

Ministry of Transportation

Highway 7&8 Transportation Corridor Planning and Class EA Study

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

Report H: Milestone Report – Selection of Detailed Planning (Route) Alternatives for Provincial Roadways

DRAFT

January, 2011

www.7and8corridorstudy.ca

This report is presented in draft format in order to obtain information and comments from stakeholders. Your input is requested by March 25, 2011 so the report can be finalized.



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1.0 INTRODUCTION

1.1 Introduction to the Highway 7&8 Transportation Corridor Planning and Class EA Study

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

- development of a plan that addresses:
 - o capacity, operation and safety needs along the 2-lane and 4-lane sections 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
 - o linkage needs between the analysis area and transportation corridors serving other regions in the province.
- preparation of a preliminary design for the provincial roadway components of that plan; and
- documentation of the work in a Transportation Environmental Study Report for public review at study completion.

This study also:

- involved reviewing and building on the findings of the MTO Highway 7&8 Study Design Greater Stratford to New Hamburg Area, December 2005;
- addresses the transportation policies and growth forecasts of the final Growth Plan for the Greater Golden Horseshoe (recognizing that the easterly portion of the analysis area for this project lies within the Greater Golden Horseshoe); and
- recognizes other relevant transportation corridor studies being undertaken by MTO.

The study is being 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.7and8 corridorstudy.ca.

A major component of the study is an outreach and consultation program structured around six key points of decision-making, each of which is 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.

1.2 Analysis Area

The Analysis Area was established to identify transportation problems and opportunities associated with Highway 7&8 from the Greater Stratford to New Hamburg Area plus the broader 'Area Transportation System' (including Highway 8) between Highway 7&8 and Highway 401. The Analysis Area was not intended to represent a Study Area for the planning alternatives to be generated during the course of the study. The selection of a Study Area within the Analysis Area is documented in Report E and summarized in Section 2 of this report.

For orientation and reference, a map of the Analysis Area is provided in **Exhibit 1.1** below.

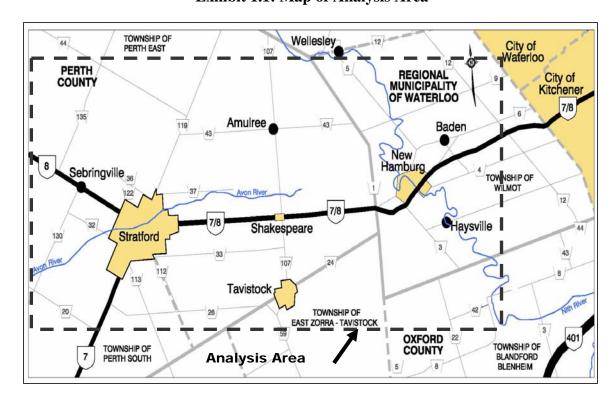


Exhibit 1.1: Map of Analysis Area

1.3 Purpose, Relevance and Position of Report "H" Within the Study Process

The purpose of Report H is to document the selection of detailed planned alternatives (route alternatives) within the preferred corridor, including:

- Refined Study Area;
- Refined detailed planning (route) alternatives;
- Assessment and evaluation of route alternatives:
- Preferred detailed planning (route) alternative for entire study corridor; and
- Process for the generation of preliminary design alternatives.

As can be seen in **Exhibit 1.2** below, Report H is the ninth of 12 reports to be prepared for this study and the third report of Phase 4, Detailed Planning.

Exhibit 1.2: Summary of Reports Highway 7&8 Transportation Corridor Planning and Class EA Study

STUDY PHASE 1: STUDY PLAN

• Report "A" Study Plan For Technical Work, Outreach And Consultation

STUDY PHASE 2: AREA TRANSPORTATION SYSTEM PLANNING

- Report "B": Working Paper Overview of Transportation, Land Use and Economic Conditions Within the Analysis Area
- Report "F" -1st Part: Working Paper Environmental Conditions And Constraints
- Report "C": Working Paper 'Area Transportation System' Problems and Opportunities
- Report "D": Working Paper Area Transportation System Alternatives

STUDY PHASE 3: PRELIMINARY PLANNING

• Report "E": Milestone Report – Highway 7&8 Transportation Corridor Needs Assessment

STUDY PHASE 4: DETAILED PLANNING FOR PROVINCIAL ROADWAYS

- Report "F" 2nd Part: Working Paper Environmental Conditions And Constraints
- Report "G": Working Paper Generation of Detailed Planning Alternatives for Provincial Roadways
- Report "H": Milestone Report Selection of Detailed Planning Alternatives for Provincial Roadways

STUDY PHASE 5: PRELIMINARY DESIGN FOR PROVINCIAL ROADWAYS

- Report "I": Working Paper Generation of Provincial Roadway Preliminary Design Alternatives
- Report "J": Milestone Report Selection of Preliminary Design Alternatives for Provincial Roadways

STUDY PHASE 6: TRANSPORTATION ENVIRONMENTAL STUDY REPORT

• Report "K": Transportation Environmental Study Report (documents overall study)

2.0 AREA TRANSPORTATION SYSTEM STRATEGY

The area transportation needs assessment detailed in Report D identified the selection of highway corridor improvements (i.e. widening of existing Highway 7&8 or a new highway corridor), or combinations of the foregoing, plus inter-regional transit and transportation demand management (e.g. ridesharing and telecommuting) to address the area transportation system problems and opportunities.

Exhibit 2.1 summarizes the overall area transportation system strategy that includes all of the above noted elements. In response to stakeholder input, some sections of highway corridor improvements have been revised since the original publication of Report E.

Exhibit 2.2 illustrates the preferred highway corridor and the associated Study Area for the generation of detailed planning alternatives, including the area for further review of Shakespeare route alternatives which was defined in response to comments received through the PIC #3 consultation process to allow the study team to conduct a more detailed review of route alternatives in the Shakespeare area.

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

	Exhibit 2.1: Area Transportation System Strategy				
Strategy Component Description					
Highway Corridor	 From west of Stratford to Highway 7 2-lane Highway 8 with geometric improvements from mid-way between Perth Roads 130 and 125 to Perth Road 125; Modification of intersection at Highway 8 and Perth Road 125; 2-lane Perth Road 125 with geometric improvements from Highway 8 to Perth Line 32/Lorne Avenue; Modification of intersection at Perth Road 125 and Perth Line 32/Lorne Avenue; 2/3-lane Perth Line 32/Lorne Avenue with geometric improvements from Perth Road 125 to Highway 7. From Highway 7 to East of Stratford Widen Highway 7 from 2 to 4 lanes from south of Perth Line 29 to Lorne Avenue; and Widen Lorne Avenue from 2 to 4/5 lanes from Highway 7 to Perth Road 111. From East of Stratford to West of Shakespeare New 4-lane highway from Lorne Avenue at Perth Road 111 to one of: Highway 7&8 east of Perth Road 110; or A southerly bypass of Shakespeare. 				

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	Exhibit 2.1: Area Transportation System Strategy			
Strategy Component	Description			
	 From West of Shakespeare to East of Shakespeare One of: A new 4-lane northerly bypass of Shakespeare; or Widening Highway 7&8 from 2 to 4/5 lanes through Shakespeare; or A new 4-lane southerly bypass of Shakespeare. From East of Shakespeare to West of New Hamburg Widen Highway 7&8 from 2 to 4/5 lanes from east of Shakespeare to mid-way between Perth Road 102 and Wilmot–Easthope Road (railway structure). From West of New Hamburg to East of New Hamburg Widen Highway 7&8 from 2 to 4/5 lanes from mid-way between Perth Road 102 and Wilmot–Easthope Road (railway structure) to existing 4-lane section immediately west of Wilmot–Easthope Road; Modification of intersection at Wilmot-Easthope Road; Modification of Highway 7&8 through New Hamburg with median barrier, modification or closure of intersections, plus possible service road. 			
Inter-Regional Transit	Referred to appropriate agency for further review and action			
Transportation Demand Management	Referred to appropriate agency for further review and action			

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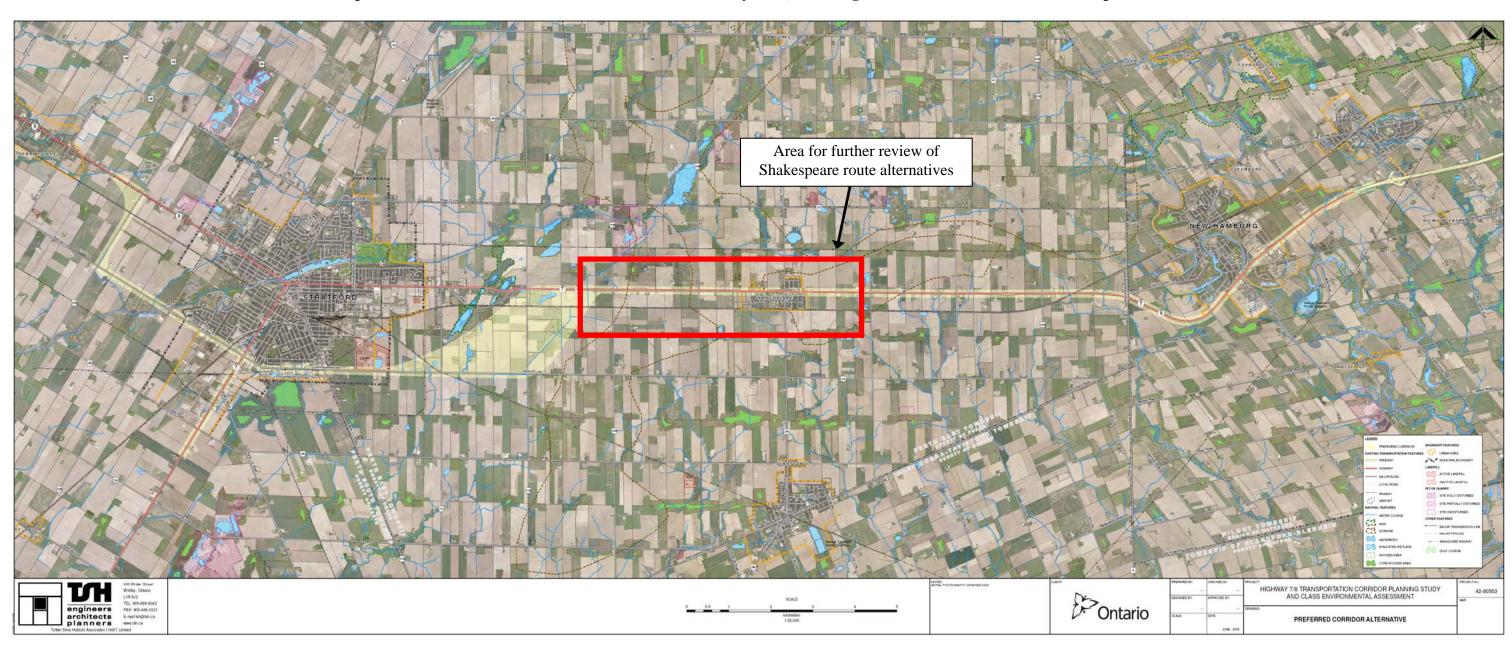


Exhibit 2.2: Map of Preferred Corridor Alternative and Associated Study Area, including Area for Further Review of Shakespeare Route Alternatives

3.0 PROCESS AND CRITERIA TO GENERATE AND EVALUATE DETAILED PLANNING (ROUTE) ALTERNATIVES

3.1 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 (route) alternatives for provincial roadways is the following:

- 1 Identify Detailed Planning Alternatives for Existing Provincial Highway and/or New Provincial Roadway Routes
 - Description and rationale for detailed planning alternatives (presented in Report G and in **Section 3.2** and **Exhibit 3.1** below, including revisions made subsequent to the preparation of 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 were evaluated against the environmental and transportation factors and sub-factors identified in **Exhibit 3.2** at the end of this section which were refined / modified in part based on local information provided by stakeholders through the consultation process.
- 4 Comparative Evaluation of Detailed Planning Alternatives by Reasoned Argument and Augmented by Arithmetic Methods
 - Each alternative was evaluated using the reasoned argument and arithmetic methods and the identified factors, sub-factors, criteria and indicators (see **Exhibit 3.2** at the end of this section).
- 5 Identify Recommended Detailed Planning Alternative for Existing Provincial Highway and/or New Provincial Routes
 - Selection of recommended detailed planning alternative based on results of comparative evaluation and taking into consideration stakeholder input received through consultation and outreach program (presented in Report H).

3.2 Summary of Detailed Planning Alternatives for Provincial Roadways

Based on the selected Preliminary Planning (Corridor) Alternatives carried forward from the preliminary planning phase, the Highway 7&8 Transportation Corridor Planning and Class EA Study considered specific location / type / character and template "footprints" for the following categories of provincial roadway detailed planning alternatives:

- Improve existing Highway 7&8
 - o specific location and type of geometrical improvements to existing highway
 - o specific location, extent and direction of widening to existing highway
- New corridor
 - o new provincial highway route location
- A combination of improvements to sections of existing Highway 7&8 and new sections of provincial highway

The following objectives and rationale were used to generate widening / route alternatives to 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.

Principle 1: Minimize impacts to significant natural features, functions, systems and communities

- 1. Avoid where possible, or minimize encroachment on or loss of water bodies and associated riparian zones;
- 2. Avoid where possible, or minimize encroachment on or loss of critical fish habitat features;
- 3. Avoid where possible, or minimize encroachment on or loss of species of conservation concern (vegetation, fish and wildlife);
- 4. Avoid where possible, or minimize encroachment on or loss of critical habitat of Species at Risk;
- 5. Avoid where possible, or minimize encroachment on or loss of encroachment into ecologically functional areas;
- 6. 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;
- 7. Avoid where possible, or minimize encroachment on or loss of Provincially Significant Wetlands (PSWs) and avoid impairment to wetland functions, including ecological function:
- 8. Avoid where possible, or minimize encroachment on or loss of all other evaluated and unevaluated wetlands:
- 9. Avoid where possible, or minimize encroachment on or loss of designated significant woodlands;
- 10. Avoid where possible, or minimize encroachment on or loss of other important woodlands:
- 11. Avoid where possible, or minimize encroachment on known groundwater recharge and discharge areas; as well as identified wellhead and source protection areas and areas susceptible to groundwater contamination;
- 12. 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
- 13. Avoid where possible, or minimize encroachment on loss of, or impairment of ecological function to special spaces (including recreational activity zones).

Principle 2: Minimize impacts to existing and planned (approved under the Planning Act) population and employment areas

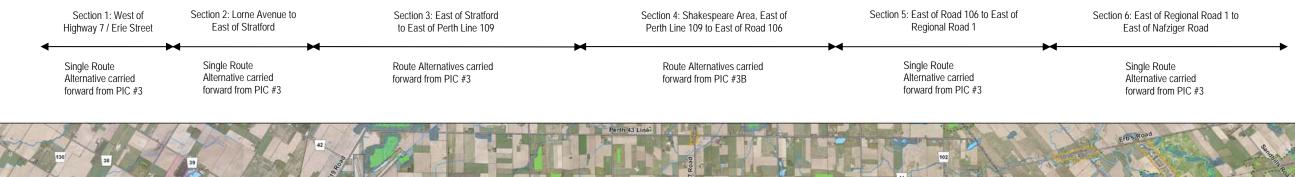
- 1. Maximize separation distance from sensitive receptor locations;
- 2. Avoid where possible or minimize encroachment on, or loss of developed properties;
- 3. Minimize access impacts;
- 4. Maximize the access provided to major generators of economic activity;
- 5. Avoid where possible, or minimize encroachment on, or loss of prime agricultural areas and agricultural infrastructure;
- 6. Avoid where possible, or minimize encroachment on, or loss of mineral, petroleum and mineral aggregate resources;
- 7. Avoid operating and "non-operating" waste disposal sites; and
- 8. Avoid where possible, minimize encroachment on, or loss of known archaeological sites/built heritage features/cultural heritage landscape areas of extreme significance.

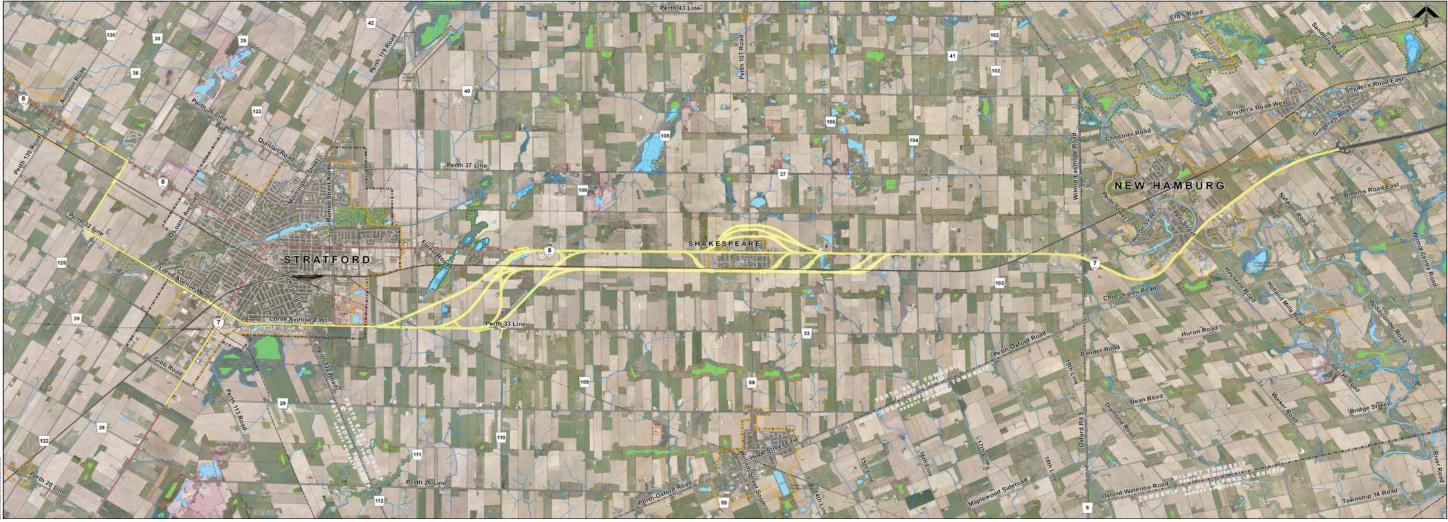
Principle 3: Transportation service criteria

- 1. Generate alternatives that are efficient and direct, while meeting standards for design; and
- 2. Select alternatives that address the transportation problems and transportation opportunities.

The Study Area was divided into six sections for the generation of provincial roadway detailed planning (route) alternatives. The alternatives which were generated for the various segments of the preferred corridor and the associated rationale for their generation are described below. The detailed planning alternatives are illustrated on **Exhibit 3.1**. These alternatives were reviewed with stakeholders, agencies and the public through the outreach and consultation process, with modifications / refinements made to the alternatives where warranted to generate a final set of detailed planning alternatives to be evaluated.

Exhibit 3.1: Map of Route Alternatives





3.2.1 West of Highway 7 / Erie Street

West of Highway 7 / Erie Street, a single route alternative was identified for this corridor segment, with the following geometric improvement alternatives developed for the connections between Perth Line 32 and Road 125 and Road 125 and Highway 8, recognizing that these connections could be accommodated through a series of right and left turns or through the introduction of curves to provide a free flow condition:

- Alternative 1: Retain existing condition (i.e. intersections at Perth Line 32 and Road 125 and Road 125 and Highway 8)
- Alternative 2: Provide R-420 m radii at Perth Line 32/Road 125 and Road 125/Highway 8 intersections and associated road connections
- Alternative 3: Provide R-650 m radii at Perth Line 32/Road 125 and Road 125/Highway 8 intersections and associated road connections
- Alternative 4: Provide R-1200 m radii at Perth Line 32/Road 125 and Road 125/Highway 8 intersections and associated road connections

In response to comments received through the PIC #3 and #3B consultation processes, the connections between Perth Line 32 and Road 125 and Road 125 and Highway 8 will be reviewed, modified as appropriate subject to further discussions with stakeholders, and evaluated during the Preliminary Design phase as evaluation indicators for Preliminary Design alternatives are at a higher level of detail that better addresses concerns expressed by stakeholders.

3.2.2 Highway 7 / Erie Street to East of Stratford (Lorne Avenue)

The existing Lorne Avenue corridor width from Highway 7 / Erie Street to the east limit of Stratford is currently 30 m in width which can accommodate the proposed 4/5 lane cross section. Therefore, a single route alternative was identified for this corridor segment. Widening alternatives for this section will be developed and evaluated during the Preliminary Design phase as evaluation indicators for Preliminary Design alternatives are at a higher level of detail.

3.2.3 East of Stratford to East of Perth Line 109

From the east limit of Stratford to east of Perth Line 109, four new route alternatives (as illustrated in **Exhibit 3.1** and the plan in **Appendix A**) were generated to connect the Lorne Avenue corridor to the existing Highway 7&8 corridor or a new route south of the existing railway corridor as follows:

- Alternative 1: Situated along the west side of the preferred corridor
- Alternative 2: Situated west of Road 110
- Alternative 3: Uses a segment of Road 110
- Alternative 4: Situated along the east side of the municipal drain east of Road 110

3.2.4 East Limit of Perth Line 109 to East of Road 106

From east of Perth Line 109 to east of Road 106, in response to comments received through the PIC #3 consultation process and input received through the Shakespeare Community Workshops, a broader range of route alternatives (as illustrated in **Exhibit 3.1** and the plan in **Appendix B**) was generated for the Shakespeare area as follows:

- Four highway bypass route alternatives north of the existing Highway 7&8 corridor that connect back to Highway 7&8 west and east of the hamlet;
- Four highway bypass route alternatives south of the existing Highway 7&8 corridor that connect back to Highway 7&8 or a new route south of the existing railway corridor west of the hamlet and to Highway 7&8 east of the hamlet; and
- Highway route alternative that involve highway widening within the existing and/or expanded Highway 7&8 corridor (that is, making use of the existing corridor).

3.2.5 East of Road 106 to East of Regional Road 1

From east of Road 106 to east of Regional Road 1, a single route alternative and several widening alternatives were identified for this segment of the corridor. Widening alternatives for this section will be further developed and evaluated during the Preliminary Design phase as evaluation indicators for Preliminary Design alternatives are at a higher level of detail.

3.2.6 East of Regional Road 1 to East of Nafziger Road

From east of Regional Road 1 to east of Nafziger Road, a single route alternative was identified for this segment of the corridor. The existing 4-lane cross section through the New Hamburg area can accommodate the projected 2031 traffic demands. However, there will be capacity deficiencies at the at-grade intersections. Furthermore, median barrier is required to separate the opposing lanes of traffic (i.e. the eastbound and the westbound traffic) for safety reasons.

Widening and crossing road connection alternatives for this section will be further developed and evaluated during the Preliminary Design phase as evaluation indicators for Preliminary Design alternatives are at a higher level of detail.

3.3 Process for Assessment and Evaluation of Detailed Planning Alternatives and Selection of the Preferred Detailed Planning Alternatives

The Study Area was divided into six sections for the generation, assessment and evaluation of route alternatives. For the following four sections, a single route alternative was identified and hence was not subject to the reasoned argument and arithmetic evaluation methods:

- Section 1: West of Highway 7 / Erie Street
- Section 2: Highway 7 / Erie Street to East of Stratford (Lorne Avenue)
- Section 5: East of Road 106 to East of Regional Road 1
- Section 6: East of Regional Road 1 to East of Nafziger Road

For the remaining two sections where multiple route alternatives were identified, specifically Sections 3 and 4 encompassing the area east of Stratford and in the vicinity of Shakespeare, the assessment and evaluation of route alternatives was undertaken using the reasoned argument and arithmetic evaluation methods. The assessment and evaluation was undertaken in steps as follows:

- For Section 3 (east of Stratford):
 - Route alternatives connecting to new route alternative south of railway corridor evaluated to identify preferred alternative
 - Route alternatives connecting to existing Highway 7&8 evaluated to identify preferred alternative
- For Section 4 (Shakespeare area):
 - o North by-pass route alternatives evaluated to identify preferred alternative
 - South by-pass route alternatives east of Shakespeare evaluated to identify preferred alternative
 - o Preferred north and south by-pass alternatives and the existing Highway 7&8 alternative evaluated to identify preferred route alternative for Shakespeare Area

Exhibit 3.2 provides the environmental and transportation factors, sub-factors, criteria and indicators which were considered for the assessment and evaluation of route alternatives. The sub-factors, criteria and indicators were refined / modified in part based on local information provided by stakeholders through the consultation process.

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

The first stage (assessment) entailed the identification of advantages and disadvantages of the various alternatives under consideration. At this stage, environmental features were examined to determine the extent of impact. Net impacts were 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 was the evaluation itself. This stage built upon the information obtained from the impact assessment stage and involved 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.

Two evaluation approaches were used to assist in the selection of route alternatives. The Reasoned Argument (or Trade-off) method was the primary tool used to identify a preferred alternative while the Arithmetic (weighting-scoring) method was the secondary tool, used to validate the results of the reasoned argument method.

The Reasoned Argument (trade-off) evaluation component provides 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. It 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 is 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 was derived from the following sources:

- government legislation, policies and guidelines;
- municipal policy (i.e. Official Plans);
- issues and concerns identified by ministries, agencies and the municipalities during the course of this study as well as issues and concerns identified by interest groups and the general public during the study; and
- study team expertise.

The Arithmetic evaluation provides a means to compare the alternative methods based on a numerical scaling with initial weights assigned the study team. A numerical approach is a good sensitivity analysis tool to determine if the conclusions of the reasoned argument approach are valid and appropriate.

The arithmetic evaluation method incorporates 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 were 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 were compared to determine the preferred alternative.

- 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.

The Arithmetic evaluation results were reviewed and compared to the results of the Reasoned Argument method to ensure the rationale supporting the trade-off decisions were valid and appropriate.

Exhibit 3.2: Evaluation Factors, Sub-factors, Criteria and Indicators for Assessment and Evaluation of Detailed Planning Alternatives

FACTOR / SUB-FACTOR	CRITERIA	INDICATORS FOR DETAILED PLANNING FOR PROVINCIAL ROADWAYS	RATIONALE FOR FACTOR AND SUB-FACTOR EVALUATION
1. Natural Environmental Facto	ors		
1.1 Fisheries and Aquatic Ecosystems	1.1.1 Fish Habitat	Potential and significance of: • encroachment, severance, displacement; • long-term alteration/disruption as applicable to the following: • critical fish habitat features • riparian areas • habitat rehabilitation goals	 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. 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. 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
	1.1.2 Fish Community	Potential and significance of:	 on their ecological functions. 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. 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. Subsection 36(3) of the Fisheries Act prohibits the deposit of a deleterious substance, directly or indirectly, into waters frequented by fish.
1.2 Terrestrial Ecosystems	1.2.1 Wildlife	Potential and significance of:	 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. The presence of species identified by COSEWIC and COSSARO as vulnerable, threatened or endangered (VTE) requires consideration in the 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. 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. 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. 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. The Canadian F
	1.2.2 Wetlands	Potential and significance of:	 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. 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 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).
	1.2.3 Forests (e.g. woodlands [forest stands, woodlots and interior forest habitat] and significant valley lands [valley and stream corridors])	Potential and significance of: • encroachment, severance, displacement; • long-term alteration/disruption as applicable to the following: • significant woodlands/valley lands • forest management/research program areas	 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. 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. The study area is located within the Carolinian Zone and may have important representations of Carolinian species assemblages. These natural heritage areas require protection.

Exhibit 3.2: Evaluation Factors, Sub-factors, Criteria and Indicators for Assessment and Evaluation of Detailed Planning Alternatives

FACTOR / SUB-FACTOR	CRITERIA	INDICATORS FOR DETAILED PLANNING FOR PROVINCIAL ROADWAYS	RATIONALE FOR FACTOR AND SUB-FACTOR EVALUATION
	1.2.4 Vegetation	Potential and significance of:	Small degraded, isolated remnant woodlots and wetlands can have ecological value. Large natural and relatively undisturbed features have high ecological sensitivity and value.
	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 and significance of: • encroachment, severance, displacement; • long-term alteration/ disruption; • change in area character/ aesthetics; • nuisance impacts; • change to access / travel time; • change to facilities / utilities / services. to designated/special areas.	 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. Important habitat areas, that may not be associated with other features protected by other means (ANSIs, ESAs, PSWs), require consideration during the generation and evaluation of alternatives. These areas may be of local or regional significance to wildlife that is not necessarily at risk. Other areas may be identified as important habitat for wildlife species requiring larger habitat blocks or with specialized habitat requirements. The assessment should have regard for PPS Policy 2.1.4 which states that development and site alteration shall not be permitted in certain listed significant wetlands, woodlands, valleylands, wildlife habitat and areas of natural and scientific interest. Development and site alteration may be permitted in significant wildlife habitat if it can be demonstrated that there will be no negative impacts on the natural features or functions for which the area is identified. 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. 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. PPS Policy 2
1.3 Groundwater	1.3.1 Areas of Ground water 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	 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. 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
	1.3.2 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	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.
	1.3.3 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	contamination and/or interference should be avoided/infinimized to the extent possible.
	1.3.4 Private Wells	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-Sensitive Ecosystems (e.g. groundwater fed wetlands, coldwater streams)	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 and significance of: • encroachment, severance, displacement; • long-term alteration/ disruption. as applicable to the following: • watercourse crossings (permanent, intermittent and ephemeral) • floodplain or meander belts • riparian areas • sensitive headwater areas • watershed and subwatershed management plans	 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. MTO is required to comply with the requirements of the Drainage Act.
	1.4.2 Surface Water Quality and Quantity	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	

Exhibit 3.2: Evaluation Factors, Sub-factors, Criteria and Indicators for Assessment and Evaluation of Detailed Planning Alternatives

FACTOR / SUB-FACTOR	CRITERIA	INDICATORS FOR DETAILED PLANNING FOR PROVINCIAL ROADWAYS	RATIONALE FOR FACTOR AND SUB-FACTOR EVALUATION
2. Land Use / Socio-Economic En	i de la companya de		
2.1 Land Use Planning Policies, Goals, Objectives	2.1.1 First Nations Land Claims	Potential and significance of encroachment, severance, displacement to areas for which there are First Nations outstanding land claims	 It is important that First Nations People's land claims within the Analysis Area are documented The Ontario Provincial Policy Statement notes that long-term prosperity and social well-being of Ontarians depends on maintaining strong communities, a clean and
	2.1.2 Provincial/Federal land use planning policies/goals/objectives	Degree of compatibility with federal/provincial land use policies/goals/ objectives	healthy environment and a strong economy. Transportation facilities play a key role in achieving these objectives. • 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.
	NOTES:		• The Greenbelt Plan notes that infrastructure is important to economic well-being, human health and quality of life in southern Ontario and the Greenbelt.
	PPS Policy 1.6.6.4 stipulates that when planning for corridors for significant transportation facilities, consideration will be given to significant natural heritage, water, agricultural, mineral, cultural heritage and archaeological resources.		 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 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.
	PPS Policy 2.3 requires prime agricultural areas be protected for long-term use. Prime agricultural areas include specialty crop areas and Classes 1, 2, and 3 soils in this order of priority.		
	2.1.3 Municipal (regional and local) land use planning policies/ goals/objectives (Official Plans)	Degree of compatibility with municipal Official Plans	
	2.1.4 Development Objectives of Private Property Owners	Potential to isolate property from current/future urban envelope Impact on future land use	
2.2 Land Use / Community	2.2.1 First Nation Reserves	Potential and significance of: • encroachment, severance, displacement; • long-term alteration / disruption; • change in area character / aesthetics; • nuisance impacts; • change to access / travel time.	 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 Property takings / displacements and changes / effects on local access have a significant impact on owners and tenants as well as the broader community. 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. Disruption or displacement of institutional features may adversely affect the users of these features / facilities and the broader community.
		to First Nation Reserves	
	2.2.2 First Nations' Sacred Grounds	Potential and significance of: • encroachment, severance, displacement; • long-term alteration / disruption; • change in area character / aesthetics; • nuisance impacts; • change to access / travel time.	
		to First Nations' sacred grounds	
	2.2.3 Urban and Rural Residential	Potential and significance of: encroachment, severance, displacement, property acquisition; long-term alteration / disruption (e.g. loss of parking area); change in area character / aesthetics (e.g. loss of trees / garden area); nuisance impacts (e.g. intrusion of highway into current residential envelope); change to access / travel time; change to facilities / utilities / services; interference with residential community cohesion; change to highway operational impacts (e.g. snow storage and highway access visibility).	
L		to urban and rural residential areas (residents [owners/tenants] and community groups).	

Exhibit 3.2: Evaluation Factors, Sub-factors, Criteria and Indicators for Assessment and Evaluation of Detailed Planning Alternatives

FACTOR / SUB-FACTOR	CRITERIA	INDICATORS FOR DETAILED PLANNING FOR PROVINCIAL ROADWAYS	RATIONALE FOR FACTOR AND SUB-FACTOR EVALUATION
	2.2.4 Commercial/Industrial	Potential and significance of: • encroachment, severance, displacement, property acquisition; • long-term alteration / disruption; • change in area character / aesthetics; • nuisance impacts; • change to access / travel time; • change to facilities / utilities / services; • interference with residential community cohesion; • change to highway operational impacts (e.g. customer parking, cargo loading/off-loading) to commercial and industrial areas (business owners/tenants and customers).	
	2.2.5 Tourist Areas and Attractions	Potential and significance of:	
	(e.g. museums, theatres, etc.)	 encroachment, severance, displacement, property acquisition; long-term alteration / disruption; change in area character / aesthetics; nuisance impacts; change to access / travel time; change to facilities / utilities / services; loss of "critical mass" in number of signature business attractions (e.g. number of antique shops). 	
		to tourist areas and attractions.	
2.2 Land Use / Community	2.2.6 Community Facilities / Institutions	Potential and significance of: • encroachment, severance, displacement, property acquisition;	
	(e.g. hospitals, schools, places of worship, unique community features)	 long-term alteration / disruption; change in area character/ aesthetics; nuisance impacts; change to access / travel time; change to facilities / vitilities / services; change to ease and safety of pedestrian movements across the highway and within the highway right-of-way; change to highway operation impacts to current use (e.g. highway noise and vibration interfering with church services). 	
		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)	Potential and significance of: • encroachment, severance, displacement; • long-term alteration / disruption; • change to access / travel time; • change to facilities / utilities / services.	
	2.2.8 Downtown Historic Crossroads Function	to municipal infrastructure and public service facilities. Potential and significance of interference by long-distance through traffic on: • "main street" function and structure; • Character / aesthetics; • change to ease and safety of pedestrian movements across the highway and within the highway right-of-way; • change to on-street parking.	
2.3 Noise Sensitive Areas (NSAs)	2.3.1 Highway Noise	in the historic downtown area. Potential for significant traffic noise increases in NSAs and for noise-sensitive receivers	The Ontario Ministry of the Environment (MOE) has published Noise Pollution Control (NPC) and Land Use (LU) planning guidelines. These MOE documents
(residential areas and sensitive institutional uses)	2.3.1 Filgilway Ivoise	immediately adjacent to the highway.	 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. MOE/MTO Noise Protocol requires that highway noise be considered in all Provincial (MTO) Transportation projects
	2.3.2 Construction Noise	Not considered until the Preliminary Design phase	 The MOE/MTO Noise Protocol requires that construction noise be addressed on MTO construction projects Construction noise may be subject to municipal (I.e., local) noise by-law

Exhibit 3.2: Evaluation Factors, Sub-factors, Criteria and Indicators for Assessment and Evaluation of Detailed Planning Alternatives

FACTOR / SUB-FACTOR	CRITERIA	INDICATORS FOR DETAILED PLANNING FOR PROVINCIAL ROADWAYS	RATIONALE FOR FACTOR AND SUB-FACTOR EVALUATION
2.4 Agriculture	2.4.1 Agriculture - Canada Land Inventory Class 1,2,3 Land	Potential and significance of encroachment, severance of Canada Land Inventory Class 1, 2 and 3 soils	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
	2.4.2 Agricultural - Farm Infrastructure	Potential and significance of:	 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. Ontario Ministry of Agriculture and Food (OMAF) has provincial guidelines for protection of prime agricultural lands as well as agricultural structures or infrastructure, including the Nutrient Management Act.
		to farm infrastructure (field tile drainage systems/outlets, irrigation systems, barns / silos/ structures, etc.	
	2.4.3 Agriculture – Operations on Individual Farms	Potential and significance of: • encroachment, severance, displacement; • long-term alteration/ disruption; • nuisance impacts;	
		to in-farm field operations (planting, harvesting, grazing, nutrient management, etc.) as applicable to the following: • Specialty crops/cropland • Dairy/livestock operations • Field crop operations • High investment agricultural operations • Established agricultural farm communities	
	2.4.4 Agriculture – Transportation Linkages between Integrated Agricultural Business Units	Potential to sever/disrupt transportation linkages between integrated agricultural business units (movement between integrated agricultural business units of equipment, materials, workers, etc.)	
2.5 Land Use / Resources	2.5.1 First Nations People's Treaty Rights or Use of Land and Resources for Traditional Purposes (e.g. hunting, fishing, harvesting of country foods, harvesting of medicinal	Potential and significance of: • encroachment, severance, displacement; • long-term alteration / disruption; • nuisance impacts; • change to access / travel time.	 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 Planning of transportation facilities must address First Nations People's treaty rights, and be conducted in accordance with Ontario's New Approach to Aboriginal Affairs (Spring 2005) and the Grand River Notification Agreement
	plants)	to First Nations' treaty rights or use of land and resources for traditional purposes	
	2.5.2 Parks and Recreational Areas (e.g. national/provincial parks, conservation areas, municipal parks, public spaces, golf courses, trails, greenways and open space linkages)	Potential and significance of: • encroachment, severance, displacement, property acquisition; • long-term alteration / disruption; • change in area character / aesthetics; • nuisance impacts; • change to access / travel time; • change to facilities / utilities / services.	• 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.
		to parks and recreational areas.	
	2.5.3 Aggregates, Mineral-Resources	Potential and significance of: • encroachment, severance, displacement, property acquisition; • long-term alteration / disruption; • change to access / travel time; • change to facilities / utilities / services. to current/future extraction of aggregate and mineral resources.	 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. Sections 2.4 and 2.5 of the Provincial Policy Statement have the objective of protecting mineral and aggregate resources for the long term. The policy statement makes provisions for the protection of both known deposits and areas of potential. MTO adheres to requirements of the Aggregates Act to protect aggregate resources while minimizing sterilization of mineral aggregate resources as much as possible.
2.6 Major Utility Transmission Corrid	lors	Potential and significance of:	Utility corridors are subject to regulations from owners and governing authorities for operation of utilities including National Energy Board, Ontario Energy Board,
(e.g. railroads, hydro, gas, oil)		 encroachment, severance, displacement; long-term alteration / disruption; change to access / travel time; change to facilities / utilities / services. 	Transport Canada, Railway Safety Act, etc.
		to major utility transmission corridors.	

Exhibit 3.2: Evaluation Factors, Sub-factors, Criteria and Indicators for Assessment and Evaluation of Detailed Planning Alternatives

FACTOR / SUB-FACTOR	CRITERIA	INDICATORS FOR DETAILED PLANNING FOR PROVINCIAL ROADWAYS	RATIONALE FOR FACTOR AND SUB-FACTOR EVALUATION
2.7 Contaminated Property and Waste Management (e.g. Landfills, Hazardous Waste Sites, "Brownfield" Areas, other known contaminated sites, and high-risk contamination areas)		Potential and significance of:	 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. 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. Appropriate assessments will be carried on these sites and the project will comply with the appropriate.
2.8 Landscape Composition	2.8.1 Scenic Composition (total aesthetic value of landscape components) 2.8.2 Sensitive Viewer Groups 2.8.3 Scenic value of views/vistas from the transportation facility 2.8.4 Specimen Trees	Potential and significance of change to scenic composition (total aesthetic value of landscape components). Potential and significance of change vistas/outlooks for sensitive viewer groups. Potential and significance of views/vistas from the transportation facility. Not considered until the Preliminary Design phase	Visual impacts on adjacent land use and effects on the visual experiences for users of the facility will be considered.
2.9 Air Quality	2.9.1 Regional Air Quality and Total Contaminant and Greenhouse Gas Emissions 2.9.2 Local Air Quality and Sensitive Receptors to Air Pollutants	Not considered until the Freimmary Design phase Not considered after the Preliminary Planning Phase Presence and potential for impacts to sensitive receptors to air pollutants and greenhouse gas emissions, including consideration of number of sensitive receptors immediately adjacent to the highway	 Air Quality impacts have the potential to affect human health. Alternatives through or near urban areas create the potential for increased contaminant levels. Dust emissions associated with construction related activities could cause temporary air quality issues. Greenhouse gases contribute to global warming.
3. Cultural Environmental Fact			
3.1 Cultural Heritage – Built Heritage and Cultural Landscapes	3.1.1 Buildings or "Standing" Sites of Architectural or Heritage Significance or Ontario Heritage Foundation Easement Properties 3.1.2 Heritage Bridges 3.1.3 Areas of Historic 19 th Century Settlement	Potential and significance of:	 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. Impacts to built heritage features should be avoided to the extent possible, or as a secondary alternative relocation rather than demolition could be considered. MTO is required to operate in accordance with Ontario Heritage Act MTO is required to operate in accordance with Ontario Heritage Act
	3.1.4 Cultural Heritage Landscapes	to areas of historic 19 th century settlement. Potential and significance of change to composition of cultural landscapes.	
	(collection of individual man-made features modifying pristine landscape)		
3.1.5 First Nations' Burial Sites Potential and significance of: encroachment, severance, displacement; long-term alteration/ disruption; change in area character / aesthetics; nuisance impacts; change to access / travel time. to First Nations' burial sites.			
	3.1.6 Cemeteries	Potential and significance of: • encroachment, severance, displacement; • long-term alteration / disruption; • change in area character / aesthetics;	

Exhibit 3.2: Evaluation Factors, Sub-factors, Criteria and Indicators for Assessment and Evaluation of Detailed Planning Alternatives

FACTOR / SUB-FACTOR	CRITERIA	INDICATORS FOR DETAILED PLANNING FOR PROVINCIAL ROADWAYS	RATIONALE FOR FACTOR AND SUB-FACTOR EVALUATION
		 nuisance impacts; change to access / travel time; change to facilities / utilities / services. 	
		to cemeteries.	
3.2 Cultural Heritage – Archaeology	3.2.1 Pre-Historic and Historic First Nations Sites	Potential for destruction or disturbance of pre-historic and historic First Nations archaeological sites of extreme local, provincial or national interest	 Disturbance or destruction of certain archaeological sites of extreme local, provincial or national interest represents a significant cultural loss. Impacts to archaeological resources/sites should be avoided or minimized to the extent possible.
	3.2.2 Historic Euro-Canadian Archaeological Sites	Potential for destruction or disturbance of historic Euro-Canadian archaeological sites of extreme local, provincial or national interest	Significant archaeological sites shall be preserved and avoided in accordance with Ontario Ministry of Culture (OMC), and Aborignal People's policies and procedures, and all others shall be excavated to OMC standards
4. Area Economy – Previously	addressed during Needs Assessme	ent Phase	
5. Transportation Factors			
5.1 Area Transportation System Capacity and Efficiency	5.1 Federal/Provincial/Municipal transportation planning policies/goals/objectives	Previously considered during the Preliminary Planning phase	 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. The effectiveness of each alternative needs to be determined.
	5.2 Efficient movement of people	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	 There is a need to determine how transportation solutions address future needs in relation to existing and proposed future transportation infrastructure. There is a need to determine how well transportation solutions operate during peak periods. Transportation agencies have developed design standards to ensure that safety objectives are reflected in all new/expanded infrastructure. These standards are not
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) subject to modification or compromise to avoid/reduce impacts, costs, etc. Goods movement between economic centres and growth areas incurs out-of-way travel and detimes, out-of-way travel and improving travel time reliability would lead to lower transportation.	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.		
5.2 System reliability / redundancy		Potential to support system reliability and redundancy for travel (people and goods) between regions and communities during adverse conditions	 There is a need to determine how well transportation solutions operate during peak periods. There is a need to determine emergency access and safety issues related to transportation solutions. There is a need to determine the flexibility of transportation solutions to address future needs beyond the forecasted planning horizon.
5.3 Safety	5.3.1 Traffic 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	 Physical conditions and staging issues can affect the feasibility of implementing transportation solutions. There is the need identify the costs associated with possible transportation solutions. Construction costs can influence the feasibility of a given alternative
	5.3.2 Emergency Access	Potential to support emergency access to/from existing and/or new provincial facilities.	
	5.3.3 Pedestrian, Cyclist and Snowmobile Safety within the highway right-of-way	Potential and significance of change to ease and safety of movement across the highway and within the right-of-way	
5.4 Mobility and Access	5.4.1 Modal integration, balance and efficiency	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 on potential to provide higher order transit service.	
	5.4.2 Linkages to Population and Employment Centres	Potential to improve linkages to population and employment centres for people and goods movement	
	5.4.3 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)	
	5.4.4 Accommodate mobility of pedestrians, cyclists and snowmobiles	Potential to accommodate mobility of pedestrians, cyclists within critical travel corridors in urbanized areas and snowmobiles in recognized rural trails	
5.5 Network Compatibility	5.5.1 Network Connectivity	Potential to improve transportation system connectivity within and to/from the analysis area	
	5.5.2 Flexibility for Future Expansion	Potential to address future transportation needs beyond the forecasted planning horizon	
5.6 Engineering	5.6.1 Constructability	Potential ease of implementation considering feasibility/difficulty of physical, property or environmental constraints	
	5.6.2 Compliance with Design Criteria	Conformity to applicable provincial safety and design standards	
5.7 Traffic Operations		Potential for negative impact on traffic operations due to factors such as design features, private access, and transportation network connections	
5.8 Construction Cost (excludes propert	y costs and engineering costs)	Relative road construction cost, excluding property and engineering costs	
NOTES:	Information to support the evaluation are e	enhanced by field investigation work as appropriate (the environmental information is docume	ented in Report "F" – 2 nd Part)

4.0 ASSESSMENT AND EVALUATION OF DETAILED PLANNING (ROUTE) ALTERNATIVES AND SELECTION OF PREFERRED DETAILED PLANNING (ROUTE) ALTERNATIVE

The assessment and evaluation of the detailed planning (route) alternatives and the selection of the preferred route alternative was undertaken in accordance with the process described in **Section 3.3** using the environmental and transportation factors, sub-factors, criteria and indicators provided in **Exhibit 3.2**.

4.1 Assessment and Evaluation of Detailed Planning (Route) Alternatives

The Study Area was divided into six sections for the generation, assessment and evaluation of route alternatives. As was indicated in **Section 3.3** of this report, a single route alternative was identified for the following four sections, and hence was not subject to the reasoned argument and arithmetic evaluation methods:

- Section 1: West of Highway 7 / Erie Street
- Section 2: Highway 7 / Erie Street to East of Stratford (Lorne Avenue)
- Section 5: East of Road 106 to East of Regional Road 1
- Section 6: East of Regional Road 1 to East of Nafziger Road

For the remaining two sections where multiple route alternatives were identified, specifically Sections 3 and 4 encompassing the area east of Stratford and in the vicinity of Shakespeare, the assessment and evaluation of route alternatives was undertaken using the reasoned argument and arithmetic evaluation methods. The assessment and evaluation was undertaken in steps as follows:

- For Section 3 (east of Stratford):
 - o Route alternatives connecting to new route alternative south of railway corridor evaluated to identify preferred alternative
 - o Route alternatives connecting to existing Highway 7&8 evaluated to identify preferred alternative
- For Section 4 (Shakespeare area):
 - o North by-pass route alternatives evaluated to identify preferred alternative
 - South by-pass route alternatives east of Shakespeare evaluated to identify preferred alternative
 - o Preferred north and south by-pass alternatives and the existing Highway 7&8 alternative evaluated to identify preferred route alternative for Shakespeare Area

Each alternative was assessed and evaluated as follows:

• A qualitative assessment (high, medium or low) of potential impact for each of the natural environment, land use/social environment, and cultural environment criteria

identified in **Exhibit 3.2** was made based on the environmental information provided in Report F – Part 1, Report F – Part 2 and input provided from stakeholders through the consultation process.

- A qualitative assessment (high, medium or low) of the potential to support each of the transportation criteria identified in **Exhibit 3.2**.
- A brief rationale for each of these high-medium-low qualitative assessments was provided.
- A summary evaluation of each route alternative was made (most preferred route, or moderately preferred route, or least preferred route) for each factor group (natural environment, land use/social environment, cultural environment, and transportation).

The reasoned argument and arithmetic assessment and evaluation results for the Section 3 and Section 4 route alternatives are documented in the tables in **Appendix A** and **Appendix B**, with the preferred alternative for each step of the evaluation process summarized below:

- Section 3: Route alternatives east of Stratford connecting to new route south of railway corridor
 - o Preferred Alternative: Perth Road 33 to west of Road 110, new alignment on east side of Central municipal drain to south side of railway corridor
- Section 3: Route alternatives east of Stratford connecting to existing Highway 7&8
 - Preferred Alternative: Perth Road 33 to west of Road 110, new alignment on east side of Central municipal drain connecting to existing Highway 7&8 corridor east of Road 110
- Section 4: Shakespeare South By-Pass Alternatives
 - Preferred Alternative: New alignment on south side of railway corridor connecting to existing Highway 7&8 west of Road 106
- Section 4: Shakespeare North By-Pass Alternatives
 - o Preferred Alternative: Most northerly by-pass alternative
- Section 4: Best of Shakespeare North By-Pass, South By-Pass and Existing Route Alternatives
 - o Preferred Alternative: New alignment on south side of railway corridor to east of Shakespeare, connecting to existing Highway 7&8 west of Road 106

The assessment and evaluation results for Sections 3 and 4 were reviewed to ensure connectivity between the two sections. The preferred alternative east of Stratford was dependent in part on the preferred alternative for the Shakespeare area.

4.2 Selection of Preferred Detailed Planning (Route) Alternative

The selection of a preferred route alternative was undertaken as follows:

- A summary assessment and summary evaluation of each route alternative was made for each factor group (natural environment, land use/social environment, cultural environment, and transportation), based upon the information presented in the tables in **Appendix A** and **Appendix B**.
- An overall evaluation and a recommendation of which route alternative to select for each section of the Study Area was made, including the rationale (see below) for selecting one alternative over the others. This is also presented in the tables in **Appendix A** and **Appendix B**.

The rationale for selecting the preferred alternative included, in part, the following:

- government legislation, policies and guidelines;
- municipal policy (i.e. Official Plans);
- issues and concerns identified by ministries, agencies and the municipalities during the course of this study as well as issues and concerns identified by interest groups and the general public during the study; and
- study team expertise.

The Preferred Route alternative is presented in **Exhibit 4.1** and is described briefly below:

- Section 1: Existing Highway 8, Road 125, Lorne Avenue and Erie Street alignments west of Highway 7 / Erie Street
- Section 2: Existing Lorne Avenue alignment from Highway 7 / Erie Street to east of Stratford
- Section 3: Perth Road 33 to west of Road 110, new alignment on east side of Central municipal drain to south side of railway corridor
- Section 4: New alignment on south side of railway corridor to east of Shakespeare, connecting to existing Highway 7&8 west of Road 106
- Section 5: Existing Highway 7&8 alignment from west of Road 106 to east of Regional Road 1
- Section 6: Existing Highway 7&8 alignment from east of Regional Road 1 to east of Nafziger Road

The south bypass alternative which remains south of railway corridor west of Shakespeare is preferred for the following primary reasons:

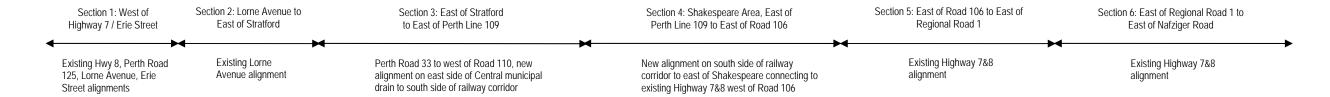
- Moderate potential to affect woodlots; low potential to affect other aspects of natural environment
- Lower potential to affect existing and future development in Shakespeare
- Avoids impacts to the Shakespeare downtown function and character
- Moderate potential to affect agricultural lands / operations
- Lower potential to affect cultural environment

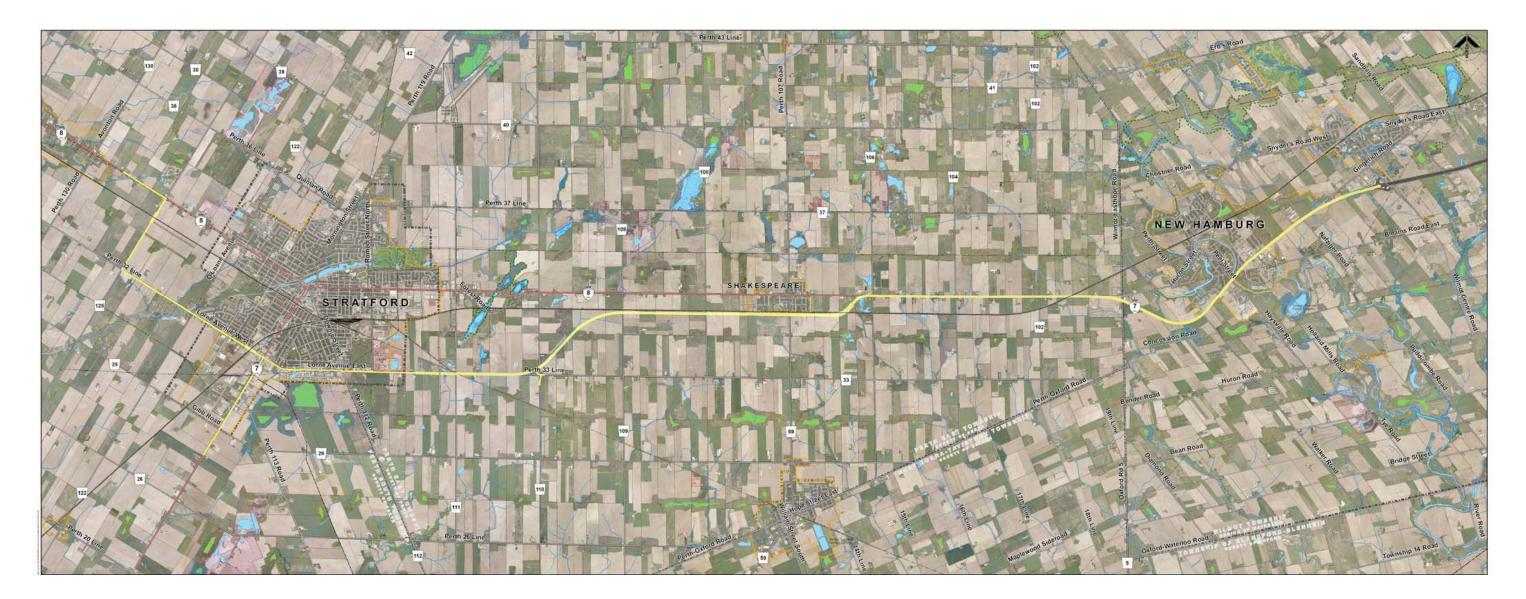
 High potential to support efficient movement of people and goods and improve traffic operations, traffic and pedestrian / cyclist safety, system reliability, mobility and accessibility, and network connectivity

Subject to stakeholder input received, the Project Team will refine the Preferred Route and the Study Area for the generation of Preliminary Design alternatives. As the study progresses, the study area limits may be refined or modified as required to accommodate any reasonable alternatives that may be developed.

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Exhibit 4.1: Map of Preferred Route Alternative





5.0 PROCESS AND CRITERIA FOR GENERATION OF PRELIMINARY DESIGN ALTERNATIVES

Preliminary design involves defining the preferred route alternative in greater detail, including:

- Horizontal and vertical alignments of the preferred route alternative
- Roadway cross section
- Right-of-way width / property requirements
- Crossing road connections (interchanges; grade separations; at-grade intersections)
- Shakespeare by-pass connection to Highway 7&8 east of Shakespeare
- Drainage requirements (watercourse crossings, municipal drainage / tile drainage modifications, and a preliminary stormwater management strategy)
- Roadway lighting requirements
- Environmental protection / mitigation measures

Preliminary Design alternatives will be generated when more than one method of implementing the proposed improvements is available with the objectives of capitalizing on transportation engineering opportunities, avoiding significant environmental features and/or minimizing design-related environmental impacts. Preliminary Design alternatives will be considered at a number of locations along the Preferred Route Alternative.

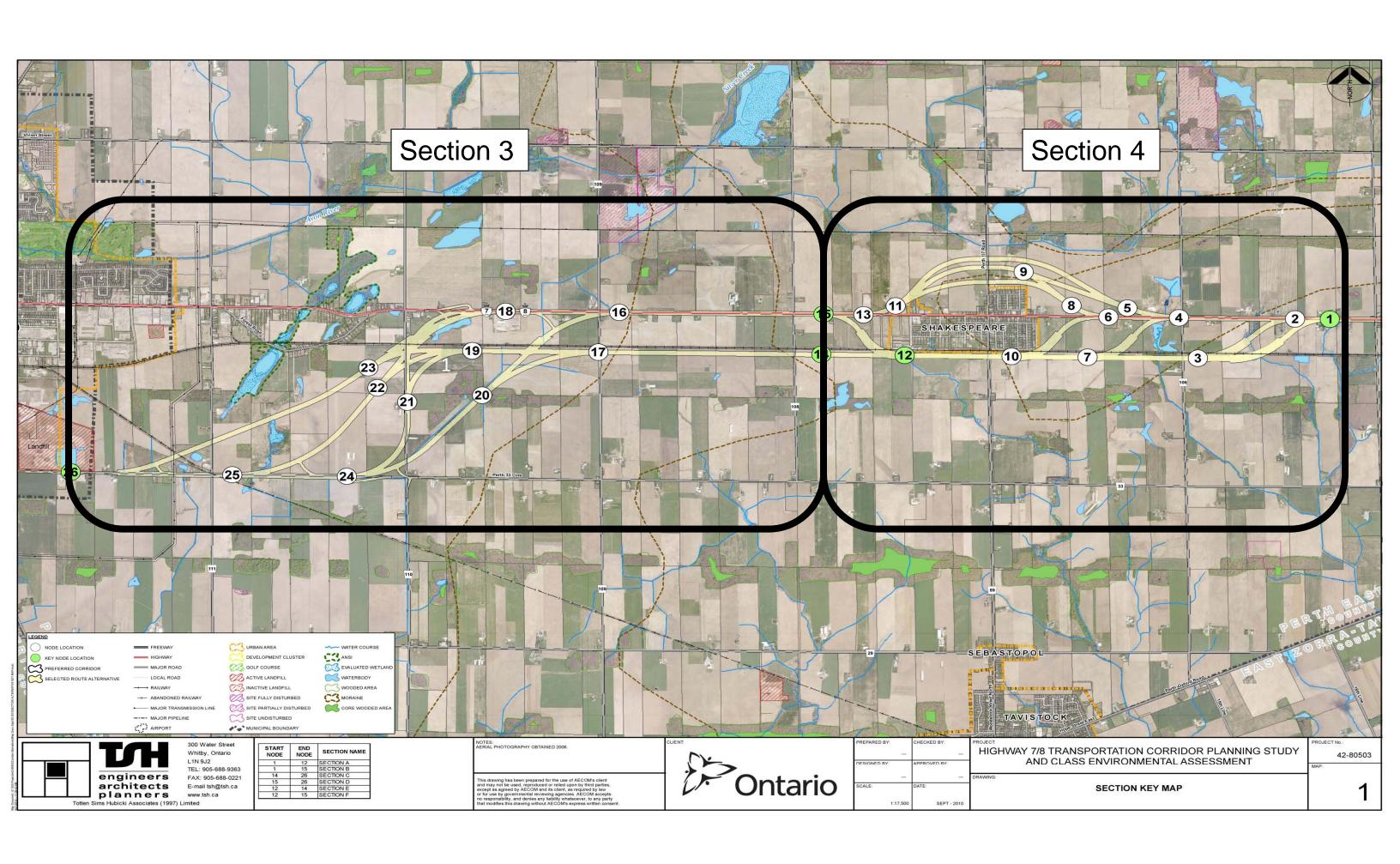
The following principles and the associated objectives and rationale described in **Section 3.2** will also apply to the generation of preliminary design alternatives to ensure not only that alternatives are efficient/direct and meet technical objectives/design requirements, but also minimize/avoid impacts to significant environmental and study area features to the extent possible.

- Principle 1: Minimize impacts to significant natural features, functions, systems and communities
- Principle 2: Minimize impacts to existing and planned (approved under the Planning Act) population and employment areas
- Principle 3: Transportation service criteria

6.0 SUMMARY OF INPUT RECEIVED ON DETAILED PLANNING ALTERNATIVES AND MTO RESPONSES AND CHANGES

In the final copy of this document, this section will provide a summary of comments and input received on the draft *Report H: Selection of Detailed Planning (Route) Alternatives for Provincial Roadways* during the public review period, as well as an explanation of how this feedback was addressed in the updated version of the report by MTO.

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APPENDIX A

ASSESSMENT AND EVALUATION TABLES FOR ROUTE ALTERNATIVES EAST OF STRATFORD



East of Stratford Route Alternatives

Alternatives connecting to existing Hwy 7&8 7 18 8 (16) 19 23 22 20 25) (24)

Alternatives connecting to new route alternative south of railway corridor

Highway 7&8 Transportation Corridor Planning and Class EA Study

EVALUATION OF ROUTE ALTERNATIVES

Note – Evaluation of the route alternatives is based on a qualitative assessment of each route (high, medium or low). Relevant and site-specific information for each criterion/cell is provided to justify the high, medium or low assessment.

			SEGMENT C – EAST OF STRATFORI	D, SOUTH OF RAILWAY CORRIDOR		
Factor				Route A	Iternative	
/ Sub- Factor	Criteria	Indicator for Route Selection	C1 14-17-20-24-25-26	C2 14-17-19-21-24-25-26	C3 14-17-19-22-25-26	C4 14-17-19-23-26
1. NATU	RAL ENVIRONMENT	AL FACTORS				
1.1 Fish	eries and Aquatic Ec	osystems				
	1.1.1 Fish Habitat	Potential and significance of:	Medium potential to affect fish and fish habitat Proposed alignment crosses 4 permanent unassigned tributaries and 1 remnant section of a permanent warmwater tributary of Trout Creek, Thames River Watershed.	Medium potential to affect fish and fish habitat Proposed alignment crosses 3 permanent unassigned tributaries and 1 remnant section of a permanent warmwater tributary of Trout Creek, Thames River Watershed.	Medium potential to affect fish and fish habitat Proposed alignment crosses 3 permanent unassigned tributaries and 1 remnant section of a permanent warmwater tributary of Trout Creek, Thames River Watershed.	 Medium potential to affect fish and fish habitat Proposed alignment crosses 3 permanent unassigned tributaries of Trout Creek, Thames River Watershed. A small section of unassigned wetland may also be impacted
	1.1.2 Fish Community	Potential and significance of:	 Watersned. Watercourses contain low to moderate quality habitat and directly support fish species Fish communities and habitats present are considered to be moderately resilient to disturbance and show evidence of historical channel alignments or modifications Fish movements are likely localized between feeding and spawning areas which are abundant within the reaches outside of the study area. There are no critical habitat types within reaches associated with the route. There are no SAR within the route Expected impacts include temporary disturbance to fish and fish habitat associated with construction, potential for short term impacts to water quality during construction. Impacts can be mitigated and/or compensated. 	 Watersned. Watercourses contain low quality habitat and may directly support warmwater fish species Fish communities and habitats present are considered to be moderately resilient to disturbance and show evidence of historical channel alignments or modifications Fish movements are already impacted by the existing rail line Feeding and spawning areas are abundant within the reaches outside of the study area. There are no critical habitat types within reaches associated with the route There are no SAR within the route Expected impacts include temporary disturbance to fish and fish habitat associated with construction, potential for short term impacts to water quality during construction. Impacts can be mitigated and/or compensated. 	 Watersned. Watercourses contain low quality habitat and may directly support warmwater fish species Fish communities and habitats present are considered to be moderately resilient to disturbance and show evidence of historical channel alignments or modifications Fish movements are already impacted by the existing rail line Feeding and spawning areas are abundant within the reaches outside of the study area. There are no critical habitat types within reaches associated with the route. There are no SAR within the route Expected impacts include temporary disturbance to fish and fish habitat associated with construction, potential for short term impacts to water quality during construction. Impacts can be mitigated and/or compensated. 	 Watercourses contain low quality habitat and may directly support warmwater fish species Fish communities and habitats present are considered to be moderately resilient to disturbance and show evidence of historical channel alignments or modifications Fish movements are already impacted by the existing rail line Feeding and spawning areas are abundant within the reaches outside of the study area. There are no critical habitat types within reaches associated with the route. There are no SAR within the route Expected impacts include temporary disturbance to fish and fish habitat associated with construction, potential for short term impacts to water quality during construction. Impacts can be mitigated and/or compensated.
1.2 Terr	estrial Ecosystems					
	1.2.1 Wildlife	Potential and significance of:	 Medium potential to affect wildlife and their habitat No special concern, endangered or threatened wildlife species No provincially rare species (S1 – S3) 2 area sensitive bird species recorded in study corridor 1 MNR area sensitive bird species 	 Medium potential to affect wildlife and their habitat No special concern, endangered or threatened wildlife species No provincially rare species (S1 – S3) 2 area sensitive bird species recorded in study corridor 1 MNR area sensitive bird species 	 Medium potential to affect wildlife and their habitat No special concern, endangered or threatened wildlife species No provincially rare species (S1 – S3) 3 area sensitive bird species recorded in study corridor 1 MNR area sensitive bird species 	 Low potential to affect wildlife and their habitat No special concern, endangered or threatened wildlife species No provincially rare species (S1 – S3) 1 frog species were recorded within the route, potential to disrupt habitat for these species

LEGEND

SELECTED CORRIDOR MOST PREFERRED MODERATELY PREFERRED LEAST PREFERRED **NO DIFFERENCE**

Note – Evaluation of the route alternatives is based on a qualitative assessment of each route (high, medium or low). Relevant and site-specific information for each criterion/cell is provided to justify the high, medium or low assessment.

SEGMENT C – EAST OF STRATFORD, SOUTH OF RAILWAY CORRIDOR

actor				Route A	ternative	
Sub- actor	Criteria	Indicator for Route Selection	C1 14-17-20-24-25-26	C2 14-17-19-21-24-25-26	C3 14-17-19-22-25-26	C4 14-17-19-23-26
		 critical wildlife habitat features ecologically functional areas such as connective corridors or travel ways for movement/migration important wildlife areas such as deeryards, heronries, waterfowl areas, important bird areas wildlife management, rehabilitation/research program sites interference with critical wildlife life stage processes (eg mating/rearing) etc 	 2 frog species were recorded within the route, potential to disrupt habitat for these species Route would bisect large track of forest, potential to impact important wildlife area 	2 frog species were recorded within the route, potential to disrupt habitat for these species	3 frog species were recorded within the route, potential to disrupt habitat for these species	
	1.2.2 Wetlands	Potential and significance of:	Low potential to affect wetlands No PSW or LSW are present within the route 3 unevaluated low-moderate quality wetlands	Low potential to affect wetlands No PSW or LSW are present within the route 2 unevaluated low-moderate quality wetlands	Medium potential to affect wetlands No PSW or LSW are present within the route 2 unevaluated low-moderate quality wetlands 1 unevaluated wetland/standing water body impacted	Medium potential to affect wetlands No PSW or LSW are present within the route 1 evaluated low-moderate quality wetlands 1 unevaluated wetland/standing water body impacted low-moderate quality
•	1.2.3 Forests	Potential and significance of:	Medium potential to affect significant or established woodlands of forests The route will require a significant removal of vegetation from 2 woodlands; the removal of this woodland would impact (reduce and/or remove) core interior forest habitat on both sides of the route Impact to these woodlands includes severance and edge effects 4 additional woodland units are impacted, these woodlands are relatively small Impacts to these woodlands include edge effects	Low potential to affect significant or established woodlands of forests • 4 woodland units are impacted; these woodlands are relatively small • Impacts to these woodlands include edge effects	Low potential to affect significant or established woodlands of forests • 4 woodland units are impacted; these woodlands are relatively small • Impacts to these woodlands include edge effects	Low potential to affect significant or established woodlands of forests • 3 relatively small woodland units are impacted • Impacts to these woodlands include edge effects
	1.2.4 Vegetation	Potential and significance of: • encroachment, severance, displacement; • long-term alteration / disruption as applicable to the following: • populations of vegetation species at risk	Medium potential to affect vegetation Route is predominantly existing roadway and agricultural field 1 Provincially Significant NHIC record found in database Impacts include severance and	Low potential to affect vegetation Route is predominantly existing roadway and agricultural field 1 provincially significant NHIC record found in database	Low potential to affect vegetation Route is predominantly existing roadway and agricultural field 1 provincially significant NHIC record found in database	Low potential to affect vegetation Route is predominantly existing roadway and agricultural field 1 provincially significant NHIC record found in database

MOST PREFERRED	MODERATELY PREFERRED	LEAST PREFERRED	NO DIFFERENCE	SELECTED CORRIDOR

Note	Note – Evaluation of the route alternatives is based on a qualitative assessment of each route (high, medium or low). Relevant and site-specific information for each criterion/cell is provided to justify the high, medium or low assessment.							
	SEGMENT C – EAST OF STRATFORD, SOUTH OF RAILWAY CORRIDOR							
Factor				Route Alternative				
/ Sub- Factor	Criteria	eria Indicator for Route Selection	C1 14-17-20-24-25-26	C2 14-17-19-21-24-25-26	C3 14-17-19-22-25-26	C4 14-17-19-23-26		
		(vulnerable, threatened or endangered species), species of conservation concern and significant regional/local flora/communities • areas/corridors supporting known populations of vegetation species at risk (vulnerable, threatened or endangered species), species of conservation concern and significant flora/communities • vegetation management, rehabilitation/research program sites	displacement of high forest habitat					
	1.2.5 Designated/ Special Areas	Potential and significance of: • encroachment, severance, displacement; • long-term alteration / disruption; • change in area character / aesthetics; • nuisance impacts; • change to access / travel time; • change to facilities / utilities / services.	Low potential to affect designated/special areas • Does not cross any ESA or ANSI	Low potential to affect designated/special areas Does not cross any ESA or ANSI	Low potential to affect designated/special areas Does not cross any ESA or ANSI	Low potential to affect designated/special areas Does not cross any ESA or ANSI		
400		to designated/special areas.						
1.3 Grou	ındwater	T	Te control of the					
	1.3.1 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	 Low potential to adversely affect volume of groundwater flow within recharge and discharge areas Surface runoff is interpreted to exceed infiltration for the majority of the route given the relatively impermeable nature of the glaciolacustrine and silty till deposits. However, in areas of sandy deposits, such as river crossings, higher infiltration can be expected. No temporary or long-term change to groundwater recharge or discharge is anticipated due to the small surface area affected by highway construction in the proposed corridor. 	 Low potential to adversely affect volume of groundwater flow within recharge and discharge areas Surface runoff is interpreted to exceed infiltration for the majority of the route given the relatively impermeable nature of the glaciolacustrine and silty till deposits. However, in areas of sandy deposits, such as river crossings, higher infiltration can be expected. No temporary or long-term change to groundwater recharge or discharge is anticipated due to the small surface area affected by highway construction in the proposed corridor. 	 Low potential to adversely affect volume of groundwater flow within recharge and discharge areas Surface runoff is interpreted to exceed infiltration for the majority of the route given the relatively impermeable nature of the glaciolacustrine and silty till deposits. However, in areas of sandy deposits, such as river crossings, higher infiltration can be expected. No temporary or long-term change to groundwater recharge or discharge is anticipated due to the small surface area affected by highway construction in the proposed corridor. 	 Low potential to adversely affect volume of groundwater flow within recharge and discharge areas Surface runoff is interpreted to exceed infiltration for the majority of the route given the relatively impermeable nature of the glaciolacustrine and silty till deposits. However, in areas of sandy deposits, such as river crossings, higher infiltration can be expected. No temporary or long-term change to groundwater recharge or discharge is anticipated due to the small surface area affected by highway construction in the proposed corridor. 		
	1.3.2 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	 Low potential to adversely affect groundwater wellhead protection area The route is located downgradient of the designated wellhead protection areas for Stratford. 	Low potential to adversely affect groundwater wellhead protection area The route is located downgradient of the designated wellhead protection areas for Stratford	Low potential to adversely affect groundwater wellhead protection area The route is located downgradient of the designated wellhead protection areas for Stratford	Low potential to adversely affect groundwater wellhead protection area The route is located downgradient of the designated wellhead protection areas for Stratford		

LEGEND

Note – Evaluation of the route alternatives is based on a qualitative assessment of each route (high, medium or low). Relevant and site-specific information for each criterion/cell is provided to justify the high, medium or low assessment.

SEGMENT C – EAST OF STRATFORD, SOUTH OF RAILWAY CORRIDOR

Factor				Route Al	ternative	
/ Sub- Factor	Criteria	Indicator for Route Selection	C1 14-17-20-24-25-26	C2 14-17-19-21-24-25-26	C3 14-17-19-22-25-26	C4 14-17-19-23-26
		compaction				
	1.3.3 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	 Low potential to adversely affect large volume wells The route is located downgradient of the large volume municipal wells for Stratford. 	Low potential to adversely affect large volume wells The route is located downgradient of the large volume municipal wells for Stratford.	 Low potential to adversely affect large volume wells The route is located downgradient of the large volume municipal wells for Stratford. 	Low potential to adversely affect large volume wells The route is located downgradient of the large volume municipal wells for Stratford.
	1.3.4 Private Wells	Potential and significance of alteration to private well use due to physical intrusion, or groundwater interception, draw-down, impoundment, obstruction and by soil compaction	Low potential to adversely affect private wells The route is in close proximity (<150 m) to a shallow dug well located immediately to the west of Road 111 along Lorne Avenue East. The dug well in this area is sensitive to surface contamination (i.e. road salt). The potential exists for long-term and short-term adverse effects to these wells due to their close proximity to the route. Mitigation measures to prevent adverse impact to these wells due to highway maintenance should be implemented, such as a road salt management plan. All other private wells along the route obtain water supply from the deep confined bedrock aquifer. Five of these deep bedrock wells are located in close proximity (<50 m) to the edge of the proposed route. Depending on further well investigation these may require decommissioning and replacement prior to highway construction.	Low potential to adversely affect private wells The route is in close proximity (<150 m) to a shallow dug well located immediately to the west of Road 111 along Lorne Avenue East. The dug well in this area is sensitive to surface contamination (i.e. road salt). The potential exists for long-term and short-term adverse effects to these wells due to their close proximity to the route. Mitigation measures to prevent adverse impact to these wells due to highway maintenance should be implemented, such as a road salt management plan. All other private wells along the route obtain water supply from the deep confined bedrock aquifer. Five of these deep bedrock wells are located in close proximity (<50 m) to the edge of the proposed route. Depending on further well investigation these may require decommissioning and replacement prior to highway construction.	 Medium potential to adversely affect private wells Will directly result in the removal of one well and potential to adversely affect private wells The proposed route is in close proximity (<150 m) to a shallow dug well located immediately to the west of Road 111 along Lorne Avenue East. The dug well in this area is sensitive to surface contamination (i.e. road salt). The potential exists for long-term and short-term adverse effects to these wells due to their close proximity to the route. Mitigation measures to prevent adverse impact to this dug well due to highway maintenance should be implemented, such as a road salt management plan. The proposed route appears to intersect the location of one deep drilled well located along 110th Road south of the railway tracks. This well will require decommissioning prior to highway construction. All other private wells along the route obtain water supply from the deep confined bedrock aquifer. Five of these deep bedrock wells are located in close proximity (<50 m) to the edge of the proposed route. Depending on further well investigation these may require decommissioning and replacement prior to highway construction. 	Low potential to adversely affect private wells The route is in close proximity (<150 m) to a shallow dug well located immediately to the west of Road 111 along Lorne Avenue East. The dug well is this area is sensitive to surface contamination (i.e. road salt). The potential exists for long-term and short-term adverse effects to these wells due to their close proximity to the route. Mitigation measures to prevent adverse impact to these wells due to highway maintenance should be implemented, such as a road salt management plan. All other private wells along the route obtain water supply from the deep confined bedrock aquifer. Five of these deep bedrock wells are located in close proximity (<50 m) to the edge of the proposed route. Depending on further well investigation these may require decommissioning and replacement prior to highway construction.

Note - Evaluation of the route alternatives is based on a qualitative assessment of each route (high, medium or low). Relevant and site-specific information for each criterion/cell is provided to justify the high, medium or low assessment.

