> <li>• Clear shoulders equal to or wider than 2.0 m for disabled vehicle refuge</li> </ul>	<ul style="list-style-type: none"> <li>• Typically 3.0 m wide granular shoulders including 0.5 m partially paved; fully paved shoulders for a short section within Shakespeare</li> </ul>
<ul style="list-style-type: none"> <li>• Full passing opportunities</li> </ul>	<ul style="list-style-type: none"> <li>• Limited passing opportunities due to horizontal alignment, vertical alignment and intersection spacing resulting in through vehicles spending a high proportion of time in platoons and operating at less than their desired speeds which adversely affects safety</li> </ul>
<ul style="list-style-type: none"> <li>• All passenger cars in traffic stream</li> </ul>	<ul style="list-style-type: none"> <li>• 10-16% commercial vehicles in corridor</li> </ul>
<ul style="list-style-type: none"> <li>• Directional distribution of 50/50</li> </ul>	<ul style="list-style-type: none"> <li>• 55% westbound / 45% eastbound</li> </ul>

<b>Exhibit 5.3:</b> <b>Highway 7&amp;8 Transportation Corridor Planning and Class EA Study</b> <b>Comparison of Ideal Highway Conditions and Those on Highway 7&amp;8</b>	
<b>Ideal Conditions</b>	<b>Highway 7&amp;8 Conditions</b>
<ul style="list-style-type: none"> <li>• Low number of intersections and entrances so that impediments to through traffic due to traffic control devices or turning traffic are minimized</li> </ul>	<ul style="list-style-type: none"> <li>• Numerous intersections and entrances within study area</li> </ul>
<ul style="list-style-type: none"> <li>• Level terrain</li> </ul>	<ul style="list-style-type: none"> <li>• Level to rolling terrain</li> </ul>

**5. There is currently no comprehensive highway access management plan for Highway 7&8 from Greater Stratford to New Hamburg to protect highway needs and to address the GGH policy of discouraging inappropriate highway-related growth.**

- A comprehensive highway access management plan is required to protect current and future highway capacity, operational and safety interests
- A highway access management plan is required to address the GGH Growth Plan policy of discouraging highway-related development in areas not designated for growth (which is most of the length of Highway 7&8 between the designated built-up areas of Stratford and Shakespeare, and between Shakespeare and New Hamburg).

**6. The GGH Growth Plan policy of co-ordinating transportation system planning and land use planning must be addressed.**

- The GGH Growth Plan promotes co-ordinated transportation system planning and land use planning. The functionality of the Highway 7&8 transportation corridor from Greater Stratford to the New Hamburg area to meet current and projected needs for various travel modes must be protected before the opportunities are precluded by development in the built-up areas of Stratford, Shakespeare and New Hamburg.
- Various transportation opportunities may be identified during this Class EA Study including (but not limited to) provision of a balanced and integrated transportation system (i.e. opportunities for higher order transit, improved linkages to urban growth centres, inter-modal facilities and gateways).

## **6 ENVIRONMENTAL CONDITIONS AND POTENTIAL EFFECTS**

The Highway 7&8 Transportation Corridor Planning and Class EA Study will utilize a study process that seeks to avoid, minimize or prevent adverse environmental effects. For the purposes of this study, the term “environment” reflects the definition in the Ontario Environmental Assessment Act, which includes natural, social, economic and cultural features. Specific mitigation measures and the approaches for management of environmental effects will be developed and addressed during the EA.

### **6.1 Overview of Existing Environmental Conditions**

A considerable amount of secondary source environmental information was obtained during preparation of the Study Design Report, as documented in December, 2005.

This study will begin by updating the information from secondary sources and will also include carrying out field investigations and seeking environmental information from external agencies, interest groups and the public through the Outreach and Consultation program as described in Section 9.0 of this Study Plan.

The information obtained through a review of the Study Design Report and secondary source investigations carried out to date as part of that study has provided a basic understanding of the existing environment and major environmental features in the area.

An overview of existing environmental conditions is provided below. Details are provided in Report “F”: Working Paper – Environmental Conditions and Constraints.

#### **6.1.1 Natural Environment**

The study area lies within the upper reaches of two major watersheds, the Upper Thames River on the west and the Grand River on the east end. The Avon River, a major tributary of the Upper Thames collects drainage from the Stratford area and lands to the north of Highway 7 and 8, running westward through the north end of the City of Stratford. The Nith River, a major tributary of the Grand River, receives drainage from most of the tributaries in the east part of the study area, and runs southward through New Hamburg before crossing Highway 7 and 8.

There are approximately 25 small watercourses along the subject section of Highway 7 and 8, most of which are municipal drains, although at least 8 of these watercourses are either confirmed fish habitat or have the potential to provide fish habitat. Species at Risk mapping recently developed by the Department of Fisheries and Oceans indicates the presence of protected mussel species in several of the Nith tributaries crossing Highway 7 and 8, and the presence of “special concern” (being considered for protection ) species of fish in several of the tributaries to the Avon River which crosses Highway 7 and 8.

The topography of the study area is generally gently rolling, becoming more pronounced to the north of the existing highway alignment. Soil conditions are generally good for a variety of agricultural operations and most of the land has been cleared, reducing forest cover to less than 5% of the land base. Areas of remaining forest are concentrated in poorly drained lowland or river valley areas, though linear strips of upland woodlot persist both to the north and south of the existing highway. A number of wetland/swamp/bog complexes around the study area have been recognized as 'environmentally sensitive areas', including the Little Lakes Bog and Swamp Forest Complex, spanning the existing highway just east of Stratford, and designated an Area of Natural and Scientific Interest (ANSI).

While the remaining wooded areas generally support species typical of upland woodlands in this area, the Nith Valley is known to support Carolinian biota in its lowland deciduous forests, and one plant Species at Risk, the Showy Goldenrod, has been found at locations between Stratford and New Hamburg. There are also deer wintering areas beyond the study area to the northeast and northwest, providing critical overwintering habitat to the deer which inhabit this area.

### **6.1.2 Land Use / Socio-Economic Environment**

Farming and agricultural land uses dominate the landscape and constitute the main economic activity between Stratford and New Hamburg. With most soils in agricultural capability classes 1-3, the land supports excellent cash crop operations and mixed farming, producing mixed grain, corn, soybeans, hay and a variety of fruits and vegetables. Major dairy and beef production operations are found throughout the area.

Highway 7 and 8 passes through three major population centres: New Hamburg at the East end of the study area, Stratford at the west end and Shakespeare, in the middle of the study area.

Stratford, with a population of approximately 30,000, is the primary urban centre in the study area, mixing a strong local tourism industry led by the Stratford Festival, with a small manufacturing base and commercial sector that serves as a local centre for retail and service industries. Highway 7 and 8 serves as a critical link to connect Stratford to major markets in the Kitchener/Waterloo/Cambridge area and to the Greater Toronto area approximately 1 hour to the east. This proximity is critical to the Stratford tourist industry and the auto parts industry centred in Stratford. Population and employment growth in the City of Stratford has been modest in recent years, while the population levels in adjacent townships have remained stable.

By contrast, New Hamburg, at the east end of the study area, with a population of about 6,000, is experiencing substantial population growth. New Hamburg and its surrounding (Wilmot) township lie within the urban shadow of the Kitchener/Waterloo/Cambridge areas, and have become major 'bedroom communities' for these major employment centres. While New Hamburg provides a full range of retail/service commercial facilities for its residents, it has also become the site of some major highway commercial

enterprises (eg. automotive dealerships) developed along Highway 7 and 8 in recent years.

The Hamlet of Shakespeare, located about half-way between Stratford and New Hamburg in the Township of Perth East, was initially established as a service centre for the surrounding agricultural community, but has since converted to serve the passing traffic to and from Stratford and the Stratford Festival. The hamlet now contains a number of fuel and food service outlets and a significant concentration of specialty shops dominated by high quality antique dealerships. Some new residential development is also occurring, especially on the north side of Shakespeare.

### **6.1.3 Cultural Environment**

The cultural environment includes archaeological features, built heritage features and heritage landscapes within the study area.

A preliminary archaeological assessment conducted during the Study Design identified 23 previously registered sites within 2km of the study area. Field surveys located fifteen historic components and three pre-historic components, with 9 of the historic and one of the pre-historic sites being registered. In addition to these sites, local sources reported two unmarked pioneer cemeteries along the highway and other historic archaeological remains including a brickyard and a cemetery south of Shakespeare. In general, there is a high potential for the recovery of pre-contact archaeological remains within the study area, especially along the streams and around wetland areas which would have been the foci for prehistoric settlement.

The cultural landscape within the study area is predominantly agricultural in nature, and both the highway and sideroads throughout the study area are lined with numerous attractive nineteenth and twentieth century farm complexes. The rural landscape is altered by the presence of the CNR line which parallels the highway and crosses it at one location, and by the presence of several crossroad hamlets and small population centres such as Shakespeare.

A number of significant built heritage features are found within the study area, including several located along the existing highway alignment. Most notable of these is the Fryfogel Inn property near Perth Road 106, which includes an 1845 brick building, a commemorative cairn and a cemetery. The Inn is protected by an Ontario Heritage Foundation heritage conservation easement and has been evaluated as a potential national historic site by the historic Sites and Monuments Board of Canada. Another significant built heritage feature, the Lingelbach Church and cemetery is located at the intersection of Highway 7 and 8 and Perth Line 104. The steel girder bridge which carries the single-lane CNR track over Highway 7 and 8 near Perth Road 102, constructed in 1936 constitutes another built heritage feature directly associated with the existing highway alignment.

Additional built heritage features are scattered throughout the study area, including a number of former church and old schoolhouse buildings. One such building, the Brocksden Museum located to the north of Highway 7 and 8 on Perth Line 37, has been designated under Part IV of the Ontario Heritage Act.

## **6.2 Environmental Work Plan**

The environmental work plan will be carried out in accordance with the:

- Class EA for Provincial Transportation Facilities; and
- MTO Environmental Reference for Highway Design.

For access to the above documents, please refer to the study web site.

These documents have been prepared for MTO undertakings and transportation projects of this type, to ensure that all ministry studies satisfy the requirements of federal and provincial EA principles and guidelines.

The environmental work plan includes further environmental investigations, including secondary source reviews and field investigations, after a study area is confirmed.

As the study progresses and the range of alternatives becomes more focussed, more detailed environmental investigations will be undertaken. The level of detail and scale of mapping will increase, as the project team begins to focus in on specific areas or corridors within the analysis area.

A full complement of environmental specialists will be working on the study to investigate factor-specific area(s) of expertise. The environmental factors, sub-factors and criteria are identified in Exhibit 7.2 of this Study Plan.

## **6.3 Environmental Conditions Documentation**

Environmental Conditions and Constraints will be documented in Report “F”: Working Paper – Environmental Conditions and Constraints. A detailed summary of the report is provided in Supporting Document #2 of this Study Plan.

Report “F” will be prepared in two parts as follows:

- Part 1 will:
  - document environmental conditions background data (existing/secondary source information – mapping / constraint mapping, data, reports, supplemented by preliminary field reconnaissance) to provide an environmental overview within the analysis area; and
  - provide overview/background level of detail that supports the selection of ‘Area Transportation System’ alternatives, and the generation and selection of preliminary planning alternatives.

- Part 2 will:
  - document environmental conditions field investigation work (inventory, survey, testing) and determination of environmental significance;
  - provide higher level of detail that supports the environmental impact assessment which is a component of generating provincial roadway detailed planning alternatives; and
  - utilize the same environmental factor-specific areas and provide the same areas of technical expertise, but at increased levels of detail.

Report “F” will present the facts without offering assessment of impacts or environmental protection/mitigation and compensation.

#### **6.4 Environmental Protection and Commitments to Mitigate**

Environmental protection principles are described in Section 2.4.2 of this Study Plan.

Environmental specialists carrying out the work on existing conditions will participate in determining the most effective means of protecting the environment during the generation and evaluation of preliminary and detailed planning alternatives. Environmental protection measures will also be discussed with external agencies and ministries as appropriate throughout the study.

If new environmental information arises during the study, it will be taken into consideration in the generation and evaluation of alternatives as the study moves forward.

Environmental protection and mitigation will be included in the final study recommendations at a preliminary design level of detail. If additional environmental investigations are required during the next study phase (i.e., detail design), a commitment to carry out the work will be included in the Transportation Environmental Study Report (TESR). The TESR will also include commitments to finalize the design work and obtain all required environmental approvals from external agencies prior to construction.

Environmental monitoring is described in Section 8.0 of this Study Plan.

## **7 ALTERNATIVES AND THEIR EVALUATION**

### **7.1 “Alternatives To the Undertaking”, and “Alternative Methods for Carrying Out the Undertaking”**

The Ontario *Environmental Assessment Act* defines both “alternatives to the undertaking” and “alternative methods for carrying out the undertaking”.

“Alternatives to the undertaking” are defined as functionally different ways of addressing identified problems and opportunities. For the Highway 7&8 Transportation Corridor Planning and Class EA Study, alternatives to the undertaking are examined under the transportation needs assessment phases of the study, as follows:

- ‘Area Transportation System’ alternatives, which are described in Sections 7.4.5 and 7.4.7; and
- preliminary planning alternatives, which are described in Section 7.4.10.

“Alternative methods for carrying out the undertaking” are defined as different ways of carrying out the undertaking once the preferred alternatives to the undertaking have been identified. For the Highway 7&8 Transportation Corridor Planning and Class EA Study, alternative methods for carrying out the undertaking are the following:

- provincial roadway (provincial highway/provincial transitway) detailed planning alternatives, which are described in Section 7.5.2; and
- provincial roadway (provincial highway/provincial transitway) preliminary design alternatives, which are described in Section 7.6.1.

### **7.2 Evaluation Methods and Their Application**

The evaluation of alternative methods is a two-stage process.

The first stage (assessment) entails the identification of advantages and disadvantages of the various alternatives under consideration. At this stage, environmental features are examined to determine the extent of impact. Net impacts will be identified; these refer to the effects on the environment that remain after standard mitigation measures have been applied to reduce the extent of the impact.

The second stage is the evaluation itself. This stage builds upon the information obtained from the impact assessment stage and involves a comparative analysis of the advantages and disadvantages of the alternatives considered to select a preferred alternative. At this stage, the relative importance of the environmental features and significance of the impacts are determined. A “Do Nothing” scenario will be carried forward to represent a base case for comparison to the preferred alternative.



## Evaluation Methods

The evaluation of alternatives is an integral component of the EA. Evaluation principles are provided in Section 2.4.3.

The Ontario Ministry of Environment recommends that the evaluation approach should be clearly described and government ministries, municipalities, agencies, First Nations and the public should be asked for their comments early in the EA study. The method(s) used to predict net environmental effects and evaluate advantages and disadvantages should clearly identify the relative differences and key impact trade-offs.

In this study, two evaluation approaches will be used to assist in the selection of alternatives at the various phases of this undertaking. A Reasoned Argument (or Trade-off) method will be the primary tool used to identify a preferred alternative. In some cases, an Arithmetic (weighting-scoring) method will be the secondary tool and will be used (except in the Transportation Needs Assessment phase) to verify the results of the trade-off method.

The Reasoned Argument (trade-off) evaluation component will provide a clear presentation to stakeholders of the key trade-offs between the various evaluation factors and the reasons why one alternative is preferred over another.

The Arithmetic evaluation provides a means to compare the alternative methods based on a numerical scaling with weights assigned by MTO and other stakeholders as determined through the EA Study consultation. A numerical approach is a good sensitivity analysis tool to determine if the conclusions of the reasoned argument approach are valid and appropriate.

During the study, the decision making process will be clearly documented to support a traceable process and to ensure that it is understandable to those who may be affected by the decisions. Details on the Reasoned Argument (trade-off) and Arithmetic evaluation methods are outlined as follows:

### *Reasoned Argument (Trade-off) Evaluation Method*

The reasoned argument method will be the primary evaluation method employed to select a preferred alternative. This method highlights the differences in net effects associated with the various alternatives. Based on these differences, the advantages and disadvantages of each alternative are identified. The relative significance of the impacts are examined to provide a clear rationale for the selection of a preferred alternative. The rationale that favours the selection of one alternative over all others will be derived from the following sources:

- Government legislation, policies and guidelines;
- Municipal policy (i.e. Official Plans);

- Issues and concerns identified during consultation with ministries and agencies, municipalities, ratepayer and interest groups and the general public (including input obtained through the weighting of the relative level of importance of evaluation criteria); and
- Project Team expertise.

### *Arithmetic Evaluation Method*

The arithmetic evaluation method will be the secondary method of evaluation and will incorporate both the level of importance of each environmental attribute (referred to as the weight) and the magnitude of the impact (or benefit) associated with an alternative (referred to as the score). Numerical values are derived for both the level of importance (weight), and the magnitude of the impact (score) associated with each alternative.

The weight is multiplied by the score to obtain a total for each factor. The totals for each alternative are compared to determine the preferred alternative method.

- **Scoring (degree of impact):** The score assigned to each environmental attribute is relative to the impact generated. Relative impacts can range from those that are positive (benefit the environment) to negative (detrimental to the environment). The assessment of impacts will be derived from field measurements, results of prediction models, secondary data sources (as appropriate) and other means as necessary.
- **Weighting (level of importance):** Generally, more weight is assigned to those features which are felt to be more important in assessing impacts generated by alternatives, and less weight is given to those features which are considered to be less important.

Weighting scenarios can be developed in consultation with the public, regulatory agencies, First Nations and municipalities. It should be noted that weighting scenarios may vary for different sections of the study area. In addition, numerous sensitivity tests can be run to reflect input received from stakeholders and the public. Such input will provide the Project Team with an understanding of community values with respect to the relative importance of each environmental feature.

The results of the weighting scenarios will be reviewed and compared to the results of the Reasoned Argument component.

The specific mathematical tool to be used for the arithmetic evaluation will be determined during the EA when the details regarding the alternative methods (preliminary planning, detailed planning and preliminary design for provincial roadways) are known.

### *Application of Evaluation Methods*

As previously noted, the Reasoned Argument method will be the primary evaluation tool used to select a preferred alternative with the Arithmetic Evaluation method used to

substantiate the findings.

These evaluation methods will be applied as indicated in the Exhibit 7.1 below.

<b>Exhibit 7.1</b> <b>Highway 7&amp;8 Transportation Corridor Planning and Class EA Study</b> <b>Summary of Application of Evaluation Methods</b>		
PHASE	EVALUATION METHOD	
	Reasoned Evaluation Method	Arithmetic Evaluation Method (as appropriate)
<b>Transportation Needs Assessment</b> <ul style="list-style-type: none"> <li><b>Area Transportation System Planning</b> (see Sections 7.4.3 through 7.4.9 of Study Plan)</li> </ul>	Evaluation method applied for this phase	Not applied to this phase
<ul style="list-style-type: none"> <li><b>Preliminary Planning</b> (see Sections 7.4.10 through 7.4.12 of Study Plan)</li> </ul>	Primary evaluation method applied for this phase	Secondary evaluation method applied (as appropriate)
<b>Provincial Roadway Detailed Planning</b> (see Section 7.5. of Study Plan)	Primary evaluation method applied for this phase	Secondary evaluation method applied (as appropriate)
<b>Provincial Roadway Preliminary Design</b> (see Section 7.6 of Study Plan)	Primary evaluation method applied for this phase	Secondary evaluation method applied (as appropriate)
<b>Summary Description of What The Evaluation Method Provides</b>	Key trade-offs between evaluation factors and reasons why one alternative is preferred over another	Numerical weighting/scoring of evaluation factors for alternatives (secondary evaluation method)

Where both evaluation methods are applied, they will be implemented concurrently. For example, the Project Team's assumptions and rationale behind its assessment of the level of importance of environmental attributes will be documented along with the corresponding arithmetic value assigned to the impact. In addition, input from stakeholders and the public will be co-ordinated through public information centres and other public consultation activities to ensure that issues, concerns and the magnitude of potential impacts are properly identified and understood by the Project Team.

The results of the two methods will be compared and the differences identified. The results of the Arithmetic Evaluation will be re-analyzed to determine the key weight-score combinations in the Arithmetic Evaluation. Similarly, the rationale for each trade-off decision will be revisited to determine if the Project Team's decision was appropriate. If the rationale supporting the trade-off decisions is valid and appropriate, the preferred alternative identified by the Reasoned Argument method will stand. However, if the results of the Arithmetic Evaluation lead to modifications to the trade-off decisions' rationale, the preferred alternative resulting from the Reasoned Argument approach may be revised. Prior to its application, the decision making process will be clearly documented and presented for stakeholders to comment on. During the study, additional evaluation methodologies may be utilized to ensure that the nature and magnitude of potential impacts (of significant community and/or environmental value) are accurately identified and mitigated.

Data necessary to support the evaluation of alternatives will be collected through consultation with ministries, agencies and other stakeholders from secondary sources, prediction models and site-specific field investigations. The precise nature and scope of field investigations will be determined during the study and outlined in work plans for review and comment by stakeholders. This information will be supplemented based on input received from interested stakeholder groups, municipalities, regulatory agencies and the general public.

### 7.3 Preliminary Identification of Evaluation Factors

The assessment of alternatives will consider broad factors, sub-factors and criteria that reflect objectives in addressing the stated transportation problems and consider potential impacts on the environment. Exhibit 7.2 provides a preliminary listing of the proposed environmental and transportation factors, sub-factors and criteria to be considered for the evaluation of alternatives during the various phases of the project. This exhibit builds on the information in the MTO Environmental Reference for Design (for access to this document, see the study web site).

Supporting Document #5 identifies which of these factors, sub-factors and criteria apply at each phase of the study, and provides preliminary evaluation criteria to be applied to each of them.

The information in Exhibit 7.2 and Supporting Document #5 represents the minimum detail to be considered for identifying the advantages and disadvantages of the alternatives during the various phases of the study. These preliminary factors, sub-factors and criteria will be refined and modified during consultation on “the proposed approach to upcoming work”, as is indicated in Exhibit 2.1 in Section 2.2 of this Study Plan. This will include, as appropriate, the development of measures for specific evaluation indicators.

<b>Exhibit 7.2</b> <b>Highway 7&amp;8 Transportation Corridor Planning and Class EA Study</b> <b>Preliminary Identification of Factors, Sub-Factors and Criteria</b> <b>To Be Considered in the Evaluation Of Alternatives</b>	
<b>FACTORS/SUB-FACTORS</b>	<b>CRITERIA</b>
<b>1. Natural Environmental Factors</b>	
<b>1.1 Fisheries and Aquatic Ecosystems</b>	1.1.1 Fish Habitat
	1.1.2 Fish Community
<b>1.2 Terrestrial Ecosystems</b>	1.2.1 Wildlife
	1.2.2 Wetlands
	1.2.3 Forests
	1.2.4 Vegetation
	1.2.5 Designated/Special Areas
<b>1.3 Groundwater</b>	1.3.1 Areas of Groundwater Recharge and Discharge
	1.3.2 Groundwater Source Areas and Wellhead Protection Areas

<b>Exhibit 7.2</b> <b>Highway 7&amp;8 Transportation Corridor Planning and Class EA Study</b> <b>Preliminary Identification of Factors, Sub-Factors and Criteria</b> <b>To Be Considered in the Evaluation Of Alternatives</b>	
<b>FACTORS/SUB-FACTORS</b>	<b>CRITERIA</b>
	1.3.3 Large Volume Wells
	1.3.4 Private Wells
	1.3.5 Groundwater-Dependent Commercial Enterprises
	1.3.6 Groundwater-Sensitive Ecosystems
<b>1.4 Surface Water</b>	1.4.1 Watershed / Subwatershed Drainage Features/Patterns
	1.4.2 Surface Water Quality and Quantity
<b>1.5 Air Quality</b>	1.5.1 Local and Regional Air Quality
	1.5.2 Sensitive Receptors to Air Pollutants and Greenhouse Gases
<b>2. Land Use / Socio-Economic Environmental Factors</b>	
<b>2.1 Land Use Planning Policies, Goals, Objectives</b>	2.1.1 First Nations' Land Claims
	2.1.2 Provincial / Federal Land Use Planning Policies/Goals/Objectives
	2.1.3 Municipal (local and regional) Land Use Planning Policies / Goals / Objectives
	2.1.4 Development Objectives of Private Property Owners
<b>2.2 Land Use – Community</b>	2.2.1 Indian Reserves
	2.2.2 First Nations' Sacred Grounds
	2.2.3 Urban and Rural Residential
	2.2.3 Commercial/Industrial
	2.2.5 Tourist Areas and Attractions
	2.2.6 Community Facilities / Institutions
	2.2.7 Municipal Infrastructure and Public Service Facilities
<b>2.3 Noise Sensitive Areas (NSA's)</b>	2.3.1 Highway Noise
	2.3.2 Construction Noise
<b>2.4 Land Use - Resources</b>	2.4.1 First Nations' Treaty Rights or Use of Land and Resources for Traditional Purposes
	2.4.2 Agriculture
	2.4.3 Parks and Recreational Areas
	2.4.4 Aggregate and Mineral Resources
<b>2.5 Major Utility Transmission Corridors</b>	
<b>2.6 Contaminated Property and Waste Management</b>	
<b>2.7 Landscape Composition</b>	2.7.1 Scenic Composition
	2.7.2 Sensitive Viewer Groups
	2.7.3 Scenic Value of Views/Vistas From the Transportation Facility
	2.7.4 Specimen Trees
<b>3. Cultural Environmental Factors</b>	
<b>3.1 Cultural Heritage – Built Heritage and Cultural Landscapes</b>	3.1.1 Buildings or “Standing” Sites of Architectural or Heritage Significance, or Ontario Heritage Easement Properties
	3.1.2 Heritage Bridges
	3.1.3 Areas of Historic 19 <sup>th</sup> Century Settlement
	3.1.4 Cultural Heritage Landscapes
	3.1.5 First Nations' Burial Sites

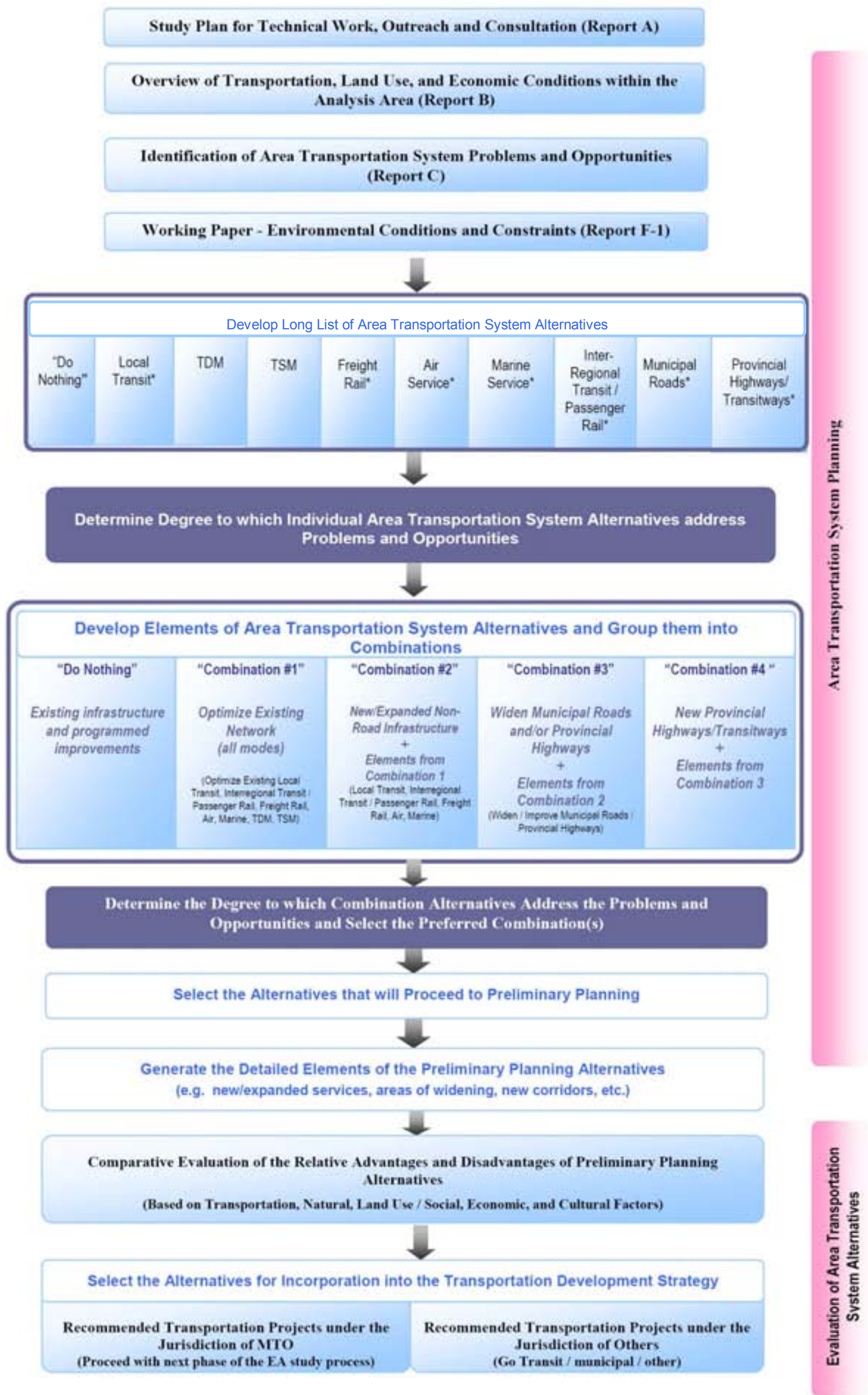
<b>Exhibit 7.2</b> <b>Highway 7&amp;8 Transportation Corridor Planning and Class EA Study</b> <b>Preliminary Identification of Factors, Sub-Factors and Criteria</b> <b>To Be Considered in the Evaluation Of Alternatives</b>	
<b>FACTORS/SUB-FACTORS</b>	<b>CRITERIA</b>
	3.1.6 Cemeteries
<b>3.2 Cultural Heritage – Archaeology</b>	3.2.1 Pre-Historic and Historic First Nations' Archaeological Sites
	3.2.2 Historic Euro-Canadian Archaeological Sites
<b>4. Area Economy Factors</b>	
4.1 First Nations' Industry	
4.2 Heavy Industry and Trade	
4.3 Tourism and Recreation Industry	
4.4 Agriculture Industry	
<b>5. Transportation Factors</b>	
5.1 Area Transportation System Capacity and Efficiency	5.1.1 Movement of People
	5.1.2 Movement of Goods
	5.1.3 System Performance During Peak Periods
5.2 Area Transportation System Reliability / Redundancy	
5.3 Safety	5.3.1 Traffic Safety
	5.3.2 Emergency Access
5.4 Mobility and Accessibility	5.4.1 Modal Integration, Balance
	5.4.2 Linkages to population and Employment Centres
	5.4.3 Recreation and Tourism Travel
	5.4.4 Accommodation for Pedestrians, Cyclists and Snowmobiles
5.5 Network Compatibility	5.5.1 Network Connectivity
	5.5.2 Flexibility for Future Expansion
5.6 Engineering	5.6.1 Constructability
	5.6.2 Compliance with Design Criteria
5.7 Construction Cost (excludes property costs and engineering costs)	
5.8 Traffic Operations	

## **7.4 'Area Transportation System' and Preliminary Planning Alternatives**

### **7.4.1 Process Overview for Transportation Needs Assessment**

The process for the identification, assessment and evaluation of the area transportation system alternatives and preliminary planning alternatives is depicted in Exhibit 7.3.

**Exhibit 7.3 Process Overview for the Development, Assessment and Evaluation of Area Transportation System Alternatives (Phase 2 of Study) and Preliminary Planning Alternatives (Phase 3 of Study)**



\* - Improved Services and/or new infrastructure

A brief description of the key elements of the process follows:

#### **7.4.2 Study Plan for Technical Work, Outreach and Consultation**

As indicated in Section 1.4, this document, Report A: Study Plan for Technical Work, Outreach and Consultation, establishes the framework and commitments to guide the study.

### **AREA TRANSPORTATION SYSTEM PLANNING**

Area Transportation System planning is outlined in Sections 7.4.3 through 7.4.9.

#### **7.4.3 Overview of Transportation, Land Use, Economic and Environmental Conditions within the Analysis Area**

The objectives and key tasks of this step are the following:

- provide an analysis area land use and economic overview and outlook, and provide a preliminary assessment of existing transportation conditions (documented in Report B: Working Paper - Overview of Transportation, Land Use, and Economic Conditions within the Analysis Area);
- provide an overview of environmental conditions and constraints within the analysis area, based upon secondary source information (documented in Report F 1<sup>st</sup> Part: Working Paper - Environmental Conditions and Constraints).

#### **7.4.4 Identify Area Transportation System Problems and Opportunities**

A preliminary statement of problems and opportunities is provided in Exhibit 1.3 in Section 1.3 of this Study Plan. The objectives and key tasks of this step are to develop additional detail through the following:

- establish travel demand forecasting approach and methodology;
- forecast future 'Area Transportation System' travel characteristics and patterns;
- provide a detailed assessment of current and future 'Area Transportation System' problems and opportunities;
- articulate the above as the basis for evaluating and selecting alternative solutions.

This work is presented in Report C: Working Paper – Area Transportation System Problems and Opportunities.

#### **7.4.5 Develop Long List of Area Transportation System Alternatives**

The following generic area transportation system alternatives have been identified:

- Do Nothing
- Travel Demand Management (TDM)



- Transportation System Management (TSM)
- Local Transit\*
- Interregional Transit and Passenger Rail\*
- Air Services\*
- Marine Services\*
- Freight Rail\*
- Municipal Roads\*
- Provincial Highways / Transitways\*

(\* new or improved operations and/or infrastructure)

These alternatives and their rationale are described below, with additional information presented in Supporting Document #3 of this Study Plan.

The “Do Nothing” alternative includes existing infrastructure and programmed improvements. The “Do Nothing” alternative is considered to be the status quo, in that no additional measures are planned to address possible shortfalls in transportation system capacity.

TDM strategies include measures that improve the operation of the current transportation system by managing travel demand, independent of other infrastructure improvements (e.g. constructing or expanding roads). The emphasis of TDM strategies is to reduce overall demands on the transportation network, especially auto trips; shift demands to time periods outside of the critical congestion periods; and shift demands from auto based trips to alternative modes of transportation, principally transit, cycling and walking.

TSM can improve the efficiency and safety of the transportation system and optimize the use of existing and planned infrastructure through such initiatives as transit priority facilities (e.g. bus priority at intersections), Intelligent Transportation Systems (ITS), High Occupancy Vehicle (HOV) lanes, Park’n’Ride facilities and intersection or signal timing improvements.

Local transit may reduce auto trips and thereby relieve congestion and increase the performance of the transportation system.

Interregional Transit and Passenger Rail would provide an alternative travel mode choice and increase the capacity of the transportation system. This could include inter-regional bus service in mixed traffic, higher order priority transit services on new infrastructure such as Bus Rapid Transit (BRT), Light Rail Transit (LRT), GO Transit, and VIA rail.

Air services can potentially result in a change in travel patterns for both passengers and freight.

Freight rail services for goods movement could encourage the diversion of freight from trucks. The ability to expand rail service and divert longer haul goods to rail may provide some relief to network congestion both on the provincial highway network, as well as on arterial roads.

Municipal Roads and Provincial Highways could be widened / improved to increase the capacity and performance of the transportation network and provide relief to forecasted network congestion. This could include:

- Provincial roads - potential to widen Highway 7&8
- Municipal roads – potential to widen local east-west roads between and through Stratford and New Hamburg.
- Access Management – access management strategies could be employed to improve the operation of existing Highway 7&8 through removal, consolidation or redirection of existing intersections and entrances and by imposing strict restrictions on future access to Highway 7&8.

In addition, new municipal roads and/or provincial highways/transitways would increase the capacity and performance of the transportation network and provide relief to forecasted network congestion. Inherent in these new facilities would be a high degree of access control in order to preserve the travel mobility characteristics of the corridor. Commercial and private entrances would be prohibited and access would be limited to at-grade highway intersections or potentially highway interchanges with key arterial roads; and to transit stations for a provincial transitway. Use of sections of existing roadways may be considered.

#### **7.4.6 Determine Degree to Which Individual Area Transportation System Alternatives Address Problems and Opportunities**

The 'Area Transportation System' alternatives will be examined to determine the degree to which they individually address problems and opportunities. On a preliminary basis, this will be determined through the following screening criteria:

- Potential to address transportation problems and opportunities;
  - Long term capacity deficiencies
  - Efficient movement of people
  - Efficient movement of goods
  - Recreational / tourist travel
  - System reliability / redundancy
  - Safety
  - Accessibility
  - Modal opportunities
- Support for provincial policies (Greater Golden Horseshoe Growth Plan, etc.)
- Supports land use and growth objectives of province and municipalities

This determination will:

- be undertaken using a reasoned argument methodology only;
- consider the environmental and transportation factors and sub-factors identified in **Exhibit 7.2** and the evaluation criteria and indicators identified in Supporting Document #5.

#### **7.4.7 Define Elements of Area Transportation System Alternatives and Group Them into Combinations**

The following generic combinations of area transportation system alternatives have been developed:

##### Do Nothing

As indicated in Section 7.4.5, the “Do Nothing” alternative includes existing infrastructure and programmed improvements.

##### Combination #1: Optimize Existing Network

Combination #1 includes:

- optimization of:
  - local transit;
  - interregional transit and passenger rail;
  - passenger rail;
  - freight rail;
- transportation system demand management (TDM)
- transportation system management (TDM)

##### Combination #2: New / Expanded Non-Road Infrastructure plus elements of Combination #1

Combination #2 includes:

- new/expanded
  - local transit
  - interregional transit and passenger rail
  - air services
  - marine services
  - freight rail
- elements of Combination #2

##### Combination #3: Widen Roads plus elements of Combination #2

Combination #3 includes:

- widen / improve:
  - municipal roads

- provincial highways
- elements of Combination #2

Combination #4: New Municipal Roads and/or Provincial Highways/ Transitways plus elements of Combination #3

Combination #4 includes:

- new municipal roads
- new provincial highways/transitways

#### **7.4.8 Determine the Degree to which Combination Alternatives Address the Problems and Opportunities and Select the Preferred Combinations**

The advantages and disadvantages of the various combination 'Area Transportation System' alternatives will be compared using a reasoned argument methodology to select recommended alternatives.

The trade-offs used to select preferred 'Area Transportation System' alternatives will reflect:

- Government legislation, policies and guidelines;
- Municipal policy (i.e. Official Plans);
- Public, Agencies, First Nations, Consultation Groups, and other stakeholder issues and concerns; and
- Project Team (staff from MTO and their Consultants) expertise.

#### **7.4.9 Identify the Alternatives that will Proceed to Preliminary Planning and those Alternatives that Require Further Study by Other Proponents**

The objectives and key tasks are:

- evaluate and select those combinations that are expected to significantly contribute to addressing 'Area Transportation System' problems and opportunities

The work outlined in Section 7.4.5 through 7.4.9 is documented in Report D: Working Paper – Area Transportation System Alternatives.

### **PRELIMINARY PLANNING**

Preliminary Planning is outlined in Sections 7.4.10 through 7.4.12

#### 7.4.10 Generate the Detailed Elements of the Preliminary Planning Alternatives

The objective and key task of this step is to generate detailed elements of the preliminary planning alternatives based on transportation, natural, land use / social, economic and cultural factors. They may include the following:

- new/expanded services;
- general areas of geometrical improvements and widening to existing facilities;
- new corridors;
- environmental protection for the above (by minimizing intrusion into areas of environmental significance as identified through secondary source information);
- conceptual areas of limitations to highway access.

Exhibit 7.4 provides a preliminary listing of the proposed environmental and transportation factors and sub-factors to be considered for generating preliminary planning alternatives:

<b>Exhibit 7.4: Principles for Generating Preliminary and Detailed Planning Alternatives</b>
<b>Principle 1: Minimize impacts to significant natural features, functions, systems and communities</b>
<ul style="list-style-type: none"> <li>• Avoid where possible, or minimize encroachment on or loss of water bodies and associated riparian zones;</li> <li>• Avoid where possible, or minimize encroachment on or loss of critical fish habitat features;</li> <li>• Avoid where possible, or minimize encroachment on or loss of species of conservation concern (vegetation, fish and wildlife);</li> <li>• Avoid where possible, or minimize encroachment on or loss of critical habitat of Species at Risk;</li> <li>• Avoid where possible, or minimize encroachment on or loss of encroachment into ecologically functional areas;</li> <li>• Avoid where possible, or minimize encroachment on or loss of important wildlife areas and travel corridors. Other areas to be considered are any identified wildlife management, rehabilitation and research program sites;</li> <li>• Avoid where possible, or minimize encroachment on or loss of Provincially Significant Wetlands (PSWs) and avoid impairment to wetland functions, including ecological function;</li> <li>• Avoid where possible, or minimize encroachment on or loss of all other evaluated and unevaluated wetlands;</li> <li>• Avoid where possible, or minimize encroachment on or loss of designated significant woodlands;</li> <li>• Avoid where possible, or minimize encroachment on or loss of other important woodlands;</li> <li>• Avoid where possible, or minimize encroachment on known groundwater recharge and discharge areas; as well as identified wellhead and source</li> </ul>

<b>Exhibit 7.4: Principles for Generating Preliminary and Detailed Planning Alternatives</b>
<p>protection areas and areas susceptible to groundwater contamination;</p> <ul style="list-style-type: none"> <li>• Avoid where possible or minimize encroachment on, loss of, or impairment of ecological function to environmentally significant features, and where appropriate associated functions, including Significant Valleylands, ESAs, ANSIs, or other areas of provincial, regional or local significance; and</li> <li>• Avoid where possible, or minimize encroachment on loss of, or impairment of ecological function to special spaces (including recreational activity zones).</li> </ul>
<b>Principle 2: Minimize impacts to existing and planned (approved under the Planning Act) population and employment areas</b>
<ul style="list-style-type: none"> <li>• Maximize separation distance from sensitive receptor locations;</li> <li>• Avoid where possible or minimize encroachment on, or loss of developed properties;</li> <li>• Minimize access impacts;</li> <li>• Maximize the access provided to major generators of economic activity;</li> <li>• Avoid where possible, or minimize encroachment on, or loss of prime agricultural areas and agricultural infrastructure;</li> <li>• Avoid where possible, or minimize encroachment on, or loss of mineral, petroleum and mineral aggregate resources;</li> <li>• Avoid operating and "non-operating" waste disposal sites; and</li> <li>• Avoid where possible, minimize encroachment on, or loss of known archaeological sites/built heritage features/cultural heritage landscape areas of extreme significance.</li> </ul>
<b>Principle 3: Transportation service criteria</b>
<ul style="list-style-type: none"> <li>• Generate alternatives that are efficient and direct, while meeting standards for design; and</li> <li>• Select alternatives that address the transportation problems and transportation opportunities.</li> </ul>

The assessment of the preliminary planning alternatives will consider the environmental and transportation factors, sub-factors and criteria identified in Exhibit 7.2 and their evaluation indicators identified in Supporting Document #5.

#### **7.4.11 Comparative Evaluation of the Relative Advantages and Disadvantages of Preliminary Planning Alternatives**

The objective and key task of this step is to evaluate preliminary planning alternatives using reasoned argument and arithmetic methods (as appropriate), utilizing the

preliminary listing of environmental and transportation factors, sub-factors and criteria in Exhibit 7.2, and their evaluation indicators identified in Supporting Document #5.

A reasoned evaluation methodology, augmented by arithmetic methods as appropriate, will be applied.

#### **7.4.12 Identify Recommended Transportation Development Strategy**

The objectives and key tasks of this step are:

- select recommended preliminary planning alternatives based on results of comparative evaluation by the project team and taking into consideration stakeholder input received through the consultation and outreach program
- develop a transportation strategy, including definition of study area(s)
- determine next steps, including decision if study is to continue through Phases 4-6 (*if provincial roadway alternatives are selected*)

The study area is defined as the geographic area within which a reasonable range of alternatives will be generated. It is fundamental to note that the study area does not limit the potential to examine broader transportation, economic and environmental considerations, impacts and effects outside of its boundaries.

The MTO Project Team will generate a study area through consultation with affected stakeholders (including regulatory agencies and municipalities). The following inputs will be used to guide the generation of study area limits:

- identified transportation problems and opportunities;
- the nature of the alternatives selected;
- existing transportation infrastructure;
- significant natural, socio-economic and cultural environmental features (as identified through secondary source data and consultation); and
- current government land use planning policies and initiatives.

During the study, the study area limits may be refined or modified as required to accommodate any reasonable alternatives that may be developed.

To determine next steps, the selected 'Area Transportation System' Development Strategy will be placed into one or more of the following four categories:

- If the preferred 'Area Transportation System' planning alternative is "Do Nothing" – the EA process is complete and no further study will be initiated.
- If the preferred 'Area Transportation System' planning alternative is not a provincial roadway recommendation – the current EA process will be halted; MTO will refer the planning alternative to the appropriate agency or jurisdiction for further review and action.

- If the preferred 'Area Transportation System' planning alternative is a provincial roadway recommendation – the EA process continues and MTO will proceed to the preliminary planning phase as outlined in Section 2.2.
- If the preferred 'Area Transportation System' planning alternative is a combination of provincial roadway recommendations and recommendations that are not provincial roadways – the EA process continues for provincial roadway solutions, with MTO proceeding to the Preliminary Planning phase as outlined in Section 2.2; and - 'Area Transportation System' planning alternatives that are not provincial roadways are referred to the appropriate agency or jurisdiction for further review and action.

The work of Sections 7.4.10 through 7.4.12 is presented in Report E: Milestone Report – Highway 7&8 Transportation Corridor Needs Assessment.

## **7.5 Detailed Planning Alternatives For Provincial Roadways**

### **7.5.1 Process Overview for the Development, Assessment and Evaluation of Detailed Planning Alternatives For Provincial Roadways**

The process for the identification, assessment and evaluation of the detailed planning alternatives for provincial roadways is depicted in Exhibit 7.5. A brief description of the key elements of the process follows:

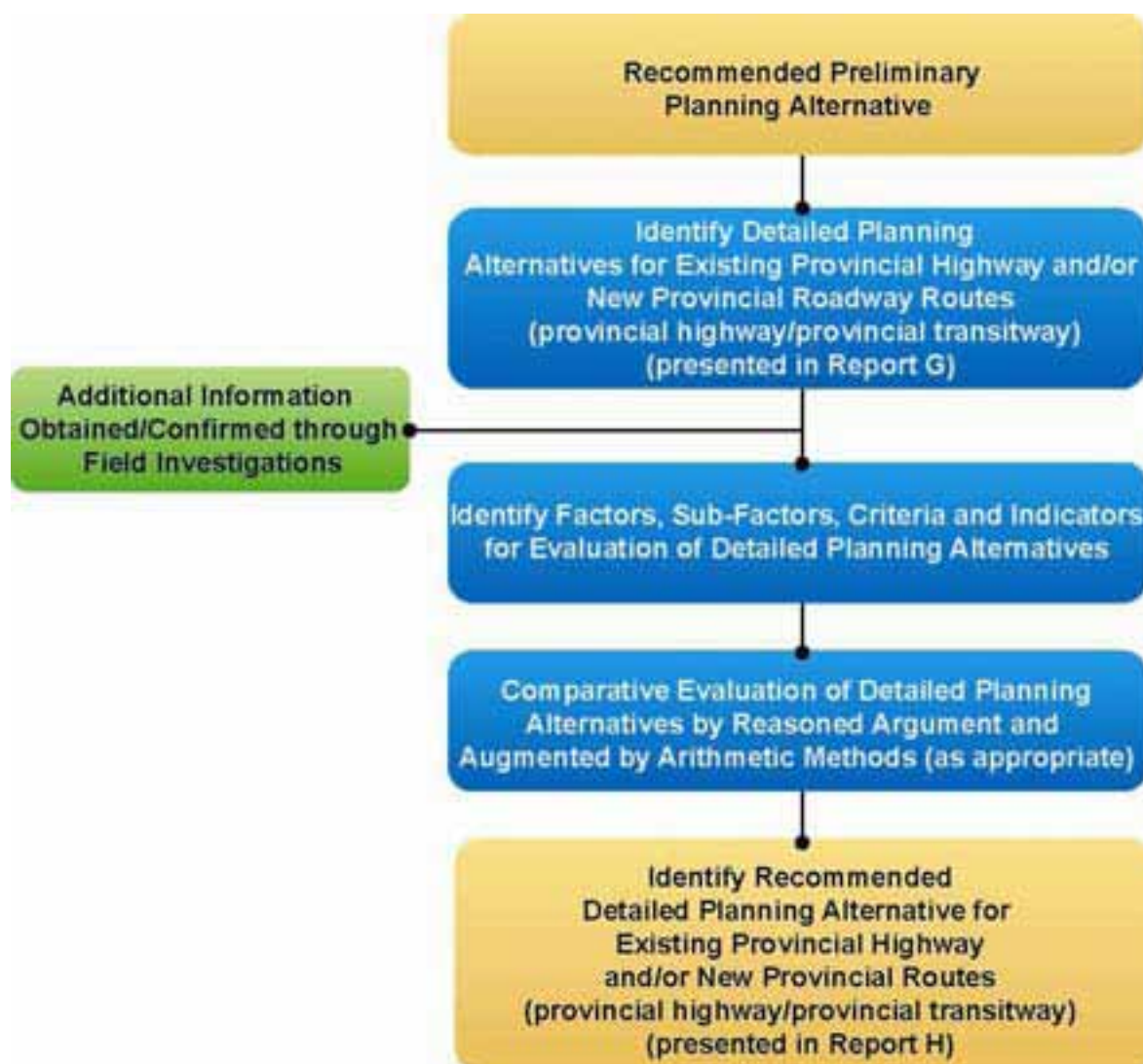
- 1 Identify Detailed Planning Alternatives for Existing Provincial Highway and/or New Provincial Roadway Routes (provincial highway/provincial transitway)
  - Description and rationale for detailed planning alternatives (presented in Report G).
- 2 Additional Information Obtained/Confirmed through Field Investigations
  - Obtain additional information regarding environmental conditions/features within the analysis area through field investigation (inventory, survey and testing, as appropriate).
- 3 Identify Factors, Sub-factors, Criteria and Indicators for Evaluation of Detailed Planning Alternatives
  - Each of the alternatives will be evaluated using reasoned argument against the environmental and transportation factors, sub-factors and criteria identified in Exhibit 7.2 and the evaluation indicators identified in Supporting Document #5
- 4 Comparative Evaluation of Detailed Planning Alternatives by Reasoned Argument and Augmented by Arithmetic Methods (as appropriate)
  - Each alternative will be evaluated using reasoned argument and arithmetic methods (as appropriate) using the identified factors, sub-factors, criteria and indicators (refer to preliminary listing of proposed factors, sub-factors and criteria in Exhibit 7.2 provided in Section 7.3; indicators will be developed during the preliminary planning phase of the study)



- 5 Identify Recommended Detailed Planning Alternative for Existing Provincial Highway and/or New Provincial Routes (provincial highway/provincial transitway)
  - Selection of recommended detailed planning alternative based on results of comparative evaluation and taking into consideration stakeholder input received through the consultation and outreach program (presented in Report H).

**Exhibit 7.5**

**Highway 7&8 Transportation Corridor Planning and Class EA Study  
Process Overview for the Development, Assessment and Evaluation  
of Detailed Planning Alternatives for Provincial Roadways (Phase 4 of Study)**



## **7.5.2 Summary Of Detailed Planning Alternatives**

Depending on the selected alternatives carried forward from the preliminary planning phase, the Highway 7&8 Transportation Corridor Planning and Class EA Study, will consider the specific location / type / character and template “footprint” for the following categories of provincial roadway detailed planning alternatives (as applicable):

- New provincial roadways
  - new provincial highway route location
  - highway type and transitway route location & technology
- Improve existing provincial highways (i.e. Highway 7&8, Highway 3)
  - specific location & type of geometrical improvements to existing provincial highway
  - specific location, extent & direction of widening to existing provincial highway
  - combinations of the above
- specialty engineering alternatives (bridge, drainage & hydrology, foundation, pavement & roadbase, traffic control & electrical infrastructure) for the above

These provincial roadway detailed planning alternatives are presented in more detail in Supporting Document #3 of this Study Plan. The rationale for the detailed planning alternatives for provincial roadways will be presented in Report “G”: Working Paper – Generation of Detailed Planning Alternatives for Provincial Roadways.

Exhibit 7.2 in Section 7.3 provides a preliminary listing of the proposed environmental and transportation factors, sub-factors and criteria to be considered for the generation, assessment and evaluation of alternatives. Supporting Document #5 provides preliminary evaluation indicators to be applied to these factors, sub-factors and criteria during the detailed planning phase. These preliminary listings will be refined and modified during consultation on the “proposed approach to upcoming work”, as is indicated in Sections 2.2 and 7.3 of this Study Plan.

The objectives and rationale for generating alternatives will ensure not only that alternatives are efficient/direct and meet technical objectives/design requirements, but also minimize/avoid impacts to significant environmental and study area features to the extent possible.

## **7.5.3 Process For Assessment Of Detailed Planning Alternatives For Provincial Roadways**

The assessment of the detailed planning alternatives for provincial roadways identified in Section 7.5.2 will:

- be undertaken using a reasoned argument methodology and augmented by arithmetic methods as appropriate ;

- consider the environmental and transportation factors, sub-factors and criteria identified in Exhibit 7.2 and the evaluation indicators identified in Supporting Document #5; and
- consider potential impacts on the environment.

The alternatives will then be reviewed with agencies and the public through the outreach and consultation process. This outreach and consultation is critical to developing a reasonable set of detailed planning alternatives. Local residents can add valuable information to the database gathered by the Project Team. Refinements to the alternatives will be integrated where warranted and a final set of detailed planning alternatives will be brought forward to the evaluation process.

#### **7.5.4 Process For Evaluation And Selection Of The Preferred Detailed Planning Alternatives For Provincial Roadways**

After the various detailed planning alternatives are generated and refined based on consultation, the evaluation of the alternatives will commence.

##### *Factor-Specific Environmental Inputs to the Evaluation of Detailed Planning Alternatives*

The data collected on the study area will assist in identifying the types of impacts each detailed planning alternative will have on each component of the environment, as indicated in Exhibit 7.2 of this Study Plan.

In addition, technical requirements and costs will be considered in the evaluation of detailed planning alternatives. Data collection for each of the environmental disciplines will be conducted consistent with the most up-to-date provincial policies and procedures. Each of these components will be defined by a set of evaluation criteria. Impacts will be quantified according to the preliminary criteria shown in Supporting Document #5 of this Study Plan.

These criteria are intended to assist the factor specific environmental specialists in determining the overall impact of the various alternatives on the natural, socio-economic and cultural environment. In determining the overall impact, the specialists will consider how the various factors and criteria interact and function together. The evaluation criteria listed represent the minimum requirements in the process of evaluating alternative methods.

A description of the rationale associated with the evaluation criteria/indicators is outlined in Supporting Document #5 of this Study Plan. The evaluation factors, sub-factors and criteria are subject to refinement and modification during the EA based on study findings, provincial policy and input received from stakeholders. Factor specific work plans for assessing potential environmental effects will be completed during the Class EA Study.

## **7.6 Preliminary Design Alternatives For Provincial Roadways**

### **7.6.1 Summary Of Preliminary Design Alternatives**

Depending upon the provincial highway and provincial transitway alternatives selected during Planning, the Preliminary Design alternatives may be generated and assessed for:

- new provincial transitway route;
- new provincial highway route;
- improvements to the existing highway; and
- combinations of the above.

The Highway 7&8 Transportation Corridor Planning and Class EA Study will consider the following preliminary design alternatives for the provincial roadway alternatives for the following categories of preliminary design (as applicable):

- calculated vertical & horizontal alignment and cross-section;
- highway interchange & intersection preliminary design;
- transitway station preliminary design;
- location/design of private entrances to highway (if applicable);
- specialty engineering alternatives for the above (bridge, drainage & hydrology, foundation, pavement & roadbase, traffic control & electrical infrastructure);
- right-of-way and property acquisition requirements;
- utility requirements (relocation etc); and
- preliminary staging of implementation.

These provincial roadway preliminary design alternatives are presented in more detail in Supporting Document #3 of this Study Plan. The rationale for the preliminary design alternatives for provincial roadways will be presented in Report “I”: Working Paper – Generation of Preliminary Design Alternatives for Provincial Roadways.

Exhibit 7.2 provides a preliminary listing of the proposed environmental and transportation factors, sub-factors and criteria to be considered for the generation, assessment and evaluation of alternatives. Supporting Document #5 provides preliminary evaluation indicators to be applied to these factors, sub-factors and criteria during the preliminary design phase. These preliminary listings will be refined and modified during consultation on the “proposed approach to upcoming work”, as is indicated in Sections 2.2 and 7.3 of this Study Plan.

### **7.6.2 Process For Generation And Assessment Of Preliminary Design Alternatives For Provincial Roadways**

The generation and assessment of preliminary design alternatives for provincial roadways will use the factors, sub-factors and criteria as were applied for the detailed planning alternatives as identified in Section 7.5.

The assessment of the preliminary design alternatives for provincial roadways identified in Section 7.6.1 will:

- be undertaken using a reasoned argument methodology and augmented by arithmetic methods as appropriate;
- consider the environmental and transportation factors, sub-factors and criteria identified in Exhibit 7.2 and the evaluation indicators identified in Supporting Document #5; and
- consider potential impacts on the environment.

### **7.6.3 Process For Evaluation And Selection Of The Preferred Preliminary Design Alternatives For Provincial Roadways**

The evaluation and selection of preliminary design alternatives for provincial roadways will use the same factors, sub-factors and criteria as were applied for the detailed planning alternatives in Section 7.5.

## **8 MONITORING STRATEGY DURING PROJECT IMPLEMENTATION**

During this Class EA study, MTO will commit to developing a monitoring program for the implementation of the selected preferred alternative. The Transportation Environmental Study Report will include a comprehensive list of all commitments made during the study to guide future environmental work and consultation as well as effects and compliance monitoring.

### **8.1 Commitment To Develop Project Technical Monitoring Program And Procedures**

During Preliminary Design of the study, a monitoring strategy will be developed to reflect how MTO proposes to ensure that the implementation of proposed mitigating measures and key design features are consistent with project commitments outlined in the Transportation Environmental Study Report and any subsequent environmental study documentation.

An environmental effects and compliance monitoring program is necessary to identify potential non-conformance with environmental design, and environmental protection requirements (as identified during this Class EA study) and to initiate corrective action to bring the work into compliance with environmental requirements committed to in the Transportation Environmental Study Report and any subsequent environmental documentation for this undertaking.

MTO will ensure that appropriate commitments to compliance monitoring are reflected in Report “J”: Milestone Report – Selection of Preliminary Design Alternatives for Provincial Roadways.

The duration of the monitoring and follow-up programs will vary and will depend on the conditions of permits and approvals granted by regulatory agencies.

### **8.2 Commitment To Develop Project EA Process Monitoring Program And Procedures**

During the planning and design processes, MTO will ensure compliance with Class EA process commitments prior to project implementation. If the preferred alternative includes a construction phase, MTO will ensure that external notification and consultations are consistent with any commitments that may have been made earlier in the Transportation Environmental Study Report or other environmental documentation. Following construction, monitoring will ensure that any follow-up information is provided to external agencies as per any outstanding environmental commitments.

## **9 OUTREACH AND CONSULTATION**

### **9.1 Key Components of Outreach and Consultation Program**

A major component of the Highway 7&8 Transportation Corridor Planning and Class EA Study will be outreach and consultation. The key components of the outreach and consultation program are as follows:

- Section 1.1 of this Study Plan indicates that outreach and consultation will be structured around six key points of decision-making, each of which will be supported by:
  - the release of a newsletter;
  - the release of draft reports for review and comment;
  - a round of Public Information Centres (PICs);
  - posting of information on the study web site; and
  - newspaper notices announcing the above.
- Section 2.2 of this Study Plan provides an overview of the planning and Class EA Study process, including objectives and key tasks, reports, and PICs at which information is presented.
- Section 2.4.4 of this Study Plan provides the principles for outreach and consultation.

The consultation program is designed such that the stakeholders will be provided reasonable timeframes for reviewing and providing comments on documentation and information made available during this Class EA study, with the PICs being the first opportunity for the public to review the information presented for each phase of the work. The consultation plan encourages proactive communication, which will allow comments and views of stakeholders to assist MTO in the decision-making process.

### **9.2 Public Information Centres (PICs)**

The six rounds of PICs are the focus points of outreach and consultation.

These PICs will be supplemented by follow-up activities where appropriate. Each round of PICs will include individual events held in Stratford and New Hamburg. The precise locations/venues and timing of each PIC will be determined during the study based on the availability of venues, etc.

The PICs will be arranged as drop-in centres (open house format) to allow stakeholders to see results, exchange information, and ask one-on-one questions of the Project Team. The setup of each round of PICs will depend on the nature of the information being presented and input being sought. The PICs serve an important function in

providing for two-way communications on specific local conditions, issues and concerns regarding the study.

Follow-up consultation activities will be held as necessary throughout the project. It is expected that these activities will be very helpful to facilitate additional dialogue and attempt to resolve any outstanding concerns and issues during the Class EA process. Follow-up activities will be arranged to address specific project issues and concerns as they arise. The format of these activities will be flexible to reflect the type of “Project Team – stakeholder” interaction required to address a particular issue but could include stakeholder group meetings, workshops, kitchen table meetings, presentations, surveys, and other.

Summary Reports for Public Information Centres, follow-up activities and other consultation events will be prepared and posted on the project website in a timely manner. The information to be presented at each PIC is summarized in the table provided in Section 2.2. The reports referred to in the table are summarized in Supporting Document #2 of this Study Plan.

### **9.3 Public Notices in Newspapers**

Newspaper notices announcing Study Commencement and PIC #1 are scheduled for posting in local newspapers in June, July and August 2007.

MTO will publish future newspaper notices as follows:

- public notices shall be placed in newspapers for each round of PICs, and the filing of the Transportation Environmental Study Report;
- each round of public notices shall include newspaper advertisements on at least 2 separate days (preferably one week-day and one weekend-day), where project scheduling/timing and newspaper circulation timing jointly permit;
- these public notices shall be placed in the following newspapers:
  - Stratford Beacon Herald;
  - New Hamburg Independent;
  - Kitchener Waterloo Record;
  - Le Regional;
  - Turtle Island News (Six Nations); and
  - Possibly two additional local newspapers.

For those newspapers which publish once per week, notices may be placed only once. For those newspapers which publish biweekly or monthly, notices will be placed only if timing/scheduling permits.

### **9.4 Project Web Site**

A project web site has been established for the Highway 7&8 Transportation Corridor Planning and Class EA Study. The web site will be maintained during the course of the



study as a source of up-to-date information. The project web site address is <http://www.7and8corridorstudy.ca>. Stakeholders are encouraged to visit the site.

## 9.5 Contacting the Study Team

The study team can be contacted at the following:

- Email to: [projectteam@7and8corridorstudy.ca](mailto:projectteam@7and8corridorstudy.ca)
- Toll free telephone call to: 1 (866) 921-9268

## 9.6 Stakeholder Contact List

The Project Team has developed a contact list that includes interested individuals, ratepayer groups, recreational groups, agricultural groups, etc. located in the analysis / study area. The mailing list developed during the Study Design was the starting point for this stakeholder list. Additions have been made based upon stakeholder contacts to the study team, and will continue to be made as the study progresses. These stakeholders will be notified by letter /e-mail of project activities including study start-up, Public Information Centres, and follow-up activities (as appropriate).

## 9.7 Stakeholder Categories

The categories of stakeholders for this study are provided in Exhibit 9.1 and then discussed below:

<b>Exhibit 9.1 Highway 7&amp;8 Transportation Corridor Planning and Class EA Study Categories of Stakeholders</b>	
• First Nations	
• Business/Commercial Interest Groups	
• Emergency Service Providers	
• General Public	
• Municipalities	
• Regulatory Agencies	
• Transportation Service Providers	
• Utility Companies	

- First Nations
  - outreach and consultation with First Nations:
    - Six Nations of the Grand River First Nation
  - comply with 'Ontario's New Approach to Aboriginal Affairs, Spring 2005; also includes compliance with Grand River Notification Agreement

- be proactive in identifying and making initial contact with Six Nations of the Grand River First Nation and with Mississaugas of the New Credit First Nation
- strive to provide appropriate and meaningful consultation and engagement with First Nations that provides them with the opportunity to be informed; and to have their opinions heard and seriously considered.
- ensure that issues of particular interest to First Nations communities are addressed, including, but not limited to:
  - identification of First Nations' land claims;
  - potential effects to Indian Reserves;
  - potential effects to First Nations' sacred grounds;
  - potential effects to First Nations' treaty rights and use of land and resources for traditional purposes (e.g. hunting, fishing, harvesting of country foods, harvesting of medical plants);
  - potential effects to First Nations' burial sites;
  - potential effects to pre-historic and historic First Nations' sites; and
  - potential effects to First Nations' industry.(For additional details on the above, please refer to Exhibit 7.2 in Section 7.3 of this Study Plan and Supporting Document #5)
- provide opportunities for two-way communication by meetings with First Nations staff, with an emphasis on draft reports developed as the study progresses;
- at key decision-making milestones during the study, offer:
  - a presentation to Councils; and
  - a community meeting on the reserves.
- Business/commercial interest groups
  - Outreach and consultation with:
    - Chambers of Commerce (New Hamburg , Stratford and District, etc), Tourism agencies and committees, business associations and individual business owners as identified during the study
  - Outreach and consultation includes discussions at PICs and meetings with groups or individuals during study. Notification of upcoming meetings and opportunities for input may also be promoted through provision of the website address to leaders of organized groups. In addition, local tourist businesses will be provided PIC notices for posting on their bulletin boards in advance of each PIC
- Emergency Service providers
  - Outreach and consultation with:
    - Police services, including OPP.
    - Ambulance services, including Perth EMS, Region of Waterloo – EMS, etc.
    - Fire departments, including Stratford, Shakespeare, Wilmot, Perth East Fire Departments
  - Outreach and consultation includes discussions at PICs with emergency service providers regarding potential impacts to emergency access routes or response time from existing facilities to residents and businesses in the analysis area.

- General Public
  - Outreach and consultation with:
    - potential users of existing Highway 7&8 from Greater Stratford to New Hamburg area
    - property owners in analysis area, both directly and indirectly impacted
    - local population who live within the analysis area and may be impacted by changes to local transportation network if provincial network changes
    - interest groups who have a specific interest in the analysis area, including Perth County and Waterloo Federation's of Agriculture, and VELO Ontario Cycling Alliance.
  - Outreach and consultation with general public includes newspaper notices for announcement of Study Commencement and PICs and TESR public review period, Canada Post notification to rural areas in advance of PICs and mailings to property owners and members of the public as they identify themselves and request to be added to the project mailing list, or attend a PIC during the study. Notification through correspondence to property owners directly impacted by proposed works will be carried out before the PIC at which the recommended preliminary design is presented and for the TESR public review period. The correspondence mailed to those directly impacted by the proposed works will indicate that they are receiving the letter because their property is directly impacted (i.e. property acquisition required and/or significant alteration to property use/access). Follow-up telephone calls will be made, as required, to ensure that as many directly affected property owners as possible attend the PICs and are aware of the opportunity to comment on the TESR.
- Municipalities:
  - Outreach and consultation with:
    - Region of Waterloo
      - Township of Wilmot
    - Perth County
      - Township of South Perth
      - Township of Perth East
      - City of Stratford
  - Outreach and consultation includes collaborative engagement that recognizes the significance of the study to municipalities and includes an invitation to join the Municipal Advisory Group (MAG) that will meet at key study milestones, in advance of each PIC. Municipalities may be interested in many aspects of the undertaking, as they relate to the work of their engineering, transportation, planning, heritage, recreation and economic development departments. Presentations to municipal Councils will be offered in advance of each PIC when requested. Councils' endorsement will be sought for the preferred alternative prior to the final set of PICs and publication of the TESR.

- Regulatory Agencies
  - Outreach and consultation with:
    - Federal agencies, including Canadian Environmental Assessment Agency (CEAA), Transport Canada, Environment Canada, Canadian Transportation Agency, Department of Fisheries and Oceans, Canada Coast Guard and Health Canada;
    - Provincial agencies, including Ministry of Natural Resources, Ministry of Environment, Ministry of Culture, Ontario Secretariat for Aboriginal Affairs, Ministry of Agriculture and Food, Ministry of Tourism, Culture and Recreation, Ministry of Community and Social Services, Ministry of Municipal Affairs and Housing and Ministry of Public Infrastructure and Renewal; and
    - Local agencies, including Grand River Conservation Authority, Upper Thames River Conservation Authority and municipal heritage planning committees/groups.
  - Outreach and consultation includes collaborative engagement that recognizes the significance of the study to regulatory agencies and includes an opportunity to join the Regulatory Advisory Group (RAG) that will meet at major study milestones, in advance of PICs. Regulatory agency interest typically relates to the study process and recommendations that relate policies, regulations and approvals, as well as environmental protection of sensitive or designated features of the natural environment (i.e., fisheries habitat, Species at Risk, ANSIs, ESAs, PSWs, etc), socio-economic environment (i.e., land use, noise, air, landscape composition, etc.) and the cultural environment (i.e., archaeological resources and built heritage features, etc.). Involvement with federal agencies in this project is required to identify issues of federal jurisdiction, effectively address Canadian Environmental Assessment Act (CEAA) requirements during the EA process and coordinate provincial and federal approvals.
- Transportation service providers
  - Outreach and consultation with:
    - Municipal Transit Operators, including Stratford City Transit,
    - Bus operators,
    - School bus operators,
    - Rail operators, including Goderich - Exeter Railway, and
    - trucking firms including Ontario Trucking Association.
  - Outreach and consultation includes discussions at PICs and may include comments on long-range planning for future bus or transit routes using Highway 7&8, or future potential new routes through analysis area. Discussions with CN and CP are expected to include potential impacts to existing rail lines or new crossings that may result from the proposed works. Transportation service providers will be encouraged to attend PICs and visit the project web site for regular study updates.

- **Utility Companies**
  - Outreach and consultation with:
    - Electrical companies including Hydro One, Tay Hydro Electric Distribution, Kitchener – Wilmot Hydro, Festival Hydro Inc.,
    - Pipelines including TransCanada Pipeline,
    - Telephone companies including Bell Canada and Call Net Technology Services Inc. (Sprint Canada),
    - Cable companies including Rogers Cable and Cogeco Cable,
    - Gas companies including Union Gas and Enbridge Gas Distribution.
  - Outreach and consultation includes discussions at PICs and may include comments on long-range planning for utility infrastructure either along existing Highway 7&8 or future new routes through the analysis area. Discussions will also include potential impacts to existing services or new crossings that may result from the proposed works. Utility company representatives will be encouraged to attend PICs and visit the project web site for regular study updates.

## **9.8 Role of Stakeholders**

Stakeholders have a major role and responsibility in determining the success of the outreach and consultation program. The extent to which the stakeholders participate, the issues they raise, and how such issues are resolved, all influence the effectiveness of the outreach and consultation program. The role of stakeholders is provided in Exhibit 9.2 below.

<b>Exhibit 9.2</b> <b>Highway 7&amp;8 Transportation Corridor Planning and Class EA Study</b> <b>Summary of Role of Stakeholders</b>	
<b>1. Get Involved! – Be Involved! – Stay Involved!</b>	
<b>2. Provide your contact information (or that of your organization) to the study team for placement on the stakeholder contact list, so that you receive letter / email notifications of project activities.</b>	
<b>3. Utilize the ‘Overview of the Study Process’ (key tasks, reports, public information centres and information presented, preliminary schedule) as the framework for your participation throughout the study (See Exhibit 2.1 of the Study Plan).</b>	

**Exhibit 9.2**  
**Highway 7&8 Transportation Corridor Planning and Class EA Study**  
**Summary of Role of Stakeholders**

- 4. Provide the study team with your comments (additions/deletions/errors) on draft reports, within the time period requested, so that your input can be considered in finalizing those documents for use as building blocks for upcoming work.**
  - For the first round of PICs, the draft reports include:
    - Report “A”: Study Plan for Technical Work, Outreach and Consultation;
    - Report “B”: Working Paper – Overview of Transportation, Land Use and Economic Conditions Within the Analysis Area; and
    - Report “F” - 1<sup>st</sup> Part: Working Paper – Environmental Conditions and Constraints.
  - Comments on the draft reports presented at the first round of PICs are requested by October 30, 2007.
- 5. Provide the study team with your comments (additions/deletions/errors) on the proposed approach to upcoming work, within the time period requested, so that your input can be considered before those approaches are applied to upcoming work.**
  - For the first round of PICs, the proposed approach to upcoming work includes:
    - Process to identify ‘Area Transportation System’ Problems and Opportunities;
    - Process and Criteria for Evaluating and Selecting ‘Area Transportation System’ Alternatives; and
    - Process, Factors and Criteria for Generating, Assessing, Evaluating and Selecting Preliminary Planning Alternatives.
  - Comments on the proposed approaches to upcoming work presented at the first round of PICs are requested by October 30, 2007.
- 6. When providing your comments, keep in mind the following:**
  - **Study objectives (See Exhibit 1.2 of the Study Plan);**
  - **Assumptions of EA proponency and completion of study work (See Exhibit 3.1 of the Study Plan).**
- 7. If you have questions or comments, or if you wish to add your name to the study contact list:**
  - **Attend Public Information Centres (PICs) and talk to the study team members that staff them;**
  - **Complete a comment sheet provided at the PICs;**
  - **Contact the study team at:**
    - **Email: [projectteam@7and8corridorstudy.ca](mailto:projectteam@7and8corridorstudy.ca)**
    - **Toll Free: 1 (866) 921-9268**
  - **Find information at the study web site at <http://www.7and8corridorstudy.ca>**

Note: Items 4 and 5 of this exhibit are customized to the first round of Public Information Centres and will be modified to suit for each subsequent round of Public Information Centres.

## **10 FILING AND REVIEW OF TRANSPORTATION ENVIRONMENTAL STUDY REPORT (TESR)**

The Transportation Environmental Report (TESR) is an assembly of the study working papers and milestone reports into a single document. The contents of the TESR are provided in Exhibit 10.1 below:

<b>Exhibit 10.1 Highway 7&amp;8 Transportation Corridor Planning and Class EA Study Transportation Environmental Study Report Contents</b>	
1.	Purpose, Relevance and Position of Report Within The Study Process
2.	Summary Description of the Undertaking
3.	Content of final Report “A” Study Plan For Technical Work, Outreach And Consultation
4.	Content of final Report “B”: Working Paper – Overview of Transportation, Land Use and Economic Conditions Within the Analysis Area
5.	Content of final Report “C”: Working Paper – ‘Area Transportation System’ Problems and Opportunities
6.	Content of final Report “D”: Working Paper – Area Transportation System Alternatives
7.	Content of final Report “E”: Milestone Report – Highway 7&8 Transportation Corridor Needs Assessment
8.	Content of final Report “F”: Working Paper - Environmental Conditions And Constraints
9.	Content of final Report “G”: Working Paper – Generation of Detailed Planning Alternatives for Provincial Roadway
10.	Content of final Report “H”: Milestone Report - Selection of Detailed Planning Alternatives for Provincial Roadway
11.	Content of final Report “I”: Working Paper - Generation of Provincial Roadway Preliminary Design Alternatives
12.	Content of final Report “J”: Milestone Report - Selection of Preliminary/Concept Design Alternatives for Provincial Roadway
13.	Environmental Synopsis
14.	Results of Outreach and Consultation
15.	Commitments to Future Work and Consultation

The Transportation Environmental Study Report will be prepared at completion of the study and made available on the public record for a 60-day review period. If no Part 2 Order or “bump-up” requests are received by the Minister of the Environment by the completion of the review period (see Section 2.1 for details), the project would be deemed to have environmental clearance, and the Highway 7&8 Transportation Corridor Planning and Class EA Study would be completed.

As is indicated in Section 1.1, decisions on funding and timing of construction are based upon environmental clearance of the TESR, since it determines the type of transportation facilities and their location.

## **11 SUMMARY OF KEY STUDY PLAN ISSUES FROM OUTREACH AND CONSULTATION, AND MTO RESPONSE/CHANGES**

THIS SECTION TO BE COMPLETED FOLLOWING THE 60-DAY PERIOD PROVIDED FOR STAKEHOLDERS TO REVIEW AND COMMENT ON THE DRAFT STUDY PLAN



## **SUPPORTING DOCUMENTATION**

# **SUPPORTING DOCUMENT #1**

## **LIST OF ABBREVIATIONS AND GLOSSARY OF TERMS**

## List of Abbreviations and Glossary of Terms Used in the Study Plan

LIST OF ABBREVIATIONS USED IN THIS STUDY PLAN	
ANSI	Area of Natural and Scientific Interest
CA	Conservation Authority
CEAA	Canadian Environmental Assessment Act
CPR	Canadian Pacific Railway
EA	Environmental Assessment
ESA	Environmentally Sensitive Areas
ETR	Electronic Toll Road
FA	Federal Authorities
FEAC	Federal Environmental Assessment Coordinator
GGH	Greater Golden Horseshoe
GHG	Green House Gas
GTA	Greater Toronto Area
HOV lanes	High Occupancy Vehicle Lanes
IBA	Important Bird Area
LACAC	Local Architectural Conservancy and Advisory Committee
MAG	Municipal Advisory Group
MMAH	Ministry of Municipal Affairs and Housing
MOE	Ministry of the Environment
MTO	Ministry of Transportation
NHIC	Natural Heritage Information Centre
NRVIS	MNR database
NTS	Not to Scale
OBM	Ontario Base Map
OEAA	Ontario Environmental Assessment Act
OMAF	Ontario Ministry of Agriculture and Food
(O)MNR	(Ontario) Ministry of Natural Resources
PIC	Public Information Centre
PSW	Provincially Sensitive Wetland
RA	Regulatory Authorities
RAAG	Regulatory Agency Advisory Group
RAP	Remedial Action Plan
SARA	Species at Risk Act
SWHTG	Significant Wildlife Habitat Technical Guide
TAC	Transportation Association of Canada
TDM	Traffic Demand Management
ToR	Terms of Reference
TSM	Traffic Systems Management

## Glossary of Terms

Term used in Terms of Reference	Explanation
Alternatives To	Functionally different ways of solving a documented transportation deficiency or taking an advantage of an opportunity.
Alternative Method	Ways of carrying out the selected alternative.
Alvar	Naturally open areas of thin or no soil over essentially flat limestone, dolostone or marble rock, supporting a sparse vegetation of mostly shrubs and herbs,.
Areas of Natural and Scientific Interest	Areas of land and water containing natural landscapes or features that have been identified as having life science or earth science values related to protection, scientific study or education.
Built Heritage Resources	One or more significant buildings, structures, monuments, installations or remains associated with architectural, cultural social, political, economic or military history and identified as being important to a community. These resources may be identified through designation or heritage conservation easement under the Ontario Heritage Act, or listed by local, provincial or federal jurisdictions.
Connectivity	The degree to which key natural heritage or key hydrologic features are connected to one another by links such as plant and animal movement corridors, hydrologic and nutrient cycling, genetic transfer and energy flow through food webs.
Cultural Heritage Landscape	A defined geographical area of heritage significance, which has been modified by human activities and is valued by a community. It involves a grouping(s) of individual heritage features such as structures, spaces, archaeological sites and natural elements, which together form a significant type of heritage form, distinctive from that of its constituent elements or parts. Examples include heritage conservation districts designated under the Ontario heritage Act; and villages, parks, gardens, battlefields, main streets and neighbourhoods, cemeteries, trail ways and industrial complexes of cultural heritage value.
Detail Design	The final stage in the design process in which the engineering and design components of preliminary design are refined and details concerning, for example, property, drainage, utility relocations and quantity estimate requirements are prepared and contract drawings and documents are produced.
Do Nothing Alternative	In the context of a transportation project, the "Do Nothing" alternative would mean that only normal operations, maintenance and repairs of existing facilities would be carried out, however, no major improvements or undertakings would be initiated.
EA Act	Environmental Assessment Act (as amended by S.O. 1996 c. 27), RSO 1980
Ecological Function	The natural processes, products or services that living or non-living environments provide or perform within or between species, ecosystems and landscapes, including hydrologic functions and biological, physical, chemical and socio-economic interactions.
Ecological Value	The value of ecology in maintaining the health of key natural heritage or key hydrologic features and the related ecological features and functions, as measured by factors such as diversity of species and habitats etc.
Endangered Species	Species that is listed or categorized as "Endangered Species" on the Ontario MNR official species at risk list.
Environment	As defined in Section 1 (c) of the EA Act. (i) air, land or water (ii) plant and animal life including man (iii) the social, economic and cultural conditions that influence the life of man or a community (iv) any building structure, machine or other device or thing made by man (v) any solid, liquid, gas, odour, heat, sound, vibration or radiation resulting directly or indirectly from the activities of man or (vi) any part of combination of the foregoing and the inter-relationships between any two of more of them, in or of Ontario.
Environmentally Sensitive Areas	Those areas identified by any agency or level of government which contain natural features, ecological functions or cultural, historical or visual amenities which are susceptible to disturbance from human activities and which warrant protection.

## Glossary of Terms

Term used in Terms of Reference	Explanation
External Agencies	Includes Federal departments and agencies, Provincial ministries and agencies, conservation authorities, municipalities, Crown corporations or other agencies other than MTO.
Freeway	Freeways are controlled access median divided highway facilities with grade separated crossings and interchanges (i.e. a vertical separation between a road/road or road/rail crossing.)
Fish Habitat	As defined in the Fisheries Act c. F-14, means spawning grounds and nursery, rearing, food supply and migration areas on which fish depend directly or indirectly in order to carry out their life processes.
Flood Plain	For river, stream and small inland lake features means the area, usually low lands adjoining a watercourse, which has been or may be subject to flooding hazard.
Greater Golden Horseshoe	A geographical area represented by the single-tier municipalities of Barrie, Brantford, Guelph, Hamilton, Kawartha Lakes, Orillia, Peterborough and Toronto; the upper-tier municipalities of Brant, Dufferin, Durham, Haldimand, Halton, Niagara, Northumberland, Peel, Peterborough, Simcoe, Waterloo, Wellington and York and the lower-tier municipalities within.
Groundwater Feature	Refers to the water-related features in the earth's sub-surface, including recharge / discharge areas, water tables, aquifers and unsaturated zones that can be defined by surface and subsurface hydrological investigation.
Habitat	The place or type of site where an organism or population naturally occurs. Species may require different habitats for different uses throughout their lifecycle.
Higher Order Transit	Transit that operates in its own dedicated right-of-way, outside of mixed traffic and therefore can achieve a frequency of service greater than mixed-traffic transit. Can include heavy rail, light rail and buses in dedicated right-of-ways.
Highways	Roadways under the jurisdiction of MTO including King's highways, secondary highways and tertiary roads. This includes all components within the associated right-of-way, e.g. structures, drainage works, traffic and safety devices.
Hydrologic function	Means the functions of the hydrological cycle that include the occurrence, circulation, distribution and chemical and physical properties of the water on the surface of the land, in the soil and underlying rocks, and in the atmosphere, and waters interactions with the environment including its relationship to living things.
Individual Environmental Assessment	An environmental assessment for an undertaking to which the EA Act applies and which requires formal review and approval under the Act.
Infrastructure	Means physical structures (facilities and corridors) that form the foundation of development. Infrastructure includes: sewage and water systems, waste management systems, electric power generation and transmission, communications and telecommunications, transit and transportation corridors and facilities, oil and gas pipelines and associated facilities.
Inter-modal Facility	A location where transfers between carriers can be made, as part of a single journey. A typical freight inter-modal facility is a rail where containers are transferred between trucks and trains.
Mitigation Measure	A measure that is incorporated into a project to reduce, eliminate or ameliorate detrimental environmental effects.
Multi-modal Transportation System	A transportation system which may include several forms of transportation such as automobiles, walking, trucks, cycling, buses, rapid transit, rail (such as commuter and freight), air and marine.
Natural Heritage Features and Area	Features and areas, including significant wetlands, significant coastal wetlands, fish habitat, significant woodlands south and east of the Canadian Shield, significant valleylands south and east of the Canadian Shield, significant habitat of endangered species and threatened species, significant wildlife habitat, and significant areas of natural and scientific interest, which are important for their environmental and social values as a legacy of the natural landscapes of an area.

## Glossary of Terms

Term used in Terms of Reference	Explanation
Natural Heritage System	A system made up of natural heritage features and areas, linked by natural corridors that are necessary to maintain biological and geological diversity, natural functions, viable populations of indigenous species and ecosystems. These systems can include lands that have been restored and areas with the potential to be restored to a natural state.
Petroleum Resources	Oil, gas, and brine resources which have been identified through exploration and verified by preliminary drilling or other forms of investigation. This may include sites of former operations where resources are still present or former sites that may be converted to underground storage for natural gas or other hydrocarbons.
Preliminary Design	That part of the planning and design process, during which various alternative design solutions are examined and evaluated including consideration of environmental effects and mitigation; the recommended design solution is then developed in sufficient detail to ensure that the horizontal and vertical controls are physically compatible with the proposed site, that the requirements for lands and right-of-ways are satisfactorily identified, and that the basic design criteria or features to be contained in the design have been fully recognized and documented in sufficient graphic detail to ensure their feasibility.
Provincial Policy Statement	The Provincial Policy Statement (PPS) sets out the Ontario Government's interests in land use planning and development and provides policy direction on matters of provincial interest to those involved in land use planning. The PPS is the complementary document to the <i>Planning Act</i> and is issued under the authority of the <i>Act</i> .
Prime Agricultural Area	Areas where prime agricultural lands predominate. This includes: areas of prime agricultural lands and associated Canada Land Inventory Class 4-7 soils; and additional areas where there is a local concentration of farms which exhibit characteristics of ongoing agriculture.
Prime Agricultural Land	Land that includes specialty crop areas and/or Canada Land Inventory Classes 1, 2, and 3 soils, in this order of priority for protection.
Proponent	A person or agency that carries or proposes to carry out an undertaking, or is the owner or person having charge, management or control of the undertaking.
Provincial Plan	A plan approved by the Lieutenant Governor in Council or the Minister of Municipal Affairs and Housing, but does not include municipal official plans.
Regulatory Agencies	Includes Federal departments and agencies, Provincial ministries and agencies, and conservation authorities.
Site Alteration	Activities such as filling, grading and excavation that would change the landform and natural vegetative characteristics of land.
Species At Risk	Wild plants and animals that have been assessed by an independent body, the Committee on the Status of Endangered Wildlife in Canada (COSEWIC), and found to be at some risk of disappearing from the wild in Canada. Species at Risk are protected by federal legislation, called the <i>Species at Risk Act</i> (SARA), proclaimed June 5, 2003.
Specialty Crop Area	Areas where specialty crops such as tender fruits, grapes, other fruit crops, vegetable crops, greenhouse crops, and crops from agriculturally developed organic soil lands are predominantly grown
Threatened Species	Species that is listed or categorized as "Threatened Species" on the Ontario MNR official species at risk list.
Transitway	A separate transit facility directly associated with a provincial freeway / highway. The transit right-of-way may be shared with a highway right-of-way.
Transportation Demand Management	Transportation demand management is a general term for strategies that result in more efficient use of existing transportation infrastructure. Examples include pricing (road tolls or transit discounts), flexible working hours, car pooling, park and ride etc.
Transportation Systems	A system consisting of corridors and rights of way for the movement of people and goods, and associated transportation facilities including transit stops and stations, cycle lanes, bus lanes, high occupancy lanes, rail facilities, inter-modal terminals, etc. and associated facilities such as storage and maintenance.

### Glossary of Terms

Term used in Terms of Reference	Explanation
Valley Lands	A natural area that occurs in a valley or other landform depression that has water flowing through or standing for some period of the year.
Watershed	An area that is drained by a river and its tributaries.
Watershed Plan	A plan used for managing human activities and natural resources in an area defined by watershed boundaries. The Plan can include a water budget and conservation plan, land and water use strategies, monitoring plan and targets.
Wellhead Protection Area	The surface and subsurface area surrounding a water well or well field that supplies a public water system and through which contaminants are likely to move so as eventually to reach the waterwell or well field.
Wetlands	Lands that are seasonally or permanently covered by shallow water, as well as lands where the water table is close to, or at the surface. The four major types of wetlands are swamps, marshes, bogs and fens. Periodically soaked or wet lands being used for agricultural purposes which no longer exhibit wetland characteristics are not considered to be wetlands for the purposes of this definition.
Wildlife Habitat	Areas where plants, animals and other organisms live, and find adequate amounts of food, water, shelter and space needed to sustain their populations.
Woodland	Woodlands include treed areas, woodlots or forested areas and vary in their level of significance at the local, regional and provincial levels

Note: Glossary of terms will be expanded to include evaluation subfactors, as appropriate.

**SUPPORTING DOCUMENT #2**

**HIGHWAY 7&8 TRANSPORTATION CORRIDOR PLANNING AND  
CLASS EA STUDY – SUMMARY OF REPORTS**



<b>Supporting Document #2</b> <b>Highway 7&amp;8 Transportation Corridor Planning and Class EA Study - Summary of Reports</b>		
STUDY PHASE	REPORTS	REPORT CONTENT
1. STUDY PLAN	<b>Report "A": 'Study Plan for Technical Work, Outreach and Consultation'</b>  (60 days provided for stakeholders to review and comment on draft Study Plan *)	a) Introduction: <ul style="list-style-type: none"> <li>• Introduction to the planning and Class EA Study</li> <li>• Study Objectives</li> <li>• Preliminary Statement of Transportation Problems and Opportunities</li> <li>• Purpose, relevance and position of report within the study process</li> </ul> b) Outline of planning & Class EA Study process: <ul style="list-style-type: none"> <li>• Overview of the Class EA Process and the Class EA for Provincial Transportation Facilities</li> <li>• Overview of planning and Class EA Study process for this provincial transportation corridor study</li> <li>• Overview of Federal/provincial EA co-ordination</li> <li>• Overview of Principles for Conducting the Study               <ul style="list-style-type: none"> <li>○ Transportation Engineering Principles</li> <li>○ Environmental Protection Principles</li> <li>○ Evaluation Principles</li> <li>○ Outreach and Consultation Principles</li> </ul> </li> <li>• Earlier and Related Work</li> </ul> c) Statement and Assumptions of Proponency <ul style="list-style-type: none"> <li>• Statement of Proponency</li> <li>• Assumptions of EA Proponency and Completion of Work</li> </ul> d) Statement of EA compliance/ Submission Statement
		e) Purpose of the Undertaking: <ul style="list-style-type: none"> <li>• Policy framework and other government initiatives</li> <li>• Transportation Problems and Opportunities               <ul style="list-style-type: none"> <li>○ Definition and Description of 'Area Transportation System'</li> <li>○ Overview of the Area Transportation System</li> <li>○ Overview of the Area Economy, Employment and Population Growth Forecasts</li> <li>○ Discussion of the Preliminary Statement of Problems &amp; Opportunities</li> </ul> </li> </ul> f) Environmental Conditions and Potential Effects
		g) Alternatives and their evaluation: <ul style="list-style-type: none"> <li>• "Alternatives To" the Undertaking and "Alternative Methods" for Carrying out the Undertaking</li> <li>• Evaluation Processes and Their Application</li> <li>• Preliminary Identification of Evaluation Factors and Sub-Factors</li> <li>• Transportation Needs Assessment               <ul style="list-style-type: none"> <li>- Area Transportation System Alternatives</li> <li>- Preliminary Planning Alternatives</li> </ul> </li> <li>• Detailed Planning Alternatives</li> <li>• Preliminary/Concept Design Alternatives</li> </ul> h) Monitoring strategy during project implementation
		i) Outreach and consultation <ul style="list-style-type: none"> <li>• Key components of outreach &amp; consultation program</li> <li>• Public Information Centres (PICs)</li> <li>• Public Notices in Newspapers</li> <li>• Project Web Site</li> <li>• Contacting the Study Team</li> <li>• Stakeholder Contact Lists</li> <li>• Stakeholder Categories</li> <li>• Role of Stakeholders</li> </ul> j) Filing and review of Transportation Environmental Study Report

<b>Supporting Document #2</b> <b>Highway 7&amp;8 Transportation Corridor Planning and Class EA Study - Summary of Reports</b>		
STUDY PHASE	REPORTS	REPORT CONTENT
<b>2. AREA TRANSPORTATION SYSTEM PLANNING</b>	<b>Report “B”: Working Paper – Overview of Transportation, Land Use and Economic Conditions within the Analysis Area</b>  (30 days provided for stakeholders to review and comment on draft working paper *)	a) Purpose, relevance and position of report within the study process b) Identification of analysis area c) Overview of provincial and municipal land use, transportation, and economic development policies (including forecasts for population and employment) d) Definition and description of ‘Area Transportation System’ e) Description of ‘Area Transportation System’ current travel characteristics and patterns (all modes) f) Description of analysis area – socio-economic existing conditions and outlooks g) Analysis Area – ‘Area Transportation System’ Modal Outlooks h) Description of current provincial highway conditions with respect to infrastructure condition, performance, compliance with current design standards, suitability for service to increased traffic, and feasibility of implementing improvements versus replacement/major reconstruction (determined through background/overview data and preliminary field reconnaissance) i) Summary of key factors that are driving ‘Area Transportation System’ needs
	<b>Report “C”: Working Paper – ‘Area Transportation System’ Problems and Opportunities</b>  (30 days provided for stakeholders to review and comment on draft working paper *)	a) Purpose, relevance and position of report within the study process b) Summary of transportation, land use and economic conditions <ul style="list-style-type: none"> <li>• Process to define ‘Area Transportation System’ problems and opportunities</li> </ul> c) Travel demand forecasting approach and methodology d) Forecasted future ‘Area Transportation System’ travel characteristics and patterns e) Detailed description and assessment of current and future ‘Area Transportation System’ problems and opportunities: <ul style="list-style-type: none"> <li>• Existing assessment</li> <li>• Horizon year assessment</li> </ul> f) Summary of ‘Area Transportation System’ needs’ g) Description and rationale of generic transportation system alternatives: <ul style="list-style-type: none"> <li>○ Area Transportation System alternatives</li> <li>○ Combination alternatives</li> </ul> h) Process and criteria for evaluating and selecting the preferred Area Transportation System Alternatives
	<b>Report “D”: Working Paper – Area Transportation System Alternatives</b>  (30 days provided for stakeholders to review and comment on draft milestone report *)	a) Purpose, relevance and position of report within the study process b) Summary of analysis area overview, transportation problems <ul style="list-style-type: none"> <li>• Summary of key factors that are driving ‘Area Transportation System’ needs</li> <li>• Process to define ‘Area Transportation System’ problems and opportunities</li> <li>• Summary – preliminary identification of existing and future ‘Area Transportation System’ problems, deficiencies and opportunities</li> </ul> c) Identify ‘Area Transportation System’ alternatives d) Select and define Area Transportation System alternatives and group them into combinations e) Determine the degree to which combination alternatives address the problems and opportunities f) Select the Alternatives that will proceed to preliminary planning

<b>Supporting Document #2</b> <b>Highway 7&amp;8 Transportation Corridor Planning and Class EA Study - Summary of Reports</b>		
STUDY PHASE	REPORTS	REPORT CONTENT
	Report "F" 1 <sup>st</sup> Part: Working Paper - Environmental Conditions and Constraints  (30 days provided for stakeholders to review and comment on draft working paper *)	a) Purpose, relevance and position of report within the study process b) Environmental overview within the analysis area based upon secondary source information for the following factor-specific areas: <ul style="list-style-type: none"> <li>• fisheries and aquatic ecosystems</li> <li>• terrestrial ecosystems</li> <li>• groundwater</li> <li>• surface water</li> <li>• air quality</li> <li>• land use / community</li> <li>• noise sensitive areas</li> <li>• land use / resources</li> <li>• landscape composition</li> <li>• contaminated property and waste management</li> <li>• cultural heritage – built heritage and cultural landscapes</li> <li>• cultural heritage – archaeology</li> </ul>

<b>Supporting Document #2</b> <b>Highway 7&amp;8 Transportation Corridor Planning and Class EA Study - Summary of Reports</b>		
STUDY PHASE	REPORTS	REPORT CONTENT
<b>3. PRELIMINARY PLANNING</b>	<b>Report "E": Milestone Report – Highway 7&amp;8 Transportation Corridor Needs Assessment</b>  (60 days provided for stakeholders to review and comment on draft milestone report *)	a) Purpose, relevance and position of report within the study process b) Summary of Report "D": Transportation Area Transportation System Alternatives: <ul style="list-style-type: none"> <li>• Area Transportation System alternatives</li> <li>• Environmental conditions and constraints</li> <li>• Outline of process and criteria for generating and assessing provincial roadway preliminary planning alternatives</li> </ul> c) Generation of preliminary planning alternatives (as applicable): <ul style="list-style-type: none"> <li>• New transportation facility location, type and capacity:               <ul style="list-style-type: none"> <li>○ conceptual corridors for a new provincial transitway</li> <li>○ conceptual corridors for a new provincial highway</li> <li>○ conceptual areas of limitations on access to provincial highway</li> </ul> </li> <li>• key specialty engineering preliminary planning alternatives for new transportation facilities               <ul style="list-style-type: none"> <li>○ minimize need for large spans &amp; lengths of major culverts</li> <li>○ minimize intrusion into major watercourses &amp; water bodies</li> <li>○ minimize intrusion into areas of extreme gradient change</li> <li>○ minimize intrusion into large areas of unstable soils</li> <li>○ possible ITS applications</li> </ul> </li> <li>• environmental protection for the above by minimizing intrusion into areas of provincial environmental interest as defined in the Provincial Policy Statement</li> <li>• preliminary study area(s)</li> </ul> d) Generation of preliminary planning alternatives for improvements to existing transportation facilities (as applicable): <ul style="list-style-type: none"> <li>• Location, type and capacity of facility improvements:               <ul style="list-style-type: none"> <li>○ general locations of geometrical improvements</li> <li>○ general locations of widening</li> <li>○ general location/configuration/template footprint of new connection points</li> <li>○ conceptual areas of limitations on access to provincial highway</li> </ul> </li> <li>• key specialty engineering preliminary planning alternatives for improvements to existing transportation facilities               <ul style="list-style-type: none"> <li>○ general type/character of structure improvements of specific bridges &amp; major culverts</li> <li>○ general locations of improvement to drainage along &amp; across ROW</li> <li>○ general nature of stability improvements to specific large cut &amp; fill embankments</li> <li>○ general locations of improvement to road base &amp; pavement</li> <li>○ general locations of improvement to line-of-sight, roadside safety &amp; traffic control</li> </ul> </li> <li>• environmental protection for the above by minimizing intrusion into areas of provincial environmental interest as defined in the Provincial Policy Statement</li> <li>• preliminary study area(s)</li> </ul> e) Evaluation and selection of provincial roadway preliminary planning alternatives and identification of type of provincial roadway detailed planning study, including description and rationale of study area(s) f) Decision to proceed with planning and Class EA Study through Phases 3-6 g) Process and criteria for generating provincial roadway detailed planning alternatives

<b>Supporting Document #2</b> <b>Highway 7&amp;8 Transportation Corridor Planning and Class EA Study - Summary of Reports</b>		
STUDY PHASE	REPORTS	REPORT CONTENT
<b>4. DETAILED PLANNING FOR PROVINCIAL ROADWAYS</b>	<b>Report "F" - 2<sup>nd</sup> Part:</b> <b>Working Paper - Environmental Conditions and Constraints</b>  (30 days provided for stakeholders to review and comment on draft working paper *)	a) Purpose, relevance and position of report within the study process b) Areas of Environmental Interest as specified in Provincial Policy Statement (from 1 <sup>st</sup> Part of Report F) c) Environmental conditions and constraints within the detailed planning study area for the following factor-specific areas: <ul style="list-style-type: none"> <li>• fisheries and aquatic ecosystems</li> <li>• terrestrial ecosystems</li> <li>• groundwater</li> <li>• surface water</li> <li>• air quality</li> <li>• land use / community</li> <li>• noise sensitive areas</li> <li>• land use / resources</li> <li>• landscape composition</li> <li>• contaminated property and waste management</li> <li>• cultural heritage – built heritage and cultural landscapes</li> <li>• cultural heritage – archaeology</li> </ul> d) Technical information for each factor-specific area: <ul style="list-style-type: none"> <li>• areas of investigation</li> <li>• background data</li> <li>• field investigations</li> <li>• determination of significance</li> </ul> e) Summary of significant environmental issues (Note: technical information builds on the content of the 1 <sup>st</sup> part of the report through field investigations and determination of environmental significance)

<b>Supporting Document #2</b> <b>Highway 7&amp;8 Transportation Corridor Planning and Class EA Study - Summary of Reports</b>		
STUDY PHASE	REPORTS	REPORT CONTENT
	<b>Report "G": Working Paper - Generation of Detailed Planning Alternatives for Provincial Roadways</b>  (30 days provided for stakeholders to review and comment on draft working paper *)	a) Purpose, relevance and position of report within the study process b) Summary of Report "E": Provincial Roadway Preliminary Planning: <ul style="list-style-type: none"> <li>Provincial roadway preliminary planning alternatives selected</li> <li>Process and criteria for generating provincial roadway detailed planning alternatives</li> </ul> c) Engineering condition field investigation work d) Refinement of study area(s) e) Description and analysis of detailed planning alternatives generated for provincial roadway (as applicable) <ul style="list-style-type: none"> <li>key roadway engineering alternatives for new provincial roadway:               <ul style="list-style-type: none"> <li>final study area</li> <li>new provincial transitway route location &amp; technology</li> <li>new provincial highway route location and highway type</li> <li>basic plan, profile, cross-section</li> <li>hwy interchange/intersection specific location, configuration, footprint</li> <li>transitway station specific location &amp; footprint</li> <li>specific nature &amp; location of limitations on access to provincial hwy</li> </ul> </li> <li>key specialty engineering detailed planning alternatives for new provincial roadway:               <ul style="list-style-type: none"> <li>specific location/ type/span/length &amp; template "footprint" of bridges &amp; major culverts</li> <li>specific location/type/character &amp; template "footprint" of major facilities for drainage along &amp; across the ROW and for stormwater management</li> <li>specific location/type/character and template "footprint" of major cut/fill embankments; foundations for bridges &amp; major culverts</li> <li>road base structure and pavement type</li> <li>specific locations/sites for traffic control signals and roadside safety barriers</li> </ul> </li> <li>combinations of the above</li> <li>environmental impact assessment for the above</li> </ul> f) Description and analysis of detailed planning alternatives generated for improvements to existing highway (as applicable) <ul style="list-style-type: none"> <li>key roadway engineering alternatives for highway improvements               <ul style="list-style-type: none"> <li>final study area</li> <li>specific location &amp; type of geometric improvements</li> <li>specific location, extent &amp; direction of widening</li> <li>basic plan, profile, cross-section</li> <li>hwy interchange/intersection specific location, configuration, footprint</li> <li>specific nature &amp; location of limitations on access to provincial hwy</li> </ul> </li> <li>key specialty engineering detailed planning alternatives for improvements to existing highway (same as for "e" above)</li> <li>environmental impact assessment for the above</li> </ul> g) Process and criteria for evaluating and selecting provincial roadway detailed planning alternatives
	<b>Report "H": Milestone Report - Selection of Detailed Planning Alternatives for Provincial Roadways</b>  (60 days provided for stakeholders to review and comment on draft milestone report *)	a) Purpose, relevance and position of report within the study process b) Summary of Report "G": Generation of Detailed Planning Alternatives for Provincial Roadways: <ul style="list-style-type: none"> <li>Detailed planning alternatives generated</li> <li>Process and criteria for evaluating and selecting provincial roadway detailed planning alternatives</li> </ul> c) Evaluation and selection of technically preferred provincial roadway detailed planning alternative(s) d) Refinement of technically preferred provincial roadway detailed planning alternative(s) e) Process and criteria for generating provincial roadway preliminary design alternatives

<b>Supporting Document #2</b> <b>Highway 7&amp;8 Transportation Corridor Planning and Class EA Study - Summary of Reports</b>		
STUDY PHASE	REPORTS	REPORT CONTENT
<b>5. PRELIMINARY / DESIGN OF PROVINCIAL ROADWAYS</b>	<b>Report "I" Working Paper - Generation of Preliminary/Concept Design Alternatives for Provincial Roadways</b>  (30 days provided for stakeholders to review and comment on draft working paper *)	a) Purpose, relevance and position of report within the study process b) Summary of Report "H": Selection of Detailed Planning Alternatives for Provincial Roadways: <ul style="list-style-type: none"> <li>Provincial roadway detailed planning alternatives selected</li> <li>Process and criteria for generating provincial roadway preliminary/concept design alternatives</li> </ul> c) Description and assessment of provincial roadway preliminary design of roadway alternatives generated (as applicable) <ul style="list-style-type: none"> <li>roadway engineering preliminary design alternatives:               <ul style="list-style-type: none"> <li>calculated horizontal &amp; vertical alignment and cross-section</li> <li>highway interchange/intersection preliminary design</li> <li>transitway station preliminary design</li> <li>location/design of private entrances to highway</li> <li>right-of-way &amp; property acquisition requirements</li> <li>utilities</li> <li>emergency access</li> </ul> </li> <li>roadway engineering preliminary design of alternatives for limitation to highway access</li> <li>environmental protection for the above</li> </ul> d) Description and assessment of provincial roadway preliminary design of specialty engineering alternatives generated (as applicable) <ul style="list-style-type: none"> <li>Bridge &amp; major culvert engineering:               <ul style="list-style-type: none"> <li>structure width, length, skew, geometry &amp; cross-section</li> <li>structure vertical clearance &amp; span arrangement</li> <li>navigable channel (if applicable)</li> </ul> </li> <li>Drainage &amp; hydrology engineering:               <ul style="list-style-type: none"> <li>channels, ditches, storm sewers &amp; outlets/outfalls for drainage of roadway</li> <li>stormwater management facilities</li> <li>hydraulics of bridges, culverts &amp; water crossing inlets/outlets</li> </ul> </li> <li>Foundation engineering:               <ul style="list-style-type: none"> <li>foundations for bridge &amp; major culvert structures</li> <li>conventional slope geometry for major cut/fill embankments</li> <li>non-conventional slope geometry for major cut/fill embankments</li> <li>settlement management &amp; excavation methods</li> </ul> </li> <li>Pavement and road base engineering:               <ul style="list-style-type: none"> <li>preliminary design of road base and pavement</li> <li>mass haul (cut/fill earth/rock material balance)</li> <li>preliminary sources of suitable granular material</li> </ul> </li> <li>Traffic &amp; electrical engineering:               <ul style="list-style-type: none"> <li>traffic control signals</li> <li>major roadside safety infrastructure</li> <li>traffic signing &amp; pavement markings</li> <li>roadway illumination</li> <li>ITS technology</li> <li>Preliminary construction traffic detour requirements</li> </ul> </li> <li>specialty engineering preliminary design of alternatives for limitation to highway access</li> <li>environmental protection for the above</li> </ul> e) Process and criteria to evaluate and select provincial roadway preliminary design alternatives

<b>Supporting Document #2</b> <b>Highway 7&amp;8 Transportation Corridor Planning and Class EA Study - Summary of Reports</b>		
STUDY PHASE	REPORTS	REPORT CONTENT
	<b>Report "J": Milestone Report - Selection of Preliminary Design Alternatives for Provincial Roadways</b>  (60 days provided for stakeholders to review and comment on draft milestone report *)	a) Purpose, relevance and position of report within the study process b) Summary of Report "I": Generation of Preliminary Design Alternatives for Provincial Roadways <ul style="list-style-type: none"> <li>Provincial roadway preliminary design alternatives generated</li> <li>Process and criteria for evaluating and selecting provincial roadway preliminary design alternatives</li> </ul> c) Evaluation and selection of provincial roadway preliminary design alternative d) Description of technically preferred provincial roadway preliminary design alternatives selected e) Value engineering assessment of the technically preferred preliminary design f) Development and refinement of the technically preferred provincial roadway preliminary design alternatives g) Preliminary staging of implementation h) Preliminary property requirements i) Agreements in principle for road assumptions, transfers, closures and the resolution of major rail and utility conflicts j) External permits anticipated to be required k) Design criteria for subsequent detail design assignments l) Preliminary assessment of technically preferred preliminary design under Ontario Infrastructure Planning, Financing and Procurement Framework m) Monitoring Strategy: <ul style="list-style-type: none"> <li>Technical monitoring program and procedures</li> <li>EA process monitoring program and procedures</li> </ul>
<b>6. TRANSPORTATION ENVIRONMENTAL STUDY REPORT</b>	<b>Report "K": Milestone Report - 'Transportation Environmental Study Report' (TESR)</b>  (60 days provided for stakeholders to review and comment on TESR after notice of filing)	a) Purpose, relevance and position of report within the study process b) Summary description of undertaking c) Content of: <ul style="list-style-type: none"> <li>final Report "A": Study Plan for Technical Work, Outreach and Consultation</li> <li>final Report "B": Working Paper – Overview of Environmental Conditions and Constraints within the Analysis Area</li> <li>final Report "C": Working Paper – 'Area Transportation System' Problems and Opportunities</li> <li>final Report "D": Milestone Report – Transportation Corridor Needs Assessment</li> <li>final Report "E": Milestone Report - Preliminary Planning for Provincial Roadways</li> <li>final Report "F": Working Paper - Environmental Conditions and Constraints</li> <li>final Report "G": Working Paper - Generation of Detailed Planning Alternatives for Provincial Roadways</li> <li>final Report "H": Milestone Report - Selection of Detailed Planning Alternatives for Provincial Roadways</li> <li>final Report "I": Working Paper - Generation of Preliminary Design Alternatives for Provincial Roadways</li> <li>final Report "J": Milestone Report - Selection of Preliminary Design Alternatives for Provincial Roadways</li> </ul> d) Environmental synopsis e) Results of outreach and consultation f) Commitments to future work and consultation
<b>NOTES</b> <ul style="list-style-type: none"> <li>* During the period provided for stakeholders to review reports, MTO will be undertaking "homework" for the next stage and report of the work</li> <li>Each report also contains the following:               <ul style="list-style-type: none"> <li>Summary of draft report key concerns identified through outreach and consultation, and MTO response/changes to those key concerns (does not apply to TESR, because it is a compilation of reports to which this previously applied)</li> <li>Supporting documentation (if applicable)</li> </ul> </li> </ul>		



## **SUPPORTING DOCUMENT #3**

### **DESCRIPTION AND RATIONALE OF ALTERNATIVES**

## DETAILED DESCRIPTION OF ALTERNATIVES

### ‘Area Transportation System’ Planning Alternatives

The Highway 7&8 Transportation Corridor Planning and Class EA Study will consider the following generic ‘Area Transportation System’ alternatives:

- Do Nothing
- Travel Demand Management (TDM)
- Transportation System Management (TSM)
- Local Transit\*
- Interregional Transit and Passenger Rail\*
- Air Services\*
- Marine Services\*
- Freight Rail\*
- Municipal Roads\*
- Provincial Highways / Transitways\*

(\* new or improved operations and/or infrastructure)

In addition, the Highway 7&8 Transportation Corridor Planning and Class EA Study will consider the following generic combinations of ‘Area Transportation System’ alternatives:

#### Do Nothing

As indicated in Section 7.4.5, the “Do Nothing” alternative includes existing infrastructure and programmed improvements.