14010	e – Evaluation of the foc	ute alternatives is based on a qualitative assessme	SEGMENT C – EAST OF STRATFORI	<u> </u>	each chieffor/cell is provided to justify the	e riigii, medidiii or low assessifient.
Factor				Route Al	ternative	
/ Sub- Factor	Criteria	Indicator for Route Selection	C1 14-17-20-24-25-26	C2 14-17-19-21-24-25-26	C3 14-17-19-22-25-26	C4 14-17-19-23-26
	1.3.5 Groundwater- Dependent Commercial Enterprises (e.g. water bottling operations)	Potential and significance of alteration to groundwater use by groundwater-dependent commercial enterprises due to physical intrusion, or groundwater interception, drawdown, impoundment, obstruction and by soil compaction	No potential to adversely affect groundwater dependent commercial enterprises No groundwater dependent commercial enterprises have been identified along this route.	 No potential to adversely affect groundwater dependent commercial enterprises No groundwater dependent commercial enterprises have been identified along this route. 	 No potential to adversely affect groundwater dependent commercial enterprises No groundwater dependent commercial enterprises have been identified along this route. 	 No potential to adversely affect groundwater dependent commercial enterprises No groundwater dependent commercial enterprises have been identified along this route.
	1.3.6 Groundwater- Sensitive Ecosystems (e.g. groundwater fed wetlands, coldwater streams)	Potential and significance of alteration to groundwater-sensitive ecosystems due to physical intrusion, or groundwater interception, draw-down, impoundment, obstruction and by soil compaction	 Medium potential to adversely affect groundwater sensitive ecosystems Possible encroachment on an evaluated high quality wetland Potential long-term adverse effect to groundwater quality due to increased road salt use and road run-off. Potential temporary effects to groundwater quantity are possible if construction dewatering is required. 	 Medium potential to adversely affect groundwater sensitive ecosystems Possible encroachment on an evaluated high quality wetland Potential long-term adverse effect to groundwater quality due to increased road salt use and road run-off. Potential temporary effects to groundwater quantity are possible if construction dewatering is required. 	 High potential to adversely affect groundwater sensitive ecosystems Encroachment on an evaluated high quality wetland Potential long-term adverse effect to groundwater quality due to increased road salt use and road run-off. Potential temporary effects to groundwater quantity are possible if construction dewatering is required. 	High potential to adversely affect groundwater sensitive ecosystems Encroachment on an evaluated high quality wetland Potential long-term adverse effect to groundwater quality due to increased road salt use and road run-off. Potential temporary effects to groundwater quantity are possible if construction dewatering is required.
1.4 Surfa	ace Water					
	1.4.1 Watershed / Sub-Watershed Drainage Features/Patterns	Potential and significance of: • encroachment, severance, displacement; • long-term alteration/ disruption. as applicable to the following: • watercourse crossings (permanent, intermittent and ephemeral) • floodplain or meander belts • riparian areas • sensitive headwater areas • watershed and subwatershed management plans	Medium potential to affect drainage features / patterns and surface water quality / quantity Crosses 5 watercourses Abuts the existing Central municipal drain	Medium potential to affect drainage features / patterns and surface water quality / quantity Crosses 4 watercourses Crosses the existing Central municipal drain	Medium potential to affect drainage features / patterns and surface water quality / quantity Crosses 4 watercourses Crosses the Central municipal drain	Medium potential to affect drainage features / patterns and surface water quality / quantity Crosses 3 watercourses Crosses the Central municipal drain
	1.4.2 Surface Water Quality and Quantity	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				
2. LAND	USE / SOCIO-ECONO	MIC FACTORS				
2.1 Land	Use Planning Policies	s, Goals, Objectives				
	2.1.1 First Nations Land Claims	Potential and significance of encroachment, severance, displacement to areas for which	Low potential to displace areas where there are outstanding First Nations	Low potential to displace areas where there are outstanding First Nations	Low potential to displace areas where there are outstanding First Nations	Low potential to displace areas where there are outstanding First Nations

LEGEND

MOST PREFERRED	MODERATELY PREFERRED	LEAST PREFERRED	NO DIFFERENCE	SELECTED CORRIDOR

Note – Evaluation of the route alternatives is based on a qualitative assessment of each route (high, medium or low). Relevant and site-specific information for each criterion/cell is provided to justify the high, medium or low assessment.

SEGMENT C – EAST OF STRATFORD, SOUTH OF RAILWAY CORRIDOR

		Route Alternative				
Criteria	Indicator for Route Selection	C1 14-17-20-24-25-26	C2 14-17-19-21-24-25-26	C3 14-17-19-22-25-26	C4 14-17-19-23-26	
	there are First Nations outstanding land claims	lands claims.5 First Nations land claims have been filed in the study area	lands claims.5 First Nations land claims have been filed in the study area	Iands claims.5 First Nations land claims have been filed in the study area	lands claims.5 First Nations land claims have been filed in the study area	
2.1.2 Provincial/ Federal land use planning policies/ goals/objectives	Degree of compatibility with federal/provincial land use policies/goals/objectives NOTES: PPS Policy 1.6.6.4 stipulates that when planning for corridors for significant transportation facilities, consideration will be given to significant natural heritage, water, agricultural, mineral, cultural heritage and archaeological resources. PPS Policy 2.3 requires prime agricultural areas be protected for long-term use. Prime agricultural areas include specialty crop areas and Classes 1, 2, and 3 soils in this order of priority.	 Low compatibility with federal/provincial land use policies/goals Route is predominantly on new alignment which results in increased impacts relative to PPS Policies 1.6.6.4 and 2.3. There are no location-specific federal or provincial land use policies for this area 	 Low compatibility with federal/ provincial land use policies/goals Route is predominantly on new alignment which results in increased impacts relative to PPS Policies 1.6.6.4 and 2.3. There are no location-specific federal or provincial land use policies for this area 	 Low compatibility with federal/provincial land use policies/goals Route is predominantly on new alignment which results in increased impacts relative to PPS Policies 1.6.6.4 and 2.3. There are no location-specific federal or provincial land use policies for this area 	 Low compatibility with federal/provincial land use policies/goals Route is predominantly on new alignment which results in increased impacts relative to Pl Policies 1.6.6.4 and 2.3. There are no location-specific federal or provincial land use policies for this area 	
2.1.3 Municipal (regional and local) land use planning policies/goals/ objectives (Official Plans)	Degree of compatibility with municipal Official Plans	 Medium compatibility with municipal Official Plans. The corridor impacts agricultural designated lands in County of Perth O.P. 	 Medium compatibility with municipal Official Plans. The corridor impacts agricultural designated lands in County of Perth O.P. 	 Medium compatibility with municipal Official Plans. The corridor impacts agricultural designated lands in County of Perth O.P. 	 Medium compatibility with municipal Official Plans. The corridor impacts agriculture designated lands in County of Perth O.P. 	
2.1.4 Development Objectives of Privat Property Owners	·	Low potential to impact future land use Route alternative does not limit the	Low potential to impact future land use Route alternative does not limit the	Low potential to impact future land use Route alternative does not limit the	Low potential to impact future land use Route alternative does not limit the	
d Use / Community	Impact on future land use	potential for future development	potential for future development	potential for future development	potential for future development	
2.2.1 First Nation Reserves	Potential and significance of: • encroachment, severance, displacement; • long-term alteration / disruption; • change in area character / aesthetics; • nuisance impacts; • change to access / travel time.	No potential effects to First Nation reserves No Indian Reserves in the Analysis Area	No potential effects to First Nation reserves No Indian Reserves in the Analysis Area	No potential effects to First Nation reserves No Indian Reserves in the Analysis Area	No potential effects to First Nation reserves No Indian Reserves in the Analysis Area	
2.2.2 First Nations' Sacred Grounds	to First Nation Reserves Potential and significance of: • encroachment, severance, displacement; • long-term alteration / disruption; • change in area character / aesthetics; • nuisance impacts;	Low potential effect to First Nations' sacred grounds No known First Nations' sacred grounds in the Analysis Area	Low potential effect to First Nations' sacred grounds No known First Nations' sacred grounds in the Analysis Area	Low potential effect to First Nations' sacred grounds No known First Nations' sacred grounds in the Analysis Area	Low potential effect to First Nation sacred grounds No known First Nations' sacre grounds in the Analysis Area	

LEGEND

MOST PREFERRED MODERATELY PREFERRED LEAST PREFERRED NO DIFFERENCE SELECTED CORRIDOR

Note – Evaluation of the route alternatives is based on a qualitative assessment of each route (high, medium or low). Relevant and site-specific information for each criterion/cell is provided to justify the high, medium or low assessment.

SEGMENT C – EAST OF STRATFORD, SOUTH OF RAILWAY CORRIDOR

r			Route Alternative				
r	Criteria	Indicator for Route Selection	C1 14-17-20-24-25-26	C2 14-17-19-21-24-25-26	C3 14-17-19-22-25-26	C4 14-17-19-23-26	
		change to access / travel time.					
		to First Nations' sacred grounds					
	2.2.3 Urban and Rural Residential	 Potential and significance of: encroachment, severance, displacement, property acquisition; long-term alteration / disruption (e.g. loss of parking area); change in area character / aesthetics (e.g. loss of trees/garden area); nuisance impacts (e.g. intrusion of highway into current residential envelope); change to access / travel time; change to facilities / utilities / services; interference with residential community cohesion; change to highway operational impacts (e.g. snow storage and highway access visibility). 	 Low potential for impacts to urban and rural residential areas Loss of some frontage (property acquisition) to 12 residential properties along Perth Line 33. Loss of some mature trees. No long term alteration/disruption to residence or farm buildings. Likely nuisance impacts to this property. Loss (acquisition) of some residential/farm properties along entire route. Field observation identified no change to facilities / utilities / services. 	Low potential for impacts to urban and rural residential areas • Loss of some frontage (property acquisition) to 13 residential properties along Perth Line 33. Loss of some mature trees. No long term alteration/disruption to residence or farm buildings. Likely nuisance impacts to this property. • Loss (acquisition) of some residential/farm properties along entire route. • Field observation identified no change to facilities / utilities / services.	 Low potential for impacts to urban and rural residential areas Loss of some frontage (property acquisition) to 11 residential properties along Perth Line 33. Loss of some mature trees. No long term alteration/disruption to residence or farm buildings. Likely nuisance impacts to this property. Loss (acquisition) of some residential/farm properties along entire route. Field observation identified no change to facilities / utilities / services. 	 Low potential for impacts to urban and rural residential areas Loss of some frontage (property acquisition) to 3 residential properties along Perth Line 33. Loss of some mature trees. No long term alteration/disruption to residence or farm buildings. Likely nuisance impacts to this property. Loss (acquisition) of some residential/farm properties along entire route. Field observation identified no change to facilities / utilities / services. 	
		to urban and rural residential areas (residents [owners/tenants] and community groups).					
	2.2.4 Commercial / Industrial	Potential and significance of: • encroachment, severance, displacement, property acquisition; • long-term alteration / disruption; • change in area character / aesthetics; • nuisance impacts; • change to access / travel time; • change to facilities / utilities / services; • interference with commercial community cohesion; • change to highway operation impacts (e.g. customer parking, cargo loading/off-loading). to commercial and industrial areas (business	Low potential for impacts to commercial and industrial areas • Loss of some frontage (property acquisition) to some commercial properties on Perth Line 33 around Road 111. Likely nuisance impacts to these properties. • Field observation identified no change to facilities / utilities / services.	Low potential for impacts to commercial and industrial areas • Loss of some frontage (property acquisition) to some commercial properties on Perth Line 33 around Road 111. Likely nuisance impacts to these properties. • Field observation identified no change to facilities / utilities / services.	 Low potential for impacts to commercial and industrial areas Loss of some frontage (property acquisition) to some commercial properties on Perth Line 33 around Road 111. Likely nuisance impacts to these properties. Field observation identified no change to facilities / utilities / services. 	Low potential for impacts to commercial and industrial areas • Loss of some frontage (property acquisition) to some commercial properties on Perth Line 33 around Road 111. Likely nuisance impacts to these properties. • Field observation identified no change to facilities / utilities / services.	
		owners/tenants and customers).					
á	2.2.5 Tourist Areas and Attractions (e.g. museums, theatres, etc.)	Potential and significance of:	 Low potential for impacts to tourist areas and attractions No change or impacts to tourist areas and attractions in terms of any property encroachment or acquisition. No nuisance impacts anticipated given absence of any tourist attractions or areas along this 	 Low potential for impacts to tourist areas and attractions No change or impacts to tourist areas and attractions in terms of any property encroachment or acquisition. No nuisance impacts anticipated given absence of any tourist attractions or areas along this 	 Low potential for impacts to tourist areas and attractions No change or impacts to tourist areas and attractions in terms of any property encroachment or acquisition. No nuisance impacts anticipated given absence of any tourist attractions or areas along this 	 Low potential for impacts to tourist areas and attractions No change or impacts to tourist areas and attractions in terms of any property encroachment or acquisition. No nuisance impacts anticipated given absence of any tourist attractions or areas along this 	

LEGEND

MOST PREFERRED MODERATELY PREFERRED LEAST PREFERRED NO DIFFERENCE SELECTED CORRIDOR

Note – Evaluation of the route alternatives is based on a qualitative assessment of each route (high, medium or low). Relevant and site-specific information for each criterion/cell is provided to justify the high, medium or low assessment.

SEGMENT C – EAST OF STRATFORD, SOUTH OF RAILWAY CORRIDOR

Factor				Route A	ternative	
/ Sub- Factor	Criteria	Indicator for Route Selection	C1 14-17-20-24-25-26	C2 14-17-19-21-24-25-26	C3 14-17-19-22-25-26	C4 14-17-19-23-26
		business attractions (e.g. number of antique shops). to tourist areas and attractions.	alternative. • Field observation identified no change to facilities / utilities / services. • No interference with area character/aesthetics of tourist area • No signature business attractions (none along this alternative)	 alternative. Field observation identified no change to facilities / utilities / services. No interference with area character/aesthetics of tourist area No signature business attractions (none along this alternative) 	 alternative. Field observation identified no change to facilities / utilities / services. No interference with area character/aesthetics of tourist area No signature business attractions (none along this alternative) 	 alternative. Field observation identified no change to facilities / utilities / services. No interference with area character/aesthetics of tourist area No signature business attractions (none along this alternative)
	2.2.6 Community Facilities / Institutions (e.g. hospitals, schools, places of worship, unique community features)	Potential and significance of: encroachment, severance, displacement, property acquisition; long-term alteration / disruption; change in area character/ aesthetics; nuisance impacts; change to access / travel time; change to facilities / utilities / services change to ease and safety of pedestrian movements across the highway and within the highway right-of-way; change to highway operation impacts to current use (e.g. highway noise and vibration interfering with church services).	 No potential for impacts to community facilities and institutions No change or impacts to community facilities or institutions in terms of any property encroachment or acquisition. No long term alteration /disruption No nuisance impacts anticipated given absence of any community facilities or areas along this alternative. Field observation identified no change to facilities / utilities / services. 	 No potential for impacts to community facilities and institutions No change or impacts to community facilities or institutions in terms of any property encroachment or acquisition. No long term alteration /disruption No nuisance impacts anticipated given absence of any community facilities or areas along this alternative. Field observation identified no change to facilities / utilities / services. 	 No potential for impacts to community facilities and institutions No change or impacts to community facilities or institutions in terms of any property encroachment or acquisition. No long term alteration /disruption No nuisance impacts anticipated given absence of any community facilities or areas along this alternative. Field observation identified no change to facilities / utilities / services. 	 No potential for impacts to community facilities and institutions No change or impacts to community facilities or institutions in terms of any property encroachment or acquisition. No long term alteration /disruption No nuisance impacts anticipated given absence of any community facilities or areas along this alternative. Field observation identified no change to facilities / utilities / services.
	2.2.7 Municipal Infrastructure and Public Service Facilities (e.g. sewage and water services, police/emergency services, local utilities)	Potential and significance of:	Low potential for impacts to municipal infrastructure / public service facilities • Potential encroachment to municipal landfill located on Perth Line 33, west of Road 111. Site backs onto roadway so potential disruption due to widening of the road is likely minimal. • From field observations, no other impacts to municipal infrastructure and public service facilities.	Low potential for impacts to municipal infrastructure / public service facilities • Potential encroachment to municipal landfill located on Perth Line 33, west of Road 111. Site backs onto roadway so potential disruption due to widening of the road is likely minimal. • From field observations, no other impacts to municipal infrastructure and public service facilities.	Low potential for impacts to municipal infrastructure / public service facilities • Potential encroachment to municipal landfill located on Perth Line 33, west of Road 111. Site backs onto roadway so potential disruption due to widening of the road is likely minimal. • From field observations, no other impacts to municipal infrastructure and public service facilities.	Low potential for impacts to municipal infrastructure / public service facilities • Potential encroachment to municipal landfill located on Perth Line 33, west of Road 111. Site backs onto roadway so potential disruption due to widening of the road is likely minimal. • From field observations, no other impacts to municipal infrastructure and public service facilities.
	2.2.8 Downtown Historic Crossroads Function	Potential and significance of interference by long-distance through-traffic on: • "main street" function and structure; • character/aesthetics; • change to ease and safety of pedestrian movements across the highway and within the highway right-of-way; • change to on-street parking	No potential for interference in the historic downtown area Alternative does not affect any downtown or historical areas. No adverse effects on Main Street function, character, pedestrian movements or street parking	No potential for interference in the historic downtown area Alternative does not affect any downtown or historical areas. No adverse effects on Main Street function, character, pedestrian movements or street parking	No potential for interference in the historic downtown area Alternative does not affect any downtown or historical areas. No adverse effects on Main Street function, character, pedestrian movements or street parking	No potential for interference in the historic downtown area Alternative does not affect any downtown or historical areas. No adverse effects on Main Street function, character, pedestrian movements or street parking

Note – Evaluation of the route alternatives is based on a qualitative assessment of each route (high, medium or low). Relevant and site-specific information for each criterion/cell is provided to justify the high, medium or low assessment.

			SEGMENT C - EAST OF STRATFOR	D, SOUTH OF RAILWAY CORRIDOR				
Factor				Route Alternative				
/ Sub- Factor	Criteria	Indicator for Route Selection	C1 14-17-20-24-25-26	C2 14-17-19-21-24-25-26	C3 14-17-19-22-25-26	C4 14-17-19-23-26		
		in the historic downtown area						
2.3 Noise	e Sensitive Areas (NSA	As) (residential areas and sensitive institutional u	ises)					
	2.3.1 Highway Noise	Potential for significant traffic noise increases in NSAs and for noise-sensitive receivers immediately adjacent to the highway.	 Low potential for significant noise increases Potential noise impacts of 65 dBA or a 5 dB increase are expected for about 15 NSAs within the area of influence. A decrease of noise impacts by 5 dB or more is expected for about 17 NSAs due to reduced traffic on the roadway that is currently Hwy 7/8. 	 Low potential for significant noise increases Potential noise impacts of 65 dBA or a 5 dB increase are expected for about 16 NSAs within the area of influence. A decrease of noise impacts by 5 dB or more is expected for about 17 NSAs due to reduced traffic on the roadway that is currently Hwy 7/8. 	 Low potential for significant noise increases Potential noise impacts of 65 dBA or a 5 dB increase are expected for about 14 NSAs within the area of influence. A decrease of noise impacts by 5 dB or more is expected for about 17 NSAs due to reduced traffic on the roadway that is currently Hwy 7/8. 	 Low potential for significant noise increases Potential noise impacts of 65 dBA or a 5 dB increase are expected for about 16 NSAs within the area of influence. A decrease of noise impacts by 5 dB or more is expected for about 17 NSAs due to reduced traffic on the roadway that is currently Hwy 7/8. 		
	2.3.2 Construction Noise	To be considered during Preliminary Design pha	se					
2.4 Agric	culture							
	2.4.1 Agriculture - Canada Land Inventory Class 1,2,3 Land	Potential and significance of encroachment, severance of Canada Land Inventory Classes 1, 2 and 3 soils	High potential for impacts to CLI Class 1, 2 and 3 lands Impacts 51 hectares of Class 1 / 2 soil	High potential for impacts to CLI Class 1, 2 and 3 lands Impacts 53 hectares of Class 1 / 2 soil	High potential for impacts to CLI Class 1, 2 and 3 lands Impacts 49 hectares of Class 1 / 2 soil	High potential for impacts to CLI Class 1, 2 and 3 lands Impacts 49 hectares of Class 1 / 2 soil		
	2.4.2 Agriculture – Farm Infrastructure	Potential and significance of: • encroachment, severance, displacement; • long-term alteration / disruption; • nuisance impacts; to farm infrastructure (field tile drainage systems/outlets, irrigation systems, barns / silos/ structures, etc.)	 Medium potential impacts on farm infrastructure 2 minor encroachments on farm infrastructure west of Road 110 and south of Perth Line 33 Impacts to subsurface farm infrastructure (e.g. tile drainage) and to area farm drainage systems are anticipated. The locations of subsurface farm infrastructure along the preferred route will be identified and mitigation concepts for these impacts will be developed during preliminary design 	 High potential impacts on farm infrastructure 3 encroachments on farm infrastructure on Road 110 2 minor encroachments on farm infrastructure west of Road 110 and south of Perth Line 33 Potential to displace multiple farm buildings. Impacts to subsurface farm infrastructure (e.g. tile drainage) and to area farm drainage systems are anticipated. The locations of subsurface farm infrastructure along the preferred route will be identified and mitigation concepts for these impacts will be developed during preliminary design 	 High potential impacts on farm infrastructure Displaces infrastructure on 1 livestock and cash crop operation on Road 110 2 encroachments on farm infrastructure, 1 on Road 110 and 1 west of Road 110 and north of Perth Line 33 Impacts to subsurface farm infrastructure (e.g. tile drainage) and to area farm drainage systems are anticipated. The locations of subsurface farm infrastructure along the preferred route will be identified and mitigation concepts for these impacts will be developed during preliminary design 	Medium potential impacts on farm infrastructure 2 encroachments on farm infrastructure, 1 on Road 110 and 1 west of Road 100 north of Perth Line 33 Impacts to subsurface farm infrastructure (e.g. tile drainage) and to area farm drainage systems are anticipated. The locations of subsurface farm infrastructure along the preferred route will be identified and mitigation concepts for these impacts will be developed during preliminary design		
	2.4.3 Agriculture – Operations on Individual Farms	Potential and significance of: • encroachment, severance, displacement; • long-term alteration / disruption; • nuisance impacts;	Medium potential for impacts to operations on individual farms Long term alteration to in field farm operations in an established agricultural community including:	Medium potential for impacts to operations on individual farms Long term alteration to in field farm operations in an established agricultural community including:	High potential for impacts to operations on individual farms Long term alteration to in field farm operations in an established agricultural community including:	High potential for impacts to operations on individual farms Long term alteration to in field farm operations in an established agricultural community including:		

MOST PREFERRED	MODERATELY PREFERRED	LEAST PREFERRED	NO DIFFERENCE	SELECTED CORRIDOR

Note – Evaluation of the route alternatives is based on a qualitative assessment of each route (high, medium or low). Relevant and site-specific information for each criterion/cell is provided to justify the high, medium or low assessment.

SEGMENT C – EAST OF STRATFORD, SOUTH OF RAILWAY CORRIDOR

Factor				Route A	Iternative	
/ Sub- Factor	Criteria	Indicator for Route Selection	C1 14-17-20-24-25-26	C2 14-17-19-21-24-25-26	C3 14-17-19-22-25-26	C4 14-17-19-23-26
		to in-farm field operations (planting, harvesting, grazing, nutrient management, etc.) as applicable to the following: • Specialty crops/cropland • Diary/livestock operations • Field crop operations • High investment agricultural operations • Established agricultural farm communities	 Minor frontage impacts and encroachment on lands on 3 live stock and cash crop operations on Perth Line 33 Minor frontage impacts and encroachment on lands on 10 parcels on Perth Line 33 Severs 3 parcels between Road 109 and Road 110 Severs 1 parcel west of Road 110 Significant encroachment on portions of land abutting the railway on 7 parcels, 3 of which are associated with a cash crop and livestock operation in the area 3 parcels where nutrient management has been reported by the farmer are impacted significantly 4 parcels where nutrient management is assumed to occur in association with livestock operations are significantly impacted Additional nutrient management operations may still be identified by potentially impacted farmers 	 Minor frontage impacts and encroachment on lands on 2 live stock and cash crop operations on Road 110 Minor frontage impacts and encroachment on lands on 3 live stock and cash crop operations on Perth Line 33 Minor frontage impacts and encroachment on lands on 10 parcels on Perth Line 33 Severs 2 parcels on Road 110 Significant encroachment on portions of land abutting the railway on 9 parcels, 3 of which are associated with a cash crop and livestock operation in the area Displaces portions of land fronting onto Road 110 on 2 parcels 3 parcels where nutrient management has been reported by the farmer are impacted significantly 6 parcels where nutrient management is assumed to occur in association with livestock operations are significantly impacted Additional nutrient management operations may still be identified by potentially impacted farmers 	 Minor frontage impacts and encroachment on lands on 1 live stock and cash crop operation on Perth Line 33 Minor frontage impacts and encroachment on lands on 7 parcels on Perth Line 33 Severs 2 parcels fronting onto Road 110 Severs 2 parcels west of Road 110 on Perth Line 33 Significant encroachment on portions of land abutting the railway on 9 parcels, 3 of which are associated with a cash crop and livestock operation in the area 3 parcels where nutrient management has been reported by the farmer are impacted significantly 4 parcels where nutrient management is assumed to occur in association with livestock operations are impacted significantly Additional nutrient management operations may still be identified by potentially impacted farmers 	 Minor frontage impacts and encroachment on lands on 1 parcel of land on Perth Line 33 on Perth Line 33 Severs 6 parcels west of Road 110 Significant encroachment on portions of land abutting the railway on 9 parcels, 3 of which are associated with a cash crop and livestock operation in the area 3 parcels where nutrient management has been reported by the farmer are impacted significantly 4 parcels where nutrient management is assumed to occur in association with livestock operations are impacted significantly Additional nutrient management operations may still be identified by potentially impacted farmers
	2.4.4 Agriculture – Transportation Linkages between Integrated Agricultural Business Units (IABUs)	Potential to sever/disrupt transportation linkages between integrated agricultural business units (movement between integrated agricultural business units of equipment, materials, workers, etc.)	Medium potential to sever / disrupt transportation linkages Route alternative 1 passes between parcels of land associated with 2 IABU's as identified to the study team by the farming community	Medium potential to sever / disrupt transportation linkages Route alternative 2 passes between parcels of land associated with 2 IABU's as identified to the study team by the farming community however, this alternative involves additional lanes to cross rather than a new route to cross.	Medium potential to sever / disrupt transportation linkages Route alternative 3 passes between parcels of land associated with 2 IABU's as identified to the study team by the farming community	Medium potential to sever / disrupt transportation linkages Route alternative 4 passes between parcels of land associated with 2 IABU's as identified to the study team by the farming community

Note – Evaluation of the route alternatives is based on a qualitative assessment of each route (high, medium or low). Relevant and site-specific information for each criterion/cell is provided to justify the high, medium or low assessment.

			SEGMENT C – EAST OF STRATFORI	D, SOUTH OF RAILWAY CORRIDOR		
Factor		_		Route A	ternative	
/ Sub- Factor	Criteria	Indicator for Route Selection	C1 14-17-20-24-25-26	C2 14-17-19-21-24-25-26	C3 14-17-19-22-25-26	C4 14-17-19-23-26
2.5 Land	Use / Resources					
	2.5.1 First Nations' Treaty Rights or Use of Land and Resources for Traditional Purposes	Potential and significance of: • encroachment, severance, displacement; • long-term alteration / disruption; • nuisance impacts; • change to access / travel time.	Medium potential to affect First Nation Treaty Rights or use of land and resources for traditional purposes Route alternative has both existing roadway and new alignment components.	Medium potential to affect First Nation Treaty Rights or use of land and resources for traditional purposes Route alternative has both existing roadway and new alignment components.	Medium potential to affect First Nation Treaty Rights or use of land and resources for traditional purposes Route alternative has both existing roadway and new alignment components.	Medium potential to affect First Nation Treaty Rights or use of land and resources for traditional purpose. Route alternative has both existing roadway and new alignment components.
	(e.g. hunting, fishing, harvesting of country foods, harvesting of medicinal plants)	to First Nations' treaty rights or use of land and resources for traditional purposes				
	2.5.2 Parks and Recreational Areas (e.g. national/ provincial parks, conservation areas, municipal parks, public spaces, golf courses, trails, greenways and open space linkages)	Potential and significance of: • encroachment, severance, displacement, property acquisition; • long-term alteration / disruption; • change in area character/ aesthetics; • nuisance impacts; • change to access / travel time; • change to facilities / utilities / services. to parks and recreational areas.	 No potential for impacts to parks and recreational areas No encroachment or impacts to any parks or recreational areas as they do not exist along this route. Field observation identified no change to facilities / utilities / services. 	 No potential for impacts to parks and recreational areas No encroachment or impacts to any parks or recreational areas as they do not exist along this route. Field observation identified no change to facilities / utilities / services. 	 No potential for impacts to parks and recreational areas No encroachment or impacts to any parks or recreational areas as they do not exist along this route. Field observation identified no change to facilities / utilities / services. 	 No potential for impacts to parks and recreational areas No encroachment or impacts to any parks or recreational areas as they do not exist along this route. Field observation identified no change to facilities / utilities / services.
	2.5.3 Aggregates, Mineral-Resources	Potential and significance of: • encroachment, severance, displacement, property acquisition; • long-term alteration / disruption; • change to access / travel time; • change to facilities / utilities / services. to current/future extraction of aggregate and mineral resources.	No potential for impacts to current/future aggregate / mineral resources No impacts to mineral-aggregate resources	No potential for impacts to current/future aggregate / mineral resources No impacts to mineral-aggregate resources	No potential for impacts to current/future aggregate / mineral resources No impacts to mineral-aggregate resources	No potential for impacts to current/future aggregate / mineral resources No impacts to mineral-aggregate resources
	r Utility Transmission oads, hydro, gas, oil)	Corridors				
		Potential and significance of: • encroachment, severance, displacement; • long-term alteration / disruption; • change to access / travel time; • change to facilities / utilities / services. To major utility transmission corridors.	Low potential for impacts to major utility transmission corridors No railway crossings One major hydro transmission corridor crossing No major gas / oil corridor crossings	Low potential for impacts to major utility transmission corridors No railway crossings One major hydro transmission corridor crossing No major gas / oil corridor crossings	Low potential for impacts to major utility transmission corridors No railway crossings One major hydro transmission corridor crossing No major gas / oil corridor crossings	Low potential for impacts to major utility transmission corridors No railway crossings One major hydro transmission corridor crossing No major gas / oil corridor crossings

			SEGMENT C – EAST OF STRATFOR	D, SOUTH OF RAILWAY CORRIDOR				
Factor			Route Alternative					
/ Sub- Factor	Criteria	Indicator for Route Selection	C1 14-17-20-24-25-26	C2 14-17-19-21-24-25-26	C3 14-17-19-22-25-26	C4 14-17-19-23-26		
		and Waste Management ste Sites, "Brownfield" Areas, other known contamin	ated sites, and high-risk contamination are	eas)				
		Potential and significance of: • encroachment, severance, displacement; • long-term alteration / disruption; • change to access / travel time; • change to facilities / utilities / services. to contaminated property and waste management.	Low potential for impacts to contaminated property and waste including exposure of contaminants and unstable substrates and potential concerns from soil and groundwater contamination. • The Stratford Landfill Facility is located approximately 0.25 km east and northeast of the proposed terminus of the route C1 alignment. Any development within 500 m of a landfill requires a MOE D-4 Assessment. • Mitigation measures to prevent the exposure of contaminants and unstable substrates should be implemented, as required, based on the assessment of the landfill data and the D-4 study. • No other waste disposal sites were identified in the vicinity of the proposed alignment. • No vehicle fuel and repair facilities were identified within 1 km of the proposed route alignment. Wilhelm Concrete, a concrete forming company, is located approximately 0.2 km north of the proposed alignment. Fuel ASTs were observed on the property in aerial photographs; however, this property is not believed to present a significant environmental concern. • Mitigation measures should be implemented to prevent the exposure of contaminants.	Low potential for impacts to contaminated property and waste including exposure of contaminants and unstable substrates and potential concerns from soil and groundwater contamination. • The Stratford Landfill Facility is located approximately 0.25km east and northeast of the proposed terminus of the route C2 alignment Any development within 500 m of a landfill requires a MOE D-4 Assessment. • Mitigation measures to prevent the exposure of contaminants and unstable substrates should be implemented, as required, based on the assessment of the landfill data and the D-4 study. • No other waste disposal sites were identified in the vicinity of the proposed alignment. • No vehicle fuel and repair facilities were identified within 1 km of the proposed route alignment. Wilhelm Concrete, a concrete forming company, is located approximately 0.2 km north of the proposed alignment. Fuel ASTs were observed on the property in aerial photographs; however, this property is not believed to present a significant environmental concern. • Mitigation measures should be implemented to prevent the exposure of contaminants.	Low potential for impacts to contaminated property and waste including exposure of contaminants and unstable substrates and potential concerns from soil and groundwater contamination. • The Stratford Landfill Facility is located approximately 0.25km east and northeast of the proposed terminus of the route C3 alignment. Any development within 500 m of a landfill requires a MOE D-4 Assessment. • Mitigation measures to prevent the exposure of contaminants and unstable substrates should be implemented, as required, based on the assessment of the landfill data and the D-4 study. • No other waste disposal sites were identified in the vicinity of the proposed alignment. • No vehicle fuel and repair facilities were identified within 1 km of the proposed route alignment. Wilhelm Concrete, a concrete forming company, is located approximately 0.2 km north of the proposed alignment. Fuel ASTs were observed on the property in aerial photographs; however, this property is not believed to present a significant environmental concern. • Mitigation measures should be implemented to prevent the exposure of contaminants.	Low potential for impacts to contaminated property and waste including exposure of contaminants and unstable substrates and potential concerns from soil and groundwater contamination. • The Stratford Landfill Facility is located approximately 0.25km east and northeast of the proposed terminus of the route C4 alignment. Any development within 500 m of a landfill requires a MOE D-4 Assessment. • Mitigation measures to prevent the exposure of contaminants and unstable substrates should be implemented, as required, based on the assessment of the landfill data and the D-4 study. • No other waste disposal sites were identified in the vicinity of the proposed alignment. • No vehicle fuel and repair facilities were identified within 1 km of the proposed route alignment. Wilhelm Concrete, a concrete forming company, is located approximately 0.2 km north of the proposed alignment. Fuel ASTs were observed on the property in aerial photographs; however, this property is not believed to present a significant environmental concern. • Mitigation measures should be implemented to prevent the exposure of contaminants.		
2.8 Landsc	ape Composition							
C	.8.1 Scenic Composition (total esthetic value of	Potential and significance of change to scenic composition (total aesthetic value of landscape components).	Low potential to impact scenic composition for sensitive viewer groups and of views from the route	Low potential to impact scenic composition for sensitive viewer groups and of views from the route	Low potential to impact scenic composition for sensitive viewer groups and of views from the route	Low potential to impact scenic composition for sensitive viewer groups and of views from the route		

aesthetic value of landscape

components).

groups and of views from the route alternative

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MOST PREFERRED MODERATELY PREFERRED

LEAST PREFERRED

NO DIFFERENCE

SELECTED CORRIDOR

Note – Evaluation of the route alternatives is based on a qualitative assessment of each route (high, medium or low). Relevant and site-specific information for each criterion/cell is provided to justify the high, medium or low assessment.

			SEGMENT C - EAST OF STRATFORI	D, SOUTH OF RAILWAY CORRIDOR		
Factor				Route A	Iternative	
/ Sub- Factor	Criteria	Indicator for Route Selection	C1 14-17-20-24-25-26	C2 14-17-19-21-24-25-26	C3 14-17-19-22-25-26	C4 14-17-19-23-26
	components)		 low/moderate negative impacts on farming community due to existing railroad corridor 	farming community due to existing railroad corridor	 low/moderate negative impacts on farming community due to existing railroad corridor 	 low/moderate negative impacts on farming community due to existing railroad corridor high negative impact on affected farmhouses on western entry high negative impact on farm
	2.8.2 Sensitive Viewer Groups	Potential and significance of change vistas/outlooks for sensitive viewer groups.	 high negative impacts on affected farms moderate/high negative impact due 	 moderate negative impacts on affected farms along Road 110 moderate/high negative impact on 	 moderate/high negative impact on affected farms moderate visual interest through agricultural fields low/moderate visual interest of flat terrain and railroad corridor moderate visual interest of nearby woodlots low/moderate visual interest of riparian areas and associated vegetation 	
	2.8.3 Scenic value of views/vistas from the transportation facility	Potential and significance of views/vistas from the transportation facility.	to potential loss of vegetation moderate visual interest through agricultural fields low/moderate visual interest of flat terrain and railroad corridor high visual interest of adjacent woodlots moderate/high visual interest of	adjacent properties on existing footprint of Road 110 due to the loss of frontage and associated loss of farmland • moderate visual interest through agricultural fields • low/moderate visual interest of flat terrain and railroad corridor • moderate/high visual interest of nearby woodlots		community due to the loss of farmland • high negative impact on subdivision to north • moderate visual interest through agricultural fields • low/moderate visual interest of flat terrain and railroad corridor • moderate visual interest of nearby woodlots • high visual interest of nearby riparian areas and associated vegetation • low visual interest of nearby residential backyards
	2.8.4 Specimen Trees	To be considered during Preliminary Design pha	se			
2.9 Air Q	luality					
	2.9.1 Local and Regional Air Quality (Total contaminant and greenhouse gas emissions)	Previously addressed during Needs Assessmen	t Phase			
	2.9.2 Sensitive receptors to air pollutants and greenhouse gas emissions	Presence and potential for impacts to sensitive receptors to air pollutants and greenhouse gas emissions, including consideration of number of sensitive receptors immediately adjacent to the highway.	Low potential impact to sensitive receptors adjacent to the highway 6 sensitive receptors within 20m of the edge of the right of way.	Low potential impact to sensitive receptors adjacent to the highway 6 sensitive receptors within 20m of the edge of the right of way.	Low potential impact to sensitive receptors adjacent to the highway 6 sensitive receptors within 20m of the edge of the right of way.	Low potential impact to sensitive receptors adjacent to the highway 3 sensitive receptors within 20m of the edge of the right of way.
3. CULT	URAL ENVIRONMENT	TAL FACTORS				
3.1 Cultu	ıral Heritage – Built He	eritage and Cultural Landscapes				
	3.1.1 Buildings or "Standing" Sites of Architectural or Heritage Significance or	Potential and significance of:	 Low potential for impacts to sites of heritage significance and Heritage Foundation Easement Properties There are two non-inventoried heritage buildings just to the west of 	 Low potential for impacts to sites of heritage significance and Heritage Foundation Easement Properties There are two non-inventoried heritage buildings just to the west of 	 Low potential for impacts to sites of heritage significance and Heritage Foundation Easement Properties There are two non-inventoried heritage buildings just to the west of 	 Low potential for impacts to sites of heritage significance and Heritage Foundation Easement Properties There are three heritage structures in close proximity to the route but

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MOST PREFERRED MODERATELY PREFERRED LEAST PREFERRED NO DIFFERENCE SELECTED CORRIDOR

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SEGMENT C – EAST OF STRATFORD, SOUTH OF RAILWAY CORRIDOR

Factor				Route Al	Iternative		
/ Sub- Factor	Criteria	Indicator for Route Selection	C1 14-17-20-24-25-26	C2 14-17-19-21-24-25-26	C3 14-17-19-22-25-26	C4 14-17-19-23-26	
	Ontario Heritage Foundation Easement	 nuisance impacts; change to access / travel time; change to facilities / utilities / services. 	this route along Perth Line 33 The setting might be changed somewhat	this route along Perth Line 33 The setting might be changed somewhat	this route along Perth Line 33 The setting might be changed somewhat	not within it. Two are non- inventoried heritage buildings just to the west of this route along Perth	
	Properties	to buildings or "standing" sites of extreme local, provincial or national interest or Ontario Heritage Foundation easements properties.				Line 33; their setting might be changed somewhat. Another is James Reaney's Birthplace – the route passes just to the south of it. Its rear setting may change somewhat.	
	3.1.2 Heritage Bridges	Potential for destruction or significant alteration of heritage bridges					
	3.1.3 Areas of Historic 19 th Century Settlement	Potential and significance of: • encroachment, severance, displacement; • long-term alteration / disruption; • change in area character / aesthetics; • nuisance impacts; • change to access / travel time; • change to facilities / utilities / services.	 No potential for impacts to areas of historic settlement There are no areas of historic 19th century settlement within the route 	 No potential for impacts to areas of historic settlement There are no areas of historic 19th century settlement within the route 	 No potential for impacts to areas of historic settlement There are no areas of historic 19th century settlement within the route 	No potential for impacts to areas of historic settlement There are no areas of historic 19th century settlement within the route	
		to areas of historic 19 th century settlement.					
	3.1.4 Cultural Heritage Landscapes (collection of individual man- made features modifying pristine landscape)	Potential and significance of change to composition of cultural landscapes.	 No potential for impacts to cultural heritage landscapes based on existing data Dilse did not identify any cultural heritage landscapes within the proposed route 	 No potential for impacts to cultural heritage landscapes based on existing data Dilse did not identify any cultural heritage landscapes within the proposed route 	 No potential for impacts to cultural heritage landscapes based on existing data Dilse did not identify any cultural heritage landscapes within the proposed route 	 No potential for impacts to cultural heritage landscapes based on existing data Dilse did not identify any cultural heritage landscapes within the proposed route 	
	3.1.5 First Nations' Burial Sites	Potential and significance of: • encroachment, severance, displacement; • long-term alteration / disruption; • change in area character / aesthetics; • nuisance impacts; • change to access / travel time. to First Nations' burial sites.	 No potential for impacts to First Nations burial sites There are no known / reported First Nations' burial sites within this route 	 No potential for impacts to First Nations burial sites There are no known / reported First Nations' burial sites within this route 	 No potential for impacts to First Nations burial sites There are no known/reported First Nations' burial sites within this route 	 No potential for impacts to First Nations burial sites There are no known/reported First Nations' burial sites within this route 	
	3.1.6 Cemeteries	Potential and significance of:	No potential for impacts to cemeteries There are no cemeteries within or in proximity to this route	No potential for impacts to cemeteries There are no cemeteries within or in proximity to this route	No potential for impacts to cemeteries There are no cemeteries within or in proximity to this route	No potential for impacts to cemeteries There are no cemeteries within or in proximity to this route	

			SEGMENT C - EAST OF STRATFOR	D, SOUTH OF RAILWAY CORRIDOR		
actor				<u>'</u>	Iternative	
Sub- actor	Criteria	Indicator for Route Selection	C1 14-17-20-24-25-26	C2 14-17-19-21-24-25-26	C3 14-17-19-22-25-26	C4 14-17-19-23-26
.2 Cultu	ural Heritage – Archaed	ology				
	3.2.1 Pre-Historic and Historic First Nations Sites	Potential for destruction or disturbance of pre- historic and historic First Nations archaeological sites of extreme local, provincial or national interest	Low potential for destruction or disturbance of archaeological sites based on existing data There are no known/registered	Low potential for destruction or disturbance of archaeological sites based on existing data There are no known/registered	Low potential for destruction or disturbance of archaeological sites based on existing data There are no known/registered	Low potential for destruction or disturbance of archaeological sites based on existing data There are no known/registered
	3.2.2 Historic Euro- Canadian Archaeological Sites	Potential for destruction or disturbance of historic Euro-Canadian archaeological sites of extreme local, provincial or national interest	archaeological sites within or in close proximity to the route There is potential for previously undocumented archaeological sites	archaeological sites within or in close proximity to the route There is potential for previously undocumented archaeological sites	archaeological sites within or in close proximity to the route There is potential for previously undocumented archaeological sites	archaeological sites within or in close proximity to the route There is potential for previously undocumented archaeological site
AREA	A ECONOMY – Previou	sly addressed during Needs Assessment Phas	e			
TRAN	ISPORTATION FACTO	RS				
1 Area	Transportation Syster	n Capacity and Efficiency				
	5.1.1 Federal/ Provincial/Municipal transportation planning policies/goals/ objectives	Previously addressed during Needs Assessment	Thase.			
	5.1.2 Efficient movement of people	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	 High potential to support efficient movement of people. Route is predominantly on new alignment, with high level of service due to few intersections and few driveways Direct route Some out-of-way travel for local access from Stratford to route 	 High potential to support efficient movement of people. Route is predominantly on new alignment, with high level of service due to few intersections and few driveways Direct route Some out-of-way travel for local access from Stratford to route 	 High potential to support efficient movement of people. Route is predominantly on new alignment, with high level of service due to few intersections and few driveways Direct route Some out-of-way travel for local access from Stratford to route 	 High potential to support efficient movement of people. Route is predominantly on new alignment, with high level of service due to few intersections and few driveways Direct route Some out-of-way travel for local access from Stratford to route
	5.1.3 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)	High potential to support efficient movement of goods. Route is predominantly on new alignment, with high level of service due to few intersections and few driveways Direct route Some out-of-way travel for local access from Stratford to route	 High potential to support efficient movement of goods. Route is predominantly on new alignment, with high level of service due to few intersections and few driveways Direct route Some out-of-way travel for local access from Stratford to route 	 High potential to support efficient movement of goods. Route is predominantly on new alignment, with high level of service due to few intersections and few driveways Direct route Some out-of-way travel for local access from Stratford to route 	 High potential to support efficient movement of goods. Route is predominantly on new alignment, with high level of service due to few intersections and few driveways Direct route Some out-of-way travel for local access from Stratford to route
2 Area	Transportation Syster	n Reliability / Redundancy				
		Potential to support system reliability and redundancy for travel (people and goods) between regions and communities during	High potential to support system reliability and redundancy Route is predominantly on new	High potential to support system reliability and redundancyRoute is predominantly on new	High potential to support system reliability and redundancyRoute is predominantly on new	High potential to support system reliability and redundancyRoute is predominantly on new

Note – Evaluation of the route alternatives is based on a qualitative assessment of each route (high, medium or low). Relevant and site-specific information for each criterion/cell is provided to justify the high, medium or low assessment.

			SEGMENT C - EAST OF STRATFORE	O, SOUTH OF RAILWAY CORRIDOR		
Factor				Route Al	ternative	
/ Sub- Factor	Criteria	Indicator for Route Selection	C1 14-17-20-24-25-26	C2 14-17-19-21-24-25-26	C3 14-17-19-22-25-26	C4 14-17-19-23-26
			connection in the area to accommodate travel during adverse conditions (i.e. provides an alternate route)	connection in the area to accommodate travel during adverse conditions (i.e. provides an alternate route)	connection in the area to accommodate travel during adverse conditions (i.e. provides an alternate route)	connection in the area to accommodate travel during adverse conditions (i.e. provides an alternate route)
5.3 Safet	зу					
	5.3.1 Traffic 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	Route is predominantly on new alignment, with limited number of access points at intersection locations and a few access points associated with private entrances A four/five lane cross section provides for good passing opportunity, provides a wider platform to accommodate evasive moves during potential accidents, and a centre left turn lane would accommodate safer left turns along the highway at intersection and driveway locations	Route is predominantly on new alignment, with limited number of access points at intersection locations and a few access points associated with private entrances A four/five lane cross section provides for good passing opportunity, provides a wider platform to accommodate evasive moves during potential accidents, and a centre left turn lane would accommodate safer left turns along the highway at intersection and driveway locations	Route is predominantly on new alignment, with limited number of access points at intersection locations and a few access points associated with private entrances A four/five lane cross section provides for good passing opportunity, provides a wider platform to accommodate evasive moves during potential accidents, and a centre left turn lane would accommodate safer left turns along the highway at intersection and driveway locations	Route is predominantly on new alignment, with limited number of access points at intersection locations and a few access points associated with private entrances A four/five lane cross section provides for good passing opportunity, provides a wider platform to accommodate evasive moves during potential accidents, and a centre left turn lane would accommodate safer left turns along the highway at intersection and driveway locations
	5.3.2 Emergency Access	Potential to support emergency access to/from existing and/or new provincial facilities.	High potential to support emergency access to/from route Opportunity to provide connections via north-south crossing roads	High potential to support emergency access to/from route Opportunity to provide connections via north-south crossing roads	High potential to support emergency access to/from route Opportunity to provide connections via north-south crossing roads	High potential to support emergency access to/from route Opportunity to provide connections via north-south crossing roads
	5.3.3 Pedestrian, Cyclist and Snowmobile Safety within the highway right-of-way	Potential and significance of change to ease and safety of movement across the highway and within the right-of-way.	High potential to improve pedestrian, cyclist and snowmobile safety Route predominantly on new alignment so limited need for movement within the right-of-way Pedestrian, cyclist and snowmobile movements across right-of-way can be provided at intersection locations and/or designated crossing locations	High potential to improve pedestrian, cyclist and snowmobile safety Route predominantly on new alignment so limited need for movement within the right-of-way Pedestrian, cyclist and snowmobile movements across right-of-way can be provided at intersection locations and/or designated crossing locations	High potential to improve pedestrian, cyclist and snowmobile safety Route predominantly on new alignment so limited need for movement within the right-of-way Pedestrian, cyclist and snowmobile movements across right-of-way can be provided at intersection locations and/or designated crossing locations	High potential to improve pedestrian, cyclist and snowmobile safety Route predominantly on new alignment so limited need for movement within the right-of-way Pedestrian, cyclist and snowmobile movements across right-of-way can be provided at intersection locations and/or designated crossing locations
5.4 Mobi	lity and Accessibility					
	5.4.1 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 connection to concentrations of population, travel performance indicators (LOS, v/c, travel speed) at critical screenlines and on potential to provide higher order transit	Medium potential to improve modal integration, balance and efficiency. Transit service is potentially constrained by the bypass of existing development along Highway 7&8.	 Medium potential to improve modal integration, balance and efficiency. Transit service is potentially constrained by the bypass of existing development along Highway 7&8. 	Medium potential to improve modal integration, balance and efficiency. Transit service is potentially constrained by the bypass of existing development along Highway 7&8.	Medium potential to improve modal integration, balance and efficiency. Transit service is potentially constrained by the bypass of existing development along Highway 7&8.

LEGEND

MOST PREFERRED MODERATELY PREFERRED LEAST PREFERRED NO DIFFERENCE SELECTED CORRIDOR

Note – Evaluation of the route alternatives is based on a qualitative assessment of each route (high, medium or low). Relevant and site-specific information for each criterion/cell is provided to justify the high, medium or low assessment.

SEGMENT C – EAST OF STRATFORD, SOUTH OF RAILWAY CORRIDOR

ctor				Route A	Iternative		
ub- ctor	Criteria	Indicator for Route Selection	C1 14-17-20-24-25-26	C2 14-17-19-21-24-25-26	C3 14-17-19-22-25-26	C4 14-17-19-23-26	
		service.	 Use of existing Perth Road 33 corridor limits opportunities to provide higher order transit service Opportunity to support interface between rail transit service and highway 	 Use of existing Perth Road 33 corridor limits opportunities to provide higher order transit service Opportunity to support interface between rail transit service and highway 	 Use of existing Perth Road 33 corridor limits opportunities to provide higher order transit service Opportunity to support interface between rail transit service and highway 	 Use of existing Perth Road 33 corridor limits opportunities to provide higher order transit service Opportunity to support interface between rail transit service and highway 	
	5.4.2 Linkages to Population and Employment Centres	Potential to improve linkages to population and employment centres for people and goods movement	High potential to improve linkages to population and employment centres. Linkage to Stratford and New Hamburg improved	 High potential to improve linkages to population and employment centres. Linkage to Stratford and New Hamburg improved 	 High potential to improve linkages to population and employment centres. Linkage to Stratford and New Hamburg improved 	 High potential to improve linkages to population and employment centres. Linkage to Stratford and New Hamburg improved 	
	5.4.3 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)	High potential to support recreation and tourism travel Tourist travel through the analysis area is facilitated	High potential to support recreation and tourism travel Tourist travel through the analysis area is facilitated	High potential to support recreation and tourism travel Tourist travel through the analysis area is facilitated	High potential to support recreation and tourism travel Tourist travel through the analysis area is facilitated	
	5.4.4 Accommodate mobility of pedestrians, cyclists and snowmobiles	Potential to accommodate mobility of pedestrians, cyclists within critical travel corridors in urbanized areas and snowmobiles in recognized rural trails	High potential to accommodate mobility of pedestrians, cyclists and snowmobiles Route predominantly on new alignment so limited need for movement within the right-of-way Pedestrian, cyclist and snowmobile movements across right-of-way can be provided at intersection locations and/or designated crossing locations	High potential to accommodate mobility of pedestrians, cyclists and snowmobiles Route predominantly on new alignment so limited need for movement within the right-of-way Pedestrian, cyclist and snowmobile movements across right-of-way can be provided at intersection locations and/or designated crossing locations	High potential to accommodate mobility of pedestrians, cyclists and snowmobiles Route predominantly on new alignment so limited need for movement within the right-of-way Pedestrian, cyclist and snowmobile movements across right-of-way can be provided at intersection locations and/or designated crossing locations	High potential to accommodate mobility of pedestrians, cyclists and snowmobiles Route predominantly on new alignment so limited need for movement within the right-of-way Pedestrian, cyclist and snowmobile movements across right-of-way can be provided at intersection locations and/or designated crossing locations	
Netw	ork Compatibility						
	5.5.1 Network Connectivity	Potential to improve transportation system connectivity within and to/from the analysis area.	High potential to improve transportation system connectivity Provides improved linkage between Stratford and New Hamburg	High potential to improve transportation system connectivity Provides improved linkage between Stratford and New Hamburg	High potential to improve transportation system connectivity Provides improved linkage between Stratford and New Hamburg	High potential to improve transportation system connectivity Provides improved linkage between Stratford and New Hamburg	
	5.5.2 Flexibility for Future Expansion	Potential to address future transportation needs beyond the forecasted planning horizons.	High potential for future expansion. Route is predominantly on new alignment so the majority of the right-of-way could accommodate future expansion	 High potential for future expansion. Route is predominantly on new alignment so the majority of the right-of-way could accommodate future expansion 	 High potential for future expansion. Route is predominantly on new alignment so the majority of the right-of-way could accommodate future expansion 	 High potential for future expansion. Route is predominantly on new alignment so the majority of the right-of-way could accommodate future expansion 	

Note – Evaluation of the route alternatives is based on a qualitative assessment of each route (high, medium or low). Relevant and site-specific information for each criterion/cell is provided to justify the high, medium or low assessment.

			SEGMENT C – EAST OF STRATFORD	D, SOUTH OF RAILWAY CORRIDOR		
actor				Route A	Iternative	
/ Sub- Factor	Criteria	Indicator for Route Selection	C1 14-17-20-24-25-26	C2 14-17-19-21-24-25-26	C3 14-17-19-22-25-26	C4 14-17-19-23-26
i.6 Engi	neering					
	5.6.1 Constructability	Potential ease of implementation considering feasibility/difficulty of physical, property or environmental constraints	Low potential for constructability issues Utilizes segment of existing Perth Road 33 corridor No railway crossings No new major watercourse crossings	Low potential for constructability issues Utilizes segment of existing Perth Road 33 and Road 110 corridors No railway crossings No new major watercourse crossings	Low potential for constructability issues Utilizes segment of existing Perth Road 33 corridor No railway crossings No new major watercourse crossings	Low potential for constructability issues Utilizes segment of existing Pe Road 33 corridor No railway crossings No new major watercourse crossings
	5.6.2 Compliance with Design Criteria	Conformity to applicable provincial safety and design standards.	High conformity to safety and design standards Supports use of better than minimum horizontal and vertical alignment elements Can accommodate standard lane and shoulder widths	High conformity to safety and design standards Supports use of better than minimum horizontal and vertical alignment elements Can accommodate standard lane and shoulder widths	High conformity to safety and design standards Supports use of better than minimum horizontal and vertical alignment elements Can accommodate standard lane and shoulder widths	High conformity to safety and design standards Supports use of better than minimum horizontal and vertical alignment elements Can accommodate standard larger and shoulder widths
5.7 Traff	ic Operations					
		Potential for negative impact on traffic operations due to factors such as design features, private access, and transportation network connections	 Low potential for negative impact on traffic operations Route is predominantly on new alignment, with limited number of access points at intersection locations and a few access points associated with private entrances. Opportunity to provide connections via north-south crossing roads 	 Medium potential for negative impact on traffic operations Route is predominantly on new alignment, with limited number of access points at intersection locations and a few access points associated with private entrance; however route utilizes a segment of Road 110 which will impact the connectivity of Road 110. Opportunity to provide connections via north-south crossing roads 	 Low potential for negative impact on traffic operations Route is predominantly on new alignment, with limited number of access points at intersection locations and a few access points associated with private entrances. Opportunity to provide connections via north-south crossing roads 	Low potential for negative impact of traffic operations Route is predominantly on new alignment, with limited number access points at intersection locations and a few access point associated with private entrance. Opportunity to provide connections via north-south crossing roads
5.8 Cons	struction Cost (exclud	es property costs and engineering costs)				T
		Relative road construction cost, excluding property and engineering costs	Medium cost \$10.0 M	Medium cost \$10.0 M	Medium cost \$10.0 M	Medium cost \$10.0 M

Highway 7&8 Transportation Corridor Planning and Class EA Study

EVALUATION OF ROUTE ALTERNATIVES

Note – Evaluation of the route alternatives is based on a qualitative assessment of each route (high, medium or low). Relevant and site-specific information for each criterion/cell is provided to justify the high, medium or low assessment.

SEGMENT C - EAST OF STRATFORD, SOUTH OF RAILWAY CORRIDOR

Factor			Route Alternative				
/ Sub- Factor	Criteria	Indicator for Route Selection	C1 14-17-20-24-25-26	C2 14-17-19-21-24-25-26	C3 14-17-19-22-25-26	C4 14-17-19-23-26	

SUMMARY OF EVALUATION

Summary of Natural Environment

Route Alternatives C2 is preferred from a natural environment perspective as it has lower potential impacts to terrestrial ecosystems, including wetlands, forests and vegetation, and to groundwater.

Summary of Land Use / Socio-Economic Environment

Route Alternative C1 is preferred from a land use / socio-economic environment perspective as it has lower potential impacts to agriculture,

Summary of Cultural Environment

All route alternatives are comparable in terms of the potential impacts on built heritage and archaeological sites.

Summary of Transportation

All route alternatives are comparable in their ability to support transportation criteria for most transportation factors. However, Route Alternatives C1, C3 and C4 are preferred because they have lower potential for negative impacts to traffic operations.

Conclusion

Based upon the above, Route Alternative C1 is the preferred alternative south of the railway corridor east of Stratford.

SEGMENT C - EAST OF STRATFORD, SOUTH OF RAILWAY CORRIDOR

FACTORS		Weighting			rnative	
			1	2	3	4
1.0 NATURAL ENVIRONMENT 1.1 Fisheries and Aquatic Ecosystems		20.00 8.00				
A. A. Solici res and Aquante Ecosystems	Weighted Score	0.00	2.64	2.64	2.64	2.64
1.2 Terrestrial Ecosystems		5.00				
1.3 Groundwater	Weighted Score	5.00	2.42	3.35	2.67	2.93
	Weighted Score		3.34	3.34	2.67	3.01
1.4 Surface Water	Weighted Score	2.00	0.66	0.66	0.66	0.66
	Factor Score	20.00	9.06	9.99	8.64	9.24
2.0 LAND USE / SOCIO-ECONOMI	IC ENVIRONMENT	35.00		All the same of	State Line	
2.1 Land Use Planning Policies, Goals, Objectives		3.50				
2.2 Land Use / Community	Weighted Score	7.00	2.17	2.17	2.17	2.17
22 Zand Ost / Commany	Weighted Score	7.00	6.08	6.08	6.08	6.08
2.3 Noise Sensitive Areas		5.25	0.50	0.50	0.50	0.55
2.4 Agriculture	Weighted Score	7.00	3.52	3.52	3.52	3.52
	Weighted Score		2.08	1.16	0.23	1.16
2.5 Land Use / Resources	Weighted Score	3.50	3.27	3.27	3.27	3.38
2.6 Major Utility Transmission Corridors	The state of the s	0.70	O.E.	U.E.	0.27	0.00
37.6 1 1 1 1 P 1 1 W 1 M	Weighted Score	0.70	0.47	0.47	0.47	0.47
2.7 Contaminated Property and Waste Managem	ent Weighted Score	0.70	0.47	0.47	0.47	0.47
2.8 Landscape Composition		2.10	HUIT HA		ME ALLINO	
2.9 Air Quality	Weighted Score	5.25	1.41	1,41	1,41	1.41
and Quality	Weighted Score	0120	3.52	3.52	3.52	3.52
	Factored Score	35.00	22.97	22.04	21.12	22.16
3.0 CULTURAL ENVIRONMENT		20.00			SE BUILDING	
3.1 Cultural Heritage - Built Heritage and Cultur	al Landscapes Weighted Score	16.00	13.36	13.36	13.36	13.36
3.2 Archaeology		4.00				10,00
	Weighted Score		2.68	2.68	2.68	2.68
		20.00	4004	4004	1001	
\	Factored Score	20.00	16.04	16.04	16.04	16.04
5.0 TDANSPORTATION	Factorea Score		16.04	16.04	16.04	
5.0 TRANSPORTATION 5.1 Area Transportation System Capacity and Eff		20.00 25.00 3.75	16.04	16.04	16.04	
5.1 Area Transportation System Capacity and Eff	ficiency Weighted Score	25.00 3.75	3.75	16.04	3.75	
5.1 Area Transportation System Capacity and Eff	ficiency Weighted Score undancy	25.00	3.75	3.75	3.75	3.75
5.1 Area Transportation System Capacity and Eff 5.2 Area Transportation System Reliability / Red	ficiency Weighted Score	25.00 3.75				16.04
5.1 Area Transportation System Capacity and Eff 5.2 Area Transportation System Reliability / Red 5.3 Safety	ficiency Weighted Score undancy	25.00 3.75 3.75 6.25	3.75	3.75	3.75	3.75
5.1 Area Transportation System Capacity and Eff 5.2 Area Transportation System Reliability / Red	ficiency Weighted Score undancy Weighted Score	25.00 3.75 3.75	3.75 3.75	3.75	3.75	3.75 3.75
5.1 Area Transportation System Capacity and Eff 5.2 Area Transportation System Reliability / Red 5.3 Safety	ficiency Weighted Score undancy Weighted Score Weighted Score Weighted Score	25.00 3.75 3.75 6.25	3.75 3.75 6.25 2.42	3.75 3.75 6.25 2.42	3.75 3.75 6.25	3.75 3.75 6.25
5.1 Area Transportation System Capacity and Eff 5.2 Area Transportation System Reliability / Redu 5.3 Safety 5.4 Mobility and Accessibility 5.5 Network Compatibility	ficiency Weighted Score undancy Weighted Score Weighted Score	25.00 3.75 3.75 6.25 2.50 1.25	3.75 3.75 6.25	3.75 3.75 6.25	3.75 3.75 6.25	3.75 3.75 6.25
5.1 Area Transportation System Capacity and Eff 5.2 Area Transportation System Reliability / Redu 5.3 Safety 5.4 Mobility and Accessibility 5.5 Network Compatibility 5.6 Engineering	ficiency Weighted Score undancy Weighted Score Weighted Score Weighted Score	25.00 3.75 3.75 6.25 2.50 1.25 2.50	3.75 3.75 6.25 2.42	3.75 3.75 6.25 2.42	3.75 3.75 6.25	3.75 3.75 6.25
5.1 Area Transportation System Capacity and Eff 5.2 Area Transportation System Reliability / Redu 5.3 Safety 5.4 Mobility and Accessibility 5.5 Network Compatibility 5.6 Engineering	ficiency Weighted Score undancy Weighted Score Weighted Score Weighted Score Weighted Score Weighted Score Weighted Score	25.00 3.75 3.75 6.25 2.50 1.25	3.75 3.75 6.25 2.42 1.25	3.75 3.75 6.25 2.42 1.25	3.75 3.75 6.25 2.42 1.25	3.75 3.75 6.25 2.42 1.25
5.1 Area Transportation System Capacity and Eff 5.2 Area Transportation System Reliability / Redi 5.3 Safety 5.4 Mobility and Accessibility	ficiency Weighted Score undancy Weighted Score Weighted Score Weighted Score Weighted Score	25.00 3.75 3.75 6.25 2.50 1.25 2.50	3.75 3.75 6.25 2.42 1.25	3.75 3.75 6.25 2.42 1.25	3.75 3.75 6.25 2.42	3.75 3.75 6.25 2.42
5.1 Area Transportation System Capacity and Eff 5.2 Area Transportation System Reliability / Redu 5.3 Safety 5.4 Mobility and Accessibility 5.5 Network Compatibility 5.6 Engineering 5.7 Traffic Operations	ficiency Weighted Score undancy Weighted Score	25.00 3.75 3.75 6.25 2.50 1.25 2.50 3.75 1.25	3.75 3.75 6.25 2.42 1.25 1.84 2.51	3.75 3.75 6.25 2.42 1.25 1.84 1.24	3.75 3.75 6.25 2.42 1.25 1.84 2.51	3.75 3.75 6.25 2.42 1.25 1.84 2.51
5.1 Area Transportation System Capacity and Eff 5.2 Area Transportation System Reliability / Redu 5.3 Safety 5.4 Mobility and Accessibility 5.5 Network Compatibility 5.6 Engineering 5.7 Traffic Operations	ficiency Weighted Score undancy Weighted Score	25.00 3.75 3.75 6.25 2.50 1.25 2.50 3.75 1.25	3.75 3.75 6.25 2.42 1.25 1.84	3.75 3.75 6.25 2.42 1.25 1.84	3.75 3.75 6.25 2.42 1.25 1.84	3.75 3.75 6.25 2.42 1.25 1.84
5.1 Area Transportation System Capacity and Eff 5.2 Area Transportation System Reliability / Redu 5.3 Safety 5.4 Mobility and Accessibility 5.5 Network Compatibility 5.6 Engineering 5.7 Traffic Operations	ficiency Weighted Score undancy Weighted Score	25.00 3.75 3.75 6.25 2.50 1.25 2.50 3.75 1.25	3.75 3.75 6.25 2.42 1.25 1.84 2.51	3.75 3.75 6.25 2.42 1.25 1.84 1.24	3.75 3.75 6.25 2.42 1.25 1.84 2.51	3.75 3.75 6.25 2.42 1.25 1.84 2.51

NATURAL ENVIRONMENT WEIGHTING TABLE - SEGMENT C: EAST OF STRATFORD, SOUTH OF RAILWAY CORRIDOR

	Factor / Sub-factor / Criteria	Indicator	Net Effect	Weighting	1	Alter 2	native 3	
1.0	NATURAL ENVIRONMENT			20.00		2	3	1
VALUE OF	Taheries and Aquatic Ecosystems	EN TOPINGE AND DEED	STORES AND	Tanana - 1		15-11-11	14	
	1.1.1 Fish Habitat	Potential and significance of: encroachment, severance, displacement; and long-term alteration/disruption as applicable to the following: critical fish habitat features, riparian areas and habitat rehabilitation goals.		8.00				
	1.1.2 Fish Community	Potential and significance of encroachment, severance, displacement; and long-term alteration/disruption as applicable to the following: fish species at risk (vulnerable, threatened or endangered fish species), fish movement/migration, critical fish life stage processes (spawning, rearing, nursery, feeding) and long-term fish community management goals.	No / Low / Medium / High Effects	8.00	0.33	0.33	0.33	0.33
			Weighted Score		2.64	2.64	2.64	2.64
1.2 T	errestrial Ecosystems			5.00		377		
	1.2.1 Wildlife	Potential and significance of: encroachment, severance, displacement; and long-term alteration/disruption as applicable to the following: wildlife species) arisk (valuerable, threatened or endangered wildlife species); wildlife of local and regional importance; migratory birds; critical wildlife habitat features; ecologically functional areas such as connective corridors or travel ways for movement/impartator; important wildlife areas such as deeryards, heronries, waterfowl areas, important bird areas; wildlife management, rehabilitation/research program sites; and interference with critical wildlife life stage processes (eg mating/rearing, etc.).	No / Low / Medium / High Effects	0.75	0.33	0.67	0.33	0.67
	1.2.2 Wetlands	Potential and significance of: encroachment, severance, displacement; and long-term alteration/disruption as applicable to the following: provincially significant wetlands, their buffer areas, and their wetland function; evaluated and un-evaluated wetlands, their wetland buffer areas, and their wetland function; and wetland management, research and/or wetland conservation programs/areas.	No / Low / Medium / High Effects	1.25	0.67	0.67	0.33	0.33
	1.2.3 Forests	Potential and significance of: encroachment, severance, displacement; and long-term alteration/disruption as applicable to the following: significant woodlands/valley lands: and fotest management/research program areas.	No / Low / Medium / High Effects	1.25	0.33	0.67	0.67	0.67
	1.2.4 Vegetation	Potential and significance of: encroachment, severance, displacement; and long-term alteration/disruption as applicable to the following: subsponlations of vegetation species at risk (vulnerable, threatened or endangered species), species of conservation concern and significant regional/local flora/communities; areas/corridors supporting known populations of vegetation species at risk (vulnerable, threatened or endangered species), species of conservation concern and significant flora/communities; and vegetation management, rehabilitation/research program sites.	No / Low / Medium / High Effects	0.75	0.33	0.67	0.67	0.67
	1.2.5 Designated/Special Areas	Potential and significance of: encroachment, severance, displacement, long- term afteration/disruption, change in area character/aesthetics, nuisance impacts, change to access/bravel time, and change to facilities/attilities/services to designated/special areas.	No / Low / Medium / High Effects	1,00	0.67	0.67	0.67	0.67
			Weighted Score		2.42	3.35	2.67	2.93
3 G	roundwater	the state of the second second	THE WASHING	5.00	Shiring	Vibile	PLUI-NIE	TETTE
	1.3.1 Areas of Groundwater Recharge and Discharge	Potential and significance of alteration to areas of groundwater recharge and discharge due to physical intrusion or groundwater inception, drawdown, impoundment, obstruction, or soll compaction impacting groundwater base-flow and quality.	No / Low / Medium / High Effects	0.50	0.67	0.67	0.67	0.67
	1.3.2 Groundwater Source Areas and Wellhead Protection Areas	Potential and significance of alteration to areas of groundwater resource areas and wellhead protection areas due to physical intrusion, or groundwater interception, draw-down, impoundment, obstruction and by soil compaction.	No / Low / Medium / High Effects	1.00	0.67	0.67	0.67	0.67
	1.3.3 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,	No / Low / Medium / High Effects	0.50	0.67	0.67	0.67	0.67

NATURAL ENVIRONMENT WEIGHTING TABLE - SEGMENT C: EAST OF STRATFORD, SOUTH OF RAILWAY CORRIDOR

	Factor / Sub-factor / Criteria	Indicator	Net Effect	Weighting		Alter	native	
60		Thursday.	THE BIRCE		1	2	3	4
0	NATURAL ENVIRONMENT			20.00				= 719
	1.3.4 Private Wells	Potential and significance of alteration to private well use due to physical intrusion, or groundwater interception, draw-down, impoundment, obstruction and by soil compaction.	No / Low / Medium / High Effects	1,00	0.67	0.67	0.33	0.67
	1.3.5 Groundwater-Dependent Commercial Enterprises (e.g. water bottling operations)	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.	No / Low / Medium / High Effects	1,00	1.00	1.00	1.00	1.00
	1.3.6 Groundwater-Sensitive Ecosystems (e.g. groundwater fed wetlands, coldwater streams)	Potential and significance of alteration to groundwater-sensitive ecosystems due to physical intrusion, or groundwater interception, drawdown, impoundment, obstruction and by soil compaction.	No / Low / Medium / High Effects	1.00	0.33	0.33	0.00	0.00
			Weighted Score		3.34	3.34	2.67	3.01
100	Surface Water			2.00				
	I.4.1 Watershed / Sub-Watershed Draimage Features / Patterns	Potential and significance of: encroachment, severance, displacement; and long-term alteration/disruption as applicable to the following: watercourse crossings (permanent, intermittent and ephement); floodplain or meander botts; riparian areas; sensitive headwater areas; and watershed and sub watershed management plans.	No / Low / Medium / High Effects		5,500		9518-2	0.414
	1.4.2 Surface Water Quality and Quantity	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 waterbodies.	No / Low / Medium / High Effects	2.00	0.33	0.33	0.33	0.33
			Weighted Score		0.66	0.66	0.66	0.66
-	M		Factored Score	20.00	9.06	9,99	8.64	9.24

SUMMARY WEIGHTING TABLE - SEGMENT C: EAST OF STRATFORD, SOUTH OF RAILWAY CORRIDOR

Factor / Sub-factor / Criteria	Indicator	Net Effect	Weighting	1		native	4
0 LAND USE / SOCIO-ECONOMIC	ENVIRONMENT		35.00		2	3	MIN
0 Land Use Planning Policies, Goals and Ob	ectives		3,50				
2.1.1 First Nations Land Claims	Potential and significance of encroschment, severance, displacement to areas for which there are First Nations outstanding land claims	No / Low / Medium / High Effects	0.18	0.67	0.67	0.67	0.67
2.1.2 Provincia/Federal land use planning policies/goals/objectives	Degree of composibility with federal/provincial land use policies/goals/objectives	No / Low / Medium / High Effects	0.52	0.33	0.33	0.33	0.33
2.1.3 Municipal (regional and local land use planning policies/goals/ objectives (Official Plans)	Degree of compatibility with municipal Official Plans	No/Low/Medium/High Effects	2,28	0.67	0.67	0.67	0.67
2.1.4 Development Objectives of Private Property Owners	Potential to isolate property from current/future urban envelope. Impact on future land use.	No/Low/Medium/High Effects	0.52	0.67	0.67	0.67	0.67
		Weighted Score		2.17	2.17	2.17	2.17
2 Land Use / Community	METANGE STATE OF		7.00				
2.2.1 First Nation Reserves	Potential and significance of encroachment, severance, displacement, long-term alteration / disruption, change in area character / aesthetics, nuisance impacts and change to access / travel time to First Nation Reserves.	No / Low / Medium / High Effects	0.35	1.00	1.00	1.00	1.00
2.2.2 First Nations' Sacred Grounds	Potential and significance of encroachment, severance, displacement, long-term alteration / disruption, change in area character / aesthetics, nuisance impacts and change to access / travel time to First Nations' sacred grounds.	No / Low / Medium / High Effects	0.35	0.67	0.67	0.67	0.67
2.2.3 Urban and Rural Residential	Potential and significance of: encroschment, severance, displacement, property acquisition; long-term alteration/disruption (e.g., loss of parking area); change in area character / aesthetics (e.g. loss of reverlagenden real; missaice impacts (e.g. istration of highway into current residential envelope); change to access / travel inter, change to facilities / utilities / services interference with residential community cohesion; change to highway operational impacts (e.g., aroo's storage and highway access visibility) to urban and rural residential areas (residents (owners/tenants) and community groups).	No / Low / Medium / High Effects	1.05	0.67	0.67	0.67	0.67
2.2.4 Commercial/Industrial	Potential and significance of: encroachment, severance, displacement, property acquisition; hung-term alteratoridisruption; closinge in area character/assittetics; nuisance impacts; change to travel access/travel time; change in facilitation/tiles/services; interference with commercial community cohesion; change to highway operation impacts (e.g. customer parking, eargo loading/off-hoading/i to commercial and industrial areas (business owners/hemants and customers).	No / Low / Medium / High Effects	1.05	0.67	0.67	0.67	0.67
2.2.5 Tourist Areas and Attractions (e.g. museums, theatres, etc.)	Potential and significance of: encroachment, severance, displacement, property acquisition: long-term alteration/disruption: change in area character/aesthetics; nuisance impacts; change to travel access/travel time; change to facilities/utilities/services; loss of "critical mass" in number of signature business attractions (e.g. number of antique shops); to tourist areas and attractions.	No / Low / Medium / High Effects	1.05	1.00	1.00	1,00	1.00
2.2.6 Community Facilities/Institutions (e.g. hospitals, schools, places of worship, unique community features)	Potential and significance of: enemochment, severance, displacement, property acquisition; long-term alteration/disruption; change in rare character/sestbetics; nutsance impocts; change to travel access/travel time; change to facilities/utilities/services; change to ease and safety of pedestrian movements across the highway and within the highway right-of-way; change to highway operation impocts to current use (e.g. highway onle and vibration interfering with church services); to community facilities and institutions.	No / Low / Medium / High liffeets	1.05	1.00	1.00	1.00	1.00
2.2.7 Municipal Infrastructure and Public Service Facilities (e.g. sawage and water services, police/emergency services, local utilities)	Potential and significance of: encroschment, severance, displacement: long-term alternation/disruption; change to access/travel time; change to facilities/utilities/services; to muricipal infrastructure and public service facilities.	No / Low / Medium / High Effects	0.35	0.67	0.67	0.67	0.67
2.2.8 Downtown Historic Crossroads Function	Potential and significance of interference by long-distance through- traffic on: "main street" function and structure; character/acshietics; change to ease and safety of pedestrian movements across the highway and whith the highway right-of-way; change to on-street parking; in historic downtown area.	No / Low / Medium / High Effects	1.75	1.00	1.00	1.00	1.00
		Weighted Score		6.08	6.08	6.08	6.08
Noise Sensitive Areas (NSAs) (residential a	reas and sensitive institutional uses)		5.25				
2.3.1 Highway Noise	Potential for significant traffic noise increases in NSAs and for noise-sensitive receivers immediately adjacent to the highway	No / Low / Medium / High Effects	5.25	0.67	0.67	0.67	0.67
		Weighted Score		3.52	3.52	3.52	3.52