#### Combination #1: Optimize Existing Network

Combination #1 includes:

- optimization of:
  - local transit;
  - interregional transit;
  - passenger rail;
  - freight rail;
- transportation system demand management (TDM);  
transportation system management (TDM)

#### Combination #2: New / Expanded Non-Road Infrastructure plus elements of Combination #1

Combination #2 includes:

- new/expanded
  - local transit

- interregional transit and passenger rail
  - air services
  - marine services
  - freight rail
- elements of Combination #2

Combination #3: Widen/Improve Roads plus elements of Combination #2

Combination #3 includes:

- widen / improve:
  - municipal roads
  - provincial highways
- elements of Combination #2

Combination #4: New Municipal Roads and/or Provincial Highways/ Transitways  
plus elements of Combination #3

Combination #4 includes:

- new municipal roads
- new provincial highways/transitways

## **Preliminary Planning Alternatives**

The Highway 7&8 Transportation Corridor Planning and Class EA Study will consider the following preliminary planning alternatives for the alternatives carried forward from the 'Area Transportation System' planning phase (as applicable)

a) Preliminary planning alternatives for new transportation facilities:

- new transportation facility location, type and capacity (key roadway engineering alternatives for new provincial roadways)
  - conceptual corridors for a new transportation facility, including network linkages
  - conceptual areas of limitations on access to provincial highway (see details in "d" below)
  - combinations of the above
  - preliminary study area
- key specialty engineering preliminary planning alternatives for new transportation facilities:
  - bridge engineering: minimize need for large spans & lengths of bridges and major culverts; general location of new bridges
  - drainage & hydrology engineering: minimize intrusion into major watercourses and water bodies; general location of potential significant modification to watercourses and water bodies

- foundations engineering: minimize intrusion into areas of extreme gradient change and into large areas of unstable soils; general locations where large cut and fill embankments required
- pavement and road base engineering: minimize intrusion into large areas of unstable soils
- traffic and electrical engineering: possible ITS applications
- environmental protection for the above (which is focussed on minimizing intrusion into areas of provincial environmental interest as defined in the Provincial Policy Statement, recognizing that complete avoidance of all such areas is not likely to be possible)
- preliminary study area(s)

b) Preliminary planning alternatives for improvements to existing transportation facilities:

- Location, type and capacity of highway improvements (key roadway engineering alternatives for highway improvements):
  - general areas/locations/end-points of potential geometrical improvements to existing highway:
    - roadway gradient & alignment/curvature
    - highway intersection/interchange location/configuration
  - general areas/locations/end-points of potential widening of existing highway
    - through-lanes
    - passing lanes
    - continuous left turn lanes
    - general purpose lanes vs HOV lanes or reserved bus lanes)
  - interchanges and major intersections for 'Area Transportation System' (network) linkages
  - conceptual areas of limitations on access to provincial highway
    - locations where access to highway potentially limited in order to maintain highway functional integrity (purpose and level of service)
    - locations where access to highway potentially limited to/from areas not designated for development
  - preliminary study area
- key specialty engineering preliminary planning alternatives for improvements to existing highway
  - bridge engineering: general type/character of structure improvements of specific bridges & major culverts
  - drainage & hydrology engineering: general locations of improvement to drainage along & across ROW
  - foundation engineering: consideration of improvements to specific structure foundations and stability improvements to specific deep cut and high fill embankments
  - pavement and road base engineering: consideration of pavement/road base modification versus replacement
  - traffic & electrical engineering: general locations of improvement to line-of-sight, roadside safety; sites where traffic control signals required

- combinations of the above
- environmental protection for the above (which is focussed on minimizing intrusion into areas of provincial environmental interest as defined in the Provincial Policy Statement, recognizing that complete avoidance of all such areas is not likely to be possible)
- preliminary study area(s)

### **Detailed Planning Alternatives**

The Highway 7&8 Transportation Corridor Planning and Class EA Study will consider the following detailed planning alternatives for the provincial roadway alternatives carried forward from the preliminary planning phase (as applicable):

- a) Detailed planning alternatives for a new provincial roadway (as applicable) are the following:
- key roadway engineering alternatives for new provincial roadway:
    - final study area
    - new provincial transitway route location & technology
    - new provincial highway route location and highway type
    - final study areas
    - roadway design speed, basic plan and profile, basic cross-section covering:
      - number of lanes/tracks
      - core/collector separation (if applicable)
      - median treatment and shoulder type
      - major drainage
    - highway interchange/intersection specific location, configuration, footprint
    - transitway station specific location & footprint
    - specific nature & location of limitations on access to provincial highway (see details in “f” below)
  - key specialty engineering detailed planning alternatives for new provincial roadway:
    - bridge engineering: specific location/ type/span/length & template “footprint” of bridges & major culverts
    - drainage & hydrology engineering: specific location/type/character & template “footprint” of major facilities for drainage along & across the ROW and for stormwater management
    - foundation engineering: specific location/type/character and template “footprint” of major cut/fill embankments; foundations for bridges & major culverts
    - pavement and road base engineering: road base structure and pavement type
    - traffic & electrical engineering: specific locations/sites for traffic control signals and roadside safety barriers
  - environmental impact assessment (see details in (b) below)
- b) Detailed planning alternatives for improvement to the existing provincial highway (as applicable), are the following:
- key roadway engineering alternatives for highway improvements

- final study area
- specific location/end-points, type/character of geometrical improvements
  - roadway gradient and alignment curvature
  - interchange/intersection location/configuration
- specific location/end-points, extent & direction of widening
  - number of lanes
  - symmetrical vs asymmetrical vs new independent centreline
- roadway design speed, basic plan and profile, basic cross-section covering:
  - number of lanes/tracks
  - core/collector separation (if applicable)
  - median treatment and shoulder type
  - major drainage
- highway interchange/intersection specific location, configuration, and template “footprint”
- specific consideration of the above to improve bus operations on the highway, and to improve highway access to regional centres of goods movement such as intermodal facilities
- specific nature & location of limitations on access to provincial highway (as applicable)
  - areas where interchanges, intersections and entrances limited
  - areas where cross-roads grade-separated
  - areas where service roads provided
  - areas of metering of traffic access to highways at interchanges and intersections
  - areas of provincial ownership to prevent access to crossing roads from being too close to highway
  - areas of staged access based upon development controls being put in place
  - highway functional classification and highway access management classification upon which the above is based (selected from the following):
    - freeway (freeway, staged freeway)
    - arterial (major arterial, minor arterial)
    - collector (major collector, minor collector)
    - local
- key specialty engineering detailed planning alternatives for highway improvements:
  - bridge engineering: specific location/ type/span/length & template “footprint” of bridges & major culverts
  - drainage & hydrology engineering: specific location/type/character & template “footprint” of major facilities for drainage along & across the ROW and for stormwater management
  - foundation engineering: specific location/type/character and template “footprint” of major cut/fill embankments; foundations for bridges & major culverts
  - pavement and road base engineering: road base structure and pavement type
  - traffic & electrical engineering: specific locations/sites for traffic control signals and roadside safety barriers

- environmental impact assessment
  - environmental constraints to design and construction
  - avoidance/prevention/minimization incorporated into development of alternatives (where avoidance is primarily with respect to “footprint” impacts during generation of alternatives to capitalize on significant transportation engineering opportunities while protecting significant environmental features as much as possible)
  - assessment of environmental impacts (to factor areas identified for Report “F”, based upon the following:
    - environmental sensitivities identified;
    - details of environmental effect / condition change, with respect to:
      - type of impact (“footprint”, interference, traffic access modification, emissions)
      - nature of impact (direction, timing, duration, frequency, magnitude, reversibility, geographic extent, probability of occurrence and cumulative impacts)
    - degree to which environmental effects / condition changes can be mitigated (based on previous and concurrent experience), including residual effects; and
    - degree to which environmental avoidance/impact prevention could be incorporated in the development of alternatives
    - net environmental effects - advantages and disadvantages (which may be limited to a short-list of alternatives if the evaluation process includes a screening component)

## **Preliminary Design Alternatives**

The Highway 7&8 Transportation Corridor Planning and Class EA Study will consider the following preliminary design alternatives for the provincial roadway alternatives carried forward from the detailed planning phase (as applicable):

- a) Roadway engineering preliminary design alternatives (as applicable)
  - roadway engineering preliminary design alternatives:
    - calculated horizontal & vertical alignment and cross-section covering:
      - lane/track arrangement
      - lane continuity & balance
      - cross-fall & super-elevation
      - median & shoulder
      - aspects of specialty engineering infrastructure such as drainage and roadside safety
    - highway interchange/intersection preliminary design
    - transitway station preliminary design
    - location/design of private entrances to highway
    - right-of-way & property acquisition requirements (“property request” follows)
    - utilities (electricity, gas, water, telecommunications)

- roadway engineering preliminary design of alternatives for limitation to highway access (as applicable):
  - preclude or limit highway interchanges with crossing roads:
    - limit new highway interchanges to key selected municipal major arterial roads
    - specify minimum distance separation between new and existing interchanges
    - preclude interchanges at crossing roads on which public/private roads and entrances do not meet specified minimum separation distances from the interchange ramp terminals
    - prohibit new interchanges
  - preclude or limit highway intersections with crossing roads:
    - eliminate turns at existing intersections
    - close existing intersections
    - specify minimum distance separation between new and existing intersections
    - specify minimum highway stopping sight distance at intersections
    - prohibit new intersections
  - preclude or limit property entrances to highway:
    - limit/prohibit intensified traffic use / upgrading of existing property entrances
    - specify maximum density (# entrances per kilometre) of property entrances and minimum distance separation between property entrances (for both commercial and non-commercial)
    - specify minimum distance separation between property entrances and crossing road intersection
    - specify minimum highway stopping sight distance at entrances
    - specify minimum “access connection depth” within entrances
    - specify conditions for traffic signals by commercial entrance applicants
    - specify minimum lot frontage for entrances
    - prohibit entrances for direct property access to highway
    - for entrances from crossing roads, specify minimum distance between entrance and highway, or prohibit entrances within highway “control area”
  - grade-separate crossing roads at highway
    - prevent highway access while maintaining local road continuity
  - provide highway service roads
    - considered in association with precluding or eliminating interchanges, intersections, entrances
  - meter traffic access to highway at interchanges and intersections
    - traffic signals at intersections timed to favour highway traffic and/or control access from crossing road traffic
    - traffic signals on interchange ramps to control access from crossing roads
  - implement provincial ownership regime on sections of crossing roads adjacent to highway in order to prevent access that is too close to the highway (could be up to 1 km from edge of highway ROW):
    - assume section of crossing road adjacent to highway as part of the Kings Highway, onto which MTO will not permit roadway intersections or private entrances
    - implement provincial land “reserves” along each side of crossing roads, through which MTO will not permit roadway intersections or private entrances (e.g. 0.3 m wide band of provincial property along each side of crossing road)
  - staged access is conditional upon suitable agreements regarding management of area growth being reached between the local municipality and one or both of the Ministry of Public Infrastructure and Renewal and the Ministry of Municipal Affairs and Housing:
    - interchange not constructed unless agreements reached
    - interchange initially constructed as a grade-separated crossing, with ramps for access not constructed unless agreements reached



- traffic access at interchange from crossing road to highway metered at specified levels unless agreement reached
  - intersections initially constructed with limited permitted turns unless agreements reached
  - cul de sac crossing roads, with intersection not constructed unless agreements reached
- private entrances not permitted unless agreements reached
- preclude or limit buildings and structures within highway “control area”
- environmental protection for the above
  - environmental preliminary design (mitigation, compensation, enhancement)
  - potential effects to interdependent components of ecosystems as well as the overall cumulative effects
  - likelihood of significant adverse environmental effects

b) Specialty engineering preliminary design alternatives (as applicable)

- Bridge & major culvert engineering:
  - structure width, length, skew, geometry & cross-section
  - structure vertical clearance & span arrangement
  - navigable channel (if applicable)
- Drainage & hydrology engineering:
  - channels, ditches, storm sewers & outlets/outfalls for drainage of roadway
  - stormwater management facilities
  - hydraulics of bridges, culverts & water crossing inlets/outlets
- Foundation engineering:
  - foundations for bridge & major culvert structures
  - conventional slope geometry for major cut/fill embankments
  - non-conventional slope geometry for major cut/fill embankments
  - settlement management & excavation methods
- Pavement and road base engineering:
  - preliminary design of road base and pavement
  - mass haul (cut/fill earth/rock material balance)
  - preliminary sources of suitable granular material
- Traffic & electrical engineering:
  - traffic control signals
  - major roadside safety infrastructure
  - traffic signing & pavement markings
  - roadway illumination
  - ITS technology
  - emergency access
  - Preliminary construction traffic detour requirements
- specialty engineering preliminary/concept design of alternatives for limitation to highway access (see details in “d” above)
- environmental protection for the above
- environmental preliminary design (mitigation, compensation, enhancement)
  - potential effects to interdependent components of ecosystems as well as the overall cumulative effects
  - likelihood of significant adverse environmental effects

*Note regarding Items (a) and (b) above: examination of preliminary design alternatives includes specific consideration of preliminary design elements that improve bus operations on the highway and that improve highway access to/from regional centres of primary goods movement such as intermodal facilities*

**SUPPORTING DOCUMENT #4**  
**FEDERAL / PROVINCIAL EA CO-ORDINATION**

## FEDERAL/PROVINCIAL EA CO-ORDINATION

Under the Canadian Environmental Assessment Act (CEAA), the following information needs to be provided in a class environmental assessment conducted as a screening (paraphrasing):

- a description of the existing environment;
- any change the project may cause in the environment including: land, water, air, organic and inorganic matter, living organisms, and the interaction of natural systems;
- any effects that the project may cause to a listed wildlife species, its critical habitat or residences of individuals of that species, as those terms are defined in subsection 2(1) of the *Species at Risk Act*;
- the effects of a project-related environmental change on: health and socio-economic conditions; physical and cultural heritage; the current use of lands and resources for traditional purposes by aboriginal persons; and any structure, site or thing that is of historical, archeological, paleontological or architectural significance;
- any such project change or effect occurring both within or outside Canada;
- all environmental effects that may result from the various phases of the project (construction, operation, modification, abandonment and decommissioning);
- the environmental effects of accidents and malfunctions;
- the effects of the environment on the project (including effects due to climate change);
- the cumulative environmental effects of this project that are likely to result from the project in combination with other projects or activities that have been or will be carried out;
- the likelihood of significant adverse environmental effects;
- the need for and requirements of a follow-up program;
- comments from the public obtained in accordance with CEAA;
- any measures to be taken that would mitigate identified environmental effects;
- any other matter that the responsible authority deems to be necessary including those required for a comprehensive study, mediation or panel.

Additional factors to be considered for a comprehensive study, mediation or panel include:

- the purpose of the project;
- alternatives means of carrying out the project;
- design of a follow up program;
- the capacity of renewable resources affected by the project to meet the needs of the present and those of the future.

If the decommissioning and abandonment phases are not currently part of the proposed project, the proponent may explain this in its EA document, and the responsible authority under *CEAA* may decide not to require further analysis on these phases of the project as part of the current assignment.

Nothing in this document will limit the prerogative of federal authorities to seek additional information as more is learned about the specifics of the projects and its potential effects. Responsible authorities will be making a judgment about the likelihood of significant adverse environmental effects after mitigation, and they have the discretion to determine what information they require before making such a judgment.

## **SUPPORTING DOCUMENT #5**

### **PRELIMINARY FACTORS, SUB-FACTORS, CRITERIA AND INDICATORS FOR EVALUATION OF AREA TRANSPORTATION SYSTEM PLANNING ALTERNATIVES AND PROVINCIAL ROADWAY ALTERNATIVES**

SUPPORTING DOCUMENT #5						
PRELIMINARY FACTORS, SUB-FACTORS, CRITERIA AND INDICATORS FOR EVALUATION OF AREA TRANSPORTATION SYSTEM PLANNING ALTERNATIVES AND PROVINCIAL ROADWAY ALTERNATIVES						
FACTOR / SUB-FACTOR	CRITERIA	PRELIMINARY EVALUATION INDICATORS FOR EACH PHASE				RATIONALE FOR FACTOR AND SUB-FACTOR EVALUATION
		TRANSPORTATION NEEDS ASSESSMENT	PRELIMINARY PLANNING	DETAILED PLANNING FOR PROVINCIAL ROADWAYS	PRELIMINARY DESIGN FOR PROVINCIAL ROADWAYS	
1. Natural Environmental Factors						
1.1 Fisheries and Aquatic Ecosystems	1.1.1 Fish Habitat	Potential to affect fish species at risk (vulnerable, threatened or endangered fish species) and their habitat	Potential to affect fish species at risk (vulnerable, threatened or endangered fish species) and their habitat	Potential and significance of: <ul style="list-style-type: none"><li>• encroachment, severance, displacement;</li><li>• long-term alteration/disruption</li></ul> as applicable to the following: <ul style="list-style-type: none"><li>• critical fish habitat features</li><li>• riparian areas</li><li>• habitat rehabilitation goals</li></ul>	Potential and significance of: <ul style="list-style-type: none"><li>• encroachment, severance, displacement;</li><li>• long-term alteration/disruption</li><li>• short-term alteration/disruption (construction impacts).</li></ul> as applicable to the following: <ul style="list-style-type: none"><li>• critical fish habitat features</li><li>• riparian areas</li><li>• habitat rehabilitation goals</li></ul>	<ul style="list-style-type: none"><li>• The crossing of water bodies by transportation facilities has the potential to affect fish and aquatic habitat features through impediments to fish passage, loss of vegetation, changes to channel geomorphology (channel form and function), substrate and cover, changes to the water quality due to erosion and sedimentation, stormwater discharge and temperature changes.</li><li>• PPS Policy 1.6.6.4 stipulates that when planning for corridors and rights-of-way for significant transportation facilities, consideration will be given to significant natural heritage, water, agricultural, mineral, cultural heritage and archaeological resources. The context is provided in other PPS policy statements_ identified below.</li><li>• PPS Policy 2.1.5 requires that development and site alteration shall not be permitted in fish habitat except in accordance with provincial and federal requirements. In addition, policy 2.1.6 restricts development and site alteration on adjacent lands to natural heritage features (e.g. significant - wetlands, woodlands, valleylands etc.) unless the ecological function of the adjacent lands has been evaluated and it has been demonstrated that there will be no negative impacts on the natural features or on their ecological functions.</li><li>• It is an objective of the PPS to protect, improve or restore the quality and quantity of surface water, including headwaters. Surface water features are an important part of the natural, economic and cultural landscape. PPS Policy 2.2.2 restricts development and site alteration in or near sensitive surface water features and groundwater features such that these features and their related hydrologic functions will be protected, improved or restored.</li><li>• The Federal Fisheries Act prohibits the harmful alteration, disruption or destruction of fish habitat, the introduction of deleterious substances to fish habitat and the blockage of fish passage. Where impacts cannot be mitigated, a Fisheries Compensation Plan is prepared in consultation with the CA/DFO to address agency concerns/requirements.</li><li>• Subsection 36(3) of the Fisheries Act prohibits the deposit of a deleterious substance, directly or indirectly, into waters frequented by fish.</li></ul>
	1.1.2 Fish Community			Potential and significance of: <ul style="list-style-type: none"><li>• encroachment, severance, displacement;</li><li>• long-term alteration/ disruption</li></ul> as applicable to the following: <ul style="list-style-type: none"><li>• fish species at risk (vulnerable, threatened or endangered fish species)</li><li>• fish movement/migration</li><li>• critical fish life stage processes (spawning, rearing, nursery, feeding)</li><li>• long-term fish community management goals</li></ul>	Potential and significance of: <ul style="list-style-type: none"><li>• encroachment, severance, displacement;</li><li>• long-term alteration/ disruption</li><li>• short-term alteration/disruption (construction impacts).</li></ul> as applicable to the following: <ul style="list-style-type: none"><li>• fish species at risk (vulnerable, threatened or endangered fish species)</li><li>• fish movement/migration</li><li>• critical fish life stage processes (spawning, rearing, nursery, feeding)</li><li>• long-term fish community management goals</li></ul>	
1.2 Terrestrial Ecosystems	1.2.1 Wildlife	Potential to affect wildlife species at risk (vulnerable, threatened or endangered wildlife species) and their habitat	Potential to affect wildlife species at risk (vulnerable, threatened or endangered wildlife species) and their habitat	Potential and significance of: <ul style="list-style-type: none"><li>• encroachment, severance, displacement;</li><li>• long-term alteration/ disruption</li></ul> as applicable to the following: <ul style="list-style-type: none"><li>• wildlife species at risk (vulnerable, threatened or endangered wildlife species)</li><li>• wildlife of local and regional importance</li><li>• migratory birds</li></ul>	Potential and significance of: <ul style="list-style-type: none"><li>• encroachment, severance, displacement;</li><li>• long-term alteration/ disruption</li><li>• short-term alteration/disruption (construction impacts).</li></ul> as applicable to the following: <ul style="list-style-type: none"><li>• wildlife species at risk (vulnerable, threatened or endangered wildlife species)</li><li>• wildlife of local and regional importance</li></ul>	<ul style="list-style-type: none"><li>• PPS Policy 1.6.6.4 stipulates that when planning for corridors and rights-of-way for significant transportation facilities, consideration will be given to significant natural heritage, water, agricultural, mineral, cultural heritage and archaeological resources. The context is provided in other PPS policy statements identified below.</li><li>• The presence of species identified by COSEWIC and COSSARO as vulnerable, threatened or endangered (VTE) requires consideration in the</li></ul>

SUPPORTING DOCUMENT #5						
PRELIMINARY FACTORS, SUB-FACTORS, CRITERIA AND INDICATORS FOR EVALUATION OF AREA TRANSPORTATION SYSTEM PLANNING ALTERNATIVES AND PROVINCIAL ROADWAY ALTERNATIVES						
FACTOR / SUB-FACTOR	CRITERIA	PRELIMINARY EVALUATION INDICATORS FOR EACH PHASE				RATIONALE FOR FACTOR AND SUB-FACTOR EVALUATION
		TRANSPORTATION NEEDS ASSESSMENT	PRELIMINARY PLANNING	DETAILED PLANNING FOR PROVINCIAL ROADWAYS	PRELIMINARY DESIGN FOR PROVINCIAL ROADWAYS	
				<ul style="list-style-type: none"><li>critical wildlife habitat features</li><li>ecologically functional areas such as connective corridors or travel ways for movement/migration</li><li>important wildlife areas such as deeryards, heronries, waterfowl areas, important bird areas</li><li>wildlife management, rehabilitation/research program sites</li><li>interference with critical wildlife life stage processes (eg mating/rearing) etc</li></ul>	<ul style="list-style-type: none"><li>migratory birds</li><li>critical wildlife habitat features</li><li>ecologically functional areas such as connective corridors or travel ways for movement/migration</li><li>important wildlife areas such as deeryards, heronries, waterfowl areas, important bird areas</li><li>wildlife management, rehabilitation/research program sites</li><li>interference with critical wildlife life stage processes (eg mating/rearing) etc</li></ul>	<p>generation of route alternatives. Species or populations may be under pressure or susceptible to stress as a result of development. Since habitat for these species is often limited, impacts to areas where the presence of species at risk is suspected or confirmed should be avoided or minimized. The assessment should have regard for the PPS objective that development and site alteration will not be permitted in significant portions of the habitat of Threatened and Endangered Species. The reported presence of Species of Conservation Concern (as defined by MNR in the Significant Wildlife Habitat Technical Guides (SWHTG – MNR, 2000) and TRCA species of concern will also be considered.</p> <ul style="list-style-type: none"><li>The general prohibitions under the Species at Risk Act, which apply to federally protect migratory bird and aquatic species at risk as well as to all endangered and threatened species on federal lands.</li><li>Section 6 of the Migratory Bird Regulations under the Migratory Birds Convention Act, 1994, which prohibits the incidental take of migratory birds and the disturbance and destruction of taking of the nest of a migratory bird.</li><li>PPS Policy 2.1.4 prohibits development and site alteration in significant wetlands in the Canadian Shield north of Ecoregions 5E, 6E and 7E. The assessment should have regard for this objective. Wetlands serve ecological functions to varying degrees including groundwater recharge/discharge, flood attenuation, wildlife movement corridors, habitat for flora and fauna, and water filtration.</li><li>The Canadian Federal Policy on Wetland Conservation promotes the goal of no net loss of wetland function in areas where wetland loss has reached critical levels.</li></ul>
	1.2.2 Wetlands	Potential to affect provincially and locally significant wetlands	Potential to affect provincially and locally significant wetlands	<p>Potential and significance of:</p> <ul style="list-style-type: none"><li>encroachment, severance, displacement;</li><li>long-term alteration/ disruption</li></ul> <p>as applicable to the following:</p> <ul style="list-style-type: none"><li>provincially significant wetlands, their buffer areas, and their wetland function</li><li>evaluated and un-evaluated wetlands, their wetland buffer areas, and their wetland function</li><li>wetland management, research and/or wetland conservation programs/areas</li></ul>	<p>Potential and significance of:</p> <ul style="list-style-type: none"><li>encroachment, severance, displacement;</li><li>long-term alteration/ disruption</li><li>short-term alteration/disruption (construction impacts).</li></ul> <p>as applicable to the following:</p> <ul style="list-style-type: none"><li>provincially significant wetlands, their buffer areas, and their wetland function</li><li>evaluated and un-evaluated wetlands, their wetland buffer areas, and their wetland function</li><li>wetland management, research and/or wetland conservation programs/areas</li></ul>	<ul style="list-style-type: none"><li>PPS Policy 1.6.6.4 stipulates that when planning for corridors and rights-of-way for significant transportation facilities, consideration will be given to significant natural heritage, water, agricultural, mineral, cultural heritage and archaeological resources. The context is provided in other PPS policy statements identified below.</li><li>It is important to recognize identified ecologically functional linkages between factors and sub-factors (within a natural heritage system) that contribute to landscape connectivity. The assessment should have regard for PPS Policy 2.1.2 which states that the diversity and connectivity of natural features in an area, and the long term ecological function and biodiversity of natural heritage systems, should be maintained, restored, or where possible improved, recognizing linkages between and among natural heritage features and areas, surface water features and groundwater features. The avoidance of wildlife corridors minimizes</li></ul>



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FACTOR / SUB-FACTOR	CRITERIA	PRELIMINARY EVALUATION INDICATORS FOR EACH PHASE				RATIONALE FOR FACTOR AND SUB-FACTOR EVALUATION
		TRANSPORTATION NEEDS ASSESSMENT	PRELIMINARY PLANNING	DETAILED PLANNING FOR PROVINCIAL ROADWAYS	PRELIMINARY DESIGN FOR PROVINCIAL ROADWAYS	
						risks of wildlife mortality during operation of the facility. Secondary information on ecosystem linkages (aquatic and terrestrial) will be reviewed and supplemented by other available sources (including contacts with specialists, field findings).
1.2 Terrestrial Ecosystems (Cont'd)	1.2.3 Forests  (e.g. woodlands [forest stands, woodlots and interior forest habitat] and significant valley lands [valley and stream corridors])	Potential to affect significant woodlands/valley lands and areas supporting known populations of vegetation species at risk (vulnerable, threatened or endangered species)	Potential to affect significant woodlands/valley lands and areas supporting known populations of vegetation species at risk (vulnerable, threatened or endangered species)	Potential and significance of: <ul style="list-style-type: none"><li>• encroachment, severance, displacement;</li><li>• long-term alteration/ disruption</li></ul> as applicable to the following: <ul style="list-style-type: none"><li>• significant woodlands/valley lands</li><li>• forest management/research program areas</li></ul>	Potential and significance of: <ul style="list-style-type: none"><li>• encroachment, severance, displacement;</li><li>• long-term alteration/ disruption</li><li>• short-term alteration/disruption (construction impacts).</li></ul> as applicable to the following: <ul style="list-style-type: none"><li>• woodlands/valley lands</li><li>• forest management/research program areas</li></ul>	<ul style="list-style-type: none"><li>• PPS Policy 1.6.6.4 stipulates that when planning for corridors and rights-of-way for significant transportation facilities, consideration will be given to significant natural heritage, water, agricultural, mineral, cultural heritage and archaeological resources. The context is provided in other PPS policy statements identified below.</li><li>• The PPS Policy 2.1.4 only permits development and site alteration in significant woodlands south and east of the Canadian Shield where it can be demonstrated that there will be no negative impacts on the natural features or their ecological function. The assessment should have regard for the PPS protection objectives.</li><li>• The study area is located within the Carolinian Zone and may have important representations of Carolinian species assemblages. These natural heritage areas require protection.</li><li>• Small degraded, isolated remnant woodlots and wetlands can have ecological value. Large natural and relatively undisturbed features have high ecological sensitivity and value.</li></ul>
	1.2.4 Vegetation			Potential and significance of: <ul style="list-style-type: none"><li>• encroachment, severance, displacement;</li><li>• long-term alteration/ disruption</li></ul> as applicable to the following: <ul style="list-style-type: none"><li>• populations of vegetation species at risk (vulnerable, threatened or endangered species), species of conservation concern and significant regional/local flora/communities</li><li>• areas/corridors supporting known populations of vegetation species at risk (vulnerable, threatened or endangered species), species of conservation concern and significant flora/communities</li><li>• vegetation management, rehabilitation/research program sites</li></ul>	Potential and significance of: <ul style="list-style-type: none"><li>• encroachment, severance, displacement;</li><li>• long-term alteration/ disruption</li><li>• short-term alteration/disruption (construction impacts).</li></ul> as applicable to the following: <ul style="list-style-type: none"><li>• populations of vegetation species at risk (vulnerable, threatened or endangered species), species of conservation concern and significant regional/local flora/communities</li><li>• areas/corridors supporting known populations of vegetation species at risk (vulnerable, threatened or endangered species), species of conservation concern and significant flora/communities</li><li>• vegetation management, rehabilitation/research program sites</li></ul>	
	1.2.5 Designated/Special Areas (such as world biosphere reserves, heritage rivers, ESAs, ESPAs, ANSIs, environmental plan areas, conservation reserves; and the designated special areas of national parks, provincial parks, conservation areas, etc)	Potential to affect designated/special areas	Potential to affect designated/special areas	Potential and significance of: <ul style="list-style-type: none"><li>• encroachment, severance, displacement;</li><li>• long-term alteration/ disruption;</li><li>• change in area character/ aesthetics;</li><li>• nuisance impacts;</li><li>• change to access / travel time;</li><li>• change to facilities / utilities / services.</li></ul> to designated/special areas.	Potential and significance of: <ul style="list-style-type: none"><li>• encroachment, severance, displacement;</li><li>• long-term alteration/ disruption;</li><li>• short-term alteration/disruption (construction impacts);</li><li>• change in area character/ aesthetics;</li><li>• nuisance impacts;</li><li>• change to access / travel time;</li><li>• change to facilities / utilities / services.</li></ul> to designated/special areas.	

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PRELIMINARY FACTORS, SUB-FACTORS, CRITERIA AND INDICATORS FOR EVALUATION OF AREA TRANSPORTATION SYSTEM PLANNING ALTERNATIVES AND PROVINCIAL ROADWAY ALTERNATIVES						
FACTOR / SUB-FACTOR	CRITERIA	PRELIMINARY EVALUATION INDICATORS FOR EACH PHASE				RATIONALE FOR FACTOR AND SUB-FACTOR EVALUATION
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						<p>there will be no negative impacts on the natural features or functions for which the area is identified.</p> <ul style="list-style-type: none"><li>• Areas that have been designated as Environmentally Significant Areas, Areas of Natural and Scientific Interest or Significant Valleylands may have landforms or plant communities associated with the area that are designated locally, regionally or provincially significant, or provide important corridors.</li><li>• ESAs are not explicitly included in the Provincial Policy Statement, but are often associated with other features subject to the policy statement (e.g. ANSIs, significant woodlands, significant habitat of endangered species or threatened species, significant wetlands, valleylands and wildlife habitat). They are also reflected in the MNR Land Use Guidelines, Conservation Authority Plans and municipal land use plans.</li><li>• PPS Policy 2.1.6 provides for development and site alteration on adjacent lands to listed natural heritage features and areas, only where the ecological function of the adjacent lands has been evaluated and it has been demonstrated that there will be no negative impacts on the natural features or on their ecological function.</li><li>• Policy 4.2.1.2 of the Greenbelt Plan 2005 states that the location and construction of infrastructure and expansions, extensions, operations and maintenance of infrastructure in the Protected Countryside are subject to specified criteria.</li></ul>
1.3 Groundwater	1.3.1 Areas of Ground water Recharge and Discharge	Potential to affect areas of groundwater recharge and discharge	Potential to affect areas of groundwater recharge and discharge	Potential and significance of alteration to areas of groundwater recharge and discharge due to physical intrusion or groundwater interception, draw-down, impoundment, obstruction, or soil compaction impacting groundwater base-flow and quality	Potential and significance of alteration to areas of groundwater recharge and discharge due to physical intrusion or groundwater interception, draw-down, impoundment, obstruction, or soil compaction impacting groundwater base-flow and quality	<ul style="list-style-type: none"><li>• PPS Policy 1.6.6.4 stipulates that when planning for corridors and rights-of-way for significant transportation facilities, consideration will be given to significant natural heritage, water, agricultural, mineral, cultural heritage and archaeological resources. The context is provided in other PPS policy statements identified below.</li><li>• Section 2.2 of the PPS identifies that the quality and quantity of water (including groundwater) should be protected improved or restored. The assessment should have regard for this objective. Transportation facilities have the potential to impact groundwater resources through removal of recharge areas, interference with discharge areas/shallow groundwater zones, and introduction of contaminated runoff. Consequently, impacts to areas identified as being susceptible to groundwater contamination and/or interference should be avoided/minimized to the extent possible.</li></ul>
	1.3.2 Groundwater Source Areas and Wellhead Protection Areas	Potential to affect groundwater source areas and wellhead protection areas	Potential to affect groundwater source areas and wellhead protection areas	Potential and significance of alteration to groundwater source areas and wellhead protection areas due to physical intrusion, or groundwater interception, draw-down, impoundment, obstruction and by soil compaction	Potential and significance of alteration to groundwater source areas and wellhead protection areas due to physical intrusion, or groundwater interception, draw-down, impoundment, obstruction and by soil compaction	
	1.3.3 Large Volume Wells	Potential to affect large volume wells	Potential to affect large volume wells	Potential and significance of alteration to large volume wells due to physical intrusion or groundwater interception, draw-down, impoundment, obstruction and by soil compaction	Potential and significance of alteration to large volume wells due to physical intrusion or groundwater interception, draw-down, impoundment, obstruction and by soil compaction	
	1.3.4 Private Wells	Not considered in this phase.	Not considered in this phase.	Potential and significance of alteration to private well use due to physical intrusion, or groundwater interception, draw-down, impoundment, obstruction and by soil compaction	Potential and significance of alteration to private well use due to physical intrusion, or groundwater interception, draw-down, impoundment, obstruction and by soil compaction	
	1.3.5 Groundwater-Dependent Commercial Enterprises  (e.g. water bottling operations)	Not considered in this phase.	Not considered in this phase.	Potential and significance of alteration to groundwater use by groundwater-dependent commercial enterprises due to physical intrusion, or groundwater interception, draw-down, impoundment, obstruction and by soil compaction	Potential and significance of alteration to groundwater use by groundwater-dependent commercial enterprises due to physical intrusion, or groundwater interception, draw-down, impoundment, obstruction and by soil compaction	

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FACTOR / SUB-FACTOR	CRITERIA	PRELIMINARY EVALUATION INDICATORS FOR EACH PHASE				RATIONALE FOR FACTOR AND SUB-FACTOR EVALUATION
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	1.3.6 Groundwater-Sensitive Ecosystems  (e.g. groundwater fed wetlands, coldwater streams)	Not considered in this phase.	Not considered in this phase.	Potential and significance of alteration to groundwater-sensitive ecosystems due to physical intrusion, or groundwater interception, draw-down, impoundment, obstruction and by soil compaction	Potential and significance of alteration to groundwater-sensitive ecosystems due to physical intrusion, or groundwater interception, draw-down, impoundment, obstruction and by soil compaction	
1.4 Surface Water	1.4.1 Watershed / Sub-Watershed Drainage Features/Patterns	Potential to affect permanent watercourses	Potential to affect permanent watercourses	Potential and significance of: <ul style="list-style-type: none"><li>• encroachment, severance, displacement;</li><li>• long-term alteration/ disruption.</li></ul> as applicable to the following: <ul style="list-style-type: none"><li>• watercourse crossings (permanent, intermittent and ephemeral)</li><li>• floodplain or meander belts</li><li>• riparian areas</li><li>• sensitive headwater areas</li><li>• watershed and subwatershed management plans</li></ul>	Potential and significance of: <ul style="list-style-type: none"><li>• encroachment, severance, displacement;</li><li>• long-term alteration/ disruption.</li></ul> as applicable to the following: <ul style="list-style-type: none"><li>• watercourse crossings (permanent, intermittent and ephemeral)</li><li>• floodplain or meander belts</li><li>• riparian areas</li><li>• sensitive headwater areas</li><li>• watershed and subwatershed management plans</li></ul>	<ul style="list-style-type: none"><li>• Surface water features are an important part of the natural landscape in the Analysis Area. There are a number of permanent and intermittent watercourses flowing through the Analysis Area as well as a number of provincially and locally significant wetlands and various unnamed tributaries and agricultural swales present in the analysis area. Consequently, surface water quantity and quality could be negatively affected by the undertaking (e.g., reduction in surface water quantity, degradation of surface water quality, etc.) and therefore the ability to protect surface water quality, including the function of headwaters, need to be considered in the evaluation.</li></ul>
	1.4.2 Surface Water Quality and Quantity	Not considered in this phase	Not considered in this phase	Potential and significance of impacts on quality through direct and indirect discharges of contaminated and sediment-laden run-off  Potential and significance of impacts on hydrology due to changes in ground permeability, modifications to surface drainage patterns and alterations of water bodies	Potential and significance of impacts on quality through direct and indirect discharges of contaminated and sediment-laden run-off  Potential and significance of impacts on hydrology due to changes in ground permeability, modifications to surface drainage patterns and alterations of water bodies	
1.5 Air Quality	1.5.1 Local and Regional Air Quality  (Total contaminant and greenhouse gas emissions)	Potential to reduce the air quality consequences of traffic congestion	Potential to reduce the air quality consequences of traffic congestion	Not considered in this phase. See item below	Not considered in this phase. See item below.	<ul style="list-style-type: none"><li>• Air Quality impacts have the potential to affect human health.</li><li>• Alternatives through or near urban areas create the potential for increased contaminant levels.</li><li>• Dust emissions associated with construction related activities could cause temporary air quality issues.</li><li>• Greenhouse gases contribute to global warming.</li></ul>
	1.5.2 Sensitive receptors to air pollutants and greenhouse gas emissions	Not considered in this phase.	Not considered in this phase.	Presence and potential for impacts to sensitive receptors to air pollutants and greenhouse gas emissions	Potential and significance of effects on sensitive receptors to air pollutants and greenhouse gas emissions	
2. Land Use / Socio-Economic Environmental Factors						
2.1 Land Use Planning Policies, Goals, Objectives	2.1.1 First Nations Land Claims	Potential to affect areas for which there are First Nations outstanding land claims	Potential to affect areas for which there are First Nations outstanding land claims	Potential and significance of encroachment, severance, displacement to areas for which there are First Nations outstanding land claims	Potential and significance of encroachment, severance, displacement to areas for which there are First Nations outstanding land claims	<ul style="list-style-type: none"><li>• It is important that First Nations’s land claims within the Analysis Area are documented</li><li>• The Ontario Provincial Policy Statement notes that long-term prosperity and social well-being of Ontarians depends on maintaining strong communities, a clean and healthy environment and a strong economy. Transportation facilities play a key role in achieving these objectives.</li><li>• There is a need to co-ordinate transportation planning with municipal land planning as established through Official Plans, Secondary Plans and Zoning by-laws as these specify land uses supported by residents, municipalities and the province.</li><li>• The Greenbelt Plan notes that infrastructure is important to economic well-being, human health and quality of life in southern Ontario and the Greenbelt.</li><li>• Policy 4.2.1 of the Greenbelt Plan states that, for lands within the protected countryside, as defined by the Greenbelt Plan, 2005, infrastructure must meet one of the following policies; it supports agriculture, recreation and tourism, rural</li></ul>
	2.1.2 Provincial/Federal land use planning policies/goals/ objectives	Potential to support federal/provincial land use policies/goals/objectives	Potential to support federal/provincial land use policies/goals/objectives	Degree of compatibility with federal/provincial land use policies/goals/ objectives	Not considered in this phase.	
	2.1.3 Municipal (regional and local) land use planning policies/ goals/objectives (Official Plans)	Potential to support municipal Official Plans	Potential to support municipal Official Plans	Degree of compatibility with municipal Official Plans	Not considered in this phase.	
	2.1.4 Development Objectives of Private Property Owners	Not considered in this phase	Not considered in this phase	Potential to isolate property from current/future urban envelope  Impact on future land use	Not considered in this phase.	

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FACTOR / SUB-FACTOR	CRITERIA	PRELIMINARY EVALUATION INDICATORS FOR EACH PHASE				RATIONALE FOR FACTOR AND SUB-FACTOR EVALUATION
		TRANSPORTATION NEEDS ASSESSMENT	PRELIMINARY PLANNING	DETAILED PLANNING FOR PROVINCIAL ROADWAYS	PRELIMINARY DESIGN FOR PROVINCIAL ROADWAYS	
						settlement areas, resource use or the rural economic activity that exists and is permitted within the Greenbelt; or it serves the significant growth and economic development expected in southern Ontario beyond the Greenbelt by providing for the appropriate infrastructure connections among urban growth centers and between these centers and Ontario's borders.
2.2 Land Use / Community	2.2.1 First Nation Reserves	Potential to affect First Nation Reserves	Potential to affect First Nation Reserves	Potential and significance of: <ul style="list-style-type: none"><li>• encroachment, severance, displacement;</li><li>• long-term alteration/ disruption;</li><li>• change in area character / aesthetics;</li><li>• nuisance impacts;</li><li>• change to access / travel time.</li></ul> to First Nation Reserves	Potential and significance of: <ul style="list-style-type: none"><li>• encroachment, severance, displacement;</li><li>• long-term alteration/ disruption;</li><li>• short-term alteration/disruption (construction impacts);</li><li>• change in area character / aesthetics;</li><li>• nuisance impacts;</li><li>• change to access / travel time.</li></ul> to First Nation Reserves	<ul style="list-style-type: none"><li>• It is important that potential and significance of impacts to Indian Reservations and sacred grounds be recognized and addressed in accordance with Ontario's New Approach to Aboriginal Affairs (Spring 2005) and the Grand River Notification Agreement</li><li>• Property takings / displacements and changes / effects on local access have a significant impact on owners and tenants as well as the broader community.</li><li>• Property takings / displacements and changes / effects on local access have a significant impact on owners and tenants as well as the broader community and customer/client base.</li><li>• Disruption or displacement of institutional features may adversely affect the users of these features / facilities and the broader community.</li></ul>
	2.2.2 First Nations' Sacred Grounds	Not considered in this phase	Potential to affect First Nations' Sacred Grounds	Potential and significance of: <ul style="list-style-type: none"><li>• encroachment, severance, displacement;</li><li>• long-term alteration/ disruption;</li><li>• change in area character / aesthetics;</li><li>• nuisance impacts;</li><li>• change to access / travel time.</li></ul> To First Nations' sacred grounds	Potential and significance of: <ul style="list-style-type: none"><li>• encroachment, severance, displacement;</li><li>• long-term alteration/ disruption;</li><li>• short-term alteration/disruption (construction impacts);</li><li>• change in area character / aesthetics;</li><li>• nuisance impacts;</li><li>• change to access / travel time.</li></ul> To First Nations' sacred	
	2.2.3 Urban and Rural Residential	Potential to affect urban and residential areas	Potential to affect urban and residential areas	Potential and significance of: <ul style="list-style-type: none"><li>• encroachment, severance, displacement, property acquisition;</li><li>• long-term alteration/ disruption;</li><li>• change in area character/ aesthetics;</li><li>• nuisance impacts;</li><li>• change to access / travel time;</li><li>• change to facilities / utilities / services.</li></ul> to urban and rural residential areas (residents [owners/tenants] and community groups).	Potential and significance of: <ul style="list-style-type: none"><li>• encroachment, severance, displacement, property acquisition;</li><li>• long-term alteration/ disruption;</li><li>• short-term alteration/disruption (construction impacts);</li><li>• change in area character/ aesthetics;</li><li>• nuisance impacts;</li><li>• change to access / travel time;</li><li>• change to facilities / utilities / services.</li></ul> to urban and rural residential areas (residents [owners/tenants] and community groups).	
	2.2.4 Commercial/Industrial	Not considered in this phase	Potential to affect commercial and industrial areas	Potential and significance of: <ul style="list-style-type: none"><li>• encroachment, severance, displacement, property acquisition;</li><li>• long-term alteration/ disruption;</li><li>• change in area character/ aesthetics;</li><li>• nuisance impacts;</li><li>• change to access / travel time;</li><li>• change to facilities / utilities / services.</li></ul> to commercial and industrial areas	Potential and significance of: <ul style="list-style-type: none"><li>• encroachment, severance, displacement, property acquisition;</li><li>• long-term alteration/ disruption;</li><li>• short-term alteration/disruption (construction impacts);</li><li>• change in area character/ aesthetics;</li><li>• nuisance impacts;</li><li>• change to access / travel time;</li><li>• change to facilities / utilities / services.</li></ul>	

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FACTOR / SUB-FACTOR	CRITERIA	PRELIMINARY EVALUATION INDICATORS FOR EACH PHASE				RATIONALE FOR FACTOR AND SUB-FACTOR EVALUATION
		TRANSPORTATION NEEDS ASSESSMENT	PRELIMINARY PLANNING	DETAILED PLANNING FOR PROVINCIAL ROADWAYS	PRELIMINARY DESIGN FOR PROVINCIAL ROADWAYS	
				(business owners/tenants and customers).	to commercial and industrial areas (business owners/tenants and customers).	
	2.2.5 Tourist Areas and Attractions  (e.g. museums, theatres, etc.)	Not considered in this phase	Potential to affect tourist areas and attractions	Potential and significance of: <ul style="list-style-type: none"><li>• encroachment, severance, displacement, property acquisition;</li><li>• long-term alteration/ disruption;</li><li>• change in area character/ aesthetics;</li><li>• nuisance impacts;</li><li>• change to access / travel time;</li><li>• change to facilities / utilities / services.</li></ul> To tourist areas and attractions.	Potential and significance of: <ul style="list-style-type: none"><li>• encroachment, severance, displacement, property acquisition;</li><li>• long-term alteration/ disruption;</li><li>• short-term alteration/disruption (construction impacts);</li><li>• change in area character/ aesthetics;</li><li>• nuisance impacts;</li><li>• change to access / travel time;</li><li>• change to facilities / utilities / services.</li></ul> to tourist areas and attractions.	
2.2 Land Use / Community	2.2.6 Community Facilities / Institutions  (e.g. hospitals, schools, places of worship, unique community features)	Not considered in this phase	Potential to affect community facilities and institutions	Potential and significance of: <ul style="list-style-type: none"><li>• encroachment, severance, displacement, property acquisition;</li><li>• long-term alteration/ disruption;</li><li>• change in area character/ aesthetics;</li><li>• nuisance impacts;</li><li>• change to access / travel time;</li><li>• change to facilities / utilities / services.</li></ul> To community facilities and institutions.	Potential and significance of: <ul style="list-style-type: none"><li>• encroachment, severance, displacement, property acquisition;</li><li>• long-term alteration/ disruption;</li><li>• short-term alteration/disruption (construction impacts);</li><li>• change in area character/ aesthetics;</li><li>• nuisance impacts;</li><li>• change to access / travel time;</li><li>• change to facilities / utilities / services.</li></ul> to community facilities and institutions.	
	2.2.7 Municipal Infrastructure and Public Service Facilities  (e.g. sewage and water services, police/emergency services, local utilities)	Not considered in this phase	Not considered in this phase	Potential and significance of: <ul style="list-style-type: none"><li>• encroachment, severance, displacement;</li><li>• long-term alteration/ disruption;</li><li>• change to access / travel time;</li><li>• change to facilities / utilities / services.</li></ul> to municipal infrastructure and public service facilities.	Potential and significance of: <ul style="list-style-type: none"><li>• encroachment, severance, displacement;</li><li>• long-term alteration/ disruption;</li><li>• short-term alteration/disruption (construction impacts);</li><li>• change to access / travel time;</li><li>• change to facilities / utilities / services.</li></ul> to municipal infrastructure and public service facilities.	
2.3 Noise Sensitive Areas (NSAs)  (residential areas and sensitive institutional uses)	2.3.1 Highway Noise	Potential for increased traffic noise in NSAs	Potential for increased traffic noise in NSAs	Potential for significant traffic noise increases in NSAs	Potential for increase of traffic noise in NSAs by 5 dBA, or to above a 45 dBA ambient within 10 years of project construction	<ul style="list-style-type: none"><li>• The Ontario Ministry of the Environment (MOE) has published Noise Pollution Control (NPC) and Land Use (LU) planning guidelines. These MOE documents establish ambient noise criteria, based on one-hour average sound pressure levels (Leq), and evaluate ambient vibration levels based on either Peak or RMS velocity, as applicable. Noise levels generally rise with increased traffic volumes.</li><li>• MOE/MTO Noise Protocol requires that highway noise be considered in all Provincial (MTO) Transportation projects</li></ul>
	2.3.2 Construction Noise	Not considered in this phase	Not considered in this phase	Not considered in this phase	Potential and significance of increase in construction noise to NSAs	
2.4 Land Use / Resources	2.4.1 First Nations' Treaty Rights or Use of Land and Resources for Traditional Purposes  (e.g. hunting, fishing, harvesting of	Potential to affect First Nations' Treaty Rights or use of land and resources for traditional purposes	Potential to affect First Nations' Treaty Rights or use of land and resources for traditional purposes	Potential and significance of: <ul style="list-style-type: none"><li>• encroachment, severance, displacement;</li><li>• long-term alteration/ disruption;</li><li>• nuisance impacts;</li></ul>	Potential and significance of: <ul style="list-style-type: none"><li>• encroachment, severance, displacement;</li><li>• long-term alteration/ disruption;</li><li>• short-term alteration/disruption</li></ul>	<ul style="list-style-type: none"><li>• It is important that potential and significance of impacts to Indian Reservations and sacred grounds be recognized and addressed in accordance with Ontario's New Approach to</li></ul>

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FACTOR / SUB-FACTOR	CRITERIA	PRELIMINARY EVALUATION INDICATORS FOR EACH PHASE				RATIONALE FOR FACTOR AND SUB-FACTOR EVALUATION
		TRANSPORTATION NEEDS ASSESSMENT	PRELIMINARY PLANNING	DETAILED PLANNING FOR PROVINCIAL ROADWAYS	PRELIMINARY DESIGN FOR PROVINCIAL ROADWAYS	
	country foods, harvesting of medicinal plants)			<ul style="list-style-type: none"><li>• change to access / travel time.</li></ul> to First Nations' treaty rights or use of land and resources for traditional purposes	(construction impacts); <ul style="list-style-type: none"><li>• nuisance impacts;</li><li>• change to access / travel time.</li></ul> to First Nations' treaty rights or use of land and resources for traditional purposes	Aboriginal Affairs (Spring 2005) and the Grand River Notification Agreement <ul style="list-style-type: none"><li>• Planning of transportation facilities must address First Nations' treaty rights, and be conducted in accordance with Ontario's New Approach to Aboriginal Affairs (Spring 2005) and the Grand River Notification Agreement</li></ul>
	2.4.2 Agriculture	Potential to affect specialty crop areas and/or areas of Canada Land Inventory Classes 1, 2 and 3 soils	Potential to affect specialty crop areas and/or areas of Canada Land Inventory Classes 1, 2 and 3 soils	Potential and significance of: <ul style="list-style-type: none"><li>• encroachment, severance, displacement, property acquisition;</li><li>• long-term alteration/ disruption;</li><li>• change in area character/ aesthetics;</li><li>• nuisance impacts;</li><li>• change to access / travel time;</li><li>• change to facilities / utilities / services.</li></ul> as applicable to the following: <ul style="list-style-type: none"><li>• Canada Land Inventory Classes 1, 2 and 3 soils</li><li>• Specialty crops/cropland</li><li>• Dairy/livestock operations</li><li>• Field crop operations</li><li>• High investment agricultural operations</li><li>• Established agricultural farm communities</li></ul>	Potential and significance of: <ul style="list-style-type: none"><li>• encroachment, severance, displacement, property acquisition;</li><li>• long-term alteration/ disruption;</li><li>• short-term alteration/disruption (construction impacts);</li><li>• change in area character/ aesthetics;</li><li>• nuisance impacts;</li><li>• change to access / travel time;</li><li>• change to facilities / utilities / services.</li></ul> as applicable to the following: <ul style="list-style-type: none"><li>• Canada Land Inventory Classes 1, 2 and 3 soils</li><li>• Specialty crops/cropland</li><li>• Dairy/livestock operations</li><li>• Field crop operations</li><li>• High investment agricultural operations</li><li>• Established agricultural farm communities</li></ul>	<ul style="list-style-type: none"><li>• PPS Policy 1.6.6.4 stipulates that when planning for corridors and rights-of-way for significant transportation facilities, consideration will be given to significant natural heritage, water, agricultural, mineral, cultural heritage and archaeological resources. The context is provided in other PPS policy statements identified below.</li><li>• Section 2.3 of the Provincial Policy Statement requires prime agricultural areas be protected for long-term use for agriculture. Prime agricultural areas include specialty crop areas and Classes 1, 2 and 3 soils in this order of priority.</li><li>• Ontario Ministry of Agriculture and Food (OMAF) has provincial guidelines for protection of prime agricultural lands as well as agricultural structures or infrastructure</li></ul>
2.4 Land Use / Resources (Cont'd)	2.4.3 Parks and Recreational Areas (e.g. national/provincial parks, conservation areas, municipal parks, public spaces, golf courses, trails, greenways and open space linkages)	Potential to affect parks and recreational areas	Potential to affect parks and recreational areas.	Potential and significance of: <ul style="list-style-type: none"><li>• encroachment, severance, displacement, property acquisition;</li><li>• long-term alteration/ disruption;</li><li>• change in area character/ aesthetics;</li><li>• nuisance impacts;</li><li>• change to access / travel time;</li><li>• change to facilities / utilities / services.</li></ul> To parks and recreational areas.	Potential and significance of: <ul style="list-style-type: none"><li>• encroachment, severance, displacement, property acquisition;</li><li>• long-term alteration/ disruption;</li><li>• short-term alteration/disruption (construction impacts);</li><li>• change in area character/ aesthetics;</li><li>• nuisance impacts;</li><li>• change to access / travel time;</li><li>• change to facilities / utilities / services.</li></ul> to parks and recreational areas.	<ul style="list-style-type: none"><li>• Disruption or displacement of recreational / community features may adversely affect the users of the facility/feature. Parks are generally lands in public ownership aimed at preserving significant and sometimes unique components of the environment, and providing recreational opportunities. These areas should be avoided to the extent possible however, in some cases, transportation facilities can be situated along park boundaries without adversely affecting the park. Frequently, parts are isolated islands surrounded by development and as such they can function as wildlife refuge areas or may facilitate wildlife movement opportunities. PPS, 2005, Policy 1.5.1 states that healthy active communities shall be promoted by (d) considering the impacts of planning decisions on provincial parks, conservation reserves and conservation areas.</li></ul>
	2.4.4 Aggregates, Mineral Resources	Potential to affect aggregate and mineral resources sites	Potential to affect aggregate and mineral resources sites	Potential and significance of: <ul style="list-style-type: none"><li>• encroachment, severance, displacement, property acquisition;</li><li>• long-term alteration/ disruption;</li><li>• change to access / travel time;</li><li>• change to facilities / utilities / services.</li></ul> to current/future extraction of aggregate and mineral resources.	Potential and significance of: <ul style="list-style-type: none"><li>• encroachment, severance, displacement, property acquisition;</li><li>• long-term alteration/ disruption;</li><li>• short-term alteration/disruption (construction impacts);</li><li>• change to access / travel time;</li><li>• change to facilities / utilities / services.</li></ul> to current/future extraction of aggregate and mineral resources.	<ul style="list-style-type: none"><li>• PPS Policy 1.6.6.4 stipulates that when planning for corridors and rights-of-way for significant transportation facilities, consideration will be given to significant natural heritage, water, agricultural, mineral, cultural heritage and archaeological resources. The context is provided in other PPS policy statements identified below.</li><li>• Sections 2.4 and 2.5 of the Provincial Policy Statement have the objective of protecting mineral and aggregate resources for the long</li></ul>