SUMMARY WEIGHTING TABLE - SEGMENT C: EAST OF STRATFORD, SOUTH OF RAILWAY CORRIDOR

	Factor / Sub-factor / Criteria	Indicator	Net Effect	Weighting	1		native	
AAA	griculture			7.00	75-1-1	2	3	4
-4 /1	2.4.1 Agriculture - Canada Land Inventory Class 1, 2, 3 Land	Potential and significance of eneroachment, severance of Canada Land inventory Classes 1, 2 and 3 soils	No / Low / Medium / High Effects	0.70	0.00	0.00	0.00	0.00
	2.4.2 Agriculture - Farm Infrastructure	Potential and significance of: encroachment, severance, displacement long-term alteration/disruption; nuisance impacts: to farm infrastructure (field tile drainage systems/outlets, irrigation systems, burns/silos/structures, etc.).	No / Low / Medium / High Effects	2.80	0.33	0.00	0.00	0.33
	2.4.3 Agriculture - Operations on Individual Farms	Potential and significance of: encroschment, severance, displacement; long-term alteration/disruption; nuisance impacts; to in-farm field operations (planting, harvesting, grazing, nutrient management, etc.) as applicable to the following; specially crops/cropland; disryflwestock operations; field crop operations; high investment agricultural operations; established agricultural farm communities.	No/Low/Medium/High Effects	2.80	0.33	0.33	0.00	0.00
	2.4.4 Agriculture - Transportation Linkages between Integrated Agricultural Business Units	Potential to severAlisrupt transportation linkages between integrated agricultural business units (movement between integrated agricultural business units of equipment, materials, workers, etc.)	No / Low / Medium / High Effects	0.70	0.33	0.33	0.33	0.33
			Weighted Score		2.08	1.16	0.23	1,16
.5 Lo	and Use / Resources			3.50		DEVI		JUST B
	2.5.1 First Nations' Treaty Rights or Use of Land and Resources for Traditional Purposes (e.g. hunting, fishing, harvesting of country foods, harvesting of medicinal plants)	Potential and significance of: encroachment, severance, displacement; long-term alteration/disruption; neisance impacts; change to access/fravel time; to First Nations' treaty rights or use of land and resources for traditional purposes.	No / Low / Medium / High Effects	0.35	0.33	0.33	0.33	0.67
	2.5.2 Parks and Recreational Areas (e.g., national/provincial parks, conservation areas, municipal parks, public spaces, golf courses, trails, greenways and open space linkages)	Potential and significance of: encroachment, severance, displacement, properly acquisition; long-term alteration/disruption; change in area character deatheries; nuisance impacts; change to accessivated time; change to facilities/utilities/servicer; to parks and recreational areas.	No / Low / Medium / High Effects	2.45	1.00	1.00	1.00	1.00
	2.5.3 Aggregates, Mineral-Resources	Potential and significance of encroachinent, severance, displacement, property acquisition; long-term alteration/disruption; change to access/travel time; change to facilities/stilities/services; to current/future extraction of aggregate and mineral resources.	No / Low / Medium / High Effects	0.70	1.00	1.00	1.00	1.00
			Weighted Score		3.27	3.27	3.27	3.38
6 M	ajor Utility Transmission Corridors (e.g. r	railroads, hydro, gas, oil)		0.70	LELVIL			
		Potential and significance of: encroachment, severance, displacement, property acquisition; long-term alteration/disruption: change to access/fravel time: change to facilities/utilities/services; to major stillity transmission corridors.	No / Low / Medium / High Effects	0.70	0.67	0.67	0.67	0.67
			Weighted Score		0.47	0.47	0.47	0.47
	ontaminated Property and Waste Manage a contaminated sites, and high-risk contamin	ment (e.g. landfills, hazardous waste sites, "brow ation areas)	rnfield" areas, other	0.70				
		Potential and significance of: encroachment, severance, displacement, property acquisition; long-term alteration/disruption;	No / Low / Medium / High	0.70	0.67	0.67	0.67	0.67
		change to access/travel time; change to facilities/stillities/services; to contaminated property and waste management.	Effects					
L		change to access/travel time; change to facilities/artikites/services; to contaminated property and waste management.	Hiffects Weighted Score		0.47	0.47	0.47	0.47
8 La	andscape Composition	change to access/travel time; change to facilities/utilities/services; to contaminated property and waste management.	H09/7505	2.10	0.47	0.47	0.47	0.47
8 La		change to access/travel time; change to facilities/utilities/services; to contaminated property and waste management. Potential and significance of change to scenic composition (total aeatheric value of landscape components).	H09/7505		0.47	0.47	9.47	0.47
8 La	andscape Composition 2.8.1 Scenic Composition (total aesthetic value of	contaminated property and waste management. Potential and significance of change to scenic composition (total	Weighted Score		0.47	0.47	0.47	0.47
8 La	andscape Composition 2.8.1 Scenic Composition (total aesthetic value of landscape components)	contaminated property and waste management. Potential and significance of change to scenic composition (total aesthetic value of landscape components). Potential and significance of change to vistas/outlooks for sensitive	Weighted Score No / Low / Medium / High Effects No / Low / Medium / High Effects No / Low / Medium / High Effects	2.10	0.67	0.67	0.67	0.67
	andscape Composition 2.8.1 Scenic Composition (total aesthetic value of landscape components) 2.8.2 Sensitive Viewer Groups 2.8.3 Scenic Value of Views/Vistas from the transportation facility	contaminated property and waste management. Potential and significance of change to scenic composition (total aesthetic value of landscape components). Potential and significance of change to vistas/outlooks for sensitive viewer groups. Potential and significance of views/vistas from the transportation	Weighted Score No / Low / Medium / High Effects No / Low / Medium / High Effects	2.10				
	2.8.1 Seenic Composition 2.8.1 Seenic Composition (total aesthetic value of landscape components) 2.8.2 Sensitive Viewer Groups 2.8.3 Seenic Value of Views/Vistas from the	contaminated property and waste management. Potential and significance of change to scenic composition (total aesthetic value of landscape components). Potential and significance of change to vistas/outlooks for sensitive viewer groups. Potential and significance of views/vistas from the transportation	Weighted Score No / Low / Medium / High Effects No / Low / Medium / High Effects No / Low / Medium / High Effects	2.10	0.67	0.67	0.67	0.67
	andscape Composition 2.8.1 Scenic Composition (total aesthetic value of landscape components) 2.8.2 Sensitive Viewer Groups 2.8.3 Scenic Value of Views/Vistas from the transportation facility	contaminated property and waste management. Potential and significance of change to scenic composition (total aesthetic value of landscape components). Potential and significance of change to vistas/outlooks for sensitive viewer groups. Potential and significance of views/vistas from the transportation	Weighted Score No / Low / Medium / High Effects No / Low / Medium / High Effects No / Low / Medium / High Effects	2.10	0.67	0.67	0.67	0.67
	2.8.1 Sernic Composition 2.8.1 Sernic Composition (total aesthetic value of landscape components) 2.8.2 Sensitive Viewer Groups 2.8.3 Sernic Value of Views/Vistas from the transportation facility r Quality 2.9.2 Sensitive receptors to air pollutants and	Potential and significance of change to scenic composition (total aesthetic value of landscape components). Potential and significance of change to vistas/outlooks for sensitive viewer groups. Potential and significance of change to vistas/outlooks for sensitive viewer groups. Potential and significance of views/vistas from the transportation facility. Presence and potential for impacts to sensitive receptors to air pollutiants and greenhouse gas emissions, including consideration of namer of sensitive receptors introduced and potential for impacts to sensitive receptors to air pollutiants and greenhouse gas emissions, including consideration of namer of sensitive receptors immediately adjacent to the	Weighted Score No / Low / Medium / High Effects No / Low / Medium / High Effects No / Low / Medium / High Effects Weighted Score	2.10	0.67	0.67	0.67	0.67

Highway 7/8 Transportation Corridor Planning and Class EA Study Cultural Environment

SUMMARY WEIGHTING TABLE - SEGMENT C: EAST OF STRATFORD, SOUTH OF RAILWAY CORRIDOR

	Factor / Sub-factor / Criteria	Indicator	Net Effect	Weighting			native	
					1	2	3	4
.0	CULTURAL ENVIRONMENT			20.00				
.1	Cultural Heritage - Built Heritage and C	ultural Landscapes		16.00		Active 5	Hall	
	3.1.1 Buildings or "Standing" Sites of Architectural of Heritage Significance or Ontario Heritage Foundation Easement Properties		No / Low / Medium / High Effects	8.00	0.67	0.67	0.67	0.67
	3.1.2 Heritage Bridges	Potential for destruction or significant alteration of heritage bridges.	No / Low / Medium / High Effects					
	3.1.3 Areas of Historic 19th Century Settlement	Potential and significance of encroachment, severance, displacement, long-term alteration / disruption, change in area character / aesthetics, missance impacts, change to access / travel, change to facilities / utilities/ service to areas of historic 19th century settlement.	No / Low / Medium / High Effects	3.00	1.00	1.00	1.00	1.00
	3.1.4 Cultural Heritage Landscapes (collection of individual manmade features modifying pristine landscape)	Potential and significance of charge to composition of cultural landscapes.	No / Low / Medium / High liffects	2.00	1.00	1.00	1.00	1,00
	3.1.5 First Nutions' Burial Sites	Potential and significance of encroachment, severance, displacement, long-term alteration / disruption, change in area character / aesthetics, nuisance impacts, change to access / travel, to First Nations' burial sites.	No / Low / Medium / High Effects	0.00	1.00	1.00	1.00	1.00
	3.1.6 Cemeteries	Potential and significance of encroachment, severance, displacement, long-term alteration / disruption, change in area character / neathetics, nuisance impacts, change to access / travel, change to facilities / utilities/	No / Low / Medium / High Effects	3,00	1.00	1.00	1,00	1,00
			Weighted Score		13.36	13.36	13.36	13.36
2 (Cultural Heritage - Archaeology			4.00	E3-11		P/14 11	4
	3.2.1 Pre-Historic and Historic First Nations Sites	Potential for destruction or disturbance of prehistoric and historic First Nations archaeological sites of extreme local, provincial or national interest	No / Low / Medium / High Effects	100			14/49	
	3.2.2 Historic EuorCanadian Archaeological Sites	Potential for destruction or disturbance of historic EuroCanadian archaeological sites of extreme local, provincial or national interest	No / Low / Medium / High Effects	4.00	0.67	0.67	0.67	0.67
	A STATE OF THE PERSON OF THE P		Weighted Score		2.68	2.68	2.68	2.68
			Factored Score	20.00	16.04	16.04	16.04	16.04

Highway 7/8 Transportation Corridor Planning and Class EA Study

SUMMARY WEIGHTING TABLE - SEGMENT C: EAST OF STRATFORD, SOUTH OF RAILWAY CORRIDOR

	Factor / Sub-factor / Criteria	Indicator	Net Effect	Weighting	1	Alter 2	native 3	4
5.0 T	RANSPORTATION			25.00				
5.1 Ar	rea Transportation System Capacity and	1 Efficiency	THE DESIGNATION	3.75		Service of	DULT	
	S.1.2 Efficient movement of people	Potential to support the officient 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	No / Low / Medium / High Effects	1.88	1.00	1.00	1.00	1.00
	S.1.3 Efficient movement of goods	Potential to support the efficient movement of goods between communities and regions based on Level of Service (LOS) and volume to capacity (v/c) on a network, screenline and critical link basis	No / Low / Medium / High Effects	1.88	1.00	1.00	1.00	1.00
			Weighted Score		3.75	3.75	3.75	3.75
.2 Ar	ea Transportation System Reliability /			3.75				11/2/11/3
		Potential to support system reliability and redundancy for travel (people and goods) between regions and communities during adverse conditions.	No / Low / Medium / High Effects	3.75	1.00	1.00	1.00	1.00
3 Saf	Cuty		Weighted Score	6.25	3.75	3.75	3.75	3.75
I		Potential to improve traffic safety based on opportunity to reduce		0.23				
	5.3.1 Truffle Safety	roterina to improve matter salety assess on opportunity to reduce congestion on area road network (LOS and vley and reduce the frequency of intersections and entrances in the Highway 7&8 corridor	No / Low / Medium / High Effects	2.50	1.00	1.00	1.00	1.00
	5.3.2 Emergency Access	Potential to support emergency access toffrom existing and/or new provincial facilities	No / Low / Medium / High Effects	1,25	1.00	1.00	1.00	1.00
	5.3.3 Pedestrian, Cyclist and Snowmobile Safety within the highway right-of-way	Potential and significance of change to case and safety of movement across the highway and within the right-of-way.	No / Low / Medium / High Effects	2,50	1.00	1.00	1,00	1.00
			Weighted Score		6.25	6.25	6.25	6.25
4 Mo	obility and Accessibility			2.50				2.11
	5.4.1 Modal integration, balance and efficiency	Potential to improve modal choice and increase mode split for person trips between communities, regims and major transit station area beard on consection to concentrations of population, trivel performance indicators (LOS, vic. travel speed) at critical screenlines and on potential to provide higher order transit service.	No / Low / Medium / High Effects	0,25	0.67	0.67	0.67	0.67
	5.4.2 Linkages to Population and Employment Centres	Potential to improve linkages to population and employment centres for people and goods movement.	No / Low / Medium / High Effects	0.75	1.00	1.00	1.00	1.00
	5.4.3 Recreation and Tourism Travel	Potential to support recreation and tourism travel within and toffrom the Analysis Area by provision of higher order network (roads and transit) continuity and connectivity and through network performance indicators (LOS, vic, travel speed)	No / Low / Medium / High Effects	0.75.	1.00	1.00	1.00	1.00
	5.4.4 Accommodate mobility of pedestrians, cyclists and snowmobiles	Potential to accommodate mobility of pedestrians, cyclists within critical travel corridors in urbanized areas and snowmobiles in recognized rural trails.	No / Low / Medium / High Effects	0.75	1.00	1,00	1.00	1.00
			Weighted Score		2 42	2.42	2,42	2.42
			() A 1.055 (A)	1.25				200
1	5.5.1 Network Connectivity	Potential to improve transportation system connectivity within and to/from the analysis area.	No / Low / Medium / High Effects	1.00	1.00	1,00	1.00	1.00
	5.5.2 Flexibility for Puture Expansion	Potential to address future transportation needs beyond the forecasted planning horizons.	No / Low / Medium / High Effects	0.25	1.00	1.00	1.00	1.00
di Hil			Weighted Score		1.25	1.25	1.25	1.25
6 Eng	gineering			2.50		T-I		
,	5.6.1 Constructability	Potential case of implementation considering feasibility/difficulty of physical, property or environmental constraints.	No / Low / Medium / High Effects	2.00	0.67	0.67	0.67	0.67
	5.6.2 Compliance with Design Criteria	Conformity to applicable provincial safety and design standards.	No / Low / Medium / High Effects	0.50	1.00	1.00	1.00	1.00
			Weighted Score		1.84	1.84	1.84	1.84
Tro	affic Operations	wites to the double to have	All logicals	3.75		1,111		
		Potential for negative impact on traffic operations due to factors such as design features, private access, and immiportation network connections.	No / Low / Medium / High Effects	3,75	0.67	0.33	0.67	0.67
September 1		The state of the s	Weighted Score	1,000	2,51	1.24	2.51	2.51
8 Cor	nstruction Cost (excludes property costs	and engineering costs)		1.25		7/2/55	1000	
		Relative road construction cost, excluding property and engineering costs.	No / Low / Medium / High Effects	1.25	0.33	0.33	0.33	0.33
			Weighted Score		1,24	1.24	1.24	1.24
			Factored Score	25.00	23.01	21.73	23.01	23.01

SUMMARY WEIGHTING TABLE - SEGMENT C: EAST OF STRATFORD, SOUTH OF RAILWAY CORRIDOR SUMMARY OF SENSITIVITY ANALYSIS - RANKING OF ALTERNATIVES

FACTORS	RATING	WEIGHT	Alternative 1	Alternative 2	Alternative 3	Alternative 4
Evaluation Team	Initial \	Weights	1	3	4	2
		SE	SENSITIVITY ANALYSIS			
Notired Environment	High	%09	2	1	4	က
Natural Living III	Low	10%	1	3	4	2
I and I lea / Socio-Economic Emigrament	High	85%	1	3	4	2
Land Ose / Socio-Economic Environment	Low	10%	2	8	4	-
Cultural Environment	High	20%	1	3	4	2
	Low	10%	1	3	4	2
Transmortation	High	%02	1	4	3	2
ransportation.	Low	10%	1	2	4	3
	Ove	Overall Ranking	1	3	4	2

Highway 7th Transportation Corridor Planning and Class EA Study SEGMENT C - EAST OF STRATFORD, SOUTH OF HAILWAY CORRIDOR

50

Weighting 10.00 4.00

660 6.60 5.68 7,31

Natural 10%

1.13

2.45

2.65

2.45

7.90 5.93

136 136

3.69 3.69 3.69

2,35

0.15 0.73 2.06 2.13 0.29 0.29

221 221

0.55 0.53 0.53

3,95

4.62

4.32

5.00

4.53

10.00

21.60 23.09

6.68

39.50

1.34 1.46

121 1.68

250

			,			-	Merchange
1 A NITHINGS OF STREET	30.00		7	7		ľ	000
LU NATURAL ENVIRONMENT	20.00					1	20.00
Tell Programs and Aquatic Econystems		200	200	200	0.64		20,000
1.3 Termental Foundame	600	407	2.04	204	204		13 60
Weinhard Som		2.42	3.35	2.67	2 93		-
13 Groundwater	\$00						12 50
Weighted Som		334	334	267	301		
14 Surface Water	2000						000
Weighted Score		990	0.66	0.66	0.66		
Designed Course	00.00	30.0	000	0.04	200		000
Tacharda Deare	20.04	20.0	00.0	5	2.64	1	3
Transfer out to the other of the transfer of t	35.00					ľ	000
AN LAND USE / SOCIO-ECUNOMIC ENVIRONMENT	25,00					1	22.00
2.1 Land Use Planning Policies, Goals, Objectives	250		00000				2.20
7.3 Tand Day Community	2000	21/	217	2.17	2.17		
Weighed Com		200	808	6.00	600		440
2.3 Noise Sensitive Areas	525	-		-	-		1.00
Weighted Score	100	3.52	3.52	3.52	352		
2.4 Agriculture	2.00						4.40
Weighted Score		2.06	1.16	0.23	1.16		
2.5 Land Use / Resources	3.50	1				1	2.20
A Main Balle, Transmission Courts.	0.30	327	327	327	338	34	
And Major Chirty Linkshipson Corroces		0.47	0.47	440	0.00		#
2.7 Contaminated Property and Waste Menomenant	0.00	2000	200	200	626		0.44
Weighted Com		0.47	250	0.47	2770		1
28 Tandscape Composition	210	200	100	-	200	1	21
Weighted Some		1,41	1.41	1.41	1.41		
29 Air Ossality	5.25						3.30
Weighted Score	1927	352	3.52	352	3.52		
Factored Score	35.00	22.97	22.04	21.12	22.16		22,00
						L	
3.0 CULTURAL ENVIRONMENT	20.00	THE ME	C DOCUMENT	The Party of the P	No. of Concession, Name of Street, or other		12.50
3.1 Caltural Heritage - Built Heritage and Cultural Landscanes	16.00						10.00
Weighted Some	Ĺ	13.36	13度	13.36	13.36		
3.2 Archaeologo	4.00						250
Weighted Score		2.68	2.68	2.68	2.68		
Factored Score	20.00	16.04	16.04	16.04	16.04		12.50
						L	
5.0 TRANSPORTATION	25.00				THE PARTY NAMED IN		15.50
5.1 Area Transportation System Capacity and Efficiency	3.75						2.33
Weighted Son		3.75	3.75	375	3.75		
5.2 Area Transportation System Reliability / Redundancy	3.75						233
Weighted Some		3.75	3.75	3.75	3.75		į
Come or	9	202	200	202	0.00	011	3.88
Ed Mckiller and Assemblife.	2.60	909	000	979	979		30.
Weighted Som		2.62	30	3.00	240		3
S.S. Network Compatibility	1.25					Û	0.78
Weighted Son		125	125	125	1.25		
5.6 Engineering	250		Service and the service and th				1.55
Weighted Soon	20.0	1.84	1.84	1.84	1.84		2
N. Ifalic Operation	2.03		****		2000		148
* expired Acts * Construction Cost	1.75	167	1.64	531	231		36.0
Weighted Some		1.24	124	124	124		979
Factored Score	25.00	23.01	21.73	23.01	23.01		15.50
	100 00					L	
	100.00					1	
Total Alternative Score		71.07	18.69	68.81	70.45	-	100 00

1.2 Terrestrial Kooystens	200	204	504	264	264	12.50	6.60	٥
Weighted Score		2.42	3.35	2.67	2.93		90'9	10
L3 Groundwater Weinhard Com	200	ne	2000	7.007	100	12.50	34.0	Ľ
14 Surface Water	2.00	-		200.7	1000	200	000	
Weighted Score	1	990	99'0	0.66	990		1.65	+
Factored Score	20.00	9.06	9.99	8.64	9.24	20.00	22.64	24
								L
2.0 LAND USE / SOCIO-ECONOMIC ENVIRONMENT	35.00			N IN		22.00		
2.1 Land Use Planning Policies, Goals, Objectives	3.50	41				2.20		
Weighted Some		2.17	217	2.17	2.17		1.36	+
22 Land Use / Community	7,00					4.40		
2.3 Noise Consisting Appear	***	6.06	209	6.08	6.06	3.70	3.82	60
Weighted Score		3.52	3.52	3.52	3.52		221	53
2.4 Agriculture	7.00					4.40		
Weighted Some	3.60	2.06	1.16	023	1.16		131	a
Weighted Sovre		327	327	327	3.38	770	2.05	2
2.6 Major Utility Transmission Corridors	0.70					0.44		
Neighted Some	g, o	0.47	0.47	0.47	0.47	0.44	0.29	0
Weighted Soare		0.47	0.47	14.0	740	100	0.29	0
2.8 Landscape Composition	2.10					1.32		
2.6 Air Onellin	4.36	1.41	1.41	1.41	1,41	3.30	98'0	0
Weighted Score	757	352	352	352	352	200	221	2
Factored Score	35.00	22.97	22.04	21.12	22.16	22.00	14.44	13
3.0 CULTURAL ENVIRONMENT	20.00			THE REAL PROPERTY.		12.50		
3.1 Cultural Heritage - Built Heritage and Cultural Landscapes Weichted Com-	16.00	20.00	20.00	40.00	20.00	10.00	36.0	ľ
32 Archaeology	4.00			200	200	250	200	9
Weighted Sowe		2.66	2.68	2.68	2.68		1.08	1
Factored Score	20.00	16.04	16.04	16.04	16.04	12.50	10.03	10
5.0 TRANSPORTATION	25.00				Country or wind	15.50		
5.1 Area Transportation System Capacity and Efficiency	3.75					2.33		
C2 Area Transportation System Reliability (Redundance	174	375	372	375	375	2.33	233	2
Weighted Score		3.75	3.75	3.75	3.75		233	2
SG Safety Weighted Scoon	2	4.00	200	30.9	90.0	3.88	20.0	
S.4 Mobility and Accessibility	250	-	-	200	040	1.55	2000	1
Weighted Some		2.42	2.42	242	2.42		1.50	1
5.5 Network Compatibility Weighted Some	9	25	**	196	1.96	0.78	82.0	
5.6 Engineering	2.50					1.55		
Weighted Some		1.84	1.84	1.84	1.84		1.14	şri .
N. Traffic Operations Weighted Some	3/19	251	124	251	251	2.33	1.56	0
5.8 Construction Cost	133					0.78		
Weighted Score		1.24	124	124	1.24		110	0
Factored Score	25.00	23.01	21.73	23.01	23.01	15.50	14.26	13
	100.00							
Total Alternative Score		71.07	18.69	68.81	70.45	100.00	61.36	62
		The second second		The Control of the Co				

1.13

23.84

24.88

39.50 18.00

13.93

13.28

1.59

1 59

1.59

5.93

0.08 0.08

620 620

15.03 15.03 15.03

1,15

420 420 420

4.20

4.20 7.00

233 233

233 233 3.86 3.88

1.50

18.05

18.05

3.02

18.05

22.50

10.03

10.03

4.50

835 835 835

28.00

73.44

71.97

72.26

74.26

100.00

61.31

59.17

2.33

28,00

14.26

2.81

1,39

1.40

1.40

Highway 178 Tamsportation Comitor Planning and Class EA Study SEGMENT C - EAST OF STRAIFORD, Land Uke/Sooto-Economic 85%

5290

Outheral SOFs.

0.63

Weighting Mernative Weighting Renative		11.20	7,000 3370 4,000 3724 4,10 3,13 1441 2,000 1477	2.13 tall 2.00	807	0.92 0.92 0.92 0.92	28.00 12.68 13.39 12.10 12.93 12.50 5.66 6.24 5.40	2-cs 10.00	1.00 0.00 0.00 0.00 0.00 1.50 1.50 1.50	970	1.74	2.00 1.01 1.01 1.01 2.21 2.21 2.21 2.21	0.00 0.	0.93 0.93 0.97	0.13 0.13 0.13 0.13 0.13	0.13 0.13 0.13 0.13	0.50 0.40 0.40 0.40 0.88 0.88	1.50 1.01 1.01 1.01 2.01 2.01	6.30 6.03 6.33 22.00 14.44 13.86	28.00	22.40 18.70 18.70 18.70 18.70	5.60 3.75 3.75 3.75 5.70 6.70 6.70 6.70	8 22.46 22.46 50.00 40.10 40.10	34.00	5.10	5.10 5.10 5.10 5.10 2.33 2.33 2.33	5.10 5.10 5.10	850 850 850	329 329 329	07.1 07.1 07.1 07.1	3,40 2.50 2.50 2.50 1.14 1.14 1.14	233	3.42 3.42 0.77 156 0.77	34,00 31.29 29.56 31.29 31.29 15.50 14.26 13.47 14.26		
-			0.73	20.00	2	0.17	2.31		5.27		14.75	854	2.81	8.22	1.34	1.14	3.42	854	53.83	Ц	3.34	19:0	4.01			6.75	52.0	125	0.45	0.25	0.37	0.00	8 8	4.60		34 17
	,	-	+		+		-	Con laboration	527		4.76	354	950	7.83	134	1.14	3.42	154	1.29		22	797	10.	100		175	37.5	521	2.48						H	
Alternative	,		+	190			2.16	THE OWNER OF	527 527			854 854	2.81 0.56	7.93 7.93	114 134	1,14 1,14	3.42 3.42	854 854	53.54 51.29		334 334	790 190	4.01 4.01	THE RESERVE THE PERSON NAMED IN	ŀ	0.75 0.75	0.75 0.75	1.25 1.25	0.48 0.48	0.25 0.25	0.37 0.37 0	***	050	4.60		90 69
		-	990	200		0.17	2.30 2.16		Ė		14.76								3 53.54			-						-		0.25	0.37	2000	200 200	4.60		90 69 99 99 99
	5.00	900	250 9900	0.84		0.17 0.17	2.20 2.30 2.16	85.00	527 527		14.76	854	2.81	7.93 7.93	1,14 1,14	1,14 1,14	342 3.42	854	53.54	5.00	334 334	0.07	5.00 4.01 4.01	5.00		0.75	0.75	1.25 1.25	0.48 0.48	0.25 0.25 0.25	0.37 0.37	2000	200 200	435 4.60		90 69 05 199

250

0.62

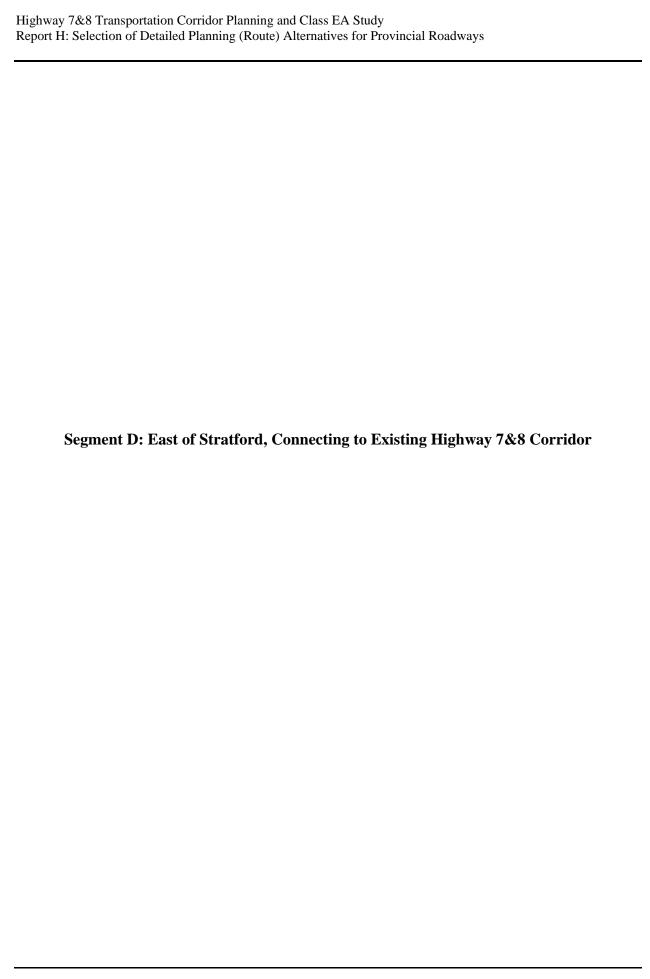
Highway 7/8 Transportation Comidor Parenting and Class EA Study SEGMENT C - EAST OF STRATFORD, Cultural 10%.

FACTORS	Weighting		Atternative	ative		Weishting	l l		Alternative		Weise	Weighting	M	Alternative	
		-	2		*	•		*	1	,		-	2	17	+
1.0 NATURAL ENVIRONMENT	22.50					1.125 8.00					0.4 24	24.00			
1.1 Fisheries and Aquatic Ecosystems	00'6				1000	3.20	0.00				09'6	99			
Weighted Score		2.97	2.87	2.97	2.97		13	1.06	1.06	1.06			317 3.17	3.17	3.17
1.2 Terrestrial Ecosystems	5.63					200				1000	19	009			
Weighted Score	The second second	2.72	3.77	3.00	3.29		0.97	134	1.07	1,17		2.90	4.02	3.20	3.51
13 Groundwater	5.63					2.00	4				19	0079			
Weighted Score		3.75	3.76	300	3.39		7.7	134	107	120		401	4.01	320	3.61
1.4 Serface Water	9		-			080		ŀ			rà:	2.40			
Weighted Soore	1	0.74	0.74	0.74	0.74		+	+	+			+	+	0.79	0.79
Factored Score	22.50	10.19	11.24	9.72	10.39	8.00	3.62	62 4.00	3.46	3.69	24	24.00 10.87	.87 11.99	10.37	11.08
2.0 LAND USE / SOCIO-ECONOMIC ENVIRONMENT	39.50					1.13 14,00	0	C. C.			0.40 42.00	00			
2.1 Land Use Planning Policies, Goals, Objectives	3.95					1.40	ON SHEET		THE REAL PROPERTY.		4	420			
Weighted Score		2.45	2.45	2.45	2.45		0.87	780 587	0.87	0.87		2.60	260	2.60	2.60
2.2 Land Use / Community	7.90					2.80	L				8	8.40			
Weighted Score		98'9	98.9	6.86	5.85		2.43	43 2.43	2.43	2.43		7.29	7.20	7.20	7.90
2.3 Noise Sensitive Areas	5.93					2.10	L				9	08.9			
Weighted Score		3.97	3.97	3.97	3.97) in the second	1.41	1,41	1741	1741		420	420	4.77	7.20
2.4 Agriculture	7.90					2.80	L				06	8.40			
Weighted Score		2.35	1.30	0.26	1.30		0.83	63 0.46	000	0.46	6	2.40	1 30	0.58	04.4
2.5 Land Die / Resources	3.05					T.40						7.00		070	2000
Weighted Some		3.69	3.69	3.69	3.82		131	131	131	1.36		160	400	9.00	700
2.6 Make Dillity Transmission Corridors	0.70					90.0				100	0	0.04		225	4.00
Weighted Some		0.53	0.53	0.53	0.63	0.00	0.10	010	0.00	0.0			-	200	0.00
7.7 Contemporal Beauty and Wate Measurest	0.70	news.	200	W39	200	0.78				0.79		020	900	0.55	0.56
	0.79	200	40.00	200	-	0.78					0	0.84	ı		
Werglind Some	100	0.53	0.83	0.53	0.53		0.19	19 0.19	65.0	0.19		0.56	950 95	0.56	950
	157	4.50	****	* 600		17.34	-	-			-	252			
And Air Ownite	603	eg-1	100	1.00	1.39	0.00		900	950	0.56		1,69	1.69	1.69	1.69
Sirelina Sir	2.93	400	444	400.0	4 8 8 8	7.10		-			9	6.30			
anne neithru	-	2.30	0.00	100	180					+		+	+	422	422
Factored Score	39.50	25.92	24.88	23.84	25.01	14.00	0 9.19	19 8.82	8.45	8.87	45.	42.00 27.56	56 26.45	25.34	26.60
							_					_			
30 CHI TITRAL ENVIRONMENT	10.00				The same of the same of	8 00		THE PERSON NAMED IN	Section 1	The Real Property lies	24 00	00	-		
11 Charles Paris Con 11 Acres 11 Charles	000					0.00					040	000			
A.1 Californi Heritage - Built Berntage and Cultural Landscapes	8.00	-		-		p-40					19	19.20			
Wrighted Nove	***************************************	99'9	999	859	6.68	700	5.34	34 5.34	534	534			16.03 16.03	16.03	16.03
A. Archiecology	7.00	***	* 0.0	100	-	1.60	1				4	4.80			
Weighted Secre	-	134	1.00	138	7					1.07		+	+	322	322
Factored Score	10.00	8.02	8.02	8.02	8.02	8.00	6.42	42 6.42	6.42	6.42	24.	24.00 19.25	25 19.25	19.25	19.25
5.0 TRANSPORTATION	28.00					1.12 70.00	0		Contract of the second		28 10	10.00			
5.1 Area Transportation System Capacity and Efficiency	420										Г	1.50			
Weighted Score		4,20	4.20	420	420			10.50 10.50	10.50	10.50		1.50	1.50	150	1.50
S.2. Area Transportation System Reliability / Redundancy	4.20					10.50		Ī				1.50			
Weighled Score	-	4.20	4.20	420	4.20	200		10.50 10.50	10.50	10.50		150	05.1 05	150	1.50
Notabled Some	007	700	200	200	2.00	1730	17.50	12 EA	2000	V2 44		230	45.0	-	-
54 Mobility and Accessibility	2.80			-	0000	2.00			ı	11.30	1	1001		620	7520
Weighted Score		2.71	2.71	271	2.71		6.77	17 6.77	6.77	6.77		72.0	250 25	250	26.0
5.5 Network Compatibility	1.40					3.50					0.50	L			
Weighted Some	1000	1.40	1.40	1.40	1.40		3.50	90 3.50	3.50	3.50		0.50	050 050	0.50	0.50
No Laginering	7.00	2000	2000	2000	90.0	7,00	3. 3	31.3		200		00"			
S7 Traffic Operations	4.30	****	2000	200	907	10.50			Ó G	0.10	12	1.50	0.74	0.74	0.74
Weighted Scare		2.81	1.39	2.81	2.81		7.04	3.47	7.04	7.04		1,01	0.50	101	1.01
5.8 Construction Cost	1.40					3.50	Ц				0	0.50			
Weighted Sowe		1.39	1.39	1.30	1.39		+	+	+					0.50	0.50
Factored Score	28.00	25.77	24.34	25.77	25.77	70.00	0 64.42	42 60.85	5 64.42	64.42	10	10.00 9.20	69'8 02	9.20	9.20
					/		-								
Total Alternative Score	100.00	69.90	68.48	67.34	69.19	100.00	83.65	80.08	8 82.74	83.40	100.00	88.99 00	88 66.38	64.16	66.13
	******	2000	2000	Towns of	- Const	4000					700				00.13

1.20

0.4

120



Not	e – Evaluation of the re	oute alternatives is based on a qualitative assessme	ent of each route (high, medium or low).	Relevant and site-specific information for	each criterion/cell is provided to justify the	e high, medium or low assessment.
		SEGMEN	T D – EAST OF STRATFORD, CONNEC	TING TO EXISTING HIGHWAY 7&8 CO	RRIDOR	
Factor				Route A	Iternative	
/ Sub- Factor	Criteria	Indicator for Route Selection	D1 15-16-20-24-25-26	D2 15-16-18-21-24-25-26	D3 15-16-18-22-25-26	D4 15-16-18-23-26
1. NATU	RAL ENVIRONMENT	AL FACTORS				
1.1 Fish	eries and Aquatic Ec	osystems				
1.1 Fish	1.1.2 Fish Community	Potential and significance of:	 Medium potential to affect fish and fish habitat Proposed alignment crosses 2 permanent unassigned tributaries and 1 permanent warmwater tributary of Trout Creek, Thames River Watershed Proposed alignment crosses 1 permanent unassigned tributary of Avon River, Thames River Watershed. Watercourses contain low quality habitat an may directly support warmwater fish species Fish communities and habitats present are considered to be moderately resilient to disturbance and show evidence of historical channel alignments or modifications Feeding and spawning areas are abundant within the reaches outside of the study area. There are no critical habitat types within reaches associated with the route. There are no SAR within the route Expected impacts include temporary disturbance to fish and fish habitat associated with construction, potential for short term impacts to water quality during construction. Impacts can be mitigated and/or compensated. 	 High potential to affect fish and fish habitat Proposed alignment crosses 2 permanent unassigned tributaries and 1 permanent warmwater tributary of Trout Creek, Thames River Watershed Proposed alignment crosses 1 permanent unassigned tributary of Avon River, Thames River Watershed. The Avon River crossing is an existing crossing at Highway 7&8. Impacts may also occur to shorelines of an existing standing water body (i.e. pond) Watercourses contain low quality habitat and may directly support warmwater fish species. Fish communities and habitats present are considered to be moderately resilient to disturbance and show evidence of historical channel alignments or modifications Feeding and spawning areas are abundant within the reaches outside of the study area. There are no critical habitat types within reaches associated with the route. There are no SAR within the route Expected impacts include temporary disturbance to fish and fish habitat associated with construction, potential for short term impacts to water quality during construction. Impacts can be mitigated and/or compensated. Impacts to waterbody may include 	 High potential to affect fish and fish habitat Proposed alignment crosses 2 permanent unassigned tributaries and 1 permanent warmwater tributary of Trout Creek, Thames River Watershed Proposed alignment crosses 1 permanent unassigned tributary of Avon River, Thames River Watershed. The Avon River crossing is an existing crossing at Highway 7&8 Impacts may also occur to shorelines of an existing standing water body (i.e. pond) and edge effects to an unassigned wetland Watercourses contain low quality habitat and may directly support warmwater fish species. Fish communities and habitats present are considered to be moderately resilient to disturbance and show evidence of historical channel alignments or modifications Feeding and spawning areas are abundant within the reaches outside of the study area. There are no critical habitat types within reaches associated with the route. There are no SAR within the route Expected impacts include temporary disturbance to fish and fish habitat associated with construction, potential for short term impacts to water quality during construction. Impacts can be mitigated and/or compensated. 	 High potential to affect fish and fish habitat Proposed alignment crosses 2 permanent unassigned tributaries of Trout Creek, Thames River Watershed Proposed alignment crosses 1 permanent unassigned tributary of Avon River, Thames River Watershed. The Avon River crossing is an existing crossing at Highway 7&8 Impacts may also occur to shorelines of an existing standing water body (i.e. pond). Watercourses contain low quality habitat and may directly support warmwater fish species. Fish communities and habitats present are considered to be moderately resilient to disturbance and show evidence of historical channel alignments or modifications Feeding and spawning areas are abundant within the reaches outside of the study area. There are no critical habitat types within reaches associated with the route. There are no SAR within the route Expected impacts include temporary disturbance to fish and fish habitat associated with construction, potential for short term impacts to water quality during construction. Impacts can be mitigated and/or compensated. Impacts to waterbody may include edge effects resulting in loss of

LEGEND

MOST PREFERRED MODERATELY PREFERRED LEAST PREFERRED **NO DIFFERENCE** SELECTED CORRIDOR

Note – Evaluation of the route alternatives is based on a qualitative assessment of each route (high, medium or low). Relevant and site-specific information for each criterion/cell is provided to justify the high, medium or low assessment.

		SEGMEN ⁻	TD – EAST OF STRATFORD, CONNEC	TING TO EXISTING HIGHWAY 7&8 CO	RRIDOR	
Factor				Route A	Iternative	
/ Sub- Factor	Criteria	Indicator for Route Selection	D1 15-16-20-24-25-26	D2 15-16-18-21-24-25-26	D3 15-16-18-22-25-26	D4 15-16-18-23-26
1.2 Terre	estrial Ecosystems	•		•		
	1.2.1 Wildlife	Potential and significance of:	 Medium potential to affect wildlife and their habitat No special concern, endangered or threatened wildlife species No provincially rare species (S1 – S3) 2 area sensitive bird species recorded in study corridor 1 MNR area sensitive bird species 2 frog species were recorded within the route, potential to disrupt habitat for these species Route would bi-sect large track of forest, potential to impact important wildlife area 	 Medium potential to affect wildlife and their habitat No special concern, endangered or threatened wildlife species No provincially rare species (S1 – S3) 2 area sensitive bird species recorded in study corridor 1 MNR area sensitive bird species 2 frog species were recorded within the route, potential to disrupt habitat for these species 	 Medium potential to affect wildlife and their habitat No special concern, endangered or threatened wildlife species No provincially rare species (S1 – S3) 3 area sensitive bird species recorded in study corridor 1 MNR area sensitive bird species 3 frog species were recorded within the route, potential to disrupt habitat for these species 	 Low potential to affect wildlife and their habitat No special concern, endangered or threatened wildlife species No provincially rare species (S1 – S3) 1 frog species were recorded within the route, potential to disrupt habitat for these species
	1.2.2 Wetlands	Potential and significance of:	 Low potential to affect wetlands No PSW or LSW are present within the study corridor 3 unevaluated low-moderate quality wetlands 	No PSW or LSW are present within the study corridor 2 unevaluated low-moderate quality wetlands	Medium potential to affect wetlands No PSW or LSW are present within the study corridor 2 unevaluated low-moderate quality wetlands 1 unevaluated wetland/standing water body impacted	Moderate potential to affect wetlands No PSW or LSW are present within the study corridor 1evaluated low-moderate quality wetlands 1 unevaluated wetland/standing water body impacted low-moderate quality
	1.2.3 Forests	Potential and significance of:	Medium potential to affect significant or established woodlands of forests The route will require a significant removal of vegetation from 2 woodlands, the removal of this woodland would impact (reduce and/or remove) core interior forest habitat on both sides of the route Impact to these woodlands includes severance and edge effects	Low potential to affect significant or established woodlands of forests 4 woodland units are impacted, these woodlands are relatively small Impacts to these woodlands include edge effects	Low potential to affect significant or established woodlands of forests 4 woodland units are impacted, these woodlands are relatively small Impacts to these woodlands include edge effects	Low potential to affect significant or established woodlands of forests 3 relatively small woodland units are impacted, Impacts to these woodlands include edge effects

MOST PREFERRED	MODERATELY PREFERRED	LEAST PREFERRED	NO DIFFERENCE	SELECTED CORRIDOR

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Note – Evaluation of the route alternatives is based on a qualitative assessment of each route (high, medium or low). Relevant and site-specific information for each criterion/cell is provided to justify the high, medium or low assessment.							
	SEGMENT D – EAST OF STRATFORD, CONNECTING TO EXISTING HIGHWAY 7&8 CORRIDOR Route Alternative						
Factor / Sub- Factor	Criteria	Indicator for Route Selection	D1 15-16-20-24-25-26	D2 15-16-18-21-24-25-26	D3 15-16-18-22-25-26	D4 15-16-18-23-26	
			 4 additional woodland units are impacted, these woodlands are relatively small Impacts to these woodlands include edge effects 				
	1.2.4 Vegetation	Potential and significance of:	Medium potential to affect vegetation Route is predominantly existing roadway and agricultural field 1 Provincially Significant NHIC record found in database Impacts include severance and displacement of high forest habitat	Low potential to affect vegetation Route is predominantly existing roadway and agricultural field 1 provincially significant NHIC record found in database	Low potential to affect vegetation Route is predominantly existing roadway and agricultural field 1 provincially significant NHIC record found in database	Route is predominantly existing roadway and agricultural field 1 provincially significant NHIC record found in database	
	1.2.5 Designated/ Special Areas	Potential and significance of:	Low potential to affect designated/special areas • Does not cross any ESA or ANSI	Low potential to affect designated/special areas • Does not cross any ESA or ANSI	Low potential to affect designated/special areas • Does not cross any ESA or ANSI	Low potential to affect designated/special areas Does not cross any ESA or ANSI	
1.3 Gro	1.3 Groundwater						
	1.3.1 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	Low potential to adversely affect volume of groundwater at recharge and discharge areas Surface runoff is interpreted to exceed infiltration for the majority of the route given the relatively impermeable nature of the glaciolacustrine and silty till deposits. However, in areas of sandy deposits, such as river crossings,	Low potential to adversely affect volume of groundwater at recharge and discharge areas • Surface runoff is interpreted to exceed infiltration for the majority of the route given the relatively impermeable nature of the glaciolacustrine and silty till deposits. • However, in areas of sandy deposits, such as river crossings,	Low potential to adversely affect volume of groundwater at recharge and discharge areas • Surface runoff is interpreted to exceed infiltration for the majority of the route given the relatively impermeable nature of the glaciolacustrine and silty till deposits. • However, in areas of sandy deposits, such as river crossings,	Low potential to adversely affect volume of groundwater at recharge and discharge areas • Surface runoff is interpreted to exceed infiltration for the majority of the route given the relatively impermeable nature of the glaciolacustrine and silty till deposits. • However, in areas of sandy deposits, such as river crossings,	

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SEGMENT D – EAST OF STRATFORD, CONNECTING TO EXISTING HIGHWAY 7&8 CORRIDOR

Factor				Route Alternative			
/ Sub- Factor	Criteria	Indicator for Route Selection	D1 15-16-20-24-25-26	D2 15-16-18-21-24-25-26	D3 15-16-18-22-25-26	D4 15-16-18-23-26	
			higher infiltration can be expected. No temporary or long-term change to groundwater recharge or discharge is anticipated due to the small surface area affected by highway construction in the proposed corridor.	 higher infiltration can be expected. No temporary or long-term change to groundwater recharge or discharge is anticipated due to the small surface area affected by highway construction in the proposed corridor. 	 higher infiltration can be expected. No temporary or long-term change to groundwater recharge or discharge is anticipated due to the small surface area affected by highway construction in the proposed corridor. 	 higher infiltration can be expected. No temporary or long-term change to groundwater recharge or discharge is anticipated due to the small surface area affected by highway construction in the proposed corridor. 	
	1.3.2 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	Low potential to adversely affect groundwater wellhead protection area The route is located downgradient of the designated wellhead protection areas for Stratford.	Low potential to adversely affect groundwater wellhead protection area The route is located downgradient of the designated wellhead protection areas for Stratford.	Low potential to adversely affect groundwater wellhead protection area. The route is located downgradient of the designated wellhead protection areas for Stratford	Low potential to adversely affect groundwater wellhead protection area. The route is located downgradient of the designated wellhead protection areas for Stratford.	
	1.3.3 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	Low potential to adversely affect large volume wells. The route is located downgradient of the large volume municipal wells for Stratford.	 Low potential to adversely affect large volume wells. The route is located downgradient of the large volume municipal wells for Stratford. 	 Low potential to adversely affect large volume wells. The route is located downgradient of the large volume municipal wells for Stratford. 	Low potential to adversely affect large volume wells. The route is located downgradient of the large volume municipal wells for Stratford.	
	1.3.4 Private Wells	Potential and significance of alteration to private well use due to physical intrusion, or groundwater interception, draw-down, impoundment, obstruction and by soil compaction	 Low potential to adversely affect private wells The route is in close proximity (<150 m) to two shallow dug wells. These wells are located where the route turns south at Road 109 and immediately to the west of Road 111 along Lorne Avenue East. These wells are sensitive to surface contamination (i.e. road salt). The potential exists for long-term and short-term effects to these wells due to their close proximity to the route. Mitigation measures to prevent adverse impact to these wells due to highway construction should be implemented, such as a road salt management plan. All other private wells along the route obtain water supply from the deep confined bedrock aquifer. Five of these deep bedrock wells are located in close proximity (<50 m) to the edge of the proposed route. Depending on further well 	 High potential to adversely affect private wells Will directly result in the removal of one well and potential to adversely affect other private wells The route appears to intersect the location of one deep aquifer well located along highway 110th Road, south of the railway tracks. This well will require decommissioning prior to highway construction. The proposed route is also in close proximity (<150 m) to four shallow dug wells. These wells are located along the existing highway 7/8 corridor west of Road 109 and immediately to the west of Road 111 along Lorne Avenue East. These wells are sensitive to surface contamination (i.e. road salt). The potential exists for long-term and short-term effects to these wells due to their close proximity to the route. Mitigation measures to prevent adverse impact to these wells due to 	 Medium potential to adversely affect private wells The route is in close proximity (<150 m) to four shallow dug wells. These wells are located along the existing highway 7/8 corridor west of Road 109 and immediately to the west of Road 111 along Lorne Avenue East. These wells are sensitive to surface contamination (i.e. road salt). The potential exists for long-term and short-term effects to these wells due to their close proximity to the route. Mitigation measures to prevent adverse impact to these wells due to highway construction should be implemented, such as a road salt management plan. All other private wells along the route obtain water supply from the deep confined bedrock aquifer. Six of these deep bedrock wells are located in close proximity (<50 m) to the edge of the proposed route. Depending on further well 	 Medium potential to adversely affect private wells The route is in close proximity (<150 m) to four shallow dug wells. These wells are located along the existing highway 7/8 corridor west of Road 109 and immediately to the west of Road 111 along Lorne Avenue East. These wells are sensitive to surface contamination (i.e. road salt). The potential exists for long-term and short-term effects to these wells due to their close proximity to the route. Mitigation measures to prevent adverse impact to these wells due to highway construction should be implemented, such as a road salt management plan. All other private wells along the route obtain water supply from the deep confined bedrock aquifer. Five of these deep bedrock wells are located in close proximity (<50 m) to the edge of the proposed route. Depending on further well 	

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Not	Note – Evaluation of the route alternatives is based on a qualitative assessment of each route (high, medium or low). Relevant and site-specific information for each criterion/cell is provided to justify the high, medium or low assessment.						
	SEGMENT D – EAST OF STRATFORD, CONNECTING TO EXISTING HIGHWAY 7&8 CORRIDOR						
Factor / Sub- Factor	Criteria	Indicator for Route Selection	D1 15-16-20-24-25-26	Route Al D2 15-16-18-21-24-25-26	D3 15-16-18-22-25-26	D4 15-16-18-23-26	
			investigations these may require decommissioning and replacement prior to highway construction.	highway construction should be implemented, such as a road salt management plan. • All other private wells along the route obtain water supply from the deep confined bedrock aquifer. Five of these deep bedrock wells are located in close proximity (<50 m) to the edge of the proposed route. Depending on further well investigations these may require decommissioning and replacement prior to highway construction.	investigations these may require decommissioning and replacement prior to highway construction.	investigations these may require decommissioning and replacement prior to highway construction.	
	1.3.5 Groundwater- Dependent Commercial Enterprises (e.g. water bottling operations)	Potential and significance of alteration to groundwater use by groundwater-dependent commercial enterprises due to physical intrusion, or groundwater interception, drawdown, impoundment, obstruction and by soil compaction	 No potential to adversely affect groundwater dependent commercial enterprises Route intersects surficial irrigation / drainage features. No groundwater dependent commercial enterprises have been identified along this route. 	 No potential to adversely affect groundwater dependent commercial enterprises Route intersects surficial irrigation / drainage features. No groundwater dependent commercial enterprises have been identified along this route. 	 No potential to adversely affect groundwater dependent commercial enterprises No groundwater dependent commercial enterprises have been identified along this route. 	 No potential to adversely affect groundwater dependent commercial enterprises Route intersects surficial irrigation / drainage features. No groundwater dependent commercial enterprises have been identified along this route. 	
	1.3.6 Groundwater- Sensitive Ecosystems (e.g. groundwater fed wetlands, coldwater streams)	Potential and significance of alteration to groundwater-sensitive ecosystems due to physical intrusion, or groundwater interception, draw-down, impoundment, obstruction and by soil compaction	 Medium potential to adversely affect groundwater sensitive ecosystems In close proximity to an evaluated high quality wetland Potential long-term adverse effect to groundwater quality due to increased road salt use and road run-off. Potential for temporary adverse effects to groundwater quantity should construction dewatering be required. 	Medium potential to adversely affect groundwater sensitive ecosystems In close proximity to an evaluated high quality wetland Potential long-term adverse effect to groundwater quality due to increased road salt use and road run-off. Potential for temporary adverse effects to groundwater quantity should construction dewatering be required.	 High potential to adversely affect groundwater sensitive ecosystems Encroachment on an evaluated high quality wetland and a water body. Potential long-term adverse effect to groundwater quality due to increased road salt use and road run-off. Potential for temporary adverse effects to groundwater quantity should construction dewatering be required. 	High potential to adversely affect groundwater sensitive ecosystems Encroachment on an evaluated high quality wetland and a water body. Potential long-term adverse effect to groundwater quality due to increased road salt use and road run-off. Potential for temporary adverse effects to groundwater quantity should construction dewatering be required.	
1.4 Surf	1.4 Surface Water						
	1.4.1 Watershed / Sub-Watershed Drainage Features/Patterns	Potential and significance of:	Medium potential to affect drainage features / patterns and surface water quality / quantity Crosses 4 watercourses	Medium potential to affect drainage features / patterns and surface water quality / quantity Crosses 5 watercourses	Medium potential to affect drainage features / patterns and surface water quality / quantity Crosses 5 watercourses	Medium potential to affect drainage features / patterns and surface water quality / quantity Crosses 5 watercourses	

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		SEGMEN	T D – EAST OF STRATFORD, CONNEC	TING TO EXISTING HIGHWAY 7&8 CO	RRIDOR	
Factor				Route A	Iternative	
/ Sub- Factor	Criteria	Indicator for Route Selection	D1 15-16-20-24-25-26	D2 15-16-18-21-24-25-26	D3 15-16-18-22-25-26	D4 15-16-18-23-26
		sensitive headwater areas watershed and subwatershed management plans				
	1.4.2 Surface Water Quality and Quantity	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				
2. LAND	USE / SOCIO-ECONO	OMIC FACTORS				
2.1 Land	Use Planning Policie	s, Goals, Objectives				
	2.1.1 First Nations Land Claims	Potential and significance of encroachment, severance, displacement to areas for which there are First Nations outstanding land claims	 Low potential to displace areas where there are outstanding First Nations lands claims. 5 First Nations land claims have been filed in the study area 	 Low potential to displace areas where there are outstanding First Nations lands claims. 5 First Nations land claims have been filed in the study area 	 Low potential to displace areas where there are outstanding First Nations lands claims. 5 First Nations land claims have been filed in the study area 	 Low potential to displace areas where there are outstanding First Nations lands claims. 5 First Nations land claims have been filed in the study area
	2.1.2 Provincial/ Federal land use planning policies/ goals/objectives	Degree of compatibility with federal/provincial land use policies/goals/objectives NOTES: PPS Policy 1.6.6.4 stipulates that when planning for corridors for significant transportation facilities, consideration will be given to significant natural heritage, water, agricultural, mineral, cultural heritage and archaeological resources. PPS Policy 2.3 requires prime agricultural areas be protected for long-term use. Prime agricultural areas include specialty crop areas and Classes 1, 2, and 3 soils in this order of priority.	 Low compatibility with federal/provincial land use policies/goals Route is on new alignment and also uses the existing corridor which results in reduced impacts relative to PPS Policies 1.6.6.4 and 2.3. There are no location-specific federal or provincial land use policies for this area 	Medium compatibility with federal/provincial land use policies/goals Route predominantly uses existing roadway corridors which results in reduced impacts relative to PPS Policies 1.6.6.4 and 2.3. There are no location-specific federal or provincial land use policies for this area	 Low compatibility with federal/provincial land use policies/goals Route is on new alignment and also uses the existing corridor which results in reduced impacts relative to PPS Policies 1.6.6.4 and 2.3. There are no location-specific federal or provincial land use policies for this area 	Low compatibility with federal/ provincial land use policies/goals Route is on new alignment and also uses the existing corridor which results in reduced impacts relative to PPS Policies 1.6.6.4 and 2.3. There are no location-specific federal or provincial land use policies for this area
	2.1.3 Municipal (regional and local) land use planning policies/goals/ objectives (Official Plans)	Degree of compatibility with municipal Official Plans	Medium compatibility with municipal Official Plans. The corridor impacts agricultural designated lands in County of Perth O.P. Perth OP Agriculture designation for all sections	Medium compatibility with municipal Official Plans. The corridor impacts agricultural designated lands in County of Perth O.P. Perth OP Agriculture designation for all sections	Medium compatibility with municipal Official Plans. The corridor impacts agricultural designated lands in County of Perth O.P. Perth OP Agriculture designation for all sections	Medium compatibility with municipal Official Plans. The corridor impacts agricultural designated lands in County of Perth O.P. Perth OP Agriculture designation for all sections

Note – Evaluation of the route alternatives is based on a qualitative assessment of each route (high, medium or low). Relevant and site-specific information for each criterion/cell is provided to justify the high, medium or low assessment.

		SEGMEN	T D – EAST OF STRATFORD, CONNEC	TING TO EXISTING HIGHWAY 7&8 CO	RRIDOR	
Factor				Route A	Iternative	
/ Sub- Factor	Criteria	Indicator for Route Selection	D1 15-16-20-24-25-26	D2 15-16-18-21-24-25-26	D3 15-16-18-22-25-26	D4 15-16-18-23-26
	2.1.4 Development Objectives of Private Property Owners	Potential to isolate property from current/future urban envelope Impact on future land use	Low potential to impact future land use • Route alternative does not limit the potential for future development	Low potential to impact future land use • Route alternative does not limit the potential for future development	Low potential to impact future land use • Route alternative does not limit the potential for future development	Low potential to impact future land use Route alternative does not limit the potential for future development
2.2 Land Use / Community						
	2.2.1 First Nation Reserves	Potential and significance of: • encroachment, severance, displacement; • long-term alteration / disruption; • change in area character / aesthetics; • nuisance impacts; • change to access / travel time. to First Nation Reserves	No potential effects to First Nation reserves No Indian Reserves in the Analysis Area	No potential effects to First Nation reserves No Indian Reserves in the Analysis Area	No potential effects to First Nation reserves No Indian Reserves in the Analysis Area	No potential effects to First Nation reserves No Indian Reserves in the Analysis Area
2.	2.2.2 First Nations' Sacred Grounds	Potential and significance of:	Low potential effect to First Nations' sacred grounds No known First Nations' sacred grounds in the Analysis Area	Low potential effect to First Nations' sacred grounds No known First Nations' sacred grounds in the Analysis Area	Low potential effect to First Nations' sacred grounds No known First Nations' sacred grounds in the Analysis Area	Low potential effect to First Nations' sacred grounds No known First Nations' sacred grounds in the Analysis Area
	2.2.3 Urban and Rural Residential	Potential and significance of:	 Medium potential for impacts to urban and rural residential areas Loss of some frontage (property acquisition) to 22 residential properties along the existing corridor and Perth Line 33. Loss of some mature trees. Likely nuisance impacts to this property. Possible encroachment and displacement of some residential or farm buildings at 2 residences (located on the south side of Highway 7, east and west of Conc.109). Likely nuisance impacts to these properties Loss (acquisition) of some residential/farm properties along entire route. Field observation identified no change to facilities / utilities / services. 	 Medium potential for impacts to urban and rural residential areas Loss of some frontage (property acquisition) to 28 residential properties along the existing corridor and Perth Line 33. Loss of some mature trees. Likely nuisance impacts to this property. Possible encroachment and displacement of some residential or farm buildings at 1 residence (located north of the train tracks, on the east side of Road 110). Likely nuisance impacts to this property. Loss (acquisition) of some residential/farm properties along entire route. Field observation identified no change to facilities / utilities / services. 	 High potential for impacts to urban and rural residential areas Loss of some frontage (property acquisition) to 27 residential properties along the existing corridor and Perth Line 33. Loss of some mature trees. Likely nuisance impacts to this property. Likely encroachment and displacement of some residential or farm buildings at 1 residence (located north of the train tracks, on the east side of Road 110). Likely displacement of the entire residential building. Loss (acquisition) of some residential/farm properties along entire route. Field observation identified no change to facilities / utilities / services 	 High potential for impacts to urban and rural residential areas Loss of some frontage (property acquisition) to 19 residential properties along the existing corridor and Perth Line 33. Loss of some mature trees. Likely nuisance impacts to this property. Likely encroachment and displacement of some residential or farm buildings at 1 residence (located north of the train tracks, on the east side of Road 110). Likely displacement of the entire residential building. Likely encroachment and displacement of some residential or farm buildings at 1 residence (located north of the train tracks, on the west side of Road 110). Loss (acquisition) of some residential/farm properties along

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SEGMENT D – EAST OF STRATFORD, CONNECTING TO EXISTING HIGHWAY 7&8 CORRIDOR

r				Route A	ternative	
r	Criteria	Indicator for Route Selection	D1 15-16-20-24-25-26	D2 15-16-18-21-24-25-26	D3 15-16-18-22-25-26	D4 15-16-18-23-26
						entire route. • Field observation identified no change to facilities / utilities / services.
	2.2.4 Commercial / Industrial	Potential and significance of: encroachment, severance, displacement, property acquisition; long-term alteration / disruption; change in area character / aesthetics; nuisance impacts; change to access / travel time; change to facilities / utilities / services; interference with commercial community cohesion; change to highway operation impacts (e.g. customer parking, cargo loading/off-loading). to commercial and industrial areas (business owners/tenants and customers).	Low potential for impacts to commercial and industrial areas • Loss of some frontage (property acquisition) to some commercial properties on Perth Line 33 around Road 111. Likely nuisance impacts to these properties. • Field observation identified no change to facilities / utilities / services.	Low potential for impacts to commercial and industrial areas • Loss of some frontage (property acquisition) to one commercial property on existing right-of-way. Likely nuisance impacts to this property. • Loss of some frontage (property acquisition) to some commercial properties on Perth Line 33 around Road 111. Likely nuisance impacts to these properties. • Field observation identified no change to facilities / utilities / services.	Low potential for impacts to commercial and industrial areas • Loss of some frontage (property acquisition) to one commercial property on existing right-of-way. Likely nuisance impacts to this property. • Loss of some frontage (property acquisition) to some commercial properties on Perth Line 33 around Road 111. Likely nuisance impacts to these properties. • Field observation identified no change to facilities / utilities / services.	Low potential for impacts to commercial and industrial areas • Loss of some frontage (property acquisition) to one commercial property on existing right-of-way. Likely nuisance impacts to this property. • Potential acquisition of property of the Little Lake Golf Centre, located in vicinity of Road 110. • Loss of some frontage (property acquisition) to some commercial properties on Perth Line 33 west of Road 111. Likely nuisance impacts to these properties. • Field observation identified no change to facilities / utilities / services.
	2.2.5 Tourist Areas and Attractions (e.g. museums, theatres, etc.)	Potential and significance of: • encroachment, severance, displacement, property acquisition; • long-term alteration / disruption; • change in area character/ aesthetics; • nuisance impacts; • change to access / travel time; • change to facilities / utilities / services; • loss of "critical mass" in number of signature business attractions (e.g. number of antique shops). to tourist areas and attractions.	 Low potential for impacts to tourist areas and attractions No change or impacts to tourist areas and attractions in terms of any property encroachment or acquisition. No nuisance impacts anticipated given absence of any tourist attractions or areas along this alternative. Field observation identified no change to facilities / utilities / services. No interference with area character/aesthetics of tourist area No signature business attractions (none along this alternative) 	 Low potential for impacts to tourist areas and attractions No change or impacts to tourist areas and attractions in terms of any property encroachment or acquisition. No nuisance impacts anticipated given absence of any tourist attractions or areas along this alternative. Field observation identified no change to facilities / utilities / services. No interference with area character/aesthetics of tourist area No signature business attractions (none along this alternative) 	 Low potential for impacts to tourist areas and attractions No change or impacts to tourist areas and attractions in terms of any property encroachment or acquisition. No nuisance impacts anticipated given absence of any tourist attractions or areas along this alternative. Field observation identified no change to facilities / utilities / services. No interference with area character/aesthetics of tourist area No signature business attractions (none along this alternative) 	 Low potential for impacts to tourist areas and attractions No change or impacts to tourist areas and attractions in terms of any property encroachment or acquisition. No nuisance impacts anticipated given absence of any tourist attractions or areas along this alternative. Field observation identified no change to facilities / utilities / services. No interference with area character/aesthetics of tourist area No signature business attractions (none along this alternative)
	2.2.6 Community Facilities / Institutions (e.g. hospitals,	Potential and significance of: • encroachment, severance, displacement, property acquisition; • long-term alteration / disruption;	No potential for impacts to community facilities and institutions No change or impacts to community facilities or institutions in terms of	No potential for impacts to community facilities and institutions No change or impacts to community facilities or institutions in terms of	No potential for impacts to community facilities and institutions No change or impacts to community facilities or institutions in terms of	No potential for impacts to community facilities and institutions No change or impacts to community facilities or institutions in terms of

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		SEGMEN	T D – EAST OF STRATFORD, CONNEC	TING TO EXISTING HIGHWAY 7&8 CO	RRIDOR	
Factor				Route A	Iternative	
/ Sub- Factor	Criteria	Indicator for Route Selection	D1 15-16-20-24-25-26	D2 15-16-18-21-24-25-26	D3 15-16-18-22-25-26	D4 15-16-18-23-26
	schools, places of worship, unique community features)	 change in area character/ aesthetics; nuisance impacts; change to access / travel time; change to facilities / utilities / services change to ease and safety of pedestrian movements across the highway and within the highway right-of-way; change to highway operation impacts to current use (e.g. highway noise and vibration interfering with church services). to community facilities and institutions. 	 any property encroachment or acquisition. No long term alteration /disruption No nuisance impacts anticipated given absence of any community facilities or areas along this alternative. Field observation identified no change to facilities / utilities / services. 	 any property encroachment or acquisition. No long term alteration /disruption No nuisance impacts anticipated given absence of any community facilities or areas along this alternative. Field observation identified no change to facilities / utilities / services. 	 any property encroachment or acquisition. No long term alteration /disruption No nuisance impacts anticipated given absence of any community facilities or areas along this alternative. Field observation identified no change to facilities / utilities / services. 	 any property encroachment or acquisition. No long term alteration /disruption No nuisance impacts anticipated given absence of any community facilities or areas along this alternative. Field observation identified no change to facilities / utilities / services.
	2.2.7 Municipal Infrastructure and Public Service Facilities (e.g. sewage and water services, police/emergency services, local utilities)	Potential and significance of: • encroachment, severance, displacement; • long-term alteration / disruption; • change to access / travel time; • change to facilities / utilities / services. to municipal infrastructure and public service facilities.	Low potential for impacts to municipal infrastructure / public service facilities • Potential encroachment to municipal landfill located on Perth Line 33, west of Road 111. Site backs onto roadway so potential disruption due to widening of the road is likely minimal. • From field observations, no other impacts to municipal infrastructure and public service facilities.	 Low potential for impacts to municipal infrastructure / public service facilities Potential encroachment to municipal landfill located on Perth Line 33, west of Road 111. Site backs onto roadway so potential disruption due to widening of the road is likely minimal. From field observations, no other impacts to municipal infrastructure and public service facilities. 	Low potential for impacts to municipal infrastructure / public service facilities Potential encroachment to municipal landfill located on Perth Line 33, west of Road 111. Site backs onto roadway so potential disruption due to widening of the road is likely minimal. From field observations, no other impacts to municipal infrastructure and public service facilities.	Low potential for impacts to municipal infrastructure / public service facilities • Potential encroachment to municipal landfill located on Perth Line 33, west of Road 111. Site backs onto roadway so potential disruption due to widening of the road is likely minimal. • From field observations, no other impacts to municipal infrastructure and public service facilities.
	2.2.8 Downtown Historic Crossroads Function	Potential and significance of interference by long-distance through-traffic on: • "main street" function and structure; • character/aesthetics; • change to ease and safety of pedestrian movements across the highway and within the highway right-of-way; • change to on-street parking in the historic downtown area	 No potential for interference in the historic downtown area Alternative does not affect any downtown or historical areas. No adverse effects on Main Street function, character, pedestrian movements or street parking 	No potential for interference in the historic downtown area Alternative does not affect any downtown or historical areas. No adverse effects on Main Street function, character, pedestrian movements or street parking	No potential for interference in the historic downtown area Alternative does not affect any downtown or historical areas. No adverse effects on Main Street function, character, pedestrian movements or street parking	No potential for interference in the historic downtown area Alternative does not affect any downtown or historical areas. No adverse effects on Main Street function, character, pedestrian movements or street parking
2.3 Nois	e Sensitive Areas (NSA	As) (residential areas and sensitive institutional u	ises)	l		,
	2.3.1 Highway Noise	Potential for significant traffic noise increases in NSAs and for noise-sensitive receivers immediately adjacent to the highway.	 Low potential for significant noise increases Potential noise impacts of 65 dBA or a 5 dB increase are expected for 20 NSAs within the area of influence. A decrease of noise impacts by 5 dB or more is expected for 4 NSAs due to reduced traffic on the roadway that is currently Hwy 7/8. 	 High potential for significant noise increases Potential noise impacts of 65 dBA or a 5 dB increase are expected for 26 NSAs within the area of influence. Approximately 10 additional NSAs may be added if the roadway bridges over the rail line. Higher impacts are expected for 3 	High potential for significant noise increases • Potential noise impacts of 65 dBA or a 5 dB increase are expected for 26 NSAs within the area of influence. Approximately 15 additional NSAs may be added if the roadway bridges over the rail line. • Higher impacts are expected for 2	High potential for significant noise increases Potential noise impacts of 65 dBA or a 5 dB increase are expected for 26 NSAs within the area of influence. Approximately 20 additional NSAs may be added if the roadway bridges over the rail line. Higher impacts are expected for

Note – Evaluation of the route alternatives is based on a qualitative assessment of each route (high, medium or low). Relevant and site-specific information for each criterion/cell is provided to justify the high, medium or low assessment.

		SEGMEN	T D – EAST OF STRATFORD, CONNEC	<u> </u>		
Factor				Route A	Iternative	
/ Sub- Factor	Criteria	Indicator for Route Selection	D1 15-16-20-24-25-26	D2 15-16-18-21-24-25-26	D3 15-16-18-22-25-26	D4 15-16-18-23-26
				NSAs if an elevated roadway overpass of the rail line is used. Mitigation of the elevated roadway would be more challenging.	NSAs if an elevated roadway overpass of the rail line is used. Mitigation of the elevated roadway would be more challenging.	adjacent NSAs if an elevated roadway overpass of the rail line is used. Mitigation of the elevated roadway would be more challenging.
	2.3.2 Construction Noise	To be considered during Preliminary Design pha	se			
2.4 Agri	culture					
	2.4.1 Agriculture - Canada Land Inventory Class 1,2,3 Land	Potential and significance of encroachment, severance of Canada Land Inventory Classes 1, 2 and 3 soils	High potential for impacts to CLI Class 1, 2 and 3 lands Impacts 55 hectares of Class 1 / 2 soil	High potential for impacts to CLI Class 1, 2 and 3 lands Impacts 59 hectares of Class 1 / 2 soil	High potential for impacts to CLI Class 1, 2 and 3 lands Impacts 52 hectares of Class 1 / 2 soil	High potential for impacts to CLI Class 1, 2 and 3 lands Impacts 52 hectares of Class 1 / 2 soil
	2.4.2 Agriculture – Farm Infrastructure	Potential and significance of: • encroachment, severance, displacement; • long-term alteration / disruption; • nuisance impacts; to farm infrastructure (field tile drainage systems/outlets, irrigation systems, barns / silos/ structures, etc.)	Medium potential impacts on farm infrastructure 1 encroachment on farm infrastructure west of Road 109 2 minor encroachments on farm infrastructure west of Road 110 and south of Perth Line 33 Impacts to subsurface farm infrastructure (e.g. tile drainage) and to area farm drainage systems are anticipated. The locations of subsurface farm infrastructure along the preferred route will be identified and mitigation concepts for these impacts will be developed during preliminary design	 High potential impacts on farm infrastructure 1 encroachment on farm infrastructure just east of Road 110 2 encroachments on farm infrastructure on Road 110 Displaces infrastructure on 1 livestock and cash crop operation on Road 110 2 minor encroachments on farm infrastructure west of Road 110 and south of Perth Line 33 Impacts to subsurface farm infrastructure (e.g. tile drainage) and to area farm drainage systems are anticipated. The locations of subsurface farm infrastructure along the preferred route will be identified and mitigation concepts for these impacts will be developed during preliminary design 	Medium potential impacts on farm infrastructure 1 encroachment on farm infrastructure just east of Road 110 2 encroachments on farm infrastructure, 1 on Road 110 and 1 west of Road 110 and north of Perth Line 33 Impacts to subsurface farm infrastructure (e.g. tile drainage) and to area farm drainage systems are anticipated. The locations of subsurface farm infrastructure along the preferred route will be identified and mitigation concepts for these impacts will be developed during preliminary design	Medium potential impacts on farm infrastructure 1 encroachment on farm infrastructure just east of Road 110 2 encroachments on farm infrastructure, 1 on Road 110 and 1 west of Road 100 north of Perth Line 33 Impacts to subsurface farm infrastructure (e.g. tile drainage) and to area farm drainage systems are anticipated. The locations of subsurface farm infrastructure along the preferred route will be identified and mitigation concepts for these impacts will be developed during preliminary design
	2.4.3 Agriculture – Operations on Individual Farms	Potential and significance of:	High potential for impacts to operations on individual farms Long term alteration to in field farm operations in an established agricultural community including: Minor frontage impacts and encroachment on lands on 5 live stock and cash crop operations on existing right-of-way	High potential for impacts to operations on individual farms Long term alteration to in field farm operations in an established agricultural community including: Minor frontage impacts and encroachment on lands on 6 live stock and cash crop operations on existing right-of-way	High potential for impacts to operations on individual farms Long term alteration to in field farm operations in an established agricultural community including: Minor frontage impacts and encroachment on lands on 6 live stock and cash crop operations on existing right-of-way	High potential for impacts to operations on individual farms • Long term alteration to in field farm operations in an established agricultural community including: - Minor frontage impacts and encroachment on lands on 6 live stock and cash crop operations on existing right-of-way

MOST PREFERRED	MODERATELY PREFERRED	LEAST PREFERRED	NO DIFFERENCE	SELECTED CORRIDOR

Note – Evaluation of the route alternatives is based on a qualitative assessment of each route (high, medium or low). Relevant and site-specific information for each criterion/cell is provided to justify the high, medium or low assessment.