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						<p>term. The policy statement makes provisions for the protection of both known deposits and areas of potential.</p> <ul style="list-style-type: none"><li>• MTO adheres to requirements of the Aggregates Act to protect aggregate resources while minimizing sterilization of mineral aggregate resources as much as possible.</li></ul>
<b>2.5 Major Utility Transmission Corridors</b>  (e.g. railroads, hydro, gas, oil)		Potential to affect major utility transmission corridors	Potential to affect major utility transmission corridors	Potential and significance of: <ul style="list-style-type: none"><li>• encroachment, severance, displacement;</li><li>• long-term alteration/ disruption;</li><li>• change to access / travel time;</li><li>• change to facilities / utilities / services.</li></ul> To major utility transmission corridors.	Potential and significance of: <ul style="list-style-type: none"><li>• encroachment, severance, displacement;</li><li>• long-term alteration/ disruption;</li><li>• short-term alteration/disruption (construction impacts);</li><li>• change to access / travel time;</li><li>• change to facilities / utilities / services.</li></ul> to major utility transmission corridors.	<ul style="list-style-type: none"><li>• Utility corridors are subject to regulations from owners and governing authorities for operation of utilities including National Energy Board, Ontario Energy Board, Transport Canada, Railway Safety Act, etc.</li></ul>
<b>2.6 Contaminated Property and Waste Management</b>  (e.g. Landfills, Hazardous Waste Sites, “Brownfield” Areas, other known contaminated sites, and high-risk contamination areas)		Potential to affect landfills (open and closed), hazardous waste sites “brownfield” areas, and other known contaminated sites, and high-risk contamination areas	Potential to affect landfills (open and closed), hazardous waste sites “brownfield” areas, and other known contaminated sites, and high-risk contamination areas	Potential and significance of: <ul style="list-style-type: none"><li>• encroachment, severance, displacement;</li><li>• long-term alteration/disruption;</li><li>• change to access / travel time;</li><li>• change to facilities / utilities / services.</li></ul> to contaminated property and waste management.	Potential and significance of: <ul style="list-style-type: none"><li>• encroachment, severance, displacement;</li><li>• long-term alteration/disruption;</li><li>• short-term alteration/disruption (construction impacts);</li><li>• change to access / travel time;</li><li>• change to facilities / utilities / services.</li></ul> to contaminated property and waste management.	<ul style="list-style-type: none"><li>• Localized significant sources of property contamination can be associated with operating and closed waste disposal sites, the latter being of more significance due to their difficulty in accurately locating them. Consideration should be given to avoiding/ minimizing effects in the “area of influence” of waste disposal sites.</li><li>• There is the potential that some of the lands in the project area may be contaminated due to the nature of existing and historical land use especially in older commercial/industrial areas and in areas with heavy industrial activity. Sources of potential property contamination in rural areas are most commonly associated with service stations; isolated pockets of commercial/industrial areas; unknown fill areas; scrap yards and other high-risk land uses. Impacts to these areas should be avoided / minimized to the extent possible.</li><li>• Appropriate assessments will be carried on these sites and the project will comply with the appropriate.</li></ul>
<b>2.7 Landscape Composition</b>	2.7.1 Scenic Composition (total aesthetic value of landscape components)	Not considered in this phase	Not considered in this phase	Potential and significance of change to scenic composition (total aesthetic value of landscape components).	Potential and significance of destruction / disturbance of specimen trees.	<ul style="list-style-type: none"><li>• Visual impacts on adjacent land use and effects on the visual experiences for users of the facility will be considered.</li></ul>
	2.7.2 Sensitive Viewer Groups	Not considered in this phase	Not considered in this phase	Potential and significance of change vistas/outlooks for sensitive viewer groups.	Potential and significance of change to scenic composition (total aesthetic value of landscape components).	
	2.7.3 Scenic value of views/vistas from the transportation facility	Not considered in this phase	Not considered in this phase	Potential and significance of views/vistas from the transportation facility.	Potential and significance of views/vistas from the transportation facility.	
	2.7.4 Specimen Trees	Not considered in this phase	Not considered in this phase	Not considered in this phase	Potential and significance of change vistas/outlooks for sensitive viewer groups.	
<b>3. Cultural Environmental Factors</b>						
<b>3.1 Cultural Heritage – Built Heritage and Cultural Landscapes</b>	3.1.1 Buildings or “Standing” Sites of Architectural or Heritage Significance or Ontario Heritage Foundation Easement Properties	Potential to affect buildings or “standing” sites of extreme local, provincial or national interest or Ontario Heritage Foundation easements properties	Potential to affect buildings or “standing” sites of extreme local, provincial or national interest or Ontario Heritage Foundation easements properties	Potential and significance of: <ul style="list-style-type: none"><li>• encroachment, severance, displacement, property acquisition;</li><li>• long-term alteration/ disruption;</li><li>• change in area character/ aesthetics;</li><li>• nuisance impacts;</li><li>• change to access / travel time;</li><li>• change to facilities / utilities / services.</li></ul>	Potential and significance of: <ul style="list-style-type: none"><li>• encroachment, severance, displacement, property acquisition;</li><li>• long-term alteration/ disruption;</li><li>• change in area character/ aesthetics;</li><li>• nuisance impacts;</li><li>• change to access / travel time;</li><li>• change to facilities / utilities / services.</li></ul>	<ul style="list-style-type: none"><li>• A new transportation facility may result in the loss of built heritage features resulting in a depletion of the cultural heritage resources / heritage character in the area.</li><li>• Impacts to built heritage features should be avoided to the extent possible, or as a secondary alternative relocation rather than demolition could be considered.</li></ul>

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				to buildings or “standing” sites of extreme local, provincial or national interest or Ontario Heritage Foundation easements properties.	to buildings or “standing” sites of extreme local, provincial or national interest or Ontario Heritage Foundation easements properties.	<ul style="list-style-type: none"><li>• MTO is required to operate in accordance with Cemeteries Act</li><li>• MTO is required to operate in accordance with Ontario Heritage Act</li></ul>
	3.1.2 Heritage Bridges	Potential to affect heritage bridges	Potential to affect heritage bridges	Potential for destruction or significant alteration of heritage bridges	Potential for destruction or significant alteration of heritage bridges	
	3.1.3 Areas of Historic 19 <sup>th</sup> Century Settlement	Potential to affect areas of historic 19 <sup>th</sup> century settlement	Potential to affect areas of historic 19 <sup>th</sup> century settlement	Potential and significance of: <ul style="list-style-type: none"><li>• encroachment, severance, displacement;</li><li>• long-term alteration/ disruption;</li><li>• change in area character/ aesthetics;</li><li>• nuisance impacts;</li><li>• change to access / travel time;</li><li>• change to facilities / utilities / services.</li></ul> to areas of historic 19 <sup>th</sup> century settlement.	Potential and significance of: <ul style="list-style-type: none"><li>• encroachment, severance, displacement;</li><li>• long-term alteration/ disruption;</li><li>• change in area character/ aesthetics;</li><li>• nuisance impacts;</li><li>• change to access / travel time;</li><li>• change to facilities / utilities / services.</li></ul> to areas of historic 19 <sup>th</sup> century settlement.	
	3.1.4 Cultural Heritage Landscapes  (collection of individual man-made features modifying pristine landscape)	Not considered in this phase	Not considered in this phase	Potential and significance of change to composition of cultural landscapes.	Potential and significance of change to composition of cultural landscapes.	
	3.1.5 First Nations’ Burial Sites	Not considered in this phase	Not considered in this phase	Potential and significance of: <ul style="list-style-type: none"><li>• encroachment, severance, displacement;</li><li>• long-term alteration/ disruption;</li><li>• change in area character / aesthetics;</li><li>• nuisance impacts;</li><li>• change to access / travel time.</li></ul> to First Nations' burial sites.	Potential and significance of: <ul style="list-style-type: none"><li>• encroachment, severance, displacement;</li><li>• long-term alteration/ disruption;</li><li>• change in area character / aesthetics;</li><li>• nuisance impacts;</li><li>• change to access / travel time.</li></ul> to First Nations' burial sites.	
	3.1.6 Cemeteries	Potential to affect cemeteries	Potential to affect cemeteries	Potential and significance of: <ul style="list-style-type: none"><li>• encroachment, severance, displacement;</li><li>• long-term alteration/ disruption;</li><li>• change in area character/ aesthetics;</li><li>• nuisance impacts;</li><li>• change to access / travel time;</li><li>• change to facilities / utilities / services.</li></ul> to cemeteries.	Potential and significance of: <ul style="list-style-type: none"><li>• encroachment, severance, displacement;</li><li>• long-term alteration/ disruption;</li><li>• short-term alteration/disruption (construction impacts);</li><li>• change in area character/ aesthetics;</li><li>• nuisance impacts;</li><li>• change to access / travel time;</li><li>• change to facilities / utilities / services.</li></ul> to cemeteries.	
3.2 Cultural Heritage - Archaeology	3.2.1 Pre-Historic and Historic First Nations Sites	Potential to affect significant pre-historic and historic First Nations archaeological sites of extreme local, provincial or national interest	Potential to affect significant pre-historic and historic First Nations archaeological sites of extreme local, provincial or national interest	Potential for destruction or disturbance of pre-historic and historic First Nations archaeological sites of extreme local, provincial or national interest	Potential for destruction or disturbance of pre-historic and historic First Nations archaeological sites of extreme local, provincial or national interest	<ul style="list-style-type: none"><li>• Disturbance or destruction of certain archaeological sites of extreme local, provincial or national interest represents a significant cultural loss.</li><li>• Impacts to archaeological resources/sites should be avoided or minimized to the extent possible.</li><li>• Significant archaeological sites shall be preserved and avoided in accordance with Ontario Ministry of Culture (OMC), and Aboriginal People’s policies and procedures, and all others shall be excavated to OMC standards</li></ul>
	3.2.2 Historic Euro-Canadian Archaeological Sites	Potential to affect significant historic Euro-Canadian archaeological sites of extreme local, provincial or national interest	Potential to affect significant historic Euro-Canadian archaeological sites of extreme local, provincial or national interest	Potential for destruction or disturbance of historic Euro-Canadian archaeological sites of extreme local, provincial or national interest	Potential for destruction or disturbance of historic Euro-Canadian archaeological sites of extreme local, provincial or national interest	
4. Area Economy						
4.1 First Nations Industry		Potential to support First Nations industry in the area by efficient and reliable movement of people and goods	Potential to support First Nations industry in the area by efficient and reliable movement of people and goods	Not considered in this phase	Not considered in this phase	<ul style="list-style-type: none"><li>• Transportation congestion negatively affects existing business, industry and trade, adding significant costs to doing business and is a deterrent to new businesses considering locating</li></ul>
4.2 Heavy Industry and Trade		Potential to support area heavy industry and	Potential to support heavy industry and trade	Not considered in this phase	Not considered in this phase	



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		trade by efficient and reliable goods movement	by efficient and reliable goods movement			<div>or expanding in the Analysis Area.</div> <div><div><div>• Travel reliability for commercial vehicles is a concern given the impacts of construction, maintenance or collisions on the already congested transportation system.</div><div>• A large proportion of recreational travel is based on longer distance auto based trips, therefore tourism and recreational travel is significantly affected by congestion on the area roadway network. Tourism is currently Ontario's fifth largest export industry and is projected to become the fourth largest in the near future. Tourism includes recreation and the cottage sector.</div><div>• Agriculture is an important component of the overall economic base of the Analysis Area. Travel for agricultural equipment on local roads is severely affected by longer distance trips diverted from congested highways. Transportation of agricultural supplies and products is affected by congestion on the area road network.</div><div>• PPS Policy 1.6.6.4 stipulates that when planning for corridors and rights-of-way for significant transportation facilities, consideration will be given to significant natural heritage, water, agricultural, mineral, cultural heritage and archaeological resources. The context is provided in other PPS policy statements identified below.</div><div>• The Provincial Policy Statement, 2005 stipulates that prime agricultural areas shall be protected for long-term use for agriculture. Prime agricultural areas are areas where prime agricultural lands predominate. Specialty crop areas shall be given the highest priority for protection followed by Classes 1, 2 and 3 soils, in this order of priority.</div></div></div>
4.3 Tourism and Recreation Industry		Potential to support area tourism and recreation industry by efficient and reliable movement of people	Potential to support tourism and recreation industry by efficient and reliable movement of people	Not considered in this phase	Not considered in this phase	
4.4 Agriculture Industry		Potential to support area agriculture industry by efficient movement of goods	Potential to support area agriculture industry by efficient movement of goods	Not considered in this phase	Not considered in this phase	
5. Transportation Factors						
5.1 Federal/Provincial/Municipal transportation planning policies/goals/objectives		Potential to support federal/provincial/municipal transportation planning policies/goals/objectives	Potential to support federal/provincial/municipal transportation planning policies/goals/objectives	Not considered in this phase.	Not considered in this phase.	<div><div>• The Official Plans of municipalities within the Analysis Area, and the strategic growth policies and targets embodied in the Provincial Growth Plan, suggest that population and employment growth will continue over time and will be important to future economic prosperity. In order for this economic growth to be realized, an efficient transportation system to move both people and goods within and through the Analysis Area is considered fundamental.</div><div>• The effectiveness of each alternative needs to be determined.</div><div>• There is a need to determine how transportation solutions address future needs in relation to existing and proposed future transportation infrastructure.</div><div>• There is a need to determine how well transportation solutions operate during peak periods.</div></div>
5.2 Efficient movement of people		Potential to support the efficient movement of people between communities and regions based on network, screenline and critical link performance measures including Level of Service (LOS) and volume to capacity (v/c)	Potential to support the efficient movement of people between communities and regions based on Level of Service (LOS) and volume to capacity (v/c) on a network, screenline and critical link basis	Potential to support the efficient movement of people between communities and regions based on Level of Service (LOS) and volume to capacity (v/c) on a network, screenline and critical link basis	Not considered in this phase.	
5.3 Efficient movement of goods		Potential to support efficient movement of goods between urban growth centres and regional intermodal facilities based on road network and Highway 7&8 corridor performance measures (LOS and travel speed)	Potential to support efficient movement of goods between urban growth centres and regional intermodal facilities based on road network and Highway 7&8 corridor performance measures (LOS and travel speed)	Potential to support efficient movement of goods between urban growth centres and regional intermodal facilities based on road network and Highway 7&8 corridor performance measures (LOS and travel speed)	Not considered in this phase.	
5.4 System reliability / redundancy		Potential to support system reliability and redundancy for travel (people and goods) between regions and communities during adverse conditions	Potential to support system reliability and redundancy for travel (people and goods) between regions and communities during adverse conditions	Potential to support system reliability and redundancy for travel (people and goods) between regions and communities during adverse conditions	Not considered in this phase	

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5.5 Safety		Potential to improve traffic safety based on opportunity to reduce congestion on area road network (LOS and v/c) and reduce the frequency of intersections and entrances in the Highway 7&8 corridor	Potential to improve traffic safety based on opportunity to reduce congestion on area road network (LOS and v/c) and reduce the frequency of intersections and entrances in the Highway 7&8 corridor	Potential to improve traffic safety based on opportunity to reduce congestion on area road network (LOS and v/c) and reduce the frequency of intersections and entrances in the Highway 7&8 corridor	Potential for collisions recognizing side road intersections, presence of auxiliary lanes, number/spacing of entrances, available sight distance, storage for disabled vehicles, etc.	<ul style="list-style-type: none"><li>• Transportation agencies have developed design standards to ensure that safety objectives are reflected in all new/expanded infrastructure. These standards are not subject to modification or compromise to avoid/reduce impacts, costs, etc.</li><li>• Goods movement between economic centres and growth areas incurs out-of-way travel and delay due to congestion through the Analysis Area. Reducing travel times, out-of-way travel and improving travel time reliability would lead to lower transportation costs and benefit the local, provincial and national economy.</li><li>• There is a need to determine how well transportation solutions operate during peak periods.</li><li>• There is a need to determine emergency access and safety issues related to transportation solutions.</li><li>• There is a need to determine the flexibility of transportation solutions to address future needs beyond the forecasted planning horizon.</li><li>• Physical conditions and staging issues can affect the feasibility of implementing transportation solutions.</li><li>• There is the need identify the costs associated with possible transportation solutions. Construction costs can influence the feasibility of a given alternative</li></ul>
5.6 Modal integration, balance and efficiency		Potential to improve modal choice and increase mode split for person trips between communities, regions and major transit station areas based on travel performance indicators (LOS, v/c, travel speed) at critical screenlines and on potential to provide higher order transit service in the Highway 7&8 corridor.	Potential to improve modal choice and increase mode split for person trips between communities, regions and major transit station areas based on travel performance indicators (LOS, v/c, travel speed) at critical screenlines and on potential to provide higher order transit service in the Highway 7&8 corridor.	Potential to improve modal choice and increase mode split between communities, regions and intermodal facilities based on travel performance indicators (LOS, v/c, travel speed) at critical screenlines and for Highway 7&8 corridor.	Not considered in this phase.	
5.7 Linkages to Population and Employment Centres		Potential to improve accessibility to urban growth centres for people and goods movement based on higher order network (roads and transit) continuity and connectivity	Potential to improve accessibility to urban growth centres for people and goods movement based on higher order network continuity and connectivity	Potential to improve accessibility to urban growth centres for people and goods movement based on higher order network continuity and connectivity	Not considered in this phase.	
5.8 Recreation and Tourism Travel		Potential to support recreation and tourism travel within and to/from the Analysis Area by provision of higher order network (roads and transit) continuity and connectivity and through network performance indicators (LOS, v/c, travel speed)	Potential to support recreation and tourism travel within and to/from the Analysis Area by provision of higher order network (roads and transit) continuity and connectivity and through network performance indicators (LOS, v/c, travel speed)	Potential to support recreation and tourism travel within and to/from the Analysis Area by provision of higher order network (roads and transit) continuity and connectivity and through network performance indicators (LOS, v/c, travel speed)	Not considered in this phase.	
5.9 Accommodation for pedestrians, cyclists and snowmobiles		Potential to accommodate pedestrians, cyclists within critical travel corridors in urbanized areas and snowmobiles in recognized rural trails	Potential to accommodate pedestrians, cyclists within critical travel corridors in urbanized areas and snowmobiles in recognized rural trails	Potential to accommodate pedestrians, cyclists within critical travel corridors in urbanized areas and snowmobiles in recognized rural trails	Not considered in this phase.	
5.10 Constructability		Not considered in this phase.	Potential ease of implementation considering feasibility/difficulty of physical, property or environmental constraints	Potential ease of implementation considering feasibility/difficulty of physical, property or environmental constraints	Potential ease of implementation considering feasibility/difficulty of physical, property or environmental constraints	
5.11 Construction Cost (excludes property costs and engineering costs)		Not considered in this phase.	Not considered in this phase.	Relative road construction cost, excluding property and engineering costs	Relative road construction cost, excluding property and engineering costs	
5.12 Traffic Operations		Not considered in this phase.	Potential impact on traffic operations due to factors such as design features, private access, and transportation network connections	Potential impact on traffic operations due to factors such as design features, private access, and transportation network connections	Potential impact on traffic operations due to factors such as design features, private access, and transportation network connections	
NOTES:		Notes regarding evaluation criteria for transportation needs assessment and the preliminary planning phases: <ul style="list-style-type: none"><li>• information to support evaluation is drawn from secondary source information and preliminary field reconnaissance (the environmental information is documented in Report “F” – 1<sup>st</sup> Part)</li></ul>		Notes regarding evaluation criteria for the detailed planning and the preliminary design phases: <ul style="list-style-type: none"><li>• information to support evaluation is enhanced by field investigation work as appropriate (the environmental information is documented in Report “F” – 2<sup>nd</sup> Part)</li><li>• “Measures” for detailed planning evaluation criteria will be developed during preliminary planning</li><li>• “Measures” for preliminary design evaluation criteria will be developed during detailed planning</li></ul>		

**SUPPORTING DOCUMENT #6**

**RECORD OF CONSULTATION DURING PREPARATION  
OF THE STUDY PLAN**

**RECORD OF CONSULTATION DURING PREPARATION OF THE STUDY PLAN**

TO BE COMPLETED AS PART OF FINAL STUDY PLAN



Ministry of Transportation

# **Highway 7&8 Transportation Corridor Planning and Class EA Study**

From Greater Stratford to New Hamburg Area  
MTO Group Work Project # 13-00-00

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## Report A: Study Plan for Technical Work, Outreach and Consultation

# DRAFT

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July, 2007

[www.7and8corridorstudy.ca](http://www.7and8corridorstudy.ca)



This report is presented in draft format in order to obtain information and comments from stakeholders. Your input is requested by October 30, 2007 so the report can be finalized.

"Ce document hautement spécialisé n'est disponible qu'en anglais en vertu du règlement 411/97, qui en exempte l'application de la Loi sur les services en français. Pour de l'aide en français, veuillez communiquer avec le ministère des Transports, Bureau des services en français au: 905-704-2045 ou 905-704-2046."

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## **SUPPORTING DOCUMENTATION**

- Supporting Document #1: List of Abbreviations and Glossary of Terms
- Supporting Document #2: Highway 7&8 Transportation Corridor Planning and Class EA Study, Summary of Reports
- Supporting Document #3: Detailed Description of Alternatives
- Supporting Document #4: Federal/Provincial EA Co-ordination
- Supporting Document #5: Preliminary Factors, Sub-Factors, Criteria and Indicators for Evaluation of Area Transportation System Alternatives and Provincial Roadway Alternatives
- Supporting Document #6: Record of Consultation During Preparation of the Study Plan (to be completed before finalizing the Study Plan)

## LIST OF EXHIBITS

- Exhibit 1.1: Map of Analysis Area
- Exhibit 1.2: Summary of Study Objectives
- Exhibit 1.3: Preliminary Statement of Transportation Problems and Opportunities
- Exhibit 2.1: Overview of Planning and Class EA Study Process (Key Tasks, Reports, PICs and Information Presented, Preliminary Schedule)
- Exhibit 3.1: Assumptions of EA Proponency and Completion of Work
- Exhibit 5.1: Application of GGH Growth Plan and Provincial Policy Statement Policy Framework
- Exhibit 5.2: 'Area Transportation System' Context
- Exhibit 5.3: Comparison of Ideal Highway Geometric Conditions and Those on Highway 7&8
- Exhibit 7.1: Summary of Application Of Evaluation Methodologies
- Exhibit 7.2: Preliminary Identification Of Factors, Sub-factors And Criteria To Be Considered In The Generation, Assessment And Evaluation Of Alternatives
- Exhibit 7.3: Process Overview for the Development, Assessment and Evaluation of the Area Transportation System Alternatives (Phase 2 of Study) and Preliminary Planning Alternatives (Phase 3 of Study)
- Exhibit 7.4: Principles for Generating Preliminary and Detailed Planning Alternatives
- Exhibit 7.4: Process Overview for the Development, Assessment and Evaluation of Detailed Planning Alternatives for Provincial Roadway (Phase 4 of Study)
- Exhibit 9.1: Categories of Stakeholders
- Exhibit 9.2: Role of Stakeholders
- Exhibit 10.1: Transportation Environmental Study Report Contents

## **1 INTRODUCTION**

### **1.1 Introduction To The Highway 7&8 Transportation Corridor Planning And Class EA Study**

The Ministry of Transportation (MTO) has initiated a Highway 7&8 Transportation Corridor Planning and Class Environmental Assessment (Class EA) Study, from Greater Stratford to the New Hamburg area. The study will:

- develop a plan that addresses:
  - capacity, operation and safety needs along the 2-lane section of Highway 7&8 between Stratford and the New Hamburg area and through the urban centres (Stratford, Shakespeare and New Hamburg) along Highway 7&8 for the movement of people and goods; and
  - linkage needs between the analysis area to transportation corridors serving other regions in the province.
- prepare a preliminary design for the provincial roadway components of that plan; and
- be documented in a Transportation Environmental Study Report for public review at study completion.

This study will also:

- Review and build on the MTO Highway 7&8 Study Design – Greater Stratford to New Hamburg Area, December 2005;
- Address the transportation policies and directions of the ‘Growth Plan for the Greater Golden Horseshoe’ (recognizing that a portion of the analysis area for this project lies within the GGH);
- Recognize several municipal transportation initiatives in the area;
- Recognize other relevant transportation corridor studies being undertaken by MTO; and
- Be carried out as a Group ‘A’ project, in accordance with the Class Environmental Assessment for Provincial Transportation Facilities.

Access to the above documents can be obtained through the project website at [www.7and8corridorstudy.ca](http://www.7and8corridorstudy.ca).

A major component of the study will be an outreach and consultation program structured around six key points of decision-making, each of which will be supported by:

- the release of a newsletter;
- the release of draft reports for review and comment;
- a round of Public Information Centres (PICs);
- posting of information on the study web site; and
- newspaper notices announcing the above.

At the completion of the study, the filing of a Transportation Environmental Study Report (TESR) will be announced through newspaper notices. Decisions on funding and timing

of detail design and construction are based upon environmental clearance of the TESR, since it determines the type of transportation facilities and their location.

This Study Plan is designed to provide a comprehensive framework to guide the study. For an overview of this framework, readers are referred to the following exhibits in the Study Plan:

- Exhibit 1.1: Map of Analysis Area
- Exhibit 1.2: Summary of Study Objectives
- Exhibit 1.3: Preliminary Statement of Transportation Problems and Opportunities
- Exhibit 2.1: Overview of Planning and Class EA Study Process (Key Tasks, Reports, PICs and Information Presented, Preliminary Schedule)
- Exhibit 3.1: Assumptions of EA Proponency and Completion of Work
- Exhibit 5.1: Application of GGH Growth Plan and Provincial Policy Statement Policy Framework
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- Exhibit 7.2: Preliminary Identification Of Factors, Sub-factors And Criteria To Be Considered In The Generation, Assessment And Evaluation Of Alternatives
- Exhibit 7.3: Process Overview for the Development, Assessment and Evaluation of the Area Transportation System Alternatives and Preliminary Planning Alternatives (Phases 2 and 3 of Study)
- Exhibit 7.4: Principles for Generating Preliminary and Detailed Planning Alternatives
- Exhibit 7.5: Process Overview for the Development, Assessment and Evaluation of Detailed Planning Alternatives for Provincial Roadway (Phase 4 of Study)
- Exhibit 9.1: Categories of Stakeholders
- Exhibit 9.2: Summary of Role of Stakeholders
- Exhibit 10.1: Transportation Environmental Study Report Contents

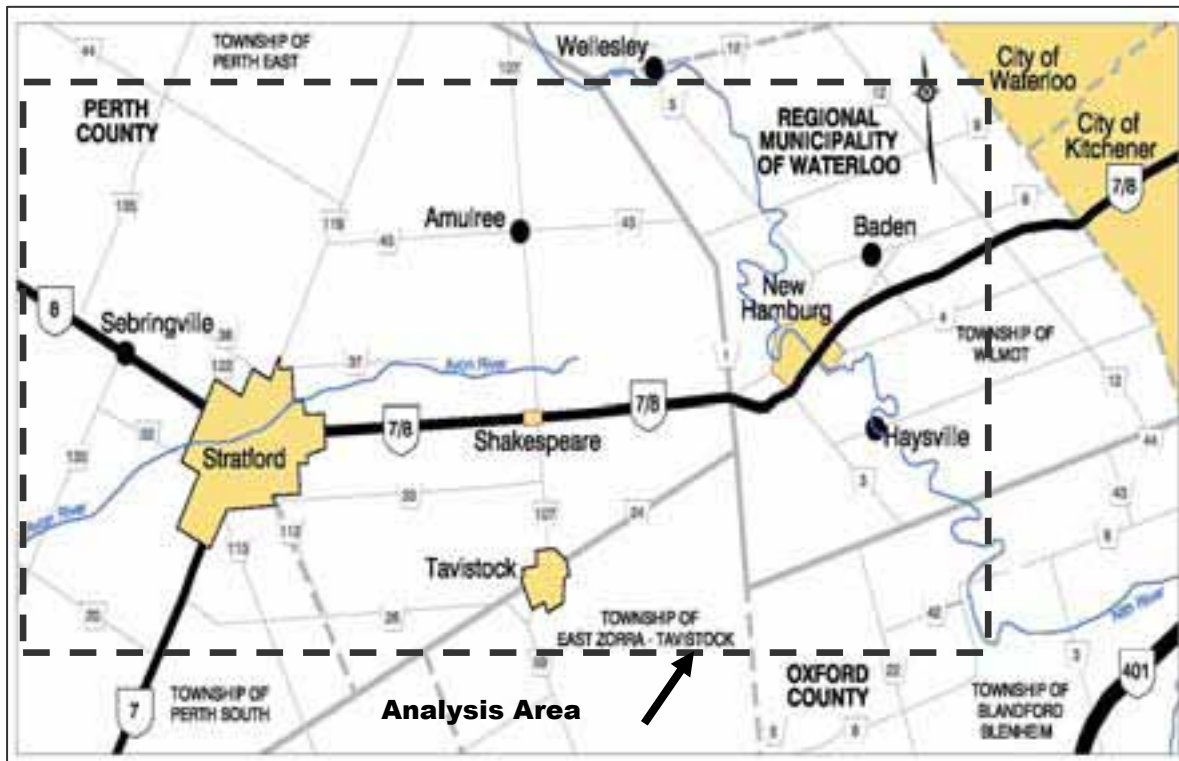
These exhibits may be presented at the first round of Public Information Centres.

For orientation and reference, a map of the Analysis Area follows. The Analysis Area has been established to identify transportation problems and opportunities associated with Highway 7&8 from Greater Stratford to the New Hamburg area plus the broader 'Area Transportation System'. The Analysis Area is not intended to represent a Study Area for the planning alternatives to be generated during the course of the study. The Study Area will be generated by the MTO Project Team through consultation with affected stakeholders as described in Sections 2.2 and 7.5.1.5 of this Study Plan.

## Exhibit 1.1

### HIGHWAY 7&8 TRANSPORTATION CORRIDOR PLANNING & CLASS EA STUDY

#### MAP OF ANALYSIS AREA



## 1.2 Study Objectives

The objectives of the Highway 7&8 Transportation Corridor Planning and Class EA Study are, in part, based upon the policies of the final Growth Plan for the Greater Golden Horseshoe, released by the province on June 16, 2006. The study objectives are summarized in Exhibit 1.2 and then discussed below:

<b>Exhibit 1.2</b> <b>Highway 7&amp;8 Transportation Corridor Planning and Class EA Study</b> <b>Summary of Study Objectives</b>	
1.	To identify and assess the factors that are driving 'Area Transportation System' needs
2.	To apply those driving factors in preparing a Transportation Development Strategy to address long-term multi-year needs for the movement of people and goods
3.	To undertake the planning and preliminary design of the provincial roadway components (provincial highways and provincial transitways) of those strategies
4.	To conduct the planning and preliminary design of provincial roadways with an inherent approach of avoiding or minimizing overall environmental impacts
5.	To identify highway access management measures for growth management and highway protection
6.	To engage public and stakeholders early in the study process and continue to engage them throughout the study process

The study objectives are the following:

- 1. To identify and assess the factors that are driving 'Area Transportation System' needs:**
  - to identify and assess factors that are driving 'Area Transportation System' needs, including area travel characteristics and the state of the existing provincial highway infrastructure (physical and operational); land use, area economics, employment, population, technology, environmental, socio-economic and cultural factors; and related programs, policy and legislation (for a definition and description of 'Area Transportation System', see Section 5.2.1 of this Study Plan);
- 2. To apply those driving factors in preparing a Transportation Development Strategy to address long-term multi-year needs for the movement of people and goods:**

- to apply those driving factors in preparing a Transportation Development Strategy to address long-term multi-year needs for the movement of people and goods within the context of a balanced and integrated 'Area Transportation System', which:
  - a) provides adequate 'Area Transportation System' capacity in order to serve current and projected needs of the travelling public, stimulate economic growth, and create jobs;
  - b) ensures that the corridors necessary for the various travel modes of the 'Area Transportation System' are identified and protected, in order to maintain and improve transportation linkages;
  - c) is co-ordinated and consistent with land-use related growth objectives and growth forecasts, in order to reflect the impact of designation of areas as urban growth centres, major transit station areas, settlement areas, built-up areas, intensification areas and corridors, non-urban areas, greenfield areas and greenbelt; and
  - d) has the following attributes:
    - (i) considers both the connectivity of modes, and the separation of modes within corridors, in order to provide travel choice for the various modes of the 'Area Transportation System' and thereby reduce reliance on any single mode;
    - (ii) puts the transit component of the 'Area Transportation System' (GO Transit, provincial transitways, other inter-city transit) as the first investment priority in order to support growth in a compact and efficient form;
    - (iii) puts goods movement as the first investment priority in the provincial highway component of the 'Area Transportation System', for service to cities, other major centres of population and other regions of the province, priority truck routes leading into those communities, and major regional goods movement facilities such as intermodal facilities.

**3. To undertake the planning and design of the provincial roadway components (provincial highways and provincial transitways) of those strategies:**

- to pursue the provincial roadway components (provincial highways and provincial transitways) of the Transportation Development Strategy by undertaking their planning, design and protection as modern, safe, efficient and effective facilities.

**4. To conduct the planning and design of provincial roadways with an inherent approach of avoiding or minimizing overall environmental impacts:**

- to conduct the planning and design of provincial roadways with an inherent approach of avoiding or minimizing overall environmental impacts (ie To avoid



natural, socio-economic and cultural environmental impacts) through consideration of alternatives and “mitigation measures”;

**5. To identify highway access management measures for growth management and highway protection:**

- to identify highway access management measures in order to:
  - discourage highway-related development in areas not designated for growth;
  - protect the purpose and level of service of ‘Area Transportation System’ provincial highways; and
  - protect the benefits of any new provincial highway capacity; and

**6. To engage public and stakeholders early in the study process and continue to engage them throughout the study process:**

- to engage public and stakeholders early in the study process and continue to engage them, in order to provide meaningful and regular outreach and consultation that is integrated with and supports the study work and decision-making process.

**1.3 Preliminary Statement of Transportation Problems and Opportunities**

Based upon previous MTO studies, and the final Growth Plan for the Greater Golden Horseshoe (released by the province on June 16, 2006), a preliminary statement of problems and opportunities for the Highway 7&8 Transportation Corridor Planning and Class EA Study is provided in Exhibit 1.3 below:

<b>Exhibit 1.3</b> <b>Highway 7&amp;8 Transportation Corridor Planning and Class EA Study</b> <b>Preliminary Statement of Transportation Problems and Opportunities</b>	
1.	There are transportation capacity concerns for the movement of both people and goods along the 2-lane section of Highway 7&8 between Stratford and the New Hamburg area and on Highway 7&8 through the urban centres (Stratford, Shakespeare and New Hamburg).
2.	Provincial / inter-regional traffic through the urban centres (Stratford and Shakespeare) along Highway 7&8 interferes with their “downtown / historic crossroads” function.
3.	The connection of the analysis area to transportation corridors serving other regions in the province may be inadequate for long-term transportation and economic development needs.
4.	Geometric and traffic safety characteristics along Highway 7&8 should be addressed with respect to long-term traffic needs.

<b>Exhibit 1.3</b> <b>Highway 7&amp;8 Transportation Corridor Planning and Class EA Study</b> <b>Preliminary Statement of Transportation Problems and Opportunities</b>	
5.	There is currently no comprehensive highway access management plan for Highway 7&8 from Greater Stratford to New Hamburg to protect highway needs and to address the GGH policy of discouraging inappropriate highway-related growth.
6.	The GGH Growth Plan policy of co-ordinating transportation system planning and land use planning must be addressed.

Highway 7&8 transportation corridor problems and opportunities are discussed in further detail in Section 5.2.4 of this Study Plan.

#### **1.4 Purpose Of This Study Plan and its Relevance to the Overall Planning & EA Process**

This Study Plan is the first deliverable of the planning and Class EA Study. The Study Plan establishes the framework and commitments for conducting the planning and Class EA Study, particularly in the areas of:

- study purpose and objectives;
- study process;
- study reports;
- outreach and consultation program;
- study schedule; and
- processes to generate and evaluate alternatives.

The Study Plan builds on the principles and processes for transportation engineering, environmental protection, evaluation, consultation and documentation that are specified in the 'Class EA for Provincial Transportation Facilities'. Further details of the Class EA process and the rationale for the framework of the Study Plan are provided in Sections 2.1 and 4.0.

In addition, the Study Plan provides the role of a scoping document under the *Canadian Environmental Assessment Act* (CEAA), to:

- confirm the "scope of project" that is being assessed (project description);
- establish the scope of factors to be considered in the EA process;
- describe the methodology to assess the environmental effects of the project, including the specific methodologies for assessing cumulative effects and for determining significance; and
- provide the basis for requesting federal authorities to "trigger" CEAA as early as is practicable in the planning process before "irrevocable decisions" are made.

## **2 OUTLINE OF PLANNING AND CLASS EA STUDY PROCESS**

### **2.1 Overview of the Class EA Process and the Class Environmental Assessment For Provincial Transportation Facilities**

The *Environmental Assessment Act* (EA Act) provides for the preparation of a Class Environmental Assessment (Class EA) for submission to the Minister of the Environment for review and a decision by the provincial cabinet regarding approval through order-in-council. A Class EA is an approved planning document that defines groups of projects and activities and the environmental assessment (EA) processes which the proponent commits to following for each of these undertakings.

The Ontario Ministry of Transportation developed the 'Class Environmental Assessment for Provincial Transportation Facilities', which was approved by Order in Council 1653/99 on October 6, 1999, as amended on July 14, 2000. It provides, in part, the following:

- classification of projects and activities;
- study stages and phases;
- transportation engineering and environmental protection principles;
- consultation principles and processes;
- documentation and "bump-up" principles and processes; and
- environmental clearance process.

This Highway 7&8 Transportation Corridor Planning and Class EA Study will comply with the Class EA process for 'Group A' projects (as defined under the Class Environmental Assessment for Provincial Transportation Facilities) for MTO undertakings in which highway widening, a major realignment and bypass of sections of existing highway, a new provincial highway (provided it is not a new 400-series highway), a new provincial transitway, or combinations of the above are possible outcomes.

By following the Class EA process, the Highway 7&8 Transportation Corridor Planning and Class EA Study does not require formal review and approval under the *Ontario Environmental Assessment Act*. The approved process itself is extensive, with significant consultation and outreach to agencies, stakeholders and the public.

If, at the completion of the Class EA study process, a stakeholder is not satisfied with MTO attempts to reach a resolution regarding concerns brought forward, that stakeholder may challenge the study by making a request to the Minister of the Environment to determine if a Part 2 order or "bump-up" is required. If the Minister agrees that a bump-up is required, the project would be re-designated to an individual environmental assessment, and would be subject to the formal review and approval processes noted above.

If, during the course of the study, it is determined that a new 400-series highway should be pursued, the Highway 7&8 Transportation Corridor Planning and Class EA Study would no longer be eligible to follow the Class EA process. Under such circumstances, the study would have to be converted to an “Individual EA” study, with the extended timeframes associated with formal review and approvals (which include the possibility of public hearings) required by the Ontario *Environmental Assessment Act*, as follows:

- the Study Plan would be converted to an Environmental Assessment Terms of Reference, and would be submitted to the Minister of the Environment for review and a decision by the Minister regarding approval; and
- the Transportation Environmental Study Report would be replaced by an Environmental Assessment Report, and would be submitted to the Minister of the Environment for review and a decision by the provincial cabinet regarding approval through order-in-council.

Because this Study Plan has been structured to be consistent with the requirements of a Terms of Reference, it provides the basis for an efficient transition to an individual Environmental Assessment in the event that the Study identifies a new 400-series highway as the preferred solution.

The overview of the planning and EA process for the Highway 7&8 Transportation Corridor Study that is provided in Section 2.2 below builds on the requirements provided in the Class Environmental Assessment for Provincial Transportation Facilities. A more detailed summary of the reports that will be produced for this study (both working papers and milestone reports) is provided in Supporting Document #2 for this Study Plan.

Environmental clearance of the Transportation Environmental Study Report (TESR) marks completion of the Highway 7&8 Transportation Corridor Planning and Class EA Study. If the TESR is cleared, the next stage of the project under the terms of the Class Environmental Assessment for Provincial Transportation Facilities, is detail design for provincial roadways (provincial highways and/or transitways). Detail design will follow the design and consultation processes outlined in the Class Environmental Assessment for Provincial Transportation Facilities, and will be documented in a Design and Construction Report (DCR).

## **2.2 Overview of the Planning and Class EA Study Process for The Highway 7&8 Transportation Corridor Study (Key Tasks, Reports, PICs and Information Presented, and Preliminary Schedule)**

Exhibit 2.1 below provides an overview of the planning and Class EA study process that will be used for the Highway 7&8 Transportation Corridor Study.

<b>Exhibit 2.1</b> <b>Highway 7&amp;8 Transportation Corridor Planning and Class EA Study</b> <b>Overview of the Study Process</b>				
STUDY PHASE	OBJECTIVES AND KEY TASKS	REPORTS	PUBLIC INFORMATION CENTRES (PICs) + INFORMATION PRESENTED	PRELIMINARY SCHEDULE
<b>1. STUDY PLAN</b>	<ul style="list-style-type: none"> <li>Establish framework to guide the study work, including: <ul style="list-style-type: none"> <li>study purpose and objectives</li> <li>overview of study process</li> <li>overview of study reports</li> <li>overview of outreach and consultation</li> <li>study schedule</li> <li>overview of processes, factors &amp; criteria to generate, assess &amp; evaluate alternatives</li> </ul> </li> </ul>	Report "A": Study Plan for Technical Work, Outreach and Consultation	PIC #1: <ul style="list-style-type: none"> <li>Study Newsletter #1</li> <li>Recently completed work: <ul style="list-style-type: none"> <li>drafts of Reports "A", "B" and 1<sup>st</sup> part of "F"</li> </ul> </li> <li>Proposed approach to upcoming work: <ul style="list-style-type: none"> <li>process to define 'Area Transportation System' problems and opportunities</li> <li>process and criteria for evaluating and selecting 'Area Transportation System' alternatives</li> <li>process, factors, and criteria for generating, assessing, and evaluating preliminary planning alternatives</li> </ul> </li> </ul>	April 2007 to August 2007  (PIC #1 July/August, 2007)
<b>EA STAGE 1: ALTERNATIVES TO THE UNDERTAKING - TRANSPORTATION NEEDS ASSESSMENT</b>				
<b>2. AREA TRANSPORTATION SYSTEM PLANNING</b>	<ul style="list-style-type: none"> <li>Overview of Transportation, Land Use, Economic and Environmental Conditions within the Analysis Area <ul style="list-style-type: none"> <li>description and assessment of land use and economic conditions</li> <li>description and assessment of existing transportation conditions</li> <li>preliminary assessment of problems and opportunities based on the above</li> <li>overview of environmental conditions and constraints within analysis area (based upon secondary source information)</li> </ul> </li> </ul>	Report "B": Working Paper – Overview of Transportation, Land Use and Economic Conditions within the Analysis Area  Report "F" – 1 <sup>st</sup> Part: Working Paper –Environmental Conditions and Constraints		
	<ul style="list-style-type: none"> <li>Identification of Area Transportation System Problems and Opportunities: <ul style="list-style-type: none"> <li>Establish travel demand forecasting approach and methodology</li> <li>Forecast future 'Area Transportation System' travel characteristics and patterns</li> <li>Detailed description and assessment of current and future 'Area Transportation System' problems and opportunities</li> </ul> </li> </ul>	Report "C": Working Paper – 'Area Transportation System' Problems and Opportunities	PIC#2: <ul style="list-style-type: none"> <li>Study Newsletter #2</li> <li>Recently Completed work: <ul style="list-style-type: none"> <li>drafts of Reports "C", "D", &amp; "E"</li> </ul> </li> <li>Proposed approach to upcoming work: <ul style="list-style-type: none"> <li>process and criteria for generating provincial roadway detailed planning alternatives</li> </ul> </li> </ul>	August 2007 to Spring 2008  (PIC #2 in Spring 2008)

<b>Exhibit 2.1</b> <b>Highway 7&amp;8 Transportation Corridor Planning and Class EA Study</b> <b>Overview of the Study Process</b>				
STUDY PHASE	OBJECTIVES AND KEY TASKS	REPORTS	PUBLIC INFORMATION CENTRES (PICs) + INFORMATION PRESENTED	PRELIMINARY SCHEDULE
	<ul style="list-style-type: none"> <li>Identify 'Area Transportation System' alternatives: <ul style="list-style-type: none"> <li>Do Nothing</li> <li>Transportation Demand Management (TDM)</li> <li>Transportation System Management (TSM)</li> <li>Local Transit*</li> <li>Inter-regional transit and passenger rail*</li> <li>Air Services*</li> <li>Marine Services*</li> <li>Freight Rail*</li> <li>Municipal Roads*</li> <li>Provincial Highways/Transitways*</li> </ul> (* new or improved operations and/or infrastructure) </li> <li>Determine degree to which individual 'Area Transportation System' alternatives address problems and opportunities</li> <li>Select and define elements of area transportation system alternatives and group them into combinations: <ul style="list-style-type: none"> <li>Do nothing</li> <li>Combination #1: Optimize Existing Network</li> <li>Combination #2: New / Expanded Non-Road Infrastructure + Elements of Combination #1</li> <li>Combination #3: Widen/Improve Roads + Elements of Combination #2</li> <li>Combination #4: New Municipal Roads and/or Provincial Highways/Transitways + Elements of Combination #3</li> </ul> </li> <li>Determine the degree to which combination alternatives address the problems and opportunities and select the preferred combination(s)</li> <li>Select the alternatives that will proceed to Preliminary Planning</li> </ul>	Report "D": Working Paper – Area Transportation System Alternatives		

<b>Exhibit 2.1</b> <b>Highway 7&amp;8 Transportation Corridor Planning and Class EA Study</b> <b>Overview of the Study Process</b>				
<b>STUDY PHASE</b>	<b>OBJECTIVES AND KEY TASKS</b>	<b>REPORTS</b>	<b>PUBLIC INFORMATION CENTRES (PICs) + INFORMATION PRESENTED</b>	<b>PRELIMINARY SCHEDULE</b>
<b>3. PRELIMINARY PLANNING</b> (plans at 1:20,000 scale)	<ul style="list-style-type: none"> <li>• Generate the detailed elements of the preliminary planning alternatives (as applicable) based on transportation, natural, land use / social, economic and cultural factors:               <ul style="list-style-type: none"> <li>○ new/expanded services</li> <li>○ general areas of geometrical improvements and widening to existing facilities</li> <li>○ new corridors</li> <li>○ environmental protection for the above (by minimizing intrusion into areas of environmental significance as identified through secondary source information</li> <li>○ conceptual areas of limitations to highway access</li> </ul> </li> <li>• Comparative evaluation of the relative advantages and disadvantages of preliminary planning alternatives</li> <li>• Select alternatives for incorporation into transportation development strategy (including preliminary study area(s))</li> <li>• Decision if study is to continue through Phases 4-6 <i>(if provincial roadway alternatives are selected)</i></li> </ul>	Report "E": Milestone Report – Highway 7&8 Transportation Corridor Needs Assessment		

**Exhibit 2.1**  
**Highway 7&8 Transportation Corridor Planning and Class EA Study**  
**Overview of the Study Process**

STUDY PHASE	OBJECTIVES AND KEY TASKS	REPORTS	PUBLIC INFORMATION CENTRES (PICs) + INFORMATION PRESENTED	PRELIMINARY SCHEDULE
<b>EA STAGE 2: ALTERNATIVE METHODS FOR CARRYING OUT THE UNDERTAKING</b>				
<b>4. DETAILED PLANNING FOR PROVINCIAL ROADWAYS</b>  (plans at 1:10,000 scale)	<ul style="list-style-type: none"> <li>Identify environmental conditions and constraints within the detailed planning study area (as identified through field investigations to augment secondary source information)</li> <li>Establish final study area(s) for provincial roadways for the preliminary planning alternatives carried forward from Phase 3</li> <li>Generate, specific location / type / character and template "footprint" for the following categories of provincial roadway detailed planning alternatives (as applicable): <ul style="list-style-type: none"> <li>new provincial transitway route location &amp; technology</li> <li>new provincial highway route location &amp; highway type</li> <li>specific location and type of geometrical improvements to existing highways</li> <li>specific location, extent and direction of widening to existing highways</li> </ul> </li> <li>Generate specialty engineering alternatives (bridge, drainage &amp; hydrology, foundation, pavement &amp; road base, traffic control &amp; electrical infrastructure) for the above</li> <li>For highway alternatives, establish specific nature &amp; location of limitations to highway access</li> <li>Undertake environmental impact assessment for the above (by striving to avoid or prevent major "footprint"-based environmental impacts to the area and its features, including fisheries and aquatic ecosystems, terrestrial ecosystems, groundwater, land use factors, contaminated property, built heritage &amp; cultural landscapes, archaeology, landscape composition, surface water, and designated areas; and by striving to avoid intrusion into noise-sensitive areas)</li> </ul>	Report "F" - 2 <sup>nd</sup> Part: Working Paper - Environmental Conditions and Constraints  Report "G": Working Paper - Generation of Detailed Planning Alternatives for Provincial Roadways	PIC#3: <ul style="list-style-type: none"> <li>Study Newsletter #3</li> <li>Recently completed work: <ul style="list-style-type: none"> <li>draft of Reports "G" &amp; 2<sup>nd</sup> part of "F"</li> </ul> </li> <li>Proposed approach to upcoming work: <ul style="list-style-type: none"> <li>process and criteria for evaluating &amp; selecting provincial roadway detailed planning alternatives</li> </ul> </li> </ul>	Spring 2008 to Fall 2008  (PIC #3 in Fall 2008)
	<ul style="list-style-type: none"> <li>Evaluate and select specific location / type / character and template "footprint" of the provincial roadway detailed planning alternatives</li> </ul>	Report "H": Milestone Report - Selection of Detailed Planning Alternatives for Provincial Roadways	PIC#4: <ul style="list-style-type: none"> <li>Study Newsletter #4</li> <li>Recently completed work: <ul style="list-style-type: none"> <li>draft of Report "H"</li> </ul> </li> <li>Proposed approach to upcoming work: <ul style="list-style-type: none"> <li>process and criteria for generating provincial roadway preliminary design alternatives</li> </ul> </li> </ul>	Fall 2008 to Fall 2009  (PIC #4 in Spring 2008)



**Exhibit 2.1**  
**Highway 7&8 Transportation Corridor Planning and Class EA Study**  
**Overview of the Study Process**

STUDY PHASE	OBJECTIVES AND KEY TASKS	REPORTS	PUBLIC INFORMATION CENTRES (PICs) + INFORMATION PRESENTED	PRELIMINARY SCHEDULE
<b>5. PRELIMINARY DESIGN FOR PROVINCIAL ROADWAYS</b>  (plans at 1:2,000 scale)	<ul style="list-style-type: none"> <li>For the detailed planning alternatives carried forward from Phase 4, generate provincial roadway alternatives for the following categories of preliminary design (as applicable):                             <ul style="list-style-type: none"> <li>calculated vertical &amp; horizontal alignment and cross-section</li> <li>highway interchange &amp; intersection preliminary design</li> <li>transitway station preliminary design</li> <li>location/design of private entrances to highway</li> </ul> </li> <li>Generate specialty engineering alternatives for the above (bridge, drainage &amp; hydrology, foundation, pavement &amp; road base, traffic control &amp; electrical infrastructure)</li> <li>For the above, develop environmental protection for the area and its features (as identified in Phase 4), including environmental control/mitigation, compensation and/or enhancement to address "footprint" impacts, interference impacts, traffic access modification impacts to property and neighbourhood/commercial areas, timing impacts; and by addressing effects of malfunctions or accidents, cumulative effects from the project in combination with other projects</li> <li>Identify right-of-way and property acquisition requirements</li> <li>Identify utility requirements (relocation etc)</li> <li>Develop preliminary staging of implementation</li> </ul>	Report "I": Working Paper – Generation of Preliminary Design Alternatives for Provincial Roadways	PIC#5: <ul style="list-style-type: none"> <li>Study Newsletter #5</li> <li>Recently completed work:                             <ul style="list-style-type: none"> <li>draft of Report "I"</li> </ul> </li> <li>Proposed approach to upcoming work:                             <ul style="list-style-type: none"> <li>process and criteria for evaluating &amp; selecting provincial roadway preliminary design alternatives</li> <li>process and criteria for evaluating and selecting provincial highway access management alternatives</li> </ul> </li> </ul>	Spring 2009 to Fall 2009  (PIC #5 in Fall 2009)
	<ul style="list-style-type: none"> <li>Evaluate and select provincial roadway preliminary design alternatives, and develop final access management plan</li> </ul>	Report "J": Milestone Report – Selection of Preliminary Design Alternatives for Provincial Roadways	PIC#6: <ul style="list-style-type: none"> <li>Study Newsletter #6</li> <li>Recently Completed Work                             <ul style="list-style-type: none"> <li>drafts of Reports "J" and "K"</li> </ul> </li> </ul>	Fall 2009 to Winter 2010  (PIC #6 in Winter 2010)
<b>6. TRANSPORTATION ENVIRONMENTAL STUDY REPORT</b>	<ul style="list-style-type: none"> <li>Filing of report, formal public review, and environmental "clearance"</li> </ul>	Report "K": Transportation Environmental Study Report (documentations overall study)	NO PIC <ul style="list-style-type: none"> <li>Study Newsletter #7</li> </ul>	TESR filed in Spring 2010
<b>PHASE 7: DETAIL DESIGN (documented in a Design and Construction Report) - NOT PART OF THIS STUDY</b>				

## **2.3 Federal/Provincial EA Co-ordination**

The Highway 7&8 Transportation Corridor Planning and EA Study is subject to the requirements of the *Ontario Environmental Assessment Act*. The requirements of the *Canadian Environmental Assessment Act* (CEAA) may also apply. Both governments have agreed to coordinate their respective EA processes as outlined in the Canada-Ontario Agreement on EA Cooperation, November 2004 (Harmonization Agreement).

The federal/provincial co-ordination process outlined in Supporting Document #4 of this Study Plan will guide the study. This approach is designed to address the information requirements of both federal and provincial environmental assessment Acts, in accordance with the harmonization agreement.

It is recognized by both the Canadian Environmental Assessment Agency (on behalf of the federal authorities) and MTO that ongoing dialogue on the information requirements should continue as the project progresses. As such, it may be necessary to provide additional or more detailed information as the EA process proceeds. The intent is to produce a single body of documentation on environmental effects to meet all of the information needs of both the federal and provincial governments. To the extent practical, federal/provincial information requirements regarding potential factors to be assessed in the context of this study have been integrated. General information requirements under CEAA can be found in Supporting Document #4 of this Study Plan.

## **2.4 Overview of Principles for Conducting the Study**

The Highway 7&8 Transportation Corridor Planning and Class EA Study will be conducted under the following areas of study principles:

- transportation engineering principles;
- environmental protection principles;
- evaluation principles; and
- stakeholder outreach, consultation and documentation principles.

These principles, which build on those specified in the Class Environmental Assessment for Provincial Transportation Facilities, are outlined in the subsections below.

### **2.4.1 Transportation Engineering Principles**

The transportation engineering principles that will be applied to the alternatives examined in the Highway 7&8 Transportation Corridor Planning and Class EA Study are based on the 'Class Environmental Assessment for Provincial Transportation Facilities', and include the following:

- a) provide for the efficient movement of people and goods;

- b) meet the needs of the travelling public as a whole, by maximizing opportunities for mobility;
- c) address the identified 'Area Transportation System' problems and opportunities, and maximize the opportunity to satisfy existing and future provincial travel demand;
- d) ensure compatibility, connectivity and consistency with the existing and future provincial and municipal transportation system;
- e) improve the level of service, safety and operation for the provincial transportation system users;
- f) ensure that sound engineering and scientific principles and judgement are applied to the best available data in the analysis, assessment and evaluation of transportation engineering problems, opportunities and solutions in order to meet or exceed current provincial design standards and practices;
- g) maximize opportunities to make the facility "more safe";
- h) avoid directing large volumes of long-distance provincial traffic through settlement areas;
- i) ensure the technical feasibility of planned construction, operation and maintenance;
- j) minimize property requirements and impacts on adjacent properties;
- k) use highway access management principles in order to preserve and protect the functional integrity of the provincial transportation system; and
- l) co-ordinate with municipal transportation studies and with other MTO transportation studies.

#### **2.4.2 Environmental Protection Principles**

The environmental protection principles that will be applied to the alternatives examined in the Highway 7&8 Transportation Corridor Planning and Class EA Study are based on the 'Class Environmental Assessment for Provincial Transportation Facilities', and include the following:

- a) conduct the study with an inherent approach of avoiding or minimizing overall environmental impacts through consideration of alternatives, with the objective of avoiding significant environmental areas;

- b) conduct the study to address the content of the following:
  - the Ministry of Transportation 'Environmental Protection Requirements for Transportation Planning and Highway Design, Construction, Operation and Maintenance'; and
  - the Ministry of Transportation 'Environmental Reference for Highway Design';
- c) meet the requirements of federal and provincial environmental legislation;
- d) meet the intent of government-approved policy and inter-ministerial protocols that relate to environmental protection;
- e) balance environmental protection considerations with transportation engineering considerations during each stage of the study process, recognizing that safety and effectiveness of the transportation system is fundamental to such decisions;
- f) recognize that it is seldom possible to satisfy all interests when making the tradeoffs necessary in the EA process, and that no single environmental factor is "paramount";
- g) identify existing environmental conditions and potential impacts relevant to the study, recognizing the following general categories of impacts at the appropriate study phase:
  - footprint impacts (to the area and its features)
  - interference impacts (to the area and its features)
  - traffic access modification impacts (to property, neighbourhoods, commercial areas)
  - emissions impacts (to air, water, soil and utilization of same)
  - ecological impacts
  - timing impacts (relative to season, week, day, hour, duration of the impacts above)
  - effects of malfunctions or accidents that may occur in connection with the project
  - cumulative environmental effects that are likely to result from the project in combination with other projects or activities;
- h) balance the approaches to environmental protection, recognizing that the general order of decreasing preference is as follows:
  - avoidance/prevention
  - control / mitigation (reducing the severity of environmental impacts)
  - compensation (provision of "equivalent" or countervailing environmental features)
  - enhancement (improvement over previous environmental conditions);
- i) provide mitigation effort in proportion to environmental significance and ability to reasonably mitigate with environmental mitigation measures that are technically and economically feasible;
- j) recognize that environmental mitigation measures themselves may have impacts to be considered;

- k) address the Ministry of Transportation's 'Statement of Environmental Values' (for access to this document, please see the study web site); and
- l) consider the Provincial Policy Statement related to land use planning and development issued under Section 3 of the Planning Act (for access to this document, please see the study web site).

### **2.4.3 Evaluation Principles**

The evaluation principles that will be applied to the alternatives examined in the Highway 7&8 Transportation Corridor Planning and Class EA Study are based on the 'Class Environmental Assessment for Provincial Transportation Facilities', and include the following:

- a) conduct the study with an underlying comparative evaluation process which starts with a broad perspective, and narrows to the more focussed, on a phased and iterative basis, as the study proceeds:
  - phasing of evaluation is the following:
    - evaluate and select 'Area Transportation System' alternatives;
    - evaluate and select preliminary planning alternatives;
    - evaluate and select provincial roadway detailed planning alternatives;
    - evaluate and select provincial roadway preliminary design and highway access management alternatives;
  - based on an overview representation evaluation process as provided in the Study Plan, the process will be reviewed and confirmed at each phase of evaluation to:
    - present technical information which is the subject of the evaluation process
    - present and obtain comment from external stakeholders on the proposed definition and refinement of the process to be applied at that phase of evaluation
    - present and obtain comment from external stakeholders on the results of the evaluation process;
- b) multiple alternatives to be considered;
- c) evaluation process to be comprehensive, traceable and replicable, and to be understandable by those who may be affected by the decisions;
- d) evaluation process at some phases may include a screening / short-listing component to improve efficiency and clarity;
- e) evaluation criteria to be comprehensive, fundamental, relevant, independent, measurable, well-defined;

- f) relevant factors, including natural environment, land use / socio-economic environment, cultural environment, area economy, and transportation to be given due consideration (for details, see Section 7.3 of this Study Plan); and
- g) appropriate areas of emphasis to recognized study area features and character, with evaluation factors/criteria to be refined if appropriate to reflect different sections of the study area and different stages of the study process.

#### **2.4.4 Stakeholder Outreach And Consultation Principles**

Outreach and consultation is a major component of the Highway 7&8 Transportation Corridor Planning and Class EA Study. The principles for outreach and consultation are the following:

- a) Comprehensive outreach and consultation plan:
  - is systematic, innovative and flexible;
  - is open, inclusive, responsive, transparent, traceable and defensible;
  - provides early and proactive explanation of “process” and policy requirements and how/why they are effectively/efficiently addressed by the Study Plan for Technical Work, Outreach and Consultation;
  - is structured around and focussed on points of key decision-making (for details see Section 2.2 of this Study Plan);
- b) Study work and decision-making process is integrated with and built upon the direct involvement and contributions of stakeholders:
  - structured decision-making process established through this Study Plan at the beginning of the study process
  - meaningful consultation with stakeholders at points of focused outreach and consultation before significant decisions are made. At each round of public information centres the following information will be presented:
    - recently completed study work (in draft – eg. preliminary findings and decisions)
    - the proposed approach to undertake upcoming study work (eg. generation and/or evaluation of alternatives)
  - consultation scheduled and implemented in a manner that permits stakeholders to make informed contributions to study decisions;
- c) Stakeholder examination/comment is encouraged:
  - notify stakeholders of intention to carry out the study and in advance of key study milestones (for details see Section 9.1 of this Study Plan)
  - comprehensive effort to identify and engage stakeholders
  - early outreach to stakeholder groups, and continued engagement during the study
  - explain stakeholder role, and importance of stakeholder participation

- enable stakeholders to understand the process and follow the study through its various stages
  - facilitate understanding of process and issues, which may include divergent or competing stakeholder interests
  - make information accessible and understandable
  - constructively address stakeholder input, with all relevant evidence, opinion and perspectives considered
  - reasonable effort made to resolve concerns
  - role and effect of outreach and consultation documented during the study (eg in each report), showing the effect of input received on the Study discussions/directions (within limits imposed by the *Freedom of Information and Protection of Privacy Act*);
- d) Clear outreach and consultation to each stakeholder category (for details see Section 9.7 of this Study Plan):
- First Nations
  - Business/commercial interest groups
  - Emergency service providers
  - General public
  - Municipalities
  - Regulatory agencies
  - Transportation service providers
  - Utility companies
- e) Effective documentation of study work and decision-making:
- documents prepared to support each point of key decision-making and focused outreach and consultation, and structured as inserts to the TESR (for details see Section 2.2 and Supporting Document #2 of this Study Plan)
  - documents organized for ease of access to information and reference, and in relation to relevance and in the overall planning and Class EA Study process
  - document content (e.g. exhibits) presented in a manner that facilitates use for PIC display boards, newsletters, etc
  - timely opportunity to review relevant information and documentation;
- f) Effective/innovative presentation of study information:
- use of a project website to inform / consult with stakeholders on an ongoing and timely basis
  - high quality mapping and graphics
  - newsletters, factsheets, questionnaires, etc. to effectively summarize study process and technical information presented, and to solicit input; and
- g) Effective consultation events (PICs, and as applicable, workshops and public meetings) to ensure that stakeholders understand and respond to key decision points:
- events appropriately scheduled

- events well advertised with appropriate lead time (for details see Section 9.2 of this Study Plan)
- events advertised through newspaper advertisements, and as appropriate, portable message signs, mail drops, etc.
- newspapers used for advertisements to reflect readership in First Nations communities, local and area communities, municipal boundaries, weekday and weekend exposure
- venue locations for each round of PICs to reflect municipal boundaries and centres/distribution of population within the study area
- venue/facility to have appropriate space, facilities, parking, external signing
- venue/facility to be universally accessible
- display and information material prepared to effectively present information and communicate issues at hand
- events to be appropriately staffed.

## **2.5 Earlier And Related Work**

The Highway 7&8 Transportation Corridor Planning and Class EA Study will build on the previous transportation planning work undertaken by MTO.

### **Strategic Transportation Directions for Southwestern Ontario (2002)**

In concert with other levels of governments, MTO developed the '*Strategic Transportation Directions for Southwestern Ontario*' (2002) to provide a vision for tomorrow's transportation system (for access to this document, see the study web site).

*The Strategic Transportation Directions* document sets out a course of action for transportation, taking into account the different needs of the region, based on extensive research, relevant factors such as Smart Growth principles, infrastructure decisions and announcements, transportation studies conducted by MTO and other pertinent information. In brief, the *Strategic Transportation Directions* document provides the following:

- an overview of the transportation network of the region;
- identification of the contribution of different transportation modes to the region's overall transportation system;
- identification of social and economic factors in the region that affect transportation;
- identification of growth patterns and their effect on future transportation needs;
- strategic directions for the development of the provincial transportation system; and
- strategies that MTO may pursue in relation to the region's overall transportation network.

The findings of the 2002 Strategic Directions document are incorporated into Section 5.2.4 of this Study Plan.



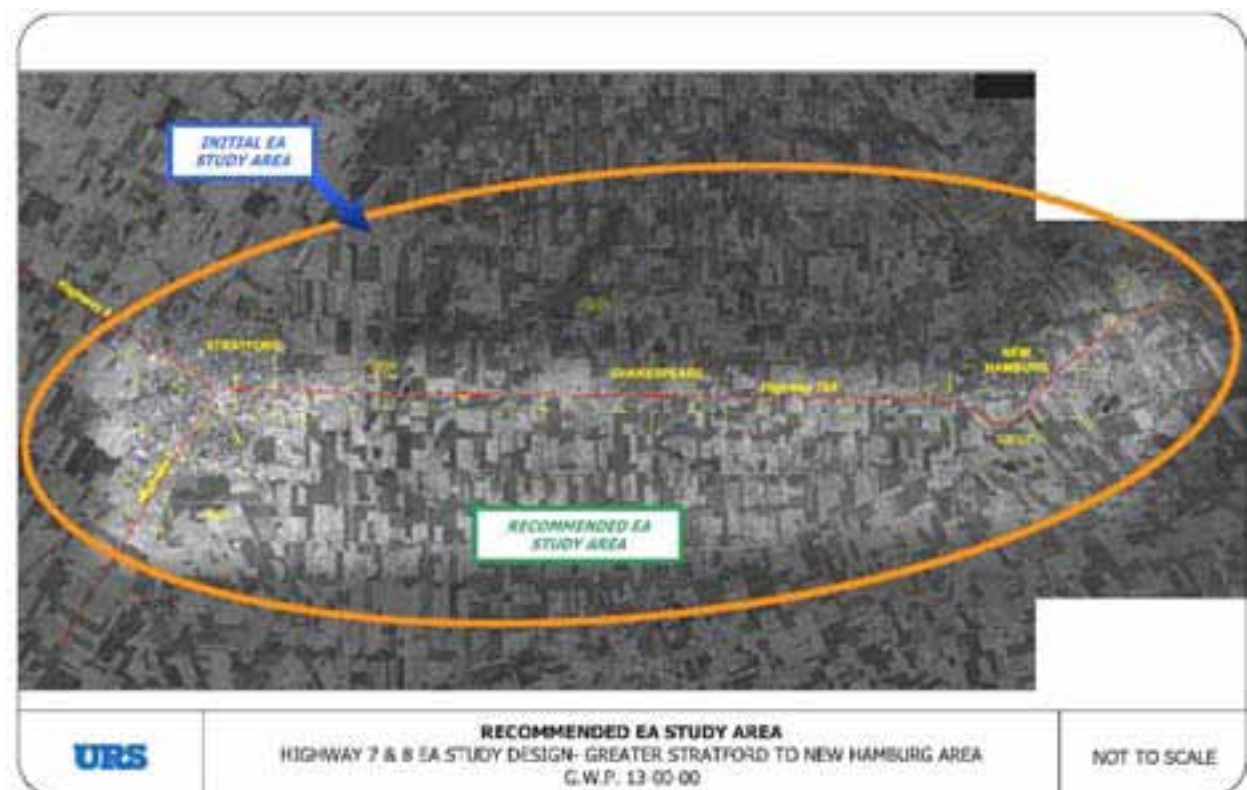
## **Highway 7&8 Corridor Planning Study Design Report (December 2005)**

MTO developed the 'Highway 7&8 Corridor Planning Study Design Report' (December 2005) to assess the present and future role and function of the Highway 7&8 Corridor between Greater Stratford and the New Hamburg area (for access to this document, see the study web site). Development of the study design report, in part, involved consultation with stakeholders, including two rounds of public information centres and the opportunity to comment on the report.

In brief, the Highway 7&8 Study Design Report provides the following:

- roadway role and function;
- engineering conditions;
- traffic conditions;
- traffic safety;
- origin-destination survey to accurately determine vehicle patterns between Greater Stratford and the New Hamburg area;
- assessment of transportation planning alternatives; and
- recommended preliminary study area as a factor for the identification of potential transportation solutions to address identified needs.

The findings of the 2005 Study Design Report are incorporated into Section 5.2.4 of this Study Plan. The preliminary study area identified in the Study Design Report is provided below:



This preliminary study area falls within the following municipalities:

- City of Stratford;
- County of Perth;
- Township of Perth East;
- Township of Perth South;
- Township of Wilmot; and
- Regional Municipality of Waterloo.

The preliminary study area recommended in the Study Design Report will be subject to review and modification as the Highway 7&8 Transportation Corridor Planning and Class EA Study proceeds.

### **3 STATEMENT AND ASSUMPTIONS OF PROPONENCY**

#### **3.1 Statement of Proponency**

The Ontario Ministry of Transportation is the proponent for this Study Plan for the Highway 7&8 Transportation Corridor Planning and Class EA Study.

#### **3.2 Assumptions Of EA Proponency And Completion Of Study Work**

MTO is conducting the Highway 7&8 Transportation Corridor Planning and Class EA Study under the assumptions of EA proponency and completion of study work provided in Exhibit 3.1 below:

<b>Exhibit 3.1 Highway 7&amp;8 Transportation Corridor Planning and Class EA Study Assumptions of EA Proponency and Completion of Study Work</b>	
<b>1.</b>	The current roles and relationships of different government levels and transportation service providers are maintained, consistent with their responsibility and authority.
<b>2.</b>	The consideration of 'Area Transportation System' and preliminary planning alternatives, and the development of a Transportation Development Strategy to address problems and opportunities are not restricted by these current roles.
<b>3.</b>	If 'Area Transportation System' and preliminary planning alternatives involving provincial roadways (provincial highways and/or provincial transitways) are selected, MTO will make the decision on the pursuit of further study through preliminary planning, detailed planning, and preliminary design.
<b>4.</b>	If 'Area Transportation System' and preliminary planning alternatives involving municipal roads, rail/air/water/intermodal facilities, municipal/private transit, or GO Transit are selected, MTO will refer the alternative recommendations to the appropriate government agency and/or transportation service provider for independent decision on further action.
<b>5.</b>	Depending upon the circumstances, the province may, as a separate initiative following completion of the Planning and Class EA Study, pursue innovative funding, and public and private partnerships for undertaking the following: <ul style="list-style-type: none"><li>• further study, design and construction of 'Area Transportation System' and preliminary planning alternatives identified in the planning and Class EA Study, for which MTO is not the EA proponent;</li><li>• design and construction of the provincial roadway (provincial highway and/or provincial transitway) that is the product of a planning and Class EA Study.</li></ul>
<b>6.</b>	The interaction of provincial transportation planning and growth management is a shared responsibility as follows: <ul style="list-style-type: none"><li>• municipalities, the Ministry of Municipal Affairs and Housing, and the Ministry of Public Infrastructure and Renewal are responsible for managing growth in a manner that encourages good development and discourages sprawl;</li></ul>

<p style="text-align: center;"><b>Exhibit 3.1</b> <b>Highway 7&amp;8 Transportation Corridor Planning and Class EA Study</b> <b>Assumptions of EA Proponency and Completion of Study Work</b></p>
<ul style="list-style-type: none"><li>• MTO is responsible for planning of the provincial roadways (provincial highways/provincial transitways) components of the Transportation Development Strategy; and</li><li>• in association with the planning of provincial highways/transitways, MTO is also responsible for provincial highway access management to discourage development in areas not designated for growth.</li></ul>
<p>7. The Highway 7&amp;8 Transportation Corridor Planning and Class EA Study will not address “over-arching issues” such as the following:</p> <ul style="list-style-type: none"><li>• statutes, policies and standards of governments;</li><li>• municipal official plans;</li><li>• responsibility, authority and decisions for transportation functions/modes that rest with government agencies and service providers other than MTO;</li><li>• ownership of lands and infrastructure; and</li><li>• funding policies and commitments of governments and the private sector.</li></ul>
<p>8. Although the Highway 7&amp;8 Transportation Corridor Planning and Class EA Study Process will not investigate concerns, suggestions or changes to such “overarching issues”, the study team will document input received during the Highway 7&amp;8 Transportation Corridor Planning and Class EA Study and refer it to the appropriate authority for information/consideration.</p>

## **4 STATEMENT OF EA COMPLIANCE**

This Highway 7&8 Transportation Corridor Planning and Class EA Study will follow and comply with the Class Environmental Assessment for Provincial Transportation facilities outlined in Section 2.1 of this Study Plan.

Although this is a Class EA study, the requirements of Section 6 (2)(a) of the Ontario *Environmental Assessment Act* have been addressed as an appropriate standard for this Study Plan. Accordingly, the Study Plan specifically addresses the following:

- Identification of the Proponent (Chapter 3 of this Study Plan);
- The purpose of the undertaking (Chapter 5);
- The process for selecting preferred alternatives to the undertaking (Chapter 7);
- The process for generating the study area (Chapter 7);
- The process for generating and selecting preferred alternative methods (Chapter 7);
- A commitment to carry out compliance monitoring (Chapter 8); and,
- A description of the Consultation Plan proposed for the Environmental Assessment (Chapter 9).

The Study Plan also includes Supporting Documents, one of which is a Record of Consultation During Preparation of the Study Plan (to be completed before finalizing the Study Plan).

## 5 PURPOSE OF UNDERTAKING

### 5.1 Policy Framework And Other Government Initiatives

The Highway 7&8 Transportation Corridor Planning and Class EA Study builds on the policy framework provided by:

- the '2005 Provincial Policy Statement' (PPS) under Section 3 of the *Planning Act*; and
- the final 'Growth Plan for the Greater Golden Horseshoe' (GGH Growth Plan) released in June, 2006 under the *Places to Grow Act*.

This policy framework has direct impact on the following:

- study plan;
- identification of Area Transportation System problems and opportunities;
- evaluation and selection of Area Transportation System alternatives;
- evaluation and selection of preliminary planning alternatives; and
- evaluation and selection of detailed planning alternatives for provincial roadways.

The application of this policy framework is presented in Exhibit 5.1 below.

<b>Exhibit 5.1</b> <b>Highway 7&amp;8 Transportation Corridor Planning And Class Ea Study</b> <b>Application Of GGH Growth Plan And Provincial Policy Statement</b> <b>Policy Framework</b>	
<b>POLICY DOCUMENT</b>	<b>POLICY STATEMENT</b>
<b>Study Plan</b>	
<b>Study Objectives</b>	Study objectives are based upon the policies of the GGH Growth Plan
<b>Identification of Area Transportation System Problems and Opportunities</b>	
<b>GGH Growth Plan</b>	Population and employment forecasts of the Plan will be used for planning
- Growth Forecasts, Where and How to Grow	A significant portion of new population and employment growth will be directed to the (designated) built-up areas of the community through intensification
	(Designated) urban growth centres, and their gross density targets for residents and jobs will be as identified in the Plan
<b>Evaluation and Selection of Area Transportation System Functional and Modal Alternatives</b>	
<b>Provincial Policy Statement</b>	Transportation system should be provided which are safe, energy efficient, facilitate the movement of people and goods, and are appropriate to address projected needs
- Transportation Systems	

<b>Exhibit 5.1</b> <b>Highway 7&amp;8 Transportation Corridor Planning And Class Ea Study</b> <b>Application Of GGH Growth Plan And Provincial Policy Statement</b> <b>Policy Framework</b>	
<b>POLICY DOCUMENT</b>	<b>POLICY STATEMENT</b>
<b>GGH Growth Plan</b>  - General Transportation Policies	Ensure that corridors are identified and protected to meet current and projected needs for various travel modes
	Provide balance, choice, access and connectivity among transportation modes for moving people and goods
<b>GGH Growth Plan</b>  - Policies for Moving Goods	Provide linkages to planned or existing intermodal facilities and to other major regional facilities for primary goods movement
	Improve corridors for moving goods, consistent with the transportation infrastructure designated in the Plan
<b>Evaluation and Selection of Preliminary Planning Alternatives and Detailed Planning Alternatives for Provincial Roadways</b> (Policy statements indicated above also apply)	
<b>GGH Growth Plan</b>  - General Transportation Policies	Provide for safety of the system users
	Support opportunities for multi-modal use within corridors where appropriate
	Consider separation of modes within corridors where appropriate
<b>Provincial Policy Statement</b>  - Planning Transportation Corridors	When planning for corridors and rights-of-way for significant transportation facilities, consideration will be given to significant natural heritage, water, agricultural, mineral, cultural heritage and archaeological resources.

The influence on this study of the Growth Plan for the Greater Golden Horseshoe is further discussed in Section 5.2.2 and 5.2.3 of this Study Plan.

## 5.2 Transportation Problems And Opportunities

### 5.2.1 Definition And Description Of 'Area Transportation System'

The Highway 7&8 Transportation Corridor Planning and Class EA Study is being conducted in the context provided in Exhibit 5.2 below:

**Exhibit 5.2**  
**Highway 7&8 Transportation Corridor Planning and Class EA Study**  
**'Area Transportation System' Context**

- The Highway 7&8 Transportation Corridor Planning and Class EA Study is being conducted in the context of the '*Area Transportation System*'.
- The '*Area Transportation System*' is composed of the area transportation facilities which have the primary function of providing transportation linkages for the movement of people and goods, by all modes and all jurisdictions, between multiple regions of the province and/or between cities and other major centres of population, or which function to complete such primary transportation linkages, with an emphasis on connections to:
  - cities and other major centres of population that contain designated urban growth centres;
  - cities and other major centres of population that contain designated major transit station areas;
  - major regional facilities for primary goods movement, such as intermodal facilities; and
  - international airports, major ports and international gateways.

### **5.2.2 Overview Of The Area Transportation System**

The analysis carried out for the *Strategic Transportation Directions* for Southwestern Ontario (2002) identified several trends:

- As in the rest of the province, the automobile (including vans and light trucks) is the dominant intercity travel mode in Southwestern Ontario, accounting for over 90% of passenger kilometres travelled. The remaining transportation modes (bus, rail, GO Transit, marine and air) account for 7.5% of passenger kilometres travelled.
- The primary modes used for the transportation of goods in and through the region, based on tonnes shipped, are truck (68%), rail (18%) and marine (15%). Mode usage varies with the particular commodity transported, the market served, the need for "just in time" service, and the industry distribution system. Market trends indicate that truck transport will play a greater goods movement role in the future.
- Trucking is the primary means of moving goods in Southwestern Ontario. Since the highway system links industry and markets in Southern Ontario and the U.S., there is substantial international truck freight movement on freeways in the region. The accessibility provided by the provincial and municipal road network makes trucking very competitive with other modes, except in the case of certain bulk goods and long distance hauls to markets outside Ontario.



- Provincial and regional roadways play a key role in the movement of intercity passengers and goods, and by 2026 will carry over 75% of the total system traffic in vehicle kilometres.
- A reduced level of service is forecast for the entire system, with provincial and regional routes showing substantial increases in the vehicle kilometres operating at congested conditions.
- All major urban centres show improved commuter containment (i.e. live-work arrangements); however, total commuter kilometres will continue to increase.

The Growth Plan for the Greater Golden Horseshoe (2006) in part provides the following direction with respect to the Area Transportation System for the analysis area:

- Future goods movement corridors are envisioned to provide links between the Niagara Frontier and the GTA.

### 5.2.3 Overview Of Area Economy, Employment And Population Growth Forecasts

Growth in the transportation corridor is dependent on a number of discreet but related socio-economic factors, such as: population and employment, demographic characteristics, and national, provincial and regional trends. Each of these factors acts upon the characteristics of travel demand with different and varying effects. In order to assess the needs of the Area Transportation System, the first step is to establish the factors that define the environments in the study area. These factors become the framework for the quantification of role and function of the transportation system.

#### *Growth Plan for the Greater Golden Horseshoe*

A major influence to the socio-economic environment in the analysis area is the recently published Growth Plan for the Greater Golden Horseshoe (GGH Growth Plan), released by the province on June 16, 2006, which reflects the *Places to Grow Act's* underlying principles of intensification and reduced urban sprawl. The Growth Plan promotes planning on a more regional level and sets the stage for future growth and land use scenarios by providing guidelines for municipal planning that are intended to:

- stimulate economic prosperity;
- facilitate the efficient movement of goods by linking intermodal facilities, international gateways, and communities within the GGH;
- revitalize downtowns;
- provide growth forecast objectives:

Forecasted Distribution of Population and Employment Within the Analysis Area of the Hwy 7&8 Transportation Corridor Planning and EA Study (figures in 000s, from Schedule 3 of the GGH Growth Plan)							
MUNICIPALITY	POPULATION				EMPLOYMENT		
	2001	2011	2021	2031	2001	2011	2021 2031
Region of Waterloo	456	526	623	729	236	282	324 366

- promote intensification - by the year 2015 and for each year thereafter to 2031, a minimum of 40 percent of all residential development in upper and single tier municipalities will be in the built-up area;
- designate urban growth centres which will generally be planned to achieve a minimum gross density target (the closest centres to which this applies are uptown Waterloo and downtown Kitchener);
- encourage more compact communities, with services, shops and businesses close to home;
- curb urban sprawl;
- preserve greenspace and agricultural lands that are under pressure in the GGH;
- cut down on car dependency by increasing modal share of alternatives to the automobile;
- contribute to better air quality;
- spur transit investment and create conditions favourable to public transit use; and
- promote a culture of conservation.

Through its policies, the GGH Growth Plan will impact the future land use / socio-economic environment in the analysis area, by establishing guidelines for future growth, land use (including greenspace and agriculture) and transportation objectives.

This study's objectives have, in part, been set in accordance with the policies of the final GGH Growth Plan, as described in Section 1.2.

### *Municipal Official Plans*

Future land uses are also governed by Official Plans for the municipalities in the analysis area, including Perth County and the Region of Waterloo. The currently approved Official Plan of the Region of Waterloo will need to be updated to reflect the population and employment guidelines and targets set out in the Growth Plan (Perth County is outside the Greater Golden Horseshoe).

### *Trade and Tourism*

The study area can be considered a conduit for trade and tourism between the GTA and Lake Huron. Goods movement through this area into Canada's economic heartland are critical to the local, regional and provincial economies. The efficiency of the provincial highway system, in and through the study area is therefore essential to the economic prosperity of the area.

### *Land Use/ Socio Economic Environment*

An overview of the land use / socio-economic environment is provided in Section 6 of this Study Plan

## **5.2.4 Discussion of Preliminary Statement of Transportation Problems and Opportunities**

Section 1.3 of this Study Plan provides a preliminary statement of transportation problems and opportunities, based upon previous MTO reports, and the final Growth Plan for the Greater Golden Horseshoe (released by the province on June 16, 2006). This section expands upon that statement.

### **1. There are transportation capacity concerns for the movement of both people and goods along the 2-lane section of Highway 7&8 between Stratford and New Hamburg and on Highway 7&8 through the urban centres (Stratford, Shakespeare and New Hamburg).**

- There will be an east-west capacity deficiency of one lane in each direction from 2.9 km east of the Stratford City Limits to Waterloo Road 1 (i.e. two-lane section of highway) to meet the current and projected needs of the travelling public, and to stimulate economic growth and job creation:
  - The two-lane section of Highway 7&8 currently operates at an undesirable level of service (LOS D).
  - Average daily traffic on Highway 7&8 is forecast to increase by a minimum of 30% between 2004 and 2031.
  - As a result, the existing transportation network is not capable of supporting the projected growth in population, employment, trade and tourism.
  - Failure to address these transportation deficiencies could result in unacceptable travel delay that would be costly to industry, and would deter recreational and tourist travel. The reduction in mobility and access will restrict the ability of the broader region to attract new business and promote economic growth.
  - These transportation deficiencies could occur earlier and/or increase in duration, extent or severity if higher population, tourism or economic growth scenarios are realized.
  - The City of Stratford has expressed concerns with the significant amount of truck traffic that is passing through the core of the City via Highway 7&8.
  - The County of Perth has expressed concerns with the degree of residential traffic that is destined for locations east of Stratford, and is utilizing parallel routes to the north of Highway 7&8, such as Perth Line 37, to avoid traffic delays in Stratford.

2. **Provincial / inter-regional traffic through the urban centres (Stratford and Shakespeare) along Highway 7&8 interferes with their “downtown / historic crossroads” function.**
  - There are traffic conflicts between local and longer distance trips in downtown Stratford and Shakespeare; and
  - The City of Stratford has expressed concerns with the significant amount of truck traffic that is passing through the core of the City via Highway 7&8.
3. **The connection of the analysis area to transportation corridors serving other regions in the province may be inadequate for long-term transportation and economic development needs.**
  - Highway 7&8 is experiencing increasing functional separation from the provincial highway network as development in Stratford intensifies and expands.
4. **Geometric and traffic safety characteristics along Highway 7&8 should be addressed with respect to long-term traffic needs.**
  - This is indicated in Exhibit 5.3 below, in which ideal highway geometric conditions are compared to those of the existing Highway 7&8:

<b>Exhibit 5.3:</b> <b>Highway 7&amp;8 Transportation Corridor Planning and Class EA Study</b> <b>Comparison of Ideal Highway Conditions and Those on Highway 7&amp;8</b>	
<b>Ideal Conditions</b>	<b>Highway 7&amp;8 Conditions</b>
<ul style="list-style-type: none"> <li>Design features of roadway linked to legally posted speed</li> </ul>	<ul style="list-style-type: none"> <li>Numerous vertical alignment features do not meet desirable limits for the posted speed</li> </ul>
<ul style="list-style-type: none"> <li>Lane width equal to or greater than 3.75 m where posted speed limit is 80 km/h and 3.5 m where posted speed limit is 60 km/h</li> </ul>	<ul style="list-style-type: none"> <li>Typically 3.75 m wide lanes except through Shakespeare where lane width is marginally below standard (3.35 m versus 3.5 m)</li> </ul>
<ul style="list-style-type: none"> <li>Clear shoulders equal to or wider than 2.0 m for disabled vehicle refuge</li> </ul>	<ul style="list-style-type: none"> <li>Typically 3.0 m wide granular shoulders including 0.5 m partially paved; fully paved shoulders for a short section within Shakespeare</li> </ul>
<ul style="list-style-type: none"> <li>Full passing opportunities</li> </ul>	<ul style="list-style-type: none"> <li>Limited passing opportunities due to horizontal alignment, vertical alignment and intersection spacing resulting in through vehicles spending a high proportion of time in platoons and operating at less than their desired speeds which adversely affects safety</li> </ul>
<ul style="list-style-type: none"> <li>All passenger cars in traffic stream</li> </ul>	<ul style="list-style-type: none"> <li>10-16% commercial vehicles in corridor</li> </ul>
<ul style="list-style-type: none"> <li>Directional distribution of 50/50</li> </ul>	<ul style="list-style-type: none"> <li>55% westbound / 45% eastbound</li> </ul>

<b>Exhibit 5.3:</b> <b>Highway 7&amp;8 Transportation Corridor Planning and Class EA Study</b> <b>Comparison of Ideal Highway Conditions and Those on Highway 7&amp;8</b>	
<b>Ideal Conditions</b>	<b>Highway 7&amp;8 Conditions</b>
<ul style="list-style-type: none"> <li>• Low number of intersections and entrances so that impediments to through traffic due to traffic control devices or turning traffic are minimized</li> </ul>	<ul style="list-style-type: none"> <li>• Numerous intersections and entrances within study area</li> </ul>
<ul style="list-style-type: none"> <li>• Level terrain</li> </ul>	<ul style="list-style-type: none"> <li>• Level to rolling terrain</li> </ul>

**5. There is currently no comprehensive highway access management plan for Highway 7&8 from Greater Stratford to New Hamburg to protect highway needs and to address the GGH policy of discouraging inappropriate highway-related growth.**

- A comprehensive highway access management plan is required to protect current and future highway capacity, operational and safety interests
- A highway access management plan is required to address the GGH Growth Plan policy of discouraging highway-related development in areas not designated for growth (which is most of the length of Highway 7&8 between the designated built-up areas of Stratford and Shakespeare, and between Shakespeare and New Hamburg).

**6. The GGH Growth Plan policy of co-ordinating transportation system planning and land use planning must be addressed.**

- The GGH Growth Plan promotes co-ordinated transportation system planning and land use planning. The functionality of the Highway 7&8 transportation corridor from Greater Stratford to the New Hamburg area to meet current and projected needs for various travel modes must be protected before the opportunities are precluded by development in the built-up areas of Stratford, Shakespeare and New Hamburg.
- Various transportation opportunities may be identified during this Class EA Study including (but not limited to) provision of a balanced and integrated transportation system (i.e. opportunities for higher order transit, improved linkages to urban growth centres, inter-modal facilities and gateways).

## **6 ENVIRONMENTAL CONDITIONS AND POTENTIAL EFFECTS**

The Highway 7&8 Transportation Corridor Planning and Class EA Study will utilize a study process that seeks to avoid, minimize or prevent adverse environmental effects. For the purposes of this study, the term “environment” reflects the definition in the Ontario Environmental Assessment Act, which includes natural, social, economic and cultural features. Specific mitigation measures and the approaches for management of environmental effects will be developed and addressed during the EA.

### **6.1 Overview of Existing Environmental Conditions**

A considerable amount of secondary source environmental information was obtained during preparation of the Study Design Report, as documented in December, 2005.

This study will begin by updating the information from secondary sources and will also include carrying out field investigations and seeking environmental information from external agencies, interest groups and the public through the Outreach and Consultation program as described in Section 9.0 of this Study Plan.

The information obtained through a review of the Study Design Report and secondary source investigations carried out to date as part of that study has provided a basic understanding of the existing environment and major environmental features in the area.

An overview of existing environmental conditions is provided below. Details are provided in Report “F”: Working Paper – Environmental Conditions and Constraints.

#### **6.1.1 Natural Environment**

The study area lies within the upper reaches of two major watersheds, the Upper Thames River on the west and the Grand River on the east end. The Avon River, a major tributary of the Upper Thames collects drainage from the Stratford area and lands to the north of Highway 7 and 8, running westward through the north end of the City of Stratford. The Nith River, a major tributary of the Grand River, receives drainage from most of the tributaries in the east part of the study area, and runs southward through New Hamburg before crossing Highway 7 and 8.

There are approximately 25 small watercourses along the subject section of Highway 7 and 8, most of which are municipal drains, although at least 8 of these watercourses are either confirmed fish habitat or have the potential to provide fish habitat. Species at Risk mapping recently developed by the Department of Fisheries and Oceans indicates the presence of protected mussel species in several of the Nith tributaries crossing Highway 7 and 8, and the presence of “special concern” (being considered for protection ) species of fish in several of the tributaries to the Avon River which crosses Highway 7 and 8.

The topography of the study area is generally gently rolling, becoming more pronounced to the north of the existing highway alignment. Soil conditions are generally good for a variety of agricultural operations and most of the land has been cleared, reducing forest cover to less than 5% of the land base. Areas of remaining forest are concentrated in poorly drained lowland or river valley areas, though linear strips of upland woodlot persist both to the north and south of the existing highway. A number of wetland/swamp/bog complexes around the study area have been recognized as 'environmentally sensitive areas', including the Little Lakes Bog and Swamp Forest Complex, spanning the existing highway just east of Stratford, and designated an Area of Natural and Scientific Interest (ANSI).

While the remaining wooded areas generally support species typical of upland woodlands in this area, the Nith Valley is known to support Carolinian biota in its lowland deciduous forests, and one plant Species at Risk, the Showy Goldenrod, has been found at locations between Stratford and New Hamburg. There are also deer wintering areas beyond the study area to the northeast and northwest, providing critical overwintering habitat to the deer which inhabit this area.

### **6.1.2 Land Use / Socio-Economic Environment**

Farming and agricultural land uses dominate the landscape and constitute the main economic activity between Stratford and New Hamburg. With most soils in agricultural capability classes 1-3, the land supports excellent cash crop operations and mixed farming, producing mixed grain, corn, soybeans, hay and a variety of fruits and vegetables. Major dairy and beef production operations are found throughout the area.

Highway 7 and 8 passes through three major population centres: New Hamburg at the East end of the study area, Stratford at the west end and Shakespeare, in the middle of the study area.

Stratford, with a population of approximately 30,000, is the primary urban centre in the study area, mixing a strong local tourism industry led by the Stratford Festival, with a small manufacturing base and commercial sector that serves as a local centre for retail and service industries. Highway 7 and 8 serves as a critical link to connect Stratford to major markets in the Kitchener/Waterloo/Cambridge area and to the Greater Toronto area approximately 1 hour to the east. This proximity is critical to the Stratford tourist industry and the auto parts industry centred in Stratford. Population and employment growth in the City of Stratford has been modest in recent years, while the population levels in adjacent townships have remained stable.

By contrast, New Hamburg, at the east end of the study area, with a population of about 6,000, is experiencing substantial population growth. New Hamburg and its surrounding (Wilmot) township lie within the urban shadow of the Kitchener/Waterloo/Cambridge areas, and have become major 'bedroom communities' for these major employment centres. While New Hamburg provides a full range of retail/service commercial facilities for its residents, it has also become the site of some major highway commercial

enterprises (eg. automotive dealerships) developed along Highway 7 and 8 in recent years.

The Hamlet of Shakespeare, located about half-way between Stratford and New Hamburg in the Township of Perth East, was initially established as a service centre for the surrounding agricultural community, but has since converted to serve the passing traffic to and from Stratford and the Stratford Festival. The hamlet now contains a number of fuel and food service outlets and a significant concentration of specialty shops dominated by high quality antique dealerships. Some new residential development is also occurring, especially on the north side of Shakespeare.

### **6.1.3 Cultural Environment**

The cultural environment includes archaeological features, built heritage features and heritage landscapes within the study area.

A preliminary archaeological assessment conducted during the Study Design identified 23 previously registered sites within 2km of the study area. Field surveys located fifteen historic components and three pre-historic components, with 9 of the historic and one of the pre-historic sites being registered. In addition to these sites, local sources reported two unmarked pioneer cemeteries along the highway and other historic archaeological remains including a brickyard and a cemetery south of Shakespeare. In general, there is a high potential for the recovery of pre-contact archaeological remains within the study area, especially along the streams and around wetland areas which would have been the foci for prehistoric settlement.

The cultural landscape within the study area is predominantly agricultural in nature, and both the highway and sideroads throughout the study area are lined with numerous attractive nineteenth and twentieth century farm complexes. The rural landscape is altered by the presence of the CNR line which parallels the highway and crosses it at one location, and by the presence of several crossroad hamlets and small population centres such as Shakespeare.

A number of significant built heritage features are found within the study area, including several located along the existing highway alignment. Most notable of these is the Fryfogel Inn property near Perth Road 106, which includes an 1845 brick building, a commemorative cairn and a cemetery. The Inn is protected by an Ontario Heritage Foundation heritage conservation easement and has been evaluated as a potential national historic site by the historic Sites and Monuments Board of Canada. Another significant built heritage feature, the Lingelbach Church and cemetery is located at the intersection of Highway 7 and 8 and Perth Line 104. The steel girder bridge which carries the single-lane CNR track over Highway 7 and 8 near Perth Road 102, constructed in 1936 constitutes another built heritage feature directly associated with the existing highway alignment.



Additional built heritage features are scattered throughout the study area, including a number of former church and old schoolhouse buildings. One such building, the Brocksden Museum located to the north of Highway 7 and 8 on Perth Line 37, has been designated under Part IV of the Ontario Heritage Act.

## **6.2 Environmental Work Plan**

The environmental work plan will be carried out in accordance with the:

- Class EA for Provincial Transportation Facilities; and
- MTO Environmental Reference for Highway Design.

For access to the above documents, please refer to the study web site.

These documents have been prepared for MTO undertakings and transportation projects of this type, to ensure that all ministry studies satisfy the requirements of federal and provincial EA principles and guidelines.

The environmental work plan includes further environmental investigations, including secondary source reviews and field investigations, after a study area is confirmed.

As the study progresses and the range of alternatives becomes more focussed, more detailed environmental investigations will be undertaken. The level of detail and scale of mapping will increase, as the project team begins to focus in on specific areas or corridors within the analysis area.

A full complement of environmental specialists will be working on the study to investigate factor-specific area(s) of expertise. The environmental factors, sub-factors and criteria are identified in Exhibit 7.2 of this Study Plan.

## **6.3 Environmental Conditions Documentation**

Environmental Conditions and Constraints will be documented in Report “F”: Working Paper – Environmental Conditions and Constraints. A detailed summary of the report is provided in Supporting Document #2 of this Study Plan.

Report “F” will be prepared in two parts as follows:

- Part 1 will:
  - document environmental conditions background data (existing/secondary source information – mapping / constraint mapping, data, reports, supplemented by preliminary field reconnaissance) to provide an environmental overview within the analysis area; and
  - provide overview/background level of detail that supports the selection of ‘Area Transportation System’ alternatives, and the generation and selection of preliminary planning alternatives.

- Part 2 will:
  - document environmental conditions field investigation work (inventory, survey, testing) and determination of environmental significance;
  - provide higher level of detail that supports the environmental impact assessment which is a component of generating provincial roadway detailed planning alternatives; and
  - utilize the same environmental factor-specific areas and provide the same areas of technical expertise, but at increased levels of detail.

Report “F” will present the facts without offering assessment of impacts or environmental protection/mitigation and compensation.

#### **6.4 Environmental Protection and Commitments to Mitigate**

Environmental protection principles are described in Section 2.4.2 of this Study Plan.

Environmental specialists carrying out the work on existing conditions will participate in determining the most effective means of protecting the environment during the generation and evaluation of preliminary and detailed planning alternatives. Environmental protection measures will also be discussed with external agencies and ministries as appropriate throughout the study.

If new environmental information arises during the study, it will be taken into consideration in the generation and evaluation of alternatives as the study moves forward.

Environmental protection and mitigation will be included in the final study recommendations at a preliminary design level of detail. If additional environmental investigations are required during the next study phase (i.e., detail design), a commitment to carry out the work will be included in the Transportation Environmental Study Report (TESR). The TESR will also include commitments to finalize the design work and obtain all required environmental approvals from external agencies prior to construction.

Environmental monitoring is described in Section 8.0 of this Study Plan.

## **7 ALTERNATIVES AND THEIR EVALUATION**

### **7.1 “Alternatives To the Undertaking”, and “Alternative Methods for Carrying Out the Undertaking”**

The Ontario *Environmental Assessment Act* defines both “alternatives to the undertaking” and “alternative methods for carrying out the undertaking”.

“Alternatives to the undertaking” are defined as functionally different ways of addressing identified problems and opportunities. For the Highway 7&8 Transportation Corridor Planning and Class EA Study, alternatives to the undertaking are examined under the transportation needs assessment phases of the study, as follows:

- ‘Area Transportation System’ alternatives, which are described in Sections 7.4.5 and 7.4.7; and
- preliminary planning alternatives, which are described in Section 7.4.10.

“Alternative methods for carrying out the undertaking” are defined as different ways of carrying out the undertaking once the preferred alternatives to the undertaking have been identified. For the Highway 7&8 Transportation Corridor Planning and Class EA Study, alternative methods for carrying out the undertaking are the following:

- provincial roadway (provincial highway/provincial transitway) detailed planning alternatives, which are described in Section 7.5.2; and
- provincial roadway (provincial highway/provincial transitway) preliminary design alternatives, which are described in Section 7.6.1.

### **7.2 Evaluation Methods and Their Application**

The evaluation of alternative methods is a two-stage process.

The first stage (assessment) entails the identification of advantages and disadvantages of the various alternatives under consideration. At this stage, environmental features are examined to determine the extent of impact. Net impacts will be identified; these refer to the effects on the environment that remain after standard mitigation measures have been applied to reduce the extent of the impact.

The second stage is the evaluation itself. This stage builds upon the information obtained from the impact assessment stage and involves a comparative analysis of the advantages and disadvantages of the alternatives considered to select a preferred alternative. At this stage, the relative importance of the environmental features and significance of the impacts are determined. A “Do Nothing” scenario will be carried forward to represent a base case for comparison to the preferred alternative.

## Evaluation Methods

The evaluation of alternatives is an integral component of the EA. Evaluation principles are provided in Section 2.4.3.

The Ontario Ministry of Environment recommends that the evaluation approach should be clearly described and government ministries, municipalities, agencies, First Nations and the public should be asked for their comments early in the EA study. The method(s) used to predict net environmental effects and evaluate advantages and disadvantages should clearly identify the relative differences and key impact trade-offs.

In this study, two evaluation approaches will be used to assist in the selection of alternatives at the various phases of this undertaking. A Reasoned Argument (or Trade-off) method will be the primary tool used to identify a preferred alternative. In some cases, an Arithmetic (weighting-scoring) method will be the secondary tool and will be used (except in the Transportation Needs Assessment phase) to verify the results of the trade-off method.

The Reasoned Argument (trade-off) evaluation component will provide a clear presentation to stakeholders of the key trade-offs between the various evaluation factors and the reasons why one alternative is preferred over another.

The Arithmetic evaluation provides a means to compare the alternative methods based on a numerical scaling with weights assigned by MTO and other stakeholders as determined through the EA Study consultation. A numerical approach is a good sensitivity analysis tool to determine if the conclusions of the reasoned argument approach are valid and appropriate.

During the study, the decision making process will be clearly documented to support a traceable process and to ensure that it is understandable to those who may be affected by the decisions. Details on the Reasoned Argument (trade-off) and Arithmetic evaluation methods are outlined as follows:

### *Reasoned Argument (Trade-off) Evaluation Method*

The reasoned argument method will be the primary evaluation method employed to select a preferred alternative. This method highlights the differences in net effects associated with the various alternatives. Based on these differences, the advantages and disadvantages of each alternative are identified. The relative significance of the impacts are examined to provide a clear rationale for the selection of a preferred alternative. The rationale that favours the selection of one alternative over all others will be derived from the following sources:

- Government legislation, policies and guidelines;
- Municipal policy (i.e. Official Plans);

- Issues and concerns identified during consultation with ministries and agencies, municipalities, ratepayer and interest groups and the general public (including input obtained through the weighting of the relative level of importance of evaluation criteria); and
- Project Team expertise.

### *Arithmetic Evaluation Method*

The arithmetic evaluation method will be the secondary method of evaluation and will incorporate both the level of importance of each environmental attribute (referred to as the weight) and the magnitude of the impact (or benefit) associated with an alternative (referred to as the score). Numerical values are derived for both the level of importance (weight), and the magnitude of the impact (score) associated with each alternative.

The weight is multiplied by the score to obtain a total for each factor. The totals for each alternative are compared to determine the preferred alternative method.

- **Scoring (degree of impact):** The score assigned to each environmental attribute is relative to the impact generated. Relative impacts can range from those that are positive (benefit the environment) to negative (detrimental to the environment). The assessment of impacts will be derived from field measurements, results of prediction models, secondary data sources (as appropriate) and other means as necessary.
- **Weighting (level of importance):** Generally, more weight is assigned to those features which are felt to be more important in assessing impacts generated by alternatives, and less weight is given to those features which are considered to be less important.

Weighting scenarios can be developed in consultation with the public, regulatory agencies, First Nations and municipalities. It should be noted that weighting scenarios may vary for different sections of the study area. In addition, numerous sensitivity tests can be run to reflect input received from stakeholders and the public. Such input will provide the Project Team with an understanding of community values with respect to the relative importance of each environmental feature.

The results of the weighting scenarios will be reviewed and compared to the results of the Reasoned Argument component.

The specific mathematical tool to be used for the arithmetic evaluation will be determined during the EA when the details regarding the alternative methods (preliminary planning, detailed planning and preliminary design for provincial roadways) are known.

### *Application of Evaluation Methods*

As previously noted, the Reasoned Argument method will be the primary evaluation tool used to select a preferred alternative with the Arithmetic Evaluation method used to

substantiate the findings.

These evaluation methods will be applied as indicated in the Exhibit 7.1 below.

<b>Exhibit 7.1</b> <b>Highway 7&amp;8 Transportation Corridor Planning and Class EA Study</b> <b>Summary of Application of Evaluation Methods</b>		
PHASE	EVALUATION METHOD	
	Reasoned Evaluation Method	Arithmetic Evaluation Method (as appropriate)
<b>Transportation Needs Assessment</b> <ul style="list-style-type: none"> <li><b>Area Transportation System Planning</b> (see Sections 7.4.3 through 7.4.9 of Study Plan)</li> </ul>	Evaluation method applied for this phase	Not applied to this phase
<ul style="list-style-type: none"> <li><b>Preliminary Planning</b> (see Sections 7.4.10 through 7.4.12 of Study Plan)</li> </ul>	Primary evaluation method applied for this phase	Secondary evaluation method applied (as appropriate)
<b>Provincial Roadway Detailed Planning</b> (see Section 7.5. of Study Plan)	Primary evaluation method applied for this phase	Secondary evaluation method applied (as appropriate)
<b>Provincial Roadway Preliminary Design</b> (see Section 7.6 of Study Plan)	Primary evaluation method applied for this phase	Secondary evaluation method applied (as appropriate)
<b>Summary Description of What The Evaluation Method Provides</b>	Key trade-offs between evaluation factors and reasons why one alternative is preferred over another	Numerical weighting/scoring of evaluation factors for alternatives (secondary evaluation method)

Where both evaluation methods are applied, they will be implemented concurrently. For example, the Project Team's assumptions and rationale behind its assessment of the level of importance of environmental attributes will be documented along with the corresponding arithmetic value assigned to the impact. In addition, input from stakeholders and the public will be co-ordinated through public information centres and other public consultation activities to ensure that issues, concerns and the magnitude of potential impacts are properly identified and understood by the Project Team.

The results of the two methods will be compared and the differences identified. The results of the Arithmetic Evaluation will be re-analyzed to determine the key weight-score combinations in the Arithmetic Evaluation. Similarly, the rationale for each trade-off decision will be revisited to determine if the Project Team's decision was appropriate. If the rationale supporting the trade-off decisions is valid and appropriate, the preferred alternative identified by the Reasoned Argument method will stand. However, if the results of the Arithmetic Evaluation lead to modifications to the trade-off decisions' rationale, the preferred alternative resulting from the Reasoned Argument approach may be revised. Prior to its application, the decision making process will be clearly documented and presented for stakeholders to comment on. During the study, additional evaluation methodologies may be utilized to ensure that the nature and magnitude of potential impacts (of significant community and/or environmental value) are accurately identified and mitigated.

Data necessary to support the evaluation of alternatives will be collected through consultation with ministries, agencies and other stakeholders from secondary sources, prediction models and site-specific field investigations. The precise nature and scope of field investigations will be determined during the study and outlined in work plans for review and comment by stakeholders. This information will be supplemented based on input received from interested stakeholder groups, municipalities, regulatory agencies and the general public.

### 7.3 Preliminary Identification of Evaluation Factors

The assessment of alternatives will consider broad factors, sub-factors and criteria that reflect objectives in addressing the stated transportation problems and consider potential impacts on the environment. Exhibit 7.2 provides a preliminary listing of the proposed environmental and transportation factors, sub-factors and criteria to be considered for the evaluation of alternatives during the various phases of the project. This exhibit builds on the information in the MTO Environmental Reference for Design (for access to this document, see the study web site).

Supporting Document #5 identifies which of these factors, sub-factors and criteria apply at each phase of the study, and provides preliminary evaluation criteria to be applied to each of them.

The information in Exhibit 7.2 and Supporting Document #5 represents the minimum detail to be considered for identifying the advantages and disadvantages of the alternatives during the various phases of the study. These preliminary factors, sub-factors and criteria will be refined and modified during consultation on “the proposed approach to upcoming work”, as is indicated in Exhibit 2.1 in Section 2.2 of this Study Plan. This will include, as appropriate, the development of measures for specific evaluation indicators.