SEGMENT D – EAST OF STRATFORD, CONNECTING TO EXISTING HIGHWAY 7&8 CORRIDOR

Factor				Route A	Iternative	
/ Sub- Factor	Criteria	Indicator for Route Selection	D1 15-16-20-24-25-26	D2 15-16-18-21-24-25-26	D3 15-16-18-22-25-26	D4 15-16-18-23-26
			 Minor frontage impacts and encroachment on lands on 3 parcels on existing right-of-way Minor frontage impacts and encroachment on lands on 3 live stock and cash crop operations on Perth Line 33 Minor frontage impacts and encroachment on lands on 10 parcels on Perth Line 33 Severs 4 parcels between Road 109 and Road 110 Severs 1 parcel west of Road 110 3 parcels where nutrient management has been reported by the farmer are impacted significantly 4 parcels where nutrient management is assumed to occur in association with livestock operations are significantly impacted 5 parcels where nutrient management is assumed to occur in association with livestock operations are slightly impacted Additional nutrient management operations may still be identified by potentially impacted farmers 	 Minor frontage impacts and encroachment on lands on 8 parcels on existing right-of-way Minor frontage impacts and encroachment on lands on 2 live stock and cash crop operations on Road 110 Minor frontage impacts and encroachment on lands on 3 live stock and cash crop operations on Perth Line 33 Minor frontage impacts and encroachment on lands on 10 parcels on Perth Line 33 Severs 2 parcels on Road 110 Displaces portions of land fronting onto Road 110 on 2 parcels 3 parcels where nutrient management has been reported by the farmer are impacted significantly 6 parcels where nutrient management is assumed to occur in association with livestock operations are significantly impacted 6 parcels where nutrient management is assumed to occur in association with livestock operations are slightly impacted Additional nutrient management operations may still be identified by potentially impacted farmers 	 Minor frontage impacts and encroachment on lands on 8 parcels on existing right-of-way Minor frontage impacts and encroachment on lands on 1 live stock and cash crop operation on Perth Line 33 Minor frontage impacts and encroachment on lands on 7 parcels on Perth Line 33 Severs 1 parcel fronting onto Road 110 Severs 2 parcels west of Road 110 on Perth Line 33 3 parcels where nutrient management has been reported by the farmer are impacted significantly 4 parcels where nutrient management is assumed to occur in association with livestock operations are impacted significantly 6 parcels where nutrient management is assumed to occur in association with livestock operations are slightly impacted Additional nutrient management operations may still be identified by potentially impacted farmers 	 Minor frontage impacts and encroachment on lands on 8 parcels on existing right-of-way Minor frontage impacts and encroachment on lands on 1 parcel of land on Perth Line 33 on Perth Line 33 Severs 1 parcel fronting onto Road 110 Severs 6 parcels west of Road 110 3 parcels where nutrient management has been reported by the farmer are impacted significantly 4 parcels where nutrient management is assumed to occur in association with livestock operations are impacted significantly 6 parcels where nutrient management is assumed to occur in association with livestock operations are slightly impacted Additional nutrient management operations may still be identified by potentially impacted farmers
	2.4.4 Agriculture – Transportation Linkages between Integrated Agricultural Business Units	Potential to sever/disrupt transportation linkages between integrated agricultural business units (movement between integrated agricultural business units of equipment, materials, workers, etc.)	Medium potential to sever / disrupt transportation linkages Route alternative passes between parcels of land associated with 2 IABU's as identified to the study team by the farming community	Medium potential to sever / disrupt transportation linkages Route alternative passes between parcels of land associated with 2 IABU's as identified to the study team by the farming community	Medium potential to sever / disrupt transportation linkages Route alternative passes between parcels of land associated with 2 IABU's as identified to the study team by the farming community	Medium potential to sever / disrupt transportation linkages Route alternative passes between parcels of land associated with 2 IABU's as identified to the study team by the farming community

		SEGMEN ⁻	Γ D – EAST OF STRATFORD, CONNEC	TING TO EXISTING HIGHWAY 7&8 CO	RRIDOR	
Factor				Route A	Iternative	
/ Sub- Factor	Criteria	Indicator for Route Selection	D1 15-16-20-24-25-26	D2 15-16-18-21-24-25-26	D3 15-16-18-22-25-26	D4 15-16-18-23-26
2.5 Land	Use / Resources					
	2.5.1 First Nations' Treaty Rights or Use of Land and Resources for Traditional Purposes (e.g. hunting, fishing, harvesting of country foods, harvesting of medicinal plants)	Potential and significance of: • encroachment, severance, displacement; • long-term alteration / disruption; • nuisance impacts; • change to access / travel time. to First Nations' treaty rights or use of land and resources for traditional purposes	Medium potential to affect First Nation Treaty Rights or use of land and resources for traditional purposes Route alternative has both existing highway and new corridor components.	Medium potential to affect First Nation Treaty Rights or use of land and resources for traditional purposes Route alternative predominantly uses existing roadway corridors.	Medium potential to affect First Nation Treaty Rights or use of land and resources for traditional purposes Route alternative has both existing highway and new corridor components.	Medium potential to affect First Nation Treaty Rights or use of land and resources for traditional purposes Route alternative has both existing highway and new corrido components.
F	2.5.2 Parks and Recreational Areas (e.g. national/ provincial parks, conservation areas, municipal parks, public spaces, golf courses, trails, greenways and open space linkages)	Potential and significance of: • encroachment, severance, displacement, property acquisition; • long-term alteration / disruption; • change in area character/ aesthetics; • nuisance impacts; • change to access / travel time; • change to facilities / utilities / services. to parks and recreational areas.	 No potential for impacts to parks and recreational areas No encroachment or impacts to any parks or recreational areas as they do not exist along this route. Field observation identified no change to facilities / utilities / services. 	No potential for impacts to parks and recreational areas No encroachment or impacts to any parks or recreational areas as they do not exist along this route. Field observation identified no change to facilities / utilities / services.	No potential for impacts to parks and recreational areas No encroachment or impacts to any parks or recreational areas as they do not exist along this route. Field observation identified no change to facilities / utilities / services.	No potential for impacts to parks and recreational areas No encroachment or impacts to any parks or recreational areas as they do not exist along this route. Field observation identified no change to facilities / utilities / services.
	2.5.3 Aggregates, Mineral-Resources	Potential and significance of: • encroachment, severance, displacement, property acquisition; • long-term alteration / disruption; • change to access / travel time; • change to facilities / utilities / services. to current/future extraction of aggregate and mineral resources.	No potential for impacts to current/future aggregate / mineral resources No impacts to mineral-aggregate resources	No potential for impacts to current/future aggregate / mineral resources No impacts to mineral-aggregate resources	No potential for impacts to current/future aggregate / mineral resources No impacts to mineral-aggregate resources	No potential for impacts to current/future aggregate / mineral resources No impacts to mineral-aggregate resources
	r Utility Transmission oads, hydro, gas, oil)	Corridors				
		Potential and significance of: • encroachment, severance, displacement; • long-term alteration / disruption; • change to access / travel time; • change to facilities / utilities / services. to major utility transmission corridors.	Medium potential for impacts to major utility transmission corridors One new railway crossing One major hydro transmission corridor crossing No major gas / oil corridor crossings	Medium potential for impacts to major utility transmission corridors One new railway crossing One major hydro transmission corridor crossing No major gas / oil corridor crossings	Medium potential for impacts to major utility transmission corridors One new railway crossing One major hydro transmission corridor crossing No major gas / oil corridor crossings	Medium potential for impacts to major utility transmission corridors One new railway crossing One major hydro transmission corridor crossing No major gas / oil corridor crossings

LEGEND

MOST PREFERRED MODERATELY PREFERRED LEAST PREFERRED NO DIFFERENCE SELECTED CORRIDOR

Highway 7&8 Transportation Corridor Planning and Class EA Study

NOIG -	- Evaluation of the r	oute alternatives is based on a qualitative assessme	ent of each route (nigh, medium or low).	Relevant and site-specific information for	each criterion/cell is provided to justify the	e high, medium or low assessment.
		SEGMEN	TD – EAST OF STRATFORD, CONNEC	TING TO EXISTING HIGHWAY 7&8 CO	RRIDOR	
Factor				Route A	Iternative	
/ Sub- Factor			D1 15-16-20-24-25-26	D2 15-16-18-21-24-25-26	D3 15-16-18-22-25-26	D4 15-16-18-23-26
		nd Waste Management te Sites, "Brownfield" Areas, other known contamina	ted sites, and high-risk contamination are	eas)		
		Potential and significance of:	Low potential for impacts to contaminated property and waste including exposure of contaminants and unstable substrates and potential concerns from soil and groundwater contamination. • The Stratford Landfill Facility is located approximately 0.25 km east and northeast of the proposed terminus of the route C1 alignment. Any development within 500 m of a landfill requires a MOE D-4 Assessment. • Mitigation measures to prevent the exposure of contaminants and unstable substrates should be implemented, as required, based on the assessment of the landfill data and the D-4 study. • No other waste disposal sites were identified in the vicinity of the proposed alignment. • No vehicle fuel and repair facilities were identified within 1 km of the proposed route alignment. Wilhelm Concrete, a concrete forming company, is located approximately 0.2 km north of the proposed alignment. Fuel ASTs were observed on the property in aerial photographs; however, this property is not believed to present a significant environmental concern. • Mitigation measures should be implemented to prevent the exposure of contaminants.	Low potential for impacts to contaminated property and waste including exposure of contaminants and unstable substrates and potential concerns from soil and groundwater contamination. • The Stratford Landfill Facility is located approximately 0.25km east and northeast of the proposed terminus of the route C2 alignment Any development within 500 m of a landfill requires a MOE D-4 Assessment. • Mitigation measures to prevent the exposure of contaminants and unstable substrates should be implemented, as required, based on the assessment of the landfill data and the D-4 study. • No other waste disposal sites were identified in the vicinity of the proposed alignment. • No vehicle fuel and repair facilities were identified within 1 km of the proposed route alignment. Wilhelm Concrete, a concrete forming company, is located approximately 0.2 km north of the proposed alignment. Fuel ASTs were observed on the property in aerial photographs; however, this property is not believed to present a significant environmental concern. • Mitigation measures should be implemented to prevent the exposure of contaminants.	Low potential for impacts to contaminated property and waste including exposure of contaminants and unstable substrates and potential concerns from soil and groundwater contamination. • The Stratford Landfill Facility is located approximately 0.25km east and northeast of the proposed terminus of the route C3 alignment. Any development within 500 m of a landfill requires a MOE D-4 Assessment. • Mitigation measures to prevent the exposure of contaminants and unstable substrates should be implemented, as required, based on the assessment of the landfill data and the D-4 study. • No other waste disposal sites were identified in the vicinity of the proposed alignment. • No vehicle fuel and repair facilities were identified within 1 km of the proposed route alignment. Wilhelm Concrete, a concrete forming company, is located approximately 0.2 km north of the proposed alignment. Fuel ASTs were observed on the property in aerial photographs; however, this property is not believed to present a significant environmental concern. • Mitigation measures should be implemented to prevent the exposure of contaminants.	Low potential for impacts to contaminated property and waste including exposure of contaminants and unstable substrates and potential concerns from soil and groundwater contamination. • The Stratford Landfill Facility is located approximately 0.25km east and northeast of the proposed terminus of the route C4 alignment. Any development within 500 m of a landfill requires a MOE D-4 Assessment. • Mitigation measures to prevent the exposure of contaminants and unstable substrates should be implemented, as required, based or the assessment of the landfill data and the D-4 study. • No other waste disposal sites were identified in the vicinity of the proposed alignment. • No vehicle fuel and repair facilities were identified within 1 km of the proposed route alignment. Wilhelm Concrete, a concrete forming company, is located approximately 0.2 km north of the proposed alignment. Fuel ASTs were observed on the property in aerial photographs; however, this property is not believed to present a significant environmental concern. • Mitigation measures should be implemented to prevent the exposure of contaminants.
2	2.8.1 Scenic Composition (total aesthetic value of	Potential and significance of change to scenic composition (total aesthetic value of landscape components).	Low potential to impact scenic composition for sensitive viewer groups and of views from the route	Low potential to impact scenic composition for sensitive viewer groups and of views from the route	Low potential to impact scenic composition for sensitive viewer groups and of views from the route	Low potential to impact scenic composition for sensitive viewer groups and of views from the route

LEGEND

MOST PREFERRED MODERATELY PREFERRED LEAST PREFERRED **NO DIFFERENCE** SELECTED CORRIDOR

Note - Evaluation of the route alternatives is based on a qualitative assessment of each route (high, medium or low). Relevant and site-specific information for each criterion/cell is provided to justify the high, medium or low assessment.

SEGMENT D - EAST OF STRATFORD, CONNECTING TO EXISTING HIGHWAY 7&8 CORRIDOR **Route Alternative Factor** / Sub-Criteria **Indicator for Route Selection D1** D2 D3 D4 **Factor** 15-16-18-22-25-26 15-16-18-23-26 15-16-20-24-25-26 15-16-18-21-24-25-26 • high negative impact on affected components) low/moderate negative impact on high negative impact on affected high negative impact on affected affected farmhouses on western farms due to the loss of farmland farmhouses on western entry nearby residential area moderate negative impact on farm entry moderate visual interest through high negative impact on affected community due to the minimal loss low negative impact on farm agricultural fields farms due to the loss of farmland 2.8.2 Sensitive Potential and significance of change of farmland community due to the minimal loss low/moderate visual interest of flat low visual interest of nearby Viewer Groups vistas/outlooks for sensitive viewer groups. of farmland moderate visual interest through terrain residential backyards 2.8.3 Scenic value Potential and significance of views/vistas from agricultural fields moderate negative impacts on low/moderate visual interest of • low/moderate visual interest of flat of views/vistas from the transportation facility. • low/moderate visual interest of flat affected farms along Road 110 nearby woodlots terrain the transportation moderate negative impact on terrain moderate visual interest of nearby moderate visual interest through facility adjacent properties on existing high visual interest of nearby riparian areas and associated agricultural fields footprint of Road 110 due to the loss woodlots vegetation moderate visual interest of nearby of frontage and associated loss of high visual interest of nearby woodlots farmland riparian areas and associated high visual interest of nearby vegetation moderate visual interest through riparian areas and associated agricultural fields on existing Road vegetation 110 footprint • low/moderate visual interest of flat terrain • moderate/high visual interest of nearby woodlots high visual interest of nearby riparian areas and associated vegetation 2.8.4 Specimen To be considered during Preliminary Design phase Trees 2.9 Air Quality 2.9.1 Local and Previously addressed during Needs Assessment Phase Regional Air Quality (Total contaminant and greenhouse gas emissions) 2.9.2 Sensitive Presence and potential for impacts to sensitive **Medium** potential impact to sensitive Medium potential impact to sensitive **Medium** potential impact to sensitive **Medium** potential impact to sensitive receptors to air receptors to air pollutants and greenhouse gas receptors adjacent to the highway pollutants and emissions, including consideration of number • 12 sensitive receptors within 20m of • 10 sensitive receptors within 20m of • 11 sensitive receptors within 20m of 9 sensitive receptors within 20m of

LEGEND

the edge of the right of way.

of sensitive receptors immediately adjacent to

the highway.

greenhouse gas

emissions

the edge of the right of way.

the edge of the right of way.

the edge of the right of way.

Note	EVALUATION OF ROUTE ALTERNATIVES Note – Evaluation of the route alternatives is based on a qualitative assessment of each route (high, medium or low). Relevant and site-specific information for each criterion/cell is provided to justify the high, medium or low assessment.						
		SEGMEN	T D – EAST OF STRATFORD, CONNEC	TING TO EXISTING HIGHWAY 7&8 CO	RRIDOR		
Factor				Route Al	Iternative		
/ Sub- Factor	Criteria	Indicator for Route Selection	D1 15-16-20-24-25-26	D2 15-16-18-21-24-25-26	D3 15-16-18-22-25-26	D4 15-16-18-23-26	
3. CULTU	URAL ENVIRONMENT	AL FACTORS					
3.1 Cultu	ral Heritage – Built He	eritage and Cultural Landscapes					
	3.1.1 Buildings or "Standing" Sites of Architectural or Heritage Significance or Ontario Heritage Foundation Easement Properties 3.1.2 Heritage Bridges	Potential and significance of: • encroachment, severance, displacement, property acquisition; • long-term alteration / disruption; • change in area character / aesthetics; • nuisance impacts; • change to access / travel time; • change to facilities / utilities / services. to buildings or "standing" sites of extreme local, provincial or national interest or Ontario Heritage Foundation easements properties. Potential for destruction or significant alteration of heritage bridges	 Medium potential for impacts to sites of heritage significance There are five built heritage structures within or just outside of the proposed route. Two non-inventoried buildings are just west of the route on Perth Line 33; their setting may be changed somewhat. There are three inventoried structures along Highway 7/8 within or just outside of the route; one of these has been demolished and is not a concern; the two others of concern are the Alexander Anderson Farmstead on Road 109 and a barn at the corner of Highway 7/8 and Road 108 – south side; the latter two structures may be displaced or have their setting changed 	 High potential for impacts to sites of heritage significance There are seven built heritage structures within or just outside of the proposed route. Two non-inventoried buildings are just west of the route on Perth Line 33; their setting may be changed somewhat. There are five inventoried structures along Highway 7/8 within or just outside of the route; one of these has been demolished and is not a concern; three others are within the route on Highway 7/8 (the Alexander Anderson Farmstead on Road 109, a barn at the corner of Highway 7/8 and Road 108, James Rankin Farmstead on Hwy 7/8). One other is just to the northwest of the route where it crosses Hwy 7/8 – the McCallum Farmstead at 2797 Hwy 7/8. The structures on the route may be displaced or have their setting changed; the ones just outside may have their setting changed somewhat 	 High potential for impacts to sites of heritage significance There are seven built heritage structures within or just outside of the proposed route. Two non-inventoried buildings are just west of the route on Perth Line 33; their setting may be changed somewhat. There are five inventoried structures along Highway 7/8 within or just outside of the route; one of these has been demolished and is not a concern; three others are within the route on Highway 7/8 (the Alexander Anderson Farmstead on Road 109, a barn at the corner of Highway 7/8 and Road 108, James Rankin Farmstead on Hwy 7/8). One other is just to the northwest of the route where it crosses Hwy 7/8 – the McCallum Farmstead on Hwy 7/8. The structures on the route may be displaced or have their setting changed; the ones just outside may have their setting changed somewhat 	 High potential for impacts to sites of heritage significance There are eight built heritage structures within or just outside of the proposed route. Two non-inventoried buildings are just west of the route on Perth Line 33; their setting may be changed somewhat. There are six inventoried structures along Highway 7/8 within or just outside of the route; one of these has been demolished and is not a concern; three others are within the route on Highway 7/8 (the Alexander Anderson Farmstead on Road 109, a barn at the corner of Highway 7/8 and Road 108, James Rankin Farmstead on Hwy 7/8). One other is just to the northwest of the route where it crosses Hwy 7/8 – the McCallum Farmstead on Hwy 7/8. Another falls to the north of the route between Road 111 and Road 110 (James Reaney's Birthplace on Forest Road). The structures on the route may be displaced or have their setting changed; the ones just outside may have their setting changed somewhat. 	
	3.1.3 Areas of Historic 19 th Century Settlement	Potential and significance of: • encroachment, severance, displacement; • long-term alteration / disruption; • change in area character / aesthetics; • nuisance impacts; • change to access / travel time; • change to facilities / utilities / services. to areas of historic 19 th century settlement.	 Low potential for impacts to areas of historic settlement There are no areas of historic 19th century settlement within the route but a portion of the route crosses Hwy 7/8 – an early transportation corridor 	Low potential for impacts to areas of historic settlement There are no areas of historic 19 th century settlement within the route but a portion of the route crosses Hwy 7/8 – an early transportation corridor	Low potential for impacts to areas of historic settlement There are no areas of historic 19 th century settlement within the route but a portion of the route crosses Hwy 7/8 – an early transportation corridor	Low potential for impacts to areas of historic settlement There are no areas of historic 19 th century settlement within the route but a portion of the route crosses Hwy 7/8 – an early transportation corridor	
	3.1.4 Cultural Heritage Landscapes	Potential and significance of change to composition of cultural landscapes.	No potential for impacts to cultural heritage landscapes based on existing data	No potential for impacts to cultural heritage landscapes based on existing data	No potential for impacts to cultural heritage landscapes based on existing data	No potential for impacts to cultural heritage landscapes based on existing data	

	MOST PREFERRED	MODERATELY PREFERRED	LEAST PREFERRED	NO DIFFERENCE	SELECTED CORRIDOR
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Note – Evaluation of the route alternatives is based on a qualitative assessment of each route (high, medium or low). Relevant and site-specific information for each criterion/cell is provided to justify the high, medium or low assessment.

		SEGMEN	T D – EAST OF STRATFORD, CONNEC	TING TO EXISTING HIGHWAY 7&8 CO	RRIDOR		
Factor				Route Al	ternative		
/ Sub- Factor	Criteria	Indicator for Route Selection	D1 15-16-20-24-25-26	D2 15-16-18-21-24-25-26	D3 15-16-18-22-25-26	D4 15-16-18-23-26	
	(collection of individual man-made features modifying pristine landscape)		Dilse did not identify any cultural heritage landscapes within the proposed route	Dilse did not identify any cultural heritage landscapes within the proposed route	Dilse did not identify any cultural heritage landscapes within the proposed route	Dilse did not identify any cultural heritage landscapes within the proposed route	
	3.1.5 First Nations' Burial Sites	Potential and significance of:	No potential for impacts to First Nations burial sites There are no known / reported First Nations' burial sites within this route	No potential for impacts to First Nations burial sites There are no known / reported First Nations' burial sites within this route	No potential for impacts to First Nations burial sites There are no known/reported First Nations' burial sites within this route	No potential for impacts to First Nations burial sites There are no known/reported First Nations' burial sites within this route	
	3.1.6 Cemeteries	Potential and significance of:	Low potential for impacts to cemeteries There are no cemeteries within the route; however the James Rankin Cemetery is just to the west of it on Hwy 7/8; negligible impacts	Medium potential for impacts to cemeteries There is one cemetery within/adjacent to the route (the James Rankin Cemetery on Hwy 7/8). The boundaries are poorly known but it may be set back enough from the road to avoid impact	Medium potential for impacts to cemeteries There is one cemetery within/adjacent to the route (the James Rankin Cemetery on Hwy 7/8). The boundaries are poorly known but it may be set back enough from the road to avoid impact	Medium potential for impacts to cemeteries There is one cemetery within/adjacent to the route (the James Rankin Cemetery on Hwy 7/8). The boundaries are poorly known but it may be set back enough from the road to avoid impact	
3.2 Cultu	│ ɹral Heritage – Archae			Шрасс	шірасі	impact	
	3.2.1 Pre-Historic and Historic First Nations Sites Potential for destruction or disturbance of pre-historic and historic First Nations archaeological sites of extreme local, provincial Medium production of disturbance of pre-historic and historic First Nations There are		 Medium potential for destruction or disturbance of archaeological sites There are three archaeological sites within this route, along Highway 7/8; 	 Medium potential for destruction or disturbance of archaeological sites There are three archaeological sites within this route, along Highway 7/8; 	 Medium potential for destruction or disturbance of archaeological sites There are three archaeological sites within this route, along Highway 7/8; 	Medium potential for destruction or disturbance of archaeological sites There are three archaeological sites within this route, along Highway 7/8;	
	3.2.2 Historic Euro- Canadian Archaeological Sites	Potential for destruction or disturbance of historic Euro-Canadian archaeological sites of extreme local, provincial or national interest	all likely have portions intact. Existing information is not good (one EuroCanadian; 2 unknown) • There is potential for previously	all likely have portions intact. Existing information is not good (one EuroCanadian; 2 unknown) There is potential for previously undocumented archaeological sites	all likely have portions intact. Existing information is not good (one EuroCanadian; 2 unknown) There is potential for previously undocumented archaeological sites	all likely have portions intact. Existing information is not good (one EuroCanadian; 2 unknown) There is potential for previously undocumented archaeological sites	
4. AREA	A ECONOMY – Previou	sly addressed during Needs Assessment Phas	ee				
	5. TRANSPORTATION FACTORS						
5.1 Area	Area Transportation System Capacity and Efficiency						
	5.1.1 Federal/ Provincial/Municipal transportation planning policies/goals/ objectives	transportation old planning policies/goals/					

LEGEND

MOST PREFERRED MODERATELY PREFERRED LEAST PREFERRED NO DIFFERENCE SELECTED CORRIDOR

Note – Evaluation of the route alternatives is based on a qualitative assessment of each route (high, medium or low). Relevant and site-specific information for each criterion/cell is provided to justify the high, medium or low assessment.

		SEGMEN	T D – EAST OF STRATFORD, CONNEC	TING TO EXISTING HIGHWAY 7&8 CO	RRIDOR	
Factor				Route A	lternative	
/ Sub- Factor	Criteria	Indicator for Route Selection	D1 15-16-20-24-25-26	D2 15-16-18-21-24-25-26	D3 15-16-18-22-25-26	D4 15-16-18-23-26
	5.1.2 Efficient movement of people	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	High potential to support efficient movement of people. Route consists of new alignment and existing roadway segments, with high level of service due to few intersections and few driveways Direct route Some out-of-way travel for local access from Stratford to route	High potential to support efficient movement of people. Route predominantly uses existing roadway corridors, with high level of service due to few intersections and few driveways Direct route Some out-of-way travel for local access from Stratford to route	High potential to support efficient movement of people. Route consists of new alignment and existing roadway segments, with high level of service due to few intersections and few driveways Direct route Some out-of-way travel for local access from Stratford to route	High potential to support efficient movement of people. Route consists of new alignment and existing roadway segments, with high level of service due to few intersections and few driveways Direct route Some out-of-way travel for local access from Stratford to route
	5.1.3 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)	High potential to support efficient movement of goods. Route consists of new alignment and existing roadway segments, with high level of service due to few intersections and few driveways Direct route Some out-of-way travel for local access from Stratford to route	High potential to support efficient movement of goods. Route predominantly uses existing roadway corridors, with high level of service due to few intersections and few driveways Direct route Some out-of-way travel for local access from Stratford to route	High potential to support efficient movement of goods. Route consists of new alignment and existing roadway segments, with high level of service due to few intersections and few driveways Direct route Some out-of-way travel for local access from Stratford to route	High potential to support efficient movement of goods. Route consists of new alignment and existing roadway segments, with high level of service due to few intersections and few driveways Direct route Some out-of-way travel for local access from Stratford to route
5.2 Area	Transportation Syste	m Reliability / Redundancy				
		Potential to support system reliability and redundancy for travel (people and goods) between regions and communities during adverse conditions	High potential to support system reliability and redundancy Route is predominantly on new alignment, which provides a new connection in the Stratford area to accommodate travel during adverse conditions (i.e. provides an alternate route)	Low potential to support system reliability and redundancy Route predominantly uses existing roadway corridors	High potential to support system reliability and redundancy Route is predominantly on new alignment, which provides a new connection in the Stratford area to accommodate travel during adverse conditions (i.e. provides an alternate route)	High potential to support system reliability and redundancy Route is predominantly on new alignment, which provides a new connection in the Stratford area to accommodate travel during adverse conditions (i.e. provides an alternate route)
5.3 Safe	ty					
	5.3.1 Traffic 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	 High potential to improve traffic safety Route is predominantly on new alignment, with limited number of access points at intersection locations and a few access points associated with private entrances A four/five lane cross section provides for good passing opportunity, provides a wider platform to accommodate evasive moves during potential accidents, 	High potential to improve traffic safety Route predominantly uses existing roadway corridors, with limited number of access points at intersection locations and a few access points associated with private entrances A four/five lane cross section provides for good passing opportunity, provides a wider platform to accommodate evasive	 High potential to improve traffic safety Route is predominantly on new alignment, with limited number of access points at intersection locations and a few access points associated with private entrances A four/five lane cross section provides for good passing opportunity, provides a wider platform to accommodate evasive moves during potential accidents, 	High potential to improve traffic safety Route is predominantly on new alignment, with limited number of access points at intersection locations and a few access points associated with private entrances A four/five lane cross section provides for good passing opportunity, provides a wider platform to accommodate evasive moves during potential accidents,

Note – Evaluation of the route alternatives is based on a qualitative assessment of each route (high, medium or low). Relevant and site-specific information for each criterion/cell is provided to justify the high, medium or low assessment.

		SEGMEN	T D – EAST OF STRATFORD, CONNEC	TING TO EXISTING HIGHWAY 7&8 CO	RRIDOR	
Factor				Route A	Iternative	
/ Sub- Factor	Criteria	Indicator for Route Selection	D1 15-16-20-24-25-26	D2 15-16-18-21-24-25-26	D3 15-16-18-22-25-26	D4 15-16-18-23-26
			and a centre left turn lane would accommodate safer left turns along the highway at intersection and driveway locations	moves during potential accidents, and a centre left turn lane would accommodate safer left turns along the highway at intersection and driveway locations	and a centre left turn lane would accommodate safer left turns along the highway at intersection and driveway locations	and a centre left turn lane would accommodate safer left turns along the highway at intersection and driveway locations
	5.3.2 Emergency Access	Potential to support emergency access to/from existing and/or new provincial facilities.	High potential to support emergency access to/from route Opportunity to provide connections via north-south crossing roads	High potential to support emergency access to/from route Opportunity to provide connections via north-south crossing roads	High potential to support emergency access to/from route Opportunity to provide connections via north-south crossing roads	High potential to support emergency access to/from route Opportunity to provide connections via north-south crossing roads
	5.3.3 Pedestrian, Cyclist and Snowmobile Safety within the highway right-of-way	Potential and significance of change to ease and safety of movement across the highway and within the right-of-way.	High potential to improve pedestrian, cyclist and snowmobile safety Route predominantly on new alignment so limited need for movement within the right-of-way Pedestrian, cyclist and snowmobile movements across right-of-way can be provided at intersection locations and/or designated crossing locations	Medium potential to improve pedestrian, cyclist and snowmobile safety Route predominantly uses existing roadway corridors so some need for movement within the right-of-way Pedestrian, cyclist and snowmobile movements across right-of-way can be provided at intersection locations and/or designated crossing locations	High potential to improve pedestrian, cyclist and snowmobile safety Route predominantly on new alignment so limited need for movement within the right-of-way Pedestrian, cyclist and snowmobile movements across right-of-way can be provided at intersection locations and/or designated crossing locations	High potential to improve pedestrian, cyclist and snowmobile safety Route predominantly on new alignment so limited need for movement within the right-of-way Pedestrian, cyclist and snowmobile movements across right-of-way can be provided at intersection locations and/or designated crossing locations
5.4 Mob	ility and Accessibility					
	5.4.1 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 connection to concentrations of population, travel performance indicators (LOS, v/c, travel speed) at critical screenlines and on potential to provide higher order transit service.	Medium potential to improve modal integration, balance and efficiency. Transit service is potentially constrained by the bypass of existing development along Highway 7&8. Use of existing Perth Road 33 corridor limits opportunities to provide higher order transit service Opportunity to support interface between rail transit service and highway	 Medium potential to improve modal integration, balance and efficiency. Transit service is potentially constrained by the bypass of existing development along Highway 7&8. Use of existing Perth Road 33 corridor limits opportunities to provide higher order transit service Opportunity to support interface between rail transit service and highway 	Medium potential to improve modal integration, balance and efficiency. Transit service is potentially constrained by the bypass of existing development along Highway 7&8. Use of existing Perth Road 33 corridor limits opportunities to provide higher order transit service Opportunity to support interface between rail transit service and highway	Medium potential to improve modal integration, balance and efficiency. Transit service is potentially constrained by the bypass of existing development along Highway 7&8. Use of existing Perth Road 33 corridor limits opportunities to provide higher order transit service Opportunity to support interface between rail transit service and highway
	5.4.2 Linkages to Population and Employment Centres	Potential to improve linkages to population and employment centres for people and goods movement	 High potential to improve linkages to population and employment centres. Linkage to Stratford and New Hamburg improved 	High potential to improve linkages to population and employment centres. Linkage to Stratford and New Hamburg improved	High potential to improve linkages to population and employment centres. Linkage to Stratford and New Hamburg improved	High potential to improve linkages to population and employment centres. Linkage to Stratford and New Hamburg improved

Note – Evaluation of the route alternatives is based on a qualitative assessment of each route (high, medium or low). Relevant and site-specific information for each criterion/cell is provided to justify the high, medium or low assessment.

		SEGMEN	T D – EAST OF STRATFORD, CONNEC	TING TO EXISTING HIGHWAY 7&8 CO	RRIDOR	
Factor				Route Al	ternative	
/ Sub- Factor	Criteria	Indicator for Route Selection	D1 15-16-20-24-25-26	D2 15-16-18-21-24-25-26	D3 15-16-18-22-25-26	D4 15-16-18-23-26
	5.4.3 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)	High potential to support recreation and tourism travel Tourist travel through the analysis area is facilitated	High potential to support recreation and tourism travel Tourist travel through the analysis area is facilitated	High potential to support recreation and tourism travel Tourist travel through the analysis area is facilitated	High potential to support recreation and tourism travel Tourist travel through the analysis area is facilitated
	5.4.4 Accommodate mobility of pedestrians, cyclists and snowmobiles	Potential to accommodate mobility of pedestrians, cyclists within critical travel corridors in urbanized areas and snowmobiles in recognized rural trails	High potential to accommodate mobility of pedestrians, cyclists and snowmobiles Route predominantly on new alignment so limited need for movement within the right-of-way Pedestrian, cyclist and snowmobile movements across right-of-way can be provided at intersection locations and/or designated crossing locations	Medium potential to accommodate mobility of pedestrians, cyclists and snowmobiles Route predominantly uses existing roadway corridors so so some need for movement within the right-of-way Pedestrian, cyclist and snowmobile movements across right-of-way can be provided at intersection locations and/or designated crossing locations	High potential to accommodate mobility of pedestrians, cyclists and snowmobiles Route predominantly on new alignment so limited need for movement within the right-of-way Pedestrian, cyclist and snowmobile movements across right-of-way can be provided at intersection locations and/or designated crossing locations	High potential to accommodate mobility of pedestrians, cyclists and snowmobiles Route predominantly on new alignment so limited need for movement within the right-of-way Pedestrian, cyclist and snowmobile movements across right-of-way can be provided at intersection locations and/or designated crossing locations
5.5 Netw	ork Compatibility					
	5.5.1 Network Connectivity	Potential to improve transportation system connectivity within and to/from the analysis area.	High potential to improve transportation system connectivity Provides improved linkage between Stratford and New Hamburg	High potential to improve transportation system connectivity Provides improved linkage between Stratford and New Hamburg	High potential to improve transportation system connectivity Provides improved linkage between Stratford and New Hamburg	High potential to improve transportation system connectivity Provides improved linkage between Stratford and New Hamburg
	5.5.2 Flexibility for Future Expansion	Potential to address future transportation needs beyond the forecasted planning horizons.	High potential for future expansion. Route is predominantly on new alignment so the majority of the right-of-way could accommodate future expansion	Medium potential for future expansion. Route predominantly uses existing roadway corridor, limiting potential for future expansion	High potential for future expansion. Route is predominantly on new alignment so the majority of the right-of-way could accommodate future expansion	High potential for future expansion. Route is predominantly on new alignment so the majority of the right-of-way could accommodate future expansion
5.6 Engi	neering					
	5.6.1 Constructability	Potential ease of implementation considering feasibility/difficulty of physical, property or environmental constraints	Medium potential for constructability issues	Medium potential for constructability issues	Medium potential for constructability issues	Medium potential for constructability issues Utilizes segment of existing Highway 7&8 corridor and Lorne Avenue One railway crossing Several new watercourse crossings

Note – Evaluation of the route alternatives is based on a qualitative assessment of each route (high, medium or low). Relevant and site-specific information for each criterion/cell is provided to justify the high, medium or low assessment.

		SEGMEN	IT D – EAST OF STRATFORD, CONNEC	<u> </u>		
Factor				Route A	Iternative	
/ Sub- Factor	Criteria	Indicator for Route Selection	D1 15-16-20-24-25-26	D2 15-16-18-21-24-25-26	D3 15-16-18-22-25-26	D4 15-16-18-23-26
5.7 Traft	5.6.2 Compliance with Design Criteria	Conformity to applicable provincial safety and design standards.	 High conformity to safety and design standards Supports use of better than minimum horizontal and vertical alignment elements Can accommodate standard lane and shoulder widths 	 High conformity to safety and design standards Supports use of better than minimum horizontal and vertical alignment elements Can accommodate standard lane and shoulder widths 	 High conformity to safety and design standards Supports use of better than minimum horizontal and vertical alignment elements Can accommodate standard lane and shoulder widths 	High conformity to safety and design standards Supports use of better than minimum horizontal and vertical alignment elements Can accommodate standard lane and shoulder widths
	•	Potential for negative impact on traffic operations due to factors such as design features, private access, and transportation network connections	 Low potential for negative impact on traffic operations Route is predominantly on new alignment, with limited number of access points at intersection locations and a few access points associated with private entrances. Opportunity to provide connections via north-south crossing roads 	 Medium potential for negative impact on traffic operations Route predominantly uses existing roadway corridors, with limited number of access points at intersection locations and a few access points associated with private entrance; however route utilizes a segment of Road 110 which will impact the connectivity of Road 110. Opportunity to provide connections via north-south crossing roads 	 Low potential for negative impact on traffic operations Route is predominantly on new alignment, with limited number of access points at intersection locations and a few access points associated with private entrances. Opportunity to provide connections via north-south crossing roads 	 Low potential for negative impact on traffic operations Route is predominantly on new alignment, with limited number of access points at intersection locations and a few access points associated with private entrances. Opportunity to provide connections via north-south crossing roads
5.8 Con	struction Cost (exclude	es property costs and engineering costs)				
		Relative road construction cost, excluding property and engineering costs	High cost	High cost	High cost	High cost
		property and engineering ecolo	\$16 M	\$16 M	\$16 M	\$16 M
SUMMA	RY OF EVALUATION		Summary of Natural Environment Route Alternatives D1 is preferred from groundwater.	a natural environment perspective as it h	nas lower potential impacts to fisheries ar	nd aquatic ecosystems and to
			Summary of Land Use / Socio-Econo Route Alternative D1 is preferred from a noise sensitive area and agriculture,		perspective as it has lower potential impa	acts to rural and urban residential area,
			Summary of Cultural Environment Route Alternative D1 is preferred from a	a cultural environment perspective as it ha	as lower potential impacts on built heritag	ge and archaeological sites.
				potential for negative impacts to traffic op	eria for most transportation factors. Howe perations and higher potential to improve	
			Conclusion Based upon the above, Route Alternative	ve D1 is the preferred alternative connect	ing to existing Highway 7&8 east of Strat	ford.

SEGMENT D - EAST OF STRATFORD, CONNECTING TO EXISTING HIGHWAY 7/8 CORRIDOR

FACTORS		Weighting		Alte	rnative	
		100	1	2	3	4
1.0 NATURAL ENVIRONMENT		20.00				
1.1 Fisheries and Aquatic Ecosystems	Weighted Score	8.00	2.64	0.00	0.00	0.00
1.2 Terrestrial Ecosystems	Weighted deore	5.00	8.07	0.00	0.00	0.00
	Weighted Score	0.0000000000000000000000000000000000000	2.42	3.35	2.67	2.93
1.3 Groundwater	Weighted Score	5.00	3.34	2.67	2.67	2.67
1.4 Surface Water	Weighted Score	2.00	5.04	2,07	2.07	2.07
	Weighted Score		0.66	0.66	0.66	0.66
Factor :	Score	20.00	9.06	6.68	6.00	6.26
2.0 LAND USE / SOCIO-ECONOMIC ENVIRO	NMENT	35.00				
2.1 Land Use Planning Policies, Goals, Objectives	Weighted Score	3.50	2.17	2.35	2.17	0.17
2.2 Land Use / Community	weighted score	7.00	2.17	2.35	2.17	2.17
COST NA POSTANISMA CAN AND HAVE	Weighted Score	THE PROPERTY OF THE PARTY OF TH	5.37	5.03	5.03	5.03
2.3 Noise Sensitive Areas	Weighted Score	5.25	3.52	0.00	0.00	0.00
2.4 Agriculture	rreignied acore	7.00	3.32	0.00	0.00	0.00
	Weighted Score	200000	1.16	0.23	1.16	1.16
2.5 Land Use / Resources	Weighted Score	3.50	3.27	2.27	2.57	2.07
2.6 Major Utility Transmission Corridors	Weighted Score	0.70	5.21	3.27	2.57	3.27
	Weighted Score		0.23	0.23	0.23	0.23
2.7 Contaminated Property and Waste Management	Weighted Score	0.70	0.47	0.47	0.47	0.47
2.8 Landscape Composition	weighted Score	2.10	0.47	0.47	0.47	0.47
	Weighted Score		1.41	1.41	1.41	1.41
2.9 Air Quality	Weighted Score	5.25	1.73	1.73	1.73	4.70
Factore		35.00	19.32	14.71	14.75	1.73 15.45
The state of the s		00.00	10.02			10.10
3.0 CULTURAL ENVIRONMENT	177 10 2	20.00	0.00		STATISTICS NO	NAME OF
3.1 Cultural Heritage - Built Heritage and Cultural Landscapes	1.15.1.15.6	16.00				
	Weighted Score	0.52	8.66	5.00	5.00	5.00
3.2 Archaeology	Weighted Score	4.00	1.32	1.32	1.32	1.32
Factore		20.00	9.98	6.32	6.32	6.32
				0.00		0.02
5.0 TRANSPORTATION	HERE THE RESERVE	25.00	100 P 40 P			E Romer Cons
5.1 Area Transportation System Capacity and Efficiency		3.75	-			
5.2 to The control of	Weighted Score	2.75	3.75	3.75	3.75	3.75
5.2 Area Transportation System Reliability / Redundancy	Weighted Score	3.75	3.75	1.24	3.75	3.75
5.3 Safety	Torganed deole	6.25	0,70	1,54	0.70	0.75
	Weighted Score		6.25	5.43	6.25	6.25
5.4 Mobility and Accessibility	Weighted Score	2.50	2.42	2.17	2.42	2.42
5.5 Network Compatibility		1.25			10	27.72
	Weighted Score	0.50	1.25	1.17	1.25	1.25
5.6 Engineering	Weighted Score	2.50	1.16	1.16	1.16	1.16
5.7 Traffic Operations	c.ginea score	3.75	1110	550	1110	1.10
	Weighted Score		2.51	1.24	2.51	2.51
5.8 Construction Cost	Weighted Score	1.25	1.24	1.24	1.24	1.24
		and the second second second				
Factores		25.00	22.33	17.39	22.33	44 33
Factored		25.00 100.00	22.33	17.39	22.33	22.33
Factored Total Alternative Score	d Score	25.00 100.00	60.68	45.09	49.40	50.36

ALTERNATIVE DESCRIPTIONS 1: D1: 15-16-20-24-25-26 2: D2: 15-16-18-21-24-25-26 3: D3: 15-16-18-22-25-26 4: D4: 15-16-18-23-26

NATURAL ENVIRONMENT WEIGHTING TABLE - SEGMENT D: EAST OF STRATFORD, CONNECTING TO EXISTING HIGHWAY 7/8 CORRIDOR

	Factor / Sub-factor / Criteria	Indicator	Net Effect	Weighting			rnative	
1.0	NATURAL ENVIRONMENT			20.00	NIXIVES	2	3	4
1.1	Pisheries and Aquatic Ecosystems	TOTAL PROTECTION		8,00	12, 113		THE WILL	TO IT
	1.1.1 Fish Habitat	Potential and significance of encroachment, severance, displacement; and long-term alteration/disruption as applicable to the following: critical fish habitat features, riparian areas and habitat rehabilitation goals,		8.00				
	1.1.2 Fish Community	Potential and significance of encroachment, severance, displacement; and long-term alteration/disruption as applicable to the following: fish species at risk (vulnerable, threatened or endangered fish species), fish movement/ingration, critical fish life stage processes (spawning, rearing, nursery, feeding) and long-term fish community management goals.	No / Low / Medium / High Effects	8.00	0.33	0.00	0.00	0.00
_			Weighted Score		2.64	0.00	0.00	0.00
1.2 7	Terrestrial Ecosystems			5.00				
	1.2.1 Wildlife	Potential and significance of: encroachment, severance, displacement; and long-term alteration/disruption as applicable to the following: wildlife species at risk (vulnerable, hrentened or endangered wildlife species); wildlife of local and regional importance; migratory birds; critical wildlife habitat features; ecologically functional areas such as connective corridors or travel ways for movement/migration; important wildlife areas such as decryards, herouries, waterfowl areas, important birdlife areas; wildlife management, rehabilitation/research program sites; and interference with critical wildlife life stage processes (eg mating/rearing, etc.).	No / Low / Medium / High Effects	0.75	0.33	0.67	0.33	0.67
	1.2.2 Wetlands	Potential and significance of: encroachment, severance, displacement; and long-term alteration/disruption as applicable to the following: provincially significant wetlands, their buffer areas, and their wetland function; evaluated and un-evaluated wetlands, their wetland buffer areas, and their wetland function; and wetland management, research and/or wetland conservation programs/areas.	No / Low / Medium / High Effects	1.25	0.67	0.67	0.33	0.33
	1.2.3 Forests	Potential and significance of: encroachment, severance, displacement; and long-term alteration/disruption as applicable to the following: significant woodfands/valley lands; and forest management/research program areas.	No / Low / Medium / High Effects	1.25	0.33	0.67	0.67	0.67
	1,2.4 Vegetation	Potential and significance of: encroachment, severance, displacement; and long-term alteration/disruption as applicable to the following: subpopulations of vegetation species at risk (vulnerable, threatened or endangered species), species of conservation concern and significant regional/local flora/communities; areas/corridors supporting known populations of vegetation species at risk (vulnerable, threatened or endangered species), species of conservation concern and significant flora/communities; and vegetation management, rehabilitation/research program sites.	No / Low / Medium / High Effects	0.75	0.33	0.67	0.67	0.67
	1.2.5 Designated/Special Areas	Potential and significance of: encroachment, severance, displacement, long- term alteration/disruption, change in area character/aesthetics, nuisance impacts, change to access/ravel lime, and change to facilities/nullities/services to designated/special areas;	No / Low / Medium / High Effects	1.00	0.67	0.67	0.67	0.67
			Weighted Score		2.42	3.35	2.67	2.93
30	Groundwater			5.00		HILL		
	1.3.1 Areas of Groundwater Recharge and Discharge	Potential and significance of alteration to areas of groundwater recharge and discharge due to physical intrusion or groundwater inception, draw- down, impoundment, obstruction, or soil compaction impacting groundwater base-flow and quality.	No / Low / Medium / High Effects	0.50	0.67	0.67	0.67	0.67
	1.3.2 Groundwater Source Areas and Wellhead Protection Areas	Potential and significance of alteration to areas of groundwater resource areas and wellhead protection areas due to physical intrusion, or groundwater interception, draw-down, impoundment, obstruction and by soil compaction.	No / Low / Medium / High Effects	1.00	0.67	0.67	0.67	0.67
	1.3.3 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.	No / Low / Medium / High Effects	0.50	0.67	0.67	0.67	0.67

Highway 7/8 Transportation Corridor Planning and Class EA Study

NATURAL ENVIRONMENT WEIGHTING TABLE - SEGMENT D: EAST OF STRATFORD, CONNECTING TO EXISTING HIGHWAY 7/8 CORRIDOR

	Factor / Sub-factor / Criteria	Indicator	Net Effect	Weighting		Alter	native	
	Fileton / Sub-fileton / Criteria	mucator	(ver isnect	weighting	1	2	3	4
0	NATURAL ENVIRONMENT			20.00				
	1.3.4 Private Wells	Potential and significance of alteration to private well use due to physical intrusion, or groundwater interception, draw-down, impoundment, obstruction and by soil compaction.	No / Low / Medium / High Effects	1.00	0.67	0.00	0.33	0.33
	1.3.5 Groundwater-Dependent Commercial Enterprises (e.g. water bottling operations)	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.	No / Low / Medium / High Effects	1.00	1.00	1.00	1.00	1.00
	1.3.6 Groundwater-Sensitive Ecosystems (e.g. groundwater fed wetlands, coldwater streams)	Potential and significance of alteration to groundwater-sensitive ecosystems due to physical intrusion, or groundwater interception, drawdown, impoundment, obstruction and by seil compaction.	No / Low / Medium / High Effects	1,00	0.33	0.33	0.00	0.00
30			Weighted Score		3.34	2.67	2.67	2.67
S	Surface Water			2.00		TELET HE		
	1.4.1 Watershed / Sub-Watershed Drainage Features / Patterns	Potential and significance of: encroachment, severance, displacement; and long-term alteration/disruption as applicable to the following: watercourse crossings (permanent, intermittent and ephemeral): floodplain or meander belts: riparian areas; sensitive headwater areas; and watershed and sub watershed management plans.	No / Low / Medium / High Effects					
	1.4.2 Surface Water Quality and Quantity	Petential 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 waterbodies.	No / Low / Medium / High Effects	2.00	0.33	0.33	0.33	0.33
			Weighted Score		0.66	0.66	0.66	0.66
			Factored Score	20.00	9.06	6.68	6.00	6.26

ALTERNATIVE DESCRIPTIONS 1: D1: 15-16-20-24-25-26 2: D2: 15-16-18-21-24-25-26 3: D3: 15-16-18-22-25-26 4: D4: 15-16-18-23-26

SUMMARY WEIGHTING TABLE - SEGMENT D: EAST OF STRATFORD, CONNECTING TO EXISTING HIGHWAY 7/8 CORRIDOR

Factor / Sub-factor / Criteria	Indicator	Net Effect	Weighting	1	2	mative 3	4
LAND USE / SOCIO-ECONOMIC	ENVIRONMENT		35.00			TX TH	
Land Use Planning Policies, Goals and Ob	jectives		3.50	Tall at			
2.1.1 First Nations Land Claims	Potential and significance of encronchment, severance, displacement to areas for which there are First Nations outstanding land claims	No / Low / Medium / High Effects	0.18	0.67	0.67	0.67	0.67
2.1.2 Provincia/Federal land use planning policies/goals/objectives	Degree of compatibility with federal/provincial land use policies/goals/objectives	No / Low / Medium / High Hifferts	0.52	0.33	0.67	0.33	0.33
2.1.3 Municipal (regional and local land use planning policies/goals/ objectives (Official Plans)	Degree of compatibility with municipal Official Plans	No / Low / Medium / High Effects	2.28	0.67	0.67	0.67	0.67
2.1.4 Development Objectives of Private Property Owners	Potential to isolate property from current/future urban envelope. Impact on future land use.	No / Low / Medium / High Effects	0.52	0.67	0.67	0.67	0.67
		Weighted Score		2.17	2,35	2.17	2.17
Land Use / Community			7.00				
2.2.1 First Nation Reserves	Potential and significance of encroachment, severance, displacement, long-term alteration / disruption, change in area changer / acuthetics, nuisance imports and change to access / travel time to First Nation Reserves.	No / Low / Medium / High Effects	0.35	1.00	1.00	1.00	1.00
2.2.2 First Nations' Sacred Grounds	Potential and significance of encroachment, severance, displacement, long-term alteration / disruption, change in area character / seathelies, naisance impacts and change to access / travel time to First Nations' sacred grounds.	No / Low / Medium / High Effects	0,35	0.67	0.67	0.67	0.67
2.2.3 Urban and Rural Residential	Potential and significance of: encroachment, severance, displacement, property acquisition: bmg-term alteration/disruption (e.g., loss of parking area): change in area character / acatheties (e.g., loss of treat/gooden area); unitaste impacts (e.g., loss of treat/gooden area); unitaste impacts (e.g., intrasion of highway into current residential envelope); change to access / travel time; change to facilities / utilities / services interference with residential community echesions (enting to highway operational impacts (e.g., snow storage and highway access viability) to urban and rural residential areas (residents (owners/tenants) and community groups).	No / Low / Medium / High Effects	1.05	0.33	0.00	0.00	0.00
2.2.4 CommerciaVIndustrial	Potential and significance of encroachment, severance, displacement, property acquisition: long-term alteration/disruption; change in area character/acsithetics; missance imposts; change to travel account/area (line; change to foildites/attitics/ervices; interference with commercial community cohesion; change to highway operation impacts (e.g., customer parking; carpo backing/offs/ada/go); to commercial and industrial areas (business owners/lenants and customers).	No / Low / Medium / High Effects	1.05	0.67	0.67	0.67	0.67
2.2.5 Tourist Areas and Attractions (e.g. museums, theatres, etc.)	Potential and significance of: encroschment, sevenance, displacement, property acquisition; long-term alteration/disruption; change in area character/archetecter, taiscance impacts; change to make accesstraved time; change to facilities/architects/revices; loss of "critical mass" in number of signature business attractions (e.g. number of antique shops); to tourist areas and attractions.	No / Low / Medium / High Effects	1.05	0.67	0.67	0.67	0.67
2.2.6 Community Facilities/Institutions (e.g. hospitals, schook, places of worship, unique community features)	Potential and significance of: encroachment, severance, displacement, properly acquisition; inqterm alteration/disruption; change in a fact chanceter/asstitics, unisance impacts; change to travel access/travel time; change to facilities/utilities/services; change to earn of safety of pedestrian movements across the highway and within the highway right-of-way; change to highway operation impacts to current use (e.g. highway noise and vibration interfering with church services); to community facilities and institutions.	No / Low / Medium / High Effects	1.05	1,00	1.00	1.00	1.00
2.2.7 Municipal Infrastructure and Public Service Facilities (e.g. sewage and water services, police/emergency services, local utilities)	Potential and significance of: encroachment, severance, displacement; long-term alteration/disruption; change to access/travel time; change to facilities/utilities/services; to municipal infrastructure and public service facilities.	No / Low / Medium / High Effects	0.35	0.67	0.67	0.67	0.67
2.2.8 Downtown Historic Crossroads Function	Potential and significance of interference by long-distance through- traffic on: "main street" function and structure; character/aesthetics; change to ease and safety of pedestrian movements across the highway and within the highway right-f-way; change to on-street parking; in historic downtown area.	No / Low / Medium / High Effects	1.75	1.00	1.00	1.00	1.00
		Weighted Score	222	5.37	5.03	5.03	5.03
Noise Sensitive Areas (NSAs) (residential ar	reas and sensitive institutional uses)		5.25				
2.3.1 Highway Noise	Potential for significant traffic noise increases in NSAs and for noise-sensitive receivers immediately adjacent to the highway	No / Low / Medium / High Effects	5.25	0.67	0.00	0.00	0.00
		Weighted Score		3.52	0.00	0.00	0.00

Highway 7/8 Transportation Corridor Planning and Class EA Study

SUMMARY WEIGHTING TABLE - SEGMENT D: EAST OF STRATFORD, CONNECTING TO EXISTING HIGHWAY 7/8 CORRIDOR

	Factor / Sub-factor / Criteria	Indicator	Net Effect	Weighting			rnative	
		\$ 2000 E 200	18972300300300	2012-001	_1_	2	3	4
4.4 A	griculture	ESSENSES ESSENCE		7.00			12 11	
	2.4.1 Agriculture - Canada Land Inventory Class 1, 2, 3 Land	Potential and significance of encroschment, severance of Canada Land inventory Classes 1, 2 and 3 soils	No / Low / Medium / High Effects	0.70	0.00	0.00	0.00	0.00
	2.4.2 Agriculture - Farm Infrastructure	Potential and significance of: encroachment, severance, displacement; long-term alternation/disruption; nuisance impacts: to farm infrastructure (rickt tile dinitings systems/oralists, irrigation systems, barns/silos/structures, etc.).	No/Low/Medium/High Effects	2.80	0.33	0.00	0.33	0.33
	2.4.3 Agriculture - Operations on Individual Farms	Potential and significance of: encroachment, severance, displacement, long-term alternatoridisruption; nuisance impacis; to in-farm field operations (planting, harvesting, grazing, nutrient management, etc.) as a plantishe to the following; specially crops/ropland; diary/livestock operations; field crop operations; high investment agricultural operations; established agricultural farm communities.	No/Low/Medium/High Effects	2.80	0.00	0.00	0.00	0.00
	2.4.4 Agriculture - Transportation Linkages between Integrated Agricultural Business Units	Potential to sever/disrupt transportation linkages between integrated agricultural business units (movement between integrated agricultural business units of equipment, materials, workers, etc.)	No/Low/Medium/High Effects	0.70	0.33	0.33	0.33	0.33
			Weighted Score		1.16	0.23	1.16	1.16
.5 L	and Use / Resources			3.50				
	2.5.1 First Nations' Treaty Rights or Use of Land and Resources for Traditional Purposes (e.g. hunting, fishing, harvesting of country foods, harvesting of medicinal plants)	Potential and significance of; encroachment, severance, displacement; long-term alternation/disruption; nuisance impacts; change to access/travel time to Plast Nations' treaty rights or use of land and resources for traditional purposes.	No/Low/Medium/High Effects	0.35	0.33	0.33	0.33	0.33
	2.5.2 Parks and Recreational Areas (e.g., national/provincial parks, conservation areas, municipal parks, public spaces, golf courses, trails, greenways and open space linkages)	Potential and significance of: encroachment, severance, displacement, property acquisition; long-term alteration/disruption; change in area character's desthetics; nuisance impacts; change to access/travel time; change to facilities/utilities/services; to parks and recreational areas.	No / Low / Medium / High Effects	2.45	1.00	1.00	1.00	1.00
	2.5.3 Aggregates, Mineral-Resources	Potential and significance of encroachment, severance, displacement, property acquisition; long-term alteration/disruption; change to access/dravel time; change to facilite/strifiles/services; to current/future extraction of aggregate and mineral resources.	No / Low / Medium / High Effects	0,70	1.00	1.00	0.00	1.00
36,			Weighted Score		3.27	3.27	2.57	3.27
.6 N	lajor Utility Transmission Corridors (e.g. 1	ailroads, hydro, gas, oil)		0.70		WHI I		
		Potential and significance of: encroachment, severance, displacement, property acquisition; long-term alteration/disruption; change to access/rared time: change to facilities/arthitics/services; to major utility transmission corridors.	No / Low / Medium / High Effects	0.70	0.33	0.33	0.33	0.33
			Weighted Score		0.23	0.23	0.23	0.23
	ontaminated Property and Waste Manage n contaminated sites, and high-risk contamin	ment (e.g. landfills, hazardous waste sites, "brow	nfield" areas, other	0.70				
150000				0.70				
		Potential and significance of: encroachment, severance, displacement, property acquisition; long-term alteration/daraption; change to access/mared time; change to facilities/utilities/services; to contaminated property and waste management.	No / Low / Medium / High Effects	0.70	0.67	0.67	0.67	0.67
		Potential and significance of: encroachment, severance, displacement, property acquisition: long-term alternation/disruption: change to facilities/withines/services: to		4 1200	0.67	0.67	0.67	0.67
	andscape Composition	Potential and significance of: encroachment, severance, displacement, property acquisition: long-term alternation/disruption: change to facilities/withines/services: to	Effects	4 1200	7 (282)		VCCBV2./A	NIMIN
	andscape Composition 2.8.1 Sernic Composition (total aesthetic value of landscape components)	Potential and significance of: encroachment, severance, displacement, property acquisition: long-term alternation/disruption: change to facilities/withines/services: to	Effects	0.70	7 (282)		VCCBV2./A	NIMIN
	2.8.1 Scenic Composition (total aesthetic value of	Potential and significance of eneroschment, severance, displacement, property acquisition: long-term alteration/disruption; change to access/travel time; change to facilities/utilities/services: to contaminated property and waste management. Potential and significance of change to scenic composition (total)	Weighted Score No / Low / Medium / High	0.70	7 (282)		VCCBV2./A	NIMIN
	2.8.1 Scenic Composition (total aesthetic value of landscape components)	Potential and significance of: encroachment, severance, displacement, properly acquisition; long-term alteration/disruption; change to access/travel time; change to facilite-builtises/services; to contaminated property and waste management. Potential and significance of change to scenic composition (total aesthetic value of landscape components). Potential and significance of change to vistas/outlooks for sensitive	Weighted Score No / Low / Medium / High Effects No / Low / Medium / High	0.70	0.47	0.47	0.47	0.47
.,8 L.	2.8.1 Scenic Composition (total aesthetic value of landscape components) 2.8.2 Sensitive Viewer Groups 2.8.3 Scenic Value of Views/Vistas from the transportation facility	Potential and significance of eneroachment, severance, displacement, property acquisition; long-term alteration/disruption; change to access/travel time; change to facilities/utilities/services; to contaminated property and waste management. Potential and significance of change to seemic composition (total aesthetic value of londscape components). Potential and significance of change to vistas/outlooks for sensitive viewer groups. Petential and significance of viewe/vistas from the transportation	Weighted Score No / Low / Medium / High Effects No / Low / Medium / High Effects	2.10	0.47	0.47	0.47	0.47
.8 L.	2.8.1 Scenic Composition (total aesthetic value of landscape components) 2.8.2 Sensitive Viewer Groups 2.8.3 Scenic Value of Views/Vistas from the	Potential and significance of eneroachment, severance, displacement, property acquisition; long-term alteration/disruption; change to access/travel time; change to facilities/utilities/services; to contaminated property and waste management. Potential and significance of change to seemic composition (total aesthetic value of londscape components). Potential and significance of change to vistas/outlooks for sensitive viewer groups. Petential and significance of viewe/vistas from the transportation	Weighted Score No / Low / Medium / High Effects No / Low / Medium / High Effects No / Low / Medium / High Effects	0.70	0.47	0.47	0.47	0.47
.,8 L.	2.8.1 Scenic Composition (total aesthetic value of landscape components) 2.8.2 Sensitive Viewer Groups 2.8.3 Scenic Value of Views/Vistas from the transportation facility	Potential and significance of eneroachment, severance, displacement, property acquisition; long-term alteration/disruption; change to access/travel time; change to facilities/utilities/services; to contaminated property and waste management. Potential and significance of change to seemic composition (total aesthetic value of londscape components). Potential and significance of change to vistas/outlooks for sensitive viewer groups. Petential and significance of viewe/vistas from the transportation	Weighted Score No / Low / Medium / High Effects No / Low / Medium / High Effects No / Low / Medium / High Effects	2.10	0.47	0.47	0.47	0.47
2.8 L	2.8.1 Secuic Composition (total aesthetic value of landscape components) 2.8.2 Sensitive Viewer Groups 2.8.3 Secuic Value of Views/Vistas from the transportation facility ir Quality 2.9.2 Sensitive receptors to air pollutants and	Potential and significance of eneroschment, severance, displacement, property acquisition; long-term alteration/disruption; change to access/travel time; change to facilities/utilities/services: to contaminated property and waste management. Potential and significance of change to scenic composition (total aesthetic value of landscape components). Potential and significance of change to vistas/outlooks for sensitive viewer groups. Petential and significance of views/vistas from the transportation facility. Presence and potential for impacts to sensitive receptors to air pollutants and greenhouse gas emissions, including consideration of number of sensitive receptors in our for number of sensitive receptors in mediately adjacent to the	Weighted Score No / Low / Medium / High Effects No / Low / Medium / High Effects No / Low / Medium / High Effects Weighted Score	2.10 2.10 5.25	0.47	0.47	0.47	0.47

ALTERNATIVE DESCRIPTIONS 1: D1: 15-16-20-24-25-26 2: D2: 15-16-18-21-24-25-26 3: D3: 15-16-18-22-25-26 4: D4: 15-16-18-23-26

Highway 7/8 Transportation Corridor Planning and Class EA Study Cultural Environment

SUMMARY WEIGHTING TABLE - SEGMENT D: EAST OF STRATFORD, CONNECTING TO EXISTING HIGHWAY 7/8 CORRIDOR

	Factor / Sub-factor / Criteria	Indicator	Net Effect	Weighting			native	
1000		***************************************	733 23133	, reighting	_ 1	2	3	4
3.0 C	ULTURAL ENVIRONMENT			20.00			SEL	
.1 Cı	altural Heritage - Built Heritage and Cu	iltural Landscapes		16.00	450	ENW		100
	3.1.1 Buildings or "Standing" Sites of Architectural or Heritage Significance or Ontario Heritage Foundation Easement Properties	Potential and significance of encroachment, severance, displacement, property acquisition, long-term alteration / disruption, change in area character / aesthetics, nuisance impacts, change to access / travel, change to facilities / utilities/ service to buildings or "standings" sites of extreme local, provincial or national interest or Ontario Heritage Foundation casements properties.	No / Low / Medium / High Effects	8.00	0,33	0.00	0.00	0.00
	3.1.2 Heritage Bridges	Potential for destruction or significant alteration of heritage bridges.	No / Low / Medium / High Effects					
	3.1.3 Areas of Historic 19th Century Settlement	Potential and significance of encroachment, severance, displacement, long-term alteration / disraption, change in area character / assisticts, unisance impacts, change to access / travel, change to facilities / utilities/ service to areas of historic 19th century settlement.	No / Low / Medium / High Effects	3.00	0.67	0.67	0.67	0.67
	3.1.4 Cultural Heritage Landscapes (collection of individual manmade features modifying pristine landscape)	Potential and significance of change to composition of cultural landscapes.	No / Low / Medium / High Effects	2,00	1.00	1.00	1.00	1.00
	3.1.5 First Nations' Burial Sites	Potential and significance of encroachment, severance, displacement, long-term alteration / disruption, change in area character / aesthetics, nuisance impacts, change to access / travel, to First Nations' burial sites.	No / Low / Medium / High Effects	0.00	1.00	1,00	1.00	1.00
	3.1.6 Cemeteries	Potential and significance of encroachment, severance, displacement, long-term alteration / disruption, change in area character / aestituties, nuisance impacts, change to access / travel, change to facilities / utilities/ service to cemeteries.	No / Low / Medium / High Effects	3.00	0.67	0.33	0.33	0.33
			Weighted Score		8.66	5.00	5.00	5.00
2 Cu	ltural Heritage - Archaeology			4.00	Haritan II		# He' T	1
	3.2.1 Pre-Historic and Historic First Nations Sites	Potential for destruction or disturbance of prehistoric and historic First Nations archaeological sites of extreme local, provincial or national interest	No / Low / Medium / High Effects					Ng/gw
	3.2.2 Historic EuorCanadian Archaeological Sites	Potential for destruction or disturbance of historic EuroCanadian archaeological sites of extreme local, provincial or national interest	No / Low / Medium / High Effects	4.00	0.33	0.33	0.33	0.33
-			Weighted Score		1,32	1.32	1.32	1.32
			Factored Score	20.00	9.98	6.32	6.32	6.32

ALTERNATIVE DESCRIPTIONS 1: D1: 15-16-20-24-25-26 2: D2: 15-16-18-21-24-25-26 3: D3: 15-16-18-22-25-26 4: D4: 15-16-18-23-26

Highway 7/8 Transportation Corridor Planning and Class EA Study SUMMARY WEIGHTING TABLE - SEGMENT D: EAST OF STRATFORD, CONNECTING TO EXISTING HIGHWAY 7/8 CORRIDOR

	Factor / Sub-factor / Criteria	Indicator	Net Effect	Weighting	1	Alte 2	rnative 3	4
0.0	TRANSPORTATION			25.00			TEMES	
.1 /	Area Transportation System Capacity an	d Efficiency		3.75		LAKI		1155
	5.1.2 Efficient movement of people	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.	No / Low / Medium / High Effects	1.88	1.00	1.00	1.00	1.00
	5.1.3 Efficient movement of goods	Potential to support the efficient movement of goods between communities and regions based on Level of Service (LOS) and volume to capacity (v/c) on a network, screenline and critical link basis	No / Low / Medium / High Effects	1.88	1.00	1.00	1.00	1,00
2.4	rea Transportation System Reliability /	Padavalana	Weighted Score	276	3.75	3.75	3.75	3,75
T	rea Transportation System Renability /	Potential to support system reliability and redundancy for travel		3.75				
		(people and goods) between regions and communities during adverse conditions.	No / Low / Medium / High Effects	3.75	1.00	0.33	1.00	1.00
.3 S	afety	Bertling - Land Control V	Weighted Score	6.25	3.75	1,24	3.75	3.75
Ī	5.3.1 Traffic 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	No / Low / Medium / High Effects	2.50	1.00	1.00	1.00	1,00
	5.3.2 Emergency Access	Potential to support emergency access to/from existing and/or new provincial facilities	No / Low / Medium / High Effects	1.25	1.00	1.00	1.00	1,00
	5.3.3 Pedestrian, Cyclist and Snowmobile Safety within the highway right-of-way	Potential and significance of change to ease and safety of movement across the highway and within the right-of-way.	No / Low / Medium / High Effects	2.50	1.00	0.67	1.00	1.00
			Weighted Score		6.25	5.43	6.25	6.25
4 1	Iobility and Accessibility	Marine Charles and Colores		2.50			=======	
	5.4,1 Model 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 exmection to concentrations of population, travel performance indicators (LOS, vc, travel speed) at critical screenlines and on potential to provide higher order transit service.	No / Low / Medium / High Effects	0.25	0.67	0.67	0.67	0.67
	5.4.2 Linkages to Population and Employment Centres	Potential to improve linkages to population and employment centres for people and goods movement.	No / Low / Medium / High Effects	0.75	1.00	1.00	1.00	1.00
	5.4.3 Recreation and Tourism Travel	Potential to support recreation and tourism mavel within and tourism the Analysis Area by provision of higher order network (roads and transit) continuity and connectivity and through network performance indicators (LOS, vic. travel speed)	No / Low / Medium / High Effects	0.75	1.00	1.00	1.00	1.00
	5.4.4 Accommodate mobility of pedestrians, cyclists and snowmobiles	Potential to accommodate mobility of pedestrians, cyclists within critical travel corridors in urbanized areas and snowmobiles in recognized rural traits.	No / Low / Medium / High Effects	0.75	1.00	0.67	1.00	1.00
			Weighted Score		2.42	2.17	2.42	2.42
5 N	etwork Compatibility			1.25				444
	5.5.1 Network Connectivity	Potential to improve transportation system connectivity within and to/from the analysis area.	No / Low / Medium / High Effects	1,00	1.00	1.00	1.00	1,00
	5.5.2 Flexibility for Future Expansion	Potential to address future transportation needs beyond the forecasted planning borizons.	No / Low / Medium / High Effects	0.25	1.00	0.67	1.00	1.00
	AV. AV.		Weighted Score		1.25	1.17	1.25	1.25
6 E	ngineering			2.50				
	5.6.1 Constructability	Potential case of implementation considering feasibility/difficulty of physical, property or environmental constraints.	No / Low / Medium / High Effects	2.00	0.33	0.33	0.33	0.33
	5.6.2 Compilance with Design Criteria	Conformity to applicable provincial safety and design standards.	No / Low / Medium / High Effects	0.50	1.00	1.00	1.00	1.00
	* 0		Weighted Score	2.00	1.16	1.16	1.16	1.16
T	raffic Operations	Description of the second of t		3.75				
L		Potential for negative impact on traffic operations due to factors such as design features, private access, and transportation network connections.	No / Low / Medium / High Effects	3.75	0.67	0.33	0.67	0.67
8 C	onstruction Cost (excludes property costs	s and engineering costs)	Weighted Score	1.25	2.51	1.24	2.51	2.51
	p. p. ty con	Relative road construction cost, excluding property and engineering costs.	No / Low / Medium / High Effects	1.25	0.33	0.33	0.33	0.33
-			Weighted Score		1.24	1.24	1.24	1.24
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ALTERNATIVE DESCRIPTIONS 1: D1: 15-16-20-24-25-26 2: D2: 16-16-18-21-24-25-26 3: D3: 15-16-18-22-25-26 4: D4: 15-16-18-23-26

SUMMARY WEIGHTING TABLE - SEGMENT D: EAST OF STRATFORD, CONNECTING TO EXISTING HIGHWAY 7/8 CORRIDOR SUMMARY OF SENSITIVITY ANALYSIS - RANKING OF ALTERNATIVES

FACTORS	RATING	WEIGHT	Alternative 1	Alternative 2	Alternative 3	Alternative 4
Evaluation Team	Initial \	Weights	-	4	3	2
		SE	SENSITIVITY ANALYSIS			
Natural Environment	High	20%	-	4	8	2
	Low	10%	1	4	3	2
and Hea / Socio-Economic Environment	High	85%	1	4	3	2
	Low	10%	1	4	3	2
Cultural Environment	High	20%	1	4	3	2
	Low	10%	1	4	3	2
Transportation	High	%02	1	4	3	2
	Low	10%	1	4	3	2
	Ove	Overall Ranking	1	4	6	2

ALTERNATIVE DESCRIPTIONS
1: D1: 15-16-20-24-25-26
2: D2: 15-16-18-21-24-25-26
3: D3: 15-16-18-22-25-26
4: D4: 15-16-18-23-26

The control of the	Marketon Transcriptor										
NATIONAL CENTRICANTE National Scare National Scare	FACTORS Parning and Class EA Study	Weighting	,	Alten	athre		Weighting		Altern	ative	
Weighted Serv. 100	10 NATTIBAL ENVIRONMENT	20.00		7	2		90 02		64	3	,
Weighted Server Scott Sc	IN INTORNE ENTROPHENT	0000					20.00	100			
Figure Weighted Series Weighted Series Scott			100	000	2000	****	2000				
			-	200	000	000	03.61	0.000	000	000	000
Factored Score Weighed Sco			2.42	3.50	587	200	0071	200			200
			4	200	5.01	CAN	13.60	4000	0.00	000	131
Factor Negletal Service 20,000 9,066 6,668 6,000 6,206 6			7.7	582	680	. 667	0077		****	-	-
Finctioned Score Finctioned			-	4.01	500	500	100.0	0.00	2000	0.00	90'0
Figure 1 Store Facture 2 Store S.50			0.66	0.66	250	0.66	2000	30.	201	20.7	100
CONOMICE ENTINONMENT Sign Sign	Factored Cone		90.0	6 68	6.00	8.06	20.00	N3.00	16.70	45.00	15.64
State Stat				2000	200	2	000	1	10.00	13.00	10.04
Accordance Michael Serie 150 217 218 219	THE THE PROPERTY OF SOURCE OF STREET STREET	00.20									
Weighted Series Weighted Series S	O LAND USE / SOCIO-ECONOMIC ENVIRONMENT	35.00			Distance in		22.00				
Weighted Serve Veighted Serve Same S						2	2.20				
Weighted Serve S.50			2.17	235	217	2.17	The state of the s	1.36	1,47	1.36	1.36
Weighted Serve Veighted Serve S.S.		1					4.40				
Weighted Secretions Weighted Secretions Weighted Secretions Weighted Secretions Secret			5.37	5,03	5,03	5.03		3,38	3.16	3.16	3.16
Weighted Serve 100							3.30				
Weighted Scare Weighted Scare Meighted Scare Meig	Statement of the last of the l		3.52	0000	0000	000		221	0000	0000	000
Michigal Secret Michigal S		1.100		0000	***	****	4.40				
wite place Weighted Scare 257 227 227 227 227 227 227 227 228 167		150	1.10	0.23	1,36	1.16		0.73	0.15	673	0.73
NAMENT Weighted Secret Annalysister Weighted Secret Annalysister Weighted Secret Annalysister Weighted Secret Annalysis Annalysis			407	4.67	130	404	7.70	200		-	
Noticipal Series Noticipal S			170	96	16.3	3.61	****	5002	977	1.63	502
NAMENT			0.23	0.23	0.33	0.24	1	200	200	210	20.00
Weighted Store Scale Sca	STREET, SQUARE, SQUARE		200	244	0.50	200	0.44	W.1D	0.15	0.13	0.10
Factored Score 2.10 1.47 1.475 1.545 1.550 1.50 1			20.00				0.4				
NAMENT Pactured Score 35.00 19.32 14.71 14.75 15.45 15		0	0.47	0.47	0.47	0.47		0.29	0.29	0.29	0.29
Factored Score 1,50		210	100000				133				
Maighted Score		4	1741	171	1,41	1.41		0.88	0.88	99'0	0.88
Factored Score							3,30				
NAMENT	Weighted Score		1.73	1.73	1,73	1.73		1.00	1.00	1.09	1.09
12.50 State Stat	Factored Score	35.00	19.32	14.71	14.75	15.45	22.00	12.14	9.24	9.27	9.71
12.50 10.00 12.50 1.00											
Factored Score 15.00 1.0	.0 CULTURAL ENVIRONMENT	20.00					12.50	The latest designation of the latest designa	- A - A - A - A - A - A - A - A - A - A		100
Weighted Score 4,00 5,98 5,00 5,50	1 Cultural Heritage - Built Heritage and Cultural Landscapes	16.00					00.01				
Factored Score A00 1.26 1.26 1.25 6.32			8.66	8.00	8.00	8.00	0000	2.41	2.0	010	0.40
Pactored Score 20,000 9.38 6.32 6.33 6.	AND DESCRIPTION OF THE PERSON NAMED IN COLUMN TWO IS NOT THE PERSON NAMED IN COLUMN TWO IS					2000	250	-	20.00	6.13	6.10
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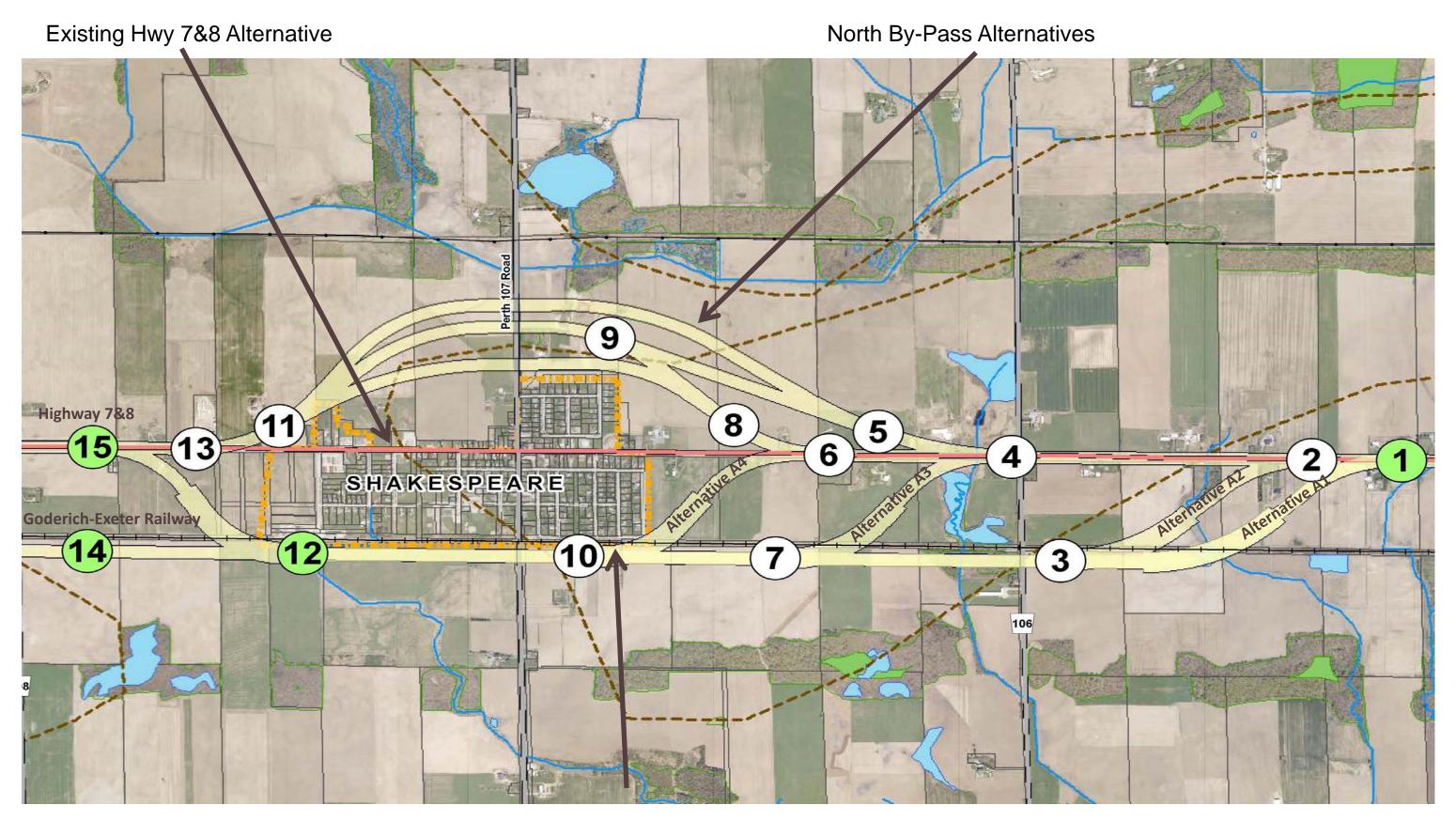
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Highway 7&8 Transportation Corridor Planning and Class EA Study	
Report H: Selection of Detailed Planning (Route) Alternatives for Provincial Roadway	vs

APPENDIX B

ASSESSMENT AND EVALUATION TABLES FOR SHAKESPEARE AREA ROUTE ALTERNATIVES

Shakespeare Area Route Alternatives



South By-Pass Alternatives



Note – Evaluation of the route alternatives is based on a qualitative assessment of each route (high, medium or low). Relevant and site-specific information for each criterion/cell is provided to justify the high, medium or low assessment.

			SEGMENT A – SHAKESPEARE	AREA SOUTHERN BYPASSES		
Factor				Route A	Iternative	
/ Sub- Factor	Criteria	Indicator for Route Selection	A1 1-3-7-10-12	A2 1-2-3-7-10-12	A3 1-2-4-7-10-12	A4 1-2-4-6-10-12
1. NATU	RAL ENVIRONMENT	AL FACTORS				
1.1 Fish	eries and Aquatic Eco	osystems				
	1.1.1 Fish Habitat 1.1.2 Fish Community	Potential and significance of:	Low potential to affect fish and fish habitat 2 permanent warmwater and 1 permanent coolwater crossings of Horner Creek containing low to moderate quality habitat supporting warmwater fish species I permanent coolwater crossing of the North Woodstock River containing low to moderate quality fish habitat. Fish communities and habitats present are considered to be moderately resilient to disturbance and show evidence of historical channel alignments or modifications Fish movements are likely localized	 Low potential to affect fish and fish habitat 2 permanent warmwater and 1 permanent coolwater crossings of Horner Creek containing low to moderate quality habitat supporting warmwater fish species I permanent coolwater crossing of the North Woodstock River containing low to moderate quality fish habitat. Fish communities and habitats present are considered to be moderately resilient to disturbance and show evidence of historical channel alignments or modifications Fish movements are likely localized 	Low potential to affect fish and fish habitat 2 permanent warmwater and 1 permanent coolwater crossings of Horner Creek containing low to moderate quality habitat supporting warmwater fish species I permanent coolwater crossing of the North Woodstock River containing low to moderate quality fish habitat. Fish communities and habitats present are considered to be moderately resilient to disturbance and show evidence of historical channel alignments or modifications Fish movements are likely localized	Low potential to affect fish and fish habitat 2 permanent warmwater and 1 permanent coolwater crossings of Horner Creek containing low to moderate quality habitat supporting warmwater fish species I permanent coolwater crossing of the North Woodstock River containing low to moderate quality fish habitat. Fish communities and habitats present are considered to be moderately resilient to disturbance and show evidence of historical channel alignments or modifications Fish movements are likely localized
		rearing, nursery, feeding) • long-term fish community management goals	between feeding and spawning areas which are abundant within the reaches outside of the study area. There are no critical habitat types within reaches associated with the route alternative. There are no SAR within the route alternative Expected impacts include temporary disturbance to fish and fish habitat associated with construction, potential for short term impacts to water quality during construction. Impacts can be mitigated and/or compensated.	between feeding and spawning areas which are abundant within the reaches outside of the study area. There are no critical habitat types within reaches associated with the route alternative. There are no SAR within the route alternative Expected impacts include temporary disturbance to fish and fish habitat associated with construction, potential for short term impacts to water quality during construction. Impacts can be mitigated and/or compensated.	between feeding and spawning areas which are abundant within the reaches outside of the study area. There are no critical habitat types within reaches associated with the route alternative. There are no SAR within the route alternative Expected impacts include temporary disturbance to fish and fish habitat associated with construction, potential for short term impacts to water quality during construction. Impacts can be mitigated and/or compensated.	between feeding and spawning areas which are abundant within the reaches outside of the study area. There are no critical habitat types within reaches associated with the route alternative. There are no SAR within the route alternative Expected impacts include temporary disturbance to fish and fish habitat associated with construction, potential for short term impacts to water quality during construction. Impacts can be mitigated and/or compensated.
1.2 Terre	estrial Ecosystems				,	,
	1.2.1 Wildlife	Potential and significance of:	 Medium potential to affect wildlife and their habitat No special concern, endangered or threatened wildlife species No provincially rare species (S1 – S3) 2 area sensitive bird species recorded in study area 	 Medium potential to affect wildlife and their habitat No special concern, endangered or threatened wildlife species No provincially rare species (S1 – S3) 2 area sensitive bird species recorded in study area 	Low potential to affect wildlife and their habitat No special concern, endangered or threatened wildlife species No provincially rare species (S1 – S3) 1 area sensitive bird species recorded in study area	Low potential to affect wildlife and their habitat No special concern, endangered or threatened wildlife species No provincially rare species (S1 – S3) 1 area sensitive bird species recorded in study area

LEGEND

MOST PREFERRED MODERATELY PREFERRED LEAST PREFERRED NO DIFFERENCE SELECTED CORRIDOR

Note – Evaluation of the route alternatives is based on a qualitative assessment of each route (high, medium or low). Relevant and site-specific information for each criterion/cell is provided to justify the high, medium or low assessment.

SEGMENT A – SHAKESPEARE AREA SOUTHERN BYPASSES

actor				Route Al	ternative	
Sub- actor	Criteria	Indicator for Route Selection	A1 1-3-7-10-12	A2 1-2-3-7-10-12	A3 1-2-4-7-10-12	A4 1-2-4-6-10-12
		 migratory birds critical wildlife habitat features ecologically functional areas such as connective corridors or travel ways for movement/migration important wildlife areas such as deeryards, heronries, waterfowl areas, important bird areas wildlife management, rehabilitation/research program sites interference with critical wildlife life stage processes (eg mating/rearing) etc 	 2 frog species were recorded within the route alternative, potential to disrupt habitat for these species No critical wildlife habitat or habitat supporting species of concern present within the route alternative 	 1 frog species were recorded within the route alternative, potential to disrupt habitat for these species No critical wildlife habitat or habitat supporting species of concern present within the route alternative 	No critical wildlife habitat or habitat supporting species of concern present within the route alternative	No critical wildlife habitat or habitat supporting species of concern present within the route alternative
	1.2.2 Wetlands	Potential and significance of:	Medium potential to affect wetlands No PSW or LSW are present within the route alternative 3 unevaluated high quality wetlands such as treed swamp and swamp thicket are found within the route alternative	Medium potential to affect wetlands No PSW or LSW are present within the route alternative 2 unevaluated high quality wetlands such as treed swamp and swamp thicket are found within the route alternative	No PSW or LSW are present within the route alternative 3 unevaluated low quality wetlands such as meadow marsh are found within the route alternative	Low potential to affect wetlands No PSW or LSW are present within the route alternative 2 unevaluated low quality wetlands such as meadow marsh are found within the route alternative
	1.2.3 Forests	Potential and significance of:	Medium potential to affect significant or established woodlands or forests Route alternative will require a significant removal of vegetation from 1 woodland Impacts to woodland include severance and edge effects	Medium potential to affect significant or established woodlands or forests Route alternative will require a significant removal of vegetation from 3 woodlands. 2 woodlands are cultural plantations Impacts to woodlands include severance and edge effects	Low potential to affect significant or established woodlands or forests Route alternative will require a minimal removal of vegetation from 3 woodlands Impacts to woodlands limited to encroachment to edge of forests	Low potential to affect significant or established woodlands or forests Route alternative will require a minimal removal of vegetation from 2 woodlands Impacts to woodlands limited to encroachment to edge of forests
	1.2.4 Vegetation	Potential and significance of:	Medium potential to affect vegetation Route alternative is predominantly agricultural field 2 regionally rare plant species were found within or adjacent to unevaluated wetlands within the route alternative Impacts include severance and displacement of high quality wetland habitat	Medium potential to affect vegetation Route alternative is predominantly agricultural field 2 regionally rare plant species were found within or adjacent to unevaluated wetlands within the route alternative Impacts include severance and displacement of high quality wetland habitat	Low potential to affect vegetation Route alternative is predominantly agricultural field and existing roadway Impacts include encroachment into low quality wetland habitat	Low potential to affect vegetation Route alternative is predominantly agricultural field and existing roadway Impacts include encroachment into low quality wetland habitat

MOST PREFERRED	MODERATELY PREFERRED	LEAST PREFERRED	NO DIFFERENCE	SELECTED CORRIDOR

EVALUATION OF ROUTE ALTERNATIVES

Note – Evaluation of the route alternatives is based on a qualitative assessment of each route (high, medium or low). Relevant and site-specific information for each criterion/cell is provided to justify the high, medium or low assessment.

		ute alternatives is based on a qualitative assessing	SEGMENT A – SHAKESPEARE	<u> </u>	· · · · · · · · · · · · · · · · · · ·	
Factor				Route A	Iternative	
/ Sub- Factor	Criteria	Indicator for Route Selection	A1 1-3-7-10-12	A2 1-2-3-7-10-12	A3 1-2-4-7-10-12	A4 1-2-4-6-10-12
		 (vulnerable, threatened or endangered species), species of conservation concern and significant flora/communities vegetation management, rehabilitation/research program sites 				
	1.2.5 Designated/ Special Areas	Potential and significance of: • encroachment, severance, displacement; • long-term alteration / disruption; • change in area character / aesthetics; • nuisance impacts; • change to access / travel time; • change to facilities / utilities / services. to designated/special areas.	Low potential to affect designated/special areas • Does not cross any ESA or ANSI	Low potential to affect designated/special areas • Does not cross any ESA or ANSI	Low potential to affect designated/special areas • Does not cross any ESA or ANSI	Low potential to affect designated/special areas • Does not cross any ESA or ANSI
1.3 Grou	 ndwater	to designated/special areas.				
	1.3.1 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	 Low potential to adversely affect volume of groundwater at recharge and discharge areas Surface runoff is interpreted to exceed infiltration for the majority of the route given the relatively impermeable nature of the glaciolacustrine and silty till deposits. However, in areas of sandy deposits, such as river crossings, higher infiltration can be expected. No temporary or long-term change to groundwater recharge or discharge is anticipated due to the small surface area affected by highway construction for route alternative. 	 Low potential to adversely affect volume of groundwater at recharge and discharge areas Surface runoff is interpreted to exceed infiltration for the majority of the route given the relatively impermeable nature of the glaciolacustrine and silty till deposits. However, in areas of sandy deposits, such as river crossings, higher infiltration can be expected. No temporary or long-term change to groundwater recharge or discharge is anticipated due to the small surface area affected by highway construction for route alternative. 	 Low potential to adversely affect volume of groundwater at recharge and discharge areas Surface runoff is interpreted to exceed infiltration for the majority of the route given the relatively impermeable nature of the glaciolacustrine and silty till deposits. However, in areas of sandy deposits, such as river crossings, higher infiltration can be expected. No temporary or long-term change to groundwater recharge or discharge is anticipated due to the small surface area affected by highway construction for route alternative. 	Low potential to adversely affect volume of groundwater at recharge and discharge areas • Surface runoff is interpreted to exceed infiltration for the majority of the route given the relatively impermeable nature of the glaciolacustrine and silty till deposits. • However, in areas of sandy deposits, such as river crossings, higher infiltration can be expected. • No temporary or long-term change to groundwater recharge or discharge is anticipated due to the small surface area affected by highway construction for route alternative.
	1.3.2 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	 Low potential to adversely affect groundwater wellhead protection area. The route alternative is upgradient of the delineated wellhead protection area for the town of Tavistock. The route alternative is located outside of the 25 year capture zone (recharge area) for the municipal well, which is located approximately 6 km to the south of the route 	 Low potential to adversely affect groundwater wellhead protection area. The route alternative is upgradient of the delineated wellhead protection area for the town of Tavistock. The route alternative is located outside of the 25 year capture zone (recharge area) for the municipal well, which is located approximately 6 km to the south of the route 	 Low potential to adversely affect groundwater wellhead protection area. The route alternative is upgradient of the delineated wellhead protection area for the town of Tavistock. The route alternative is located outside of the 25 year capture zone (recharge area) for the municipal well, which is located approximately 6 km to the south of the route 	 Low potential to adversely affect groundwater wellhead protection area. The route alternative is upgradient of the delineated wellhead protection area for the town of Tavistock. The route alternative is located outside of the 25 year capture zone (recharge area) for the municipal well, which is located approximately 6 km to the south of the route

LEGEND

MOST PREFERRED MODERATELY PREFERRED LEAST PREFERRED NO DIFFERENCE SELECTED CORRIDOR

Note – Evaluation of the route alternatives is based on a qualitative assessment of each route (high, medium or low). Relevant and site-specific information for each criterion/cell is provided to justify the high, medium or low assessment.

SEGMENT A – SHAKESPEARE AREA SOUTHERN BYPASSES

Factor				Route A	Iternative	
/ Sub- Factor	Criteria	Indicator for Route Selection	A1 1-3-7-10-12	A2 1-2-3-7-10-12	A3 1-2-4-7-10-12	A4 1-2-4-6-10-12
			alternative. • The municipal well is screened within the bedrock aquifer, which is confined above by low permeability Silty Till and Glaciolacustrine deposits.	alternative. • The municipal well is screened within the bedrock aquifer, which is confined above by low permeability Silty Till and Glaciolacustrine deposits.	alternative. • The municipal well is screened within the bedrock aquifer, which is confined above by low permeability Silty Till and Glaciolacustrine deposits.	alternative. • The municipal well is screened within the bedrock aquifer, which is confined above by low permeability Silty Till and Glaciolacustrine deposits.
	1.3.3 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	 Low potential to adversely affect large volume wells. The route alternative is upgradient of the delineated wellhead protection area for the town of Tavistock. The proposed route is located outside of the 25 year capture zone (recharge area) for the municipal well, which is located approximately 6 km to the south of the proposed corridor. No other large production wells were identified along the route 	 Low potential to adversely affect large volume wells. The route alternative is upgradient of the delineated wellhead protection area for the town of Tavistock. The proposed route is located outside of the 25 year capture zone (recharge area) for the municipal well, which is located approximately 6 km to the south of the proposed corridor. No other large production wells were identified along the route 	 Low potential to adversely affect large volume wells. The route alternative is upgradient of the delineated wellhead protection area for the town of Tavistock. The proposed route is located outside of the 25 year capture zone (recharge area) for the municipal well, which is located approximately 6 km to the south of the proposed corridor. No other large production wells were identified along the route 	 Low potential to adversely affect large volume wells. The route alternative is upgradient of the delineated wellhead protection area for the town of Tavistock. The proposed route is located outside of the 25 year capture zone (recharge area) for the municipal well, which is located approximately 6 km to the south of the proposed corridor. No other large production wells were identified along the route
	1.3.4 Private Wells	Potential and significance of alteration to private well use due to physical intrusion, or groundwater interception, draw-down, impoundment, obstruction and by soil compaction	 Low potential to adversely affect private wells The proposed route is in close proximity (<150 m) to 3 shallow dug wells completed within surficial sand deposits. These wells are located immediately to the west of Road 105 and immediately to the south along Road 106, along the existing Hwy 7/8 Route. These wells are sensitive to surface contamination (i.e. road salt). The potential exists for long-term and short-term effects to these wells due to their close proximity to the route. Mitigation measures to prevent adverse impact to these wells due to highway construction should be implemented, such as a road salt management plan. All other private wells along the route obtain water supply from the deep confined bedrock aquifer and 	 Low potential to adversely affect private wells The proposed route is in close proximity (<150 m) to 3 shallow dug wells completed within surficial sand deposits. These wells are located immediately to the west of Road 105 and immediately to the south along Road 106, along the existing Hwy 7/8 Route. These wells are sensitive to surface contamination (i.e. road salt). The potential exists for long-term and short-term effects to these wells due to their close proximity to the route. Mitigation measures to prevent adverse impact to these wells due to highway construction should be implemented, such as a road salt management plan. All other private wells along the route obtain water supply from the deep confined bedrock aquifer and 	 Low potential to adversely affect private wells The proposed route is in close proximity (<150 m) to 3 shallow dug wells completed within surficial sand deposits. These wells are located immediately to the west of Road 105 and immediately to the south along Road 106, along the existing Hwy 7/8 Route. These wells are sensitive to surface contamination (i.e. road salt). The potential exists for long-term and short-term effects to these wells due to their close proximity to the route. Mitigation measures to prevent adverse impact to these wells due to highway construction should be implemented, such as a road salt management plan. All other private wells along the route obtain water supply from the deep confined bedrock aquifer and 	 Low potential to adversely affect private wells The proposed route is in close proximity (<150 m) to 3 shallow dug wells completed within surficial sand deposits. These wells are located immediately to the west of Road 105 and immediately to the south along Road 106, along the existing Hwy 7/8 Route. These wells are sensitive to surface contamination (i.e. road salt). The potential exists for long-term and short-term effects to these wells due to their close proximity to the route. Mitigation measures to prevent adverse impact to these wells due to highway construction should be implemented, such as a road salt management plan. All other private wells along the route obtain water supply from the deep confined bedrock aquifer and

Note – Evaluation of the route alternatives is based on a qualitative assessment of each route (high, medium or low). Relevant and site-specific information for each criterion/cell is provided to justify the high, medium or low assessment.

SEGMENT A - SHAKESPEARE AREA SOUTHERN BYPASSES **Route Alternative Factor** Criteria / Sub-Indicator for Route Selection Α1 **A2 A3** Α4 **Factor** 1-3-7-10-12 1-2-3-7-10-12 1-2-4-7-10-12 1-2-4-6-10-12 are therefore not at risk. 1.3.5 Groundwater-Potential and significance of alteration to No potential to adversely affect No potential to adversely affect **No** potential to adversely affect No potential to adversely affect Dependent groundwater use by groundwater-dependent groundwater dependent commercial groundwater dependent commercial groundwater dependent commercial groundwater dependent commercial Commercial commercial enterprises due to physical enterprises enterprises enterprises enterprises Enterprises (e.g. intrusion, or groundwater interception, draw-• No groundwater dependent No groundwater dependent No groundwater dependent No groundwater dependent down, impoundment, obstruction and by soil water bottling commercial enterprises have been commercial enterprises have been commercial enterprises have been commercial enterprises have been operations) compaction identified along this route. identified along this route. identified along this route. identified along this route. 1.3.6 Groundwater-Potential and significance of alteration to **Low** potential to adversely affect Sensitive groundwater-sensitive ecosystems due to groundwater sensitive ecosystems groundwater sensitive ecosystems groundwater sensitive ecosystems groundwater sensitive ecosystems **Ecosystems** physical intrusion, or groundwater interception, • Three (3) new crossings of • Three (3) new crossings of • One (1) new crossing of a • One (1) new crossing of a (e.g. groundwater draw-down, impoundment, obstruction and by potentially groundwater fed potentially groundwater fed potentially groundwater fed stream. potentially groundwater fed stream. fed wetlands, soil compaction streams. streams. Possible encroachment on an • Possible encroachment on an coldwater streams) • Potential long-term adverse effect Potential long-term adverse effect unevaluated wetland (i.e. not unevaluated wetland (i.e. not to groundwater quality due to to groundwater quality due to identified as provincially or locally identified as provincially or locally increased road salt use and road increased road salt use and road significant). significant). run-off. run-off. Potential long-term adverse effect Potential long-term adverse effect to Potential temporary adverse effects Potential temporary adverse effects groundwater quality due to to groundwater quality due to increased road salt use and road to groundwater quantity exist if to groundwater quantity exist if increased road salt use and road construction dewatering is required. construction dewatering is required run-off. run-off. Potential temporary adverse effects Potential temporary adverse effects to groundwater quantity exist if to groundwater quantity exist if construction dewatering is required construction dewatering is required 1.4 Surface Water 1.4.1 Watershed / Potential and significance of: **Low** potential to affect drainage Sub-Watershed features / patterns and surface water encroachment, severance, displacement; Drainage quality / quantity quality / quantity quality / quantity quality / quantity • long-term alteration/ disruption. Features/Patterns Crosses 4 watercourses Crosses 4 watercourses Crosses 4 watercourses Crosses 4 watercourses as applicable to the following: watercourse crossings (permanent, intermittent and ephemeral) • floodplain or meander belts riparian areas • sensitive headwater areas watershed and subwatershed management Potential and significance of impacts on quality 1.4.2 Surface Water Quality and Quantity 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

			SEGMENT A – SHAKESPEARE	AREA SOUTHERN BYPASSES		
tor				Route Al	ternative	
b- tor	Criteria	Indicator for Route Selection	A1 1-3-7-10-12	A2 1-2-3-7-10-12	A3 1-2-4-7-10-12	A4 1-2-4-6-10-12
AND	USE / SOCIO-ECONOI	MIC FACTORS				
and	Use Planning Policies	s, Goals, Objectives				
	2.1.1 First Nations Land Claims	Potential and significance of encroachment, severance, displacement to areas for which there are First Nations outstanding land claims	 Low potential to displace areas where there are outstanding First Nations lands claims. 5 First Nations land claims have been filed in the study area 	Low potential to displace areas where there are outstanding First Nations lands claims. • 5 First Nations land claims have been filed in the study area	 Low potential to displace areas where there are outstanding First Nations lands claims. 5 First Nations land claims have been filed in the study area 	Low potential to displace areas when there are outstanding First Nations lands claims. • 5 First Nations land claims have been filed in the study area
	2.1.2 Provincial/ Federal land use planning policies/ goals/objectives	Degree of compatibility with federal/provincial land use policies/goals/objectives NOTES: PPS Policy 1.6.6.4 stipulates that when planning for corridors for significant transportation facilities, consideration will be given to significant natural heritage, water, agricultural, mineral, cultural heritage and archaeological resources. PPS Policy 2.3 requires prime agricultural areas be protected for long-term use. Prime agricultural areas include specialty crop areas and Classes 1, 2, and 3 soils in this order of priority.	Low compatibility with federal/ provincial land use policies/goals Route predominantly on new alignment which results in increased impacts relative to PPS Policies 1.6.6.4 and 2.3. There are no location-specific federal or provincial land use policies for this area	Low compatibility with federal/ provincial land use policies/goals Route predominantly on new alignment which results in increased impacts relative to PPS Policies 1.6.6.4 and 2.3. There are no location-specific federal or provincial land use policies for this area	Medium compatibility with federal/ provincial land use policies/goals Portion of route is on new alignment; remainder uses the existing corridor which results in reduced impacts relative to PPS Policies 1.6.6.4 and 2.3. There are no location-specific federal or provincial land use policies for this area	Medium compatibility with federal/provincial land use policies/goals Portion of route is on new alignment; remainder uses the existing corridor which results in reduced impacts relative to PPS Policies 1.6.6.4 and 2.3. There are no location-specific federal or provincial land use policies for this area
<u>-</u>	2.1.3 Municipal (regional and local) land use planning policies/goals/ objectives (Official Plans)	Degree of compatibility with municipal Official Plans	Medium compatibility with municipal Official Plans. The route impacts agricultural designated lands in County of Perth OP. Perth OP Agriculture designation for all sections	Medium compatibility with municipal Official Plans. The route impacts agricultural designated lands in County of Perth OP. Perth OP Agriculture designation for all sections	Medium compatibility with municipal Official Plans. The route impacts agricultural designated lands in County of Perth OP. Perth OP Agriculture designation for all sections	Medium compatibility with municipal Official Plans. The route impacts agricultural designated lands in County of Pertl OP. Perth OP Agriculture designation for all sections
	2.1.4 Development Objectives of Private Property Owners	Potential to isolate property from current/future urban envelope Impact on future land use	Low potential to impact future land use Route alternative does not limit the potential for future development	Low potential to impact future land use Route alternative does not limit the potential for future development	Low potential to impact future land use Route alternative does not limit the potential for future development	Low potential to impact future land use Route alternative does not limit the potential for future development
and	Use / Community			,		
	2.2.1 First Nation Reserves	Potential and significance of: • encroachment, severance, displacement; • long-term alteration / disruption; • change in area character / aesthetics; • nuisance impacts; • change to access / travel time.	No potential effects to First Nation reserves No Indian Reserves in the Analysis Area	No potential effects to First Nation reserves No Indian Reserves in the Analysis Area	No potential effects to First Nation reserves No Indian Reserves in the Analysis Area	No potential effects to First Nation reserves No Indian Reserves in the Analysis Area

MOST PREFERRED	MODERATELY PREFERRED	LEAST PREFERRED	NO DIFFERENCE	SELECTED CORRIDOR

Note – Evaluation of the route alternatives is based on a qualitative assessment of each route (high, medium or low). Relevant and site-specific information for each criterion/cell is provided to justify the high, medium or low assessment.

SEGMENT A – SHAKESPEARE AREA SOUTHERN BYPASSES

or				Route Al	ternative	
b- tor	Criteria	Indicator for Route Selection	A1 1-3-7-10-12	A2 1-2-3-7-10-12	A3 1-2-4-7-10-12	A4 1-2-4-6-10-12
	2.2.2 First Nations' Sacred Grounds	Potential and significance of: • encroachment, severance, displacement; • long-term alteration / disruption; • change in area character / aesthetics; • nuisance impacts; • change to access / travel time.	 Low potential effect to First Nations' sacred grounds No known First Nations' sacred grounds in the Analysis Area 	 Low potential effect to First Nations' sacred grounds No known First Nations' sacred grounds in the Analysis Area 	 Low potential effect to First Nations' sacred grounds No known First Nations' sacred grounds in the Analysis Area 	Low potential effect to First Nations' sacred grounds No known First Nations' sacred grounds in the Analysis Area
	2.2.3 Urban and Rural Residential	Potential and significance of:	Low potential for impacts to urban and rural residential areas Loss of some frontage to one residential property (A) east of Road 106. Loss of some mature trees. No long term alteration/disruption to residence or farm buildings. Likely nuisance impacts to this property. Encroachment on one residential/farm property west of Road 106. No long term alteration/disruption to residence or farm buildings. Likely nuisance impacts to this property. Some nuisance impacts likely to residential area. Area is already bounded by railway tracks; route is south of this boundary so no impact on community cohesion anticipated. Loss (acquisition) of some residential/farm properties along entire route. Field observation identified no change to facilities / utilities / services.	Low potential for impacts to urban and rural residential areas Loss of some frontage to one residential property (B) east of Road 106. Likely loss of farm-related small sheds. Likely nuisance impacts to this property. Encroachment of one residential/farm property west of Road 106. No long term alteration/disruption to residence or farm buildings. Likely nuisance impacts to this property. Some nuisance impacts likely to residential area. Area is already bounded by railway tracks; route is south of this boundary so no impact on community cohesion anticipated. Loss (acquisition) of some residential/farm properties along entire route. Field observation identified no change to facilities / utilities / services.	Low potential for impacts to urban and rural residential areas • Loss of some frontage to residential/farm properties along existing right of way in vicinity of Road 106 and easterly. • Some nuisance impacts likely to residential area. Area is already bounded by railway tracks; route is south of this boundary so no impact on community cohesion anticipated. • Loss (acquisition) of some residential/farm properties along entire route. • Field observation identified no change to facilities / utilities / services.	Medium potential for impacts to urban and rural residential areas Loss of entire residence (E) immediately east of Shakespeare (displacement of residence). Loss of some residential/farm properties along existing right of way east and west of Road 106 (frontage) Some encroachment to residential area of Shakespeare. Some nuisance impacts likely to residential area. Area is already bounded by railway tracks; route is south of this boundary so no impact on community cohesion anticipated. Loss (acquisition) of some residential/farm properties along entire route. Field observation identified no change to facilities / utilities / services.
	2.2.4 Commercial / Industrial	Potential and significance of: • encroachment, severance, displacement, property acquisition; • long-term alteration / disruption; • change in area character / aesthetics; • nuisance impacts; • change to access / travel time; • change to facilities / utilities / services; • interference with commercial community cohesion;	Low potential for impacts to commercial and industrial areas Possible encroachment to industrial area at west end of Shakespeare. No long term alteration /disruption No nuisance impacts anticipated given existing industrial development Field observation identified no change to facilities/utilities/services	Low potential for impacts to commercial and industrial areas • Possible encroachment to industrial area at west end of Shakespeare. • No long term alteration /disruption • No nuisance impacts anticipated given existing industrial development • Field observation identified no change to facilities/utilities/services	Low potential for impacts to commercial and industrial areas • Possible encroachment to industrial area at west end of Shakespeare. • No long term alteration /disruption • No nuisance impacts anticipated given existing industrial development • Field observation identified no change to facilities/utilities/services	Low potential for impacts to commercial and industrial areas • Possible encroachment to industrial area at west end of Shakespeare. • No long term alteration /disruption • No nuisance impacts anticipated given existing industrial development • Field observation identified no change to facilities/utilities/services

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SEGMENT A – SHAKESPEARE AREA SOUTHERN BYPASSES

r				Route Al	ternative	
r	Criteria	Indicator for Route Selection	A1 1-3-7-10-12	A2 1-2-3-7-10-12	A3 1-2-4-7-10-12	A4 1-2-4-6-10-12
		change to highway operation impacts (e.g. customer parking, cargo loading/off-loading). to commercial and industrial areas (business owners/tenants and customers).	 No interference with commercial community cohesion No change to commercial and industrial areas (business owners/tenants and customers). 	 No interference with commercial community cohesion No change to commercial and industrial areas (business owners/tenants and customers). 	 No interference with commercial community cohesion No change to commercial and industrial areas (business owners/tenants and customers). 	 No interference with commercial community cohesion No change to commercial and industrial areas (business owners/tenants and customers).
	2.2.5 Tourist Areas and Attractions (e.g. museums, theatres, etc.)	Potential and significance of: encroachment, severance, displacement, property acquisition; long-term alteration / disruption; change in area character/ aesthetics; nuisance impacts; change to access / travel time; change to facilities / utilities / services; loss of "critical mass" in number of signature business attractions (e.g. number of antique shops). to tourist areas and attractions.	 Low potential for impacts to tourist areas and attractions No change or impacts to tourist areas and attractions in terms of any property encroachment or acquisition. No nuisance impacts anticipated given absence of any tourist attractions or areas along this alternative. No signature business attractions (none along this alternative) Bypass of the village reduces drive-by exposure of tourist attractions (e.g. shops and boutiques) for potential out-of-town customers, but makes the tourist experience in the village more attractive, and does not impact parking opportunities. Bypass of village avoids driveway access impacts along Hwy 7&8 due to left turns across a widened highway, and avoids increases in winter snow storage along village property frontages. Field observation identified no change to facilities / utilities / services. 	 Low potential for impacts to tourist areas and attractions No change or impacts to tourist areas and attractions in terms of any property encroachment or acquisition. No nuisance impacts anticipated given absence of any tourist attractions or areas along this alternative. No signature business attractions (none along this alternative) Bypass of the village reduces drive-by exposure of tourist attractions (e.g. shops and boutiques) for potential out-of-town customers, but makes the tourist experience in the village more attractive, and does not impact parking opportunities. Bypass of village avoids driveway access impacts along Hwy 7&8 due to left turns across a widened highway, and avoids increases in winter snow storage along village property frontages. Field observation identified no change to facilities / utilities / services. 	 Low potential for impacts to tourist areas and attractions No change or impacts to tourist areas and attractions in terms of any property encroachment or acquisition. No nuisance impacts anticipated given absence of any tourist attractions or areas along this alternative. No signature business attractions (none along this alternative) Bypass of the village reduces drive-by exposure of tourist attractions (e.g. shops and boutiques) for potential out-of-town customers, but makes the tourist experience in the village more attractive, and does not impact parking opportunities. Bypass of village avoids driveway access impacts along Hwy 7&8 due to left turns across a widened highway, and avoids increases in winter snow storage along village property frontages. Field observation identified no change to facilities / utilities / services. 	 Low potential for impacts to tourist areas and attractions No change or impacts to tourist areas and attractions in terms of any property encroachment or acquisition. No nuisance impacts anticipated given absence of any tourist attractions or areas along this alternative. No signature business attractions (none along this alternative) Bypass of the village reduces drive-by exposure of tourist attractions (e.g. shops and boutiques) for potential out-of-town customers, but makes the tourist experience in the village more attractive, and does not impact parking opportunities. Bypass of village avoids driveway access impacts along Hwy 7&8 due to left turns across a widened highway, and avoids increases in winter snow storage along village property frontages. Field observation identified no change to facilities / utilities / services.
,	2.2.6 Community Facilities / Institutions (e.g. hospitals, schools, places of worship, unique community features)	Potential and significance of: • encroachment, severance, displacement, property acquisition; • long-term alteration / disruption; • change in area character/ aesthetics; • nuisance impacts; • change to access / travel time; • change to facilities / utilities / services • change to ease and safety of pedestrian movements across the highway and within the highway right-of-way;	Low potential for impacts to community facilities and institutions • Segment south of Shakespeare will bring new roadway closer to Optimist Hall and Sprucedale Public School/Community Center playing fields. Area is already bounded by railway tracks so impact to area character/aesthetics is not likely to be significant. • No encroachment or impacts to	Low potential for impacts to community facilities and institutions • Segment south of Shakespeare will bring new roadway closer to Optimist Hall and Sprucedale Public School/Community Center playing fields. Area is already bounded by railway tracks so impact to area character/aesthetics is not likely to be significant. • No encroachment or impacts to	Low potential for impacts to community facilities and institutions • Segment south of Shakespeare will bring new roadway closer to Optimist Hall and Sprucedale Public School/Community Center playing fields. Area is already bounded by railway tracks so impact to area character/aesthetics of this area is not likely to be significant. • Field observation identified no	Low potential for impacts to community facilities and institutions • Segment south of Shakespeare will bring new roadway closer to Optimist Hall and Sprucedale Public School/Community Center playing fields. Area is already bounded by railway tracks so impact to area character/aesthetics of this area is not likely to be significant. • Field observation identified no

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SEGMENT A – SHAKESPEARE AREA SOUTHERN BYPASSES

Factor				Route Al	ternative	
/ Sub- Factor	Criteria	Indicator for Route Selection	A1 1-3-7-10-12	A2 1-2-3-7-10-12	A3 1-2-4-7-10-12	A4 1-2-4-6-10-12
		change to highway operation impacts to current use (e.g. highway noise and vibration interfering with church services). to community facilities and institutions.	property boundaries of community facilities and no long-term alteration/disruption likely. • Field observation identified no change to facilities / utilities / services. • Some potential for nuisance impacts at the hall and playing fields.	property boundaries of community facilities and no long-term alteration/disruption likely. • Field observation identified no change to facilities / utilities / services. • Some potential for nuisance impacts at the hall and playing fields.	change to facilities / utilities / services. • Some potential for nuisance impacts at the hall and playing fields.	change to facilities / utilities / services. • Some potential for nuisance impacts at the hall and playing fields.
	2.2.7 Municipal Infrastructure and Public Service Facilities (e.g. sewage and water services, police/emergency services, local utilities)	Potential and significance of: • encroachment, severance, displacement; • long-term alteration / disruption; • change to access / travel time; • change to facilities / utilities / services. to municipal infrastructure and public service facilities.	 No potential for impacts to municipal infrastructure / public service facilities Bypass of village would not lengthen response times to locations outside the village unless Hwy 7&8 direct access is not retained at the east and west village limits. From field observations, no impacts to municipal infrastructure and public service facilities. 	 No potential for impacts to municipal infrastructure / public service facilities Bypass of village would not lengthen response times to locations outside the village unless Hwy 7&8 direct access is not retained at the east and west village limits. From field observations, no impacts to municipal infrastructure and public service facilities. 	 No potential for impacts to municipal infrastructure / public service facilities Bypass of village would not lengthen response times to locations outside the village unless Hwy 7&8 direct access is not retained at the east and west village limits. From field observations, no impacts to municipal infrastructure and public service facilities. 	 No potential for impacts to municipal infrastructure / public service facilities Bypass of village would not lengthen response times to locations outside the village unless Hwy 7&8 direct access is not retained at the east and west village limits. From field observations, no impacts to municipal infrastructure and public service facilities.
	2.2.8 Downtown Historic Crossroads Function	Potential and significance of interference by long-distance through-traffic on: • "main street" function and structure; • character/aesthetics; • change to ease and safety of pedestrian movements across the highway and within the highway right-of-way; • change to on-street parking in the historic downtown area	Low potential for interference in the historic downtown area Bypass of the village reduces long distance traffic through the village and provides the opportunity to improve the shopping/socializing experience in the village, and does not impact parking opportunities	Low potential for interference in the historic downtown area Bypass of the village reduces long distance traffic through the village and provides the opportunity to improve the shopping/socializing experience in the village, and does not impact parking opportunities	Low potential for interference in the historic downtown area Bypass of the village reduces long distance traffic through the village and provides the opportunity to improve the shopping/socializing experience in the village, and does not impact parking opportunities	Low potential for interference in the historic downtown area Bypass of the village reduces long distance traffic through the village and provides the opportunity to improve the shopping/socializing experience in the village, and does not impact parking opportunities
2.3 Nois	 se Sensitive Areas (NS <i>)</i>	As) (residential areas and sensitive institutional us	l ses)			
	`	Potential for significant traffic noise increases in NSAs and for noise-sensitive receivers immediately adjacent to the highway.	 Medium potential for significant noise increases Potential noise impacts of 65 dBA or a 5 dB increase are expected for about 110 NSAs within the area of influence. Potential noise impacts to 1 school (Sprucedale Public School) are expected. A decrease of noise impacts by 5 dB or more is expected for about 60 NSAs due to reduced traffic on the roadway that is currently Hwy 7/8. The rail line along the south edge of 	 Medium potential for significant noise increases Potential noise impacts of 65 dBA or a 5 dB increase are expected for about 110 NSAs within the area of influence. Potential noise impacts to 1 school (Sprucedale Public School) are expected. A decrease of noise impacts by 5 dB or more is expected for about 60 NSAs due to reduced traffic on the roadway that is currently Hwy 7/8. The rail line along the south edge of 	 Medium potential for significant noise increases Potential noise impacts of 65 dBA or a 5 dB increase are expected for about 105 NSAs within the area of influence. Potential noise impacts to 1 school (Sprucedale Public School) are expected. A decrease of noise impacts by 5 dB or more is expected for about 60 NSAs due to reduced traffic on the roadway that is currently Hwy 7/8. The rail line along the south edge of 	 High potential for significant noise increases Potential noise impacts of 65 dBA or a 5 dB increase are expected for about 115 NSAs within the area of influence. Potential noise impacts to 1 school (Sprucedale Public School) are expected. A decrease of noise impacts by 5 dB or more is expected for about 50 NSAs due to reduced traffic on the roadway that is currently Hwy 7/8. Higher impacts are expected for

EVALUATION OF ROUTE ALTERNATIVES

Note – Evaluation of the route alternatives is based on a qualitative assessment of each route (high, medium or low). Relevant and site-specific information for each criterion/cell is provided to justify the high, medium or low assessment.

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Factor			Route Alternative					
/ Sub- Factor	Criteria	Indicator for Route Selection	A1 1-3-7-10-12	A2 1-2-3-7-10-12	A3 1-2-4-7-10-12	A4 1-2-4-6-10-12		
			Shakespeare causes daily short duration noise impacts for NSAs that would be influenced by this alternative. • The elevated rail line is not expected to be high enough to form an effective noise barrier for road noise. Mitigation would therefore be more challenging.	Shakespeare causes daily short duration noise impacts for NSAs that would be influenced by this alternative. • The elevated rail line is not expected to be high enough to form an effective noise barrier for road noise. Mitigation would therefore be more challenging.	Shakespeare causes daily short duration noise impacts for NSAs that would be influenced by this alternative. • The elevated rail line is not expected to be high enough to form an effective noise barrier for road noise. Mitigation would therefore be more challenging.	NSAs at southeast corner of Shakespeare if an elevated roadway overpass of the rail line is used. Mitigation of the elevated roadway would be more challenging. The rail line along the south edge of Shakespeare causes daily short duration noise impacts for NSAs that would be influenced by this alternative. The elevated rail line is not expected to be high enough to form an effective noise barrier for road noise. Mitigation would therefore be more challenging.		
	2.3.2 Construction Noise	To considered during Preliminary Design phase						
2.4 Agri								
	2.4.1 Agriculture - Canada Land Inventory Class 1,2,3 Land	Potential and significance of encroachment, severance of Canada Land Inventory Classes 1, 2 and 3 soils	 High potential for impacts to CLI Class 1, 2 and 3 lands Impacts 30 hectares of Class 1 / 2 soil 	High potential for impacts to CLI Class 1, 2 and 3 lands Impacts 29 hectares of Class 1 / 2 soil	Medium potential for impacts to CLI Class 1, 2 and 3 lands Impacts 25 hectares of Class 1 / 2 soil	Medium potential for impacts to CLI Class 1, 2 and 3 lands Impacts 22 hectares of Class 1 / 2 soil		
	2.4.2 Agriculture – Farm Infrastructure	Potential and significance of:	 Medium potential impacts on farm infrastructure 1 minor encroachment on farm infrastructure west of Road 104 2 encroachments on farm infrastructure, 1 between Road 104 and Road 106 and 1 on Road 106, south of the railway Impacts to subsurface farm infrastructure (e.g. tile drainage) and to area farm drainage systems are anticipated. The locations of subsurface farm infrastructure along the preferred route will be identified and mitigation concepts for these impacts will be developed during preliminary design 	Medium potential impacts on farm infrastructure 1 minor encroachment on farm infrastructure between Road 104 and Road 106 1 encroachment on farm infrastructure on Road 106, south of the railway Impacts to subsurface farm infrastructure (e.g. tile drainage) and to area farm drainage systems are anticipated. The locations of subsurface farm infrastructure along the preferred route will be identified and mitigation concepts for these impacts will be developed during preliminary design	Low potential impacts on farm infrastructure 1 encroachment on farm infrastructure west of Road 106 Impacts to subsurface farm infrastructure (e.g. tile drainage) and to area farm drainage systems are anticipated. The locations of subsurface farm infrastructure along the preferred route will be identified and mitigation concepts for these impacts will be developed during preliminary design	Medium potential impacts on farm infrastructure Displaces homestead on 1 livestock and cash crop operation west of Road 106 Impacts to subsurface farm infrastructure (e.g. tile drainage) and to area farm drainage systems are anticipated. The locations of subsurface farm infrastructure along the preferred route will be identified and mitigation concepts for these impacts will be developed during preliminary design		
	2.4.3 Agriculture – Operations on Individual Farms	Potential and significance of: • encroachment, severance, displacement; • long-term alteration / disruption;	High potential for impacts to operations on individual farms • Long term alteration to in field farm operations in an established	High potential for impacts to operations on individual farms • Long term alteration to in field farm operations in an established	Medium potential for impacts to operations on individual farms Long term alteration to in field farm operations in an established	Medium potential for impacts to operations on individual farms Long term alteration to in field farm operations in an established		

MOST PREFERRED	MODERATELY PREFERRED	LEAST PREFERRED	NO DIFFERENCE	SELECTED CORRIDOR

Note – Evaluation of the route alternatives is based on a qualitative assessment of each route (high, medium or low). Relevant and site-specific information for each criterion/cell is provided to justify the high, medium or low assessment.

SEGMENT A – SHAKESPEARE AREA SOUTHERN BYPASSES

Factor				Route Al	ternative	
/ Sub- Factor	Criteria	Indicator for Route Selection	A1 1-3-7-10-12	A2 1-2-3-7-10-12	A3 1-2-4-7-10-12	A4 1-2-4-6-10-12
		 nuisance impacts; to in-farm field operations (planting, harvesting, grazing, nutrient management, etc.) as applicable to the following: Specialty crops/cropland Diary/livestock operations Field crop operations High investment agricultural operations Established agricultural farm communities 	agricultural community including: Minor frontage impacts and encroachment on lands of 1 cash crop operation west of Road 104 Severs 1 parcel between Road 104 and Road 106 Very minor encroachment on lands in the corner of 2 parcels associated with a cash crop and livestock operation between Road 104 and Road 106 Significant encroachment on portions of land abutting the railway on 5 parcels which are associated with 4 different cash crop and livestock operations in the area Displaces portions of land abutting the railway on 2 parcels 4 parcels where nutrient management has been reported by the farmer are impacted significantly 2 parcels where nutrient management has been reported by the farmer are impacted slightly 2 parcels where nutrient management is assumed to occur in association with livestock operations are significantly impacted Additional nutrient management operations may still be identified by potentially impacted farmers	agricultural community including: Minor frontage impacts and encroachment on lands on 1 cash crop operation west of Road 104 Minor frontage impacts and encroachment on lands on 1 livestock and cash crop operation between Road 104 and Road 106 Severs 1 parcel between Road 104 and Road 106 Very minor encroachment on lands in the corner of 2 parcels associated with 2 different cash crop and livestock operation between Road 104 and Road 106 Significant encroachment on portions of land abutting the railway on 4 parcels which are associated with 4 different cash crop and livestock operations in the area Displaces portions of land abutting the railway on 2 parcels 4 parcels where nutrient management has been reported by the farmer are impacted significantly 2 parcels where nutrient management has been reported by the farmer are impacted slightly 2 parcels where nutrient management is assumed to occur in association with livestock operations are significantly impacted Additional nutrient management operations may still be identified by potentially impacted farmers	agricultural community including: - Minor frontage impacts and encroachment on lands on 1 livestock and cash crop operation west of Road 106 - Severs 1 parcel west of Road 106 - Minor encroachment on lands in the corner of 1 parcel west of Road 106 and south of the railway corridor - Significant encroachment on lands abutting the railway on 3 parcels associated with 2 livestock and cash crop operations - 2 parcels where nutrient management has been reported by the farmer are significantly impacted - 2 parcels where nutrient management is assumed to occur in association with livestock operations are impacted slightly - Additional nutrient management operations may still be identified by potentially impacted farmers	agricultural community including: Minor frontage impacts and encroachment on lands on 1 livestock and cash crop operation west of Road 106 Severs 1 parcel associated with a livestock and cash crop operation which is adjacent to the Shakespeare village Significant encroachment on portions of land abutting the railway on 2 parcels which are associated with 2 different cash crop and livestock operations in the area 2 parcels where nutrient management has been reported by the farmer are significantly impacted 2 parcels where nutrient management is assumed to occur in association with livestock operations are significantly impacted Additional nutrient management operations may still be identified by potentially impacted farmers

Note – Evaluation of the route alternatives is based on a qualitative assessment of each route (high, medium or low). Relevant and site-specific information for each criterion/cell is provided to justify the high, medium or low assessment.

			SEGMENT A – SHAKESPEARE	AREA SOUTHERN BYPASSES		
Factor				Route A	ternative	
/ Sub- Factor	Criteria	Indicator for Route Selection	A1 1-3-7-10-12	A2 1-2-3-7-10-12	A3 1-2-4-7-10-12	A4 1-2-4-6-10-12
	2.4.4 Agriculture – Transportation Linkages between Integrated Agricultural Business Units (IABUs)	Potential to sever/disrupt transportation linkages between integrated agricultural business units (movement between integrated agricultural business units of equipment, materials, workers, etc.)	Medium potential to sever / disrupt transportation linkages Route passes between parcels of land associated with 2 IABU's as identified to the study team by the farming community	Medium potential to sever / disrupt transportation linkages Route passes between parcels of land associated with 2 IABU's as identified to the study team by the farming community	Medium potential to sever / disrupt transportation linkages Route passes between parcels of land associated with 2 IABU's as identified to the study team by the farming community	Medium potential to sever / disrupt transportation linkages Route passes between parcels of land associated with 2 IABU's as identified to the study team by the farming community
2.5 Land	Use / Resources					
	2.5.1 First Nations' Treaty Rights or Use of Land and Resources for Traditional Purposes	Potential and significance of: • encroachment, severance, displacement; • long-term alteration / disruption; • nuisance impacts; • change to access / travel time.	Medium potential to affect First Nation Treaty Rights or use of land and resources for traditional purposes Route alternative predominantly on new corridor components	Medium potential to affect First Nation Treaty Rights or use of land and resources for traditional purposes Route alternative predominantly on new corridor components	Medium potential to affect First Nation Treaty Rights or use of land and resources for traditional purposes Route alternative has both existing highway and new corridor components	Medium potential to affect First Nation Treaty Rights or use of land and resources for traditional purposes Route alternative has both existing highway and new corridor components
	(e.g. hunting, fishing, harvesting of country foods, harvesting of medicinal plants)	to First Nations' treaty rights or use of land and resources for traditional purposes				
	2.5.2 Parks and Recreational Areas (e.g. national/ provincial parks, conservation areas, municipal parks, public spaces, golf courses, trails, greenways and open space linkages)	Potential and significance of: encroachment, severance, displacement, property acquisition; long-term alteration / disruption; change in area character/ aesthetics; nuisance impacts; change to access / travel time; change to facilities / utilities / services. to parks and recreational areas.	 Low potential for impacts to parks and recreational areas Segment east of Road 108 will bring new roadway closer to park near Optimist Hall and Sprucedale Public School/Community Center playing fields. Area is already bounded by railway tracks so impact to area character/aesthetics is not likely to be significant. No encroachment or impacts to property boundaries of parks and recreational facilities and no long-term alteration/disruption likely. Field observation identified no change to facilities / utilities / services. Some potential for nuisance impacts at the park and playing fields. 	 Low potential for impacts to parks and recreational areas Segment easy of Road 108 will bring new roadway closer to park near Optimist Hall and Sprucedale Public School/Community Center playing fields. Area is already bounded by railway tracks so impact to area character/aesthetics is not likely to be significant. No encroachment or impacts to property boundaries of parks and recreational facilities and no long-term alteration/disruption likely. Field observation identified no change to facilities / utilities / services. Some potential for nuisance impacts at the park and playing fields. 	 Low potential for impacts to parks and recreational areas Segment east of Road 108 will bring new roadway closer to park near Optimist Hall and Sprucedale Public School/Community Center playing fields. Area is already bounded by railway tracks so impact to area character/aesthetics is not likely to be significant. No encroachment or impacts to property boundaries of parks and recreational facilities and no long-term alteration/disruption likely. Field observation identified no change to facilities / utilities / services. Some potential for nuisance impacts at the park and playing fields. 	Low potential for impacts to parks and recreational areas • Segment east of Road 108 will bring new roadway closer to park near Optimist Hall and Sprucedale Public School/Community Center playing fields. Area is already bounded by railway tracks so impact to area character/aesthetics is not likely to be significant. • No encroachment or impacts to property boundaries of parks and recreational facilities and no longterm alteration/disruption likely. • Field observation identified no change to facilities / utilities / services. • Some potential for nuisance impacts at the park and playing fields.
	2.5.3 Aggregates, Mineral-Resources	Potential and significance of: • encroachment, severance, displacement, property acquisition; • long-term alteration / disruption; • change to access / travel time; • change to facilities / utilities / services.	No potential for impacts to current/future aggregate/mineral resources No impacts to mineral-aggregate resources	No potential for impacts to current/future aggregate/mineral resources No impacts to mineral-aggregate resources	No potential for impacts to current/future aggregate/mineral resources No impacts to mineral-aggregate resources	No potential for impacts to current/future aggregate/mineral resources No impacts to mineral-aggregate resources

Note	e – Evaluation of the r	oute alternatives is based on a qualitative assessm	nent of each route (high, medium or low).		each criterion/cell is provided to justify the	e high, medium or low assessment.
			SEGMENT A – SHAKESPEARE	AREA SOUTHERN BYPASSES		
Factor						
/ Sub- Factor	Criteria	Indicator for Route Selection	A1 1-3-7-10-12	A2 1-2-3-7-10-12	A3 1-2-4-7-10-12	A4 1-2-4-6-10-12
		to current/future extraction of aggregate and mineral resources.				
	r Utility Transmissio pads, hydro, gas, oil)	n Corridors				
		Potential and significance of: • encroachment, severance, displacement; • long-term alteration / disruption; • change to access / travel time; • change to facilities / utilities / services. To major utility transmission corridors.	Low potential for impacts to major utility transmission corridors One new railway crossing No major hydro transmission corridor crossings No major gas / oil corridor crossings	Low potential for impacts to major utility transmission corridors One new railway crossing No major hydro transmission corridor crossings No major gas / oil corridor crossings	Low potential for impacts to major utility transmission corridors One new railway crossing No major hydro transmission corridor crossings No major gas / oil corridor crossings	Low potential for impacts to major utility transmission corridors One new railway crossing No major hydro transmission corridor crossings No major gas / oil corridor crossings
		nd Waste Management te Sites, "Brownfield" Areas, other known contamin Potential and significance of: • encroachment, severance, displacement; • long-term alteration / disruption; • change to access / travel time; • change to facilities / utilities / services. to contaminated property and waste management.	Medium potential for impacts to contaminated property and waste • Two vehicle fuel and repair facilities were identified in Shakespeare along Highway 7/8. Both sites, an Esso Service Station at Patrick Street and Patriot Gas east of Road 107, are at least 400 m north of proposed alignment at the west end of the alignment. Regional groundwater flow direction is	Medium potential for impacts to contaminated property and waste Two vehicle fuel and repair facilities were identified in Shakespeare along Highway 7/8. Both sites, an Esso Service Station at Patrick Street and Patriot Gas east of Road 107, are at least 400 m north of proposed alignment at the west end of the alignment. Regional groundwater flow direction is	Medium potential for impacts to contaminated property and waste • Two vehicle fuel and repair facilities were identified in Shakespeare along Highway 7/8. Both sites, an Esso Service Station at Patrick Street and Patriot Gas east of Road 107, are at least 400 m north of proposed alignment at the west end of the alignment. Regional groundwater flow direction is	Medium potential for impacts to contaminated property and waste • Two vehicle fuel and repair facilities were identified in Shakespeare along Highway 7/8. Both sites, an Esso Service Station at Patrick Street and Patriot Gas east of Road 107, are at least 400 m north of proposed alignment at the west end of the alignment. Regional groundwater flow direction is
			anticipated to be flowing in a southerly direction. The distance of the service stations from the proposed realignment indicates that potential environmental concerns related to the service stations are minimal; however, consideration should be given to implementing a scoped subsurface investigation south of the service stations at the northern extent of the proposed road alignment to confirm soil and groundwater conditions.	anticipated to be flowing in a southerly direction. The distance of the service stations from the proposed realignment indicates that potential environmental concerns related to the service stations are minimal; however, consideration should be given to implementing a scoped subsurface investigation south of the service stations at the northern extent of the proposed road alignment to confirm soil and groundwater conditions.	 anticipated to be flowing in a southerly direction. The distance of the service stations from the proposed realignment indicates that potential environmental concerns related to the service stations are minimal; however, consideration should be given to implementing a scoped 	anticipated to be flowing in a southerly direction. The distance of the service stations from the proposed realignment indicates that potential environmental concerns related to the service stations are minimal; however, consideration should be given to implementing a scoped subsurface investigation south of the service stations at the northern extent of the proposed road alignment to confirm soil and groundwater conditions.

Note - Evaluation of the route alternatives is based on a qualitative assessment of each route (high, medium or low). Relevant and site-specific information for each criterion/cell is provided to justify the high, medium or low assessment.

		ute alternatives is based on a qualitative assessme	SEGMENT A – SHAKESPEARE	<u> </u>		3 ,	
			SEGMENT A - SHARESPEARE				
Factor			Route Alternative				
/ Sub- Factor	Criteria	Indicator for Route Selection	A1 1-3-7-10-12	A2 1-2-3-7-10-12	A3 1-2-4-7-10-12	A4 1-2-4-6-10-12	
2.8 Land	scape Composition					-	
	2.8.1 Scenic Composition (total aesthetic value of landscape components)	Potential and significance of change to scenic composition (total aesthetic value of landscape components).	Medium potential to impact scenic composition for sensitive viewer groups and of views from the route alternative low/moderate negative impacts on	Medium potential to impact scenic composition for sensitive viewer groups and of views from the route alternative • low/moderate negative impacts on	Medium potential to impact scenic composition for sensitive viewer groups and of views from the route alternative low/moderate negative impacts on	High potential to impact scenic composition for sensitive viewer groups and of views from the route alternative • low/moderate negative impacts on	
	2.8.2 Sensitive Viewer Groups	Potential and significance of change vistas/outlooks for sensitive viewer groups.	urban community due to existing railroad, and existing hedge buffer • high negative impacts on affected	urban community due to existing railroad, and existing hedge buffer • high negative impacts on affected	urban community due to existing railroad, and existing hedge buffer • moderate negative impact on	urban community on southern portion due to existing railroad, and existing hedge buffer	
	2.8.3 Scenic value of views/vistas from the transportation facility	Potential and significance of views/vistas from the transportation facility.	farmhouses on east entry, and south of proposed roadway • moderate/high negative impact due to potential loss of vegetation • moderate visual interest through agricultural fields, and hedgerow • moderate/high visual interest of southern woodlot across fields • moderate/high visual interest of riparian areas and associated vegetation • moderate visual interest of hedge buffer of railroad tracks	farmhouse on east entry, and south of proposed roadway moderate/high negative impact on adjacent properties on existing footprint due to the loss of frontage and associated potential loss of vegetation moderate visual interest through agricultural fields, and hedgerow moderate/high visual interest of southern woodlot across fields high visual interest of riparian areas and associated vegetation moderate visual interest of hedge buffer of railroad tracks	affected farmhouse on east entry, and south of proposed roadway moderate/high negative impact on adjacent properties on existing footprint due to the loss of frontage and associated potential loss of vegetation moderate visual interest through agricultural fields high visual interest of southern woodlot across fields high visual interest of riparian areas and associated vegetation moderate visual interest of hedge buffer of railroad tracks	 high negative impact on affected farmhouse on east entry, and south of proposed roadway high negative impact on urban community on the eastern edge due to close proximity of proposed highway moderate/high negative impact on adjacent properties on existing footprint due to the loss of frontage and associated potential loss of vegetation moderate visual interest through agricultural fields moderate visual interest of southern woodlot across fields moderate visual interest of hedge buffer of railroad tracks 	
	2.8.4 Specimen Trees	To be considered during Preliminary Design pha	se				
2.9 Air C	uality						
	2.9.1 Local and Regional Air Quality	Previously addressed during Needs Assessment	t Phase				
	(Total contaminant and greenhouse gas emissions)						
	2.9.2 Sensitive receptors to air pollutants and greenhouse gas emissions	Presence and potential for impacts to sensitive receptors to air pollutants and greenhouse gas emissions, including consideration of number of sensitive receptors immediately adjacent to the highway.	Low potential impact to sensitive receptors adjacent to the highway O sensitive receptors within 20m of the edge of the Right of Way.	 Low potential impact to sensitive receptors adjacent to the highway 0 sensitive receptors within 20m of the edge of the Right of Way. 	Low potential impact to sensitive receptors adjacent to the highway 1 sensitive receptor within 20m of the edge of the Right of Way.	Low potential impact to sensitive receptors adjacent to the highway 3 sensitive receptors within 20m of the edge of the Right of Way.	

Note – Evaluation of the route alternatives is based on a qualitative assessment of each route (high, medium or low). Relevant and site-specific information for each criterion/cell is provided to justify the high, medium or low assessment.

SEGMENT A – SHAKESPEARE AREA SOUTHERN BYPASSES

			Route Alternative				
r - r	Criteria	Indicator for Route Selection	A1 1-3-7-10-12	A2 1-2-3-7-10-12	A3 1-2-4-7-10-12	A4 1-2-4-6-10-12	
LTUI	RAL ENVIRONMENT	AL FACTORS					
ıltur	al Heritage – Built He	eritage and Cultural Landscapes					
	3.1.1 Buildings or "Standing" Sites of Architectural or Heritage Significance or Ontario Heritage Foundation Easement Properties	Potential and significance of: • encroachment, severance, displacement, property acquisition; • long-term alteration / disruption; • change in area character / aesthetics; • nuisance impacts; • change to access / travel time; • change to facilities / utilities / services. to buildings or "standing" sites of extreme local, provincial or national interest or Ontario Heritage Foundation easements properties.	Low potential for impacts to sites of heritage significance and Heritage Foundation Easement Properties There are no built heritage resources within the route There are two in close proximity to the extreme east end of the route (1825 Highway 7/8 – George Kleinknecht Farmstead and 1834 Highway 7/8 – outbuilding); these may be encroached but not likely physically impacted Setting may change somewhat	 High potential for impacts to sites of heritage significance and Heritage Foundation Easement Properties Encroaches on and severs Fryfogel Tavern property which is an Ontario Heritage Foundation Easement property There are two in close proximity to the extreme east end of the route (1825 Highway 7/8 – George Kleinknecht Farmstead and 1834 Highway 7/8 – outbuilding); these may be encroached but not likely 	 Medium potential for impacts to sites of heritage significance and Heritage Foundation Easement Properties There are 8 built heritage resources within or in immediate proximity to the route There are two in close proximity to the extreme east end of the route (1825 Highway 7/8 – George Kleinknecht Farmstead and 1834 Highway 7/8 – outbuilding); these may be encroached but not likely physically impacted 	 Medium potential for impacts to sof heritage significance and Herital Foundation Easement Properties There are 8 built heritage resour within or in immediate proximity the route There are two in close proximity the extreme east end of the rout (1825 Highway 7/8 – George Kleinknecht Farmstead and 183 Highway 7/8 – outbuilding); thes may be encroached but not likely physically impacted 	
	3.1.2 Heritage Bridges	Potential for destruction or significant alteration of heritage bridges	• Setting may change somewhat	physically impacted • Setting may change somewhat	 Setting may change somewhat. Six within the route and are generally in close proximity to the road; setting will be heavily altered and some buildings may be displaced. These six buildings are the John McTavish Farmstead (2026 Highway 7/8), the Andrew Riddell Junior Farmstead (2053 Highway 7/8), the Andrew Riddell Farmstead (2007 Highway 7/8), Dr. Flynn's House (1971 Hwy 7/8), Sebastian Fryfogel Farmstead (1899 Highway 7/8), and the Fryfogel Tavern/Inn (1931 Highway 7/8). 	 Setting may change somewhat. Six within the route and are generally in close proximity to the road; setting will be heavily alternand some buildings may be displaced. These six buildings at the John McTavish Farmstead (2026 Highway 7/8), the Andrew Riddell Junior Farmstead (2053 Highway 7/8), the Andrew Riddell Farmstead (2007 Highway 7/8), Flynn's House (1971 Hwy 7/8), Sebastian Fryfogel Farmstead (4 Highway 7/8), and the Fryfogel Tavern/Inn (1931 Highway 7/8). 	
	3.1.3 Areas of Historic 19 th Century Settlement	Potential and significance of: • encroachment, severance, displacement; • longterm alteration / disruption; • change in area character / aesthetics; • nuisance impacts; • change to access / travel time; • change to facilities / utilities / services. to areas of historic 19 th century settlement.	 Low potential for impacts to areas of historic settlement The route crosses a portion of Highway 7/8, an early transportation route but no major, concentrated centres of 19th Century settlement 	Low potential for impacts to areas of historic settlement The route crosses a portion of Highway 7/8, an early transportation route but no major, concentrated centres of 19 th Century settlement	Low potential for impacts to areas of historic settlement The route crosses a portion of Highway 7/8, an early transportation route but no major, concentrated centres of 19 th Century settlement	 Low potential for impacts to areas historic settlement The route crosses a portion of Highway 7/8, an early transporta route but no major, concentrated centres of 19th Century settlement 	
	3.1.4 Cultural Heritage Landscapes (collection of	Potential and significance of change to composition of cultural landscapes.	Medium potential for impacts to cultural heritage landscapes Dilse identified one large, continuous cultural heritage	Medium potential for impacts to cultural heritage landscapes Dilse identified one large, continuous cultural heritage	Medium potential for impacts to cultural heritage landscapes Dilse identified one large, continuous cultural heritage	Medium potential for impacts to cultural heritage landscapes Dilse identified one large, continuous cultural heritage	

MOST PREFERRED	MODERATELY PREFERRED	LEAST PREFERRED	NO DIFFERENCE	SELECTED CORRIDOR

Note – Evaluation of the route alternatives is based on a qualitative assessment of each route (high, medium or low). Relevant and site-specific information for each criterion/cell is provided to justify the high, medium or low assessment.

SEGMENT A – SHAKESPEARE AREA SOUTHERN BYPASSES

Factor				Route Al	Iternative		
/ Sub- Factor	Criteria	Indicator for Route Selection	A1 1-3-7-10-12	A2 1-2-3-7-10-12	A3 1-2-4-7-10-12	A4 1-2-4-6-10-12	
	individual manmade features modifying pristine landscape)		landscape that crosses the east end of this route (from Lingelbach Cemetery west to west of Road 106); only the extreme east end of the route is affected	landscape that crosses the east end of this route (from Lingelbach Cemetery west to west of Road 106); only the extreme east end of the route is affected	landscape that crosses the east end of this route (from Lingelbach Cemetery west to west of Road 106); only the east end of the route is affected	landscape that crosses the east end of this route (from Lingelbach Cemetery west to west of Road 106); only the east end of the route is affected	
	3.1.5 First Nations' Burial Sites	Potential and significance of: encroachment, severance, displacement; longterm alteration / disruption; change in area character / aesthetics; nuisance impacts; change to access / travel time.	No potential for impacts to First Nations burial sites There are no known/reported First Nations' burial sites within this route	No potential for impacts to First Nations burial sites There are no known/reported First Nations' burial sites within this route	No potential for impacts to First Nations burial sites There are no known/reported First Nations' burial sites within this route	No potential for impacts to First Nations burial sites There are no known/reported First Nations' burial sites within this route	
	3.1.6 Cemeteries	to First Nations' burial sites. Potential and significance of: • encroachment, severance, displacement; • longterm alteration / disruption; • change in area character/ aesthetics; • nuisance impacts; • change to access / travel time; • change to facilities / utilities / services.	Low potential for impacts to cemeteries There are no known cemeteries within this route	High potential for impacts to cemeteries • There is one cemetery (Fryfogel) within this route; boundaries are poorly known	Low potential for impacts to cemeteries There is one cemetery (Fryfogel) adjacent to this route; boundaries are poorly known	Low potential for impacts to cemeteries • There is one cemetery (Fryfogel) adjacent to this route; boundaries are poorly known	
3 2 Cultu	 ıral Heritage – Archae	to cemeteries.					
J.Z Guitt	3.2.1 PreHistoric and Historic First Nations Sites	Potential for destruction or disturbance of prehistoric and historic First Nations archaeological sites of extreme local, provincial or national interest	Low potential for destruction or disturbance of archaeological sites There are no registered sites within this route	Medium potential for destruction or disturbance of archaeological sites There are two known registered sites within this route (Fryfogel,	Medium potential for destruction or disturbance of archaeological sites There are four known registered sites within this route (Riddell 1,	Medium potential for destruction or disturbance of archaeological sites There are four known registered sites within this route (Riddell 1,	
	3.2.2 Historic EuroCanadian Archaeological Sites	Potential for destruction or disturbance of historic EuroCanadian archaeological sites of extreme local, provincial or national interest	There is potential for previously undocumented archaeological sites	Fryfogel Inn); both have portions likely present There is potential for previously undocumented archaeological sites	Riddell 2, Fryfogel, Fryfogel Inn); all have portions likely present There is potential for previously undocumented archaeological sites	Riddell 2, Fryfogel, Fryfogel Inn); all have portions likely present There is potential for previously undocumented archaeological sites	
4. AREA	ECONOMY – Previous	sly addressed during Needs Assessment Phas	e				
5. TRAN	SPORTATION FACTOR	RS					
5.1 Area	rea Transportation System Capacity and Efficiency						
	5.1.1 Federal/ Provincial/Municipal transportation planning policies/goals/ objectives	Previously addressed during Needs Assessmen	t Phase.				

LEGEND

MOST PREFERRED MODERATELY PREFERRED LEAST PREFERRED NO DIFFERENCE SELECTED CORRIDOR

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			SEGMENT A – SHAKESPEARE	AREA SOUTHERN BYPASSES		
Factor				Route A	Iternative	
/ Sub- Factor	Criteria	Indicator for Route Selection	A1 1-3-7-10-12	A2 1-2-3-7-10-12	A3 1-2-4-7-10-12	A4 1-2-4-6-10-12
	5.1.2 Efficient movement of people	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	High potential to support efficient movement of people. Route is predominantly on new alignment, with high level of service due to few intersections and few driveways Direct route Some out-of-way travel for local access from Shakespeare to route	High potential to support efficient movement of people. Route is predominantly on new alignment, with high level of service due to few intersections and few driveways Direct route Some out-of-way travel for local access from Shakespeare to route	High potential to support efficient movement of people. Route is predominantly on new alignment, with high level of service due to few intersections and few driveways Direct route Some out-of-way travel for local access from Shakespeare to route	High potential to support efficient movement of people. Route segment through Shakespeare is on new alignment, resulting in high level of service due to few intersections and reduced number of driveways Direct route Some out-of-way travel for local access from Shakespeare to route
	5.1.3 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)	High potential to support efficient movement of goods. Route is predominantly on new alignment, with high level of service due to few intersections and few driveways Direct route Some out-of-way travel for local access from Shakespeare to route	High potential to support efficient movement of goods. Route is predominantly on new alignment, with high level of service due to few intersections and few driveways Direct route Some out-of-way travel for local access from Shakespeare to route	High potential to support efficient movement of goods. Route is predominantly on new alignment, with high level of service due to few intersections and few driveways Direct route Some out-of-way travel for local access from Shakespeare to route	High potential to support efficient movement of goods. Route segment through Shakespeare is on new alignment, resulting in high level of service due to few intersections and reduced number of driveways and few driveways Direct route Some out-of-way travel for local access from Shakespeare to route
5.2 Area	Transportation System	m Reliability / Redundancy				
		Potential to support system reliability and redundancy for travel (people and goods) between regions and communities during adverse conditions	High potential to support system reliability and redundancy Route is predominantly on new alignment, which provides a new connection in the Shakespeare area to accommodate travel during adverse conditions (i.e. provides an alternate route)	High potential to support system reliability and redundancy Route is predominantly on new alignment, which provides a new connection in the Shakespeare area to accommodate travel during adverse conditions (i.e. provides an alternate route)	High potential to support system reliability and redundancy Route is predominantly on new alignment, which provides a new connection in the Shakespeare area to accommodate travel during adverse conditions (i.e. provides an alternate route)	High potential to support system reliability and redundancy Route segment through Shakespeare is on new alignment, which provides a new connection in the Shakespeare area to accommodate travel during adverse conditions (i.e. provides an alternate route)
5.3 Safe	ty					
	5.3.1 Traffic 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	Route is predominantly on new alignment, with limited number of access points at intersection locations and a few access points associated with private entrances A four/five lane cross section provides for good passing opportunity, provides a wider	Route is predominantly on new alignment, with limited number of access points at intersection locations and a few access points associated with private entrances A four/five lane cross section provides for good passing opportunity, provides a wider	Route is predominantly on new alignment, with limited number of access points at intersection locations and a few access points associated with private entrances A four/five lane cross section provides for good passing opportunity, provides a wider	High potential to improve traffic safety Route segment through Shakespeare is on new alignment, resulting in limited number of access points at intersection locations and reduced number of access points associated with private entrances A four/five lane cross section

Note – Evaluation of the route alternatives is based on a qualitative assessment of each route (high, medium or low). Relevant and site-specific information for each criterion/cell is provided to justify the high, medium or low assessment.

SEGMENT A – SHAKESPEARE AREA SOUTHERN BYPASSES

Factor				Route Al	ternative	
/ Sub- Factor	Criteria	Indicator for Route Selection	A1 1-3-7-10-12	A2 1-2-3-7-10-12	A3 1-2-4-7-10-12	A4 1-2-4-6-10-12
			platform to accommodate evasive moves during potential accidents, and a centre left turn lane would accommodate safer left turns along the highway at intersection and driveway locations	platform to accommodate evasive moves during potential accidents, and a centre left turn lane would accommodate safer left turns along the highway at intersection and driveway locations	platform to accommodate evasive moves during potential accidents, and a centre left turn lane would accommodate safer left turns along the highway at intersection and driveway locations	provides for good passing opportunity, provides a wider platform to accommodate evasive moves during potential accidents, and a centre left turn lane would accommodate safer left turns along the highway at intersection and driveway locations
	5.3.2 Emergency Access	Potential to support emergency access to/from existing and/or new provincial facilities.	 High potential to support emergency access to/from route Full moves connection will be provided at Perth Road 107 Opportunity to provide connections to existing Highway 7&8 at east and west ends of Shakespeare Direct access from existing fire hall east of Perth Road 107 to existing Highway 7&8 will be maintained 	 High potential to support emergency access to/from route Full moves connection will be provided at Perth Road 107 Opportunity to provide connections to existing Highway 7&8 at east and west ends of Shakespeare Direct access from existing fire hall east of Perth Road 107 to existing Highway 7&8 will be maintained 	 High potential to support emergency access to/from route Full moves connection will be provided at Perth Road 107 Opportunity to provide connections to existing Highway 7&8 at east and west ends of Shakespeare Direct access from existing fire hall east of Perth Road 107 to existing Highway 7&8 will be maintained 	 High potential to support emergency access to/from route Full moves connection will be provided at Perth Road 107 Opportunity to provide connections to existing Highway 7&8 at east and west ends of Shakespeare Direct access from existing fire hall east of Perth Road 107 to existing Highway 7&8 will be maintained
	5.3.3 Pedestrian, Cyclist and Snowmobile Safety within the highway rightofway	Potential and significance of change to ease and safety of movement across the highway and within the rightofway.	High potential to improve pedestrian, cyclist and snowmobile safety Route situated south of developed area of Shakespeare so need for movement within the right-of-way eliminated; reduced traffic on existing Highway 7&8 in developed area where pedestrian / cyclist movements predominately occur Pedestrian, cyclist and snowmobile movements across right-of-way can be provided at intersection locations and/or designated crossing locations	High potential to improve pedestrian, cyclist and snowmobile safety Route situated south of developed area of Shakespeare so need for movement within the right-of-way eliminated; reduced traffic on existing Highway 7&8 in developed area where pedestrian / cyclist movements predominately occur Pedestrian, cyclist and snowmobile movements across right-of-way can be provided at intersection locations and/or designated crossing locations	High potential to improve pedestrian, cyclist and snowmobile safety Route situated south of developed area of Shakespeare so need for movement within the right-of-way eliminated; reduced traffic on existing Highway 7&8 in developed area where pedestrian / cyclist movements predominately occur Pedestrian, cyclist and snowmobile movements across right-of-way can be provided at intersection locations and/or designated crossing locations	High potential to improve pedestrian, cyclist and snowmobile safety Route situated south of developed area of Shakespeare so need for movement within the right-of-way eliminated; reduced traffic on existing Highway 7&8 in developed area where pedestrian / cyclist movements predominately occur Pedestrian, cyclist and snowmobile movements across right-of-way can be provided at intersection locations and/or designated crossing locations
5.4 Mobi	lity and Accessibility					
	5.4.1 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 connection to concentrations of population, travel performance indicators (LOS, v/c, travel speed) at critical screenlines and on potential to provide higher order transit	Medium potential to improve modal integration, balance and efficiency. Transit service is potentially constrained by the bypass of the community of Shakespeare, but is supported by the direct connection to development along	 Medium potential to improve modal integration, balance and efficiency. Transit service is potentially constrained by the bypass of the community of Shakespeare, but is supported by the direct connection to development along 	 Medium potential to improve modal integration, balance and efficiency. Transit service is potentially constrained by the bypass of the community of Shakespeare, but is supported by the direct connection to development along 	Medium potential to improve modal integration, balance and efficiency. Transit service is potentially constrained by the bypass of the community of Shakespeare, but is supported by the direct connection to development along

Note – Evaluation of the route alternatives is based on a qualitative assessment of each route (high, medium or low). Relevant and site-specific information for each criterion/cell is provided to justify the high, medium or low assessment.

SEGMENT A – SHAKESPEARE AREA SOUTHERN BYPASSES

actor				Route Alternative					
Sub- actor	Criteria	Indicator for Route Selection	A1 1-3-7-10-12	A2 1-2-3-7-10-12	A3 1-2-4-7-10-12	A4 1-2-4-6-10-12			
		service.	 Highway 7&8 both east and west of Shakespeare. Use of existing Highway 7&8 would constrain transit travel performance. Opportunity to support interface between rail transit service and highway 	 Highway 7&8 both east and west of Shakespeare. Use of existing Highway 7&8 would constrain transit travel performance. Opportunity to support interface between rail transit service and highway 	 Highway 7&8 both east and west of Shakespeare. Use of existing Highway 7&8 would constrain transit travel performance. Opportunity to support interface between rail transit service and highway 	 Highway 7&8 both east and west of Shakespeare. Use of existing Highway 7&8 would constrain transit travel performance. Opportunity to support interface between rail transit service and highway 			
	5.4.2 Linkages to Population and Employment Centres	Potential to improve linkages to population and employment centres for people and goods movement	Medium potential to improve linkages to population and employment centres. Linkage to Stratford and New Hamburg improved Linkages to Shakespeare may be reduced because of limitations imposed by intersection design requirements at potential tie-in points between the bypass and the current highway	Medium potential to improve linkages to population and employment centres. Linkage to Stratford and New Hamburg improved Linkages to Shakespeare may be reduced because of limitations imposed by intersection design requirements at potential tie-in points between the bypass and the current highway	Medium potential to improve linkages to population and employment centres. Linkage to Stratford and New Hamburg improved Linkages to Shakespeare may be reduced because of limitations imposed by intersection design requirements at potential tie-in points between the bypass and the current highway	Medium potential to improve linkages to population and employment centres. Linkage to Stratford and New Hamburg improved Linkages to Shakespeare may be reduced because of limitations imposed by intersection design requirements at potential tie-in points between the bypass and the current highway			
	5.4.3 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)	Medium potential to support recreation and tourism travel Shakespeare tourist area is bypassed, but tourist travel through the analysis area is facilitated	Medium potential to support recreation and tourism travel Shakespeare tourist area is bypassed, but tourist travel through the analysis area is facilitated	Medium potential to support recreation and tourism travel Shakespeare tourist area is bypassed, but tourist travel through the analysis area is facilitated	Medium potential to support recreation and tourism travel Shakespeare tourist area is bypassed, but tourist travel through the analysis area is facilitated			
E Noto.	5.4.4 Accommodate mobility of pedestrians, cyclists and snowmobiles	Potential to accommodate mobility of pedestrians, cyclists within critical travel corridors in urbanized areas and snowmobiles in recognized rural trails	High potential to accommodate mobility of pedestrians, cyclists and snowmobiles • Route situated south of developed area of Shakespeare so need for movement within the right-of-way eliminated; reduced traffic on existing Highway 7&8 in developed area provides opportunity to improve mobility of pedestrian / cyclist movements within developed area • Existing snowmobile trail crossings east and west of Shakespeare can be maintained	High potential to accommodate mobility of pedestrians, cyclists and snowmobiles Route situated south of developed area of Shakespeare so need for movement within the right-of-way eliminated; reduced traffic on existing Highway 7&8 in developed area provides opportunity to improve mobility of pedestrian / cyclist movements within developed area Existing snowmobile trail crossings east and west of Shakespeare can be maintained	High potential to accommodate mobility of pedestrians, cyclists and snowmobiles Route situated south of developed area of Shakespeare so need for movement within the right-of-way eliminated; reduced traffic on existing Highway 7&8 in developed area provides opportunity to improve mobility of pedestrian / cyclist movements within developed area Existing snowmobile trail crossings east and west of Shakespeare can be maintained	High potential to accommodate mobility of pedestrians, cyclists and snowmobiles Route situated south of developed area of Shakespeare so need for movement within the right-of-way eliminated; reduced traffic on existing Highway 7&8 in developed area provides opportunity to improve mobility of pedestrian / cyclist movements within developed area Existing snowmobile trail crossings east and west of Shakespeare can be maintained			
5.5 Netw	ork Compatibility 5.5.1 Network	Potential to improve transportation evotem	High potential to improve	Ligh notantial to improve	Ligh notantial to improve	High notantial to improve			
	Connectivity	Potential to improve transportation system connectivity within and to/from the analysis	High potential to improve transportation system connectivity	High potential to improve transportation system connectivity	High potential to improve transportation system connectivity	High potential to improve transportation system connectivity			

Note – Evaluation of the route alternatives is based on a qualitative assessment of each route (high, medium or low). Relevant and site-specific information for each criterion/cell is provided to justify the high, medium or low assessment.