<b>Exhibit 7.2</b> <b>Highway 7&amp;8 Transportation Corridor Planning and Class EA Study</b> <b>Preliminary Identification of Factors, Sub-Factors and Criteria</b> <b>To Be Considered in the Evaluation Of Alternatives</b>	
<b>FACTORS/SUB-FACTORS</b>	<b>CRITERIA</b>
<b>1. Natural Environmental Factors</b>	
<b>1.1 Fisheries and Aquatic Ecosystems</b>	1.1.1 Fish Habitat
	1.1.2 Fish Community
<b>1.2 Terrestrial Ecosystems</b>	1.2.1 Wildlife
	1.2.2 Wetlands
	1.2.3 Forests
	1.2.4 Vegetation
	1.2.5 Designated/Special Areas
<b>1.3 Groundwater</b>	1.3.1 Areas of Groundwater Recharge and Discharge
	1.3.2 Groundwater Source Areas and Wellhead Protection Areas

<b>Exhibit 7.2</b> <b>Highway 7&amp;8 Transportation Corridor Planning and Class EA Study</b> <b>Preliminary Identification of Factors, Sub-Factors and Criteria</b> <b>To Be Considered in the Evaluation Of Alternatives</b>	
<b>FACTORS/SUB-FACTORS</b>	<b>CRITERIA</b>
	1.3.3 Large Volume Wells
	1.3.4 Private Wells
	1.3.5 Groundwater-Dependent Commercial Enterprises
	1.3.6 Groundwater-Sensitive Ecosystems
<b>1.4 Surface Water</b>	1.4.1 Watershed / Subwatershed Drainage Features/Patterns
	1.4.2 Surface Water Quality and Quantity
<b>1.5 Air Quality</b>	1.5.1 Local and Regional Air Quality
	1.5.2 Sensitive Receptors to Air Pollutants and Greenhouse Gases
<b>2. Land Use / Socio-Economic Environmental Factors</b>	
<b>2.1 Land Use Planning Policies, Goals, Objectives</b>	2.1.1 First Nations' Land Claims
	2.1.2 Provincial / Federal Land Use Planning Policies/Goals/Objectives
	2.1.3 Municipal (local and regional) Land Use Planning Policies / Goals / Objectives
	2.1.4 Development Objectives of Private Property Owners
<b>2.2 Land Use – Community</b>	2.2.1 Indian Reserves
	2.2.2 First Nations' Sacred Grounds
	2.2.3 Urban and Rural Residential
	2.2.3 Commercial/Industrial
	2.2.5 Tourist Areas and Attractions
	2.2.6 Community Facilities / Institutions
	2.2.7 Municipal Infrastructure and Public Service Facilities
<b>2.3 Noise Sensitive Areas (NSA's)</b>	2.3.1 Highway Noise
	2.3.2 Construction Noise
<b>2.4 Land Use - Resources</b>	2.4.1 First Nations' Treaty Rights or Use of Land and Resources for Traditional Purposes
	2.4.2 Agriculture
	2.4.3 Parks and Recreational Areas
	2.4.4 Aggregate and Mineral Resources
<b>2.5 Major Utility Transmission Corridors</b>	
<b>2.6 Contaminated Property and Waste Management</b>	
<b>2.7 Landscape Composition</b>	2.7.1 Scenic Composition
	2.7.2 Sensitive Viewer Groups
	2.7.3 Scenic Value of Views/Vistas From the Transportation Facility
	2.7.4 Specimen Trees
<b>3. Cultural Environmental Factors</b>	
<b>3.1 Cultural Heritage – Built Heritage and Cultural Landscapes</b>	3.1.1 Buildings or “Standing” Sites of Architectural or Heritage Significance, or Ontario Heritage Easement Properties
	3.1.2 Heritage Bridges
	3.1.3 Areas of Historic 19 <sup>th</sup> Century Settlement
	3.1.4 Cultural Heritage Landscapes
	3.1.5 First Nations' Burial Sites



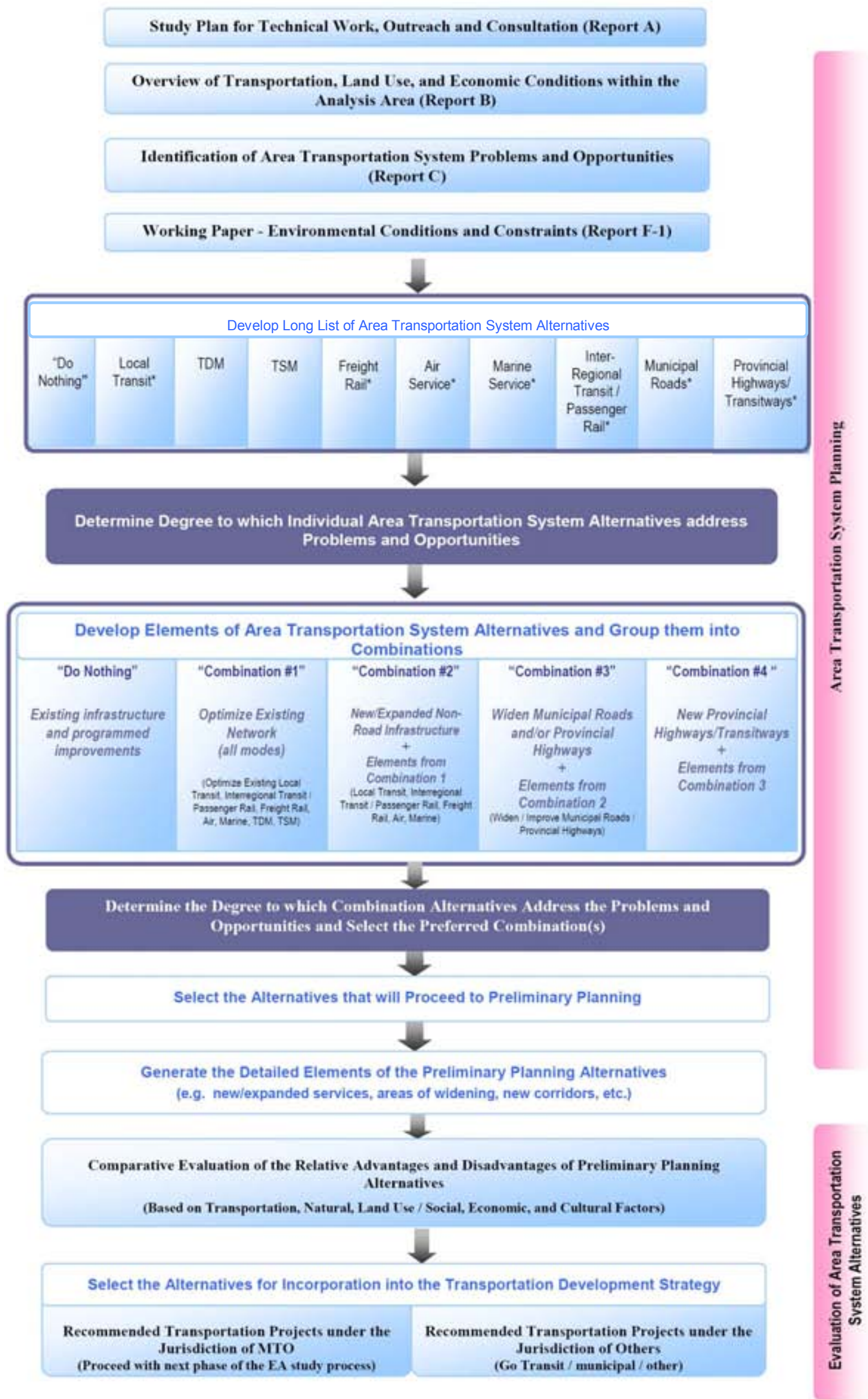
<b>Exhibit 7.2</b> <b>Highway 7&amp;8 Transportation Corridor Planning and Class EA Study</b> <b>Preliminary Identification of Factors, Sub-Factors and Criteria</b> <b>To Be Considered in the Evaluation Of Alternatives</b>	
<b>FACTORS/SUB-FACTORS</b>	<b>CRITERIA</b>
	3.1.6 Cemeteries
<b>3.2 Cultural Heritage – Archaeology</b>	3.2.1 Pre-Historic and Historic First Nations' Archaeological Sites
	3.2.2 Historic Euro-Canadian Archaeological Sites
<b>4. Area Economy Factors</b>	
4.1 First Nations' Industry	
4.2 Heavy Industry and Trade	
4.3 Tourism and Recreation Industry	
4.4 Agriculture Industry	
<b>5. Transportation Factors</b>	
5.1 Area Transportation System Capacity and Efficiency	5.1.1 Movement of People
	5.1.2 Movement of Goods
	5.1.3 System Performance During Peak Periods
5.2 Area Transportation System Reliability / Redundancy	
5.3 Safety	5.3.1 Traffic Safety
	5.3.2 Emergency Access
5.4 Mobility and Accessibility	5.4.1 Modal Integration, Balance
	5.4.2 Linkages to population and Employment Centres
	5.4.3 Recreation and Tourism Travel
	5.4.4 Accommodation for Pedestrians, Cyclists and Snowmobiles
5.5 Network Compatibility	5.5.1 Network Connectivity
	5.5.2 Flexibility for Future Expansion
5.6 Engineering	5.6.1 Constructability
	5.6.2 Compliance with Design Criteria
5.7 Construction Cost (excludes property costs and engineering costs)	
5.8 Traffic Operations	

## **7.4 'Area Transportation System' and Preliminary Planning Alternatives**

### **7.4.1 Process Overview for Transportation Needs Assessment**

The process for the identification, assessment and evaluation of the area transportation system alternatives and preliminary planning alternatives is depicted in Exhibit 7.3.

**Exhibit 7.3 Process Overview for the Development, Assessment and Evaluation of Area Transportation System Alternatives (Phase 2 of Study) and Preliminary Planning Alternatives (Phase 3 of Study)**



\* - Improved Services and/or new infrastructure

A brief description of the key elements of the process follows:

#### **7.4.2 Study Plan for Technical Work, Outreach and Consultation**

As indicated in Section 1.4, this document, Report A: Study Plan for Technical Work, Outreach and Consultation, establishes the framework and commitments to guide the study.

### **AREA TRANSPORTATION SYSTEM PLANNING**

Area Transportation System planning is outlined in Sections 7.4.3 through 7.4.9.

#### **7.4.3 Overview of Transportation, Land Use, Economic and Environmental Conditions within the Analysis Area**

The objectives and key tasks of this step are the following:

- provide an analysis area land use and economic overview and outlook, and provide a preliminary assessment of existing transportation conditions (documented in Report B: Working Paper - Overview of Transportation, Land Use, and Economic Conditions within the Analysis Area);
- provide an overview of environmental conditions and constraints within the analysis area, based upon secondary source information (documented in Report F 1<sup>st</sup> Part: Working Paper - Environmental Conditions and Constraints).

#### **7.4.4 Identify Area Transportation System Problems and Opportunities**

A preliminary statement of problems and opportunities is provided in Exhibit 1.3 in Section 1.3 of this Study Plan. The objectives and key tasks of this step are to develop additional detail through the following:

- establish travel demand forecasting approach and methodology;
- forecast future 'Area Transportation System' travel characteristics and patterns;
- provide a detailed assessment of current and future 'Area Transportation System' problems and opportunities;
- articulate the above as the basis for evaluating and selecting alternative solutions.

This work is presented in Report C: Working Paper – Area Transportation System Problems and Opportunities.

#### **7.4.5 Develop Long List of Area Transportation System Alternatives**

The following generic area transportation system alternatives have been identified:

- Do Nothing
- Travel Demand Management (TDM)

- Transportation System Management (TSM)
- Local Transit\*
- Interregional Transit and Passenger Rail\*
- Air Services\*
- Marine Services\*
- Freight Rail\*
- Municipal Roads\*
- Provincial Highways / Transitways\*

(\* new or improved operations and/or infrastructure)

These alternatives and their rationale are described below, with additional information presented in Supporting Document #3 of this Study Plan.

The “Do Nothing” alternative includes existing infrastructure and programmed improvements. The “Do Nothing” alternative is considered to be the status quo, in that no additional measures are planned to address possible shortfalls in transportation system capacity.

TDM strategies include measures that improve the operation of the current transportation system by managing travel demand, independent of other infrastructure improvements (e.g. constructing or expanding roads). The emphasis of TDM strategies is to reduce overall demands on the transportation network, especially auto trips; shift demands to time periods outside of the critical congestion periods; and shift demands from auto based trips to alternative modes of transportation, principally transit, cycling and walking.

TSM can improve the efficiency and safety of the transportation system and optimize the use of existing and planned infrastructure through such initiatives as transit priority facilities (e.g. bus priority at intersections), Intelligent Transportation Systems (ITS), High Occupancy Vehicle (HOV) lanes, Park’n’Ride facilities and intersection or signal timing improvements.

Local transit may reduce auto trips and thereby relieve congestion and increase the performance of the transportation system.

Interregional Transit and Passenger Rail would provide an alternative travel mode choice and increase the capacity of the transportation system. This could include inter-regional bus service in mixed traffic, higher order priority transit services on new infrastructure such as Bus Rapid Transit (BRT), Light Rail Transit (LRT), GO Transit, and VIA rail.

Air services can potentially result in a change in travel patterns for both passengers and freight.

Freight rail services for goods movement could encourage the diversion of freight from trucks. The ability to expand rail service and divert longer haul goods to rail may provide some relief to network congestion both on the provincial highway network, as well as on arterial roads.

Municipal Roads and Provincial Highways could be widened / improved to increase the capacity and performance of the transportation network and provide relief to forecasted network congestion. This could include:

- Provincial roads - potential to widen Highway 7&8
- Municipal roads – potential to widen local east-west roads between and through Stratford and New Hamburg.
- Access Management – access management strategies could be employed to improve the operation of existing Highway 7&8 through removal, consolidation or redirection of existing intersections and entrances and by imposing strict restrictions on future access to Highway 7&8.

In addition, new municipal roads and/or provincial highways/transitways would increase the capacity and performance of the transportation network and provide relief to forecasted network congestion. Inherent in these new facilities would be a high degree of access control in order to preserve the travel mobility characteristics of the corridor. Commercial and private entrances would be prohibited and access would be limited to at-grade highway intersections or potentially highway interchanges with key arterial roads; and to transit stations for a provincial transitway. Use of sections of existing roadways may be considered.

#### **7.4.6 Determine Degree to Which Individual Area Transportation System Alternatives Address Problems and Opportunities**

The 'Area Transportation System' alternatives will be examined to determine the degree to which they individually address problems and opportunities. On a preliminary basis, this will be determined through the following screening criteria:

- Potential to address transportation problems and opportunities;
  - Long term capacity deficiencies
  - Efficient movement of people
  - Efficient movement of goods
  - Recreational / tourist travel
  - System reliability / redundancy
  - Safety
  - Accessibility
  - Modal opportunities
- Support for provincial policies (Greater Golden Horseshoe Growth Plan, etc.)
- Supports land use and growth objectives of province and municipalities

This determination will:

- be undertaken using a reasoned argument methodology only;
- consider the environmental and transportation factors and sub-factors identified in **Exhibit 7.2** and the evaluation criteria and indicators identified in Supporting Document #5.

#### **7.4.7 Define Elements of Area Transportation System Alternatives and Group Them into Combinations**

The following generic combinations of area transportation system alternatives have been developed:

##### Do Nothing

As indicated in Section 7.4.5, the “Do Nothing” alternative includes existing infrastructure and programmed improvements.

##### Combination #1: Optimize Existing Network

Combination #1 includes:

- optimization of:
  - local transit;
  - interregional transit and passenger rail;
  - passenger rail;
  - freight rail;
- transportation system demand management (TDM)
- transportation system management (TDM)

##### Combination #2: New / Expanded Non-Road Infrastructure plus elements of Combination #1

Combination #2 includes:

- new/expanded
  - local transit
  - interregional transit and passenger rail
  - air services
  - marine services
  - freight rail
- elements of Combination #2

##### Combination #3: Widen Roads plus elements of Combination #2

Combination #3 includes:

- widen / improve:
  - municipal roads

- provincial highways
- elements of Combination #2

Combination #4: New Municipal Roads and/or Provincial Highways/ Transitways plus elements of Combination #3

Combination #4 includes:

- new municipal roads
- new provincial highways/transitways

#### **7.4.8 Determine the Degree to which Combination Alternatives Address the Problems and Opportunities and Select the Preferred Combinations**

The advantages and disadvantages of the various combination 'Area Transportation System' alternatives will be compared using a reasoned argument methodology to select recommended alternatives.

The trade-offs used to select preferred 'Area Transportation System' alternatives will reflect:

- Government legislation, policies and guidelines;
- Municipal policy (i.e. Official Plans);
- Public, Agencies, First Nations, Consultation Groups, and other stakeholder issues and concerns; and
- Project Team (staff from MTO and their Consultants) expertise.

#### **7.4.9 Identify the Alternatives that will Proceed to Preliminary Planning and those Alternatives that Require Further Study by Other Proponents**

The objectives and key tasks are:

- evaluate and select those combinations that are expected to significantly contribute to addressing 'Area Transportation System' problems and opportunities

The work outlined in Section 7.4.5 through 7.4.9 is documented in Report D: Working Paper – Area Transportation System Alternatives.

### **PRELIMINARY PLANNING**

Preliminary Planning is outlined in Sections 7.4.10 through 7.4.12

#### **7.4.10 Generate the Detailed Elements of the Preliminary Planning Alternatives**

The objective and key task of this step is to generate detailed elements of the preliminary planning alternatives based on transportation, natural, land use / social, economic and cultural factors. They may include the following:

- new/expanded services;
- general areas of geometrical improvements and widening to existing facilities;
- new corridors;
- environmental protection for the above (by minimizing intrusion into areas of environmental significance as identified through secondary source information);
- conceptual areas of limitations to highway access.

Exhibit 7.4 provides a preliminary listing of the proposed environmental and transportation factors and sub-factors to be considered for generating preliminary planning alternatives:

<b>Exhibit 7.4: Principles for Generating Preliminary and Detailed Planning Alternatives</b>
<p><b>Principle 1: Minimize impacts to significant natural features, functions, systems and communities</b></p> <ul style="list-style-type: none"><li>• Avoid where possible, or minimize encroachment on or loss of water bodies and associated riparian zones;</li><li>• Avoid where possible, or minimize encroachment on or loss of critical fish habitat features;</li><li>• Avoid where possible, or minimize encroachment on or loss of species of conservation concern (vegetation, fish and wildlife);</li><li>• Avoid where possible, or minimize encroachment on or loss of critical habitat of Species at Risk;</li><li>• Avoid where possible, or minimize encroachment on or loss of encroachment into ecologically functional areas;</li><li>• Avoid where possible, or minimize encroachment on or loss of important wildlife areas and travel corridors. Other areas to be considered are any identified wildlife management, rehabilitation and research program sites;</li><li>• Avoid where possible, or minimize encroachment on or loss of Provincially Significant Wetlands (PSWs) and avoid impairment to wetland functions, including ecological function;</li><li>• Avoid where possible, or minimize encroachment on or loss of all other evaluated and unevaluated wetlands;</li><li>• Avoid where possible, or minimize encroachment on or loss of designated significant woodlands;</li><li>• Avoid where possible, or minimize encroachment on or loss of other important woodlands;</li><li>• Avoid where possible, or minimize encroachment on known groundwater recharge and discharge areas; as well as identified wellhead and source</li></ul>



<b>Exhibit 7.4: Principles for Generating Preliminary and Detailed Planning Alternatives</b>
<p>protection areas and areas susceptible to groundwater contamination;</p> <ul style="list-style-type: none"> <li>• Avoid where possible or minimize encroachment on, loss of, or impairment of ecological function to environmentally significant features, and where appropriate associated functions, including Significant Valleylands, ESAs, ANSIs, or other areas of provincial, regional or local significance; and</li> <li>• Avoid where possible, or minimize encroachment on loss of, or impairment of ecological function to special spaces (including recreational activity zones).</li> </ul>
<b>Principle 2: Minimize impacts to existing and planned (approved under the Planning Act) population and employment areas</b>
<ul style="list-style-type: none"> <li>• Maximize separation distance from sensitive receptor locations;</li> <li>• Avoid where possible or minimize encroachment on, or loss of developed properties;</li> <li>• Minimize access impacts;</li> <li>• Maximize the access provided to major generators of economic activity;</li> <li>• Avoid where possible, or minimize encroachment on, or loss of prime agricultural areas and agricultural infrastructure;</li> <li>• Avoid where possible, or minimize encroachment on, or loss of mineral, petroleum and mineral aggregate resources;</li> <li>• Avoid operating and "non-operating" waste disposal sites; and</li> <li>• Avoid where possible, minimize encroachment on, or loss of known archaeological sites/built heritage features/cultural heritage landscape areas of extreme significance.</li> </ul>
<b>Principle 3: Transportation service criteria</b>
<ul style="list-style-type: none"> <li>• Generate alternatives that are efficient and direct, while meeting standards for design; and</li> <li>• Select alternatives that address the transportation problems and transportation opportunities.</li> </ul>

The assessment of the preliminary planning alternatives will consider the environmental and transportation factors, sub-factors and criteria identified in Exhibit 7.2 and their evaluation indicators identified in Supporting Document #5.

#### **7.4.11 Comparative Evaluation of the Relative Advantages and Disadvantages of Preliminary Planning Alternatives**

The objective and key task of this step is to evaluate preliminary planning alternatives using reasoned argument and arithmetic methods (as appropriate), utilizing the

preliminary listing of environmental and transportation factors, sub-factors and criteria in Exhibit 7.2, and their evaluation indicators identified in Supporting Document #5.

A reasoned evaluation methodology, augmented by arithmetic methods as appropriate, will be applied.

#### **7.4.12 Identify Recommended Transportation Development Strategy**

The objectives and key tasks of this step are:

- select recommended preliminary planning alternatives based on results of comparative evaluation by the project team and taking into consideration stakeholder input received through the consultation and outreach program
- develop a transportation strategy, including definition of study area(s)
- determine next steps, including decision if study is to continue through Phases 4-6 (*if provincial roadway alternatives are selected*)

The study area is defined as the geographic area within which a reasonable range of alternatives will be generated. It is fundamental to note that the study area does not limit the potential to examine broader transportation, economic and environmental considerations, impacts and effects outside of its boundaries.

The MTO Project Team will generate a study area through consultation with affected stakeholders (including regulatory agencies and municipalities). The following inputs will be used to guide the generation of study area limits:

- identified transportation problems and opportunities;
- the nature of the alternatives selected;
- existing transportation infrastructure;
- significant natural, socio-economic and cultural environmental features (as identified through secondary source data and consultation); and
- current government land use planning policies and initiatives.

During the study, the study area limits may be refined or modified as required to accommodate any reasonable alternatives that may be developed.

To determine next steps, the selected 'Area Transportation System' Development Strategy will be placed into one or more of the following four categories:

- If the preferred 'Area Transportation System' planning alternative is "Do Nothing" – the EA process is complete and no further study will be initiated.
- If the preferred 'Area Transportation System' planning alternative is not a provincial roadway recommendation – the current EA process will be halted; MTO will refer the planning alternative to the appropriate agency or jurisdiction for further review and action.

- If the preferred 'Area Transportation System' planning alternative is a provincial roadway recommendation – the EA process continues and MTO will proceed to the preliminary planning phase as outlined in Section 2.2.
- If the preferred 'Area Transportation System' planning alternative is a combination of provincial roadway recommendations and recommendations that are not provincial roadways – the EA process continues for provincial roadway solutions, with MTO proceeding to the Preliminary Planning phase as outlined in Section 2.2; and - 'Area Transportation System' planning alternatives that are not provincial roadways are referred to the appropriate agency or jurisdiction for further review and action.

The work of Sections 7.4.10 through 7.4.12 is presented in Report E: Milestone Report – Highway 7&8 Transportation Corridor Needs Assessment.

## **7.5 Detailed Planning Alternatives For Provincial Roadways**

### **7.5.1 Process Overview for the Development, Assessment and Evaluation of Detailed Planning Alternatives For Provincial Roadways**

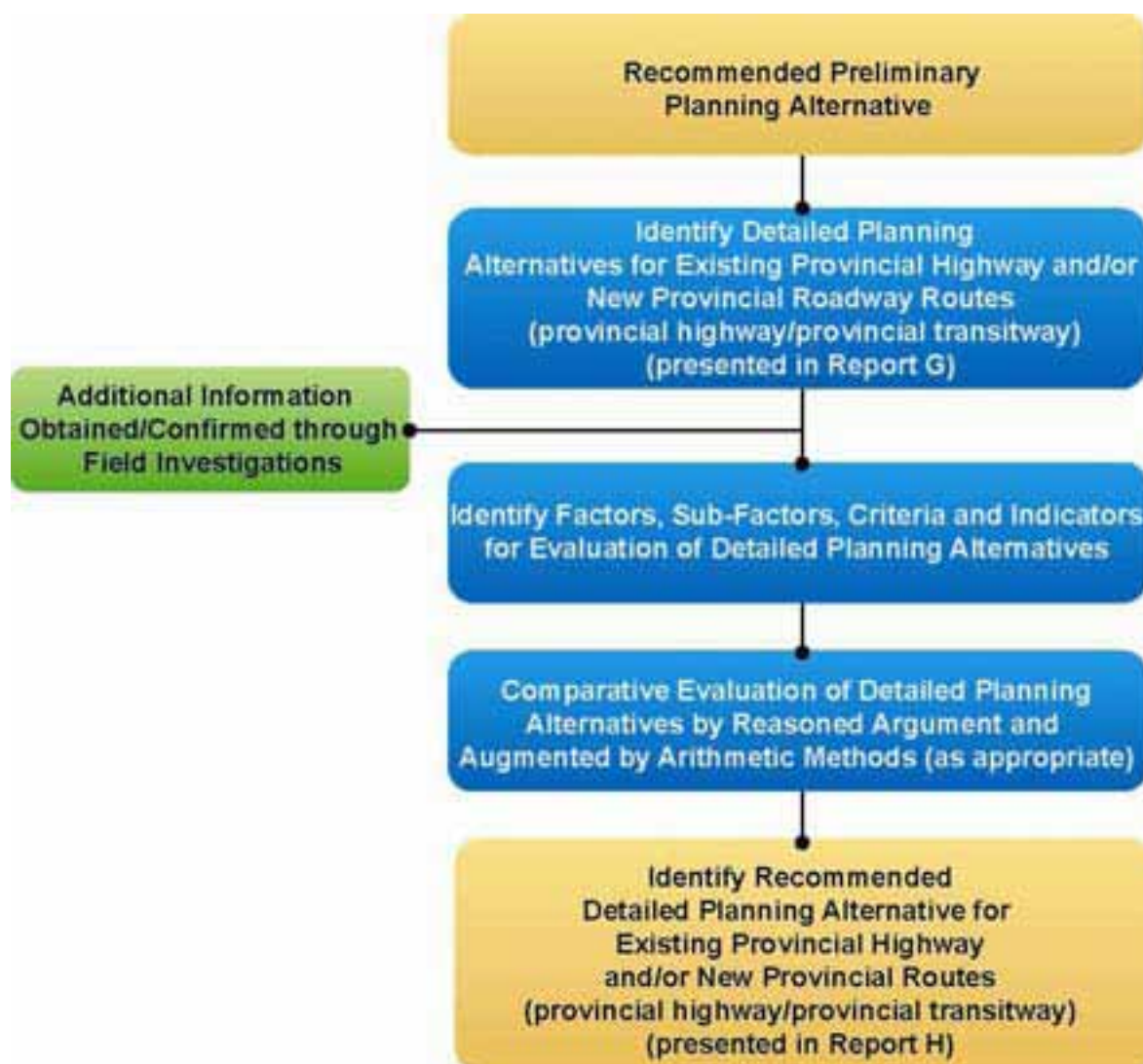
The process for the identification, assessment and evaluation of the detailed planning alternatives for provincial roadways is depicted in Exhibit 7.5. A brief description of the key elements of the process follows:

- 1 Identify Detailed Planning Alternatives for Existing Provincial Highway and/or New Provincial Roadway Routes (provincial highway/provincial transitway)
  - Description and rationale for detailed planning alternatives (presented in Report G).
- 2 Additional Information Obtained/Confirmed through Field Investigations
  - Obtain additional information regarding environmental conditions/features within the analysis area through field investigation (inventory, survey and testing, as appropriate).
- 3 Identify Factors, Sub-factors, Criteria and Indicators for Evaluation of Detailed Planning Alternatives
  - Each of the alternatives will be evaluated using reasoned argument against the environmental and transportation factors, sub-factors and criteria identified in Exhibit 7.2 and the evaluation indicators identified in Supporting Document #5
- 4 Comparative Evaluation of Detailed Planning Alternatives by Reasoned Argument and Augmented by Arithmetic Methods (as appropriate)
  - Each alternative will be evaluated using reasoned argument and arithmetic methods (as appropriate) using the identified factors, sub-factors, criteria and indicators (refer to preliminary listing of proposed factors, sub-factors and criteria in Exhibit 7.2 provided in Section 7.3; indicators will be developed during the preliminary planning phase of the study)

- 5 Identify Recommended Detailed Planning Alternative for Existing Provincial Highway and/or New Provincial Routes (provincial highway/provincial transitway)
  - Selection of recommended detailed planning alternative based on results of comparative evaluation and taking into consideration stakeholder input received through the consultation and outreach program (presented in Report H).

**Exhibit 7.5**

**Highway 7&8 Transportation Corridor Planning and Class EA Study  
Process Overview for the Development, Assessment and Evaluation  
of Detailed Planning Alternatives for Provincial Roadways (Phase 4 of Study)**



### **7.5.2 Summary Of Detailed Planning Alternatives**

Depending on the selected alternatives carried forward from the preliminary planning phase, the Highway 7&8 Transportation Corridor Planning and Class EA Study, will consider the specific location / type / character and template “footprint” for the following categories of provincial roadway detailed planning alternatives (as applicable):

- New provincial roadways
  - new provincial highway route location
  - highway type and transitway route location & technology
- Improve existing provincial highways (i.e. Highway 7&8, Highway 3)
  - specific location & type of geometrical improvements to existing provincial highway
  - specific location, extent & direction of widening to existing provincial highway
  - combinations of the above
- specialty engineering alternatives (bridge, drainage & hydrology, foundation, pavement & roadbase, traffic control & electrical infrastructure) for the above

These provincial roadway detailed planning alternatives are presented in more detail in Supporting Document #3 of this Study Plan. The rationale for the detailed planning alternatives for provincial roadways will be presented in Report “G”: Working Paper – Generation of Detailed Planning Alternatives for Provincial Roadways.

Exhibit 7.2 in Section 7.3 provides a preliminary listing of the proposed environmental and transportation factors, sub-factors and criteria to be considered for the generation, assessment and evaluation of alternatives. Supporting Document #5 provides preliminary evaluation indicators to be applied to these factors, sub-factors and criteria during the detailed planning phase. These preliminary listings will be refined and modified during consultation on the “proposed approach to upcoming work”, as is indicated in Sections 2.2 and 7.3 of this Study Plan.

The objectives and rationale for generating alternatives will ensure not only that alternatives are efficient/direct and meet technical objectives/design requirements, but also minimize/avoid impacts to significant environmental and study area features to the extent possible.

### **7.5.3 Process For Assessment Of Detailed Planning Alternatives For Provincial Roadways**

The assessment of the detailed planning alternatives for provincial roadways identified in Section 7.5.2 will:

- be undertaken using a reasoned argument methodology and augmented by arithmetic methods as appropriate ;

- consider the environmental and transportation factors, sub-factors and criteria identified in Exhibit 7.2 and the evaluation indicators identified in Supporting Document #5; and
- consider potential impacts on the environment.

The alternatives will then be reviewed with agencies and the public through the outreach and consultation process. This outreach and consultation is critical to developing a reasonable set of detailed planning alternatives. Local residents can add valuable information to the database gathered by the Project Team. Refinements to the alternatives will be integrated where warranted and a final set of detailed planning alternatives will be brought forward to the evaluation process.

#### **7.5.4 Process For Evaluation And Selection Of The Preferred Detailed Planning Alternatives For Provincial Roadways**

After the various detailed planning alternatives are generated and refined based on consultation, the evaluation of the alternatives will commence.

##### *Factor-Specific Environmental Inputs to the Evaluation of Detailed Planning Alternatives*

The data collected on the study area will assist in identifying the types of impacts each detailed planning alternative will have on each component of the environment, as indicated in Exhibit 7.2 of this Study Plan.

In addition, technical requirements and costs will be considered in the evaluation of detailed planning alternatives. Data collection for each of the environmental disciplines will be conducted consistent with the most up-to-date provincial policies and procedures. Each of these components will be defined by a set of evaluation criteria. Impacts will be quantified according to the preliminary criteria shown in Supporting Document #5 of this Study Plan.

These criteria are intended to assist the factor specific environmental specialists in determining the overall impact of the various alternatives on the natural, socio-economic and cultural environment. In determining the overall impact, the specialists will consider how the various factors and criteria interact and function together. The evaluation criteria listed represent the minimum requirements in the process of evaluating alternative methods.

A description of the rationale associated with the evaluation criteria/indicators is outlined in Supporting Document #5 of this Study Plan. The evaluation factors, sub-factors and criteria are subject to refinement and modification during the EA based on study findings, provincial policy and input received from stakeholders. Factor specific work plans for assessing potential environmental effects will be completed during the Class EA Study.

## **7.6 Preliminary Design Alternatives For Provincial Roadways**

### **7.6.1 Summary Of Preliminary Design Alternatives**

Depending upon the provincial highway and provincial transitway alternatives selected during Planning, the Preliminary Design alternatives may be generated and assessed for:

- new provincial transitway route;
- new provincial highway route;
- improvements to the existing highway; and
- combinations of the above.

The Highway 7&8 Transportation Corridor Planning and Class EA Study will consider the following preliminary design alternatives for the provincial roadway alternatives for the following categories of preliminary design (as applicable):

- calculated vertical & horizontal alignment and cross-section;
- highway interchange & intersection preliminary design;
- transitway station preliminary design;
- location/design of private entrances to highway (if applicable);
- specialty engineering alternatives for the above (bridge, drainage & hydrology, foundation, pavement & roadbase, traffic control & electrical infrastructure);
- right-of-way and property acquisition requirements;
- utility requirements (relocation etc); and
- preliminary staging of implementation.

These provincial roadway preliminary design alternatives are presented in more detail in Supporting Document #3 of this Study Plan. The rationale for the preliminary design alternatives for provincial roadways will be presented in Report “I”: Working Paper – Generation of Preliminary Design Alternatives for Provincial Roadways.

Exhibit 7.2 provides a preliminary listing of the proposed environmental and transportation factors, sub-factors and criteria to be considered for the generation, assessment and evaluation of alternatives. Supporting Document #5 provides preliminary evaluation indicators to be applied to these factors, sub-factors and criteria during the preliminary design phase. These preliminary listings will be refined and modified during consultation on the “proposed approach to upcoming work”, as is indicated in Sections 2.2 and 7.3 of this Study Plan.

### **7.6.2 Process For Generation And Assessment Of Preliminary Design Alternatives For Provincial Roadways**

The generation and assessment of preliminary design alternatives for provincial roadways will use the factors, sub-factors and criteria as were applied for the detailed planning alternatives as identified in Section 7.5.

The assessment of the preliminary design alternatives for provincial roadways identified in Section 7.6.1 will:

- be undertaken using a reasoned argument methodology and augmented by arithmetic methods as appropriate;
- consider the environmental and transportation factors, sub-factors and criteria identified in Exhibit 7.2 and the evaluation indicators identified in Supporting Document #5; and
- consider potential impacts on the environment.

### **7.6.3 Process For Evaluation And Selection Of The Preferred Preliminary Design Alternatives For Provincial Roadways**

The evaluation and selection of preliminary design alternatives for provincial roadways will use the same factors, sub-factors and criteria as were applied for the detailed planning alternatives in Section 7.5.



## **8 MONITORING STRATEGY DURING PROJECT IMPLEMENTATION**

During this Class EA study, MTO will commit to developing a monitoring program for the implementation of the selected preferred alternative. The Transportation Environmental Study Report will include a comprehensive list of all commitments made during the study to guide future environmental work and consultation as well as effects and compliance monitoring.

### **8.1 Commitment To Develop Project Technical Monitoring Program And Procedures**

During Preliminary Design of the study, a monitoring strategy will be developed to reflect how MTO proposes to ensure that the implementation of proposed mitigating measures and key design features are consistent with project commitments outlined in the Transportation Environmental Study Report and any subsequent environmental study documentation.

An environmental effects and compliance monitoring program is necessary to identify potential non-conformance with environmental design, and environmental protection requirements (as identified during this Class EA study) and to initiate corrective action to bring the work into compliance with environmental requirements committed to in the Transportation Environmental Study Report and any subsequent environmental documentation for this undertaking.

MTO will ensure that appropriate commitments to compliance monitoring are reflected in Report “J”: Milestone Report – Selection of Preliminary Design Alternatives for Provincial Roadways.

The duration of the monitoring and follow-up programs will vary and will depend on the conditions of permits and approvals granted by regulatory agencies.

### **8.2 Commitment To Develop Project EA Process Monitoring Program And Procedures**

During the planning and design processes, MTO will ensure compliance with Class EA process commitments prior to project implementation. If the preferred alternative includes a construction phase, MTO will ensure that external notification and consultations are consistent with any commitments that may have been made earlier in the Transportation Environmental Study Report or other environmental documentation. Following construction, monitoring will ensure that any follow-up information is provided to external agencies as per any outstanding environmental commitments.

## **9 OUTREACH AND CONSULTATION**

### **9.1 Key Components of Outreach and Consultation Program**

A major component of the Highway 7&8 Transportation Corridor Planning and Class EA Study will be outreach and consultation. The key components of the outreach and consultation program are as follows:

- Section 1.1 of this Study Plan indicates that outreach and consultation will be structured around six key points of decision-making, each of which will be supported by:
  - the release of a newsletter;
  - the release of draft reports for review and comment;
  - a round of Public Information Centres (PICs);
  - posting of information on the study web site; and
  - newspaper notices announcing the above.
- Section 2.2 of this Study Plan provides an overview of the planning and Class EA Study process, including objectives and key tasks, reports, and PICs at which information is presented.
- Section 2.4.4 of this Study Plan provides the principles for outreach and consultation.

The consultation program is designed such that the stakeholders will be provided reasonable timeframes for reviewing and providing comments on documentation and information made available during this Class EA study, with the PICs being the first opportunity for the public to review the information presented for each phase of the work. The consultation plan encourages proactive communication, which will allow comments and views of stakeholders to assist MTO in the decision-making process.

### **9.2 Public Information Centres (PICs)**

The six rounds of PICs are the focus points of outreach and consultation.

These PICs will be supplemented by follow-up activities where appropriate. Each round of PICs will include individual events held in Stratford and New Hamburg. The precise locations/venues and timing of each PIC will be determined during the study based on the availability of venues, etc.

The PICs will be arranged as drop-in centres (open house format) to allow stakeholders to see results, exchange information, and ask one-on-one questions of the Project Team. The setup of each round of PICs will depend on the nature of the information being presented and input being sought. The PICs serve an important function in

providing for two-way communications on specific local conditions, issues and concerns regarding the study.

Follow-up consultation activities will be held as necessary throughout the project. It is expected that these activities will be very helpful to facilitate additional dialogue and attempt to resolve any outstanding concerns and issues during the Class EA process. Follow-up activities will be arranged to address specific project issues and concerns as they arise. The format of these activities will be flexible to reflect the type of “Project Team – stakeholder” interaction required to address a particular issue but could include stakeholder group meetings, workshops, kitchen table meetings, presentations, surveys, and other.

Summary Reports for Public Information Centres, follow-up activities and other consultation events will be prepared and posted on the project website in a timely manner. The information to be presented at each PIC is summarized in the table provided in Section 2.2. The reports referred to in the table are summarized in Supporting Document #2 of this Study Plan.

### **9.3 Public Notices in Newspapers**

Newspaper notices announcing Study Commencement and PIC #1 are scheduled for posting in local newspapers in June, July and August 2007.

MTO will publish future newspaper notices as follows:

- public notices shall be placed in newspapers for each round of PICs, and the filing of the Transportation Environmental Study Report;
- each round of public notices shall include newspaper advertisements on at least 2 separate days (preferably one week-day and one weekend-day), where project scheduling/timing and newspaper circulation timing jointly permit;
- these public notices shall be placed in the following newspapers:
  - Stratford Beacon Herald;
  - New Hamburg Independent;
  - Kitchener Waterloo Record;
  - Le Regional;
  - Turtle Island News (Six Nations); and
  - Possibly two additional local newspapers.

For those newspapers which publish once per week, notices may be placed only once. For those newspapers which publish biweekly or monthly, notices will be placed only if timing/scheduling permits.

### **9.4 Project Web Site**

A project web site has been established for the Highway 7&8 Transportation Corridor Planning and Class EA Study. The web site will be maintained during the course of the

study as a source of up-to-date information. The project web site address is <http://www.7and8corridorstudy.ca>. Stakeholders are encouraged to visit the site.

## 9.5 Contacting the Study Team

The study team can be contacted at the following:

- Email to: [projectteam@7and8corridorstudy.ca](mailto:projectteam@7and8corridorstudy.ca)
- Toll free telephone call to: 1 (866) 921-9268

## 9.6 Stakeholder Contact List

The Project Team has developed a contact list that includes interested individuals, ratepayer groups, recreational groups, agricultural groups, etc. located in the analysis / study area. The mailing list developed during the Study Design was the starting point for this stakeholder list. Additions have been made based upon stakeholder contacts to the study team, and will continue to be made as the study progresses. These stakeholders will be notified by letter /e-mail of project activities including study start-up, Public Information Centres, and follow-up activities (as appropriate).

## 9.7 Stakeholder Categories

The categories of stakeholders for this study are provided in Exhibit 9.1 and then discussed below:

<b>Exhibit 9.1 Highway 7&amp;8 Transportation Corridor Planning and Class EA Study Categories of Stakeholders</b>	
• First Nations	
• Business/Commercial Interest Groups	
• Emergency Service Providers	
• General Public	
• Municipalities	
• Regulatory Agencies	
• Transportation Service Providers	
• Utility Companies	

- First Nations
  - outreach and consultation with First Nations:
    - Six Nations of the Grand River First Nation
  - comply with 'Ontario's New Approach to Aboriginal Affairs, Spring 2005; also includes compliance with Grand River Notification Agreement

- be proactive in identifying and making initial contact with Six Nations of the Grand River First Nation and with Mississaugas of the New Credit First Nation
- strive to provide appropriate and meaningful consultation and engagement with First Nations that provides them with the opportunity to be informed; and to have their opinions heard and seriously considered.
- ensure that issues of particular interest to First Nations communities are addressed, including, but not limited to:
  - identification of First Nations' land claims;
  - potential effects to Indian Reserves;
  - potential effects to First Nations' sacred grounds;
  - potential effects to First Nations' treaty rights and use of land and resources for traditional purposes (e.g. hunting, fishing, harvesting of country foods, harvesting of medical plants);
  - potential effects to First Nations' burial sites;
  - potential effects to pre-historic and historic First Nations' sites; and
  - potential effects to First Nations' industry.(For additional details on the above, please refer to Exhibit 7.2 in Section 7.3 of this Study Plan and Supporting Document #5)
- provide opportunities for two-way communication by meetings with First Nations staff, with an emphasis on draft reports developed as the study progresses;
- at key decision-making milestones during the study, offer:
  - a presentation to Councils; and
  - a community meeting on the reserves.
- Business/commercial interest groups
  - Outreach and consultation with:
    - Chambers of Commerce (New Hamburg , Stratford and District, etc), Tourism agencies and committees, business associations and individual business owners as identified during the study
  - Outreach and consultation includes discussions at PICs and meetings with groups or individuals during study. Notification of upcoming meetings and opportunities for input may also be promoted through provision of the website address to leaders of organized groups. In addition, local tourist businesses will be provided PIC notices for posting on their bulletin boards in advance of each PIC
- Emergency Service providers
  - Outreach and consultation with:
    - Police services, including OPP.
    - Ambulance services, including Perth EMS, Region of Waterloo – EMS, etc.
    - Fire departments, including Stratford, Shakespeare, Wilmot, Perth East Fire Departments
  - Outreach and consultation includes discussions at PICs with emergency service providers regarding potential impacts to emergency access routes or response time from existing facilities to residents and businesses in the analysis area.

- General Public
  - Outreach and consultation with:
    - potential users of existing Highway 7&8 from Greater Stratford to New Hamburg area
    - property owners in analysis area, both directly and indirectly impacted
    - local population who live within the analysis area and may be impacted by changes to local transportation network if provincial network changes
    - interest groups who have a specific interest in the analysis area, including Perth County and Waterloo Federation's of Agriculture, and VELO Ontario Cycling Alliance.
  - Outreach and consultation with general public includes newspaper notices for announcement of Study Commencement and PICs and TESR public review period, Canada Post notification to rural areas in advance of PICs and mailings to property owners and members of the public as they identify themselves and request to be added to the project mailing list, or attend a PIC during the study. Notification through correspondence to property owners directly impacted by proposed works will be carried out before the PIC at which the recommended preliminary design is presented and for the TESR public review period. The correspondence mailed to those directly impacted by the proposed works will indicate that they are receiving the letter because their property is directly impacted (i.e. property acquisition required and/or significant alteration to property use/access). Follow-up telephone calls will be made, as required, to ensure that as many directly affected property owners as possible attend the PICs and are aware of the opportunity to comment on the TESR.
- Municipalities:
  - Outreach and consultation with:
    - Region of Waterloo
      - Township of Wilmot
    - Perth County
      - Township of South Perth
      - Township of Perth East
      - City of Stratford
  - Outreach and consultation includes collaborative engagement that recognizes the significance of the study to municipalities and includes an invitation to join the Municipal Advisory Group (MAG) that will meet at key study milestones, in advance of each PIC. Municipalities may be interested in many aspects of the undertaking, as they relate to the work of their engineering, transportation, planning, heritage, recreation and economic development departments. Presentations to municipal Councils will be offered in advance of each PIC when requested. Councils' endorsement will be sought for the preferred alternative prior to the final set of PICs and publication of the TESR.

- Regulatory Agencies
  - Outreach and consultation with:
    - Federal agencies, including Canadian Environmental Assessment Agency (CEAA), Transport Canada, Environment Canada, Canadian Transportation Agency, Department of Fisheries and Oceans, Canada Coast Guard and Health Canada;
    - Provincial agencies, including Ministry of Natural Resources, Ministry of Environment, Ministry of Culture, Ontario Secretariat for Aboriginal Affairs, Ministry of Agriculture and Food, Ministry of Tourism, Culture and Recreation, Ministry of Community and Social Services, Ministry of Municipal Affairs and Housing and Ministry of Public Infrastructure and Renewal; and
    - Local agencies, including Grand River Conservation Authority, Upper Thames River Conservation Authority and municipal heritage planning committees/groups.
  - Outreach and consultation includes collaborative engagement that recognizes the significance of the study to regulatory agencies and includes an opportunity to join the Regulatory Advisory Group (RAG) that will meet at major study milestones, in advance of PICs. Regulatory agency interest typically relates to the study process and recommendations that relate policies, regulations and approvals, as well as environmental protection of sensitive or designated features of the natural environment (i.e., fisheries habitat, Species at Risk, ANSIs, ESAs, PSWs, etc), socio-economic environment (i.e., land use, noise, air, landscape composition, etc.) and the cultural environment (i.e., archaeological resources and built heritage features, etc.). Involvement with federal agencies in this project is required to identify issues of federal jurisdiction, effectively address Canadian Environmental Assessment Act (CEAA) requirements during the EA process and coordinate provincial and federal approvals.
- Transportation service providers
  - Outreach and consultation with:
    - Municipal Transit Operators, including Stratford City Transit,
    - Bus operators,
    - School bus operators,
    - Rail operators, including Goderich - Exeter Railway, and
    - trucking firms including Ontario Trucking Association.
  - Outreach and consultation includes discussions at PICs and may include comments on long-range planning for future bus or transit routes using Highway 7&8, or future potential new routes through analysis area. Discussions with CN and CP are expected to include potential impacts to existing rail lines or new crossings that may result from the proposed works. Transportation service providers will be encouraged to attend PICs and visit the project web site for regular study updates.

- **Utility Companies**
  - Outreach and consultation with:
    - Electrical companies including Hydro One, Tay Hydro Electric Distribution, Kitchener – Wilmot Hydro, Festival Hydro Inc.,
    - Pipelines including TransCanada Pipeline,
    - Telephone companies including Bell Canada and Call Net Technology Services Inc. (Sprint Canada),
    - Cable companies including Rogers Cable and Cogeco Cable,
    - Gas companies including Union Gas and Enbridge Gas Distribution.
  - Outreach and consultation includes discussions at PICs and may include comments on long-range planning for utility infrastructure either along existing Highway 7&8 or future new routes through the analysis area. Discussions will also include potential impacts to existing services or new crossings that may result from the proposed works. Utility company representatives will be encouraged to attend PICs and visit the project web site for regular study updates.

## **9.8 Role of Stakeholders**

Stakeholders have a major role and responsibility in determining the success of the outreach and consultation program. The extent to which the stakeholders participate, the issues they raise, and how such issues are resolved, all influence the effectiveness of the outreach and consultation program. The role of stakeholders is provided in Exhibit 9.2 below.

<b>Exhibit 9.2</b> <b>Highway 7&amp;8 Transportation Corridor Planning and Class EA Study</b> <b>Summary of Role of Stakeholders</b>	
<b>1. Get Involved! – Be Involved! – Stay Involved!</b>	
<b>2. Provide your contact information (or that of your organization) to the study team for placement on the stakeholder contact list, so that you receive letter / email notifications of project activities.</b>	
<b>3. Utilize the ‘Overview of the Study Process’ (key tasks, reports, public information centres and information presented, preliminary schedule) as the framework for your participation throughout the study (See Exhibit 2.1 of the Study Plan).</b>	



<p align="center"><b>Exhibit 9.2</b> <b>Highway 7&amp;8 Transportation Corridor Planning and Class EA Study</b> <b>Summary of Role of Stakeholders</b></p>
<p><b>4. Provide the study team with your comments (additions/deletions/errors) on draft reports, within the time period requested, so that your input can be considered in finalizing those documents for use as building blocks for upcoming work.</b></p> <ul style="list-style-type: none"> <li>For the first round of PICs, the draft reports include: <ul style="list-style-type: none"> <li>Report “A”: Study Plan for Technical Work, Outreach and Consultation;</li> <li>Report “B”: Working Paper – Overview of Transportation, Land Use and Economic Conditions Within the Analysis Area; and</li> <li>Report “F” - 1<sup>st</sup> Part: Working Paper – Environmental Conditions and Constraints.</li> </ul> </li> <li>Comments on the draft reports presented at the first round of PICs are requested by October 30, 2007.</li> </ul>
<p><b>5. Provide the study team with your comments (additions/deletions/errors) on the proposed approach to upcoming work, within the time period requested, so that your input can be considered before those approaches are applied to upcoming work.</b></p> <ul style="list-style-type: none"> <li>For the first round of PICs, the proposed approach to upcoming work includes: <ul style="list-style-type: none"> <li>Process to identify ‘Area Transportation System’ Problems and Opportunities;</li> <li>Process and Criteria for Evaluating and Selecting ‘Area Transportation System’ Alternatives; and</li> <li>Process, Factors and Criteria for Generating, Assessing, Evaluating and Selecting Preliminary Planning Alternatives.</li> </ul> </li> <li>Comments on the proposed approaches to upcoming work presented at the first round of PICs are requested by October 30, 2007.</li> </ul>
<p><b>6. When providing your comments, keep in mind the following:</b></p> <ul style="list-style-type: none"> <li><b>Study objectives (See Exhibit 1.2 of the Study Plan);</b></li> <li><b>Assumptions of EA proponency and completion of study work (See Exhibit 3.1 of the Study Plan).</b></li> </ul>
<p><b>7. If you have questions or comments, or if you wish to add your name to the study contact list:</b></p> <ul style="list-style-type: none"> <li><b>Attend Public Information Centres (PICs) and talk to the study team members that staff them;</b></li> <li><b>Complete a comment sheet provided at the PICs;</b></li> <li><b>Contact the study team at:</b> <ul style="list-style-type: none"> <li><b>Email: <a href="mailto:projectteam@7and8corridorstudy.ca">projectteam@7and8corridorstudy.ca</a></b></li> <li><b>Toll Free: 1 (866) 921-9268</b></li> </ul> </li> <li><b>Find information at the study web site at <a href="http://www.7and8corridorstudy.ca">http://www.7and8corridorstudy.ca</a></b></li> </ul>

Note: Items 4 and 5 of this exhibit are customized to the first round of Public Information Centres and will be modified to suit for each subsequent round of Public Information Centres.

## **10 FILING AND REVIEW OF TRANSPORTATION ENVIRONMENTAL STUDY REPORT (TESR)**

The Transportation Environmental Report (TESR) is an assembly of the study working papers and milestone reports into a single document. The contents of the TESR are provided in Exhibit 10.1 below:

<b>Exhibit 10.1 Highway 7&amp;8 Transportation Corridor Planning and Class EA Study Transportation Environmental Study Report Contents</b>	
1.	Purpose, Relevance and Position of Report Within The Study Process
2.	Summary Description of the Undertaking
3.	Content of final Report “A” Study Plan For Technical Work, Outreach And Consultation
4.	Content of final Report “B”: Working Paper – Overview of Transportation, Land Use and Economic Conditions Within the Analysis Area
5.	Content of final Report “C”: Working Paper – ‘Area Transportation System’ Problems and Opportunities
6.	Content of final Report “D”: Working Paper – Area Transportation System Alternatives
7.	Content of final Report “E”: Milestone Report – Highway 7&8 Transportation Corridor Needs Assessment
8.	Content of final Report “F”: Working Paper - Environmental Conditions And Constraints
9.	Content of final Report “G”: Working Paper – Generation of Detailed Planning Alternatives for Provincial Roadway
10.	Content of final Report “H”: Milestone Report - Selection of Detailed Planning Alternatives for Provincial Roadway
11.	Content of final Report “I”: Working Paper - Generation of Provincial Roadway Preliminary Design Alternatives
12.	Content of final Report “J”: Milestone Report - Selection of Preliminary/Concept Design Alternatives for Provincial Roadway
13.	Environmental Synopsis
14.	Results of Outreach and Consultation
15.	Commitments to Future Work and Consultation

The Transportation Environmental Study Report will be prepared at completion of the study and made available on the public record for a 60-day review period. If no Part 2 Order or “bump-up” requests are received by the Minister of the Environment by the completion of the review period (see Section 2.1 for details), the project would be deemed to have environmental clearance, and the Highway 7&8 Transportation Corridor Planning and Class EA Study would be completed.

As is indicated in Section 1.1, decisions on funding and timing of construction are based upon environmental clearance of the TESR, since it determines the type of transportation facilities and their location.

## **11 SUMMARY OF KEY STUDY PLAN ISSUES FROM OUTREACH AND CONSULTATION, AND MTO RESPONSE/CHANGES**

THIS SECTION TO BE COMPLETED FOLLOWING THE 60-DAY PERIOD PROVIDED FOR STAKEHOLDERS TO REVIEW AND COMMENT ON THE DRAFT STUDY PLAN

## **SUPPORTING DOCUMENTATION**

# **SUPPORTING DOCUMENT #1**

## **LIST OF ABBREVIATIONS AND GLOSSARY OF TERMS**

## List of Abbreviations and Glossary of Terms Used in the Study Plan

LIST OF ABBREVIATIONS USED IN THIS STUDY PLAN	
ANSI	Area of Natural and Scientific Interest
CA	Conservation Authority
CEAA	Canadian Environmental Assessment Act
CPR	Canadian Pacific Railway
EA	Environmental Assessment
ESA	Environmentally Sensitive Areas
ETR	Electronic Toll Road
FA	Federal Authorities
FEAC	Federal Environmental Assessment Coordinator
GGH	Greater Golden Horseshoe
GHG	Green House Gas
GTA	Greater Toronto Area
HOV lanes	High Occupancy Vehicle Lanes
IBA	Important Bird Area
LACAC	Local Architectural Conservancy and Advisory Committee
MAG	Municipal Advisory Group
MMAH	Ministry of Municipal Affairs and Housing
MOE	Ministry of the Environment
MTO	Ministry of Transportation
NHIC	Natural Heritage Information Centre
NRVIS	MNR database
NTS	Not to Scale
OBM	Ontario Base Map
OEAA	Ontario Environmental Assessment Act
OMAF	Ontario Ministry of Agriculture and Food
(O)MNR	(Ontario) Ministry of Natural Resources
PIC	Public Information Centre
PSW	Provincially Sensitive Wetland
RA	Regulatory Authorities
RAAG	Regulatory Agency Advisory Group
RAP	Remedial Action Plan
SARA	Species at Risk Act
SWHTG	Significant Wildlife Habitat Technical Guide
TAC	Transportation Association of Canada
TDM	Traffic Demand Management
ToR	Terms of Reference
TSM	Traffic Systems Management

## Glossary of Terms

Term used in Terms of Reference	Explanation
Alternatives To	Functionally different ways of solving a documented transportation deficiency or taking an advantage of an opportunity.
Alternative Method	Ways of carrying out the selected alternative.
Alvar	Naturally open areas of thin or no soil over essentially flat limestone, dolostone or marble rock, supporting a sparse vegetation of mostly shrubs and herbs,.
Areas of Natural and Scientific Interest	Areas of land and water containing natural landscapes or features that have been identified as having life science or earth science values related to protection, scientific study or education.
Built Heritage Resources	One or more significant buildings, structures, monuments, installations or remains associated with architectural, cultural social, political, economic or military history and identified as being important to a community. These resources may be identified through designation or heritage conservation easement under the Ontario Heritage Act, or listed by local, provincial or federal jurisdictions.
Connectivity	The degree to which key natural heritage or key hydrologic features are connected to one another by links such as plant and animal movement corridors, hydrologic and nutrient cycling, genetic transfer and energy flow through food webs.
Cultural Heritage Landscape	A defined geographical area of heritage significance, which has been modified by human activities and is valued by a community. It involves a grouping(s) of individual heritage features such as structures, spaces, archaeological sites and natural elements, which together form a significant type of heritage form, distinctive from that of its constituent elements or parts. Examples include heritage conservation districts designated under the Ontario heritage Act; and villages, parks, gardens, battlefields, main streets and neighbourhoods, cemeteries, trail ways and industrial complexes of cultural heritage value.
Detail Design	The final stage in the design process in which the engineering and design components of preliminary design are refined and details concerning, for example, property, drainage, utility relocations and quantity estimate requirements are prepared and contract drawings and documents are produced.
Do Nothing Alternative	In the context of a transportation project, the "Do Nothing" alternative would mean that only normal operations, maintenance and repairs of existing facilities would be carried out, however, no major improvements or undertakings would be initiated.
EA Act	Environmental Assessment Act (as amended by S.O. 1996 c. 27), RSO 1980
Ecological Function	The natural processes, products or services that living or non-living environments provide or perform within or between species, ecosystems and landscapes, including hydrologic functions and biological, physical, chemical and socio-economic interactions.
Ecological Value	The value of ecology in maintaining the health of key natural heritage or key hydrologic features and the related ecological features and functions, as measured by factors such as diversity of species and habitats etc.
Endangered Species	Species that is listed or categorized as "Endangered Species" on the Ontario MNR official species at risk list.
Environment	As defined in Section 1 (c) of the EA Act. (i) air, land or water (ii) plant and animal life including man (iii) the social, economic and cultural conditions that influence the life of man or a community (iv) any building structure, machine or other device or thing made by man (v) any solid, liquid, gas, odour, heat, sound, vibration or radiation resulting directly or indirectly from the activities of man or (vi) any part of combination of the foregoing and the inter-relationships between any two of more of them, in or of Ontario.
Environmentally Sensitive Areas	Those areas identified by any agency or level of government which contain natural features, ecological functions or cultural, historical or visual amenities which are susceptible to disturbance from human activities and which warrant protection.