	SEGMENT A – SHAKESPEARE AREA SOUTHERN BYPASSES								
Factor				Route A	Iternative				
/ Sub- Factor	Criteria	Indicator for Route Selection	A1 1-3-7-10-12	A2 1-2-3-7-10-12	A3 1-2-4-7-10-12	A4 1-2-4-6-10-12			
		area.	 Provides improved linkage between Stratford and New Hamburg 	Provides improved linkage between Stratford and New Hamburg	Provides improved linkage between Stratford and New Hamburg	Provides improved linkage between Stratford and New Hamburg			
	5.5.2 Flexibility for Future Expansion	Potential to address future transportation needs beyond the forecasted planning horizons.	High potential for future expansion. Route is outside Shakespeare urban boundary, and since it is predominantly on new alignment, the majority of the right-of-way could accommodate future expansion	High potential for future expansion. Route is outside Shakespeare urban boundary, and since it is predominantly on new alignment, the majority of the right-of-way could accommodate future expansion	High potential for future expansion. Route is outside Shakespeare urban boundary; majority of the right-of-way could accommodate future expansion	Medium potential for future expansion. Route is situated in close proximity to Shakespeare urban boundary, limiting potential for future expansion			
5.6 Engi	ineering								
	5.6.1 Constructability	Potential ease of implementation considering feasibility/difficulty of physical, property or environmental constraints	 Medium potential for constructability issues Utilizes segment of existing Highway 7&8 corridor Situated in close proximity to developed area of Shakespeare One railway crossing Two new watercourse crossings 	Medium potential for constructability issues Utilizes segment of existing Highway 7&8 corridor One railway crossing Two new watercourse crossings	Medium potential for constructability issues Utilizes segment of existing Highway 7&8 corridor One railway crossing Two new watercourse crossings	Medium potential for constructability issues Utilizes segment of existing Highway 7&8 corridor One railway crossing Two new watercourse crossings			
	5.6.2 Compliance with Design Criteria	Conformity to applicable provincial safety and design standards.	 High conformity to safety and design standards Supports use of better than minimum horizontal and vertical alignment elements Can accommodate standard lane and shoulder widths 	 High conformity to safety and design standards Supports use of better than minimum horizontal and vertical alignment elements Can accommodate standard lane and shoulder widths 	 High conformity to safety and design standards Supports use of better than minimum horizontal and vertical alignment elements Can accommodate standard lane and shoulder widths 	 High conformity to safety and design standards Supports use of better than minimum horizontal and vertical alignment elements Can accommodate standard lane and shoulder widths 			
5.7 Traf	fic Operations				,				
		Potential for negative impact on traffic operations due to factors such as design features, private access, and transportation network connections	 Low potential for negative impact on traffic operations Route is predominantly on new alignment, with limited number of access points at intersection locations and a few access points associated with private entrances. Can accommodate full moves connection at Perth Road 107 Can accommodate partial connections to existing Highway 7&8 at east and west ends of Shakespeare 	 Low potential for negative impact on traffic operations Route is predominantly on new alignment, with limited number of access points at intersection locations and a few access points associated with private entrances. Can accommodate full moves connection at Perth Road 107 Can accommodate partial connections to existing Highway 7&8 at east and west ends of Shakespeare 	 Low potential for negative impact on traffic operations Route is predominantly on new alignment, with limited number of access points at intersection locations and a few access points associated with private entrances. Can accommodate full moves connection at Perth Road 107 Can accommodate partial connections to existing Highway 7&8 at east and west ends of Shakespeare 	Low potential for negative impact on traffic operations Route segment through Shakespeare is on new alignment, resulting in limited number of access points at intersection locations and reduced number of access points associated with private entrances. Can accommodate full moves connection at Perth Road 107 Can accommodate partial connections to existing Highway 7&8 at east and west ends of Shakespeare			

Highway 7&8 Transportation Corridor Planning and Class EA Study

EVALUATION OF ROUTE ALTERNATIVES

Note – Evaluation of the route alternatives is based on a qualitative assessment of each route (high, medium or low). Relevant and site-specific information for each criterion/cell is provided to justify the high, medium or low assessment.

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Factor	Criteria	Indicator for Route Selection	Route Alternative					
/ Sub- Factor			A1 1-3-7-10-12	A2 1-2-3-7-10-12	A3 1-2-4-7-10-12	A4 1-2-4-6-10-12		
5.8 Cons	truction Cost (exclude	es property costs and engineering costs)						
	Relative road construction cost, exclude property and engineering costs		High cost	High cost	Medium Cost	Medium Cost		
			\$12 M \$12 M		\$10 M	\$10 M		

SUMMARY OF EVALUATION

Summary of Natural Environment

Route Alternatives A3 and A4 are preferred from a natural environment perspective as they have lower potential impacts to terrestrial ecosystems, including wildlife, wetlands, forests and vegetation.

Summary of Land Use / Socio-Economic Environment

Route Alternative A3 is preferred from a land use / socio-economic environment perspective as it has lower potential impacts to urban and rural residential areas and agriculture,

Summary of Cultural Environment

Route Alternatives A3 and A4 do not encroach on the Fryfogel Tavern site but do have the potential for moderate impacts to built heritage and archaeological sites. Route Alternative A2 encroaches on and severs the Fryfogel Taverrn site. Therefore, Route Alternative A1 is preferred from a cultural environment perspective as it avoids the Fryfogel Tavern site and has low potential impacts to cemeteries and archaeological sites.

Summary of Transportation

All route alternatives are comparable in their ability to support transportation criteria for most transportation factors. However, Route Alternative A3 is preferred because it has a lower relative construction cost than Alternatives A1 and A2 and has the potential to better accommodate future transportation needs relative to Alternative A4.

Conclusion

Based upon the above, Route Alternative A3 is the preferred southern by-pass alternative east of Shakespeare.

SEGMENT A - SHAKESPEARE AREA SOUTHERN BY-PASSES

FACTORS		Weighting		Alter	native	
DOMESTIC STATE OF THE STATE OF	KIND OF SALES		1	2	3	4
1.0 NATURAL ENVIRONMENT 1.1 Fisheries and Aquatic Ecosystems		20.00 8.00	MINISTER			
1.1 Fisheries and Aquatic Ecosystems	Weighted Score	8.00	5.36	5.36	5.36	5.36
1.2 Terrestrial Ecosystems		5.00				A STATE OF THE STA
1.3 Groundwater	Weighted Score	5.00	1.99	1.99	3.35	3.35
1.5 Groundwater	Weighted Score		3.68	3.68	3.68	3.68
1.4 Surface Water		2.00	Rev.			
Egato	Weighted Score	20.00	1.34	1.34	1.34	1.34
Pacto	r Score	20.00	12.37	12.37	13.73	13.73
2 A LAND USE / SOCIO ECONOMIC ENVID	ONIMENIT	35.00			THE CHARLES	
2.0 LAND USE / SOCIO-ECONOMIC ENVIRO 2.1 Land Use Planning Policies, Goals, Objectives	ONWENT	3.50				
The control of the co	Weighted Score		2.17	2.17	2.35	2.35
2.2 Land Use / Community		7.00				
2.3 Noise Sensitive Areas	Weighted Score	5.25	4.92	4.92	4.92	4.56
	Weighted Score	the second secon	1.73	1.73	1.73	0.00
2.4 Agriculture	Weight 10	7.00				
2.5 Land Use / Resources	Weighted Score	3.50	1.16	1.16	3.26	2.31
	Weighted Score		2.46	2.46	2.46	2.46
2.6 Major Utility Transmission Corridors	Weight differen	0.70	0.47	0.47	0.47	
2.7 Contaminated Property and Waste Management	Weighted Score	0.70	0.47	0.47	0.47	0.47
	Weighted Score		0.23	0.23	0.23	0.23
2.8 Landscape Composition	Weighted Cours	2.10	0.00	0.00	0.00	
2.9 Air Quality	Weighted Score	5.25	0.69	0.69	0.69	0.00
	Weighted Score		3.52	3.52	3.52	3.52
Factor	red Score	35.00	17.34	17.34	19.63	15.89
3.0 CULTURAL ENVIRONMENT		20.00	-			
3.1 Cultural Heritage - Built Heritage and Cultural Landscapes	Weighted Score	16.00	10.04	2.67	7.32	7.32
3.2 Archaeology		4.00	10.04	2.07	7.02	7.02
	Weighted Score		2.68	1.32	1.32	1.32
Factor	red Score	20.00	12.72	3.99	8.64	8.64
5.0 TRANSPORTATION		25.00				
i.1 Area Transportation System Capacity and Efficiency	Weighted Score	3.75	3.75	3.75	3.75	3.75
5.2 Area Transportation System Reliability / Redundancy		3.75			THE PERSON NAMED IN	
.3 Safety	Weighted Score		3.75	3.75	3.75	3.75
Daicty						
	Weighted Score	6.25	6.25	6.25	6.25	6.25
		2.50				
.4 Mobility and Accessibility	Weighted Score Weighted Score	2.50	6.25	6.25	6.25	1.92
.4 Mobility and Accessibility						
.4 Mobility and Accessibility .5 Network Compatibility	Weighted Score Weighted Score	2.50	1.92	1.92	1.92	1.92
.4 Mobility and Accessibility .5 Network Compatibility .6 Engineering	Weighted Score	2.50 1.25 2.50	1.92	1.92	1.92	1.92
.4 Mobility and Accessibility .5 Network Compatibility .6 Engineering	Weighted Score Weighted Score	2.50	1.92	1.92	1.92	1.92
5.4 Mobility and Accessibility 5.5 Network Compatibility 6.6 Engineering 6.7 Traffic Operations	Weighted Score Weighted Score Weighted Score Weighted Score	2.50 1.25 2.50	1.92 1.25 1.16 2.51	1.92 1.25 1.16	1.92 1.25 1.16 2.51	1.92 1.17 1.16 2.51
.4 Mobility and Accessibility 5.5 Network Compatibility 6.6 Engineering 6.7 Traffic Operations 6.8 Construction Cost	Weighted Score Weighted Score Weighted Score Weighted Score Weighted Score	2.50 1.25 2.50 3.75 1.25	1.92 1.25 1.16 2.51	1.92 1.25 1.16 2.51	1.92 1.25 1.16 2.51	1.92 1.17 1.16 2.51
.4 Mobility and Accessibility .5 Network Compatibility .6 Engineering .7 Traffic Operations .8 Construction Cost	Weighted Score Weighted Score Weighted Score Weighted Score	2.50 1.25 2.50 3.75 1.25 25.00	1.92 1.25 1.16 2.51	1.92 1.25 1.16	1.92 1.25 1.16 2.51	1.92 1.17 1.16 2.51
.4 Mobility and Accessibility 5.5 Network Compatibility 6.6 Engineering 6.7 Traffic Operations 6.8 Construction Cost	Weighted Score Weighted Score Weighted Score Weighted Score Weighted Score	2.50 1.25 2.50 3.75 1.25	1.92 1.25 1.16 2.51	1.92 1.25 1.16 2.51	1.92 1.25 1.16 2.51	1.92 1.17 1.16 2.51

ALTERNATIVE DESCRIPTIONS 1: A1: 1-3-7-10-12 2: A2: 1-2-3-7-10-12 3: A3: 1-2-4-7-10-12 4: A4: 1-2-4-6-10-12

NATURAL ENVIRONMENT WEIGHTING TABLE - SEGMENT A: SHAKESPEARE AREA SOUTHERN BY-PASSES

	Factor / Sub-factor / Criteria	Indicator	Net Effect	Weighting			rnative	
1.0 7	NATURAL ENVIRONMENT		Dintella Harris	20.00		2	3	
SCHOOL ST	Sheries and Aquatic Ecosystems	CE OF STATE OF BUILDINGS OF STATE OF	DECEMBER OF	0.00	III DANS			
	1.1.1 Fish Habitat	Potential and significance of: encroachment, severance, displacement; and long-term alteration/disruption as applicable to the following: critical fish habitat features, riparian areas and habitat rehabilitation goals.		8.00				
	1.1.2 Fish Community	Potential and significance of: encroachment, severance, displacement; and long-term alteration/disruption as applicable to the following: fish species at risk (vulnerable, theratened or endangered fish species), fish movement/mgration, critical fish life stage processes (spawning, rearing, nursery, feeding) and long-term fish community management goals.	No / Low / Medium / High Effects	8.00	0.67	0.67	0.67	0.67
_			Weighted Score		5.36	5.36	5.36	5.36
.2 T	errestrial Ecosystems			5.00				y in
	1.2.1 Wildlife	Potential and significance of encroachment, severance, displacement; and long-term alteration/disruption as applicable to the following: wildlife species: it risk (vulnerable, threatened or endangered wildlife species): wildlife of local and regional importance, migratory brids; critical wildlife habitat features; ecologically functional areas such as connective corridors or travel ways for movement/ingration; important wildlife areas such as deeryards, beronries, waterfowl areas, important bird areas; wildlife management, rehabilitation/research program sites; and interference with critical wildlife life stage processes (eg mating/rearing, etc.).	No / Low / Medium / High Effects	0.75	0.33	0.33	0.67	0.67
	1.2.2 Wetlands	Potential and significance of: encroachment, severance, displacement; and long-term alteration/disruption as applicable to the following: provincially significant wetlands, their buffer areas, and their wetland function; evaluated and un-evaluated wetlands, their wetland buffer areas, and their wetland function; and wetland management, research and/or wetland conservation programs/areas.	No / Low / Medium / High Effects	1.25	0.33	0.33	0.67	0.67
	1.2.3 Forests	Potential and significance of: encroachment, severance, displacement; and long-term alteration/disruption as applicable to the following: significant woodlands/valley lands; and forest management/research program areas.	No / Low / Medium / High Effects	1.25	0.33	0.33	0.67	0.67
	1.2.4 Vegetation	Potential and significance of: encroachment, severance, displacement; and long-term alteration/disruption as applicable to the following: subpopulations of vegetation species at risk (vulnerable, threatened or endangered species), species of conservation concern and significant regional/local flora/communities; areas/corridors supporting known populations of vegetation species at risk (vulnerable, threatened or endangered species), species of conservation concern and significant flora/communities; and vegetation management, rehabilitation/research program sites.	No / Low / Medium / High Effects	0.75	0.33	0.33	0.67	0.67
	1.2.5 Designated/Special Areas	Potential and significance of: encroachment, severance, displacement, long- term alteration/disruption, change in area character/aesthetics, mitsance impacts, change to access/travel time, and change to facilities/utilities/services to designated/special areas.	No / Low / Medium / High Effects	1.00	0.67	0.67	0.67	0.67
İ			Weighted Score		1.99	1.99	3.35	3.35
3 G	roundwater			5.00				
	1.3.1 Areas of Groundwater Recharge and Discharge	Potential and significance of alteration to areas of groundwater recharge and discharge due to physical intrusion or groundwater inception, drawdown, impoundment, obstruction, or soil compaction impacting groundwater base-flow and quality.	No / Low / Medium / High Effects	0.50	0.67	0.67	0.67	0.67
	1.3.2 Groundwater Source Areas and Wellhead Protection Areas	Potential and significance of alteration to areas of groundwater resource areas and wellhead protection areas due to physical intrusion, or groundwater interception, draw-down, impoundment, obstruction and by soil compaction.	No / Low / Medium / High Effects	1.00	0.67	0.67	0.67	0.67
	1.3.3 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.	No / Low / Medium / High Effects	0.50	0.67	0.67	0.67	0.67

NATURAL ENVIRONMENT WEIGHTING TABLE - SEGMENT A: SHAKESPEARE AREA SOUTHERN BY-PASSES

Factor / Sub-factor / Criteria	Indicator	Net Effect	Weighting	Alternative			
Pactor / Sub-factor / Criteria	Mickator	THE EMECE	rreighting	- 1	2	3	4
NATURAL ENVIRONMENT			20.00	E Was	ALL PORT		
1.3.4 Private Wells	Potential and significance of alteration to private well use due to physical intrusion, or groundwater interception, draw-down, impoundment, obstruction and by soil compaction.	No / Low / Medium / High Effects	1.00	0.67	0.67	0.67	0.67
1.3.5 Groundwater-Dependent Commercial	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.	No / Low / Medium / High Effects	1,00	1.00	1.00	1.00	1.00
groundwater fed wetlands, coldwater	Potential and significance of alteration to groundwater-sensitive ecosystems due to physical imrusion, or groundwater interception, drawdown, impoundment, obstruction and by soil compaction.	No / Low / Medium / High Effects	1.00	0.67	0.67	0.67	0.67
		Weighted Score		3.68	3.68	3.68	3.68
Surface Water			2.00				
1.4.1 Watershed / Suh-Watershed Drainage Features / Patterns	Potential and significance of: encroactment, severance, displacement; and long-term alteration/disruption as applicable to the following: watercourse crossings (permanent, intermittent and ephemeral); floodplain or meander belts; riparian areas; sensitive headwater areas; and watershed and subwatershed management plants.	No / Low / Medium / High Effects					
1.4.2 Surface Water Quality and Quantity	Potential and significance of impacts on quality through direct and indirect discharges of contaminated and sediment-lader run-off. Potential and significance of impacts on hydrology due to changes in ground permeability, medifications to surface drainage patterns and alterations of waterbodies.	No / Low / Medium / High Effects	2.00	0.67	0.67	0.67	0.67
		Weighted Score		1.34	1.34	1.34	1,34
		Factored Score	20.00	12.37	12.37	13.73	13.73

ALTERNATIVE DESCRIPTIONS 1: A1: 1-3-7-10-12 2: A2: 1-2-3-7-10-12 3: A3: 1-2-4-7-10-12 4: A4: 1-2-4-6-10-12

SUMMARY WEIGHTING TABLE - SEGMENT A: SHAKESPEARE AREA SOUTHERN BY-PASSES

Factor / Sub-factor / Criteria	Indicator	Net Effect	Weighting	1	Alter	native 3	A
LAND USE / SOCIO-ECONOMIC	ENVIRONMENT		35.00		100760		
			3.50				71.14
Land Use Planning Policies, Goals and O	ojectives		3.30				
2.1.1 First Nations Land Claims	Potential and significance of encroachment, severance, displacement to areas for which there are Pirst Nations outstanding land claims	No / Low / Medium / High Effects	0.18	0.67	0.67	0.67	0.67
2.1.2 Provincial/Federal land use planning policies/goals/objectives	Degree of compatibility with federal/provincial land use policies/goals/objectives	No / Low / Medium / High Effects	0.52	0.33	0.33	0.67	0.67
2.1.3 Municipal (regional and local land use planning policies/goals/ objectives (Official Plans)	Degree of compatibility with municipal Official Plans	No / Low / Medium / High Effects	2.28	0.67	0.67	0.67	0.67
2.1.4 Development Objectives of Private Property Owners	Potential to isolate property from current/future urban envelope. Impact on future land use.	No/Low/Medium/High Effects	0.52	0.67	0.67	0.67	0.67
		Weighted Score		2.17	2.17	2.35	2.35
Land Use / Community			7.00				
2.2.1 First Nation Reserves	Potential and significance of encroachment, severance, displacement, long-term alteration / disruption, change in area character / aestitetics, nuisance impacts and change to access / travel time to Pirst Nation Reserves.	No / Low / Medium / High Effects	0.35	1.00	1.00	1.00	1.00
2.2.2 First Nations' Sacred Grounds	Potential and significance of encroachment, severance, displacement, fong-term alteration / disruption, change in area character / nesthetics, nuisance impacts and change to necess / travel time to First Nation/ sucred grounds.	No / Low / Medium / High Effects	0.35	0.67	0.67	0.67	0.67
2.2.3 Urban and Rural Residential	Potential and significance of encroachment, severance, displacement, property acquisition; long-term alteration/disruption (e.g., loss of parking area); change in area character / neatheries (e.g., loss of tree/garden area); instance impacte, e.g., intrusion of highway into current residential envelope); chunge to access / tarved time; change to facilities / stiflies / services; interference with residential community cohesion; change to highway operational impacts (e.g. snow storage and highway access visibility) to urban and rural residential areas (residents (owners/leunts) and community groups).	No / Low / Medium / High Effects	1.05	0.67	0.67	0.67	0.33
2.2.4 Commercial/Industrial	Potential and significance of encroachment, severance, displacement, property acquisition; long-term alteration/disruption; clange in area character/neathetics; nuisance impacts; change to travel accessivative d time; clauge to facilities/net/tillites/net/tes/cinterference with commercial community cohesion; change to highway operation impacts (e.g. customer parking, cargo looding/of-faoding); to commercial and industrial areas (business owners/lenants and customers).	No / Low / Medium / High Effects	1.05	0.67	0.67	0.67	0.67
2.2.5 Tourist Areas and Attractions (e.g. museums, theatres, etc.)	Potential and significance of: encroachment, severance, displacement, property acquisition; long-term alteration/disruption; change in area character/assilhetics; nationace impacts; change to travel access/travel time; change to facilitate/articles (loss of "critical mass" in number of signature business attractions (e.g. number of antique shops); to tourist areas and attractions.	No / Low / Medium / High Effects	1.05	0.67	0.67	0.67	0.67
2.2.6 Community Facilities/Institutions (e.g. hospitals, schools, places of worship, unique community feature	Potential and significance of: encroachment, severance, displacement, property acquisition; long-term alteration/disruption; change in aea character/acethric; nutsiones impacts; change to travel access/travel time; change to facilities/utilities/ervices; change to sea and safety of podestrian movements across the highway and within the highway right-of-way; change to the same operation impacts to current use (e.g., highway noise and vibration interfering with church services); to community facilities and institutions.	No / Low / Medium / High Effects	1.05	0.67	0.67	0.67	0.67
2.2.7 Municipal Infrastructure and Public Service Facilities (e.g. sewage and water services, police/emergency services, local utilities)	Potential and significance of: encrosebment, severance, displacement; long-term alteration/disruption; change to access/travel time; change to facilities/utilities/services; to municipal infrastructure and public service facilities.	No / Low / Medium / High Effects	0.35	1.00	1,00	1.00	1.00
2.2.8 Downtown Historic Crossroads Function	Potential and significance of interference by long-distance through- traffic on: "main street" function and structure; character/neathetics; charge to case and safety of pedestrian movements across the highway and within the highway right-of-way; charage to on-street parking; in historic downtown area.	No / Low / Medium / High Effects	1.75	0.67	0.67	0.67	0.67
		Weighted Score		4.92	4.92	4.92	4.56
Noise Sensitive Areas (NSAs) (residential	areas and sensitive institutional uses)		5.25				TO DE
2.3.1 Highway Noise	Potential for significant traffic noise increases in NSAs and for noise-sensitive receivers immediately adjacent to the highway	No / Low / Medium / High Effects	5.25	0.33	0.33	0.33	0.00
		Weighted Score		1.73	1.73	1.73	0.00

Highway 7/8 Transportation Corridor Planning and Class EA Study Land Use / Socio-Economic Environment

SUMMARY WEIGHTING TABLE - SEGMENT A: SHAKESPEARE AREA SOUTHERN BY-PASSES

-	Factor / Sub-factor / Criteria	Indicator	Net Effect	Weighting	1	Alter 2	native 3	4
4 Au	riculture			7.00	EMITE	750		
	2.4.1 Agriculture - Canada Land Inventory Class 1, 2, 3 Land	Potential and significance of encroschment, severance of Canada Land inventory Classes 1, 2 and 3 soils	No / Low / Medium / High Effects	0.70	0.00	0.00	0.33	0.33
	2.4.2 Agriculture - Farm Infrastructure	Potential and significance of: encroachment, severance, displacement, long-term alteration/disruption; nuisance impacis; to farm infrastructure (field tils drainage systems/outlets, irrigation systems, borns/silos/structures, etc.).	No / Low / Medium / High Effects	2.80	0.33	0.33	0.67	0.33
	2-4.3 Agriculture - Operations on Individual Farms	Potential and significance of: encroschment, severance, displacement; long-term alteration/disruption; nuisance impacts; to in-farm field operations (planting, harvesting, grazing, nutrient management, etc.) as applicable to the following specially crops/croplantial-disry/fivesteck-operations; field crop operations; high investment agricultural operations; established agricultural farm communities.	No / Low / Medium / High Effects	2.80	0.00	0.00	0.33	0.33
	2.4.4 Agriculture - Transportation Linkages between Integrated Agricultural Business Units	Potential to sever/disrupt transportation linkages between integrated agricultural business units (movement between integrated agricultural business units of equipment, materials, workers, etc.)	No / Low / Medium / High Hiffeets	0.70	0.33	0.33	0.33	0.33
_			Weighted Score		1.16	1,16	3.26	2.31
5 Lar	nd Use / Resources	a constitue sales the conti		3.50		Line ber	MILLIAM	il ite
	2.5.1 First Nations' Trenty Rights or Use of Land and Resources for Traditional Purposes (e.g. hunting, fishing, harvesting of country foods, harvesting of medicinal plants)	Potential and significance of; encroachment, severance, displacement; long-term alternation/disruption; missance impacts; change to access/mavel time: to Flat Nations' treaty rights or use of land and resources for traditional purposes.	No / Low / Medium / High liffects	0.35	0.33	0.33	0.33	0.33
1	2.5.2 Parks and Recreational Areas (e.g., national/provincial parks, conservation areas, nunicipal parks, public spaces, golf courses, trails, greenways and open space linkages)	Potential and significance of: encroachment, severance, displacement, property acquisition; long-term alteration/disruption; change in area character? sestletics; nuisance impacts; change to necessitaved time; change to facilities/urithites/services; to parks and recreational areas.	No / Low / Medium / High Effects	2.45	0.67	0.67	0.67	0.67
	2.5.3 Aggregates, Mineral-Resources	Potential and significance of: encroachment, severance, displacement, property acquisition; long-term alteration/disruption; change to access/travel time; change to facilities/utilities/services; to current/future extraction of aggregate and mineral resources.	No / Low / Medium / High Effects	0.70	1.00	1.00	1.00	1.00
OUTS STATE OF	But a large and the same and th		Weighted Score		2.46	2.46	2.46	2.46
Ma	jor Utility Transmission Corridors (e.g. 1	ailroads, hydro, gas, oil)		0.70				
		Potential and significance of: encroachment, severance, displacement, property acquisition; torq-eem alteration/disruption; change to access/ravel time; change to facilities/utilities/services; to major utility transmission corridors.	No / Low / Medium / High Effects	0.70	0.67	0.67	0.67	0.67
			Weighted Score		0.47	0.47	0.47	0.47
	ntaminated Property and Waste Manage contaminated sites, and high-risk contamin	ment (e.g. landfills, hazardous waste sites, "brownation areas)	nfield" areas, other	0.70				
		Potential and significance of: encroachment, severance, displacement, property acquisition; long-term alteration/disruption; change to access/ravel time; change to facilities/utilities/services; to contaminated property and waste management.	No / Low / Medium / High Effects	0.70	0.33	0.33	0.33	0.33
					0.23	0.23	0.23	0.23
Ш			Weighted Score		0.23			V.E0
	ndscape Composition		Weighted Score	2.10	0.23			
Lan		Potential and significance of change to scenic composition (total neathetic value of landscape components).	Weighted Score No / Low / Medium / High Effects	2.10	0.23			
Lan	ndscape Composition		No / Low / Medium / High	2.10	0.33	0.33	0.33	0.00
Lan	ndscape Composition 2.8.1 Scenic Composition (total aesthetic value of landscape components)	nesthetic value of landscape components). Potential and significance of change to vistas/outlooks for sensitive	No / Low / Medium / High Effects No / Low / Medium / High Effects No / Low / Medium / High Effects	Coans)	0.33	0.33	C20.50	0.00
2 1 2 2 2 t	andscape Composition 2.8.1 Scenic Composition (total aesthetic value of landscape components) 2.8.2 Sensitive Viewer Groups 2.8.3 Scenic Value of Views/Vistas from the transportation facility	nesthetic value of landscape components). Potential and significance of change to vistas/outlooks for sensitive viewer groups. Potential and significance of views/vistas from the transportation	No / Low / Medium / High Effects No / Low / Medium / High Effects	2,10	(A) 5 (A)		0.33	
2 2 2 t	ndscape Composition 2.8.1 Scenic Composition (total aesthetic value of andscape components) 2.8.2 Sensitive Viewer Groups 2.8.3 Scenic Value of Views/Vistas from the	nesthetic value of landscape components). Potential and significance of change to vistas/outlooks for sensitive viewer groups. Potential and significance of views/vistas from the transportation	No / Low / Medium / High Effects No / Low / Medium / High Effects No / Low / Medium / High Effects	Coans)	0.33	0.33	C20.50	0.00
2 2 1 1 2 2 2 1 t t	andscape Composition 2.8.1 Scenic Composition (total aesthetic value of landscape components) 2.8.2 Sensitive Viewer Groups 2.8.3 Scenic Value of Views/Vistas from the transportation facility	nesthetic value of landscape components). Potential and significance of change to vistas/outlooks for sensitive viewer groups. Potential and significance of views/vistas from the transportation	No / Low / Medium / High Effects No / Low / Medium / High Effects No / Low / Medium / High Effects	2,10	0.33	0.33	C20.50	0.00
2 2 2 1 2 1	2.8.1 Scenic Composition 2.8.1 Scenic Composition (total aesthetic value of andscape components) 2.8.2 Sensitive Viewer Groups 2.8.3 Scenic Value of Views/Vistas from the transportation facility Quality 2.9.2 Sensitive receptors to air pollutants and	nesthetic value of landscape components). Potential and significance of change to vistas/outlooks for sensitive viewer groups. Potential and significance of views/vistas from the transportation facility. Presence and potential for impacts to sensitive receptors to air pollutants and greenhouse gas emissions, including consideration of number of sensitive receptors immediately adjects to the	No / Low / Medium / High Effects No / Low / Medium / High Effects No / Low / Medium / High Effects Weighted Score	2.10	0.33	0.33	0.59	0.00

ALTERNATIVE DESCRIPTIONS 1: A1: 1-3-7-10-12 2: A2: 1-2-3-7-10-12 3: A3: 1-2-4-7-10-12 4: A4: 1-2-4-6-10-12

Highway 7/8 Transportation Corridor Planning and Class EA Study Cultural Environment

SUMMARY WEIGHTING TABLE - SEGMENT A: SHAKESPEARE AREA SOUTHERN BY-PASSES

	Factor / Sub-factor / Criteria	Indicator	Net Effect	Weighting			native	
	Tacim / Sub-factor / Circula	Indicator		reigning	1	2	3	4
.0	CULTURAL ENVIRONMENT			20.00	Men's			
1	Cultural Heritage - Built Heritage and C	ultural Landscapes		16.00		Hall	Ties/Lis	++-
	5.1.1 Buildings or "Standing" Sites of Architectural or Heritage Significance or Ontario Heritage Foundation Easement Properties		No / Low / Medium / High Effects	8.00	0.67	0.00	0.33	0.33
	3.1.2 Heritage Bridges	Potential for destruction or significant alteration of heritage bridges.	No / Low / Medium / High Effects					
	3.1.3 Areas of Historic 19th Century Settlement	Potential and significance of eneroachment, severance, displacement, long-term alteration / disruption, change in area character / aesthetics, nuisance impacts, change to access / travel, change to facilities / utilities/service to areas of historic 19th century settlement.	No/Low/Medium/High Effects	3,00	0.67	0.67	0.67	0.67
	3.1.4 Cultural Heritage Landscapes (collection of individual manmade features modifying pristine landscape)	Potential and significance of change to composition of cultural landscapes,	No / Low / Medium / High Effects	2.00	0.33	0.33	0.33	0.33
	3.1.5 First Nations' Burial Sites	Potential and significance of encroachment, severance, displacement, long-term alteration / disruption, change in area character / aesthetics, nuisance impacts, change to access / travel, to First Nations' burial sites.	No / Low / Medium / High Effects	0.00	1.00	1.00	1.00	1.00
	3.1.6 Cemeteries	Potential and significance of encroachment, severance, displacement, long-term alteration / disruption, change in area character / aesthetics, nuisance impacts, change to access / travel, change to facilities / utilities/ service to cemeteries.	No / Low / Medium / High Effects	3.00	0.67	0.00	0.67	0.67
L			Weighted Score		10.04	2.67	7.32	7.32
	Cultural Heritage - Archaeology			4.00	BALE	9-1	20177	
	3.2.1 Pre-Historic and Historic First Nations Sites	Potential for destruction or disturbance of prehistoric and historic First Nations archaeological sites of extreme local, provincial or national interest	No / Low / Medium / High liffects		0.07			
	3.2.2 Historic EuorCanadian Archaeological Sites	Potential for destruction or disturbance of historic EuroCanadian archaeological sites of extreme local, provincial or national interest	No / Low / Medium / High Effects	4.00	0.67	0.33	0.33	0.33
1			Weighted Score		2.68	1.32	1.32	1.32
			Factored Score	20.00	12.72	3.99	8.64	8.64

ALTERNATIVE DESCRIPTIONS 1; A1; 1-3-7-10-12 2; A2; 1-2-3-7-10-12 3; A3; 1-2-4-7-10-12 4; A4; 1-2-4-6-10-12

Highway 7/8 Transportation Corridor Planning and Class EA Study

SUMMARY WEIGHTING TABLE - SEGMENT A: SHAKESPEARE AREA SOUTHERN BY-PASSES

Factor / Sub-factor / Criteria	Indicator	Net Effect	Weighting			native	
5.0 TRANSPORTATION			25.00	DESIGNATION OF	2	3	4
.1 Area Transportation System Capacity a	nd Efficiency		3.75				
.i Area Transportation System Capacity a	Potential to support the efficient movement of people between		25/7				
5.1.2 Efficient movement of people	communities and regions based on Level of Service (LOS) and volume to capacity (v/e) on a network, screenline and critical link basis	No / Low / Medium / High Effects	1.88	1.00	1.00	1.00	1.00
5.1.3 Efficient movement of goods	Potential to support the efficient movement of goods between communities and regions based on Level of Service (LOS) and volume to capacity (v/e) on a network, screenline and critical link basis	No / Low / Medium / High Effects	1.88	1.00	1.00	1.00	1.00
17 36- 15		Weighted Score		3.75	3.75	3.75	3.75
2 Area Transportation System Reliability	/ Redundancy		3.75		I FIRM		
	Potential to support system reliability and redundancy for travel (people and goods) between regions and communities during adverse conditions.	No / Low / Medium / High Effects	3.75	1.00	1.00	1.00	1.00
		Weighted Score	3,131	3,75	3.75	3.75	3.75
3 Safety			6.25	- 1		II II 80	
5.3.1 Traffic 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	No / Low / Medium / High Effects	2.50	1.00	1.00	1.00	1.00
5.3.2 Emergency Access	Potential to support emergency access to/from existing and/or new provincial facilities	No / Low / Medium / High Effects	1.25	1.00	1.00	1.00	1.00
5.3.3 Pedestrian, Cyclist and Snowmobile Safety within the highway right-of-way	Potential and significance of change to ease and safety of movement across the highway and within the right-of-way.	No / Low / Medium / High Effects	2.50	1.00	1.00	1,00	1.00
		Weighted Score		6.25	6.25	6.25	6.25
4 Mobility and Accessibility			2.50		ETT.		
S.4.1 Modal integration, balance and efficiency	Potential to improve modal choice and increase mode split for person trips between communities, regions and major transit stations areas hased on connection to concentrations of population, travel performance indicators (LOS, vic., travel speed) at critical according and on potential to provide higher color transit service.	No / Low / Medium / High Effects	0.25	0.67	0.67	0.67	0.67
5.4.2 Linkages to Population and Employment Centres	Potential to improve linkages to population and employment centres for people and goods movement.	No / Low / Medium / High Effects	0.75	0.67	0.67	0.67	0.67
5.4.3 Recreation and Tourism Travel	Potential to support recreation and tourism travel within and to/from the Analysis Area by provision of higher order network (troads and transit) continuity and connectivity and through network performance indicators (LOS, v/s, travel speed)	No / Low / Medium / High Effects	0.75	0.67	0.67	0.67	0.67
S.4.4 Accommodate mobility of pedestrians, cyclists and snowmobiles	Potential to accommodate mobility of pedestrians, cyclists within critical travel corridors in urbanized areas and snowmobiles in recognized rural trails.	No / Low / Medium / High Effects	0.75	1.00	1.00	1.00	1.00
		Weighted Score		1.92	1.92	1.92	1.92
5 Network Compatibility			1.25				
5.5.1 Network Connectivity	Potential to improve transportation system connectivity within and tofrom the analysis area.	No / Low / Medium / High Effects	1.00	1.00	1.00	1.00	1.00
5.5.2 Flexibility for Future Expansion	Potential to address future transportation needs beyond the forecasted planning horizons.	No / Low / Medium / High Effects	0.25	1.00	1.00	1.00	0.67
	A Million and the second	Weighted Score		1.25	1.25	1.25	1,17
6 Engineering			2.50				
5.6.1 Constructability	Potential case of implementation considering feasibility/difficulty of physical, property or environmental constraints.	No / Low / Medium / High Effects	2.00	0.33	0.33	0.33	0.33
5.6.2 Compliance with Design Criteria	Conformity to applicable provincial safety and design standards.	No / Low / Medium / High Effects	0.50	1.00	1.00	1.00	1.00
		Weighted Score		1.16	1.16	1.16	1,16
7 Traffic Operations			3.75		ALTH-U	-	4 ,
	Potential for negative impact on traffic operations due to factors such as design features, private access, and transportation network connections.	No / Low / Medium / High Effects	3.75	0.67	0.67	0.67	0.67
		Weighted Score		2.51	2.51	2.51	2.51
8 Construction Cost (excludes property co	sts and engineering costs)		1.25	FINE I			III V
	Relative road construction cost, excluding property and engineering costs.	No / Low / Medium / High Effects	1.25	0.00	0.00	0.33	0.33
		Weighted Score	335-3399	0.00	0.00	1.24	1.24
		Factored Score	25.00	20.60	20.60	21.83	21.75

ALTERNATIVE DESCRIPTIONS 1: A1: 1-3-7-10-12 2: A2: 1-2-3-7-10-12 3: A3: 1-2-4-7-10-12 4: A4: 1-2-4-6-10-12

SUMMARY WEIGHTING TABLE - SEGMENT A: SHAKESPEARE AREA SOUTHERN BY-PASSES SUMMARY OF SENSITIVITY ANALYSIS - RANKING OF ALTERNATIVES

Evaluation Team Initial Meights 2 4 1 Sexionation Team High 50% 3 4 1 1 Natural Environment Land Use / Socio-Economic Environment Land Use / Socio-Economic Environment High 85% 2 4 1 1 2 1 2 1 2 1 2 1 2 4 1 1 4 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2<	FACTORS	RATING	WEIGHT	Alternative 1	Alternative 2	Alternative 3	Alternative 4
High 50% 3 4 4 Low 10% 2 4 4 High 85% 2 3 Low 10% 1 4 4 High 50% 1 4 Low 10% 1 4 Low 10% 2 4 Low 10% 2 4 Low 10% 3 4 Low 10% 3 4 Low 10% 1 4 Ab) SARA Weights 2 4 Ab SARA Weights 3 5 Ab SARA Weights 4 5 Ab SARA Weights 5 5 Ab	Evaluation Team		Veights	2	4	1	3
High 50% 3 4 4 6 6 6 6 6 7 4 6 6 6 7 70% 2 4 7 70% 2 3 7 70 8 7 8 7 8 7 8 7 8 7 8 7 8 8 7 8 9 8 9 8			SE	NSITIVITY ANALYSIS			
nomic Environment High 85% 2 4 4 High 10% 1 4 4 Low 10% 2 4 4 Low 10% 2 4 4 High 70% 3 4 4 Low 10% 1 4 4 Low 10% 1 4 4 AA) SARA Weights 2 4 4 ABA) SARA Weights 2 4 4	Natural Environment	High	20%	3	4	-	2
High 85% 2 3 Fermion Low 10% 1 4 6 High 50% 1 4 7 Low 10% 2 4 7 Low 10% 3 4 7 Low 10% 1 4 7 AA) SAAMeights 2 4 4 7 ABA) SAPAMeights 2 4 4 7	ואנטומו בואווסוווופוו	Low	10%	2	4	+	3
Low 10% 1 4 High 50% 1 4 Low 10% 2 4 High 70% 3 4 Low 10% 1 4 Low 10% 1 4 AA) SARAWeights 2 4 Aoverall Ranking 2 4	I and I lea / Socio-Economic Environment	High	85%	2	3	1	4
High 50% 1 4 4 Low 10% 2 4 6 High 70% 3 4 7 Low 10% 1 4 7 AA) SAA Weights 2 4 4 Aboverall Ranking 2 4 4 4	Laid Ose / Socio-Logioniic Livii diinigii	Low	10%	1	4	2	3
Low 10% 2 4 7 High 70% 3 4 1 Low 10% 1 4 4 AA) SARA Weights 2 4 4 Aoverall Ranking 2 4 4 4	Outrino Environment	High	20%	-	4	2	8
High 70% 3 4 7 Low 10% 1 4 1 SARA Weights 2 4 4 Overall Ranking 2 4 4		Low	10%	2	4	+	3
Low 10% 1 4 SARA Weights 2 4 Overall Ranking 2 4	Transmortation	High	%02	3	4	1	2
SARA Weights Overall Ranking	Tanaponanon	Low	10%	1	4	2	3
	Stakeholder Input (SARA)	SARA	Weights	2	4	1	ဇ
		Ove	rall Ranking	2	4	1	3

ALTERNATIVE DESCRIPTIONS 1: A1: 1-3-7-10-12 2: A2: 1-2-3-7-10-12 3: A3: 1-2-4-7-10-12 4: A4: 1-2-4-6-10-12

SEGMENT A - SHAKESPEARE AREA SOUTHERN BY-PASSES

Natural SPS,

90

181

10.00 1.00 1.00 10.00

838 838

34.33 34.33

1.13

39.50 39.50 29.90 29.90 29.90 20.70

19 19

616 018

1.00

3.00 2.87

FACTORS	Weighting			Alternative		Weighting	
1.0 NATURAL ENVIRONMENT	20.00				-	20.00	-
1.1 Pitheries and Aquatic Econystems	X 00					20,00	
Weighted Score		223	92.9	838	5.36		13.40
1.2 Terrestrial Ecosystems	5.00					12.50	
Weighted Score		1.99	1.50	325	3.35		4.98
	200					12.80	
To Conduct Marie		3.68	2.00	368	3.08	-	9.20
Window Com		2	3,	1	-	200	
Factored Cone	20.00	19 37	12 37	13 73	49.70	00 00	0000
***************************************			100	2	2	20.00	20.30
20 LAND INE / SOCIO-ECONOMIC ENVIRONMENT	35.00					90.00	
2.1 Land De Planning Policies Goals Oblivetives	3.60					22.00	
Weighted Score		2.17	2.17	2.35	2.36		3.
13 Land Use / Community	7.00					07	
Weighted Some		4.82	4.92	25.7	4.56		3.08
La Norte Septime Arms	23			1		130	
24 Agriculture	2.00	-	277	277	000	100	801
Weighted Some		136	1.16	3.76	231		0.73
1.5 Land Use / Resources	3.50					220	
Weighted Some		2.46	2.46	242	2.45		151
Weithod Sowe	0.70	290	0.67	270	200	170	2000
2.7 Outsminsted Property and Waste Management	0.70					110	830
Weighted Sowe		0.23	0.23	0.23	023		510
2.8 Landerape Composition	2.00					1.00	
Weighted Some		60.0	0.60	0.60	000		0.44
29 Ar Quality	\$28					330	
Constitution of the consti	35 000	2007	200	200	350		221
ractorea Score	35.00	11.34	17.34	19.03	15.89	22.00	10.90
10 CULTURAL ENVIRONMENT	20.00		100			00 61	
3.1 Onlural Berliase - Built Horitase and Cultural Londonnes	16.00					15.30	
Weighted Score		10:01	2.57	720	7.00	A COUNTY OF THE PARTY OF THE PA	628
3.2 Archaeology	400					2.50	
Weighted Score		2.68	1.20	1.32	1.00		1.00
Factored Score	20.00	12.72	3.99	8.64	8.64	12.50	7.95
So TRANSPORTATION	35.00						
The Tenton Colonia Control	Mrcz					15.50	
Worked Court	370	36.9	* 35		-	233	
5.2 Area Transportation System Reliability (Relandancy	3.75			-		233	100
Weighted Some		375	3.75	375	3.75		233
Weight Comm	6.23	36.0	-	-	-	3.88	
5.4 Mobility and Accessibility	2.50	200	679	00	0.0	33.10	3.88
Wrighted Score		1.82	1.92	1.92	1.92		1.89.1
5.5 Network Compacibility Ministral Com-	23	***	1 40			0.78	
S. Engineering	2.50	129	123	2	117	39.10	0.78
Weighted Score		1.15	1.16	1.16	1.16		0.72
C Truthe Operations	3.75					233	
Wortholds Out	1.06	251	12.51	2.51	251	-	1.56
Weighted Score		000	000	177	123	0.78	000
Factored Score	25.00	29.60	20.60	21.83	21.75	15.50	17.71
	100.00					D. Marian	-
O to the time				-		1	
Total Alternative Score		63.03	54.20	63 03	400		

1.52

420 420 420

28.00

233 233

348 388

215 215 215 7.00 7.00

58.88

100.00 63.14 53.31 63.19

65.60 63.20

28.00

39.50 19.57 19.57 22.15 17.94

12.34 9.99 12.34 9.99

5.40 5.40

078 078 078

SEGMENT A - SHAKESPEARE Alland Use / Soco-Economic Sets.

Callus 975

Land Use / Socio-Economic 10%

FACTORS	Weighting	-	Attenuative		Ţ.	Weighting		Attention			Weighting		Alternative	ative	
1.0 NATURAL ENVIRONMENT	5.00				0.03	28.00					12.50		2	-	-
I.I. Pitheries and Aquatic Ecognisms	200				11	11.29			ı						
12 Terretrial Economics	126	1.74	134	*	5	200	7.80	250	750	750		138	335	335	38
Wrighted Score		050	050	160	- 10		279	270	* 60	4 00	TO STATE OF THE ST	1.24	1.24	2.08	3.08
1.3 Crocadvater	134					7,00					3,13			****	200
14 Serface Water	0,0	200	260	260	280	-	\$18	5.15	5.15	5.15		230	230	230	230
Wrighted Some		950	0.34	1034	***		1.88	1.80	1.88	1.06	9	WO	200	400	700
Factored Score	2.00	3.09	3.09	3.43	3.43	28.00	17.32	17.32	2	19.22	12.50	7.73	7.73	8.58	8.58
					1										
2.0 LAND USE/SOCIO-ECONOMIC ENVIRONMENT	85.00				243	10.00				0	0.25 22.00				
Weighted Source	Š	663	.635	2.30	16.0	100	-	-			2.20			N.	
22 Land Day Community	17.00			200		2.00	200	250	780	0.87	100	8	R	101	1,47
Wrighted Score		11.55	11.95	11.95	11.08		193	2.41	191	130		3.00	100	3.08	200
23 Nobe Smillits Arms	12.75					1.50		0			330				
2.4 Agriculture	17.00	123	421	421	000	3.00	080	0.50	0.50	000		100	1.09	100	000
Weighted Score		2.81	2.81	7.92	561		0.33	033	0.03	0.00		679	0.73	208	1.46
2.5 Land Use / Resources	8.50					100					220				
Weighted Scott	10.	597	597	5.97	6.87		0.70	200	0.70	0.70		ž	25.	151	25.
Wrighed Some		134	134	1.54	1.14	0.20	0.10	200	200	200	0.44				
2.7 Contaminated Property and Waste Management	1.76					070		-		2	17.0	0.20	0.20	0.20	0.29
Weighted Some	2	99.0	250	95.0	250		0.00	200	200	250		910	910	510	0.15
Working Score	200	1.68	. 200	1.00	0000	090	200	-	-		1.32				15
19 Air Quality	12.75				-	1.50	200	0.00		000	3.30	0.64	0.64	0.44	000
Wrighted Score		+	Н	Н	350		101	101		101		221	221	221	221
Factored Scare	85.00	42.12 4	42.12	47.67	38.60	10.00	4.96	4.96	5.61	4.54	22.00	10.90	10.90	12.34	66'6
The City of the Lange Contract of the City	90.0		1	1	1				1	1					
SA COLICIAL ENVIRONMENT	2:00				0.25	28.00		STEEL STEEL		,	140 50.00				
Committee the control of the control	400	2.61	0.67	1.80	1 01	22.40	20.00	-	-		49.00				
3.2 Artheology	100				100	2,60	14.00	274	10.25	10.25	10.00	25.10	100	18.30	18.30
Merghad Sone		H	0.33	H	023		375	1.85	186	1.85		670	3.30	330	330
Factored Score	2.00	3.18	00.1	2.16	2.16	28.00	17.81	5.59	12.10 1	12.10	50.00	31.80	86.6	21.60	21.60
to a manufacture amount	-		1		1					7					
5.0 LRAINSPORTATION 5.1 Arm Transportation System Canadra and Pfficience	5.00				0.2	34.00				2	15.50		1000		
Weighted Score		820	675	675	278	2,10	5.10	01.5	5.10	5.10	239	2.23	2.28	2.0	0.50
S.2. Area Transportation System Reliability / Relandoncy	0.75	ŀ				2.10					239				-
53 Safety	173	67.0	0.75	0.75	978	0.3	510	5.10	210	2.10	2 600	233	233	2.33	233
Weighted Sowe		123	125	125	128		8.50	0.50	8.50	8.50		3.68	3.88	3.88	3.66
Working See Accessing	67	20.0	9.00	0.00	9.00	7.40	-		1		951				
55 Network Compatibility	0.25		-	2000	100	1.70	7.01	281	192	261	0.78	138	119	1.15	41.00
Keighted Some	.00 00	500	0.25	0.25	023	100	RI	273	1.70	18		82.0	820	0.78	0.72
Weighted Sowe		0.23	623	0.23	620	7.00	1.58	151	1.58	1.58	1.55	0.77	0.72	0.72	0.72
S.7 Traffic Operations	0.75					5.10					2.33				
S.R. Chastraction Cost.	0.25	8	200	950	0.50	1.78	142	342	34	342	200	28	138	138	136
Weighted Some		-	000	0.25	0.25		000	H		1.68		000	000	27.0	22.0
Factored Score	5.00	4.12	4.12	437	435	34.00	28.01	28.01	29.69 2	29.58	15.50	12.77	12.77	13.54	13.49
			+	+						1					
Total Alternative Score	100.00	52.51	50.33	57.63 4	48.54	100.00	60.89	55.87	66.62 6	65.44	100.00	63.20	41.38	56.06	53.66
					1						-	-		The second second	-

0.63

Total Alternative Score	100.0
EBNATIVE DESCRIPTIONS	

Highway 7/8 Transportation Contdon Planning and Class EA Study

SEGMENT A - SHAKESPEARE Alloural 10%

FACTORS	Weighting		Verentalina			Weighting	1	Attemative		
10 NATTIBAL ENVIRONMENT	13.50	-	2	^			-	*	2	•
1.3 Edition and Associate Economics	000					1.25 8.00				
Writing Son		6.03	803	803	400	37.00	7.0		71.0	
1.2 Terretria Eosystems	5.69					200	L		****	* 12
Weighted Son	G.	224	224	377	577		000	0.80	134	134
13 Grondwater	5.63	40				2.00	Ц			
Weighted Son	-	414	4.14	414	414		1.47	1.47	1.47	1,47
LA Settince Waler	273	-		-		0.00				
Consequent Consequence Consequ	00.00	40.00		10.	131				250	3.0
Factores Score	06.22	10.82	13.92	10.40	15.45	8.00	4.85	4.95	94.0	5,49
THE COCIO ECONOMIC BANKERIT	30.50	1				-				
EN LAND USE / SOCIO-ECONOMIC ENVIRONMENT	39.50					1.13 14.00	0			
2.1 Land Use Flanzing Policies, Goals, Objectives	3,95	200	20.00	-		T-40				
22 Land De / Community	740	24.5		2.03	5.00	7 a C	0.87	0.87	160	700
Weighted Score		555	55	25.55	5.15		+ 63	4.67	+87	101
2.3 Noise Sensitive Areas	5.03					2.10	L			
Weighted Som		1.96	N.	1 96	000		69'0	0.60	80'0	000
Weished Son		1.30	130	2 60		2.80	100	0.00	-	
25 Land Use / Resources	303			440	201	1 40		0.60	130	0.80
Wrighted Score		277	277	277	2.77		0.99	0.98	0.00	550
2.6 Major Utility Transmission Corridors	0.79					0.28	Ц			
Weighted Some		550	0.53	0.53	0.53		0.19	0.19	0.18	0.19
4.7 Contaminated Property and Waste Management	0.79					0.28				
18 Landware Commedition	200	0.38	0.26	970	028		000	90'0	800	900
Worked Sons		0.78	0.78	0.78	0.00	100		200		10.00
29 Air Quality	593				200	2.10	0.00	820	0.28	80
Weighed Sons		387	297	397	397		141	1841	141	141
Factored Score	39.50	19,57	19.57	22.15	17.94	14.00	6.94	6.94	7.85	6.36
3.0 CULTURAL ENVIRONMENT	10.00					0.50 8.00				
34. Cultural Heritage - Built Heritage and Cultural Landscapes	K.00					6.40				-
3.2 Archaedore	100	2000	ň	368	3.66	000	4.02	101	293	283
Weighted Score		25.	990	0.68	0.00	0077	200 *	9.84	****	200
Factored Score	10.00	6.36	2.00	4.32	4.32	8.00	_	1.60	3.46	3.4K
							╀			
5.0 TRANSPORTATION	28.00					1.00				
5.1 Ares Trempertation System Capacity and Efficiency	4.30					10.50			-	
Weighted Sown		420	420	4.20	+20		10.50	30.50	95.03	10.50
Ca. Acta Iramportation system Kennings / Kenningang	6	-	-	-	-	10.50				
53 Safriy	2000					17.50	ļ	10.30	10.00	20.00
Weighted Sox	-	2007	7.00	7.00	7.00		17.50	17.50	17.50	17.50
S.4. Mobility and Accountility	2.80					7.00	Ш			
55 Network Compatibility	1.40	2.05	2.15	215	212	50	238	230	2.00	17 S 28
Wrighted Sons		1.40	1.45	140	131		3.60	360	150	4.63
5.6 Engineering	2.80					7,00				-
Weighted Sons		1.30	1.30	1.30	130		325	328	325	325
Postbol Son	4.50	2.85	2.81	2.81	2.01	05'00	7.00	101	144	2.64
5.8 Construction Cost	1.40					1.60		***	*07	101
Witighted Scool		00.0	00:0	1.38	1.30		000	000	3.0	247
Factored Score	28.00	23.07	23.07	24.45	24.36	70.00	1975		61.13	96'09
Total Altomatica Come	100.00	60 67	20 02	1637	2000	00 001			-	
		1	1	-						

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6.19 6.19 1.84 1.84

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24.00

27 27

149 140

6.00

1.60				
-	100	0.63	0.53	0.53
8.00	5.09	1.60	3.46	3.46
20.00			1	
10.50				
	10.50	10.50	05 04	10.50
10.50				
	10.50	10.50	10.50	10.50
17.50				
	17.50	17.50	17.50	17.50
7.00				
	5.35	5.30	5.34	E 230
3.50				
	3.50	3.50	3.50	3.27
7,00				
	322	\$25	325	3.25
10.50				
	7.04	70%	7.04	7.04
3.50				
	000	000	3.0	242
70.00	27.67	57.67	61.13	96'09
100 00	24.64	31 15	77.03	16 35
DO.DO	14.00	Cr.I.	11.33	10.41

70.39 68.09

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² A2 1237:012 3 A2 1247:012 4 M 1245:012



Note – Evaluation of the route alternatives is based on a qualitative assessment of each route (high, medium or low). Relevant and site-specific information for each criterion/cell is provided to justify the high, medium or low assessment.

			SEGMENT B – SHAKESPEARE	AREA NORTHERN BYPASSES		
Factor				Route A	Iternative	
/ Sub Factor	Criteria	Indicator for Route Selection	B1 1-2-4-5-11-13-15	B2 1-2-4-5-9-11-13-15	B3 1-2-4-6-8-9-11-13-15	B4 1-2-4-6-8-11-13-15
1. NATUI	RAL ENVIRONMENTA	AL FACTORS				
1.1 Fish	eries and Aquatic Ec	osystems				
	1.1.1 Fish Habitat	Potential and significance of:	Low potential to affect fish and fish habitat • 2 permanent warmwater and 1 permanent coolwater crossings of Horner Creek containing low to moderate quality habitat supporting warmwater fish species • Fish communities and habitats	Low potential to affect fish and fish habitat • 2 permanent warmwater and 1 permanent coolwater crossings of Horner Creek containing low to moderate quality habitat supporting warmwater fish species • Fish communities and habitats	Low potential to affect fish and fish habitat • 2 permanent warmwater and 1 permanent coolwater crossings of Horner Creek containing low to moderate quality habitat supporting warmwater fish species • Fish communities and habitats	Low potential to affect fish and fish habitat • 2 permanent warmwater and 1 permanent coolwater crossings of Horner Creek containing low to moderate quality habitat supporting warmwater fish species • Fish communities and habitats
	1.1.2 Fish Community	Potential and significance of: encroachment, severance, displacement; long term alteration / disruption as applicable to the following: fish species at risk (vulnerable, threatened or endangered fish species) fish movement/migration critical fish life stage processes (spawning, rearing, nursery, feeding) long term fish community management goals	present are considered to be moderately resilient to disturbance and show evidence of historical channel alignments or modifications • Fish movements are likely localized between feeding and spawning areas which are abundant within the reaches outside of the study area. There are no critical habitat types within reaches associated with the route. • There are no SAR within the route • Expected impacts include temporary disturbance to fish and fish habitat associated with construction, potential for short term impacts to water quality during construction. Impacts can be mitigated and/or compensated.	present are considered to be moderately resilient to disturbance and show evidence of historical channel alignments or modifications • Fish movements are likely localized between feeding and spawning areas which are abundant within the reaches outside of the study area. There are no critical habitat types within reaches associated with the route. • There are no SAR within the route • Expected impacts include temporary disturbance to fish and fish habitat associated with construction, potential for short term impacts to water quality during construction. Impacts can be mitigated and/or compensated.	present are considered to be moderately resilient to disturbance and show evidence of historical channel alignments or modifications • Fish movements are likely localized between feeding and spawning areas which are abundant within the reaches outside of the study area. There are no critical habitat types within reaches associated with the route. • There are no SAR within the route • Expected impacts include temporary disturbance to fish and fish habitat associated with construction, potential for short term impacts to water quality during construction. Impacts can be mitigated and/or compensated.	present are considered to be moderately resilient to disturbance and show evidence of historical channel alignments or modifications • Fish movements are likely localized between feeding and spawning areas which are abundant within the reaches outside of the study area. There are no critical habitat types within reaches associated with the route. • There are no SAR within the route • Expected impacts include temporary disturbance to fish and fish habitat associated with construction, potential for short term impacts to water quality during construction. Impacts can be mitigated and/or compensated.
1.2 Terre	estrial Ecosystems					
	1.2.1 Wildlife	Potential and significance of:	Medium potential to affect wildlife and their habitat 1 threatened amphibian species was reported within or adjacent to the route No provincially rare species (S1 – S3) 1 area sensitive bird species recorded within route Route has the potential to encroach on wetland habitat supporting a threatened species	 Medium potential to affect wildlife and their habitat 1 threatened amphibian species was reported within or adjacent to the route species (S1 – S3) 1 area sensitive bird species recorded within route Route has the potential to encroach on wetland habitat supporting a threatened species 	Medium potential to affect wildlife and their habitat 1 threatened amphibian species was reported within or adjacent to the route No provincially rare species (S1 – S3) 1 area sensitive bird species recorded within route Route has the potential to encroach on wetland habitat supporting a threatened species	Medium potential to affect wildlife and their habitat 1 threatened amphibian species was reported within or adjacent to the route No provincially rare species (S1 – S3) 1 area sensitive bird species recorded within route Route has the potential to encroach on wetland habitat supporting a threatened species

LEGEND

MOST PREFERRED MODERATELY PREFERRED LEAST PREFERRED NO DIFFERENCE SELECTED CORRIDOR

movement/migration

Note – Evaluation of the route alternatives is based on a qualitative assessment of each route (high, medium or low). Relevant and site-specific information for each criterion/cell is provided to justify the high, medium or low assessment.

SEGMENT B – SHAKESPEARE AREA NORTHERN BYPASSES

Factor				Route A	Iternative	
/ Sub Factor	Criteria	Indicator for Route Selection	B1 1-2-4-5-11-13-15	B2 1-2-4-5-9-11-13-15	B3 1-2-4-6-8-9-11-13-15	B4 1-2-4-6-8-11-13-15
		 important wildlife areas such as deeryards, heronries, waterfowl areas, important bird areas wildlife management, rehabilitation/research program sites interference with critical wildlife life stage processes (eg mating/rearing) etc 				
	1.2.2 Wetlands	Potential and significance of:	No PSW or LSW are present within the route 3 small unevaluated low quality wetlands such as meadow marsh are found within the route	Low potential to affect wetlands No PSW or LSW are present within the route 3 small unevaluated low quality wetlands such as meadow marsh are found within the route	Low potential to affect wetlands No PSW or LSW are present within the route 3 small unevaluated low quality wetlands such as meadow marsh are found within the route	Low potential to affect wetlands No PSW or LSW are present within the route 3 small unevaluated low quality wetlands such as meadow marsh are found within the route
	1.2.3 Forests	Potential and significance of:	Low potential to affect significant or established woodlands of forests The route will require a minimal removal of vegetation from 2 woodlands Impacts to woodlands limited to encroachment on forest edge	Low potential to affect significant or established woodlands of forests The route will require a minimal removal of vegetation from 2 woodlands Impacts to woodlands limited to encroachment on forest edge	Low potential to affect significant or established woodlands of forests The route will require a minimal removal of vegetation from 2 woodlands Impacts to woodlands limited to encroachment on forest edge	Low potential to affect significant or established woodlands of forests The route will require a minimal removal of vegetation from 3 woodlands uoodlands lmpacts to woodlands limited to encroachment on forest edge
	1.2.4 Vegetation	Potential and significance of: encroachment, severance, displacement long term alteration / disruption as applicable to the following: populations of vegetation species at risk (vulnerable, threatened or endangered species), species of conservation concern and significant regional/local flora/communities areas/corridors supporting known populations of vegetation species at risk (vulnerable, threatened or endangered species), species of conservation concern and significant flora/communities vegetation management, rehabilitation/research program sites	Low potential to affect vegetation Route is predominantly agricultural field and existing roadway Impacts to vegetation associated with encroachment into low quality wetland habitat	Low potential to affect vegetation Route is predominantly agricultural field and existing roadway Impacts to vegetation associated with encroachment into low quality wetland habitat	Low potential to affect vegetation Route is predominantly agricultural field and existing roadway Impacts to vegetation associated with encroachment into low quality wetland habitat	Low potential to affect vegetation Route is predominantly agricultural field and existing roadway Impacts to vegetation associated with encroachment into low quality wetland habitat

Note – Evaluation of the route alternatives is based on a qualitative assessment of each route (high, medium or low). Relevant and site-specific information for each criterion/cell is provided to justify the high, medium or low assessment.

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SEGIVIEN I D -	- SHAKESPEARE AF	KEA NUR I HERN	DIPAGGEG

Factor				Route Al	ternative	
/ Sub Factor	Criteria	Indicator for Route Selection	B1 1-2-4-5-11-13-15	B2 1-2-4-5-9-11-13-15	B3 1-2-4-6-8-9-11-13-15	B4 1-2-4-6-8-11-13-15
	1.2.5 Designated/ Special Areas	Potential and significance of: encroachment, severance, displacement; long term alteration / disruption; change in area character / aesthetics; nuisance impacts; change to access / travel time; change to facilities / utilities / services.	Low potential to affect designated/special areas • Does not cross any ESA or ANSI	Low potential to affect designated/special areas • Does not cross any ESA or ANSI	Low potential to affect designated/special areas • Does not cross any ESA or ANSI	Low potential to affect designated/special areas • Does not cross any ESA or ANSI
1.3 Grou	undwater	to designated/special areas.				
	1.3.1 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	 Low potential to adversely affect groundwater recharge and discharge areas. Surface runoff is interpreted to exceed infiltration for the majority of the route given the relatively impermeable nature of the glaciolacustrine and silty till deposits. However, in areas of sandy deposits, such as river crossings, higher infiltration can be expected. Route intersects the 25 year capture zone (recharge area) for Shakespeare's Municipal well. No temporary or long term change to groundwater recharge or discharge is anticipated due to the small surface area affected by the route. 	 Low potential to adversely affect groundwater recharge and discharge areas. Surface runoff is interpreted to exceed infiltration for the majority of the route given the relatively impermeable nature of the glaciolacustrine and silty till deposits. However, in areas of sandy deposits, such as river crossings, higher infiltration can be expected. Route intersects the 25 year capture zone (recharge area) for Shakespeare's Municipal well. No temporary or long term change to groundwater recharge or discharge is anticipated due to the small surface area affected by the route. 	 Low potential to adversely affect groundwater recharge and discharge areas. Surface runoff is interpreted to exceed infiltration for the majority of the route given the relatively impermeable nature of the glaciolacustrine and silty till deposits. However, in areas of sandy deposits, such as river crossings, higher infiltration can be expected. Route intersects the 25 year capture zone (recharge area) for Shakespeare's Municipal well. No temporary or long term change to groundwater recharge or discharge is anticipated due to the small surface area affected by the route. 	 Medium potential to adversely affect groundwater recharge and discharge areas. Surface runoff is interpreted to exceed infiltration for the majority of the route given the relatively impermeable nature of the glaciolacustrine and silty till deposits. However, in areas of sandy deposits, such as river crossings, higher infiltration can be expected. Route intersects the 10 year capture zone (recharge area) for Shakespeare's Municipal well. No temporary or long term change to groundwater recharge or discharge is anticipated due to the small surface area affected by the route.
	1.3.2 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	Medium potential to adversely affect groundwater quality within wellhead protection area The proposed route is located within the 25 year capture zone (recharge area) for the Shakespeare municipal well. Runoff control and road salt use should be mitigated within this area.	Medium potential to adversely affect groundwater quality within wellhead protection area The proposed route is located within the 25 year capture zone (recharge area) for the Shakespeare municipal well. Runoff control and road salt use should be mitigated within this area.	Medium potential to adversely affect groundwater quality within wellhead protection area The proposed route is located within the 25 year capture zone (recharge area) for the Shakespeare municipal well. Runoff control and road salt use should be mitigated within this area.	 High potential to adversely affect groundwater quality within wellhead protection area. The proposed route is located within the 10 year capture zone (recharge area) for the Shakespeare municipal well. Runoff control and road salt use should be mitigated within this area.
	1.3.3 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	Medium potential to adversely affect groundwater quality within wellhead protection area. Route is located within the 25 year capture zone (recharge area) for the	Medium potential to adversely affect groundwater quality within wellhead protection area. Route is located within the 25 year capture zone (recharge area) for the	Medium potential to adversely affect groundwater quality within wellhead protection area. Route is located within the 25 year capture zone (recharge area) for the	High potential to adversely affect groundwater quality within wellhead protection area. • Route is located within the 10 year capture zone (recharge area) for the

Note – Evaluation of the route alternatives is based on a qualitative assessment of each route (high, medium or low). Relevant and site-specific information for each criterion/cell is provided to justify the high, medium or low assessment.

SEGMENT B – SHAKESPEARE AREA NORTHERN BYPASSES

actor			Route Alternative				
/ Sub Factor	Criteria	Indicator for Route Selection	B1 1-2-4-5-11-13-15	B2 1-2-4-5-9-11-13-15	B3 1-2-4-6-8-9-11-13-15	B4 1-2-4-6-8-11-13-15	
			Shakespeare municipal well. Runoff control and road salt use should be mitigated within this area.	Shakespeare municipal well. Runoff control and road salt use should be mitigated within this area.	Shakespeare municipal well. Runoff control and road salt use should be mitigated within this area.	Shakespeare municipal well. Runoff control and road salt use should be mitigated within this area.	
	1.3.4 Private Wells	Potential and significance of alteration to private well use due to physical intrusion, or groundwater interception, draw down, impoundment, obstruction and by soil compaction	 Low potential to adversely affect private wells Route is in close proximity to 3 shallow dug wells completed within surficial sand deposits. These wells are located immediately to the west of Road 105 and immediately to the south along Road 106, along the existing Hwy 7/8 Route. These wells are sensitive to surface contamination (i.e. road salt). The potential exists for long term and short term adverse effects to these wells due to their close proximity to the route. Mitigation measures to prevent or eliminate adverse impacts to these wells due to highway construction should be implemented. All other private wells along the route obtain water supply from the deep confined bedrock aquifer 	 Low potential to adversely affect private wells Route is in close proximity to 3 shallow dug wells completed within surficial sand deposits. These wells are located immediately to the west of Road 105 and immediately to the south along Road 106, along the existing Hwy 7/8 Route. These wells are sensitive to surface contamination (i.e. road salt). The potential exists for long term and short term adverse effects to these wells due to their close proximity to the route. Mitigation measures to prevent or eliminate adverse impacts to these wells due to highway construction should be implemented. All other private wells along the route obtain water supply from the deep confined bedrock aquifer 	 Low potential to adversely affect private wells Route is in close proximity to 3 shallow dug wells completed within surficial sand deposits. These wells are located immediately to the west of Road 105 and immediately to the south along Road 106, along the existing Hwy 7/8 Route. These wells are sensitive to surface contamination (i.e. road salt). The potential exists for long term and short term adverse effects to these wells due to their close proximity to the route. Mitigation measures to prevent or eliminate adverse impacts to these wells due to highway construction should be implemented. All other private wells along the route obtain water supply from the deep confined bedrock aquifer 	 Low potential to adversely affect private wells Route is in close proximity to 3 shallow dug wells completed within surficial sand deposits. These wells are located immediately to the west of Road 105 and immediately to the south along Road 106, along the existing Hwy 7/8 Route. These wells are sensitive to surface contamination (i.e. road salt). The potential exists for long term and short term adverse effects to these wells due to their close proximity to the route. Mitigation measures to prevent or eliminate adverse impacts to these wells due to highway construction should be implemented. All other private wells along the route obtain water supply from the deep confined bedrock aquifer 	
	1.3.5 Groundwater Dependent Commercial Enterprises (e.g. water bottling operations)	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	No potential to adversely affect groundwater dependent commercial enterprises No groundwater dependent commercial enterprises have been identified along this route.	No potential to adversely affect groundwater dependent commercial enterprises No groundwater dependent commercial enterprises have been identified along this route.	No potential to adversely affect groundwater dependent commercial enterprises No groundwater dependent commercial enterprises have been identified along this route.	No potential to adversely affect groundwater dependent commercial enterprises No groundwater dependent commercial enterprises have been identified along this route.	
	1.3.6 Groundwater Sensitive Ecosystems (e.g. groundwater fed wetlands, coldwater streams)	Potential and significance of alteration to groundwater sensitive ecosystems due to physical intrusion, or groundwater interception, draw down, impoundment, obstruction and by soil compaction	 Low potential to adversely affect groundwater sensitive ecosystems Alteration to three (3) existing crossings of potentially groundwater fed streams. Possible encroachment on an unevaluated wetland (i.e. not identified as provincially or locally significant). Potential long term adverse effect to groundwater quality due to increased road salt use and road run off. 	 Low potential to adversely affect groundwater sensitive ecosystems Alteration to three (3) existing crossings of potentially groundwater fed streams. Potential long term adverse effect to groundwater quality due to increased road salt use and road run off. Potential temporary effects to groundwater quantity are possible if construction dewatering is required. 	 Low potential to adversely affect groundwater sensitive ecosystems Alteration to three (3) existing crossings of potentially groundwater fed streams. Potential long term adverse effect to groundwater quality due to increased road salt use and road run off. Potential temporary effects to groundwater quantity are possible if construction dewatering is required. 	 Low potential to adversely affect groundwater sensitive ecosystems Alteration to three (3) existing crossings of potentially groundwater fed streams. Potential long term adverse effect to groundwater quality due to increased road salt use and road run off. Potential temporary effects to groundwater quantity are possible if construction dewatering is required. 	

Note – Evaluation of the route alternatives is based on a qualitative assessment of each route (high, medium or low). Relevant and site-specific information for each criterion/cell is provided to justify the high, medium or low assessment.

			SEGMENT B – SHAKESPEARE	AREA NORTHERN BYPASSES				
Factor				Route Alternative				
/ Sub Factor	Criteria	Indicator for Route Selection	B1 1-2-4-5-11-13-15	B2 1-2-4-5-9-11-13-15	B3 1-2-4-6-8-9-11-13-15	B4 1-2-4-6-8-11-13-15		
			Potential temporary effects to groundwater quantity are possible if construction dewatering is required.					
1.4 Surfa	nce Water		l	I	I			
	1.4.1 Watershed / Sub Watershed Drainage Features/Patterns	Potential and significance of:	Medium potential to affect drainage features / patterns and surface water quality / quantity	Medium potential to affect drainage features / patterns and surface water quality / quantity	Medium potential to affect drainage features / patterns and surface water quality / quantity	Medium potential to affect drainage features / patterns and surface water quality / quantity		
	1.4.2 Surface Water Quality and Quantity	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						
2. LAND	USE / SOCIO ECONO	DMIC FACTORS						
2.1 Land	Use Planning Policie	s, Goals, Objectives						
	2.1.1 First Nations Land Claims	Potential and significance of encroachment, severance, displacement to areas for which there are First Nations outstanding land claims	 Low potential to displace areas where there are outstanding First Nations lands claims. 5 First Nations land claims have been filed in the study area 	 Low potential to displace areas where there are outstanding First Nations lands claims. 5 First Nations land claims have been filed in the study area 	 Low potential to displace areas where there are outstanding First Nations lands claims. 5 First Nations land claims have been filed in the study area 	 Low potential to displace areas where there are outstanding First Nations lands claims. 5 First Nations land claims have been filed in the study area 		
	2.1.2 Provincial/ Federal land use planning policies/ goals/objectives	Degree of compatibility with federal/provincial land use policies/goals/objectives NOTES: PPS Policy 1.6.6.4 stipulates that when planning for corridors for significant transportation facilities, consideration will be given to significant natural heritage, water, agricultural, mineral, cultural heritage and archaeological resources.	 Low compatibility with federal/provincial land use policies/goals Route is predominantly on new alignment which results in increased impacts relative to PPS Policies 1.6.6.4 and 2.3. There are no location-specific federal or provincial land use policies for this area 	 Low compatibility with federal/provincial land use policies/goals Route is predominantly on new alignment which results in increased impacts relative to PPS Policies 1.6.6.4 and 2.3. There are no location-specific federal or provincial land use policies for this area 	 Low compatibility with federal/provincial land use policies/goals Route is predominantly on new alignment which results in increased impacts relative to PPS Policies 1.6.6.4 and 2.3. There are no location-specific federal or provincial land use policies for this area 	Low compatibility with federal/ provincial land use policies/goals Route is predominantly on new alignment which results in increased impacts relative to PPS Policies 1.6.6.4 and 2.3. There are no location-specific federal or provincial land use policies for this area		

Note – Evaluation of the route alternatives is based on a qualitative assessment of each route (high, medium or low). Relevant and site-specific information for each criterion/cell is provided to justify the high, medium or low assessment.

SEGMENT B – SHAKESPEARE AREA NORTHERN BYPASSES

Factor				Route A	Iternative	
/ Sub Factor	Criteria	Indicator for Route Selection	B1 1-2-4-5-11-13-15	B2 1-2-4-5-9-11-13-15	B3 1-2-4-6-8-9-11-13-15	B4 1-2-4-6-8-11-13-15
		PPS Policy 2.3 requires prime agricultural areas be protected for long-term use. Prime agricultural areas include specialty crop areas and Classes 1, 2, and 3 soils in this order of priority.				
	2.1.3 Municipal (regional and local) land use planning policies/goals/ objectives (Official Plans)	Degree of compatibility with municipal Official Plans	Medium compatibility with municipal Official Plans. The route impacts agricultural designated lands in County of Perth O.P. Although the route does not directly service the Village of Shakespeare settlement area, it is consistent with County of Perth 6.5.1 e) to preserve the natural setting and rural character of village/hamlet areas.	Medium compatibility with municipal Official Plans. The route impacts agricultural designated lands in County of Perth O.P. Although the route does not directly service the Village of Shakespeare settlement area, it is consistent with County of Perth 6.5.1 e) to preserve the natural setting and rural character of village/hamlet areas.	Medium compatibility with municipal Official Plans. The route impacts agricultural designated lands in County of Perth O.P. Although the route does not directly service the Village of Shakespeare settlement area, it is consistent with County of Perth 6.5.1 e) to preserve the natural setting and rural character of village/hamlet areas.	Medium compatibility with municipal Official Plans. The route impacts agricultural designated lands in County of Perth O.P. Although the route does not directly service the Village of Shakespeare settlement area, it is consistent with County of Perth 6.5.1 e) to preserve the natural setting and rural character of village/hamlet areas.
	2.1.4 Development Objectives of Private Property Owners	Potential to isolate property from current/future urban envelope Impact on future land use	Low potential to impact future land use Route alternative does not limit the potential for future development which is contiguous with the existing Shakespeare community.	Low potential to impact future land use Route alternative does not limit the potential for future development which is contiguous with the existing Shakespeare community.	Medium potential to impact future land use Route alternative limits the potential for future development which is contiguous with the existing Shakespeare community	Medium potential to impact future land use Route alternative limits the potential for future development which is contiguous with the existing Shakespeare community
2.2 Land	Use / Community					
	2.2.1 First Nation Reserves	Potential and significance of:	No potential effects to First Nation reserves No Indian Reserves in the Analysis Area	No potential effects to First Nation reserves No Indian Reserves in the Analysis Area	No potential effects to First Nation reserves No Indian Reserves in the Analysis Area	No potential effects to First Nation reserves No Indian Reserves in the Analysis Area
	2.2.2 First Nations' Sacred Grounds	Potential and significance of:	Low potential effect to First Nations' sacred grounds No known First Nations' sacred grounds in the Analysis Area	Low potential effect to First Nations' sacred grounds No known First Nations' sacred grounds in the Analysis Area	Low potential effect to First Nations' sacred grounds No known First Nations' sacred grounds in the Analysis Area	Low potential effect to First Nations' sacred grounds No known First Nations' sacred grounds in the Analysis Area

Note – Evaluation of the route alternatives is based on a qualitative assessment of each route (high, medium or low). Relevant and site-specific information for each criterion/cell is provided to justify the high, medium or low assessment.