## Glossary of Terms

Term used in Terms of Reference	Explanation
External Agencies	Includes Federal departments and agencies, Provincial ministries and agencies, conservation authorities, municipalities, Crown corporations or other agencies other than MTO.
Freeway	Freeways are controlled access median divided highway facilities with grade separated crossings and interchanges (i.e. a vertical separation between a road/road or road/rail crossing.)
Fish Habitat	As defined in the Fisheries Act c. F-14, means spawning grounds and nursery, rearing, food supply and migration areas on which fish depend directly or indirectly in order to carry out their life processes.
Flood Plain	For river, stream and small inland lake features means the area, usually low lands adjoining a watercourse, which has been or may be subject to flooding hazard.
Greater Golden Horseshoe	A geographical area represented by the single-tier municipalities of Barrie, Brantford, Guelph, Hamilton, Kawartha Lakes, Orillia, Peterborough and Toronto; the upper-tier municipalities of Brant, Dufferin, Durham, Haldimand, Halton, Niagara, Northumberland, Peel, Peterborough, Simcoe, Waterloo, Wellington and York and the lower-tier municipalities within.
Groundwater Feature	Refers to the water-related features in the earth's sub-surface, including recharge / discharge areas, water tables, aquifers and unsaturated zones that can be defined by surface and subsurface hydrological investigation.
Habitat	The place or type of site where an organism or population naturally occurs. Species may require different habitats for different uses throughout their lifecycle.
Higher Order Transit	Transit that operates in its own dedicated right-of-way, outside of mixed traffic and therefore can achieve a frequency of service greater than mixed-traffic transit. Can include heavy rail, light rail and buses in dedicated right-of-ways.
Highways	Roadways under the jurisdiction of MTO including King's highways, secondary highways and tertiary roads. This includes all components within the associated right-of-way, e.g. structures, drainage works, traffic and safety devices.
Hydrologic function	Means the functions of the hydrological cycle that include the occurrence, circulation, distribution and chemical and physical properties of the water on the surface of the land, in the soil and underlying rocks, and in the atmosphere, and waters interactions with the environment including its relationship to living things.
Individual Environmental Assessment	An environmental assessment for an undertaking to which the EA Act applies and which requires formal review and approval under the Act.
Infrastructure	Means physical structures (facilities and corridors) that form the foundation of development. Infrastructure includes: sewage and water systems, waste management systems, electric power generation and transmission, communications and telecommunications, transit and transportation corridors and facilities, oil and gas pipelines and associated facilities.
Inter-modal Facility	A location where transfers between carriers can be made, as part of a single journey. A typical freight inter-modal facility is a rail where containers are transferred between trucks and trains.
Mitigation Measure	A measure that is incorporated into a project to reduce, eliminate or ameliorate detrimental environmental effects.
Multi-modal Transportation System	A transportation system which may include several forms of transportation such as automobiles, walking, trucks, cycling, buses, rapid transit, rail (such as commuter and freight), air and marine.
Natural Heritage Features and Area	Features and areas, including significant wetlands, significant coastal wetlands, fish habitat, significant woodlands south and east of the Canadian Shield, significant valleylands south and east of the Canadian Shield, significant habitat of endangered species and threatened species, significant wildlife habitat, and significant areas of natural and scientific interest, which are important for their environmental and social values as a legacy of the natural landscapes of an area.



## Glossary of Terms

Term used in Terms of Reference	Explanation
Natural Heritage System	A system made up of natural heritage features and areas, linked by natural corridors that are necessary to maintain biological and geological diversity, natural functions, viable populations of indigenous species and ecosystems. These systems can include lands that have been restored and areas with the potential to be restored to a natural state.
Petroleum Resources	Oil, gas, and brine resources which have been identified through exploration and verified by preliminary drilling or other forms of investigation. This may include sites of former operations where resources are still present or former sites that may be converted to underground storage for natural gas or other hydrocarbons.
Preliminary Design	That part of the planning and design process, during which various alternative design solutions are examined and evaluated including consideration of environmental effects and mitigation; the recommended design solution is then developed in sufficient detail to ensure that the horizontal and vertical controls are physically compatible with the proposed site, that the requirements for lands and right-of-ways are satisfactorily identified, and that the basic design criteria or features to be contained in the design have been fully recognized and documented is sufficient graphic detail to ensure their feasibility.
Provincial Policy Statement	The Provincial Policy Statement (PPS) sets out the Ontario Government's interests in land use planning and development and provides policy direction on matters of provincial interest to those involved in land use planning. The PPS is the complementary document to the <i>Planning Act</i> and is issued under the authority of the <i>Act</i> .
Prime Agricultural Area	Areas where prime agricultural lands predominate. This includes: areas of prime agricultural lands and associated Canada Land Inventory Class 4-7 soils; and additional areas where there is a local concentration of farms which exhibit characteristics of ongoing agriculture.
Prime Agricultural Land	Land that includes specialty crop areas and/or Canada Land Inventory Classes 1, 2, and 3 soils, in this order of priority for protection.
Proponent	A person or agency that carries or proposes to carry out an undertaking, or is the owner or person having charge, management or control of the undertaking.
Provincial Plan	A plan approved by the Lieutenant Governor in Council or the Minister of Municipal Affairs and Housing, but does not include municipal official plans.
Regulatory Agencies	Includes Federal departments and agencies, Provincial ministries and agencies, and conservation authorities.
Site Alteration	Activities such as filling, grading and excavation that would change the landform and natural vegetative characteristics of land.
Species At Risk	Wild plants and animals that have been assessed by an independent body, the Committee on the Status of Endangered Wildlife in Canada (COSEWIC), and found to be at some risk of disappearing from the wild in Canada. Species at Risk are protected by federal legislation, called the <i>Species at Risk Act</i> (SARA), proclaimed June 5, 2003.
Specialty Crop Area	Areas where specialty crops such as tender fruits, grapes, other fruit crops, vegetable crops, greenhouse crops, and crops from agriculturally developed organic soil lands are predominantly grown
Threatened Species	Species that is listed or categorized as "Threatened Species" on the Ontario MNR official species at risk list.
Transitway	A separate transit facility directly associated with a provincial freeway / highway. The transit right-of-way may be shared with a highway right-of-way.
Transportation Demand Management	Transportation demand management is a general term for strategies that result in more efficient use of existing transportation infrastructure. Examples include pricing (road tolls or transit discounts), flexible working hours, car pooling, park and ride etc.
Transportation Systems	A system consisting of corridors and rights of way for the movement of people and goods, and associated transportation facilities including transit stops and stations, cycle lanes, bus lanes, high occupancy lanes, rail facilities, inter-modal terminals, etc. and associated facilities such as storage and maintenance.

### Glossary of Terms

Term used in Terms of Reference	Explanation
Valley Lands	A natural area that occurs in a valley or other landform depression that has water flowing through or standing for some period of the year.
Watershed	An area that is drained by a river and its tributaries.
Watershed Plan	A plan used for managing human activities and natural resources in an area defined by watershed boundaries. The Plan can include a water budget and conservation plan, land and water use strategies, monitoring plan and targets.
Wellhead Protection Area	The surface and subsurface area surrounding a water well or well field that supplies a public water system and through which contaminants are likely to move so as eventually to reach the waterwell or well field.
Wetlands	Lands that are seasonally or permanently covered by shallow water, as well as lands where the water table is close to, or at the surface. The four major types of wetlands are swamps, marshes, bogs and fens. Periodically soaked or wet lands being used for agricultural purposes which no longer exhibit wetland characteristics are not considered to be wetlands for the purposes of this definition.
Wildlife Habitat	Areas where plants, animals and other organisms live, and find adequate amounts of food, water, shelter and space needed to sustain their populations.
Woodland	Woodlands include treed areas, woodlots or forested areas and vary in their level of significance at the local, regional and provincial levels

Note: Glossary of terms will be expanded to include evaluation subfactors, as appropriate.

**SUPPORTING DOCUMENT #2**

**HIGHWAY 7&8 TRANSPORTATION CORRIDOR PLANNING AND  
CLASS EA STUDY – SUMMARY OF REPORTS**

<b>Supporting Document #2</b> <b>Highway 7&amp;8 Transportation Corridor Planning and Class EA Study - Summary of Reports</b>		
STUDY PHASE	REPORTS	REPORT CONTENT
1. STUDY PLAN	<b>Report "A": 'Study Plan for Technical Work, Outreach and Consultation'</b>  (60 days provided for stakeholders to review and comment on draft Study Plan *)	a) Introduction: <ul style="list-style-type: none"> <li>• Introduction to the planning and Class EA Study</li> <li>• Study Objectives</li> <li>• Preliminary Statement of Transportation Problems and Opportunities</li> <li>• Purpose, relevance and position of report within the study process</li> </ul> b) Outline of planning & Class EA Study process: <ul style="list-style-type: none"> <li>• Overview of the Class EA Process and the Class EA for Provincial Transportation Facilities</li> <li>• Overview of planning and Class EA Study process for this provincial transportation corridor study</li> <li>• Overview of Federal/provincial EA co-ordination</li> <li>• Overview of Principles for Conducting the Study               <ul style="list-style-type: none"> <li>○ Transportation Engineering Principles</li> <li>○ Environmental Protection Principles</li> <li>○ Evaluation Principles</li> <li>○ Outreach and Consultation Principles</li> </ul> </li> <li>• Earlier and Related Work</li> </ul> c) Statement and Assumptions of Proponency <ul style="list-style-type: none"> <li>• Statement of Proponency</li> <li>• Assumptions of EA Proponency and Completion of Work</li> </ul> d) Statement of EA compliance/ Submission Statement
		e) Purpose of the Undertaking: <ul style="list-style-type: none"> <li>• Policy framework and other government initiatives</li> <li>• Transportation Problems and Opportunities               <ul style="list-style-type: none"> <li>○ Definition and Description of 'Area Transportation System'</li> <li>○ Overview of the Area Transportation System</li> <li>○ Overview of the Area Economy, Employment and Population Growth Forecasts</li> <li>○ Discussion of the Preliminary Statement of Problems &amp; Opportunities</li> </ul> </li> </ul> f) Environmental Conditions and Potential Effects
		g) Alternatives and their evaluation: <ul style="list-style-type: none"> <li>• "Alternatives To" the Undertaking and "Alternative Methods" for Carrying out the Undertaking</li> <li>• Evaluation Processes and Their Application</li> <li>• Preliminary Identification of Evaluation Factors and Sub-Factors</li> <li>• Transportation Needs Assessment               <ul style="list-style-type: none"> <li>- Area Transportation System Alternatives</li> <li>- Preliminary Planning Alternatives</li> </ul> </li> <li>• Detailed Planning Alternatives</li> <li>• Preliminary/Concept Design Alternatives</li> </ul> h) Monitoring strategy during project implementation
		i) Outreach and consultation <ul style="list-style-type: none"> <li>• Key components of outreach &amp; consultation program</li> <li>• Public Information Centres (PICs)</li> <li>• Public Notices in Newspapers</li> <li>• Project Web Site</li> <li>• Contacting the Study Team</li> <li>• Stakeholder Contact Lists</li> <li>• Stakeholder Categories</li> <li>• Role of Stakeholders</li> </ul> j) Filing and review of Transportation Environmental Study Report

<b>Supporting Document #2</b> <b>Highway 7&amp;8 Transportation Corridor Planning and Class EA Study - Summary of Reports</b>		
STUDY PHASE	REPORTS	REPORT CONTENT
<b>2. AREA TRANSPORTATION SYSTEM PLANNING</b>	<b>Report “B”: Working Paper – Overview of Transportation, Land Use and Economic Conditions within the Analysis Area</b>  (30 days provided for stakeholders to review and comment on draft working paper *)	a) Purpose, relevance and position of report within the study process b) Identification of analysis area c) Overview of provincial and municipal land use, transportation, and economic development policies (including forecasts for population and employment) d) Definition and description of ‘Area Transportation System’ e) Description of ‘Area Transportation System’ current travel characteristics and patterns (all modes) f) Description of analysis area – socio-economic existing conditions and outlooks g) Analysis Area – ‘Area Transportation System’ Modal Outlooks h) Description of current provincial highway conditions with respect to infrastructure condition, performance, compliance with current design standards, suitability for service to increased traffic, and feasibility of implementing improvements versus replacement/major reconstruction (determined through background/overview data and preliminary field reconnaissance) i) Summary of key factors that are driving ‘Area Transportation System’ needs
	<b>Report “C”: Working Paper – ‘Area Transportation System’ Problems and Opportunities</b>  (30 days provided for stakeholders to review and comment on draft working paper *)	a) Purpose, relevance and position of report within the study process b) Summary of transportation, land use and economic conditions <ul style="list-style-type: none"> <li>• Process to define ‘Area Transportation System’ problems and opportunities</li> </ul> c) Travel demand forecasting approach and methodology d) Forecasted future ‘Area Transportation System’ travel characteristics and patterns e) Detailed description and assessment of current and future ‘Area Transportation System’ problems and opportunities: <ul style="list-style-type: none"> <li>• Existing assessment</li> <li>• Horizon year assessment</li> </ul> f) Summary of ‘Area Transportation System’ needs’ g) Description and rationale of generic transportation system alternatives: <ul style="list-style-type: none"> <li>○ Area Transportation System alternatives</li> <li>○ Combination alternatives</li> </ul> h) Process and criteria for evaluating and selecting the preferred Area Transportation System Alternatives
	<b>Report “D”: Working Paper – Area Transportation System Alternatives</b>  (30 days provided for stakeholders to review and comment on draft milestone report *)	a) Purpose, relevance and position of report within the study process b) Summary of analysis area overview, transportation problems <ul style="list-style-type: none"> <li>• Summary of key factors that are driving ‘Area Transportation System’ needs</li> <li>• Process to define ‘Area Transportation System’ problems and opportunities</li> <li>• Summary – preliminary identification of existing and future ‘Area Transportation System’ problems, deficiencies and opportunities</li> </ul> c) Identify ‘Area Transportation System’ alternatives d) Select and define Area Transportation System alternatives and group them into combinations e) Determine the degree to which combination alternatives address the problems and opportunities f) Select the Alternatives that will proceed to preliminary planning

<b>Supporting Document #2</b> <b>Highway 7&amp;8 Transportation Corridor Planning and Class EA Study - Summary of Reports</b>		
STUDY PHASE	REPORTS	REPORT CONTENT
	Report "F" 1 <sup>st</sup> Part: Working Paper - Environmental Conditions and Constraints  (30 days provided for stakeholders to review and comment on draft working paper *)	a) Purpose, relevance and position of report within the study process b) Environmental overview within the analysis area based upon secondary source information for the following factor-specific areas: <ul style="list-style-type: none"> <li>• fisheries and aquatic ecosystems</li> <li>• terrestrial ecosystems</li> <li>• groundwater</li> <li>• surface water</li> <li>• air quality</li> <li>• land use / community</li> <li>• noise sensitive areas</li> <li>• land use / resources</li> <li>• landscape composition</li> <li>• contaminated property and waste management</li> <li>• cultural heritage – built heritage and cultural landscapes</li> <li>• cultural heritage – archaeology</li> </ul>

<b>Supporting Document #2</b> <b>Highway 7&amp;8 Transportation Corridor Planning and Class EA Study - Summary of Reports</b>		
STUDY PHASE	REPORTS	REPORT CONTENT
<b>3. PRELIMINARY PLANNING</b>	<b>Report "E": Milestone Report – Highway 7&amp;8 Transportation Corridor Needs Assessment</b>  (60 days provided for stakeholders to review and comment on draft milestone report *)	a) Purpose, relevance and position of report within the study process b) Summary of Report "D": Transportation Area Transportation System Alternatives: <ul style="list-style-type: none"> <li>• Area Transportation System alternatives</li> <li>• Environmental conditions and constraints</li> <li>• Outline of process and criteria for generating and assessing provincial roadway preliminary planning alternatives</li> </ul> c) Generation of preliminary planning alternatives (as applicable): <ul style="list-style-type: none"> <li>• New transportation facility location, type and capacity:               <ul style="list-style-type: none"> <li>○ conceptual corridors for a new provincial transitway</li> <li>○ conceptual corridors for a new provincial highway</li> <li>○ conceptual areas of limitations on access to provincial highway</li> </ul> </li> <li>• key specialty engineering preliminary planning alternatives for new transportation facilities               <ul style="list-style-type: none"> <li>○ minimize need for large spans &amp; lengths of major culverts</li> <li>○ minimize intrusion into major watercourses &amp; water bodies</li> <li>○ minimize intrusion into areas of extreme gradient change</li> <li>○ minimize intrusion into large areas of unstable soils</li> <li>○ possible ITS applications</li> </ul> </li> <li>• environmental protection for the above by minimizing intrusion into areas of provincial environmental interest as defined in the Provincial Policy Statement</li> <li>• preliminary study area(s)</li> </ul> d) Generation of preliminary planning alternatives for improvements to existing transportation facilities (as applicable): <ul style="list-style-type: none"> <li>• Location, type and capacity of facility improvements:               <ul style="list-style-type: none"> <li>○ general locations of geometrical improvements</li> <li>○ general locations of widening</li> <li>○ general location/configuration/template footprint of new connection points</li> <li>○ conceptual areas of limitations on access to provincial highway</li> </ul> </li> <li>• key specialty engineering preliminary planning alternatives for improvements to existing transportation facilities               <ul style="list-style-type: none"> <li>○ general type/character of structure improvements of specific bridges &amp; major culverts</li> <li>○ general locations of improvement to drainage along &amp; across ROW</li> <li>○ general nature of stability improvements to specific large cut &amp; fill embankments</li> <li>○ general locations of improvement to road base &amp; pavement</li> <li>○ general locations of improvement to line-of-sight, roadside safety &amp; traffic control</li> </ul> </li> <li>• environmental protection for the above by minimizing intrusion into areas of provincial environmental interest as defined in the Provincial Policy Statement</li> <li>• preliminary study area(s)</li> </ul> e) Evaluation and selection of provincial roadway preliminary planning alternatives and identification of type of provincial roadway detailed planning study, including description and rationale of study area(s) f) Decision to proceed with planning and Class EA Study through Phases 3-6 g) Process and criteria for generating provincial roadway detailed planning alternatives

<b>Supporting Document #2</b> <b>Highway 7&amp;8 Transportation Corridor Planning and Class EA Study - Summary of Reports</b>		
STUDY PHASE	REPORTS	REPORT CONTENT
<b>4. DETAILED PLANNING FOR PROVINCIAL ROADWAYS</b>	<b>Report "F" - 2<sup>nd</sup> Part:</b> <b>Working Paper - Environmental Conditions and Constraints</b>  (30 days provided for stakeholders to review and comment on draft working paper *)	a) Purpose, relevance and position of report within the study process b) Areas of Environmental Interest as specified in Provincial Policy Statement (from 1 <sup>st</sup> Part of Report F) c) Environmental conditions and constraints within the detailed planning study area for the following factor-specific areas: <ul style="list-style-type: none"> <li>• fisheries and aquatic ecosystems</li> <li>• terrestrial ecosystems</li> <li>• groundwater</li> <li>• surface water</li> <li>• air quality</li> <li>• land use / community</li> <li>• noise sensitive areas</li> <li>• land use / resources</li> <li>• landscape composition</li> <li>• contaminated property and waste management</li> <li>• cultural heritage – built heritage and cultural landscapes</li> <li>• cultural heritage – archaeology</li> </ul> d) Technical information for each factor-specific area: <ul style="list-style-type: none"> <li>• areas of investigation</li> <li>• background data</li> <li>• field investigations</li> <li>• determination of significance</li> </ul> e) Summary of significant environmental issues (Note: technical information builds on the content of the 1 <sup>st</sup> part of the report through field investigations and determination of environmental significance)



<b>Supporting Document #2</b> <b>Highway 7&amp;8 Transportation Corridor Planning and Class EA Study - Summary of Reports</b>		
STUDY PHASE	REPORTS	REPORT CONTENT
	<b>Report "G": Working Paper - Generation of Detailed Planning Alternatives for Provincial Roadways</b>  (30 days provided for stakeholders to review and comment on draft working paper *)	a) Purpose, relevance and position of report within the study process b) Summary of Report "E": Provincial Roadway Preliminary Planning: <ul style="list-style-type: none"> <li>Provincial roadway preliminary planning alternatives selected</li> <li>Process and criteria for generating provincial roadway detailed planning alternatives</li> </ul> c) Engineering condition field investigation work d) Refinement of study area(s) e) Description and analysis of detailed planning alternatives generated for provincial roadway (as applicable) <ul style="list-style-type: none"> <li>key roadway engineering alternatives for new provincial roadway:               <ul style="list-style-type: none"> <li>final study area</li> <li>new provincial transitway route location &amp; technology</li> <li>new provincial highway route location and highway type</li> <li>basic plan, profile, cross-section</li> <li>hwy interchange/intersection specific location, configuration, footprint</li> <li>transitway station specific location &amp; footprint</li> <li>specific nature &amp; location of limitations on access to provincial hwy</li> </ul> </li> <li>key specialty engineering detailed planning alternatives for new provincial roadway:               <ul style="list-style-type: none"> <li>specific location/ type/span/length &amp; template "footprint" of bridges &amp; major culverts</li> <li>specific location/type/character &amp; template "footprint" of major facilities for drainage along &amp; across the ROW and for stormwater management</li> <li>specific location/type/character and template "footprint" of major cut/fill embankments; foundations for bridges &amp; major culverts</li> <li>road base structure and pavement type</li> <li>specific locations/sites for traffic control signals and roadside safety barriers</li> </ul> </li> <li>combinations of the above</li> <li>environmental impact assessment for the above</li> </ul> f) Description and analysis of detailed planning alternatives generated for improvements to existing highway (as applicable) <ul style="list-style-type: none"> <li>key roadway engineering alternatives for highway improvements               <ul style="list-style-type: none"> <li>final study area</li> <li>specific location &amp; type of geometric improvements</li> <li>specific location, extent &amp; direction of widening</li> <li>basic plan, profile, cross-section</li> <li>hwy interchange/intersection specific location, configuration, footprint</li> <li>specific nature &amp; location of limitations on access to provincial hwy</li> </ul> </li> <li>key specialty engineering detailed planning alternatives for improvements to existing highway (same as for "e" above)</li> <li>environmental impact assessment for the above</li> </ul> g) Process and criteria for evaluating and selecting provincial roadway detailed planning alternatives
	<b>Report "H": Milestone Report - Selection of Detailed Planning Alternatives for Provincial Roadways</b>  (60 days provided for stakeholders to review and comment on draft milestone report *)	a) Purpose, relevance and position of report within the study process b) Summary of Report "G": Generation of Detailed Planning Alternatives for Provincial Roadways: <ul style="list-style-type: none"> <li>Detailed planning alternatives generated</li> <li>Process and criteria for evaluating and selecting provincial roadway detailed planning alternatives</li> </ul> c) Evaluation and selection of technically preferred provincial roadway detailed planning alternative(s) d) Refinement of technically preferred provincial roadway detailed planning alternative(s) e) Process and criteria for generating provincial roadway preliminary design alternatives

<b>Supporting Document #2</b> <b>Highway 7&amp;8 Transportation Corridor Planning and Class EA Study - Summary of Reports</b>		
STUDY PHASE	REPORTS	REPORT CONTENT
<b>5. PRELIMINARY / DESIGN OF PROVINCIAL ROADWAYS</b>	<b>Report "I" Working Paper - Generation of Preliminary/Concept Design Alternatives for Provincial Roadways</b>  (30 days provided for stakeholders to review and comment on draft working paper *)	a) Purpose, relevance and position of report within the study process b) Summary of Report "H": Selection of Detailed Planning Alternatives for Provincial Roadways: <ul style="list-style-type: none"> <li>Provincial roadway detailed planning alternatives selected</li> <li>Process and criteria for generating provincial roadway preliminary/concept design alternatives</li> </ul> c) Description and assessment of provincial roadway preliminary design of roadway alternatives generated (as applicable) <ul style="list-style-type: none"> <li>roadway engineering preliminary design alternatives:               <ul style="list-style-type: none"> <li>calculated horizontal &amp; vertical alignment and cross-section</li> <li>highway interchange/intersection preliminary design</li> <li>transitway station preliminary design</li> <li>location/design of private entrances to highway</li> <li>right-of-way &amp; property acquisition requirements</li> <li>utilities</li> <li>emergency access</li> </ul> </li> <li>roadway engineering preliminary design of alternatives for limitation to highway access</li> <li>environmental protection for the above</li> </ul> d) Description and assessment of provincial roadway preliminary design of specialty engineering alternatives generated (as applicable) <ul style="list-style-type: none"> <li>Bridge &amp; major culvert engineering:               <ul style="list-style-type: none"> <li>structure width, length, skew, geometry &amp; cross-section</li> <li>structure vertical clearance &amp; span arrangement</li> <li>navigable channel (if applicable)</li> </ul> </li> <li>Drainage &amp; hydrology engineering:               <ul style="list-style-type: none"> <li>channels, ditches, storm sewers &amp; outlets/outfalls for drainage of roadway</li> <li>stormwater management facilities</li> <li>hydraulics of bridges, culverts &amp; water crossing inlets/outlets</li> </ul> </li> <li>Foundation engineering:               <ul style="list-style-type: none"> <li>foundations for bridge &amp; major culvert structures</li> <li>conventional slope geometry for major cut/fill embankments</li> <li>non-conventional slope geometry for major cut/fill embankments</li> <li>settlement management &amp; excavation methods</li> </ul> </li> <li>Pavement and road base engineering:               <ul style="list-style-type: none"> <li>preliminary design of road base and pavement</li> <li>mass haul (cut/fill earth/rock material balance)</li> <li>preliminary sources of suitable granular material</li> </ul> </li> <li>Traffic &amp; electrical engineering:               <ul style="list-style-type: none"> <li>traffic control signals</li> <li>major roadside safety infrastructure</li> <li>traffic signing &amp; pavement markings</li> <li>roadway illumination</li> <li>ITS technology</li> <li>Preliminary construction traffic detour requirements</li> </ul> </li> <li>specialty engineering preliminary design of alternatives for limitation to highway access</li> <li>environmental protection for the above</li> </ul> e) Process and criteria to evaluate and select provincial roadway preliminary design alternatives

<b>Supporting Document #2</b> <b>Highway 7&amp;8 Transportation Corridor Planning and Class EA Study - Summary of Reports</b>		
STUDY PHASE	REPORTS	REPORT CONTENT
	<b>Report "J": Milestone Report - Selection of Preliminary Design Alternatives for Provincial Roadways</b>  (60 days provided for stakeholders to review and comment on draft milestone report *)	a) Purpose, relevance and position of report within the study process b) Summary of Report "I": Generation of Preliminary Design Alternatives for Provincial Roadways <ul style="list-style-type: none"> <li>Provincial roadway preliminary design alternatives generated</li> <li>Process and criteria for evaluating and selecting provincial roadway preliminary design alternatives</li> </ul> c) Evaluation and selection of provincial roadway preliminary design alternative d) Description of technically preferred provincial roadway preliminary design alternatives selected e) Value engineering assessment of the technically preferred preliminary design f) Development and refinement of the technically preferred provincial roadway preliminary design alternatives g) Preliminary staging of implementation h) Preliminary property requirements i) Agreements in principle for road assumptions, transfers, closures and the resolution of major rail and utility conflicts j) External permits anticipated to be required k) Design criteria for subsequent detail design assignments l) Preliminary assessment of technically preferred preliminary design under Ontario Infrastructure Planning, Financing and Procurement Framework m) Monitoring Strategy: <ul style="list-style-type: none"> <li>Technical monitoring program and procedures</li> <li>EA process monitoring program and procedures</li> </ul>
<b>6. TRANSPORTATION ENVIRONMENTAL STUDY REPORT</b>	<b>Report "K": Milestone Report - 'Transportation Environmental Study Report' (TESR)</b>  (60 days provided for stakeholders to review and comment on TESR after notice of filing)	a) Purpose, relevance and position of report within the study process b) Summary description of undertaking c) Content of: <ul style="list-style-type: none"> <li>final Report "A": Study Plan for Technical Work, Outreach and Consultation</li> <li>final Report "B": Working Paper – Overview of Environmental Conditions and Constraints within the Analysis Area</li> <li>final Report "C": Working Paper – 'Area Transportation System' Problems and Opportunities</li> <li>final Report "D": Milestone Report – Transportation Corridor Needs Assessment</li> <li>final Report "E": Milestone Report - Preliminary Planning for Provincial Roadways</li> <li>final Report "F": Working Paper - Environmental Conditions and Constraints</li> <li>final Report "G": Working Paper - Generation of Detailed Planning Alternatives for Provincial Roadways</li> <li>final Report "H": Milestone Report - Selection of Detailed Planning Alternatives for Provincial Roadways</li> <li>final Report "I": Working Paper - Generation of Preliminary Design Alternatives for Provincial Roadways</li> <li>final Report "J": Milestone Report - Selection of Preliminary Design Alternatives for Provincial Roadways</li> </ul> d) Environmental synopsis e) Results of outreach and consultation f) Commitments to future work and consultation
<b>NOTES</b> <ul style="list-style-type: none"> <li>* During the period provided for stakeholders to review reports, MTO will be undertaking "homework" for the next stage and report of the work</li> <li>Each report also contains the following:               <ul style="list-style-type: none"> <li>Summary of draft report key concerns identified through outreach and consultation, and MTO response/changes to those key concerns (does not apply to TESR, because it is a compilation of reports to which this previously applied)</li> <li>Supporting documentation (if applicable)</li> </ul> </li> </ul>		

## **SUPPORTING DOCUMENT #3**

### **DESCRIPTION AND RATIONALE OF ALTERNATIVES**

## DETAILED DESCRIPTION OF ALTERNATIVES

### ‘Area Transportation System’ Planning Alternatives

The Highway 7&8 Transportation Corridor Planning and Class EA Study will consider the following generic ‘Area Transportation System’ alternatives:

- Do Nothing
- Travel Demand Management (TDM)
- Transportation System Management (TSM)
- Local Transit\*
- Interregional Transit and Passenger Rail\*
- Air Services\*
- Marine Services\*
- Freight Rail\*
- Municipal Roads\*
- Provincial Highways / Transitways\*

(\* new or improved operations and/or infrastructure)

In addition, the Highway 7&8 Transportation Corridor Planning and Class EA Study will consider the following generic combinations of ‘Area Transportation System’ alternatives:

#### Do Nothing

As indicated in Section 7.4.5, the “Do Nothing” alternative includes existing infrastructure and programmed improvements.

#### Combination #1: Optimize Existing Network

Combination #1 includes:

- optimization of:
  - local transit;
  - interregional transit;
  - passenger rail;
  - freight rail;
- transportation system demand management (TDM);  
transportation system management (TDM)

#### Combination #2: New / Expanded Non-Road Infrastructure plus elements of Combination #1

Combination #2 includes:

- new/expanded
  - local transit

- interregional transit and passenger rail
  - air services
  - marine services
  - freight rail
- elements of Combination #2

Combination #3: Widen/Improve Roads plus elements of Combination #2

Combination #3 includes:

- widen / improve:
  - municipal roads
  - provincial highways
- elements of Combination #2

Combination #4: New Municipal Roads and/or Provincial Highways/ Transitways  
plus elements of Combination #3

Combination #4 includes:

- new municipal roads
- new provincial highways/transitways

## **Preliminary Planning Alternatives**

The Highway 7&8 Transportation Corridor Planning and Class EA Study will consider the following preliminary planning alternatives for the alternatives carried forward from the 'Area Transportation System' planning phase (as applicable)

a) Preliminary planning alternatives for new transportation facilities:

- new transportation facility location, type and capacity (key roadway engineering alternatives for new provincial roadways)
  - conceptual corridors for a new transportation facility, including network linkages
  - conceptual areas of limitations on access to provincial highway (see details in "d" below)
  - combinations of the above
  - preliminary study area
- key specialty engineering preliminary planning alternatives for new transportation facilities:
  - bridge engineering: minimize need for large spans & lengths of bridges and major culverts; general location of new bridges
  - drainage & hydrology engineering: minimize intrusion into major watercourses and water bodies; general location of potential significant modification to watercourses and water bodies

- foundations engineering: minimize intrusion into areas of extreme gradient change and into large areas of unstable soils; general locations where large cut and fill embankments required
- pavement and road base engineering: minimize intrusion into large areas of unstable soils
- traffic and electrical engineering: possible ITS applications
- environmental protection for the above (which is focussed on minimizing intrusion into areas of provincial environmental interest as defined in the Provincial Policy Statement, recognizing that complete avoidance of all such areas is not likely to be possible)
- preliminary study area(s)

b) Preliminary planning alternatives for improvements to existing transportation facilities:

- Location, type and capacity of highway improvements (key roadway engineering alternatives for highway improvements):
  - general areas/locations/end-points of potential geometrical improvements to existing highway:
    - roadway gradient & alignment/curvature
    - highway intersection/interchange location/configuration
  - general areas/locations/end-points of potential widening of existing highway
    - through-lanes
    - passing lanes
    - continuous left turn lanes
    - general purpose lanes vs HOV lanes or reserved bus lanes)
  - interchanges and major intersections for 'Area Transportation System' (network) linkages
  - conceptual areas of limitations on access to provincial highway
    - locations where access to highway potentially limited in order to maintain highway functional integrity (purpose and level of service)
    - locations where access to highway potentially limited to/from areas not designated for development
  - preliminary study area
- key specialty engineering preliminary planning alternatives for improvements to existing highway
  - bridge engineering: general type/character of structure improvements of specific bridges & major culverts
  - drainage & hydrology engineering: general locations of improvement to drainage along & across ROW
  - foundation engineering: consideration of improvements to specific structure foundations and stability improvements to specific deep cut and high fill embankments
  - pavement and road base engineering: consideration of pavement/road base modification versus replacement
  - traffic & electrical engineering: general locations of improvement to line-of-sight, roadside safety; sites where traffic control signals required

- combinations of the above
- environmental protection for the above (which is focussed on minimizing intrusion into areas of provincial environmental interest as defined in the Provincial Policy Statement, recognizing that complete avoidance of all such areas is not likely to be possible)
- preliminary study area(s)

## **Detailed Planning Alternatives**

The Highway 7&8 Transportation Corridor Planning and Class EA Study will consider the following detailed planning alternatives for the provincial roadway alternatives carried forward from the preliminary planning phase (as applicable):

- a) Detailed planning alternatives for a new provincial roadway (as applicable) are the following:
- key roadway engineering alternatives for new provincial roadway:
    - final study area
    - new provincial transitway route location & technology
    - new provincial highway route location and highway type
    - final study areas
    - roadway design speed, basic plan and profile, basic cross-section covering:
      - number of lanes/tracks
      - core/collector separation (if applicable)
      - median treatment and shoulder type
      - major drainage
    - highway interchange/intersection specific location, configuration, footprint
    - transitway station specific location & footprint
    - specific nature & location of limitations on access to provincial highway (see details in “f” below)
  - key specialty engineering detailed planning alternatives for new provincial roadway:
    - bridge engineering: specific location/ type/span/length & template “footprint” of bridges & major culverts
    - drainage & hydrology engineering: specific location/type/character & template “footprint” of major facilities for drainage along & across the ROW and for stormwater management
    - foundation engineering: specific location/type/character and template “footprint” of major cut/fill embankments; foundations for bridges & major culverts
    - pavement and road base engineering: road base structure and pavement type
    - traffic & electrical engineering: specific locations/sites for traffic control signals and roadside safety barriers
  - environmental impact assessment (see details in (b) below)
- b) Detailed planning alternatives for improvement to the existing provincial highway (as applicable), are the following:
- key roadway engineering alternatives for highway improvements



- final study area
- specific location/end-points, type/character of geometrical improvements
  - roadway gradient and alignment curvature
  - interchange/intersection location/configuration
- specific location/end-points, extent & direction of widening
  - number of lanes
  - symmetrical vs asymmetrical vs new independent centreline
- roadway design speed, basic plan and profile, basic cross-section covering:
  - number of lanes/tracks
  - core/collector separation (if applicable)
  - median treatment and shoulder type
  - major drainage
- highway interchange/intersection specific location, configuration, and template “footprint”
- specific consideration of the above to improve bus operations on the highway, and to improve highway access to regional centres of goods movement such as intermodal facilities
- specific nature & location of limitations on access to provincial highway (as applicable)
  - areas where interchanges, intersections and entrances limited
  - areas where cross-roads grade-separated
  - areas where service roads provided
  - areas of metering of traffic access to highways at interchanges and intersections
  - areas of provincial ownership to prevent access to crossing roads from being too close to highway
  - areas of staged access based upon development controls being put in place
  - highway functional classification and highway access management classification upon which the above is based (selected from the following):
    - freeway (freeway, staged freeway)
    - arterial (major arterial, minor arterial)
    - collector (major collector, minor collector)
    - local
- key specialty engineering detailed planning alternatives for highway improvements:
  - bridge engineering: specific location/ type/span/length & template “footprint” of bridges & major culverts
  - drainage & hydrology engineering: specific location/type/character & template “footprint” of major facilities for drainage along & across the ROW and for stormwater management
  - foundation engineering: specific location/type/character and template “footprint” of major cut/fill embankments; foundations for bridges & major culverts
  - pavement and road base engineering: road base structure and pavement type
  - traffic & electrical engineering: specific locations/sites for traffic control signals and roadside safety barriers

- environmental impact assessment
  - environmental constraints to design and construction
  - avoidance/prevention/minimization incorporated into development of alternatives (where avoidance is primarily with respect to “footprint” impacts during generation of alternatives to capitalize on significant transportation engineering opportunities while protecting significant environmental features as much as possible)
  - assessment of environmental impacts (to factor areas identified for Report “F”, based upon the following:
    - environmental sensitivities identified;
    - details of environmental effect / condition change, with respect to:
      - type of impact (“footprint”, interference, traffic access modification, emissions)
      - nature of impact (direction, timing, duration, frequency, magnitude, reversibility, geographic extent, probability of occurrence and cumulative impacts)
    - degree to which environmental effects / condition changes can be mitigated (based on previous and concurrent experience), including residual effects; and
    - degree to which environmental avoidance/impact prevention could be incorporated in the development of alternatives
    - net environmental effects - advantages and disadvantages (which may be limited to a short-list of alternatives if the evaluation process includes a screening component)

## **Preliminary Design Alternatives**

The Highway 7&8 Transportation Corridor Planning and Class EA Study will consider the following preliminary design alternatives for the provincial roadway alternatives carried forward from the detailed planning phase (as applicable):

- a) Roadway engineering preliminary design alternatives (as applicable)
  - roadway engineering preliminary design alternatives:
    - calculated horizontal & vertical alignment and cross-section covering:
      - lane/track arrangement
      - lane continuity & balance
      - cross-fall & super-elevation
      - median & shoulder
      - aspects of specialty engineering infrastructure such as drainage and roadside safety
    - highway interchange/intersection preliminary design
    - transitway station preliminary design
    - location/design of private entrances to highway
    - right-of-way & property acquisition requirements (“property request” follows)
    - utilities (electricity, gas, water, telecommunications)

- roadway engineering preliminary design of alternatives for limitation to highway access (as applicable):
  - preclude or limit highway interchanges with crossing roads:
    - limit new highway interchanges to key selected municipal major arterial roads
    - specify minimum distance separation between new and existing interchanges
    - preclude interchanges at crossing roads on which public/private roads and entrances do not meet specified minimum separation distances from the interchange ramp terminals
    - prohibit new interchanges
  - preclude or limit highway intersections with crossing roads:
    - eliminate turns at existing intersections
    - close existing intersections
    - specify minimum distance separation between new and existing intersections
    - specify minimum highway stopping sight distance at intersections
    - prohibit new intersections
  - preclude or limit property entrances to highway:
    - limit/prohibit intensified traffic use / upgrading of existing property entrances
    - specify maximum density (# entrances per kilometre) of property entrances and minimum distance separation between property entrances (for both commercial and non-commercial)
    - specify minimum distance separation between property entrances and crossing road intersection
    - specify minimum highway stopping sight distance at entrances
    - specify minimum “access connection depth” within entrances
    - specify conditions for traffic signals by commercial entrance applicants
    - specify minimum lot frontage for entrances
    - prohibit entrances for direct property access to highway
    - for entrances from crossing roads, specify minimum distance between entrance and highway, or prohibit entrances within highway “control area”
  - grade-separate crossing roads at highway
    - prevent highway access while maintaining local road continuity
  - provide highway service roads
    - considered in association with precluding or eliminating interchanges, intersections, entrances
  - meter traffic access to highway at interchanges and intersections
    - traffic signals at intersections timed to favour highway traffic and/or control access from crossing road traffic
    - traffic signals on interchange ramps to control access from crossing roads
  - implement provincial ownership regime on sections of crossing roads adjacent to highway in order to prevent access that is too close to the highway (could be up to 1 km from edge of highway ROW):
    - assume section of crossing road adjacent to highway as part of the Kings Highway, onto which MTO will not permit roadway intersections or private entrances
    - implement provincial land “reserves” along each side of crossing roads, through which MTO will not permit roadway intersections or private entrances (e.g. 0.3 m wide band of provincial property along each side of crossing road)
  - staged access is conditional upon suitable agreements regarding management of area growth being reached between the local municipality and one or both of the Ministry of Public Infrastructure and Renewal and the Ministry of Municipal Affairs and Housing:
    - interchange not constructed unless agreements reached
    - interchange initially constructed as a grade-separated crossing, with ramps for access not constructed unless agreements reached

- traffic access at interchange from crossing road to highway metered at specified levels unless agreement reached
  - intersections initially constructed with limited permitted turns unless agreements reached
  - cul de sac crossing roads, with intersection not constructed unless agreements reached
- private entrances not permitted unless agreements reached
- preclude or limit buildings and structures within highway “control area”
- environmental protection for the above
  - environmental preliminary design (mitigation, compensation, enhancement)
  - potential effects to interdependent components of ecosystems as well as the overall cumulative effects
  - likelihood of significant adverse environmental effects

b) Specialty engineering preliminary design alternatives (as applicable)

- Bridge & major culvert engineering:
  - structure width, length, skew, geometry & cross-section
  - structure vertical clearance & span arrangement
  - navigable channel (if applicable)
- Drainage & hydrology engineering:
  - channels, ditches, storm sewers & outlets/outfalls for drainage of roadway
  - stormwater management facilities
  - hydraulics of bridges, culverts & water crossing inlets/outlets
- Foundation engineering:
  - foundations for bridge & major culvert structures
  - conventional slope geometry for major cut/fill embankments
  - non-conventional slope geometry for major cut/fill embankments
  - settlement management & excavation methods
- Pavement and road base engineering:
  - preliminary design of road base and pavement
  - mass haul (cut/fill earth/rock material balance)
  - preliminary sources of suitable granular material
- Traffic & electrical engineering:
  - traffic control signals
  - major roadside safety infrastructure
  - traffic signing & pavement markings
  - roadway illumination
  - ITS technology
  - emergency access
  - Preliminary construction traffic detour requirements
- specialty engineering preliminary/concept design of alternatives for limitation to highway access (see details in “d” above)
- environmental protection for the above
- environmental preliminary design (mitigation, compensation, enhancement)
  - potential effects to interdependent components of ecosystems as well as the overall cumulative effects
  - likelihood of significant adverse environmental effects

*Note regarding Items (a) and (b) above: examination of preliminary design alternatives includes specific consideration of preliminary design elements that improve bus operations on the highway and that improve highway access to/from regional centres of primary goods movement such as intermodal facilities*

**SUPPORTING DOCUMENT #4**  
**FEDERAL / PROVINCIAL EA CO-ORDINATION**

## FEDERAL/PROVINCIAL EA CO-ORDINATION

Under the Canadian Environmental Assessment Act (CEAA), the following information needs to be provided in a class environmental assessment conducted as a screening (paraphrasing):

- a description of the existing environment;
- any change the project may cause in the environment including: land, water, air, organic and inorganic matter, living organisms, and the interaction of natural systems;
- any effects that the project may cause to a listed wildlife species, its critical habitat or residences of individuals of that species, as those terms are defined in subsection 2(1) of the *Species at Risk Act*;
- the effects of a project-related environmental change on: health and socio-economic conditions; physical and cultural heritage; the current use of lands and resources for traditional purposes by aboriginal persons; and any structure, site or thing that is of historical, archeological, paleontological or architectural significance;
- any such project change or effect occurring both within or outside Canada;
- all environmental effects that may result from the various phases of the project (construction, operation, modification, abandonment and decommissioning);
- the environmental effects of accidents and malfunctions;
- the effects of the environment on the project (including effects due to climate change);
- the cumulative environmental effects of this project that are likely to result from the project in combination with other projects or activities that have been or will be carried out;
- the likelihood of significant adverse environmental effects;
- the need for and requirements of a follow-up program;
- comments from the public obtained in accordance with CEAA;
- any measures to be taken that would mitigate identified environmental effects;
- any other matter that the responsible authority deems to be necessary including those required for a comprehensive study, mediation or panel.

Additional factors to be considered for a comprehensive study, mediation or panel include:

- the purpose of the project;
- alternatives means of carrying out the project;
- design of a follow up program;
- the capacity of renewable resources affected by the project to meet the needs of the present and those of the future.

If the decommissioning and abandonment phases are not currently part of the proposed project, the proponent may explain this in its EA document, and the responsible authority under *CEAA* may decide not to require further analysis on these phases of the project as part of the current assignment.

Nothing in this document will limit the prerogative of federal authorities to seek additional information as more is learned about the specifics of the projects and its potential effects. Responsible authorities will be making a judgment about the likelihood of significant adverse environmental effects after mitigation, and they have the discretion to determine what information they require before making such a judgment.



## **SUPPORTING DOCUMENT #5**

### **PRELIMINARY FACTORS, SUB-FACTORS, CRITERIA AND INDICATORS FOR EVALUATION OF AREA TRANSPORTATION SYSTEM PLANNING ALTERNATIVES AND PROVINCIAL ROADWAY ALTERNATIVES**

SUPPORTING DOCUMENT #5						
PRELIMINARY FACTORS, SUB-FACTORS, CRITERIA AND INDICATORS FOR EVALUATION OF AREA TRANSPORTATION SYSTEM PLANNING ALTERNATIVES AND PROVINCIAL ROADWAY ALTERNATIVES						
FACTOR / SUB-FACTOR	CRITERIA	PRELIMINARY EVALUATION INDICATORS FOR EACH PHASE				RATIONALE FOR FACTOR AND SUB-FACTOR EVALUATION
		TRANSPORTATION NEEDS ASSESSMENT	PRELIMINARY PLANNING	DETAILED PLANNING FOR PROVINCIAL ROADWAYS	PRELIMINARY DESIGN FOR PROVINCIAL ROADWAYS	
1. Natural Environmental Factors						
1.1 Fisheries and Aquatic Ecosystems	1.1.1 Fish Habitat	Potential to affect fish species at risk (vulnerable, threatened or endangered fish species) and their habitat	Potential to affect fish species at risk (vulnerable, threatened or endangered fish species) and their habitat	Potential and significance of: <ul style="list-style-type: none"><li>• encroachment, severance, displacement;</li><li>• long-term alteration/disruption</li></ul> as applicable to the following: <ul style="list-style-type: none"><li>• critical fish habitat features</li><li>• riparian areas</li><li>• habitat rehabilitation goals</li></ul>	Potential and significance of: <ul style="list-style-type: none"><li>• encroachment, severance, displacement;</li><li>• long-term alteration/disruption</li><li>• short-term alteration/disruption (construction impacts).</li></ul> as applicable to the following: <ul style="list-style-type: none"><li>• critical fish habitat features</li><li>• riparian areas</li><li>• habitat rehabilitation goals</li></ul>	<ul style="list-style-type: none"><li>• The crossing of water bodies by transportation facilities has the potential to affect fish and aquatic habitat features through impediments to fish passage, loss of vegetation, changes to channel geomorphology (channel form and function), substrate and cover, changes to the water quality due to erosion and sedimentation, stormwater discharge and temperature changes.</li><li>• PPS Policy 1.6.6.4 stipulates that when planning for corridors and rights-of-way for significant transportation facilities, consideration will be given to significant natural heritage, water, agricultural, mineral, cultural heritage and archaeological resources. The context is provided in other PPS policy statements_ identified below.</li><li>• PPS Policy 2.1.5 requires that development and site alteration shall not be permitted in fish habitat except in accordance with provincial and federal requirements. In addition, policy 2.1.6 restricts development and site alteration on adjacent lands to natural heritage features (e.g. significant - wetlands, woodlands, valleylands etc.) unless the ecological function of the adjacent lands has been evaluated and it has been demonstrated that there will be no negative impacts on the natural features or on their ecological functions.</li><li>• It is an objective of the PPS to protect, improve or restore the quality and quantity of surface water, including headwaters. Surface water features are an important part of the natural, economic and cultural landscape. PPS Policy 2.2.2 restricts development and site alteration in or near sensitive surface water features and groundwater features such that these features and their related hydrologic functions will be protected, improved or restored.</li><li>• The Federal Fisheries Act prohibits the harmful alteration, disruption or destruction of fish habitat, the introduction of deleterious substances to fish habitat and the blockage of fish passage. Where impacts cannot be mitigated, a Fisheries Compensation Plan is prepared in consultation with the CA/DFO to address agency concerns/requirements.</li><li>• Subsection 36(3) of the Fisheries Act prohibits the deposit of a deleterious substance, directly or indirectly, into waters frequented by fish.</li></ul>
	1.1.2 Fish Community			Potential and significance of: <ul style="list-style-type: none"><li>• encroachment, severance, displacement;</li><li>• long-term alteration/ disruption</li></ul> as applicable to the following: <ul style="list-style-type: none"><li>• fish species at risk (vulnerable, threatened or endangered fish species)</li><li>• fish movement/migration</li><li>• critical fish life stage processes (spawning, rearing, nursery, feeding)</li><li>• long-term fish community management goals</li></ul>	Potential and significance of: <ul style="list-style-type: none"><li>• encroachment, severance, displacement;</li><li>• long-term alteration/ disruption</li><li>• short-term alteration/disruption (construction impacts).</li></ul> as applicable to the following: <ul style="list-style-type: none"><li>• fish species at risk (vulnerable, threatened or endangered fish species)</li><li>• fish movement/migration</li><li>• critical fish life stage processes (spawning, rearing, nursery, feeding)</li><li>• long-term fish community management goals</li></ul>	
1.2 Terrestrial Ecosystems	1.2.1 Wildlife	Potential to affect wildlife species at risk (vulnerable, threatened or endangered wildlife species) and their habitat	Potential to affect wildlife species at risk (vulnerable, threatened or endangered wildlife species) and their habitat	Potential and significance of: <ul style="list-style-type: none"><li>• encroachment, severance, displacement;</li><li>• long-term alteration/ disruption</li></ul> as applicable to the following: <ul style="list-style-type: none"><li>• wildlife species at risk (vulnerable, threatened or endangered wildlife species)</li><li>• wildlife of local and regional importance</li><li>• migratory birds</li></ul>	Potential and significance of: <ul style="list-style-type: none"><li>• encroachment, severance, displacement;</li><li>• long-term alteration/ disruption</li><li>• short-term alteration/disruption (construction impacts).</li></ul> as applicable to the following: <ul style="list-style-type: none"><li>• wildlife species at risk (vulnerable, threatened or endangered wildlife species)</li><li>• wildlife of local and regional importance</li></ul>	<ul style="list-style-type: none"><li>• PPS Policy 1.6.6.4 stipulates that when planning for corridors and rights-of-way for significant transportation facilities, consideration will be given to significant natural heritage, water, agricultural, mineral, cultural heritage and archaeological resources. The context is provided in other PPS policy statements identified below.</li><li>• The presence of species identified by COSEWIC and COSSARO as vulnerable, threatened or endangered (VTE) requires consideration in the</li></ul>

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PRELIMINARY FACTORS, SUB-FACTORS, CRITERIA AND INDICATORS FOR EVALUATION OF AREA TRANSPORTATION SYSTEM PLANNING ALTERNATIVES AND PROVINCIAL ROADWAY ALTERNATIVES						
FACTOR / SUB-FACTOR	CRITERIA	PRELIMINARY EVALUATION INDICATORS FOR EACH PHASE				RATIONALE FOR FACTOR AND SUB-FACTOR EVALUATION
		TRANSPORTATION NEEDS ASSESSMENT	PRELIMINARY PLANNING	DETAILED PLANNING FOR PROVINCIAL ROADWAYS	PRELIMINARY DESIGN FOR PROVINCIAL ROADWAYS	
				<ul style="list-style-type: none"><li>critical wildlife habitat features</li><li>ecologically functional areas such as connective corridors or travel ways for movement/migration</li><li>important wildlife areas such as deeryards, heronries, waterfowl areas, important bird areas</li><li>wildlife management, rehabilitation/research program sites</li><li>interference with critical wildlife life stage processes (eg mating/rearing) etc</li></ul>	<ul style="list-style-type: none"><li>migratory birds</li><li>critical wildlife habitat features</li><li>ecologically functional areas such as connective corridors or travel ways for movement/migration</li><li>important wildlife areas such as deeryards, heronries, waterfowl areas, important bird areas</li><li>wildlife management, rehabilitation/research program sites</li><li>interference with critical wildlife life stage processes (eg mating/rearing) etc</li></ul>	<p>generation of route alternatives. Species or populations may be under pressure or susceptible to stress as a result of development. Since habitat for these species is often limited, impacts to areas where the presence of species at risk is suspected or confirmed should be avoided or minimized. The assessment should have regard for the PPS objective that development and site alteration will not be permitted in significant portions of the habitat of Threatened and Endangered Species. The reported presence of Species of Conservation Concern (as defined by MNR in the Significant Wildlife Habitat Technical Guides (SWHTG – MNR, 2000) and TRCA species of concern will also be considered.</p> <ul style="list-style-type: none"><li>The general prohibitions under the Species at Risk Act, which apply to federally protect migratory bird and aquatic species at risk as well as to all endangered and threatened species on federal lands.</li><li>Section 6 of the Migratory Bird Regulations under the Migratory Birds Convention Act, 1994, which prohibits the incidental take of migratory birds and the disturbance and destruction of taking of the nest of a migratory bird.</li><li>PPS Policy 2.1.4 prohibits development and site alteration in significant wetlands in the Canadian Shield north of Ecoregions 5E, 6E and 7E. The assessment should have regard for this objective. Wetlands serve ecological functions to varying degrees including groundwater recharge/discharge, flood attenuation, wildlife movement corridors, habitat for flora and fauna, and water filtration.</li><li>The Canadian Federal Policy on Wetland Conservation promotes the goal of no net loss of wetland function in areas where wetland loss has reached critical levels.</li></ul>
	1.2.2 Wetlands	Potential to affect provincially and locally significant wetlands	Potential to affect provincially and locally significant wetlands	<p>Potential and significance of:</p> <ul style="list-style-type: none"><li>encroachment, severance, displacement;</li><li>long-term alteration/ disruption</li></ul> <p>as applicable to the following:</p> <ul style="list-style-type: none"><li>provincially significant wetlands, their buffer areas, and their wetland function</li><li>evaluated and un-evaluated wetlands, their wetland buffer areas, and their wetland function</li><li>wetland management, research and/or wetland conservation programs/areas</li></ul>	<p>Potential and significance of:</p> <ul style="list-style-type: none"><li>encroachment, severance, displacement;</li><li>long-term alteration/ disruption</li><li>short-term alteration/disruption (construction impacts).</li></ul> <p>as applicable to the following:</p> <ul style="list-style-type: none"><li>provincially significant wetlands, their buffer areas, and their wetland function</li><li>evaluated and un-evaluated wetlands, their wetland buffer areas, and their wetland function</li><li>wetland management, research and/or wetland conservation programs/areas</li></ul>	<ul style="list-style-type: none"><li>PPS Policy 1.6.6.4 stipulates that when planning for corridors and rights-of-way for significant transportation facilities, consideration will be given to significant natural heritage, water, agricultural, mineral, cultural heritage and archaeological resources. The context is provided in other PPS policy statements identified below.</li><li>It is important to recognize identified ecologically functional linkages between factors and sub-factors (within a natural heritage system) that contribute to landscape connectivity. The assessment should have regard for PPS Policy 2.1.2 which states that the diversity and connectivity of natural features in an area, and the long term ecological function and biodiversity of natural heritage systems, should be maintained, restored, or where possible improved, recognizing linkages between and among natural heritage features and areas, surface water features and groundwater features. The avoidance of wildlife corridors minimizes</li></ul>

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						risks of wildlife mortality during operation of the facility. Secondary information on ecosystem linkages (aquatic and terrestrial) will be reviewed and supplemented by other available sources (including contacts with specialists, field findings).
1.2 Terrestrial Ecosystems (Cont'd)	1.2.3 Forests  (e.g. woodlands [forest stands, woodlots and interior forest habitat] and significant valley lands [valley and stream corridors])	Potential to affect significant woodlands/valley lands and areas supporting known populations of vegetation species at risk (vulnerable, threatened or endangered species)	Potential to affect significant woodlands/valley lands and areas supporting known populations of vegetation species at risk (vulnerable, threatened or endangered species)	Potential and significance of: <ul style="list-style-type: none"><li>• encroachment, severance, displacement;</li><li>• long-term alteration/ disruption</li></ul> as applicable to the following: <ul style="list-style-type: none"><li>• significant woodlands/valley lands</li><li>• forest management/research program areas</li></ul>	Potential and significance of: <ul style="list-style-type: none"><li>• encroachment, severance, displacement;</li><li>• long-term alteration/ disruption</li><li>• short-term alteration/disruption (construction impacts).</li></ul> as applicable to the following: <ul style="list-style-type: none"><li>• woodlands/valley lands</li><li>• forest management/research program areas</li></ul>	<ul style="list-style-type: none"><li>• PPS Policy 1.6.6.4 stipulates that when planning for corridors and rights-of-way for significant transportation facilities, consideration will be given to significant natural heritage, water, agricultural, mineral, cultural heritage and archaeological resources. The context is provided in other PPS policy statements identified below.</li><li>• The PPS Policy 2.1.4 only permits development and site alteration in significant woodlands south and east of the Canadian Shield where it can be demonstrated that there will be no negative impacts on the natural features or their ecological function. The assessment should have regard for the PPS protection objectives.</li><li>• The study area is located within the Carolinian Zone and may have important representations of Carolinian species assemblages. These natural heritage areas require protection.</li><li>• Small degraded, isolated remnant woodlots and wetlands can have ecological value. Large natural and relatively undisturbed features have high ecological sensitivity and value.</li></ul>
	1.2.4 Vegetation			Potential and significance of: <ul style="list-style-type: none"><li>• encroachment, severance, displacement;</li><li>• long-term alteration/ disruption</li></ul> as applicable to the following: <ul style="list-style-type: none"><li>• populations of vegetation species at risk (vulnerable, threatened or endangered species), species of conservation concern and significant regional/local flora/communities</li><li>• areas/corridors supporting known populations of vegetation species at risk (vulnerable, threatened or endangered species), species of conservation concern and significant flora/communities</li><li>• vegetation management, rehabilitation/research program sites</li></ul>	Potential and significance of: <ul style="list-style-type: none"><li>• encroachment, severance, displacement;</li><li>• long-term alteration/ disruption</li><li>• short-term alteration/disruption (construction impacts).</li></ul> as applicable to the following: <ul style="list-style-type: none"><li>• populations of vegetation species at risk (vulnerable, threatened or endangered species), species of conservation concern and significant regional/local flora/communities</li><li>• areas/corridors supporting known populations of vegetation species at risk (vulnerable, threatened or endangered species), species of conservation concern and significant flora/communities</li><li>• vegetation management, rehabilitation/research program sites</li></ul>	
	1.2.5 Designated/Special Areas (such as world biosphere reserves, heritage rivers, ESAs, ESPAs, ANSIs, environmental plan areas, conservation reserves; and the designated special areas of national parks, provincial parks, conservation areas, etc)	Potential to affect designated/special areas	Potential to affect designated/special areas	Potential and significance of: <ul style="list-style-type: none"><li>• encroachment, severance, displacement;</li><li>• long-term alteration/ disruption;</li><li>• change in area character/ aesthetics;</li><li>• nuisance impacts;</li><li>• change to access / travel time;</li><li>• change to facilities / utilities / services.</li></ul> to designated/special areas.	Potential and significance of: <ul style="list-style-type: none"><li>• encroachment, severance, displacement;</li><li>• long-term alteration/ disruption;</li><li>• short-term alteration/disruption (construction impacts);</li><li>• change in area character/ aesthetics;</li><li>• nuisance impacts;</li><li>• change to access / travel time;</li><li>• change to facilities / utilities / services.</li></ul> to designated/special areas.	