SEGMENT B – SHAKESPEARE AREA NORTHERN BYPASSES

		Route Alternative			
Criteria	Indicator for Route Selection	B1 1-2-4-5-11-13-15	B2 1-2-4-5-9-11-13-15	B3 1-2-4-6-8-9-11-13-15	B4 1-2-4-6-8-11-13-15
2.3 Urban and ral Residential	Potential and significance of: encroachment, severance, displacement, property acquisition; long term alteration / disruption (e.g. loss of parking area); change in area character / aesthetics (e.g. loss of trees/garden area); nuisance impacts (e.g. intrusion of highway into current residential envelope); change to access / travel time; change to facilities / utilities / services; interference with residential community cohesion; change to highway operational impacts (e.g. snow storage and highway access visibility). to urban and rural residential areas (residents [owners/tenants] and community groups).	Low potential for impacts to urban and rural residential areas Loss of some residential frontage (property acquisition) along existing right of way between Roads 104 and 106. No long term alteration/disruption to residence or farm buildings. Likely nuisance impacts to this property. Loss of some horse-training area (property acquisition and displacement of residence) at residence/business. Loss of some residential/farm property (property acquisition) throughout Loss of residential frontage (property acquisition) along existing right-of-way west of Shakespeare village (4 residences) Loss/encroachment into residential envelope of some residential property on the north western residential portion of Shakespeare east of Road 108. Bypass of village avoids driveway access impacts along Hwy 7&8 due to left turns across a widened highway, and avoids increases in winter snow storage along village property frontages, and does not reduce highway setback in the village with associated feeling of "highway intrusion" and reduces front yard aesthetics. Field observation identified no change to facilities / utilities / services.	Medium potential for impacts to urban and rural residential areas Loss of some residential frontage (property acquisition) along existing right-of-way between Roads 104 and 106. No long term alteration/disruption to residence or farm buildings. Likely nuisance impacts to this property. Loss of some horse-training area (property acquisition and displacement of residence) at residence/business. Loss of mature hedgerow and landscaped trees and property (acquisition) at residence on Perth Road 107. Loss of some residential/farm property (property acquisition) throughout Loss/encroachment into residential envelope of Shakespeare west of Perth Road 107. Bypass of village avoids driveway access impacts along Hwy 7&8 due to left turns across a widened highway, and avoids increases in winter snow storage along village property frontages, and does not reduce highway setback in the village with associated feeling of "highway intrusion" and reduces front yard aesthetics. Field observation identified no change to facilities / utilities / services.	 Medium potential for impacts to urban and rural residential areas Loss of some residential frontage (property acquisition) along existing right-of-way between Roads 104 and 106 and west of Road 106. No long term alteration/disruption to residence or farm buildings. Likely nuisance impacts to this property. Loss of entire residence east of Shakespeare (property acquisition and displacement of residence). Loss of mature hedgerow and landscaped trees and property (acquisition) at residence on Perth Road 107. Loss of some residential/farm property throughout (property acquisition) Loss of residential frontage (property acquisition) along existing right-of-way west of Shakespeare village (4 residences) Loss/encroachment into residential envelope of Shakespeare west of Perth Road 107. Bypass of village avoids driveway access impacts along Hwy 7&8 due to left turns across a widened highway, and avoids increases in winter snow storage along village property frontages, and does not reduce highway setback in the village with associated feeling of "highway intrusion" and reduces front yard aesthetics. Field observation identified no change to facilities / utilities / services. 	 Medium potential for impacts to urban and rural residential areas Loss of some residential frontage along right-of-way between Roads 104 and 106 and west of Road 106. No long term alteration/disruption to residence or farm buildings. Likely nuisance impacts to this property. Loss of entire residence east of Shakespeare (property acquisition and displacement of residence). Loss (property acquisition) of driveway immediately adjacent to barns on residential property (G) between immediately north of Shakespeare. Encroachment near to residential area in portion of Shakespeare. Likely nuisance impacts to this area. Loss of some residential/farm property throughout (property acquisition) Loss of residential frontage (property acquisition) along existing right-of-way west of Shakespeare village (4 residences) Loss/encroachment into residential envelope of Shakespeare west of Perth Road 107. Bypass of village avoids driveway access impacts along Hwy 7&8 due to left turns across a widened highway, and avoids increases in winter snow storage along village property frontages, and does not reduce highway setback in the village with associated feeling of "highway intrusion" and reduces front yard aesthetics. Field observation identified no change to facilities / utilities / services.
2.4 Commercial / lustrial	Potential and significance of: • encroachment, severance, displacement, property acquisition;	Medium potential for impacts to commercial and industrial areas • Encroachment on one trucking	Medium potential for impacts to commercial and industrial areas • Encroachment on one trucking	Medium potential for impacts to commercial and industrial areas • Encroachment on one trucking	Medium potential for impacts to commercial and industrial areas Encroachment on one trucking

Note – Evaluation of the route alternatives is based on a qualitative assessment of each route (high, medium or low). Relevant and site-specific information for each criterion/cell is provided to justify the high, medium or low assessment.

SEGMENT B – SHAKESPEARE AREA NORTHERN BYPASSES

tor			Route Alternative			
ub tor	Criteria	Indicator for Route Selection	B1 1-2-4-5-11-13-15	B2 1-2-4-5-9-11-13-15	B3 1-2-4-6-8-9-11-13-15	B4 1-2-4-6-8-11-13-15
		I long term alteration / disruption; change in area character / aesthetics; nuisance impacts; change to access / travel time; change to facilities / utilities / services; interference with commercial community cohesion; change to highway operation impacts (e.g. customer parking, cargo loading/off loading). to commercial and industrial areas (business owners/tenants and customers).	business east of Road 108 (property acquisition). No long term alteration /disruption anticipated at this property. No nuisance effects likely as it is already located on the existing right of way. • Encroachment/loss (property acquisition) of training area for stables located just west of Road 106. Long term alteration/disruption/ nuisance effects likely to this business. • Field observation identified no change to facilities / utilities / services. • No change to commercial and industrial areas (business owners/tenants and customers). • Bypass of the village reduces drive-by exposure of commercial businesses (e.g. restaurants and gas station) for potential out-of-town customers, and reduces commercial vehicle accessibility, but makes the shopping experience in the village more attractive, and does not impact parking opportunities. • Bypass of village avoids driveway access impacts along Hwy 7&8 due to left turns across a widened highway, and avoids increases in winter snow storage along village property frontages.	business east of Road 108 (property acquisition). No long term alteration /disruption anticipated at this property. No nuisance effects likely as it is already located on the existing right of way. • Encroachment/loss (property acquisition) of training area for stables located just west of Road 106 Long term alteration/disruption/nuisance effects likely to this business. • Field observation identified no change to facilities / utilities / services. • No change to commercial and industrial areas (business owners/tenants and customers). • Bypass of the village reduces drive-by exposure of commercial businesses (e.g. restaurants and gas station) for potential out-of-town customers, and reduces commercial vehicle accessibility, but makes the shopping experience in the village more attractive, and does not impact parking opportunities. • Bypass of village avoids driveway access impacts along Hwy 7&8 due to left turns across a widened highway, and avoids increases in winter snow storage along village property frontages.	business east of Road 108 (property acquisition). No long term alteration /disruption anticipated at this property. No nuisance effects likely as it is already located on the existing right of way. • Encroachment/loss (property acquisition) of training area for stables located just west of Road 106. Long term alteration/disruption/ nuisance effects likely to this business. • Field observation identified no change to facilities / utilities / services. • No change to commercial and industrial areas (business owners/tenants and customers). • Bypass of the village reduces drive-by exposure of commercial businesses (e.g. restaurants and gas station) for potential out-of-town customers, and reduces commercial vehicle accessibility, but makes the shopping experience in the village more attractive, and does not impact parking opportunities. • Bypass of village avoids driveway access impacts along Hwy 7&8 due to left turns across a widened highway, and avoids increases in winter snow storage along village property frontages.	business east of Road 108 (property acquisition). No long term alteration /disruption anticipated at this property. No nuisance effects likely as it is already located on the existing right of way. • Encroachment/loss (property acquisition) of training area for stables located just west of Road 106. Long term alteration/disruption/ nuisance effects likely to this business. • Field observation identified no change to facilities / utilities / services. • No change to commercial and industrial areas (business owners/tenants and customers). • Bypass of the village reduces drive- by exposure of commercial businesses (e.g. restaurants and gas station) for potential out-of-town customers, and reduces commercial vehicle accessibility, but makes the shopping experience in the village more attractive, and does not impact parking opportunities. • Bypass of village avoids driveway access impacts along Hwy 7&8 due to left turns across a widened highway, and avoids increases in winter snow storage along village property frontages.
	2.2.5 Tourist Areas and Attractions (e.g. museums, theatres, etc.)	 Potential and significance of: encroachment, severance, displacement, property acquisition; long term alteration / disruption; change in area character/ aesthetics; nuisance impacts; change to access / travel time; change to facilities / utilities / services; loss of "critical mass" in number of signature business attractions (e.g. number of antique shops). 	 Low potential for impacts to tourist areas and attractions No change or impacts to tourist areas and attractions in terms of any property encroachment or acquisition. No nuisance impacts anticipated given absence of any tourist attractions or areas along this alternative. No signature business attractions (none along this alternative) 	 Low potential for impacts to tourist areas and attractions No change or impacts to tourist areas and attractions in terms of any property encroachment or acquisition. No nuisance impacts anticipated given absence of any tourist attractions or areas along this alternative. No signature business attractions (none along this alternative) 	 Low potential for impacts to tourist areas and attractions No change or impacts to tourist areas and attractions in terms of any property encroachment or acquisition. No nuisance impacts anticipated given absence of any tourist attractions or areas along this alternative. No signature business attractions (none along this alternative) 	 Low potential for impacts to tourist areas and attractions No change or impacts to tourist areas and attractions in terms of any property encroachment or acquisition. No nuisance impacts anticipated given absence of any tourist attractions or areas along this alternative. No signature business attractions (none along this alternative)

Note – Evaluation of the route alternatives is based on a qualitative assessment of each route (high, medium or low). Relevant and site-specific information for each criterion/cell is provided to justify the high, medium or low assessment.

SEGMENT B – SHAKESPEARE AREA NORTHERN BYPASSES

Factor			Route Alternative			
/ Sub Factor	Criteria	Indicator for Route Selection	B1 1-2-4-5-11-13-15	B2 1-2-4-5-9-11-13-15	B3 1-2-4-6-8-9-11-13-15	B4 1-2-4-6-8-11-13-15
		to tourist areas and attractions.	 Bypass of the village reduces drive-by exposure of tourist attractions (e.g. shops and boutiques) for potential out-of-town customers, but makes the tourist experience in the village more attractive, and does not impact parking opportunities. Bypass of village avoids driveway access impacts along Hwy 7&8 due to left turns across a widened highway, and avoids increases in winter snow storage along village property frontages. Field observation identified no change to facilities / utilities / services. 	 Bypass of the village reduces drive-by exposure of tourist attractions (e.g. shops and boutiques) for potential out-of-town customers, but makes the tourist experience in the village more attractive, and does not impact parking opportunities. Bypass of village avoids driveway access impacts along Hwy 7&8 due to left turns across a widened highway, and avoids increases in winter snow storage along village property frontages. Field observation identified no change to facilities / utilities / services. 	 Bypass of the village reduces drive-by exposure of tourist attractions (e.g. shops and boutiques) for potential out-of-town customers, but makes the tourist experience in the village more attractive, and does not impact parking opportunities. Bypass of village avoids driveway access impacts along Hwy 7&8 due to left turns across a widened highway, and avoids increases in winter snow storage along village property frontages. Field observation identified no change to facilities / utilities / services. 	 Bypass of the village reduces drive-by exposure of tourist attractions (e.g. shops and boutiques) for potential out-of-town customers, but makes the tourist experience in the village more attractive, and does not impact parking opportunities. Bypass of village avoids driveway access impacts along Hwy 7&8 due to left turns across a widened highway, and avoids increases in winter snow storage along village property frontages. Field observation identified no change to facilities / utilities / services.
	2.2.6 Community Facilities / Institutions (e.g. hospitals, schools, places of worship, unique community features)	Potential and significance of: encroachment, severance, displacement, property acquisition; long term alteration / disruption; change in area character/ aesthetics; nuisance impacts; change to access / travel time; change to facilities / utilities / services change to ease and safety of pedestrian movements across the highway and within the highway right of way; change to highway operation impacts to current use (e.g. highway noise and vibration interfering with church services).	Medium potential for impacts to community facilities and institutions Bypassing the village avoids further isolating the school, community centre facilities and church from residents on the opposite side of the highway. However, traffic destined to the new route from the south must pass through Shakespeare to access the route. Field observation identified no change to facilities / utilities / services.	Medium potential for impacts to community facilities and institutions Bypassing the village avoids further isolating the school, community centre facilities and church from residents on the opposite side of the highway. However, traffic destined to the new route from the south must pass through Shakespeare to access the route. Field observation identified no change to facilities / utilities / services.	Medium potential for impacts to community facilities and institutions Bypassing the village avoids further isolating the school, community centre facilities and church from residents on the opposite side of the highway. However, traffic destined to the new route from the south must pass through Shakespeare to access the route. Field observation identified no change to facilities / utilities / services.	Medium potential for impacts to community facilities and institutions Bypassing the village avoids further isolating the school, community centre facilities and church from residents on the opposite side of the highway. However, traffic destined to the new route from the south must pass through Shakespeare to access the route. Field observation identified no change to facilities / utilities / services.
	2.2.7 Municipal Infrastructure and Public Service Facilities (e.g. sewage and water services, police/emergency services, local utilities)	Potential and significance of:	Low potential for impacts to municipal infrastructure / public service facilities Bypass of village would not lengthen response times to locations outside the village unless Hwy 7&8 direct access is not retained at the east and west village limits. Potential encroachment (property acquisition) to communications tower located west of Road 106. From field observations, no other impacts to municipal infrastructure and public service facilities expected	 Low potential for impacts to municipal infrastructure / public service facilities Bypass of village would not lengthen response times to locations outside the village unless Hwy 7&8 direct access is not retained at the east and west village limits. Potential encroachment (property acquisition) to communications tower located west of Road 106. From field observations, no other impacts to municipal infrastructure and public service facilities expected 	 Low potential for impacts to municipal infrastructure / public service facilities Bypass of village would not lengthen response times to locations outside the village unless Hwy 7&8 direct access is not retained at the east and west village limits. From field observations, no other impacts to municipal infrastructure and public service facilities expected 	Low potential for impacts to municipal infrastructure / public service facilities • Bypass of village would not lengthen response times to locations outside the village unless Hwy 7&8 direct access is not retained at the east and west village limits. • From field observations, no other impacts to municipal infrastructure and public service facilities expected

LEGEND

MOST PREFERRED MODERATELY PREFERRED LEAST PREFERRED

NO DIFFERENCE

SELECTED CORRIDOR

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SEGMENT B – SHAKESPEARE AREA NORTHERN BYPASSES

Factor				Route A	Iternative	
/ Sub Factor	Criteria	Indicator for Route Selection	B1 1-2-4-5-11-13-15	B2 1-2-4-5-9-11-13-15	B3 1-2-4-6-8-9-11-13-15	B4 1-2-4-6-8-11-13-15
	2.2.8 Downtown Historic Crossroads Function	Potential and significance of interference by long distance through traffic on: • "main street" function and structure; • character/aesthetics; • change to ease and safety of pedestrian movements across the highway and within the highway right of way; • change to on street parking	Low potential for interference in the historic downtown area • Bypass of the village reduces long distance traffic though the village and provides the opportunity to improve the shopping/socializing experience in the village, and does not impact parking opportunities.	Low potential for interference in the historic downtown area • Bypass of the village reduces long distance traffic though the village and provides the opportunity to improve the shopping/socializing experience in the village, and does not impact parking opportunities.	Low potential for interference in the historic downtown area • Bypass of the village reduces long distance traffic though the village and provides the opportunity to improve the shopping/socializing experience in the village, and does not impact parking opportunities.	Low potential for interference in the historic downtown area • Bypass of the village reduces long distance traffic though the village and provides the opportunity to improve the shopping/socializing experience in the village, and does not impact parking opportunities.
		in the historic downtown area				
2.3 Nois	e Sensitive Areas (NS	As) (residential areas and sensitive institutional u	ises)			
	2.3.1 Highway Noise	Potential for significant traffic noise increases in NSAs and for noise sensitive receivers immediately adjacent to the highway.	 Low potential for significant noise increases Potential noise impacts of 65 dBA or a 5 dB increase are expected for about 40 NSAs within the area of influence. A decrease of noise impacts by 5 dB or more is expected for about 45 NSAs due to reduced traffic on the roadway that is currently Hwy 7/8. 	 Medium potential for significant noise increases Potential noise impacts of 65 dBA or a 5 dB increase are expected for about 75 NSAs within the area of influence. This alternative is closer to the NSAs than B1. A decrease of noise impacts by 5 dB or more is expected for approximately 40 NSAs due to reduced traffic on the roadway that is currently Hwy 7/8. 	 Medium potential for significant noise increases Potential noise impacts of 65 dBA or a 5 dB increase are expected for about 80 NSAs within the area of influence. This alternative is closer to more NSAs than B1 and B2. A decrease of noise impacts by 5 dB or more is expected for approximately 40 NSAs due to reduced traffic on the roadway that is currently Hwy 7/8. 	 High potential for significant noise increases Potential noise impacts of 65 dBA or a 5 dB increase are expected for about 65 NSAs within the area of influence. The proximity to the closest NSAs will cause the most significant impacts of the "B" alternatives. A decrease of noise impacts by 5 dB or more is expected for about 35 NSAs due to reduced traffic on the roadway that is currently Hwy 7/8.
	2.3.2 Construction Noise	To be considered during Preliminary Design pha	ase			
2.4 Agri	culture					
	2.4.1 Agriculture Canada Land Inventory Class 1,2,3 Land	Potential and significance of encroachment, severance of Canada Land Inventory Classes 1, 2 and 3 soils	High potential for impacts to CLI Class 1, 2 and 3 lands Impacts 35 hectares of Class 1 / 2 soil	High potential for impacts to CLI Class 1, 2 and 3 lands Impacts 34 hectares of Class 1 / 2 soil	High potential for impacts to CLI Class 1, 2 and 3 lands Impacts 34 hectares of Class 1 / 2 soil	High potential for impacts to CLI Class 1, 2 and 3 lands Impacts 34 hectares of Class 1 / 2 soil
	2.4.2 Agriculture – Farm Infrastructure	Potential and significance of:	 Medium potential impacts on farm infrastructure 2 encroachments on farm infrastructure, 1 just west of Road 106 and 1 between Road 107 and Road 108 Impacts to subsurface farm infrastructure (e.g. tile drainage) and to area farm drainage systems are anticipated. The locations of subsurface farm infrastructure along the preferred route will be identified 	Medium potential impacts on farm infrastructure 3 encroachments on farm infrastructure, 1 just west of Road 106, 1 on Road 107 and 1 between Road 107 and Road 108 Impacts to subsurface farm infrastructure (e.g. tile drainage) and to area farm drainage systems are anticipated. The locations of subsurface farm infrastructure along the preferred route will be identified	 High potential impacts on farm infrastructure 3 encroachments on farm infrastructure, 1 just west of Road 106, 1 on Road 107 and 1 between Road 107 and Road 108 Displaces infrastructure on 1 operation between Road 106 and Perth Road 107 Impacts to subsurface farm infrastructure (e.g. tile drainage) and to area farm drainage systems are 	 High potential impacts on farm infrastructure 3 encroachments on farm infrastructure, 1 just west of Road 106, 1 on Road 107 and 1 between Road 107 and Road 108 Displaces infrastructure on 1 operation between Road 106 and Perth Road 107 Impacts to subsurface farm infrastructure (e.g. tile drainage) and to area farm drainage systems are

LEGEND

MOST PREFERRED MODERATELY PREFERRED LEAST PREFERRED NO DIFFERENCE SELECTED CORRIDOR

Note – Evaluation of the route alternatives is based on a qualitative assessment of each route (high, medium or low). Relevant and site-specific information for each criterion/cell is provided to justify the high, medium or low assessment.

SEGMENT B – SHAKESPEARE AREA NORTHERN BYPASSES

Factor				Route Alternative			
/ Sub Factor	Criteria	Indicator for Route Selection	B1 1-2-4-5-11-13-15	B2 1-2-4-5-9-11-13-15	B3 1-2-4-6-8-9-11-13-15	B4 1-2-4-6-8-11-13-15	
			and mitigation concepts for these impacts will be developed during preliminary design	and mitigation concepts for these impacts will be developed during preliminary design	anticipated. The locations of subsurface farm infrastructure along the preferred route will be identified and mitigation concepts for these impacts will be developed during preliminary design	anticipated. The locations of subsurface farm infrastructure along the preferred route will be identified and mitigation concepts for these impacts will be developed during preliminary design	
	2.4.3 Agriculture – Operations on Individual Farms	Potential and significance of: • encroachment, severance, displacement; • long-term alteration / disruption; • nuisance impacts; to in-farm field operations (planting, harvesting, grazing, nutrient management, etc.) as applicable to the following: • Specialty crops/cropland • Dairy/livestock operations • Field crop operations • High investment agricultural operations • Established agricultural farm communities	High potential for impacts to operations on individual farms • Long term alteration to in field farm operations in an established agricultural community including: - Minor frontage impacts and encroachment on lands of 4 operations west of Road 104, all of which are believed to cash crop and livestock operations - Severs 7 parcels between Road 106 and Road 108 - 2 parcels where nutrient management has been reported by the farmer are impacted significantly - 3 parcels where nutrient management has been reported by the farmer are impacted slightly - 1 parcel where nutrient management is assumed to occur in association with livestock operations are significantly impacted - Additional nutrient management operations may still be identified by potentially impacted farmers	High potential for impacts to operations on individual farms • Long term alteration to in field farm operations in an established agricultural community including: - Minor frontage impacts and encroachment on lands of 4 operations west of Road 104, all of which are believed to cash crop and livestock operations - Severs 7 parcels between Road 106 and Road 108 - 2 parcels where nutrient management has been reported by the farmer are impacted significantly - 3 parcels where nutrient management has been reported by the farmer are impacted slightly - 1 parcel where nutrient management is assumed to occur in association with livestock operations are significantly impacted - Additional nutrient management operations may still be identified by potentially impacted farmers	High potential for impacts to operations on individual farms • Long term alteration to in field farm operations in an established agricultural community including: - Minor frontage impacts and encroachment on lands of 5 operations west of Road 104, all of which are believed to cash crop and livestock operations - Severs 6 parcels between Road 106 and Road 108 - 1 parcel where nutrient management has been reported by the farmer are impacted significantly - 4 parcels where nutrient management has been reported by the farmer are impacted slightly - 1 parcel where nutrient management is assumed to occur in association with livestock operations are significantly impacted - Additional nutrient management operations may still be identified by potentially impacted farmers	High potential for impacts to operations on individual farms Long term alteration to in field farm operations in an established agricultural community including: Minor frontage impacts and encroachment on lands of 5 operations west of Road 104, all of which are believed to cash crop and livestock operations Severs 6 parcels between Road 106 and Road 108 1 parcels where nutrient management has been reported by the farmer are impacted significantly 4 parcels where nutrient management has been reported by the farmer are impacted slightly 1 parcel where nutrient management is assumed to occur in association with livestock operations are significantly impacted Additional nutrient management operations may still be identified by potentially impacted farmers	
	2.4.4 Agriculture – Transportation Linkages between Integrated Agricultural Business Units (IABUs)	Potential to sever/disrupt transportation linkages between integrated agricultural business units (movement between integrated agricultural business units of equipment, materials, workers, etc.)	Medium potential to sever / disrupt transportation linkages Route alternative passes between parcels of land associated with 2 IABU's as identified to the study team by the farming community	Medium potential to sever / disrupt transportation linkages Route alternative passes between parcels of land associated with 2 IABU's as identified to the study team by the farming community	Medium potential to sever / disrupt transportation linkages Route alternative passes between parcels of land associated with 2 IABU's as identified to the study team by the farming community	Medium potential to sever / disrupt transportation linkages Route alternative passes between parcels of land associated with 2 IABU's as identified to the study team by the farming community	
2.5 Land	Use / Resources						
	2.5.1 First Nations' Treaty Rights or Use	Potential and significance of: • encroachment, severance, displacement;	Medium potential to affect First Nation Treaty Rights or use of land	Medium potential to affect First Nation Treaty Rights or use of land	Medium potential to affect First Nation Treaty Rights or use of land	Medium potential to affect First Nation Treaty Rights or use of land	

Note – Evaluation of the route alternatives is based on a qualitative assessment of each route (high, medium or low). Relevant and site-specific information for each criterion/cell is provided to justify the high, medium or low assessment.

SEGMENT B – SHAKESPEARE AREA NORTHERN BYPASSES

Factor			Route Alternative			
Sub actor	Criteria	Indicator for Route Selection	B1 1-2-4-5-11-13-15	B2 1-2-4-5-9-11-13-15	B3 1-2-4-6-8-9-11-13-15	B4 1-2-4-6-8-11-13-15
	of Land and Resources for Traditional Purposes (e.g. hunting, fishing, harvesting of country foods, harvesting of medicinal plants)	 long term alteration / disruption; nuisance impacts; change to access / travel time. to First Nations' treaty rights or use of land and resources for traditional purposes 	and resources for traditional purposes • Route alternative has both existing highway and new route components.	and resources for traditional purposes Route alternative has both existing highway and new route components.	and resources for traditional purposes • Route alternative has both existing highway and new route components.	and resources for traditional purposes • Route alternative has both existing highway and new route components
	2.5.2 Parks and Recreational Areas (e.g. national/ provincial parks, conservation areas, municipal parks, public spaces, golf courses, trails, greenways and open space linkages)	Potential and significance of: • encroachment, severance, displacement, property acquisition; • long term alteration / disruption; • change in area character/ aesthetics; • nuisance impacts; • change to access / travel time; • change to facilities / utilities / services. to parks and recreational areas.	 Low potential for impacts to parks and recreational areas Bypass of village to the north somewhat isolates the village from the Shakespeare Pond conservation area on Perth Road 107. No direct impacts to parks and recreational areas as none are in the area. 	 Low potential for impacts to parks and recreational areas Bypass of village to the north somewhat isolates the village from the Shakespeare Pond conservation area on Perth Road 107. No direct impacts to parks and recreational areas as none are in the area. 	 Low potential for impacts to parks and recreational areas Bypass of village to the north somewhat isolates the village from the Shakespeare Pond conservation area on Perth Road 107. No direct impacts to parks and recreational areas as none are in the area. 	Low potential for impacts to parks and recreational areas Bypass of village to the north somewhat isolates the village from the Shakespeare Pond conservation area on Perth Road 107. No direct impacts to parks and recreational areas as none are in the area.
	2.5.3 Aggregates, Mineral-Resources	Potential and significance of: • encroachment, severance, displacement, property acquisition; • long term alteration / disruption; • change to access / travel time; • change to facilities / utilities / services. to current/future extraction of aggregate and mineral resources.	High potential for impacts to current/future aggregate / mineral resources • Displacement of aggregate / pit operations immediately east of Perth Road 107. Long term alteration/disruption of entire operation.	Low potential for impacts to current/future aggregate / mineral resources No displacement of aggregate / pit operations	Low potential for impacts to current/future aggregate / mineral resources No displacement of aggregate / pit operations	Low potential for impacts to current/future aggregate / mineral resources No displacement of aggregate / pit operations
	r Utility Transmission oads, hydro, gas, oil)	Corridors				
		Potential and significance of: • encroachment, severance, displacement; • long term alteration / disruption; • change to access / travel time; • change to facilities / utilities / services. To major utility transmission corridors.	 No potential for impacts to major utility transmission corridors No railway crossings No major hydro transmission corridor crossings No major gas / oil corridor crossings 	 No potential for impacts to major utility transmission corridors No railway crossings No major hydro transmission corridor crossings No major gas / oil corridor crossings 	 No potential for impacts to major utility transmission corridors No railway crossings No major hydro transmission corridor crossings No major gas / oil corridor crossings 	 No potential for impacts to major utility transmission corridors No railway crossings No major hydro transmission corridor crossings No major gas / oil corridor crossings

Highway 7&8 Transportation Corridor Planning and Class EA Study

EVALUATION OF ROUTE ALTERNATIVES

Note — Evaluation of the route alternatives is based on a qualitative assessment of each route (high, medium or low). Relevant and site-specific information for each criterion/cell is provided to justify the high, medium or low assessment.

			SEGMENT B - SHAKESPEARE	AREA NORTHERN BYPASSES			
r				Route Alternative			
r	Criteria	Indicator for Route Selection	B1 1-2-4-5-11-13-15	B2 1-2-4-5-9-11-13-15	B3 1-2-4-6-8-9-11-13-15	B4 1-2-4-6-8-11-13-15	
		nd Waste Management e Sites, "Brownfield" Areas, other known contamina	ated sites, and high risk contamination are	eas)			
		Potential and significance of: • encroachment, severance, displacement; • long term alteration / disruption; • change to access / travel time; • change to facilities / utilities / services. to contaminated property and waste management.	Medium potential for impacts to contaminated property and waste Two vehicle fuel and repair facilities were identified in Shakespeare along Highway 7/8. An Esso Service Station at Patrick Street is approximately 150 m south of the B1 alignment and Patriot Gas located east of Highway 107 is at least 650 m south of proposed alignment B1. Regional groundwater flow direction is anticipated to be flowing in a southerly direction. The distance of the service stations from the proposed realignment indicates that potential environmental concerns related to the service stations are minimal; however, consideration should be given to implementing a scoped subsurface investigation north of the Esso service station at the southern extent of the proposed road alignment to confirm soil and groundwater conditions.	Medium potential for impacts to contaminated property and waste Two vehicle fuel and repair facilities were identified in Shakespeare along Highway 7/8. An Esso Service Station at Patrick Street is approximately 150 m south of the B1 alignment and Patriot Gas located east of Highway 107 is at least 575 m south of proposed alignment B2. Regional groundwater flow direction is anticipated to be flowing in a southerly direction. The distance of the service stations from the proposed realignment indicates that potential environmental concerns related to the service stations are minimal; however, consideration should be given to implementing a scoped subsurface investigation north of the Esso service station at the southern extent of the proposed road alignment to confirm soil and groundwater conditions.	 Medium potential for impacts to contaminated property and waste Two vehicle fuel and repair facilities were identified in Shakespeare along Highway 7/8. An Esso Service Station at Patrick Street is approximately 150 m south of the B1 alignment and Patriot Gas located east of Highway 107 is at least 575 m south of proposed alignment B3. Regional groundwater flow direction is anticipated to be flowing in a southerly direction. The distance of the service stations from the proposed realignment indicates that potential environmental concerns related to the service stations are minimal; however, consideration should be given to implementing a scoped subsurface investigation north of the Esso service station at the southern extent of the proposed road alignment to confirm soil and groundwater conditions. 	 Medium potential for impacts to contaminated property and waste Two vehicle fuel and repair facili were identified in Shakespeare along Highway 7/8. An Esso Service Station at Patrick Street approximately 150 m south of th B1 alignment and Patriot Gas located east of Highway 107 is a least 375 m south of proposed alignment B4. Regional groundwater flow direction is anticipated to be flowing in a southerly direction. The distance of the service static from the proposed realignment indicates that potential environmental concerns related the service stations are minimal; however, consideration should be given to implementing a scoped subsurface investigation north of Esso service station at the south extent of the proposed road alignment to confirm soil and groundwater conditions. 	
	.8.1 Scenic	Potential and significance of change to scenic	Medium potential to impact scenic	Medium potential to impact scenic	Medium potential to impact scenic	Medium potential to impact scenic	
a la	composition (total esthetic value of andscape omponents)	composition (total aesthetic value of landscape components).	composition for sensitive viewer groups and of views from the route alternative High negative impact on affected	composition for sensitive viewer groups and of views from the route alternative High negative impact on affected	composition for sensitive viewer groups and of views from the route alternative High negative impact on affected	composition for sensitive viewer groups and of views from the route alternative High negative impact on affected	
	.8.2 Sensitive liewer Groups	Potential and significance of change vistas/outlooks for sensitive viewer groups.	farmhouses on east and west entry to town • Low negative impact on urban	farmhouses on east and west entry to town • High negative impact on urban	farmhouses on east and west entry to town • High negative impact on urban	farmhouses on east and west er to town • High negative impact on urban	
o th	.8.3 Scenic value f views/vistas from ne transportation acility	Potential and significance of views/vistas from the transportation facility.	community due to distance, and rolling terrain buffer • Medium/High negative impact on adjacent properties on route alternative due to the loss of frontage and associated potential loss of vegetation along existing	 High negative impact on urban community due to distance, and rolling terrain buffer High negative impact on adjacent properties on route alternative due to the loss of frontage and associated potential loss of vegetation along existing alignment 	 Fight negative impact on urban community due to distance, and rolling terrain buffer High negative impact on adjacent properties on route alternative due to the loss of frontage and associated potential loss of vegetation along existing alignment 	 Figh negative impact on droan community due to distance, and rolling terrain buffer High negative impact on adjacer properties on route alternative d to the loss of frontage and associated potential loss of vegetation along existing alignm 	

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MOST PREFERRED MODERATELY PREFERRED LEAST PREFERRED

NO DIFFERENCE

SELECTED CORRIDOR

Not	e – Evaluation of the ro	ute alternatives is based on a qualitative assessme	ent of each route (high, medium or low). F	Relevant and site-specific information for	each criterion/cell is provided to justify the	e high, medium or low assessment.	
			SEGMENT B – SHAKESPEARE	AREA NORTHERN BYPASSES			
Factor			Route Alternative				
/ Sub Factor	Criteria	Indicator for Route Selection	B1 1-2-4-5-11-13-15	B2 1-2-4-5-9-11-13-15	B3 1-2-4-6-8-9-11-13-15	B4 1-2-4-6-8-11-13-15	
			alignment segments • Medium/High visual interest through rolling terrain and agricultural fields • Low visual interest of affected farmhouse backyards	 segments high negative impact on urban community on the eastern and northern edges due to close proximity of proposed highway Medium/High visual interest through rolling terrain and agricultural fields Low visual interest of affected farmhouse backyards Medium/high negative impact on affected farmhouse on Perth Road 107 	segments • high negative impact on urban community on the eastern and northern edges due to close proximity of proposed highway Medium/High visual interest through rolling terrain and agricultural fields • Low visual interest of affected farmhouse backyards • Medium/high negative impact on affected farmhouse on Perth Road 107	segments • high negative impact on urban community on the eastern and northern edges due to close proximity of proposed highway Medium/High visual interest through rolling terrain and agricultural fields • Low visual interest of affected farmhouse backyards • Medium/high negative impact on affected farmhouse on Perth Road 107	
	2.8.4 Specimen Trees	To considered during Preliminary Design phase					
2.9 Air C	Quality						
	2.9.1 Local and Regional Air Quality (Total contaminant and greenhouse gas emissions)	Previously addressed during Needs Assessment	t Phase				
	2.9.2 Sensitive receptors to air pollutants and greenhouse gas emissions	Presence and potential for impacts to sensitive receptors to air pollutants and greenhouse gas emissions, including consideration of number of sensitive receptors immediately adjacent to the highway.	Low potential impact to sensitive receptors adjacent to the highway • 2 sensitive receptors within the edge of the right-of-way.	Low potential impact to sensitive receptors adjacent to the highway • 2 sensitive receptors within the edge of the right-of-way.	Low potential impact to sensitive receptors adjacent to the highway • 3 sensitive receptors within the edge of the right-of-way.	Low potential impact to sensitive receptors adjacent to the highway • 3 sensitive receptors within the edge of the right-of-way.	
3. CULT	URAL ENVIRONMENT	TAL FACTORS					
3.1 Cultu	ural Heritage – Built He	eritage and Cultural Landscapes					
	3.1.1 Buildings or "Standing" Sites of Architectural or Heritage Significance or Ontario Heritage Foundation Easement Properties	Potential and significance of: • encroachment, severance, displacement, property acquisition; • long term alteration / disruption; • change in area character / aesthetics; • nuisance impacts; • change to access / travel time; • change to facilities / utilities / services. to buildings or "standing" sites of extreme local, provincial or national interest or Ontario Heritage Foundation easements properties.	 Medium potential for impacts to sites of heritage significance and Heritage Foundation Easement Properties There are 8 built heritage resources within or in immediate proximity to the route. These are within the Highway 7/8 portion of the route; There are two in close proximity to the extreme east end of the route (1825 Highway 7/8 – George Kleinknecht Farmstead and 1834 Highway 7/8 – outbuilding); these 	 Medium potential for impacts to sites of heritage significance and Heritage Foundation Easement Properties There are 9 built heritage resources within or in immediate proximity to the route. There are 8 within the Highway 7/8 portion of the route; There are two in close proximity to the extreme east end of the route (1825 Highway 7/8 – George Kleinknecht Farmstead and 1834 Highway 7/8 – outbuilding); these 	 Medium potential for impacts to sites of heritage significance and Heritage Foundation Easement Properties There are 9 built heritage resources within or in immediate proximity to the route. There are 8 within the Highway 7/8 portion of the route; There are two in close proximity to the extreme east end of the route (1825 Highway 7/8 – George Kleinknecht Farmstead and 1834 Highway 7/8 – outbuilding); these 	Medium potential for impacts to sites of heritage significance and Heritage Foundation Easement Properties There are 9 built heritage resources within or in immediate proximity to the route. There are 8 within the Highway 7/8 portion of the route; There are two in close proximity to the extreme east end of the route (1825 Highway 7/8 – George Kleinknecht Farmstead and 1834 Highway 7/8 – outbuilding); these	
	3.1.2 Heritage Bridges	Potential for destruction or significant alteration of heritage bridges	may be encroached but not likely physically impacted	may be encroached but not likely physically impacted	may be encroached but not likely physically impacted	may be encroached but not likely physically impacted	

LEGEND

MOST PREFERRED MODERATELY PREFERRED LEAST PREFERRED **NO DIFFERENCE** SELECTED CORRIDOR

Note – Evaluation of the route alternatives is based on a qualitative assessment of each route (high, medium or low). Relevant and site-specific information for each criterion/cell is provided to justify the high, medium or low assessment.

SEGMENT B – SHAKESPEARE AREA NORTHERN BYPASSES

r			Route A	Iternative	
Criteria r	Indicator for Route Selection	B1 1-2-4-5-11-13-15	B2 1-2-4-5-9-11-13-15	B3 1-2-4-6-8-9-11-13-15	B4 1-2-4-6-8-11-13-15
		 Setting may change somewhat. Six within the Highway 7/8 portion of the route and are generally in close proximity to the road; setting will be heavily altered and some buildings may be displaced. These six buildings are the John McTavish Farmstead (2026 Highway 7/8), the Andrew Riddell Junior Farmstead (2053 Highway 7/8), the Andrew Riddell Farmstead (2007 Highway 7/8), Dr. Flynn's House (1971 Hwy 7/8), Sebastian Fryfogel Farmstead (1899 Highway 7/8), and the Fryfogel Tavern/Inn (1931 Highway 7/8). 	 Setting may change somewhat. Six within the Highway 7/8 portion of the route and are generally in close proximity to the road; setting will be heavily altered and some buildings may be displaced. These six buildings are the John McTavish Farmstead (2026 Highway 7/8), the Andrew Riddell Junior Farmstead (2053 Highway 7/8), the Andrew Riddell Farmstead (2007 Highway 7/8), Dr. Flynn's House (1971 Hwy 7/8), Sebastian Fryfogel Farmstead (1899 Highway 7/8), and the Fryfogel Tavern/Inn (1931 Highway 7/8). 	 Setting may change somewhat. Six within the Highway 7/8 portion of the route and are generally in close proximity to the road; setting will be heavily altered and some buildings may be displaced. These six buildings are the John McTavish Farmstead (2026 Highway 7/8), the Andrew Riddell Junior Farmstead (2053 Highway 7/8), the Andrew Riddell Farmstead (2007 Highway 7/8), Dr. Flynn's House (1971 Hwy 7/8), Sebastian Fryfogel Farmstead (1899 Highway 7/8), and the Fryfogel Tavern/Inn (1931 Highway 7/8). 	 Setting may change somewhat. Six within the Highway 7/8 portion of the route and are generally in close proximity to the road; setting will be heavily altered and some buildings may be displaced. These six buildings are the John McTavish Farmstead (2026 Highway 7/8), the Andrew Riddell Junior Farmstead (2053 Highway 7/8), the Andrew Riddell Farmstead (2007 Highway 7/8), Dr. Flynn's House (1971 Hwy 7/8), Sebastian Fryfogel Farmstead (1899 Highway 7/8), and the Fryfogel Tavern/Inn (1931 Highway 7/8).
3.1.3 Areas of Historic 19 th Century Settlement	Potential and significance of: • encroachment, severance, displacement; • long term alteration / disruption; • change in area character / aesthetics; • nuisance impacts; • change to access / travel time; • change to facilities / utilities / services. to areas of historic 19 th century settlement.	 Low potential for impacts to areas of historic settlement The route crosses a portion of Highway 7/8, an early transportation route but no major, concentrated centres of 19th Century settlement 	 Low potential for impacts to areas of historic settlement The route crosses a portion of Highway 7/8, an early transportation route but no major, concentrated centres of 19th Century settlement 	 Low potential for impacts to areas of historic settlement The route crosses a portion of Highway 7/8, an early transportation route but no major, concentrated centres of 19th Century settlement 	 Low potential for impacts to areas of historic settlement The route crosses a portion of Highway 7/8, an early transportation route but no major, concentrated centres of 19th Century settlement
3.1.4 Cultural Heritage Landscapes (collection of individual man made features modifying pristine landscape)	Potential and significance of change to composition of cultural landscapes.	Medium potential for impacts to cultural heritage landscapes Dilse identified one large, continuous cultural heritage landscape that crosses the east end of this route (from Lingelbach Cemetery west to west of Road 106); only the extreme east end of the route is affected. The other includes Shakespeare and lands immediately north of it	Medium potential for impacts to cultural heritage landscapes Dilse identified one large, continuous cultural heritage landscape that crosses the east end of this route (from Lingelbach Cemetery west to west of Road 106); only the extreme east end of the route is affected. The other includes Shakespeare and lands immediately north of it	Medium potential for impacts to cultural heritage landscapes Dilse identified one large, continuous cultural heritage landscape that crosses the east end of this route (from Lingelbach Cemetery west to west of Road 106); only the extreme east end of the route is affected. The other includes Shakespeare and lands immediately north of it	Medium potential for impacts to cultural heritage landscapes • Dilse identified one large, continuous cultural heritage landscape that crosses the east end of this route (from Lingelbach Cemetery west to west of Road 106); only the extreme east end of the route is affected. The other includes Shakespeare and lands immediately north of it
3.1.5 First Nations' Burial Sites	Potential and significance of: • encroachment, severance, displacement; • long term alteration / disruption; • change in area character / aesthetics; • nuisance impacts; • change to access / travel time. to First Nations' burial sites.	No potential for impacts to First Nations burial sites There are no known / reported First Nations' burial sites within this route	No potential for impacts to First Nations burial sites There are no known / reported First Nations' burial sites within this route	No potential for impacts to First Nations burial sites There are no known / reported First Nations' burial sites within this route	No potential for impacts to First Nations burial sites There are no known / reported First Nations' burial sites within this route

Note – Evaluation of the route alternatives is based on a qualitative assessment of each route (high, medium or low). Relevant and site-specific information for each criterion/cell is provided to justify the high, medium or low assessment.

CECMENT D	- SHAKESPEARE AREA NORTHERN BYPASS	
SEGMENT B.	- SHAKESPEAKE AKEA NUKTHEKN BIPASS	E3

Factor				Route A	Iternative	
/ Sub Factor	Criteria	Indicator for Route Selection	B1 1-2-4-5-11-13-15	B2 1-2-4-5-9-11-13-15	B3 1-2-4-6-8-9-11-13-15	B4 1-2-4-6-8-11-13-15
	3.1.6 Cemeteries	Potential and significance of:	Low potential for impacts to cemeteries There is one cemetery (Fryfogel) adjacent to this route; boundaries are poorly known	Low potential for impacts to cemeteries There is one cemetery (Fryfogel) adjacent to this route; boundaries are poorly known	Low potential for impacts to cemeteries There is one cemetery (Fryfogel) adjacent to this route; boundaries are poorly known	Low potential for impacts to cemeteries There is one cemetery (Fryfogel) adjacent to this route; boundaries are poorly known
.2 Cultu	ural Heritage – Archae	ology				
	3.2.1 Pre Historic and Historic First Nations Sites	Potential for destruction or disturbance of pre historic and historic First Nations archaeological sites of extreme local, provincial or national interest	Medium potential for destruction or disturbance of archaeological sites There are four known registered sites within this route (Riddell 1,	Medium potential for destruction or disturbance of archaeological sites There are four known registered sites within this route (Riddell 1,	Medium potential for destruction or disturbance of archaeological sites There are four known registered sites within this route (Riddell 1,	Medium potential for destruction or disturbance of archaeological sites There are four known registered sites within this route (Riddell 1,
	3.2.2 Historic Euro Canadian Archaeological Sites	ian historic Euro Canadian archaeological sites of There is netertial for previously	 all have portions likely present There is potential for previously undocumented archaeological 	Riddell 2, Fryfogel, Fryfogel Inn); all have portions likely present There is potential for previously undocumented archaeological sites	Riddell 2, Fryfogel, Fryfogel Inn); all have portions likely present There is potential for previously undocumented archaeological sites	Riddell 2, Fryfogel, Fryfogel Inn); all have portions likely present There is potential for previously undocumented archaeological sites
	A ECONOMY – Previou NSPORTATION FACTO	Isly addressed during Needs Assessment Phas	Se			
		m Capacity and Efficiency				
	5.1.1 Federal/ Provincial/Municipal transportation planning policies/goals/ objectives	Previously addressed during Needs Assessmen	t Phase.			
	5.1.2 Efficient movement of people	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	High potential to support efficient movement of people. Route is predominantly on new alignment, with high level of service due to few intersections and few driveways Direct route Some out-of-way travel for local access from Shakespeare to route	High potential to support efficient movement of people. Route is predominantly on new alignment, with high level of service due to few intersections and few driveways Direct route Some out-of-way travel for local access from Shakespeare to route	High potential to support efficient movement of people. Route segment through Shakespeare is on new alignment, resulting in high level of service due to few intersections and reduced number of driveways Direct route Some out-of-way travel for local access from Shakespeare to route	High potential to support efficient movement of people. Route segment through Shakespeare is on new alignment, resulting in high level of service due to few intersections and reduced number of driveways Direct route Some out-of-way travel for local access from Shakespeare to route
	5.1.3 Efficient movement of goods	Potential to support efficient movement of goods between urban growth centres and	High potential to support efficient movement of goods.	High potential to support efficient movement of goods.	High potential to support efficient movement of goods.	High potential to support efficient movement of goods.

LEGEND

Note – Evaluation of the route alternatives is based on a qualitative assessment of each route (high, medium or low). Relevant and site-specific information for each criterion/cell is provided to justify the high, medium or low assessment.

			SEGMENT B – SHAKESPEARE	AREA NORTHERN BYPASSES		
Factor				Route Alternative		
/ Sub Factor	Criteria	Indicator for Route Selection	B1 1-2-4-5-11-13-15	B2 1-2-4-5-9-11-13-15	B3 1-2-4-6-8-9-11-13-15	B4 1-2-4-6-8-11-13-15
		regional intermodal facilities based on road network and Highway 7&8 corridor performance measures (LOS and travel speed)	 Route is predominantly on new alignment, with high level of service due to few intersections and few driveways Direct route Some out-of-way travel for local access from Shakespeare to route 	 Route is predominantly on new alignment, with high level of service due to few intersections and few driveways Direct route Some out-of-way travel for local access from Shakespeare to route 	 Route segment through Shakespeare is on new alignment, resulting in high level of service due to few intersections and reduced number of driveways Direct route Some out-of-way travel for local access from Shakespeare to route 	 Route segment through Shakespeare is on new alignment, resulting in high level of service due to few intersections and reduced number of driveways Direct route Some out-of-way travel for local access from Shakespeare to route
5.2 Area	Transportation Syste	m Reliability / Redundancy				
		Potential to support system reliability and redundancy for travel (people and goods) between regions and communities during adverse conditions	High potential to support system reliability and redundancy Route is predominantly on new alignment, which provides a new connection in the Shakespeare area to accommodate travel during adverse conditions (i.e. provides an alternate route)	High potential to support system reliability and redundancy Route is predominantly on new alignment, which provides a new connection in the Shakespeare area to accommodate travel during adverse conditions (i.e. provides an alternate route)	High potential to support system reliability and redundancy Route segment through Shakespeare is on new alignment, which provides a new connection in the Shakespeare area to accommodate travel during adverse conditions (i.e. provides an alternate route)	High potential to support system reliability and redundancy Route segment through Shakespeare is on new alignment, which provides a new connection in the Shakespeare area to accommodate travel during adverse conditions (i.e. provides an alternate route)
5.3 Safe	ty					
	5.3.1 Traffic 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	 High potential to improve traffic safety Route is predominantly on new alignment, with limited number of access points at intersection locations and a few access points associated with private entrances A four/five lane cross section provides for good passing opportunity, provides a wider platform to accommodate evasive moves during potential accidents, and a centre left turn lane would accommodate safer left turns along the highway at intersection and driveway locations 	Route is predominantly on new alignment, with limited number of access points at intersection locations and a few access points associated with private entrances A four/five lane cross section provides for good passing opportunity, provides a wider platform to accommodate evasive moves during potential accidents, and a centre left turn lane would accommodate safer left turns along the highway at intersection and driveway locations	 High potential to improve traffic safety Route segment through Shakespeare is on new alignment, resulting in limited number of access points at intersection locations and reduced number of access points associated with private entrances A four/five lane cross section provides for good passing opportunity, provides a wider platform to accommodate evasive moves during potential accidents, and a centre left turn lane would accommodate safer left turns along the highway at intersection and driveway locations 	Route segment through Shakespeare is on new alignment, resulting in limited number of access points at intersection locations and reduced number of access points associated with private entrances A four/five lane cross section provides for good passing opportunity, provides a wider platform to accommodate evasive moves during potential accidents, and a centre left turn lane would accommodate safer left turns along the highway at intersection and driveway locations
	5.3.2 Emergency Access	Potential to support emergency access to/from existing and/or new provincial facilities.	High potential to support emergency access to/from route Full moves connection will be provided at Perth Road 107 Opportunity to provide connections to existing Highway	 High potential to support emergency access to/from route Full moves connection will be provided at Perth Road 107 Opportunity to provide connections to existing Highway 	 High potential to support emergency access to/from route Full moves connection will be provided at Perth Road 107 Opportunity to provide connections to existing Highway 	 High potential to support emergency access to/from route Full moves connection will be provided at Perth Road 107 Opportunity to provide connections to existing Highway

LEGEND

Note – Evaluation of the route alternatives is based on a qualitative assessment of each route (high, medium or low). Relevant and site-specific information for each criterion/cell is provided to justify the high, medium or low assessment.

			SEGMENT B – SHAKESPEARE	AREA NORTHERN BYPASSES			
Factor				Route Alternative			
/ Sub Factor	Criteria	Indicator for Route Selection	B1 1-2-4-5-11-13-15	B2 1-2-4-5-9-11-13-15	B3 1-2-4-6-8-9-11-13-15	B4 1-2-4-6-8-11-13-15	
			7&8 at east and west ends of Shakespeare Direct access from existing fire hall east of Perth Road 107 to existing Highway 7&8 will be maintained	 7&8 at east and west ends of Shakespeare Direct access from existing fire hall east of Perth Road 107 to existing Highway 7&8 will be maintained 	 7&8 at east and west ends of Shakespeare Direct access from existing fire hall east of Perth Road 107 to existing Highway 7&8 will be maintained 	 7&8 at east and west ends of Shakespeare Direct access from existing fire hall east of Perth Road 107 to existing Highway 7&8 will be maintained 	
	5.3.3 Pedestrian, Cyclist and Snowmobile Safety within the highway right of way	Potential and significance of change to ease and safety of movement across the highway and within the right of way.	High potential to improve pedestrian, cyclist and snowmobile safety Route situated north of developed area of Shakespeare so need for movement within the right-of-way eliminated; reduced traffic on existing Highway 7&8 in developed area where pedestrian / cyclist movements predominately occur Pedestrian, cyclist and snowmobile movements across right-of-way can be provided at intersection locations and/or designated crossing locations	High potential to improve pedestrian, cyclist and snowmobile safety Route situated north of developed area of Shakespeare so need for movement within the right-of-way eliminated; reduced traffic on existing Highway 7&8 in developed area where pedestrian / cyclist movements predominately occur Pedestrian, cyclist and snowmobile movements across right-of-way can be provided at intersection locations and/or designated crossing locations	High potential to improve pedestrian, cyclist and snowmobile safety Route situated north of developed area of Shakespeare so need for movement within the right-of-way eliminated; reduced traffic on existing Highway 7&8 in developed area where pedestrian / cyclist movements predominately occur Pedestrian, cyclist and snowmobile movements across right-of-way can be provided at intersection locations and/or designated crossing locations	High potential to improve pedestrian, cyclist and snowmobile safety Route situated north of developed area of Shakespeare so need for movement within the right-of-way eliminated; reduced traffic on existing Highway 7&8 in developed area where pedestrian / cyclist movements predominately occur Pedestrian, cyclist and snowmobile movements across right-of-way can be provided at intersection locations and/or designated crossing locations	
5.4 Mob	ility and Accessibility						
	5.4.1 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 connection to concentrations of population, travel performance indicators (LOS, v/c, travel speed) at critical screenlines and on potential to provide higher order transit service.	 Low potential to improve modal integration, balance and efficiency. Transit service is potentially constrained by the bypass of the community of Shakespeare, but is supported by the direct connection to development along Highway 7&8 both east and west of Shakespeare. Use of existing Highway 7&8 would constrain transit travel performance. 	 Low potential to improve modal integration, balance and efficiency. Transit service is potentially constrained by the bypass of the community of Shakespeare, but is supported by the direct connection to development along Highway 7&8 both east and west of Shakespeare. Use of existing Highway 7&8 would constrain transit travel performance. 	 Low potential to improve modal integration, balance and efficiency. Transit service is potentially constrained by the bypass of the community of Shakespeare, but is supported by the direct connection to development along Highway 7&8 both east and west of Shakespeare. Use of existing Highway 7&8 would constrain transit travel performance. 	 Low potential to improve modal integration, balance and efficiency. Transit service is potentially constrained by the bypass of the community of Shakespeare, but is supported by the direct connection to development along Highway 7&8 both east and west of Shakespeare. Use of existing Highway 7&8 would constrain transit travel performance. 	
	5.4.2 Linkages to Population and Employment Centres	Potential to improve linkages to population and employment centres for people and goods movement	Medium potential to improve linkages to population and employment centres. Linkage to Stratford and New Hamburg improved Linkages to Shakespeare may be reduced because of limitations imposed by intersection design requirements at potential tie-in	Medium potential to improve linkages to population and employment centres. Linkage to Stratford and New Hamburg improved Linkages to Shakespeare may be reduced because of limitations imposed by intersection design requirements at potential tie-in	Medium potential to improve linkages to population and employment centres. Linkage to Stratford and New Hamburg improved Linkages to Shakespeare may be reduced because of limitations imposed by intersection design requirements at potential tie-in	Medium potential to improve linkages to population and employment centres. Linkage to Stratford and New Hamburg improved Linkages to Shakespeare may be reduced because of limitations imposed by intersection design requirements at potential tie-in	

Note – Evaluation of the route alternatives is based on a qualitative assessment of each route (high, medium or low). Relevant and site-specific information for each criterion/cell is provided to justify the high, medium or low assessment.

SEGMENT B – SHAKESPEARE AREA NORTHERN BYPASSES

Factor				Route A	ternative	
/ Sub Factor	Criteria	Indicator for Route Selection	B1 1-2-4-5-11-13-15	B2 1-2-4-5-9-11-13-15	B3 1-2-4-6-8-9-11-13-15	B4 1-2-4-6-8-11-13-15
			points between the bypass and the current highway	points between the bypass and the current highway	points between the bypass and the current highway	points between the bypass and the current highway
	5.4.3 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)	Medium potential to support recreation and tourism travel Shakespeare tourist area is bypassed, but tourist travel through the analysis area is facilitated	Medium potential to support recreation and tourism travel Shakespeare tourist area is bypassed, but tourist travel through the analysis area is facilitated	Medium potential to support recreation and tourism travel Shakespeare tourist area is bypassed, but tourist travel through the analysis area is facilitated	Medium potential to support recreation and tourism travel Shakespeare tourist area is bypassed, but tourist travel through the analysis area is facilitated
	5.4.4 Accommodate mobility of pedestrians, cyclists and snowmobiles	Potential to accommodate mobility of pedestrians, cyclists within critical travel corridors in urbanized areas and snowmobiles in recognized rural trails	High potential to accommodate mobility of pedestrians, cyclists and snowmobiles Route situated north of developed area of Shakespeare so need for movement within the right-of-way eliminated; reduced traffic on existing Highway 7&8 in developed area provides opportunity to improve mobility of pedestrian / cyclist movements within developed area Existing snowmobile trail crossings east and west of Shakespeare can be maintained	High potential to accommodate mobility of pedestrians, cyclists and snowmobiles Route situated north of developed area of Shakespeare so need for movement within the right-of-way eliminated; reduced traffic on existing Highway 7&8 in developed area provides opportunity to improve mobility of pedestrian / cyclist movements within developed area Existing snowmobile trail crossings east and west of Shakespeare can be maintained	High potential to accommodate mobility of pedestrians, cyclists and snowmobiles Route situated north of developed area of Shakespeare so need for movement within the right-of-way eliminated; reduced traffic on existing Highway 7&8 in developed area provides opportunity to improve mobility of pedestrian / cyclist movements within developed area Existing snowmobile trail crossings east and west of Shakespeare can be maintained	High potential to accommodate mobility of pedestrians, cyclists and snowmobiles Route situated north of developed area of Shakespeare so need for movement within the right-of-way eliminated; reduced traffic on existing Highway 7&8 in developed area provides opportunity to improve mobility of pedestrian / cyclist movements within developed area Existing snowmobile trail crossings east and west of Shakespeare can be maintained
5.5 Netw	ork Compatibility					
	5.5.1 Network Connectivity	Potential to improve transportation system connectivity within and to/from the analysis area.	High potential to improve transportation system connectivity Provides improved linkage between Stratford and New Hamburg	High potential to improve transportation system connectivity Provides improved linkage between Stratford and New Hamburg	High potential to improve transportation system connectivity Provides improved linkage between Stratford and New Hamburg	High potential to improve transportation system connectivity Provides improved linkage between Stratford and New Hamburg
	5.5.2 Flexibility for Future Expansion	Potential to address future transportation needs beyond the forecasted planning horizons.	High potential for future expansion. Route is outside Shakespeare urban boundary, and since it is predominantly on new alignment, the majority of the right-of-way could accommodate future expansion	High potential for future expansion. Route is outside Shakespeare urban boundary, and since it is predominantly on new alignment, the majority of the right-of-way could accommodate future expansion	Medium potential for future expansion. Route is situated in close proximity to Shakespeare urban boundary, limiting potential for future expansion	 Medium potential for future expansion. Route is situated in close proximity to Shakespeare urban boundary, limiting potential for future expansion
5.6 Engi	neering					
	5.6.1 Constructability	Potential ease of implementation considering feasibility/difficulty of physical, property or environmental constraints	Low potential for constructability issues Utilizes segment of existing Highway 7&8 corridor No railway crossings	Low potential for constructability issues Utilizes segment of existing Highway 7&8 corridor No railway crossings	Low potential for constructability issues Utilizes segment of existing Highway 7&8 corridor No railway crossings	Low potential for constructability issues Utilizes segment of existing Highway 7&8 corridor Situated in close proximity to

LEGEND

Highway 7&8 Transportation Corridor Planning and Class EA Study

EVALUATION OF ROUTE ALTERNATIVES

Note – Evaluation of the route alternatives is based on a qualitative assessment of each route (high, medium or low). Relevant and site-specific information for each criterion/cell is provided to justify the high, medium or low assessment.

			SEGMENT B – SHAKESPEARE	AREA NORTHERN BYPASSES		
Factor				Route A	lternative	
/ Sub Factor	Criteria	Indicator for Route Selection	B1 1-2-4-5-11-13-15	B2 1-2-4-5-9-11-13-15	B3 1-2-4-6-8-9-11-13-15	B4 1-2-4-6-8-11-13-15
			No new major watercourse crossings	No new major watercourse crossings	No new major watercourse crossings	 developed area of Shakespeare No railway crossings No new major watercourse crossings
	5.6.2 Compliance with Design Criteria	Conformity to applicable provincial safety and design standards.	 High conformity to safety and design standards Supports use of better than minimum horizontal and vertical alignment elements Can accommodate standard lane and shoulder widths 	 High conformity to safety and design standards Supports use of better than minimum horizontal and vertical alignment elements Can accommodate standard lane and shoulder widths 	 High conformity to safety and design standards Supports use of better than minimum horizontal and vertical alignment elements Can accommodate standard lane and shoulder widths 	 High conformity to safety and design standards Supports use of better than minimum horizontal and vertical alignment elements Can accommodate standard lane and shoulder widths
5.7 Traff	fic Operations					
		Potential for negative impact on traffic operations due to factors such as design features, private access, and transportation network connections	 Medium potential for negative impact on traffic operations Route is predominantly on new alignment, with limited number of access points at intersection locations and a few access points associated with private entrances. Can accommodate full moves connection at Perth Road 107 Can accommodate partial connections to existing Highway 7&8 at east and west ends of Shakespeare Traffic destined to new route from the south must pass through Shakespeare to access the new route 	 Medium potential for negative impact on traffic operations Route is predominantly on new alignment, with limited number of access points at intersection locations and a few access points associated with private entrances. Can accommodate full moves connection at Perth Road 107 Can accommodate partial connections to existing Highway 7&8 at east and west ends of Shakespeare Traffic destined to new route from the south must pass through Shakespeare to access the new route 	 Medium potential for negative impact on traffic operations Route is predominantly on new alignment, with limited number of access points at intersection locations and a few access points associated with private entrances. Can accommodate full moves connection at Perth Road 107 Can accommodate partial connections to existing Highway 7&8 at east and west ends of Shakespeare Traffic destined to new route from the south must pass through Shakespeare to access the new route 	 Medium potential for negative impact on traffic operations Route segment through Shakespeare is on new alignment, resulting in limited number of access points at intersection locations and reduced number of access points associated with private entrances. Can accommodate full moves connection at Perth Road 107 Can accommodate partial connections to existing Highway 7&8 at east and west ends of Shakespeare Traffic destined to new route from the south must pass through Shakespeare to access the new route
5.8 Cons	struction Cost (exclud	es property costs and engineering costs)		1		,
		Relative road construction cost, excluding property and engineering costs	Medium Cost	Medium Cost	Medium Cost	Medium Cost
		property and origineering costs	\$5.0 M	\$4.8 M	\$4.8 M	\$4.6 M

Highway 7&8 Transportation Corridor Planning and Class EA Study

EVALUATION OF ROUTE ALTERNATIVES

			SEGMENT B – SHAKESPEARE	AREA NORTHERN BYPASSES			
Factor			Route Alternative				
/ Sub Factor	Criteria	Indicator for Route Selection	B1 1-2-4-5-11-13-15	B2 1-2-4-5-9-11-13-15	B3 1-2-4-6-8-9-11-13-15	B4 1-2-4-6-8-11-13-15	
UMMARY	OF EVALUATION		Alternative B4. Summary of Land Use / Socio-Econo Route Alternative B1 has lower potentia	mic Environment Il impacts to urban and rural residential attering to the pit operation for Route Alternative B	spective as they have lower potential impactances, future development, noise sensitive at can be mitigated. Therefore, Route Alte	areas and agriculture. The higher	
			Summary of Cultural Environment All route alternatives result in comparab	le impacts to built heritage and archaeo	logical sites.		
					teria for most transportation factors. Howe ne potential to better accommodate future t		
			Conclusion Based upon the above, Route Alternative	ve B1 is the preferred northern by-pass a	alternative.		

SEGMENT B - SHAKESPEARE AREA NORTHERN BY-PASSES

FACTORS		Weighting			rnative	
1.0 NATURAL ENVIRONMENT			1	2	3	4
1.0 NATURAL ENVIRONMENT 1.1 Fisheries and Aquatic Ecosystems		20.00 8.00			Malani	
The February and Figure Beosystems	Weighted Score	0.00	5.36	5.36	5.36	5.36
1.2 Terrestrial Ecosystems	W.1.116	5.00				in the same
1.3 Groundwater	Weighted Score	5.00	3.10	3.10	3.10	3.10
	Weighted Score		3.17	3.17	3.17	2.51
1.4 Surface Water	Walahtad Casas	2.00	0.66	0.66	0.00	0.00
Facto	Weighted Score r Score	20.00	12.29	12.29	12.29	11.62
Tucio	rscore	20.00	12.23	12.23	12.23	11.02
2.0 LAND USE/SOCIO-ECONOMIC ENVIR	ONMENT	35.00	A			1 1 1 1 1 1 1
2.1 Land Use Planning Policies, Goals, Objectives		3.50				
	Weighted Score	7.00	2.17	2.17	1.99	1.99
2.2 Land Use / Community	Weighted Score	7.00	4.09	3.73	3.73	3.73
2.3 Noise Sensitive Areas		5.25			,,,,,	3,70
2.4 Agriculture	Weighted Score	7.00	3.52	1.73	1.73	0.00
A4 Agriculture	Weighted Score	7.00	1.16	1.16	0.23	0.23
2.5 Land Use / Resources	1	3.50				UNITE
2.6 Major Utility Transmission Corridors	Weighted Score	0.70	1.76	2.23	2.23	2.23
ao major Cunty Fransmission Corruors	Weighted Score	0.70	0.70	0.70	0.70	0.70
2.7 Contaminated Property and Waste Management		0.70			100000	
2.8 Landscape Composition	Weighted Score	2.10	0.23	0.23	0.23	0.23
2.0 Lanuscape Composition	Weighted Score	2.10	0.69	0.69	0.69	0.69
2.9 Air Quality		5.25				
Eacto	Weighted Score red Score	35.00	3.52 17.83	3.52 16.16	3.52 15.06	3.52 13.32
Tutto	rea Beore	33.00	17.00	10.10	15.00	10.02
3.0 CULTURAL ENVIRONMENT		20.00	A. District	RENTERE	CANCELLOS	THE PARTY
3.1 Cultural Heritage - Built Heritage and Cultural Landscapes		16.00				
	Weighted Score	4.00	7.32	7.32	7.32	7.32
3.2 Archaeology	Weighted Score	4.00	1.32	1.32	1.32	1.32
Facto	red Score	20.00	8.64	8.64	8.64	8.64
2 Vocable						
5.0 TRANSPORTATION	dr en y o de la	25.00				
5.1 Area Transportation System Capacity and Efficiency	Walaki d Ca	3.75	0.75	0.77		
.2 Area Transportation System Reliability / Redundancy	Weighted Score	3.75	3.75	3.75	3.75	3.75
	Weighted Score		3.75	3.75	3.75	3.75
3.3 Safety	WAY 512	6.25				
	Weighted Score Weighted Score		3.75 6.25	3.75 6.25	6.25	3.75 6.25
5.4 Mobility and Accessibility	WAY 512	6.25 2.50				
.4 Mobility and Accessibility	Weighted Score Weighted Score	6.25	6.25	6.25	6.25	6.25
.4 Mobility and Accessibility .5 Network Compatibility	Weighted Score	6.25 2.50	6.25	6.25	6.25	6.25
.4 Mobility and Accessibility .5 Network Compatibility .6 Engineering	Weighted Score Weighted Score	6.25 2.50 1.25 2.50	6.25	6.25	6.25	6.25
5.4 Mobility and Accessibility 5.5 Network Compatibility 6.6 Engineering	Weighted Score Weighted Score Weighted Score Weighted Score	6.25 2.50 1.25	1.84 1.25 1.84	1.84 1.25	1.84 1.17	6.25 1.84 1.17 1.84
5.4 Mobility and Accessibility 5.5 Network Compatibility 6.6 Engineering 6.7 Traffic Operations	Weighted Score Weighted Score Weighted Score Weighted Score Weighted Score	6.25 2.50 1.25 2.50	6.25 1.84 1.25	6.25 1.84 1.25	1.84	6.25 1.84
5.4 Mobility and Accessibility 5.5 Network Compatibility 6.6 Engineering 6.7 Traffic Operations 6.8 Construction Cost	Weighted Score Weighted Score Weighted Score Weighted Score Weighted Score Weighted Score	6.25 2.50 1.25 2.50 3.75 1.25	1.84 1.25 1.84 1.24	1.84 1.25 1.84 1.24	1.84 1.17 1.84 1.24	1.84 1.17 1.84 1.24
5.3 Safety 5.4 Mobility and Accessibility 5.5 Network Compatibility 5.6 Engineering 5.7 Traffic Operations 5.8 Construction Cost	Weighted Score Weighted Score Weighted Score Weighted Score Weighted Score	6.25 2.50 1.25 2.50 3.75 1.25 25.00	1.84 1.25 1.84	1.84 1.25 1.84	1.84 1.17 1.84 1.24	6.25 1.84 1.17 1.84
5.4 Mobility and Accessibility 5.5 Network Compatibility 5.6 Engineering 5.7 Traffic Operations 5.8 Construction Cost	Weighted Score Weighted Score Weighted Score Weighted Score Weighted Score Weighted Score	6.25 2.50 1.25 2.50 3.75 1.25	1.84 1.25 1.84 1.24	1.84 1.25 1.84 1.24	1.84 1.17 1.84 1.24	1.84 1.17 1.84 1.24

ALTERNATIVE DESCRIPTIONS 1: B1: 1-2-4-5-11-13-15 2: B2: 1-2-4-5-9-11-13-15 3: B3: 1-2-4-6-8-9-11-13-15 4: B4: 1-2-4-6-8-11-13-15

NATURAL ENVIRONMENT WEIGHTING TABLE - SEGMENT B: SHAKESPEARE AREA NORTHERN BY-PASSES

	Factor / Sub-factor / Criteria	Indicator	Net Effect	Weighting			native	
1.0	NATURAL ENVIRONMENT	March 2012 September 1880	THE RESERVED	20.00		2	3	4
1.1 F	Isheries and Aquatic Ecosystems			0.00	10(7,7)	SO YES	all and	RICIAL
	1.1.1 Fish Hubitat	Potential and significance of: encroachment, severance, displacement; and long-term alteration/disruption as applicable to the following: critical fish habitat features, riparian areas and habitat rehabilitation goals.		8.00				
	1.1.2 Fish Community	Potential and significance of: oncroachment, severance, displacement; and long-term alteration/disruption as applicable to the following: fish species at risk (vulnerable, threatened or endangered fish species), fish movement/migration, critical fish life stage processes (spawning, rearing, nursery, feeding) and long-term fish community management goals.	No / Low / Medium / High Effects	8,00	0.67	0.67	0.67	0.67
			Weighted Score		5.36	5.36	5.36	5.36
1.2 T	errestrial Ecosystems			5.00			THE FE	
	1.2.1 Wildlife	Potential and significance of: encroachment, severance, displacement; and long-term alternation/disruption as applicable to the following: wildlife species at risk (vulnerable, threatened or endangered wildlife species); wildlife of local and regional importance; migratory birds, critical wildlife habitat features; ecologically functional areas such as connective corridors or travel ways for movement/migration; important wildlife areas such as deeryards, heronries, waterfowl areas, important bird areas; wildlife inamagement, rehabilitation/research program sites; and interference with critical wildlife life stage processes (eg mating/rearing, etc.).	No / Low / Medium / High Effects	0.75	0.33	0.33	0.33	0.33
	1.2.2 Wetlands	Potential and significance of encroachment, severance, displacement; and long-term alteration/disruption as applicable to the following: provincially significant wetlands, their buffer areas, and their wetland function; evaluated and un-evaluated wetlands, their wetland buffer areas, and their wetland function; and wetland management, research and/or wetland conservation programs/areas;	No / Low / Medium / High Effects	1,25	0.67	0.67	0.67	0.67
	1.2.3 Forests	Potential and significance of: encroachment, severance, displacement; and long-term alteration/disruption as applicable to the following: significant woodlands/valley lands; and forest management/research program areas.	No / Low / Medium / High Effects	1,25	0.67	0.67	0.67	0.67
	1.2.4 Vegetation	Potential and significance of: encroachment, severance, displacement; and long-term alternation/disruption as applicable to the following: subpopulations of vegetation species at risk (vulnerable, threatened or endangered species), species of conservation concern and significant regional/local Bora/communities; areas/corridors supporting known populations of vegetation species at risk (vulnerable, threatened or endangered species), species of conservation concern and significant flora/communities; and vegetation management, rehabilitation/research program sites.	No / Low / Medium / High Effects	0.75	0.67	0.67	0.67	0.67
	1.2.5 Designated/Special Areas	Potential and significance of: encroachment, severance, displacement, long- term alteration/disruption, change in area character/aesthetics, nuisance impacts, change to access/ravel time, and change to facilities/utilities/services to designated/special areas.	No / Low / Medium / High Effects	1.00	0.67	0.67	0.67	0.67
			Weighted Score		3.10	3.10	3.10	3.10
1.3 G	roundwater			5.00				
	1.3.1 Areas of Groundwater Recharge and Discharge	Potential and significance of alteration to areas of groundwater recharge and discharge due to physical intrusion or groundwater inception, draw- down, impoundment, obstruction, or soil compaction impacting groundwater base-flow and quality.	No / Low / Medium / High Effects	0.50	0.67	0.67	0.67	0.33
	1.3.2 Groundwater Source Areas and Wellhead Protection Areas	Potential and significance of alteration to areas of groundwater resource areas and wellhead protection areas due to physical intrusion, or groundwater interception, draw-down, impoundment, obstruction and by soil compaction.	No / Low / Medium / High Effects	1.00	0.33	0.33	0.33	0.00
	1.3.3 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.	No / Low / Medium / High Effects	0.50	0.33	0.33	0.33	0.00

NATURAL ENVIRONMENT WEIGHTING TABLE - SEGMENT B: SHAKESPEARE AREA NORTHERN BY-PASSES

	Factor / Sub-factor / Criteria	Indicator	Net Effect	Weighting			rnative	
5000			1,441,5544	. Tengining	1	2	3	4
0	NATURAL ENVIRONMENT			20.00				
	1.3.4 Private Wells	Potential and significance of alteration to private well use due to physical intrusion, or groundwater interception, draw-down, impoundment, obstruction and by soil compaction.	No / Low / Medium / High Effects	1.00	0.67	0.67	0.67	0.67
	1.3.5 Groundwater-Dependent Commercial Enterprises (e.g. water hottling operations)	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.	No / Low / Medium / High Effects	1.00	1.00	1.00	1.00	1.00
	1.3.6 Groundwater-Sensitive Ecosystems (e.g. groundwater fed wetlands, coldwater streams)	Potential and significance of alteration to groundwater-sensitive ecosystems due to physical intrusion, or groundwater interception, drawdown, impoundment, obstruction and by soil compaction.	No / Low / Medium / High Effects	1.00	0.67	0.67	0.67	0.67
			Weighted Score		3.17	3.17	3,17	2.51
8	Surface Water			2.00		THE		
	1.4.1 Watershed / Sub-Watershed Drainage Features / Patterns	Posential and significance of: encroachment, severance, displacement; and long-term alteration/disruption as applicable to the following: watercourse crossings (permanent, intermittent and ephemeral); floodplain or meander belts; riparian areas; sensitive headwater areas; and watershed and sub watershed management plans.	No / Low / Medium / High Effects					
	1.4.2 Surface Water Quality and Quantity	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, medifications to surface drainage patiems and alterations of waterhodies.	No / Low / Medium / High Effects	2.00	0.33	0.33	0.33	0.33
9			Weighted Score		0.66	0.66	0.66	0.66
			Factored Score	20.00	12.29	12.29	12.29	11.6

ALTERNATIVE DESCRIPTIONS 1: B1: 1-2-4-5-11-13-15 2: B2: 1-2-4-5-9-11-13-15 3: B3: 1-2-4-6-8-9-11-13-15 4: B4: 1-2-4-6-8-11-13-15