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						<p>there will be no negative impacts on the natural features or functions for which the area is identified.</p> <ul style="list-style-type: none"><li>• Areas that have been designated as Environmentally Significant Areas, Areas of Natural and Scientific Interest or Significant Valleylands may have landforms or plant communities associated with the area that are designated locally, regionally or provincially significant, or provide important corridors.</li><li>• ESAs are not explicitly included in the Provincial Policy Statement, but are often associated with other features subject to the policy statement (e.g. ANSIs, significant woodlands, significant habitat of endangered species or threatened species, significant wetlands, valleylands and wildlife habitat). They are also reflected in the MNR Land Use Guidelines, Conservation Authority Plans and municipal land use plans.</li><li>• PPS Policy 2.1.6 provides for development and site alteration on adjacent lands to listed natural heritage features and areas, only where the ecological function of the adjacent lands has been evaluated and it has been demonstrated that there will be no negative impacts on the natural features or on their ecological function.</li><li>• Policy 4.2.1.2 of the Greenbelt Plan 2005 states that the location and construction of infrastructure and expansions, extensions, operations and maintenance of infrastructure in the Protected Countryside are subject to specified criteria.</li></ul>
1.3 Groundwater	1.3.1 Areas of Ground water Recharge and Discharge	Potential to affect areas of groundwater recharge and discharge	Potential to affect areas of groundwater recharge and discharge	Potential and significance of alteration to areas of groundwater recharge and discharge due to physical intrusion or groundwater interception, draw-down, impoundment, obstruction, or soil compaction impacting groundwater base-flow and quality	Potential and significance of alteration to areas of groundwater recharge and discharge due to physical intrusion or groundwater interception, draw-down, impoundment, obstruction, or soil compaction impacting groundwater base-flow and quality	<ul style="list-style-type: none"><li>• PPS Policy 1.6.6.4 stipulates that when planning for corridors and rights-of-way for significant transportation facilities, consideration will be given to significant natural heritage, water, agricultural, mineral, cultural heritage and archaeological resources. The context is provided in other PPS policy statements identified below.</li><li>• Section 2.2 of the PPS identifies that the quality and quantity of water (including groundwater) should be protected improved or restored. The assessment should have regard for this objective. Transportation facilities have the potential to impact groundwater resources through removal of recharge areas, interference with discharge areas/shallow groundwater zones, and introduction of contaminated runoff. Consequently, impacts to areas identified as being susceptible to groundwater contamination and/or interference should be avoided/minimized to the extent possible.</li></ul>
	1.3.2 Groundwater Source Areas and Wellhead Protection Areas	Potential to affect groundwater source areas and wellhead protection areas	Potential to affect groundwater source areas and wellhead protection areas	Potential and significance of alteration to groundwater source areas and wellhead protection areas due to physical intrusion, or groundwater interception, draw-down, impoundment, obstruction and by soil compaction	Potential and significance of alteration to groundwater source areas and wellhead protection areas due to physical intrusion, or groundwater interception, draw-down, impoundment, obstruction and by soil compaction	
	1.3.3 Large Volume Wells	Potential to affect large volume wells	Potential to affect large volume wells	Potential and significance of alteration to large volume wells due to physical intrusion or groundwater interception, draw-down, impoundment, obstruction and by soil compaction	Potential and significance of alteration to large volume wells due to physical intrusion or groundwater interception, draw-down, impoundment, obstruction and by soil compaction	
	1.3.4 Private Wells	Not considered in this phase.	Not considered in this phase.	Potential and significance of alteration to private well use due to physical intrusion, or groundwater interception, draw-down, impoundment, obstruction and by soil compaction	Potential and significance of alteration to private well use due to physical intrusion, or groundwater interception, draw-down, impoundment, obstruction and by soil compaction	
	1.3.5 Groundwater-Dependent Commercial Enterprises  (e.g. water bottling operations)	Not considered in this phase.	Not considered in this phase.	Potential and significance of alteration to groundwater use by groundwater-dependent commercial enterprises due to physical intrusion, or groundwater interception, draw-down, impoundment, obstruction and by soil compaction	Potential and significance of alteration to groundwater use by groundwater-dependent commercial enterprises due to physical intrusion, or groundwater interception, draw-down, impoundment, obstruction and by soil compaction	

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FACTOR / SUB-FACTOR	CRITERIA	PRELIMINARY EVALUATION INDICATORS FOR EACH PHASE				RATIONALE FOR FACTOR AND SUB-FACTOR EVALUATION
		TRANSPORTATION NEEDS ASSESSMENT	PRELIMINARY PLANNING	DETAILED PLANNING FOR PROVINCIAL ROADWAYS	PRELIMINARY DESIGN FOR PROVINCIAL ROADWAYS	
	1.3.6 Groundwater-Sensitive Ecosystems  (e.g. groundwater fed wetlands, coldwater streams)	Not considered in this phase.	Not considered in this phase.	Potential and significance of alteration to groundwater-sensitive ecosystems due to physical intrusion, or groundwater interception, draw-down, impoundment, obstruction and by soil compaction	Potential and significance of alteration to groundwater-sensitive ecosystems due to physical intrusion, or groundwater interception, draw-down, impoundment, obstruction and by soil compaction	
1.4 Surface Water	1.4.1 Watershed / Sub-Watershed Drainage Features/Patterns	Potential to affect permanent watercourses	Potential to affect permanent watercourses	Potential and significance of: <ul style="list-style-type: none"><li>• encroachment, severance, displacement;</li><li>• long-term alteration/ disruption.</li></ul> as applicable to the following: <ul style="list-style-type: none"><li>• watercourse crossings (permanent, intermittent and ephemeral)</li><li>• floodplain or meander belts</li><li>• riparian areas</li><li>• sensitive headwater areas</li><li>• watershed and subwatershed management plans</li></ul>	Potential and significance of: <ul style="list-style-type: none"><li>• encroachment, severance, displacement;</li><li>• long-term alteration/ disruption.</li></ul> as applicable to the following: <ul style="list-style-type: none"><li>• watercourse crossings (permanent, intermittent and ephemeral)</li><li>• floodplain or meander belts</li><li>• riparian areas</li><li>• sensitive headwater areas</li><li>• watershed and subwatershed management plans</li></ul>	<ul style="list-style-type: none"><li>• Surface water features are an important part of the natural landscape in the Analysis Area. There are a number of permanent and intermittent watercourses flowing through the Analysis Area as well as a number of provincially and locally significant wetlands and various unnamed tributaries and agricultural swales present in the analysis area. Consequently, surface water quantity and quality could be negatively affected by the undertaking (e.g., reduction in surface water quantity, degradation of surface water quality, etc.) and therefore the ability to protect surface water quality, including the function of headwaters, need to be considered in the evaluation.</li></ul>
	1.4.2 Surface Water Quality and Quantity	Not considered in this phase	Not considered in this phase	Potential and significance of impacts on quality through direct and indirect discharges of contaminated and sediment-laden run-off  Potential and significance of impacts on hydrology due to changes in ground permeability, modifications to surface drainage patterns and alterations of water bodies	Potential and significance of impacts on quality through direct and indirect discharges of contaminated and sediment-laden run-off  Potential and significance of impacts on hydrology due to changes in ground permeability, modifications to surface drainage patterns and alterations of water bodies	
1.5 Air Quality	1.5.1 Local and Regional Air Quality  (Total contaminant and greenhouse gas emissions)	Potential to reduce the air quality consequences of traffic congestion	Potential to reduce the air quality consequences of traffic congestion	Not considered in this phase. See item below	Not considered in this phase. See item below.	<ul style="list-style-type: none"><li>• Air Quality impacts have the potential to affect human health.</li><li>• Alternatives through or near urban areas create the potential for increased contaminant levels.</li><li>• Dust emissions associated with construction related activities could cause temporary air quality issues.</li><li>• Greenhouse gases contribute to global warming.</li></ul>
	1.5.2 Sensitive receptors to air pollutants and greenhouse gas emissions	Not considered in this phase.	Not considered in this phase.	Presence and potential for impacts to sensitive receptors to air pollutants and greenhouse gas emissions	Potential and significance of effects on sensitive receptors to air pollutants and greenhouse gas emissions	
2. Land Use / Socio-Economic Environmental Factors						
2.1 Land Use Planning Policies, Goals, Objectives	2.1.1 First Nations Land Claims	Potential to affect areas for which there are First Nations outstanding land claims	Potential to affect areas for which there are First Nations outstanding land claims	Potential and significance of encroachment, severance, displacement to areas for which there are First Nations outstanding land claims	Potential and significance of encroachment, severance, displacement to areas for which there are First Nations outstanding land claims	<ul style="list-style-type: none"><li>• It is important that First Nations’s land claims within the Analysis Area are documented</li><li>• The Ontario Provincial Policy Statement notes that long-term prosperity and social well-being of Ontarians depends on maintaining strong communities, a clean and healthy environment and a strong economy. Transportation facilities play a key role in achieving these objectives.</li><li>• There is a need to co-ordinate transportation planning with municipal land planning as established through Official Plans, Secondary Plans and Zoning by-laws as these specify land uses supported by residents, municipalities and the province.</li><li>• The Greenbelt Plan notes that infrastructure is important to economic well-being, human health and quality of life in southern Ontario and the Greenbelt.</li><li>• Policy 4.2.1 of the Greenbelt Plan states that, for lands within the protected countryside, as defined by the Greenbelt Plan, 2005, infrastructure must meet one of the following policies; it supports agriculture, recreation and tourism, rural</li></ul>
	2.1.2 Provincial/Federal land use planning policies/goals/ objectives	Potential to support federal/provincial land use policies/goals/objectives	Potential to support federal/provincial land use policies/goals/objectives	Degree of compatibility with federal/provincial land use policies/goals/ objectives	Not considered in this phase.	
	2.1.3 Municipal (regional and local) land use planning policies/ goals/objectives (Official Plans)	Potential to support municipal Official Plans	Potential to support municipal Official Plans	Degree of compatibility with municipal Official Plans	Not considered in this phase.	
	2.1.4 Development Objectives of Private Property Owners	Not considered in this phase	Not considered in this phase	Potential to isolate property from current/future urban envelope  Impact on future land use	Not considered in this phase.	

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FACTOR / SUB-FACTOR	CRITERIA	PRELIMINARY EVALUATION INDICATORS FOR EACH PHASE				RATIONALE FOR FACTOR AND SUB-FACTOR EVALUATION
		TRANSPORTATION NEEDS ASSESSMENT	PRELIMINARY PLANNING	DETAILED PLANNING FOR PROVINCIAL ROADWAYS	PRELIMINARY DESIGN FOR PROVINCIAL ROADWAYS	
						settlement areas, resource use or the rural economic activity that exists and is permitted within the Greenbelt; or it serves the significant growth and economic development expected in southern Ontario beyond the Greenbelt by providing for the appropriate infrastructure connections among urban growth centers and between these centers and Ontario's borders.
2.2 Land Use / Community	2.2.1 First Nation Reserves	Potential to affect First Nation Reserves	Potential to affect First Nation Reserves	Potential and significance of: <ul style="list-style-type: none"><li>• encroachment, severance, displacement;</li><li>• long-term alteration/ disruption;</li><li>• change in area character / aesthetics;</li><li>• nuisance impacts;</li><li>• change to access / travel time.</li></ul> to First Nation Reserves	Potential and significance of: <ul style="list-style-type: none"><li>• encroachment, severance, displacement;</li><li>• long-term alteration/ disruption;</li><li>• short-term alteration/disruption (construction impacts);</li><li>• change in area character / aesthetics;</li><li>• nuisance impacts;</li><li>• change to access / travel time.</li></ul> to First Nation Reserves	<ul style="list-style-type: none"><li>• It is important that potential and significance of impacts to Indian Reservations and sacred grounds be recognized and addressed in accordance with Ontario's New Approach to Aboriginal Affairs (Spring 2005) and the Grand River Notification Agreement</li><li>• Property takings / displacements and changes / effects on local access have a significant impact on owners and tenants as well as the broader community.</li><li>• Property takings / displacements and changes / effects on local access have a significant impact on owners and tenants as well as the broader community and customer/client base.</li><li>• Disruption or displacement of institutional features may adversely affect the users of these features / facilities and the broader community.</li></ul>
	2.2.2 First Nations' Sacred Grounds	Not considered in this phase	Potential to affect First Nations' Sacred Grounds	Potential and significance of: <ul style="list-style-type: none"><li>• encroachment, severance, displacement;</li><li>• long-term alteration/ disruption;</li><li>• change in area character / aesthetics;</li><li>• nuisance impacts;</li><li>• change to access / travel time.</li></ul> To First Nations' sacred grounds	Potential and significance of: <ul style="list-style-type: none"><li>• encroachment, severance, displacement;</li><li>• long-term alteration/ disruption;</li><li>• short-term alteration/disruption (construction impacts);</li><li>• change in area character / aesthetics;</li><li>• nuisance impacts;</li><li>• change to access / travel time.</li></ul> To First Nations' sacred	
	2.2.3 Urban and Rural Residential	Potential to affect urban and residential areas	Potential to affect urban and residential areas	Potential and significance of: <ul style="list-style-type: none"><li>• encroachment, severance, displacement, property acquisition;</li><li>• long-term alteration/ disruption;</li><li>• change in area character/ aesthetics;</li><li>• nuisance impacts;</li><li>• change to access / travel time;</li><li>• change to facilities / utilities / services.</li></ul> to urban and rural residential areas (residents [owners/tenants] and community groups).	Potential and significance of: <ul style="list-style-type: none"><li>• encroachment, severance, displacement, property acquisition;</li><li>• long-term alteration/ disruption;</li><li>• short-term alteration/disruption (construction impacts);</li><li>• change in area character/ aesthetics;</li><li>• nuisance impacts;</li><li>• change to access / travel time;</li><li>• change to facilities / utilities / services.</li></ul> to urban and rural residential areas (residents [owners/tenants] and community groups).	
	2.2.4 Commercial/Industrial	Not considered in this phase	Potential to affect commercial and industrial areas	Potential and significance of: <ul style="list-style-type: none"><li>• encroachment, severance, displacement, property acquisition;</li><li>• long-term alteration/ disruption;</li><li>• change in area character/ aesthetics;</li><li>• nuisance impacts;</li><li>• change to access / travel time;</li><li>• change to facilities / utilities / services.</li></ul> to commercial and industrial areas	Potential and significance of: <ul style="list-style-type: none"><li>• encroachment, severance, displacement, property acquisition;</li><li>• long-term alteration/ disruption;</li><li>• short-term alteration/disruption (construction impacts);</li><li>• change in area character/ aesthetics;</li><li>• nuisance impacts;</li><li>• change to access / travel time;</li><li>• change to facilities / utilities / services.</li></ul>	

SUPPORTING DOCUMENT #5 PRELIMINARY FACTORS, SUB-FACTORS, CRITERIA AND INDICATORS FOR EVALUATION OF AREA TRANSPORTATION SYSTEM PLANNING ALTERNATIVES AND PROVINCIAL ROADWAY ALTERNATIVES						
FACTOR / SUB-FACTOR	CRITERIA	PRELIMINARY EVALUATION INDICATORS FOR EACH PHASE				RATIONALE FOR FACTOR AND SUB-FACTOR EVALUATION
		TRANSPORTATION NEEDS ASSESSMENT	PRELIMINARY PLANNING	DETAILED PLANNING FOR PROVINCIAL ROADWAYS	PRELIMINARY DESIGN FOR PROVINCIAL ROADWAYS	
				(business owners/tenants and customers).	to commercial and industrial areas (business owners/tenants and customers).	
	2.2.5 Tourist Areas and Attractions  (e.g. museums, theatres, etc.)	Not considered in this phase	Potential to affect tourist areas and attractions	Potential and significance of: <ul style="list-style-type: none"><li>• encroachment, severance, displacement, property acquisition;</li><li>• long-term alteration/ disruption;</li><li>• change in area character/ aesthetics;</li><li>• nuisance impacts;</li><li>• change to access / travel time;</li><li>• change to facilities / utilities / services.</li></ul> To tourist areas and attractions.	Potential and significance of: <ul style="list-style-type: none"><li>• encroachment, severance, displacement, property acquisition;</li><li>• long-term alteration/ disruption;</li><li>• short-term alteration/disruption (construction impacts);</li><li>• change in area character/ aesthetics;</li><li>• nuisance impacts;</li><li>• change to access / travel time;</li><li>• change to facilities / utilities / services.</li></ul> to tourist areas and attractions.	
2.2 Land Use / Community	2.2.6 Community Facilities / Institutions  (e.g. hospitals, schools, places of worship, unique community features)	Not considered in this phase	Potential to affect community facilities and institutions	Potential and significance of: <ul style="list-style-type: none"><li>• encroachment, severance, displacement, property acquisition;</li><li>• long-term alteration/ disruption;</li><li>• change in area character/ aesthetics;</li><li>• nuisance impacts;</li><li>• change to access / travel time;</li><li>• change to facilities / utilities / services.</li></ul> To community facilities and institutions.	Potential and significance of: <ul style="list-style-type: none"><li>• encroachment, severance, displacement, property acquisition;</li><li>• long-term alteration/ disruption;</li><li>• short-term alteration/disruption (construction impacts);</li><li>• change in area character/ aesthetics;</li><li>• nuisance impacts;</li><li>• change to access / travel time;</li><li>• change to facilities / utilities / services.</li></ul> to community facilities and institutions.	
	2.2.7 Municipal Infrastructure and Public Service Facilities  (e.g. sewage and water services, police/emergency services, local utilities)	Not considered in this phase	Not considered in this phase	Potential and significance of: <ul style="list-style-type: none"><li>• encroachment, severance, displacement;</li><li>• long-term alteration/ disruption;</li><li>• change to access / travel time;</li><li>• change to facilities / utilities / services.</li></ul> to municipal infrastructure and public service facilities.	Potential and significance of: <ul style="list-style-type: none"><li>• encroachment, severance, displacement;</li><li>• long-term alteration/ disruption;</li><li>• short-term alteration/disruption (construction impacts);</li><li>• change to access / travel time;</li><li>• change to facilities / utilities / services.</li></ul> to municipal infrastructure and public service facilities.	
2.3 Noise Sensitive Areas (NSAs)  (residential areas and sensitive institutional uses)	2.3.1 Highway Noise	Potential for increased traffic noise in NSAs	Potential for increased traffic noise in NSAs	Potential for significant traffic noise increases in NSAs	Potential for increase of traffic noise in NSAs by 5 dBA, or to above a 45 dBA ambient within 10 years of project construction	<ul style="list-style-type: none"><li>• The Ontario Ministry of the Environment (MOE) has published Noise Pollution Control (NPC) and Land Use (LU) planning guidelines. These MOE documents establish ambient noise criteria, based on one-hour average sound pressure levels (Leq), and evaluate ambient vibration levels based on either Peak or RMS velocity, as applicable. Noise levels generally rise with increased traffic volumes.</li><li>• MOE/MTO Noise Protocol requires that highway noise be considered in all Provincial (MTO) Transportation projects</li></ul>
	2.3.2 Construction Noise	Not considered in this phase	Not considered in this phase	Not considered in this phase	Potential and significance of increase in construction noise to NSAs	
2.4 Land Use / Resources	2.4.1 First Nations' Treaty Rights or Use of Land and Resources for Traditional Purposes  (e.g. hunting, fishing, harvesting of	Potential to affect First Nations' Treaty Rights or use of land and resources for traditional purposes	Potential to affect First Nations' Treaty Rights or use of land and resources for traditional purposes	Potential and significance of: <ul style="list-style-type: none"><li>• encroachment, severance, displacement;</li><li>• long-term alteration/ disruption;</li><li>• nuisance impacts;</li></ul>	Potential and significance of: <ul style="list-style-type: none"><li>• encroachment, severance, displacement;</li><li>• long-term alteration/ disruption;</li><li>• short-term alteration/disruption</li></ul>	<ul style="list-style-type: none"><li>• It is important that potential and significance of impacts to Indian Reservations and sacred grounds be recognized and addressed in accordance with Ontario's New Approach to</li></ul>



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PRELIMINARY FACTORS, SUB-FACTORS, CRITERIA AND INDICATORS FOR EVALUATION OF AREA TRANSPORTATION SYSTEM PLANNING ALTERNATIVES AND PROVINCIAL ROADWAY ALTERNATIVES						
FACTOR / SUB-FACTOR	CRITERIA	PRELIMINARY EVALUATION INDICATORS FOR EACH PHASE				RATIONALE FOR FACTOR AND SUB-FACTOR EVALUATION
		TRANSPORTATION NEEDS ASSESSMENT	PRELIMINARY PLANNING	DETAILED PLANNING FOR PROVINCIAL ROADWAYS	PRELIMINARY DESIGN FOR PROVINCIAL ROADWAYS	
	country foods, harvesting of medicinal plants)			<ul style="list-style-type: none"><li>• change to access / travel time.</li></ul> to First Nations' treaty rights or use of land and resources for traditional purposes	(construction impacts); <ul style="list-style-type: none"><li>• nuisance impacts;</li><li>• change to access / travel time.</li></ul> to First Nations' treaty rights or use of land and resources for traditional purposes	Aboriginal Affairs (Spring 2005) and the Grand River Notification Agreement <ul style="list-style-type: none"><li>• Planning of transportation facilities must address First Nations' treaty rights, and be conducted in accordance with Ontario's New Approach to Aboriginal Affairs (Spring 2005) and the Grand River Notification Agreement</li></ul>
	2.4.2 Agriculture	Potential to affect specialty crop areas and/or areas of Canada Land Inventory Classes 1, 2 and 3 soils	Potential to affect specialty crop areas and/or areas of Canada Land Inventory Classes 1, 2 and 3 soils	Potential and significance of: <ul style="list-style-type: none"><li>• encroachment, severance, displacement, property acquisition;</li><li>• long-term alteration/ disruption;</li><li>• change in area character/ aesthetics;</li><li>• nuisance impacts;</li><li>• change to access / travel time;</li><li>• change to facilities / utilities / services.</li></ul> as applicable to the following: <ul style="list-style-type: none"><li>• Canada Land Inventory Classes 1, 2 and 3 soils</li><li>• Specialty crops/cropland</li><li>• Dairy/livestock operations</li><li>• Field crop operations</li><li>• High investment agricultural operations</li><li>• Established agricultural farm communities</li></ul>	Potential and significance of: <ul style="list-style-type: none"><li>• encroachment, severance, displacement, property acquisition;</li><li>• long-term alteration/ disruption;</li><li>• short-term alteration/disruption (construction impacts);</li><li>• change in area character/ aesthetics;</li><li>• nuisance impacts;</li><li>• change to access / travel time;</li><li>• change to facilities / utilities / services.</li></ul> as applicable to the following: <ul style="list-style-type: none"><li>• Canada Land Inventory Classes 1, 2 and 3 soils</li><li>• Specialty crops/cropland</li><li>• Dairy/livestock operations</li><li>• Field crop operations</li><li>• High investment agricultural operations</li><li>• Established agricultural farm communities</li></ul>	<ul style="list-style-type: none"><li>• PPS Policy 1.6.6.4 stipulates that when planning for corridors and rights-of-way for significant transportation facilities, consideration will be given to significant natural heritage, water, agricultural, mineral, cultural heritage and archaeological resources. The context is provided in other PPS policy statements identified below.</li><li>• Section 2.3 of the Provincial Policy Statement requires prime agricultural areas be protected for long-term use for agriculture. Prime agricultural areas include specialty crop areas and Classes 1, 2 and 3 soils in this order of priority.</li><li>• Ontario Ministry of Agriculture and Food (OMAF) has provincial guidelines for protection of prime agricultural lands as well as agricultural structures or infrastructure</li></ul>
2.4 Land Use / Resources (Cont'd)	2.4.3 Parks and Recreational Areas (e.g. national/provincial parks, conservation areas, municipal parks, public spaces, golf courses, trails, greenways and open space linkages)	Potential to affect parks and recreational areas	Potential to affect parks and recreational areas.	Potential and significance of: <ul style="list-style-type: none"><li>• encroachment, severance, displacement, property acquisition;</li><li>• long-term alteration/ disruption;</li><li>• change in area character/ aesthetics;</li><li>• nuisance impacts;</li><li>• change to access / travel time;</li><li>• change to facilities / utilities / services.</li></ul> To parks and recreational areas.	Potential and significance of: <ul style="list-style-type: none"><li>• encroachment, severance, displacement, property acquisition;</li><li>• long-term alteration/ disruption;</li><li>• short-term alteration/disruption (construction impacts);</li><li>• change in area character/ aesthetics;</li><li>• nuisance impacts;</li><li>• change to access / travel time;</li><li>• change to facilities / utilities / services.</li></ul> to parks and recreational areas.	<ul style="list-style-type: none"><li>• Disruption or displacement of recreational / community features may adversely affect the users of the facility/feature. Parks are generally lands in public ownership aimed at preserving significant and sometimes unique components of the environment, and providing recreational opportunities. These areas should be avoided to the extent possible however, in some cases, transportation facilities can be situated along park boundaries without adversely affecting the park. Frequently, parts are isolated islands surrounded by development and as such they can function as wildlife refuge areas or may facilitate wildlife movement opportunities. PPS, 2005, Policy 1.5.1 states that healthy active communities shall be promoted by (d) considering the impacts of planning decisions on provincial parks, conservation reserves and conservation areas.</li></ul>
	2.4.4 Aggregates, Mineral Resources	Potential to affect aggregate and mineral resources sites	Potential to affect aggregate and mineral resources sites	Potential and significance of: <ul style="list-style-type: none"><li>• encroachment, severance, displacement, property acquisition;</li><li>• long-term alteration/ disruption;</li><li>• change to access / travel time;</li><li>• change to facilities / utilities / services.</li></ul> to current/future extraction of aggregate and mineral resources.	Potential and significance of: <ul style="list-style-type: none"><li>• encroachment, severance, displacement, property acquisition;</li><li>• long-term alteration/ disruption;</li><li>• short-term alteration/disruption (construction impacts);</li><li>• change to access / travel time;</li><li>• change to facilities / utilities / services.</li></ul> to current/future extraction of aggregate and mineral resources.	<ul style="list-style-type: none"><li>• PPS Policy 1.6.6.4 stipulates that when planning for corridors and rights-of-way for significant transportation facilities, consideration will be given to significant natural heritage, water, agricultural, mineral, cultural heritage and archaeological resources. The context is provided in other PPS policy statements identified below.</li><li>• Sections 2.4 and 2.5 of the Provincial Policy Statement have the objective of protecting mineral and aggregate resources for the long</li></ul>

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FACTOR / SUB-FACTOR	CRITERIA	PRELIMINARY EVALUATION INDICATORS FOR EACH PHASE				RATIONALE FOR FACTOR AND SUB-FACTOR EVALUATION
		TRANSPORTATION NEEDS ASSESSMENT	PRELIMINARY PLANNING	DETAILED PLANNING FOR PROVINCIAL ROADWAYS	PRELIMINARY DESIGN FOR PROVINCIAL ROADWAYS	
						term. The policy statement makes provisions for the protection of both known deposits and areas of potential. <ul style="list-style-type: none"><li>• MTO adheres to requirements of the Aggregates Act to protect aggregate resources while minimizing sterilization of mineral aggregate resources as much as possible.</li></ul>
<b>2.5 Major Utility Transmission Corridors</b>  (e.g. railroads, hydro, gas, oil)		Potential to affect major utility transmission corridors	Potential to affect major utility transmission corridors	Potential and significance of: <ul style="list-style-type: none"><li>• encroachment, severance, displacement;</li><li>• long-term alteration/ disruption;</li><li>• change to access / travel time;</li><li>• change to facilities / utilities / services.</li></ul> To major utility transmission corridors.	Potential and significance of: <ul style="list-style-type: none"><li>• encroachment, severance, displacement;</li><li>• long-term alteration/ disruption;</li><li>• short-term alteration/disruption (construction impacts);</li><li>• change to access / travel time;</li><li>• change to facilities / utilities / services.</li></ul> to major utility transmission corridors.	<ul style="list-style-type: none"><li>• Utility corridors are subject to regulations from owners and governing authorities for operation of utilities including National Energy Board, Ontario Energy Board, Transport Canada, Railway Safety Act, etc.</li></ul>
<b>2.6 Contaminated Property and Waste Management</b>  (e.g. Landfills, Hazardous Waste Sites, “Brownfield” Areas, other known contaminated sites, and high-risk contamination areas)		Potential to affect landfills (open and closed), hazardous waste sites “brownfield” areas, and other known contaminated sites, and high-risk contamination areas	Potential to affect landfills (open and closed), hazardous waste sites “brownfield” areas, and other known contaminated sites, and high-risk contamination areas	Potential and significance of: <ul style="list-style-type: none"><li>• encroachment, severance, displacement;</li><li>• long-term alteration/disruption;</li><li>• change to access / travel time;</li><li>• change to facilities / utilities / services.</li></ul> to contaminated property and waste management.	Potential and significance of: <ul style="list-style-type: none"><li>• encroachment, severance, displacement;</li><li>• long-term alteration/disruption;</li><li>• short-term alteration/disruption (construction impacts);</li><li>• change to access / travel time;</li><li>• change to facilities / utilities / services.</li></ul> to contaminated property and waste management.	<ul style="list-style-type: none"><li>• Localized significant sources of property contamination can be associated with operating and closed waste disposal sites, the latter being of more significance due to their difficulty in accurately locating them. Consideration should be given to avoiding/ minimizing effects in the “area of influence” of waste disposal sites.</li><li>• There is the potential that some of the lands in the project area may be contaminated due to the nature of existing and historical land use especially in older commercial/industrial areas and in areas with heavy industrial activity. Sources of potential property contamination in rural areas are most commonly associated with service stations; isolated pockets of commercial/industrial areas; unknown fill areas; scrap yards and other high-risk land uses. Impacts to these areas should be avoided / minimized to the extent possible.</li><li>• Appropriate assessments will be carried on these sites and the project will comply with the appropriate.</li></ul>
<b>2.7 Landscape Composition</b>	2.7.1 Scenic Composition (total aesthetic value of landscape components)	Not considered in this phase	Not considered in this phase	Potential and significance of change to scenic composition (total aesthetic value of landscape components).	Potential and significance of destruction / disturbance of specimen trees.	<ul style="list-style-type: none"><li>• Visual impacts on adjacent land use and effects on the visual experiences for users of the facility will be considered.</li></ul>
	2.7.2 Sensitive Viewer Groups	Not considered in this phase	Not considered in this phase	Potential and significance of change vistas/outlooks for sensitive viewer groups.	Potential and significance of change to scenic composition (total aesthetic value of landscape components).	
	2.7.3 Scenic value of views/vistas from the transportation facility	Not considered in this phase	Not considered in this phase	Potential and significance of views/vistas from the transportation facility.	Potential and significance of views/vistas from the transportation facility.	
	2.7.4 Specimen Trees	Not considered in this phase	Not considered in this phase	Not considered in this phase	Potential and significance of change vistas/outlooks for sensitive viewer groups.	
<b>3. Cultural Environmental Factors</b>						
<b>3.1 Cultural Heritage – Built Heritage and Cultural Landscapes</b>	3.1.1 Buildings or “Standing” Sites of Architectural or Heritage Significance or Ontario Heritage Foundation Easement Properties	Potential to affect buildings or “standing” sites of extreme local, provincial or national interest or Ontario Heritage Foundation easements properties	Potential to affect buildings or “standing” sites of extreme local, provincial or national interest or Ontario Heritage Foundation easements properties	Potential and significance of: <ul style="list-style-type: none"><li>• encroachment, severance, displacement, property acquisition;</li><li>• long-term alteration/ disruption;</li><li>• change in area character/ aesthetics;</li><li>• nuisance impacts;</li><li>• change to access / travel time;</li><li>• change to facilities / utilities / services.</li></ul>	Potential and significance of: <ul style="list-style-type: none"><li>• encroachment, severance, displacement, property acquisition;</li><li>• long-term alteration/ disruption;</li><li>• change in area character/ aesthetics;</li><li>• nuisance impacts;</li><li>• change to access / travel time;</li><li>• change to facilities / utilities / services.</li></ul>	<ul style="list-style-type: none"><li>• A new transportation facility may result in the loss of built heritage features resulting in a depletion of the cultural heritage resources / heritage character in the area.</li><li>• Impacts to built heritage features should be avoided to the extent possible, or as a secondary alternative relocation rather than demolition could be considered.</li></ul>

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FACTOR / SUB-FACTOR	CRITERIA	PRELIMINARY EVALUATION INDICATORS FOR EACH PHASE				RATIONALE FOR FACTOR AND SUB-FACTOR EVALUATION
		TRANSPORTATION NEEDS ASSESSMENT	PRELIMINARY PLANNING	DETAILED PLANNING FOR PROVINCIAL ROADWAYS	PRELIMINARY DESIGN FOR PROVINCIAL ROADWAYS	
				to buildings or “standing” sites of extreme local, provincial or national interest or Ontario Heritage Foundation easements properties.	to buildings or “standing” sites of extreme local, provincial or national interest or Ontario Heritage Foundation easements properties.	<ul style="list-style-type: none"><li>• MTO is required to operate in accordance with Cemeteries Act</li><li>• MTO is required to operate in accordance with Ontario Heritage Act</li></ul>
	3.1.2 Heritage Bridges	Potential to affect heritage bridges	Potential to affect heritage bridges	Potential for destruction or significant alteration of heritage bridges	Potential for destruction or significant alteration of heritage bridges	
	3.1.3 Areas of Historic 19 <sup>th</sup> Century Settlement	Potential to affect areas of historic 19 <sup>th</sup> century settlement	Potential to affect areas of historic 19 <sup>th</sup> century settlement	Potential and significance of: <ul style="list-style-type: none"><li>• encroachment, severance, displacement;</li><li>• long-term alteration/ disruption;</li><li>• change in area character/ aesthetics;</li><li>• nuisance impacts;</li><li>• change to access / travel time;</li><li>• change to facilities / utilities / services.</li></ul> to areas of historic 19 <sup>th</sup> century settlement.	Potential and significance of: <ul style="list-style-type: none"><li>• encroachment, severance, displacement;</li><li>• long-term alteration/ disruption;</li><li>• change in area character/ aesthetics;</li><li>• nuisance impacts;</li><li>• change to access / travel time;</li><li>• change to facilities / utilities / services.</li></ul> to areas of historic 19 <sup>th</sup> century settlement.	
	3.1.4 Cultural Heritage Landscapes  (collection of individual man-made features modifying pristine landscape)	Not considered in this phase	Not considered in this phase	Potential and significance of change to composition of cultural landscapes.	Potential and significance of change to composition of cultural landscapes.	
	3.1.5 First Nations’ Burial Sites	Not considered in this phase	Not considered in this phase	Potential and significance of: <ul style="list-style-type: none"><li>• encroachment, severance, displacement;</li><li>• long-term alteration/ disruption;</li><li>• change in area character / aesthetics;</li><li>• nuisance impacts;</li><li>• change to access / travel time.</li></ul> to First Nations' burial sites.	Potential and significance of: <ul style="list-style-type: none"><li>• encroachment, severance, displacement;</li><li>• long-term alteration/ disruption;</li><li>• change in area character / aesthetics;</li><li>• nuisance impacts;</li><li>• change to access / travel time.</li></ul> to First Nations' burial sites.	
	3.1.6 Cemeteries	Potential to affect cemeteries	Potential to affect cemeteries	Potential and significance of: <ul style="list-style-type: none"><li>• encroachment, severance, displacement;</li><li>• long-term alteration/ disruption;</li><li>• change in area character/ aesthetics;</li><li>• nuisance impacts;</li><li>• change to access / travel time;</li><li>• change to facilities / utilities / services.</li></ul> to cemeteries.	Potential and significance of: <ul style="list-style-type: none"><li>• encroachment, severance, displacement;</li><li>• long-term alteration/ disruption;</li><li>• short-term alteration/disruption (construction impacts);</li><li>• change in area character/ aesthetics;</li><li>• nuisance impacts;</li><li>• change to access / travel time;</li><li>• change to facilities / utilities / services.</li></ul> to cemeteries.	
3.2 Cultural Heritage - Archaeology	3.2.1 Pre-Historic and Historic First Nations Sites	Potential to affect significant pre-historic and historic First Nations archaeological sites of extreme local, provincial or national interest	Potential to affect significant pre-historic and historic First Nations archaeological sites of extreme local, provincial or national interest	Potential for destruction or disturbance of pre-historic and historic First Nations archaeological sites of extreme local, provincial or national interest	Potential for destruction or disturbance of pre-historic and historic First Nations archaeological sites of extreme local, provincial or national interest	<ul style="list-style-type: none"><li>• Disturbance or destruction of certain archaeological sites of extreme local, provincial or national interest represents a significant cultural loss.</li><li>• Impacts to archaeological resources/sites should be avoided or minimized to the extent possible.</li><li>• Significant archaeological sites shall be preserved and avoided in accordance with Ontario Ministry of Culture (OMC), and Aboriginal People’s policies and procedures, and all others shall be excavated to OMC standards</li></ul>
	3.2.2 Historic Euro-Canadian Archaeological Sites	Potential to affect significant historic Euro-Canadian archaeological sites of extreme local, provincial or national interest	Potential to affect significant historic Euro-Canadian archaeological sites of extreme local, provincial or national interest	Potential for destruction or disturbance of historic Euro-Canadian archaeological sites of extreme local, provincial or national interest	Potential for destruction or disturbance of historic Euro-Canadian archaeological sites of extreme local, provincial or national interest	
4. Area Economy						
4.1 First Nations Industry		Potential to support First Nations industry in the area by efficient and reliable movement of people and goods	Potential to support First Nations industry in the area by efficient and reliable movement of people and goods	Not considered in this phase	Not considered in this phase	<ul style="list-style-type: none"><li>• Transportation congestion negatively affects existing business, industry and trade, adding significant costs to doing business and is a deterrent to new businesses considering locating</li></ul>
4.2 Heavy Industry and Trade		Potential to support area heavy industry and	Potential to support heavy industry and trade	Not considered in this phase	Not considered in this phase	

SUPPORTING DOCUMENT #5						
PRELIMINARY FACTORS, SUB-FACTORS, CRITERIA AND INDICATORS FOR EVALUATION OF AREA TRANSPORTATION SYSTEM PLANNING ALTERNATIVES AND PROVINCIAL ROADWAY ALTERNATIVES						
FACTOR / SUB-FACTOR	CRITERIA	PRELIMINARY EVALUATION INDICATORS FOR EACH PHASE				RATIONALE FOR FACTOR AND SUB-FACTOR EVALUATION
		TRANSPORTATION NEEDS ASSESSMENT	PRELIMINARY PLANNING	DETAILED PLANNING FOR PROVINCIAL ROADWAYS	PRELIMINARY DESIGN FOR PROVINCIAL ROADWAYS	
		trade by efficient and reliable goods movement	by efficient and reliable goods movement			<ul style="list-style-type: none"><li>or expanding in the Analysis Area.</li><li>Travel reliability for commercial vehicles is a concern given the impacts of construction, maintenance or collisions on the already congested transportation system.</li><li>A large proportion of recreational travel is based on longer distance auto based trips, therefore tourism and recreational travel is significantly affected by congestion on the area roadway network. Tourism is currently Ontario's fifth largest export industry and is projected to become the fourth largest in the near future. Tourism includes recreation and the cottage sector.</li><li>Agriculture is an important component of the overall economic base of the Analysis Area. Travel for agricultural equipment on local roads is severely affected by longer distance trips diverted from congested highways. Transportation of agricultural supplies and products is affected by congestion on the area road network.</li><li>PPS Policy 1.6.6.4 stipulates that when planning for corridors and rights-of-way for significant transportation facilities, consideration will be given to significant natural heritage, water, agricultural, mineral, cultural heritage and archaeological resources. The context is provided in other PPS policy statements identified below.</li><li>The Provincial Policy Statement, 2005 stipulates that prime agricultural areas shall be protected for long-term use for agriculture. Prime agricultural areas are areas where prime agricultural lands predominate. Specialty crop areas shall be given the highest priority for protection followed by Classes 1, 2 and 3 soils, in this order of priority.</li></ul>
4.3 Tourism and Recreation Industry		Potential to support area tourism and recreation industry by efficient and reliable movement of people	Potential to support tourism and recreation industry by efficient and reliable movement of people	Not considered in this phase	Not considered in this phase	
4.4 Agriculture Industry		Potential to support area agriculture industry by efficient movement of goods	Potential to support area agriculture industry by efficient movement of goods	Not considered in this phase	Not considered in this phase	
5. Transportation Factors						
5.1 Federal/Provincial/Municipal transportation planning policies/goals/objectives		Potential to support federal/provincial/municipal transportation planning policies/goals/objectives	Potential to support federal/provincial/municipal transportation planning policies/goals/objectives	Not considered in this phase.	Not considered in this phase.	<ul style="list-style-type: none"><li>The Official Plans of municipalities within the Analysis Area, and the strategic growth policies and targets embodied in the Provincial Growth Plan, suggest that population and employment growth will continue over time and will be important to future economic prosperity. In order for this economic growth to be realized, an efficient transportation system to move both people and goods within and through the Analysis Area is considered fundamental.</li><li>The effectiveness of each alternative needs to be determined.</li><li>There is a need to determine how transportation solutions address future needs in relation to existing and proposed future transportation infrastructure.</li><li>There is a need to determine how well transportation solutions operate during peak periods.</li></ul>
5.2 Efficient movement of people		Potential to support the efficient movement of people between communities and regions based on network, screenline and critical link performance measures including Level of Service (LOS) and volume to capacity (v/c)	Potential to support the efficient movement of people between communities and regions based on Level of Service (LOS) and volume to capacity (v/c) on a network, screenline and critical link basis	Potential to support the efficient movement of people between communities and regions based on Level of Service (LOS) and volume to capacity (v/c) on a network, screenline and critical link basis	Not considered in this phase.	
5.3 Efficient movement of goods		Potential to support efficient movement of goods between urban growth centres and regional intermodal facilities based on road network and Highway 7&8 corridor performance measures (LOS and travel speed)	Potential to support efficient movement of goods between urban growth centres and regional intermodal facilities based on road network and Highway 7&8 corridor performance measures (LOS and travel speed)	Potential to support efficient movement of goods between urban growth centres and regional intermodal facilities based on road network and Highway 7&8 corridor performance measures (LOS and travel speed)	Not considered in this phase.	
5.4 System reliability / redundancy		Potential to support system reliability and redundancy for travel (people and goods) between regions and communities during adverse conditions	Potential to support system reliability and redundancy for travel (people and goods) between regions and communities during adverse conditions	Potential to support system reliability and redundancy for travel (people and goods) between regions and communities during adverse conditions	Not considered in this phase	

SUPPORTING DOCUMENT #5						
PRELIMINARY FACTORS, SUB-FACTORS, CRITERIA AND INDICATORS FOR EVALUATION OF AREA TRANSPORTATION SYSTEM PLANNING ALTERNATIVES AND PROVINCIAL ROADWAY ALTERNATIVES						
FACTOR / SUB-FACTOR	CRITERIA	PRELIMINARY EVALUATION INDICATORS FOR EACH PHASE				RATIONALE FOR FACTOR AND SUB-FACTOR EVALUATION
		TRANSPORTATION NEEDS ASSESSMENT	PRELIMINARY PLANNING	DETAILED PLANNING FOR PROVINCIAL ROADWAYS	PRELIMINARY DESIGN FOR PROVINCIAL ROADWAYS	
5.5 Safety		Potential to improve traffic safety based on opportunity to reduce congestion on area road network (LOS and v/c) and reduce the frequency of intersections and entrances in the Highway 7&8 corridor	Potential to improve traffic safety based on opportunity to reduce congestion on area road network (LOS and v/c) and reduce the frequency of intersections and entrances in the Highway 7&8 corridor	Potential to improve traffic safety based on opportunity to reduce congestion on area road network (LOS and v/c) and reduce the frequency of intersections and entrances in the Highway 7&8 corridor	Potential for collisions recognizing side road intersections, presence of auxiliary lanes, number/spacing of entrances, available sight distance, storage for disabled vehicles, etc.	<ul style="list-style-type: none"><li>• Transportation agencies have developed design standards to ensure that safety objectives are reflected in all new/expanded infrastructure. These standards are not subject to modification or compromise to avoid/reduce impacts, costs, etc.</li><li>• Goods movement between economic centres and growth areas incurs out-of-way travel and delay due to congestion through the Analysis Area. Reducing travel times, out-of-way travel and improving travel time reliability would lead to lower transportation costs and benefit the local, provincial and national economy.</li><li>• There is a need to determine how well transportation solutions operate during peak periods.</li><li>• There is a need to determine emergency access and safety issues related to transportation solutions.</li><li>• There is a need to determine the flexibility of transportation solutions to address future needs beyond the forecasted planning horizon.</li><li>• Physical conditions and staging issues can affect the feasibility of implementing transportation solutions.</li><li>• There is the need identify the costs associated with possible transportation solutions. Construction costs can influence the feasibility of a given alternative</li></ul>
5.6 Modal integration, balance and efficiency		Potential to improve modal choice and increase mode split for person trips between communities, regions and major transit station areas based on travel performance indicators (LOS, v/c, travel speed) at critical screenlines and on potential to provide higher order transit service in the Highway 7&8 corridor.	Potential to improve modal choice and increase mode split for person trips between communities, regions and major transit station areas based on travel performance indicators (LOS, v/c, travel speed) at critical screenlines and on potential to provide higher order transit service in the Highway 7&8 corridor.	Potential to improve modal choice and increase mode split between communities, regions and intermodal facilities based on travel performance indicators (LOS, v/c, travel speed) at critical screenlines and for Highway 7&8 corridor.	Not considered in this phase.	
5.7 Linkages to Population and Employment Centres		Potential to improve accessibility to urban growth centres for people and goods movement based on higher order network (roads and transit) continuity and connectivity	Potential to improve accessibility to urban growth centres for people and goods movement based on higher order network continuity and connectivity	Potential to improve accessibility to urban growth centres for people and goods movement based on higher order network continuity and connectivity	Not considered in this phase.	
5.8 Recreation and Tourism Travel		Potential to support recreation and tourism travel within and to/from the Analysis Area by provision of higher order network (roads and transit) continuity and connectivity and through network performance indicators (LOS, v/c, travel speed)	Potential to support recreation and tourism travel within and to/from the Analysis Area by provision of higher order network (roads and transit) continuity and connectivity and through network performance indicators (LOS, v/c, travel speed)	Potential to support recreation and tourism travel within and to/from the Analysis Area by provision of higher order network (roads and transit) continuity and connectivity and through network performance indicators (LOS, v/c, travel speed)	Not considered in this phase.	
5.9 Accommodation for pedestrians, cyclists and snowmobiles		Potential to accommodate pedestrians, cyclists within critical travel corridors in urbanized areas and snowmobiles in recognized rural trails	Potential to accommodate pedestrians, cyclists within critical travel corridors in urbanized areas and snowmobiles in recognized rural trails	Potential to accommodate pedestrians, cyclists within critical travel corridors in urbanized areas and snowmobiles in recognized rural trails	Not considered in this phase.	
5.10 Constructability		Not considered in this phase.	Potential ease of implementation considering feasibility/difficulty of physical, property or environmental constraints	Potential ease of implementation considering feasibility/difficulty of physical, property or environmental constraints	Potential ease of implementation considering feasibility/difficulty of physical, property or environmental constraints	
5.11 Construction Cost (excludes property costs and engineering costs)		Not considered in this phase.	Not considered in this phase.	Relative road construction cost, excluding property and engineering costs	Relative road construction cost, excluding property and engineering costs	
5.12 Traffic Operations		Not considered in this phase.	Potential impact on traffic operations due to factors such as design features, private access, and transportation network connections	Potential impact on traffic operations due to factors such as design features, private access, and transportation network connections	Potential impact on traffic operations due to factors such as design features, private access, and transportation network connections	
NOTES:		Notes regarding evaluation criteria for transportation needs assessment and the preliminary planning phases: <ul style="list-style-type: none"><li>• information to support evaluation is drawn from secondary source information and preliminary field reconnaissance (the environmental information is documented in Report “F” – 1<sup>st</sup> Part)</li></ul>		Notes regarding evaluation criteria for the detailed planning and the preliminary design phases: <ul style="list-style-type: none"><li>• information to support evaluation is enhanced by field investigation work as appropriate (the environmental information is documented in Report “F” – 2<sup>nd</sup> Part)</li><li>• “Measures” for detailed planning evaluation criteria will be developed during preliminary planning</li><li>• “Measures” for preliminary design evaluation criteria will be developed during detailed planning</li></ul>		

**SUPPORTING DOCUMENT #6**

**RECORD OF CONSULTATION DURING PREPARATION  
OF THE STUDY PLAN**

**RECORD OF CONSULTATION DURING PREPARATION OF THE STUDY PLAN**

TO BE COMPLETED AS PART OF FINAL STUDY PLAN