Factor / Sub-factor / Criteria	Indicator	Net Effect	Weighting	1	2	native 3	4
LAND USE / SOCIO-ECONOMIC	ENVIRONMENT	W. A. Lyne oker	35.00			a to but	
and Use Planning Policies, Goals and Obj	ectives	NAME OF THE OWNER OWNER OF THE OWNER OWNE	3.50		in the late	To and a	
2.1.1 First Nations Land Claims	Potential and significance of encroachment, severance, displacement to areas for which there are First Nations outstanding land claims	No/Low/Medium/High Effects	0.18	0.67	0.67	0.67	0.67
2.1.2 Provincial/Federal land use planning policies/goals/objectives	Degree of compatibility with federal/provincial land use policies/goals/objectives	No / Low / Medium / High Effects	0.52	0.33	0.33	0.33	0.33
2.1.3 Municipal (regional and local land use planning policies/goals/ objectives (Official Plans)	Degree of compatibility with municipal Official Plans	No / Low / Medium / High Effects	2.28	0.67	0.67	0.67	0.67
2.1.4 Development Objectives of Private Property Owners	Potential to isolate property from current/future urban envelope. Impact on future land use.	No / Low / Medium / High Effects	0.52	0.67	0.67	0.33	0.33
		Weighted Score		2.17	2.17	1,99	1.99
and Use / Community			7.00	I Z III E I			
2.2.1 First Nation Reserves	Potential and significance of encroachment, severance, displacement, long-term alteration / disruption, change in area character / aesthetics, nuisance impacts and change to access / travel time to First Nation Reserves.	No / Low / Medium / High Effects	0.35	1.00	1.00	1.00	1.00
2.2.2 First Nations' Sucred Grounds	Potential and significance of eneroschment, severance, displacement, long-term alteration / disruption, change in area character / aesthetics, nuisance impacts and change to access / travel time to First Nations' sacred grounds.	No / Low / Medium / High Effects	0.35	0.67	0.67	0.67	0.67
2.2.3 Urban and Rural Residential	Potential and significance of: encroachment, severance, displacement, properly acquisition; long-term alternation/disruption (e.g., loss of parking area); change in area character / ae-thelias (e.g., loss of freeding area); missioned impacts (e.g., larinssion of highway into current residential enveloped; change to access / travel inter; change to facilities / utilities / services; interference with residential continuing enhesion; change to highway operational unpacts (e.g. snow storage and highway access visibility) to urban and rural residential areas (residents (owners/terants) and community groups).	No / Low / Medium / High liffects	1.05	0.67	0.33	0.33	0.33
2.2.4 Commercia/Industrial	Potential and significance of: encroachment, severance, displacement, property acquisition: long-term alteration/disruption; change in area character/aesthetics; nusance impacts; change to travel access/travel time; change in facilities/attitischer/selecs; interference with commercial community ochesion; change to highway operation impacts (e.g. customer parking, cargo leading/off-leading); to commercial and industrial areas (business owners/tenants and customers).	No / Low / Medium / High Effects	1.05	0.33	0.33	0.33	0.33
2.2.5 Tourist Areas and Attractions (e.g. museums, theatres, etc.)	Potential and significance of: encrochment, severance, displacement, property acquisition; long-term alteration/disruption; change in area character/feasthetics; missance impacts; change to travel access/travel time; change to facilities/utilities/evervices; loss of "critical mass" in number of signature business attractions (e.g. number of antique shops); to tourist areas and attractions.	No / Low / Medium / High Effects	1.05	0.67	0.67	0.67	0.67
2.2.6 Community Facilities/Institutions (e.g. hospitals, schools, places of worship, unique community features)	Potential and significance of encroachment, severance, displacement, properly acquisition; long-term alteration/disruption; change in rate abance/arterates/test; missance impost; change to travel access/travel time; change to facilities/artifides/services; change to ease and safety of pedestram movements across the highway and within the highway right-of-way; change to highway operation impacts to current use (e.g. highway noise and vibration interfering with church services); to community facilities and institutions.	No / Low / Medium / High Effects	1.05	0.33	0.33	0.33	0.33
2.2.7 Municipal Infrastructure and Public Service Facilities (e.g. sewage and water services, police/emergency services, local utilities)	Potential and significance of: encroschment, severance, displacement: long-term alteration/disruption; change to access/mavel time; change to facilities/utilities/sevices; to municipal infrastructure and public service facilities.	No / Low / Medium / High Effects	0.35	0.67	0.67	0.67	0.67
2.2.8 Downtown Historic Crossroads Function	Potential and significance of interference by long-distance through- traffic on: "main street" function and structure; character/nesthetiss; change to ease and safety of podestrian movements across the highway and within the highway right-f-way; change to on-street packing; in historic downtown area.	No / Low / Medium / High Effects	1.75	0.67	0.67	0.67	0.67
1 6 10 1 60		Weighted Score		4.09	3.73	3.73	3.73
oise Sensitive Areas (NSAs) (residential ar 2.3.1 Highway Noise	eas and sensitive institutional uses) Potential for significant traffic noise increases in NSAs and for noise-sensitive receivers immediately adjacent to the highway	No / Low / Medium / High Effects	5.25	0.67	0.33	0.33	0.00
	more sensors received anniconnecty adjacent to the inflitway	Lincon	E E E		1		

4.4	Factor / Sub-factor / Criteria	Indicator	Net Effect	Weighting	-		native	
	and the same		Control of the Contro	7.00	- 1	2	3	4
I	griculture 2.4.1 Agriculture - Canada Land Inventory Class 1, 2, 3 Land	Potential and significance of encroachment, severance of Canada Land inventory Classes 1, 2 and 3 soils	No / Low / Medium / High Effects	0.70	0.00	0.00	0.00	0.00
	2.4.2 Agriculture - Farm Infrastructure	Potential and significance of: encroachment, severance, displacement; long-term alteration/disruption; nuisonce impacts: to form infrastructure (field tile drainage systems/outlets, irrigation systems, borns/alles/structures, etc.).	No/Low/Medium/High Effects	2.80	0.33	0.33	0.00	0.00
	2.4.3 Agriculture - Operations on Individual Farms	Potential and significance of: encroochment, severance, displacement, long-term alteration/darpotion nationed impacts; to in-farm field operations (planning, harvesting, grazing, nutrient management, et.) as applicable to the following: specialty crops/croplard; diaryfivestock operations; field crop operations; high investment agricultural operations; established agricultural farm communities.	No/Low/Medium/High Effects	2.80	0.00	0.00	0.00	0.00
	2.4.4 Agriculture - Transportation Linkages between Integrated Agricultural Business Units	Potential to sever/disrupt transportation linkages between integrated agricultural business units (movement between integrated agricultural business units of equipment, materials, workers, etc.)	No / Low / Medium / High Effects	0.70	0.33	0.33	0.33	0.33
			Weighted Score		1.16	1.16	0.23	0.23
5 L	and Use / Resources	LILET PARKET LANGUERING		3.50				UP.
	2.5.1 First Nations' Treaty Rights or Use of Land and Resources for Traditional Purposes (e.g. hunting, fishing, harvesting of country foods, harvesting of medicinal plants)	Potential and significance of: encroccliment, severance, displacement, long-term alternation/disruption; missance impacts; change to access/travel time; to First Nations' treaty rights or use of land and resources for traditional purposes.	No / Low / Medium / High Effects	0.35	0.33	0.33	0.33	0.33
	2.5.2 Parks and Recreational Areas (e.g. national/provincial parks, conservation areas, municipal parks, public spaces, golf courses, trails, greenways and open space linkages)	Potential and significance of: encroachment, severance, displacement, property acquisition; long-term alterationAttsruption; change in area character's desthetics; naturance impacts; change to necessifured time; change to facilities/utilities/sevice; to parks and recreational areas.	No / Low / Medium / High Effects	2.45	0.67	0.67	0.67	0.67
	2.5.3 Aggregates, Mineral-Resources	Potential and significance of: encroachment, severance, displacement, property acquisition; long-term alteration/disruption; change to access/travel time; change to facilities/utilities/revices; to current/future extraction of aggregate and mineral resources.	No / Low / Medium / High Effects	0.70	0.00	0.67	0.67	0.67
			Weighted Score		1.76	2.23	2.23	2.23
6 M	Iajor Utility Transmission Corridors (e.g. r	ailroads, hydro, gas, oil)		0.70				
		Potential and significance of; encroachment, severance, displacement, property acquisition; long-term alteration/disruption; change to access/ravel time; change to facilities/attitites/services; to major utility transmission corridors.	No / Low / Medium / High Effects	0.70	1.00	1.00	1.00	1.00
			Weighted Score	LF-LF-	0.70	0.70	0.70	0.70
	ontaminated Property and Waste Manage n contaminated sites, and high-risk contamin	ment (e.g. landfills, hazardous waste sites, "brownation areas)	vnfield" areas, other	0.70	giant			ByE
		Potential and significance of encroachment, severance, displacement, property acquisition: long-term alteration/disruption; change to access/travel time: change to facilities/activitis/services; to contaminated property and waste management.	No / Low / Medium / High Effects	0.70	0.33	0.33	0.33	0.33
	l l							
			Weighted Score		0.23	0.23	0.23	0.23
La	andscape Composition		Weighted Score	2.10	0.23	0.23	0.23	0.23
8 L:	0	Potential and significance of change to seemle composition (total nesthetic value of landscape components).	Weighted Score No / Low / Medium / High Effects	2.10	0.23	0.23	0.23	0.23
8 L:	andscape Composition 2.8.1 Scenic Composition (total aesthetic value of	Potential and significance of change to scenic composition (total aesthetic value of landscape components). Potential and significance of change to vistas/outbooks for sensitive viewer groups.	No / Low / Medium / High	2.10	0.23	0.23	0.23	0.23
8 L4	andscape Composition 2.8.1 Scenic Composition (total aesthetic value of landscape components)	aesthetic value of landscape components). Potential and significance of change to vistas/outboks for sensitive	No / Low / Medium / High Effects No / Low / Medium / High Effects No / Low / Medium / High Effects		0.33	0.33	0.33	0.33
	andscape Composition 2.8.1 Scenic Composition (total aesthetic value of landscape components) 2.8.2 Sensitive Viewer Groups 2.8.3 Scenic Value of Views/Vistas from the transportation facility	aesthetic value of landscape components). Potential and significance of change to vistas/outbooks for sensitive viewer groups. Potential and significance of views/vistas from the transportation	No / Low / Medium / High Effects No / Low / Medium / High Effects No / Low / Medium / High	2.10				
	andscape Composition 2.8.1 Scenic Composition (total aesthetic value of landscape components) 2.8.2 Sensitive Viewer Groups 2.8.3 Scenic Value of Views/Vistas from the	aesthetic value of landscape components). Potential and significance of change to vistas/outbooks for sensitive viewer groups. Potential and significance of views/vistas from the transportation	No / Low / Medium / High Effects No / Low / Medium / High Effects No / Low / Medium / High Effects		0.33	0.33	0.33	0.33
	andscape Composition 2.8.1 Scenic Composition (total aesthetic value of landscape components) 2.8.2 Sensitive Viewer Groups 2.8.3 Scenic Value of Views/Vistas from the transportation facility	aesthetic value of landscape components). Potential and significance of change to vistas/outbooks for sensitive viewer groups. Potential and significance of views/vistas from the transportation	No / Low / Medium / High Effects No / Low / Medium / High Effects No / Low / Medium / High Effects	2.10	0.33	0.33	0.33	0.33
	andscape Composition 2.8.1 Scenic Composition (total aesthetic value of landscape components) 2.8.2 Sensitive Viewer Groups 2.8.3 Scenic Value of Views/Vistas from the transportation facility ir Quality 2.9.2 Sensitive receptors to air pollutants and	aesthetic value of landscape components). Potential and significance of change to vistas/outbooks for sensitive viewer groups. Potential and significance of views/vistas from the transportation facility. Presence and potential for impacts to sensitive receptors to air pollutants and greenhouse gas emissions, including consideration of number of sensitive receptors immediately adjacent to the	No / Low / Medium / High Effects No / Low / Medium / High Effects No / Low / Medium / High Effects Weighted Score No / Low / Medium / High	2.10	0.33	0.33	0.33	0.33

ALTERNATIVE DESCRIPTIONS 1: B1: 1-2-4-5-11-13-15 2: B2: 1-2-4-5-9-11-13-15 3: B3: 1-2-4-6-8-9-11-13-15 4: B4: 1-2-4-6-8-11-13-15

	Factor / Sub-factor / Criteria	Indicator	Net Effect	Weighting			native	
	CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR				1	2	3	4
3.0	CULTURAL ENVIRONMENT			20.00			Stell St	
1.1	Cultural Heritage - Built Heritage and C	ultural Landscapes		16.00	11-44		HA-N	Hill
	3.1.1 Buildings or "Standing" Sites of Architectural o Heritage Significance or Ontario Heritage Foundation Easement Properties		No / Low / Medium / High Effects	8.00	0.33	0.33	0.33	0.33
	3.1.2 Heritage Bridges	Potential for destruction or significant alteration of heritage bridges.	No / Low / Medium / High Effects					
	3.1.3 Areas of Historic 19th Century Settlement	Potential and significance of encroachment, severance, displacement, long-term alteration / disruption, change in area character / aestheticis, nuisance impacts, change to access / travel, change to facilities / utilities/ service to areas of historic 19th century settlement.	No / Low / Medium / High Effects	3.00	0.67	0.67	0.67	0.67
1	3.1.4 Cultural Heritage Landscapes (collection of individual mammade features modifying pristine landscape)	Potential and significance of change to composition of cultural landscapes.	No / Low / Medium / High Effects	2.00	0.33	0.33	0.33	0,33
	3.1.5 First Nations' Burial Sites	Potential and significance of encroachment, severance, displacement, long-term attention / disruption, change in area character / nesthetics, nuisance impacts, change to access / travel, to First Nations' burial sites.	No / Low / Medium / High Hiffects	0.00	1.00	1.00	1.00	1.00
	3.1.6 Cemeteries	Potential and significance of encroachment, severance, displacement, long-term alteration / disruption, change in area character / aesthetics, nuisance impacts, change to access / travel, change to facilities / utilities/	No / Low / Medium / High Effects	3.00	0.67	0.67	0.67	0.67
1			Weighted Score		7.32	7.32	7.32	7.32
2	Cultural Heritage - Archaeology			4.00	11111		LE TAKE	
	3.2.1 Pre-Historic and Historic First Nations Sites	Potential for destruction or disturbance of prehistoric and historic First Nations archaeological sites of extreme local, provincial or national interest	No / Low / Medium / High Effects	100				14.94
	3.2.2 Historic EuorCanadian Archaeological Sites	Potential for destruction or disturbance of historic EuroCanadian archaeological sites of extreme local, provincial or national interest	No / Low / Medium / High Effects	4,00	0.33	0.33	0.33	0.33
-			Weighted Score		1.32	1.32	1.32	1.32
			Factored Score	20.00	8.64	8.64	8.64	8.64

ALTERNATIVE DESCRIPTIONS 1: B1:1-2-4-5-11-13-15 2: B2:1-2-4-5-9-11-13-15 3: B3:1-2-4-6-8-9-11-13-15 4: B4:1-2-4-6-8-11-13-15

	Factor / Sub-factor / Criteria	Indicator	Net Effect	Weighting	1	Alter 2	rnative 3	4
5.0 1	TRANSPORTATION			25.00				
.1 A	rea Transportation System Capacity and	d Efficiency		3.75				
	5.1.2 Efficient movement of people	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	No / Low / Modium / High Effects	1.88	1.00	1.00	1.00	1.00
	5.1.3 Efficient movement of goods	Potential to support the efficient movement of goods between communities and regions based on Level of Service (LOS) and volume to expacity (v/c) on a network, screenline and critical link basis	No / Low / Medium / High Effects	1.88	1.00	1.00	1.00	1.00
			Weighted Score		3.75	3.75	3.75	3.75
2 A	rea Transportation System Reliability /			3.75			_B, 0.6	
		Potential to support system reliability and redundancy for travel (people and goods) between regions and communities during adverse conditions.	No / Low / Medium / High Effects	3.75	1.00	1.00	1.00	1.00
3 S:	afety		Weighted Score	6.25	3.75	3.75	3.75	3.75
	5.3.1 Traffic 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	No / Low / Medium / High Effects	2.50	1.00	1.00	1.00	1.00
	5.3.2 Emergency Access	Potential to support emergency access to/from existing and/or new provincial facilities	No / Low / Medium / High Effects	1.25	1,00	1.00	1.00	1.00
	5.3.3 Pedestrian, Cyclist and Snowmobile Safety within the highway right-of-way	Potential and significance of change to case and safety of movement across the highway and within the right-of-way.	No / Low / Medium / High Effects	2.50	1.00	1.00	1.00	1.00
To the second			Weighted Score	ELECTRIC E	6.25	6.25	6.25	6.25
4 M	lobility and Accessibility			2.50			113130	
	5.4.1 Modal integration, balance and efficiency	Potential to improve modal choice and increase mode split for person trips between communities, regions and major transi- station areas based on connection to concentrations of population, travel performance indicators (LOS, vic. travel speed) at critical accordings and on potential to provide higher order transit service.	No / Low / Medium / High Effects	0.25	0.33	0.33	0.33	0.33
	5.4.2 Linkages to Population and Employment Centres	Potential to improve linkages to population and employment centres for people and goods movement.	No / Low / Medium / High Effects	0.75	0.67	0.67	0.67	0.67
	5.4.3 Recreation and Tourism Travel	Potential to support recreation and tourism travel within and to/from the Analysis Area by provision of legher order network (roads and transit) continuity and connectivity and through network performance indicators (LOS, vic. travel speed)	No / Low / Medium / High Effects	0.75	0.67	0.67	0.67	0.67
	5.4.4 Accommodate mobility of pedestrians, cyclists and snowmobiles	Potential to accommodate mobility of pedestrians, cyclists within critical travel considers in urbanized areas and anowymobiles in recognized rural trails.	No / Low / Medium / High Effects	0.75	1.00	1.00	1.00	1.00
			Weighted Score		1.84	1.84	1.84	1.84
5 N	etwork Compatibility			1.25				
	5.5.1 Network Connectivity	Potential to improve transportation system consectivity within and to/from the analysis area.	No / Low / Medium / High Effects	1,00	1.00	1.00	1.00	1.00
	5.5.2 Flexibility for Future Expansion	Potential to address future transportation needs beyond the forecasted planning horizons.	No / Low / Medium / High Effects	0.25	1.00	1.00	0.67	0.67
100			Weighted Score		1.25	1.25	1.17	1.17
6 Et	ngineering			2.50	IL EVIII	A-P-SIN		4
	5.6.I Constructability	Potential case of implementation considering feasibility/difficulty of physical, property or environmental constraints.	No / Low / Medium / High Effects	2.00	0.67	0.67	0.67	0.67
	5.6.2 Compliance with Design Criteria	Conformity to applicable provincial safety and design standards.	No./ Low / Medium / High Effects	0.50	1.00	1.00	1.00	1.00
	# O U		Weighted Score	2.75	1.84	1.84	1.84	1,84
Tr	raffic Operations	Potential for negative impact on traffic operations due to factors such as design features, private access, and transportation	No / Low / Medium / High Effects	3.75	0.33	0.33	0.33	0.33
L		network connections.	Weighted Score		1.24	1.24	1.24	1.24
3 Ce	onstruction Cost (excludes property cost	s and engineering costs)	Translated Guore	1.25	1.27	1.24	1124	8
19109		Relative road construction cost, excluding property and engineering costs.	No / Low / Medium / High Effects	1.25	0.33	0.33	0.33	0.33
-			Weighted Score		1.24	1.24	1.24	1.24
_			THE PARTY OF THE P				1,00.1	

ALTERNATIVE DESCRIPTIONS 1: 81: 1:2:4-5-11-13-15 2: 82: 1:2:4-5-9-11-13-15 3: 83: 1:2:4-6-8-9-11-13-15 4: 84: 1:2:4-6-8-11-13-15

SUMMARY WEIGHTING TABLE - SEGMENT B: SHAKESPEARE AREA NORTHERN BY-PASSES SUMMARY OF SENSITIVITY ANALYSIS - RANKING OF ALTERNATIVES

FACTORS	RATING	WEIGHT	Alternative 1	Alternative 2	Alternative 3	Alternative 4
Evaluation Team	Initial V	Weights	-	2	က	4
		SE	SENSITIVITY ANALYSIS			
Natural Environment	High	20%	1	2	က	4
	Low	10%	-	2	3	4
and Isa / Socio-Economic Environment	High	85%	1	2	က	4
	Low	10%	1	2	е	4
Cultural Environment	High	20%	1	2	က	4
	Low	10%	Į	2	က	4
Transportation	High	%02	1	2	3	4
	Low	10%	-	2	3	4
Stakeholder Input (SARA)	SARA	Weights	Ţ	2	က	4
	Ove	Overall Ranking	·-	2	3	4

ALTERNATIVE DESCRIPTIONS 1: B1: 1-2-4-5-11-13-15 2: B2: 1-2-4-5-9-11-13-15 3: B3: 1-2-4-6-8-9-11-13-15 4: B4: 1-2-4-6-8-11-13-15

Haymay an Transpondent Constru Planney and Class EA Study SEGMENT B - SHAKESPEARE AREA NORTHERN BY-PASSES

Natural SO's

FACTORS	Weighting				I	Weighting				I
1.0 NATURAL ENVIRONMENT	20.00					50.00	-		•	1
1.1 Publisher and Aquatic Ecosystems	8.00					2000				
Weighted Score		5.25	230	3.36	5.36		240	12.40	13.60	11.6
1.2 Terreschid Ecosystem	\$00					12.50				
13 Greathairr	4.00	200	2.10	3.00	3.10	1000	7.78	228	234	174
Wrighted Score		3.02	317	217	251		2.82	282	7.63	20.30
1.4 Surface Water.	200					200				
Weighted Some		0.66	990	990	900		1.65	185	1.85	156
Factored Score	20.00	12.29	12.29	12.29	11,62	20.00	30.71	30.71	30.71	29.05
STATE OF STA	+									
2.0 LAND USE/SOCIO-ECONOMIC ENVIRONMENT						22.00				
4-1 Land Use Planting Product, Great, Objectives	120					220			100	
2.2 Lead Use / Community	200	4.11	2.17	1.00	130	2.40	8	8	77	20
Weighted Score		409	172	272 275	だれ		252	225	235	238
2.3 Nobe Sentifive Areas	525					330				
24 Arriculture	200	200	123	123	000		122	100	1.00	000
Wrighted Score		3030	1.56	623	0.23		673	073	0.05	50.00
2.5 Land Use/Researces	3.50					2.20				
Wrighted Score	14.0	授-	222	223	223		1.10	1.60	1.40	1.40
4.4 Mayer Utility Immunistration Combiner	0.70		-			170				
2.7 Contactuated Presents and Waste Management	0.00	0.0	0.0	0.0	0.70	0.44	0.44	0.44	0.44	0.44
Weighted Score		0.23	0.23	0.23	0.23		910	0.15	0.15	0.15
28 Landscape Composition.	2.10					1,32				
Wrighted Score		0.60	0.00	0.69	0.69		170	0.44	- 0.44	39.0
and All Quality	S.	945	410	200	1000	338				
Factored Score	35.00	17.83	16.16	15.06	13.32	22.60	11 21	10.16	0.46	8 38
3.0 CULTURAL ENVIRONMENT	20.00				Contract of the Contract of th	12.50				
3.1. Caltural Heritage - Bulk Heritage and Cultural Landscapes	16.00					10:00				
17 Ambuston	-	202	745	170	122		158	457	455	25.9
Weighted Scott		120	1.00	120	- 65	2.50	0.00	***	444	0.00
Factored Score	20.00	8.64	8.64	8.64	8.64	12.50	5.40	5.40	5.40	5.40
5.9 TRANSPORTATION	25.00			2000	-	15.50				
5.1. Area Transportation System Capacity and Efficiency	3.75					2.23				
Wrighted Score		3.75	375	275	175		233	233	222	2.10
Weight Com		37.6	9.16	36.0	20.0	230	***	-	-	
S3 Sefety	625					3.88	200	200	***	
Weighted Som		6.25	8.25	625	625		2.00	3.00	3.00	3.88
5.4 Mobility and Accessibility	250					1.59				
S.F. Network Committelliny	175	10.	1.04	126	12	200	134	134	1.14	1.14
Wrighted Scott		13	1.25	117	1.17	10.00	678	24	8.29	8.73
S.6 Englacemby	2.50					1.58		-	-	
Weighted Scor		136.1	181	1.64	1.04		134	M100	134	134
5.7 Irafic Operations	3.75	-				233				
S.E. Onstruction Cost	124	2.	124	124	124	10.00	0.77	.077	77.0	0.77
Wrighted Score		126	124	128	124	0.18	27.0	2.22	1020	0.77
Factored Score	25.00	21.15	21.15	21.07	21.07	15.50	13.11	13.11		13.06
	100.00								H	
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FACTORS	Weighing	Abenative	Wrighing	,	Abenative	Weighting		Absensive	
1.0 NATURAL ENVIRONMENT	5.00		025 28.00			12.50			-
1.1 Publisher and Aquatic Komputons Weighted Score	200	134 134 134		750 750	750 750	200	135 238	338	338
1.1. Terrestrial Ecognisms Wrighted Score	13	no no no	7.00	420 420	117 117	313	-		1.00
1.3 Groundwater Weinfald Com-	125	1	7.00	1	1	313	1	H	
1.4 Surface Water	050		2.80	-	***	133	136	100	136
Factored Score	200	307 307 307 291	28.00	17.30 17.30	47.00 46.07	02.07		041	2041
			20.03		07	06.21	1,00		97')
2.0 LAND USE / SOCIO-ECONOMIC ENVIRONMENT	85.00		242 10.00	The second second		020 22,00			
2.1 Land Use Planning Publics, Goals, Objectives	8.50	_	007			230			
2.2 Land Day Comments	17.00	17 17 17 17 17 17 17 17 17 17 17 17 17 1	2.00	345	657 057	7.00	136	Z.	1.15
Weighted Some		\$54 \$47 \$47		151 211	107 107		257 235	225	235
Wrighted Score	17.73	854 421 421 000	971	101	000	330	454	100	440
24 Appendian	17.00		2.00	1	Н	440			80
2.5 Land Usi / Reserves	8.50	241 241 050 050	100	020 020	007 007	2	57.0	910	0.15
Wrighted Score		427 541 541 541		990 080	054 054	7	110 140	140	140
24 Najer Utility Transmission Combiner Weighted Scott	130	R. R.	0.29	1000	200	# 0	-		
2.7 Conteminated Property and Waste Management	1.78		0.30			10.44	770	770	440
2.8 Landonge Composition	4.10	050 050 050	0,60	oor oor	oar oar		0.15 0.15	916	0.00
Weighted Score		1,68 1,68 1,58		020 020	020 020		044	17:0	970
Monthed Some	673	70	150	101	101	330	-		
Factored Score	85.00	1 36.57	10.00			22.00	11.21 10.16	9.46	8.38
Andrewoulded Fred Mary 11-7 VI	200								
A.I. Cultural Heritane - Bull: Heritane and Cultural Landscapes	2000		0.28 28.00			140 50,00			
Weighted Score		81 81 81 81	-	20 20	20 20	40.00	0000	25.00	1630
A. Anthreshop	180	440 020 020	8.60	100		10:00	+	H	
Factored Score	5.00	2.16 2.16	28.00	-	-	50.00	21.60 21.60	21.60	21.60
						L	\vdash	H	
S.0 TRANSPORTATION	5.00		02 34,00	THE OWNER WHEN		15.50	THE PERSON NAMED IN		
Weighted Som	6.0	87.0 87.0 87.0	9.10	310 310	615 615	133	111	10.0	
5.2 Arm Transportation System Reliability / Redendancy	0.73		5.10	1	1	220	+	Н	
53 Safety	H		8.50	818 818	5.10 5.10	177	231 231	233	230
Neighted Score	0.40	128 128 128		830 830	8.50 8.50		3.00 3.00	3.58	338
Weighted Score	146	627 637 627	2.40	250 250	250 230	8	134 134	134	134
55 Network Compatibility Morehard Score	0.25	250 APA APA	0.73	-	1	0.78	+		
5.6 Engineering	0.50	200 200	3.40	120	158 158	135	民の 見の	422	072
Ningland Score S.7 Traffic Operations	0.75	037 037 037 037	91.3	250 250	230 230		104 104	134	136
Weighted Score		625 625 625		166 166	159 159		77.0	9.77	677
Weighted Score	G ₀	625 625 625 625	1.70	150	100	0.78	170 170	110	677
Factored Score	5.00	423 423 421 421	34.00	73.27 77.82	28.66 28.66	15.50	13.11 13.11		13.06
Total Alexander	100.00	+	00000					+	24/28/21
Total Auctuative Score	100,00	_	100,000	03.16 02.68	62.25 60.83	100.00	53.60 52.55	51.81	50.30

Highway 78 Transportation Comittee
Planning and Class EA Study SEGMENT B - SHAKESPEARE Alcoa

Planning and Olliss EA Shoty SEGMENT B - SHAKESPEARE ALO	Stheel 10%		Transportation 70%,	Transportation INS.	1999	
	Weighting	1 2 3 4	Weighting 1 2 3 4	Weighting , Alternative	Weighting	
1.0 NATURAL ENVIRONMENT	22.50		8.00	24.00	1.2 10.00 05	3
ALL FINGUES AND ASSESS LONGWISHING NO.	000	600 600 800 800	320 24 24 24	070	400	
1.2 Termitrial Ecopotems	595					
13 Geombasier	195	340 348 348 348	2.00 124 124 124	271 271 271 271	156 1.56 1.56	
Weighted Score		282 255 255	127 127 120	210 340 350	250	
LA Santace Water	228					
Factored Score	22.50	13.82 13.82	800 800 800 800 800 800 800 800 800 800	20 00 00 00 00 00 00 00 00 00 00 00 00 0	033	
			100	17.41	1	
2.0 LAND USE / SOCIO-ECONOMIC ENVIRONMENT	39.50	THE REAL PROPERTY AND ADDRESS OF THE PERSON NAMED IN COLUMN TWO IS NOT THE PERSON NAMED IN COLUMN TWO IS N	14.00	42.00	2000	- 8
2.1 Land Use Planning Polister, Goals, Objectives	3.65		1.40	1	3.00	b
2.2 Land Use? Community	501	246 246 228 228	0.00 0.00 0.00	240 240 239 239	126 126 134 134	
Weighted Score		462 421 421 431	154 140 140 140	431 448 448 648	216 216 216	
2.3 Noise Sensitive Areas Writing Com-	263	20. 20.	-			
24 Aprinture	7.90		2.80 000 000	X40 200 200 200	201 099 099	
Neighted Score	100	130 020 0E1 0E1	000 000 sec sec	139 538 0.28	0.00 0.13 0.13	
Weighted Som		138 251 251 251	80 80 00 00 00 00 00 00 00 00 00 00 00 0	4.29 211 242 745	200	
2.6 Major Utility Transmission Corridors	6.79					
2.7 Contemporal Presents and Worth Wilcommen	0.30	800 800 800 800	MCO MCO MCO MCO	0.84 0.84 0.84	D40 040 040	
Weighted Score		0.20 0.20 0.20 0.20	800 800 800	0.34 0.26 0.26 0.26	0.40	
2.8 Landscape Composition	173					
Vergined Score	641	87.0 87.0 87.0 87.0	20 20 20 20	CRO 580 580 580	ded ded ded ded	
Weighted Score		785 285 285 285	B1 B1 B1 B1	6.30 470 470 470		
Factored Score	39.50		3 6.46 6.02	19.39 18.07	20.00 10.19 9.23 8.60 7.61	
					0000	
3.0 CULTURAL ENVIRONMENT	10.00		008 000	24.00	120 2000	8
	8.00			19.20	16.00	į
12 Archaeder	3.00	356 356 266 266	200 200 200 200	478 478 478 478	722 722 722	
Weighted Score		990 990 990 990	100 HO HO	27 27 27	-	
Factored Score	10.00	4.32 4.32	3,46 3,46	7	20,00 8.64 8.64 8.64	
					H	
S.0 TRANSPORTATION	28.00			2a 10.00	2 50.00	ev.
Wented Some	4.00	ST ST ST	10.50			
52 Ama Tramportation System Reliability / Refundancy	4.20		000	150	1.50 T.50 T.50 T.50 T.50 T.50 T.50 T.50 T	
Weighted Score	100	420 420 420	06.01 08.01 08.01 08.01	041 041 041 130	750 750 750	
Neighted Score	007	700 700 700	17.50			
S.4. Mobility and Accomplishy	2.80		17.30	1.00 250 250 250 250	12.50 12.50 12.50	
Weighted Score		206 206 206 200	515 515 518 518	NG NG NG NG	246 246 256 256	
AS Network Compatibility Weighted Score	1,40	140 140 140	3.50			
5.6 Explorering	2.80		100	1.00	5(0) 250 250 234 224	
KJ Traffic Oversibus	0.3	206 206 206 206	\$15 \$15 \$15 \$15	0.74 0.74 0.74 0.74 0.74	266 269 268 258	
Weighted Score		130 130 130	34 34 34 34	050 050 050	7.50	
54 Contraction Cost	1.40	9				
Factored Score	28.00	23.69 23.60	70.00 59.23 59.23 59.00 59.00	10.00 8.46 8.45 8.43 10.00	Str. 10 24 24 24 24 24 24 24 24 24 24 24 24 24	
				0.00	+177+ IC77+ IC77+	
Total Alternative Score	100.001	61.95 60.07 58.73 56.03	100.00 74.73 74.06 73.39 72.43	100.00 54.97 52.96 51.61 48.73	100.00 67.28 66.32 65.53 64.20	
	-			TOTAL CHICA	0000 mman 0000	

ALTERNATIVE DESCRIPTIONS 1 DE 12-45-11-13-15 2 DE 12-46-9-11-13-15 4 DE 12-46-9-11-13-15 4 DE 12-46-9-11-13-15



Note – Evaluation of the route alternatives is based on a qualitative assessment of each route (high, medium or low). Relevant and site-specific information for each criterion/cell is provided to justify the high, medium or low assessment.

			BEST OF SHAKESPEARE	AREA ALTERNATIVES		
Factor				Route A	Iternative	
/ Sub- Factor	Criteria	Indicator for Route Selection	Best of A plus E A3 + E: 1-2-4-7-10-12-14	Best of A plus F A3 + F: 1-2-4-7-10-12-15	Best of B B1: 1-2-4-5-11-13-15	Existing Highway 7&8 Alignment 1-2-4-6-13-15
1. NATU	RAL ENVIRONMENTA	AL FACTORS				
1.1 Fish	neries and Aquatic Eco	osystems				
	1.1.2 Fish Community	Potential and significance of:	 Low potential to affect fish and fish habitat 2 permanent warmwater and 1 permanent coolwater crossings of Horner Creek containing low to medium quality habitat supporting warmwater fish species I permanent coolwater crossing of the North Woodstock River containing low to medium quality fish habitat. Fish communities and habitats present are considered to be moderately resilient to disturbance and show evidence of historical channel alignments or modifications Fish movements are likely localized between feeding and spawning areas which are abundant within the reaches outside of the study area. There are no critical habitat types within reaches associated with the route alternative. There are no SAR within the route alternative Expected impacts include temporary disturbance to fish and fish habitat associated with construction, potential for short term impacts to water quality during construction. Impacts can be mitigated and/or compensated. 	 Low potential to affect fish and fish habitat 2 permanent warmwater and 1 permanent coolwater crossings of Horner Creek containing low to medium quality habitat supporting warmwater fish species I permanent coolwater crossing of the North Woodstock River containing low to medium quality fish habitat. Fish communities and habitats present are considered to be moderately resilient to disturbance and show evidence of historical channel alignments or modifications Fish movements are likely localized between feeding and spawning areas which are abundant within the reaches outside of the study area. There are no critical habitat types within reaches associated with the route alternative. There are no SAR within the route alternative Expected impacts include temporary disturbance to fish and fish habitat associated with construction, potential for short term impacts to water quality during construction. Impacts can be mitigated and/or compensated. 	 Low potential to affect fish and fish habitat 2 permanent warmwater and 1 permanent coolwater crossings of Horner Creek containing low to medium quality habitat supporting warmwater fish species Fish communities and habitats present are considered to be moderately resilient to disturbance and show evidence of historical channel alignments or modifications Fish movements are likely localized between feeding and spawning areas which are abundant within the reaches outside of the study area. There are no critical habitat types within reaches associated with the route alternative. There are no SAR within the route alternative Expected impacts include temporary disturbance to fish and fish habitat associated with construction, potential for short term impacts to water quality during construction. Impacts can be mitigated and/or compensated. 	 Low potential to affect fish and fish habitat 2 permanent warmwater crossings of Horner Creek containing low to medium quality habitat supporting warmwater fish species Existing ROW already represents some local disturbance due to existing culverts and surface water road run-off Fish communities and habitats present are considered to be moderately resilient to disturbance and show evidence of historical channel alignments or modifications Fish movements are likely localized between feeding and spawning areas which are abundant within the reaches outside of the study area. There are no critical habitat types within reaches associated with the route alternative. There are no SAR within the route alternative Expected impacts include temporary disturbance to fish and fish habitat associated with construction, potential for short term impacts to water quality during construction. Impacts can be mitigated and/or compensated.
1.2 Terre	estrial Ecosystems					
	1.2.1 Wildlife	Potential and significance of:	Low potential to affect wildlife and their habitat No special concern, endangered or threatened wildlife species	Low potential to affect wildlife and their habitat No special concern, endangered or threatened wildlife species	Medium potential to affect wildlife and their habitat 1 threatened amphibian species was reported within or adjacent to	Medium potential to affect wildlife and their habitat 1 threatened amphibian species was reported within or adjacent to

LEGEND

Note – Evaluation of the route alternatives is based on a qualitative assessment of each route (high, medium or low). Relevant and site-specific information for each criterion/cell is provided to justify the high, medium or low assessment.

BEST OF SHAKESPEARE AREA ALTERNATIVES

Factor			Route Alternative			
/ Sub- Factor	Criteria	Indicator for Route Selection	Best of A plus E A3 + E: 1-2-4-7-10-12-14	Best of A plus F A3 + F: 1-2-4-7-10-12-15	Best of B B1: 1-2-4-5-11-13-15	Existing Highway 7&8 Alignment 1-2-4-6-13-15
		 wildlife species at risk (vulnerable, threatened or endangered wildlife species) wildlife of local and regional importance migratory birds critical wildlife habitat features ecologically functional areas such as connective corridors or travel ways for movement/migration important wildlife areas such as deeryards, heronries, waterfowl areas, important bird areas wildlife management, rehabilitation/research program sites interference with critical wildlife life stage processes (eg mating/rearing) etc 	 No provincially rare species (S1 – S3) 1 area sensitive bird species recorded in study corridor No critical wildlife habitat or habitat supporting species of concern present within the route alternative 	 No provincially rare species (S1 – S3) 1 area sensitive bird species recorded in study corridor No critical wildlife habitat or habitat supporting species of concern present within the route alternative 	 the route alternative No provincially rare species (S1 – S3) 1 area sensitive bird species recorded within study corridor Route alternative has the potential to encroach on wetland habitat supporting a threatened species 	 the route alternative No provincially rare species (S1 – S3) 1 area sensitive bird species recorded within study corridor Route alternative has the potential to encroach on wetland habitat supporting a threatened species
	1.2.2 Wetlands	Potential and significance of:	 Low potential to affect wetlands No PSW or LSW are present within the study corridor 3 unevaluated low quality wetlands such as meadow marsh are found within the route alternative 	 No PSW or LSW are present within the study corridor 3 unevaluated low quality wetlands such as meadow marsh are found within the route alternative 	 No PSW or LSW are present within the route alternative 3 small unevaluated low quality wetlands such as meadow marsh are found within the route alternative 	No PSW or LSW are present within the route alternative 3 small unevaluated low quality wetlands such as meadow marsh are found within the route alternative
	1.2.3 Forests	Potential and significance of:	Low potential to affect significant or established woodlands or forests Route alternative will require a minimal removal of vegetation from 3 woodlands Impacts to woodlands limited to encroachment to edge of forests	Low potential to affect significant or established woodlands or forests Route alternative will require a minimal removal of vegetation from 3 woodlands Impacts to woodlands limited to encroachment to edge of forests	Low potential to affect significant or established woodlands or forests Route alternative will require a minimal removal of vegetation from 2 woodlands Impacts to woodlands limited to encroachment on forest edge	Low potential to affect significant or established woodlands or forests Route alternative will require a minimal removal of vegetation from 2 woodlands Impacts to woodlands limited to encroachment on forest edge
	1.2.4 Vegetation	Potential and significance of:	Route alternative is predominantly agricultural field and existing roadway Impacts include encroachment into low quality wetland habitat	Route alternative is predominantly agricultural field and existing roadway Impacts include encroachment into low quality wetland habitat	Route is predominantly agricultural field and existing roadway Impacts include encroachment into low quality wetland habitat	Route is predominantly existing roadway with manicured lawns and property trees, and agricultural fields Impacts include encroachment into low quality wetland habitat

MOST PREFERRED	MODERATELY PREFERRED	LEAST PREFERRED	NO DIFFERENCE	SELECTED ROUTE

Note – Evaluation of the route alternatives is based on a qualitative assessment of each route (high, medium or low). Relevant and site-specific information for each criterion/cell is provided to justify the high, medium or low assessment.

BEST OF SHAKESPEARE AREA ALTERNATIVES

Factor			Route Alternative				
/ Sub- Factor	Criteria	Indicator for Route Selection	Best of A plus E A3 + E: 1-2-4-7-10-12-14	Best of A plus F A3 + F: 1-2-4-7-10-12-15	Best of B B1: 1-2-4-5-11-13-15	Existing Highway 7&8 Alignment 1-2-4-6-13-15	
		flora/communities areas/corridors supporting known populations of vegetation species at risk (vulnerable, threatened or endangered species), species of conservation concern and significant flora/communities vegetation management, rehabilitation/research program sites					
	1.2.5 Designated/ Special Areas	Potential and significance of: • encroachment, severance, displacement; • long-term alteration / disruption; • change in area character / aesthetics; • nuisance impacts; • change to access / travel time; • change to facilities / utilities / services.	Low potential to affect designated/special areas Does not cross any ESA or ANSI	Low potential to affect designated/special areas Does not cross any ESA or ANSI	Low potential to affect designated/special areas Does not cross any ESA or ANSI	Low potential to affect designated/special areas Does not cross any ESA or ANSI	
1.3 Grou	 undwater	to designated/special areas.					
	1.3.1 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	 Low potential to adversely affect volume of groundwater at recharge and discharge areas Surface runoff is interpreted to exceed infiltration for the majority of the route given the relatively impermeable nature of the glaciolacustrine and silty till deposits. However, in areas of sandy deposits, such as river crossings, higher infiltration can be expected. No temporary or long-term change to groundwater recharge or discharge is anticipated due to the small surface area affected by highway construction in the route alternative. 	 Low potential to adversely affect volume of groundwater at recharge and discharge areas Surface runoff is interpreted to exceed infiltration for the majority of the route given the relatively impermeable nature of the glaciolacustrine and silty till deposits. However, in areas of sandy deposits, such as river crossings, higher infiltration can be expected. No temporary or long-term change to groundwater recharge or discharge is anticipated due to the small surface area affected by highway construction in the route alternative. 	 Medium potential to adversely affect groundwater recharge and discharge areas. Surface runoff is interpreted to exceed infiltration for the majority of the route given the relatively impermeable nature of the glaciolacustrine and silty till deposits. However, in areas of sandy deposits, such as river crossings, higher infiltration can be expected. The route intersects the 25 year capture zone (recharge area) for Shakespeare's Municipal well. No temporary or long term change to groundwater recharge or discharge is anticipated due to the small surface area affected by the route alternative. 	 Low potential to adversely affect volume of groundwater at recharge and discharge areas Surface runoff is interpreted to exceed infiltration for the majority of the route given the relatively impermeable nature of the glaciolacustrine and silty till deposits. However, in areas of sandy deposits, such as river crossings, higher infiltration can be expected. No temporary or long-term change to groundwater recharge or discharge is anticipated due to the small surface area affected by highway construction in the route alternative. 	
	1.3.2 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	Low potential to adversely affect groundwater wellhead protection area. • The route alternative is upgradient of the delineated wellhead protection area for the	Low potential to adversely affect groundwater wellhead protection area. • The route alternative is upgradient of the delineated wellhead protection area for the	Medium potential to adversely affect groundwater quality within wellhead protection area. The route is located within the 25 year capture zone (recharge)	Low potential to adversely affect groundwater wellhead protection area. • The proposed route is upgradient of the delineated wellhead protection area for the town of	

LEGEND

Note – Evaluation of the route alternatives is based on a qualitative assessment of each route (high, medium or low). Relevant and site-specific information for each criterion/cell is provided to justify the high, medium or low assessment.

BEST OF SHAKESPEARE AREA ALTERNATIVES

Factor				Route A	ternative	
/ Sub- Factor	Criteria	Indicator for Route Selection	Best of A plus E A3 + E: 1-2-4-7-10-12-14	Best of A plus F A3 + F: 1-2-4-7-10-12-15	Best of B B1: 1-2-4-5-11-13-15	Existing Highway 7&8 Alignment 1-2-4-6-13-15
		compaction	town of Tavistock. The proposed route is located outside of the 25 year capture zone (recharge area) for the municipal well, which is located approximately 6 km to the south of the route alternative. The municipal well is screened within the bedrock aquifer, which is confined above by Low permeability Silty Till and Glaciolacustrine deposits.	 town of Tavistock. The proposed route is located outside of the 25 year capture zone (recharge area) for the municipal well, which is located approximately 6 km to the south of the route alternative. The municipal well is screened within the bedrock aquifer, which is confined above by Low permeability Silty Till and Glaciolacustrine deposits. 	 area) for the Shakespeare municipal well. Runoff control and road salt use should be mitigated within this area. 	 Tavistock. The proposed route is located outside of the 25 year capture zone (recharge area) for the municipal well, which is located approximately 6 km to the south of the route alternative. The municipal well is screened within the bedrock aquifer, which is confined above by Low permeability Silty Till and Glaciolacustrine deposits.
	1.3.3 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	 Low potential to adversely affect large volume wells. The route alternative is upgradient of the delineated wellhead protection area for the town of Tavistock. The route alternative is located outside of the 25 year capture zone (recharge area) for the municipal well, which is located approximately 6 km to the south of the route alternative. No other large production wells were identified along the route 	 Low potential to adversely affect large volume wells. The route alternative is upgradient of the delineated wellhead protection area for the town of Tavistock. The route alternative is located outside of the 25 year capture zone (recharge area) for the municipal well, which is located approximately 6 km to the south of the route alternative. No other large production wells were identified along the route 	 Medium potential to adversely affect groundwater quality within wellhead protection area. The route is located within the 25 year capture zone (recharge area) for the Shakespeare municipal well. Runoff control and road salt use should be mitigated within this area. 	 Low potential to adversely affect large volume wells. The proposed route is upgradient of the delineated wellhead protection area for the town of Tavistock. The proposed route is located outside of the 25 year capture zone (recharge area) for the municipal well, which is located approximately 6 km to the south of the route alternative. No other large production wells were identified along the route
	1.3.4 Private Wells	Potential and significance of alteration to private well use due to physical intrusion, or groundwater interception, draw-down, impoundment, obstruction and by soil compaction	Low potential to adversely affect private wells The route alternative is in close proximity (<150 m) to 3 shallow dug wells completed within surficial sand deposits. These wells are located immediately to the west of Road 106 and immediately to the south along the existing Hwy 7/8 Route. These wells are sensitive to surface contamination (i.e. road salt). The potential exists for long-term and short-term effects to these wells due to their close proximity to the route. Mitigation measures to prevent adverse impact to these wells due to highway construction should be	Low potential to adversely affect private wells The route alternative is in close proximity (<150 m) to 3 shallow dug wells completed within surficial sand deposits. These wells are located immediately to the west of Road 106 and immediately to the south along the existing Hwy 7/8 Route. These wells are sensitive to surface contamination (i.e. road salt). The potential exists for long-term and short-term effects to these wells due to their close proximity to the route. Mitigation measures to prevent adverse impact to these wells due to highway construction	Low potential to adversely affect private wells Route is in close proximity to 3 shallow dug wells completed within surficial sand deposits. These wells are located immediately to the west of Road 106 and immediately to the south along the existing Hwy 7/8 Route. These wells are sensitive to surface contamination (i.e. road salt). The potential exists for long term and short term adverse effects to these wells due to their close proximity to the route. Mitigation measures to prevent or eliminate adverse impacts to these wells due to highway construction should be	Low potential to adversely affect private wells Route is in close proximity (<150 m) to 3 shallow dug wells completed within surficial sand deposits. These wells are located immediately to the west of 106th Road and immediately to the south along the existing Hwy 7/8 Route. These wells are sensitive to surface contamination (i.e. road salt). The potential exists for long-term and short-term effects to these wells due to their close proximity to the route. Mitigation measures to prevent adverse impact to these wells due to highway construction should be

LEGEND

Note – Evaluation of the route alternatives is based on a qualitative assessment of each route (high, medium or low). Relevant and site-specific information for each criterion/cell is provided to justify the high, medium or low assessment.

BEST OF SHAKESPEARE AREA ALTERNATIVES

Factor			Route Alternative				
/ Sub- Factor	Criteria	Indicator for Route Selection	Best of A plus E A3 + E: 1-2-4-7-10-12-14	Best of A plus F A3 + F: 1-2-4-7-10-12-15	Best of B B1: 1-2-4-5-11-13-15	Existing Highway 7&8 Alignment 1-2-4-6-13-15	
			 implemented, such as a road salt management plan. All other private wells along the route obtain water supply from the deep confined bedrock aquifer and are therefore not at risk. 	 should be implemented, such as a road salt management plan. All other private wells along the route obtain water supply from the deep confined bedrock aquifer and are therefore not at risk. 	 implemented, such as a road salt management plan. All other private wells along the route obtain water supply from the deep confined bedrock aquifer and are therefore not at risk. 	 implemented, such as a road salt management plan. All other private wells along the route obtain water supply from the deep confined bedrock aquifer and are therefore not at risk. 	
	1.3.5 Groundwater- Dependent Commercial Enterprises (e.g. water bottling operations)	Potential and significance of alteration to groundwater use by groundwater-dependent commercial enterprises due to physical intrusion, or groundwater interception, drawdown, impoundment, obstruction and by soil compaction	No potential to adversely affect groundwater dependent commercial enterprises No groundwater dependent commercial enterprises have been identified along this route.	No potential to adversely affect groundwater dependent commercial enterprises No groundwater dependent commercial enterprises have been identified along this route.	No potential to adversely affect groundwater dependent commercial enterprises No groundwater dependent commercial enterprises have been identified along this route.	No potential to adversely affect groundwater dependent commercial enterprises No groundwater dependent commercial enterprises have been identified along this route.	
	1.3.6 Groundwater- Sensitive Ecosystems (e.g. groundwater fed wetlands, coldwater streams)	Potential and significance of alteration to groundwater-sensitive ecosystems due to physical intrusion, or groundwater interception, draw-down, impoundment, obstruction and by soil compaction	 Low potential to adversely affect groundwater sensitive ecosystems One (1) new crossing of a potentially groundwater fed stream. Possible encroachment on an unevaluated wetland (i.e. not identified as provincially or locally significant). Potential long-term adverse effect to groundwater quality due to increased road salt use and road run-off. Potential temporary adverse effects to groundwater quantity exist if construction dewatering is required 	 Low potential to adversely affect groundwater sensitive ecosystems One (1) new crossing of a potentially groundwater fed stream. Possible encroachment on an unevaluated wetland (i.e. not identified as provincially or locally significant). Potential long-term adverse effect to groundwater quality due to increased road salt use and road run-off. Potential temporary adverse effects to groundwater quantity exist if construction dewatering is required 	 Low potential to adversely affect groundwater sensitive ecosystems Alteration to three (3) existing crossings of potentially groundwater fed streams. Possible encroachment on an unevaluated wetland (i.e. not identified as provincially or locally significant). Potential long term adverse effect to groundwater quality due to increased road salt use and road run off. Potential temporary effects to groundwater quantity are possible if construction dewatering is required. 	 Low potential to adversely affect groundwater sensitive ecosystems Alteration to two (2) existing crossings of potentially groundwater fed streams. Potential long-term adverse effect to groundwater quality due to increased road salt use and road run-off. Potential temporary adverse effects to groundwater quantity exist if construction dewatering is required. 	
1.4 Surfa	ace Water						
	1.4.1 Watershed / Sub-Watershed Drainage Features/Patterns	Potential and significance of:	Low potential to affect drainage features / patterns and surface water quality / quantity Crosses 4 watercourses	Low potential to affect drainage features / patterns and surface water quality / quantity Crosses 4 watercourses	Medium potential to affect drainage features / patterns and surface water quality / quantity Crosses 3 watercourses Route encroaches on Easthope Moraine	Low potential to affect drainage features / patterns and surface water quality / quantity Crosses 4 watercourses	

LEGEND

Note – Evaluation of the route alternatives is based on a qualitative assessment of each route (high, medium or low). Relevant and site-specific information for each criterion/cell is provided to justify the high, medium or low assessment.

			BEST OF SHAKESPEARI	AREA ALTERNATIVES		
Factor				Route A	Iternative	
/ Sub- Factor	Criteria	Indicator for Route Selection	Best of A plus E A3 + E: 1-2-4-7-10-12-14	Best of A plus F A3 + F: 1-2-4-7-10-12-15	Best of B B1: 1-2-4-5-11-13-15	Existing Highway 7&8 Alignment 1-2-4-6-13-15
	1.4.2 Surface Water Quality and Quantity	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				
2. LAND	USE / SOCIO-ECONO	OMIC FACTORS				
2.1 Land	d Use Planning Policie	s, Goals, Objectives				
	2.1.1 First Nations Land Claims	Potential and significance of encroachment, severance, displacement to areas for which there are First Nations outstanding land claims	 Low potential to displace areas where there are outstanding First Nations lands claims. 5 First Nations land claims have been filed in the study area 	 Low potential to displace areas where there are outstanding First Nations lands claims. 5 First Nations land claims have been filed in the study area 	 Low potential to displace areas where there are outstanding First Nations lands claims. 5 First Nations land claims have been filed in the study area 	 Low potential to displace areas where there are outstanding First Nations lands claims. 5 First Nations land claims have been filed in the study area
	2.1.2 Provincial/ Federal land use planning policies/ goals/objectives	Degree of compatibility with federal/provincial land use policies/goals/objectives NOTES: PPS Policy 1.6.6.4 stipulates that when planning for corridors for significant transportation facilities, consideration will be given to significant natural heritage, water, agricultural, mineral, cultural heritage and archaeological resources. PPS Policy 2.3 requires prime agricultural areas be protected for long-term use. Prime agricultural areas include specialty crop areas and Classes 1, 2, and 3 soils in this order of priority.	Medium compatibility with federal/ provincial land use policies/goals Portion of route is on new alignment; remainder uses the existing corridor which results in reduced impacts relative to PPS Policies 1.6.6.4 and 2.3. There are no location-specific federal or provincial land use policies for this area	Medium compatibility with federal/ provincial land use policies/goals Portion of route is on new alignment; remainder uses the existing corridor which results in reduced impacts relative to PPS Policies 1.6.6.4 and 2.3. There are no location-specific federal or provincial land use policies for this area	 Low compatibility with federal/provincial land use policies/goals Route is predominantly on new alignment which results in increased impacts relative to PPS Policies 1.6.6.4 and 2.3. There are no location-specific federal or provincial land use policies for this area 	Medium compatibility with federal/provincial land use policies/goals Route predominantly uses the existing corridor thereby minimizing impacts relative to PPS Policies 1.6.6.4 and 2.3. There are no location-specific federal or provincial land use policies for this area
	2.1.3 Municipal	Degree of compatibility with municipal Official	Medium compatibility with municipal	Medium compatibility with municipal	Medium compatibility with municipal	Medium compatibility with municipal

Medium compatibility with municipal Official Plans.

(regional and local)

land use planning

objectives (Official

policies/goals/

Plans)

Plans

The route impacts agricultural designated lands in County of Perth O.P. Although the corridor does not directly service the Village of Shakespeare settlement area, it is consistent with County of Perth 6.5.1 e) to preserve the natural setting and rural character of village/hamlet areas.

Medium compatibility with municipal Official Plans.

The route impacts agricultural designated lands in County of Perth O.P. Although the corridor does not directly service the Village of Shakespeare settlement area, it is consistent with County of Perth 6.5.1 e) to preserve the natural setting and rural character of village/hamlet areas.

Medium compatibility with municipal Official Plans.

The route impacts agricultural designated lands in County of Perth O.P. Although the corridor does not directly service the Village of Shakespeare settlement area, it is consistent with County of Perth 6.5.1 e) to preserve the natural setting and rural character of village/hamlet areas.

Medium compatibility with municipal Official Plans.

Route largely avoids agricultural designated lands in County of Perth O.P. Although the corridor directly services the Village of Shakespeare settlement area, it is not consistent with County of Perth 6.5.1 e) to preserve the natural setting and rural character of village/hamlet areas.

MOST PREFERRED	MODERATELY PREFERRED	LEAST PREFERRED	NO DIFFERENCE	SELECTED ROUTE

Note – Evaluation of the route alternatives is based on a qualitative assessment of each route (high, medium or low). Relevant and site-specific information for each criterion/cell is provided to justify the high, medium or low assessment.

BEST OF SHAKESPEARE AREA ALTERNATIVES

Factor				Route A	ternative	
/ Sub- Factor	Criteria	Indicator for Route Selection	Best of A plus E A3 + E: 1-2-4-7-10-12-14	Best of A plus F A3 + F: 1-2-4-7-10-12-15	Best of B B1: 1-2-4-5-11-13-15	Existing Highway 7&8 Alignment 1-2-4-6-13-15
	2.1.4 Development Objectives of Private Property Owners	Potential to isolate property from current/future urban envelope Impact on future land use	Low potential to impact future land use Route alternative does not limit the potential for future development	Low potential to impact future land use Route alternative does not limit the potential for future development	Low potential to impact future land use Route alternative does not limit the potential for future development which is contiguous with the existing Shakespeare community.	Low potential to impact future land use Route alternative does not limit the potential for future development which is contiguous with the existing Shakespeare community.
2.2 Land	d Use / Community					
	2.2.1 First Nation Reserves	Potential and significance of:	No potential effects to First Nation reserves No Indian Reserves in the Analysis Area	No potential effects to First Nation reserves No Indian Reserves in the Analysis Area	No potential effects to First Nation reserves No Indian Reserves in the Analysis Area	No potential effects to First Nation reserves No Indian Reserves in the Analysis Area
		to First Nation Reserves				
	2.2.2 First Nations' Sacred Grounds	Potential and significance of:	 Low potential effect to First Nations' sacred grounds No known First Nations' sacred grounds in the Analysis Area 	 Low potential effect to First Nations' sacred grounds No known First Nations' sacred grounds in the Analysis Area 	 Low potential effect to First Nations' sacred grounds No known First Nations' sacred grounds in the Analysis Area 	 Low potential effect to First Nations' sacred grounds No known First Nations' sacred grounds in the Analysis Area
		to First Nations' sacred grounds				
	2.2.3 Urban and Rural Residential	Potential and significance of: encroachment, severance, displacement, property acquisition; long-term alteration / disruption (e.g. loss of parking area); change in area character / aesthetics (e.g. loss of trees/garden area); nuisance impacts (e.g. intrusion of highway into current residential envelope); change to access / travel time; change to facilities / utilities / services; interference with residential community cohesion; change to highway operational impacts (e.g. snow storage and highway access visibility). to urban and rural residential areas (residents [owners/tenants] and community groups).	 Low potential for impacts to urban and rural residential areas Loss of some frontage to residential/farm properties along existing right of way. Some encroachment to residential area of Shakespeare village with route alternative abutting railway corridor. Some nuisance impacts likely to residential area. Area is already bounded by railway tracks, route is south of this boundary so no impact on community cohesion anticipated. Loss (acquisition) of some residential/farm properties along entire route. Bypass of village avoids driveway access impacts along Hwy 7&8 	 Medium potential for impacts to urban and rural residential areas Loss of some frontage to residential/farm properties along existing right of way. Some encroachment to residential area of Shakespeare village with route alternative abutting railway corridor. Some nuisance impacts likely to residential area. Area is already bounded by railway tracks, route is south of this boundary so no impact on community cohesion anticipated. Loss (acquisition) of some residential/farm properties along entire route. Bypass of village avoids driveway access impacts along 	 Low potential for impacts to urban and rural residential areas Loss of some residential frontage (property acquisition) along existing right of way. No long term alteration/disruption to residence or farm buildings. Likely nuisance impacts to this property. Loss of some horse-training area (property acquisition and displacement of residence) at residence/business. Loss of some residential/farm property (property acquisition) throughout Loss of residential frontage (property acquisition) along existing right-of-way west of Shakespeare village (4 	 High potential for impacts to urban and rural residential areas Loss of some frontage (property acquisition) to 18 residential properties outside of the Shakespeare area. No long term alteration/disruption to residence or farm buildings. Likely nuisance impacts to these properties. Encroachment to residential area within Shakespeare Village. Some homes within the Shakespeare area are directly adjacent to the roadway, so impacts may be greater in these cases. Some property acquisition may be required in these cases. Nuisance impacts likely to residential area. Loss (acquisition) of some

LEGEND

Note – Evaluation of the route alternatives is based on a qualitative assessment of each route (high, medium or low). Relevant and site-specific information for each criterion/cell is provided to justify the high, medium or low assessment.

BEST OF SHAKESPEARE AREA ALTERNATIVES

Factor			Route A	Route Alternative		
/ Sub- Factor	Indicator for Route Selection	Best of A plus E A3 + E: 1-2-4-7-10-12-14	Best of A plus F A3 + F: 1-2-4-7-10-12-15	Best of B B1: 1-2-4-5-11-13-15	Existing Highway 7&8 Alignment 1-2-4-6-13-15	
		due to left turns across a widened highway, and avoids increases in winter snow storage along village property frontages, and does not reduce highway setback in the village with associated feeling of "highway intrusion" and reduces front yard aesthetics. • Field observation identified no change to facilities / utilities / services.	 Hwy 7&8 due to left turns across a widened highway, and avoids increases in winter snow storage along village property frontages, and does not reduce highway setback in the village with associated feeling of "highway intrusion" and reduces front yard aesthetics. Field observation identified no change to facilities / utilities / services. Loss of entire residence and farm buildings (property acquisition and displacement of residence).east of Road 108 on existing Highway 7/8 corridor. Loss of frontage (property acquisition) of two residences just east of Road 108. 	 residences) Loss/encroachment into residential envelope of some residential property on the north western residential portion of Shakespeare east of Road 108. Bypass of village avoids driveway access impacts along Hwy 7&8 due to left turns across a widened highway, and avoids increases in winter snow storage along village property frontages, and does not reduce highway setback in the village with associated feeling of "highway intrusion" and reduces front yard aesthetics. Field observation identified no change to facilities / utilities / services. 	residential/farm properties along entire route. • Widening through village causes driveway access impacts along Hwy 7&8 due to left turns across a widened highway, causes increases in snow storage along village property frontages; and by reducing highway setback increases the feeling of "highway intrusion" and reduces front yard aesthetics. • Field observation identified no change to facilities / utilities / services.	
2.2.4 Commercial / Industrial	Potential and significance of: • encroachment, severance, displacement, property acquisition; • long-term alteration / disruption; • change in area character / aesthetics; • nuisance impacts; • change to access / travel time; • change to facilities / utilities / services; • interference with commercial community cohesion; • change to highway operation impacts (e.g. customer parking, cargo loading/off-loading). to commercial and industrial areas (business owners/tenants and customers).	 Low potential for impacts to commercial and industrial areas Possible encroachment of industrial area east of Road 108. No long term alteration /disruption No nuisance impacts anticipated given existing industrial development Field observation identified no change to facilities / utilities / services; No interference with commercial community cohesion; Bypass of the village reduces drive-by exposure of commercial businesses (e.g. restaurants and gas station) for potential out-of-town customers, and reduces commercial vehicle accessibility, but makes the shopping experience in the village more attractive, and does not impact parking opportunities. Bypass of village avoids driveway access impacts along Hwy 7&8 	 Low potential for impacts to commercial and industrial areas Possible encroachment of industrial area east of Road 108. No long term alteration /disruption No nuisance impacts anticipated given existing industrial development Field observation identified no change to facilities / utilities / services; No interference with commercial community cohesion; Bypass of the village reduces drive-by exposure of commercial businesses (e.g. restaurants and gas station) for potential out-oftown customers, and reduces commercial vehicle accessibility, but makes the shopping experience in the village more attractive, and does not impact parking opportunities. Bypass of village avoids 	 Medium potential for impacts to commercial and industrial areas Encroachment on one trucking business east of Road 108 (property acquisition). No long term alteration /disruption anticipated at this property. No nuisance effects likely as it is already located on the existing right of way. Encroachment/loss (property acquisition) of training area for stables located between Road 106 and Perth Road 107. Long term alteration/disruption/nuisance effects likely to this business. Field observation identified no change to facilities / utilities / services. No interference with commercial community cohesion; Bypass of the village reduces drive-by exposure of commercial businesses (e.g. restaurants and 	 High potential for impacts to commercial and industrial areas Encroachment to commercial area within Shakespeare Village. Some businesses (including, but not limited to, the Shakespeare truck Centre, several antique stores, an Esso Gas Station, Coffee Time, Convenience Store, speciality (tourist based) shops, hair salon, glass repair and Home Hardware) within the Shakespeare area are directly adjacent to the roadway, so impacts may be greater in these cases. Some property acquisition and loss of frontage may be required in these cases. Nuisance impacts likely to the area within Shakespeare. Field observation identified no change to facilities / utilities / services; No interference with commercial community cohesion; 	

LEGEND

Note – Evaluation of the route alternatives is based on a qualitative assessment of each route (high, medium or low). Relevant and site-specific information for each criterion/cell is provided to justify the high, medium or low assessment.

BEST OF SHAKESPEARE AREA ALTERNATIVES

Factor				Route Al	ternative	
/ Sub- Factor	Criteria	Indicator for Route Selection	Best of A plus E A3 + E: 1-2-4-7-10-12-14	Best of A plus F A3 + F: 1-2-4-7-10-12-15	Best of B B1: 1-2-4-5-11-13-15	Existing Highway 7&8 Alignment 1-2-4-6-13-15
			due to left turns across a widened highway, and avoids increases in winter snow storage along village property frontages.	driveway access impacts along Hwy 7&8 due to left turns across a widened highway, and avoids increases in winter snow storage along village property frontages.	gas station) for potential out-of- town customers, and reduces commercial vehicle accessibility, but makes the shopping experience in the village more attractive, and does not impact parking opportunities. Bypass of village avoids driveway access impacts along Hwy 7&8 due to left turns across a widened highway, and avoids increases in winter snow storage along village property frontages.	 Widening through the village leaves drive-by exposure of businesses (e.g. restaurants and gas station) for potential out-of-town customers and commercial vehicle accessibility unchanged, but makes the shopping experience in the village less attractive, and reduces parking opportunities. Widening through village causes driveway access impacts along Hwy 7&8 due to left turns across a widened highway, and causes increases in snow storage along village property frontages
	2.2.5 Tourist Areas and Attractions (e.g. museums, theatres, etc.)	Potential and significance of: encroachment, severance, displacement, property acquisition; long-term alteration / disruption; change in area character/ aesthetics; nuisance impacts; change to access / travel time; change to facilities / utilities / services; loss of "critical mass" in number of signature business attractions (e.g. number of antique shops). to tourist areas and attractions.	 Low potential for impacts to tourist areas and attractions No change or impacts to tourist areas and attractions in terms of any property encroachment or acquisition. No nuisance impacts anticipated given absence of any tourist attractions or areas along this alternative. No signature business attractions (none along this alternative) Bypass of the village reduces drive-by exposure of tourist attractions (e.g. shops and boutiques) for potential out-oftown customers, but makes the tourist experience in the village more attractive, and does not impact parking opportunities. Bypass of village avoids driveway access impacts along Hwy 7&8 due to left turns across a widened highway, and avoids increases in winter snow storage along village property frontages. Field observation identified no change to facilities / utilities / services. 	 Low potential for impacts to tourist areas and attractions No change or impacts to tourist areas and attractions in terms of any property encroachment or acquisition. No nuisance impacts anticipated given absence of any tourist attractions or areas along this alternative. No signature business attractions (none along this alternative) Bypass of the village reduces drive-by exposure of tourist attractions (e.g. shops and boutiques) for potential out-oftown customers, but makes the tourist experience in the village more attractive, and does not impact parking opportunities. Bypass of village avoids driveway access impacts along Hwy 7&8 due to left turns across a widened highway, and avoids increases in winter snow storage along village property frontages. Field observation identified no change to facilities / utilities / services. 	 Low potential for impacts to tourist areas and attractions No change or impacts to tourist areas and attractions in terms of any property encroachment or acquisition. No nuisance impacts anticipated given absence of any tourist attractions or areas along this alternative. No signature business attractions (none along this alternative) Bypass of the village reduces drive-by exposure of tourist attractions (e.g. shops and boutiques) for potential out-oftown customers, but makes the tourist experience in the village more attractive, and does not impact parking opportunities. Bypass of village avoids driveway access impacts along Hwy 7&8 due to left turns across a widened highway, and avoids increases in winter snow storage along village property frontages. Field observation identified no change to facilities / utilities / services. 	 Medium potential for impacts to tourist areas and attractions Potential loss of downtown "feel" and antique based businesses within Shakespeare. Potential for increased number of drive through visitors, Potential long-term alternation of the community character within Shakespeare. Further detailed design and business impact analysis required to determine loss of number of signature businesses. Widening through the village leaves drive-by exposure of tourist attractions (e.g. shops and boutiques) for potential out-oftown customers unchanged, but makes the tourist experience in the village less attractive, and reduces parking opportunities. Widening through village causes driveway access impacts along Hwy 7&8 due to left turns across a widened highway, and causes increases in snow storage along village property frontages Field observation identified no

LEGEND

Note – Evaluation of the route alternatives is based on a qualitative assessment of each route (high, medium or low). Relevant and site-specific information for each criterion/cell is provided to justify the high, medium or low assessment.

BEST OF SHAKESPEARE AREA ALTERNATIVES

Factor				Route A	Iternative	
/ Sub- Factor	Criteria	Indicator for Route Selection	Best of A plus E A3 + E: 1-2-4-7-10-12-14	Best of A plus F A3 + F: 1-2-4-7-10-12-15	Best of B B1: 1-2-4-5-11-13-15	Existing Highway 7&8 Alignment 1-2-4-6-13-15
						change to facilities / utilities / services.
	2.2.6 Community Facilities / Institutions (e.g. hospitals, schools, places of worship, unique community features)	Potential and significance of: encroachment, severance, displacement, property acquisition; long-term alteration / disruption; change in area character/ aesthetics; nuisance impacts; change to access / travel time; change to facilities / utilities / services change to ease and safety of pedestrian movements across the highway and within the highway right-of-way; change to highway operation impacts to current use (e.g. highway noise and vibration interfering with church services). to community facilities and institutions.	 Low potential for impacts to community facilities and institutions Route alternative at Perth Road 107 will bring new roadway closer to Optimist Hall and Sprucedale Public School/Community Center playing fields. Area is already bounded by railway tracks so impact to area character/aesthetics of this area is not likely to be significant. Bypassing the village avoids further isolating the school, community centre facilities and church from residents on the opposite side of the highway. Field observation identified no change to facilities / utilities / services. Some potential for nuisance impacts at the hall and playing fields. 	 Low potential for impacts to community facilities and institutions Route alternative at Perth Road 107 will bring new roadway closer to Optimist Hall and Sprucedale Public School/Community Center playing fields. Area is already bounded by railway tracks so impact to area character/aesthetics of this area is not likely to be significant. Bypassing the village avoids further isolating the school, community centre facilities and church from residents on the opposite side of the highway. Field observation identified no change to facilities / utilities / services. Some potential for nuisance impacts at the hall and playing fields. 	Medium potential for impacts to community facilities and institutions Bypassing the village avoids further isolating the school, community centre facilities and church from residents on the opposite side of the highway. However, traffic destined to the new route from the south must pass through Shakespeare to access the route. Field observation identified no change to facilities / utilities / services.	 High potential for impacts to community facilities and institutions Encroachment (property acquisition) to Shakespeare Presbyterian Church – potential loss of parking spaces. Likely increased nuisance impacts to the church. Widening through the village isolates the north half of the village from the school and community centre facilities; and isolates the south half of the village from the church. Field observation identified no change to facilities / utilities / services.
	2.2.7 Municipal Infrastructure and Public Service Facilities (e.g. sewage and water services, police/emergency services, local utilities)	Potential and significance of: • encroachment, severance, displacement; • long-term alteration / disruption; • change to access / travel time; • change to facilities / utilities / services. to municipal infrastructure and public service facilities.	 No potential for impacts to municipal infrastructure / public service facilities Bypass of village would not lengthen response times to locations outside the village unless Hwy 7&8 direct access is not retained at the east and west village limits. From field observations, no impacts to municipal infrastructure and public service facilities. 	 No potential for impacts to municipal infrastructure / public service facilities Bypass of village would not lengthen response times to locations outside the village unless Hwy 7&8 direct access is not retained at the east and west village limits. From field observations, no impacts to municipal infrastructure and public service facilities. 	 Low potential for impacts to municipal infrastructure / public service facilities Bypass of village would not lengthen response times to locations outside the village unless Hwy 7&8 direct access is not retained at the east and west village limits. Potential encroachment (property acquisition) to communications tower located west of Road 106. From field observations, no other impacts to municipal infrastructure and public service facilities expected 	 Medium potential for impacts to municipal infrastructure / public service facilities Widening through village does not impact lengthen response times to locations outside the village. Potential encroachment and property acquisition of the Perth East Fire Department / Shakespeare Fire Department. Likely loss of paved area. Likely increased nuisance impacts. Field observation identified no other change to facilities / utilities / services.
	2.2.8 Downtown Historic Crossroads Function	Potential and significance of interference by long-distance through-traffic on: • "main street" function and structure; • character/aesthetics;	Low potential for interference in the historic downtown area Bypass of the village reduces long distance traffic through the	Low potential for interference in the historic downtown area Bypass of the village reduces long distance traffic through the	Low potential for interference in the historic downtown area Bypass of the village reduces long distance traffic through the	High potential for interference in the historic downtown area Likely adverse effects on Main Street function, character as

LEGEND

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BEST OF SHAKESPEARE AREA ALTERNATIVES

			BEST OF SHAKESPEARE	E AREA ALTERNATIVES		
Factor				Route A	Iternative	
/ Sub- Factor	Criteria	Indicator for Route Selection	Best of A plus E A3 + E: 1-2-4-7-10-12-14	Best of A plus F A3 + F: 1-2-4-7-10-12-15	Best of B B1: 1-2-4-5-11-13-15	Existing Highway 7&8 Alignment 1-2-4-6-13-15
		 change to ease and safety of pedestrian movements across the highway and within the highway right-of-way; change to on-street parking in the historic downtown area 	village and provides the opportunity to improve the shopping/socializing experience in the village, and does not impact parking opportunities.	village and provides the opportunity to improve the shopping/socializing experience in the village, and does not impact parking opportunities.	village and provides the opportunity to improve the shopping/socializing experience in the village, and does not impact parking opportunities.	 pedestrian movements restricted and street parking may become prohibited. Widening through the village introduces more long distance traffic through the village and diminishes the shopping/socializing experience in the village, and reduces parking opportunities.
2.3 Nois	e Sensitive Areas (NS	As) (residential areas and sensitive institutional u	ses)			
	2.3.1 Highway Noise	Potential for significant traffic noise increases in NSAs and for noise-sensitive receivers immediately adjacent to the highway.	 Medium potential for significant noise increases Potential noise impacts of 65 dBA or a 5 dB increase are expected for about 105 NSAs within the area of influence. Potential noise impacts to 1 school (Sprucedale Public School) are expected. A decrease of noise impacts by 5 dB or more is expected for about 60 NSAs due to reduced traffic on the roadway that is currently Hwy 7/8. The rail line along the south edge of Shakespeare causes daily short duration noise impacts for NSAs that would be influenced by this alternative. The elevated rail line is not expected to be high enough to form an effective noise barrier for road noise. Mitigation would therefore be more challenging. 	 Medium potential for significant noise increases Potential noise impacts of 65 dBA or a 5 dB increase are expected for about 105 NSAs within the area of influence. Potential noise impacts to 1 school (Sprucedale Public School) are expected. A decrease of noise impacts by 5 dB or more is expected for about 60 NSAs due to reduced traffic on the roadway that is currently Hwy 7/8. The rail line along the south edge of Shakespeare causes daily short duration noise impacts for NSAs that would be influenced by this alternative. The elevated rail line is not expected to be high enough to form an effective noise barrier for road noise. Mitigation would therefore be more challenging. 	 Low potential for significant noise increases Potential noise impacts of 65 dBA or a 5 dB increase are expected for about 40 NSAs within the area of influence. A decrease of noise impacts by 5 dB or more is expected for about 45 NSAs due to reduced traffic on the roadway that is currently Hwy 7/8. 	 High potential for significant noise increases Potential noise impacts of 65 dBA are expected for about 75 NSAs within the area of influence. Potential noise impacts to 1 church (Shakespeare Presbyterian Church) are expected within the area of influence of the ROW Mitigation of noise impacts in Shakespeare will not be feasible because driveways for the NSAs would negate the barrier effectiveness.
	2.3.2 Construction Noise	To be considered during Preliminary Design pha	se			
2.4 Agric	culture	1				
_	2.4.1 Agriculture - Canada Land Inventory Class 1,2,3 Land	Potential and significance of encroachment, severance of Canada Land Inventory Classes 1, 2 and 3 soils	High potential for impacts to CLI Class 1, 2 and 3 lands Impacts 30 hectares of Class 1 / 2 soil	High potential for impacts to CLI Class 1, 2 and 3 lands Impacts 38 hectares of Class 1 / 2 soil	High potential for impacts to CLI Class 1, 2 and 3 lands Impacts 35 hectares of Class 1 / 2 soil	Low potential for impacts to CLI Class 1, 2 and 3 lands Impacts 16 hectares of Class 1 / 2 soil

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BEST OF SHAKESPEARE AREA ALTERNATIVES

Factor			Route Alternative			
/ Sub- Factor	Criteria	Indicator for Route Selection	Best of A plus E A3 + E: 1-2-4-7-10-12-14	Best of A plus F A3 + F: 1-2-4-7-10-12-15	Best of B B1: 1-2-4-5-11-13-15	Existing Highway 7&8 Alignment 1-2-4-6-13-15
	2.4.2 Agriculture – Farm Infrastructure	Potential and significance of: • encroachment, severance, displacement; • long-term alteration / disruption; • nuisance impacts; to farm infrastructure (field tile drainage systems/outlets, irrigation systems, barns / silos/ structures, etc.)	 Medium potential impacts on farm infrastructure 1 minor encroachment on farm infrastructure west of Road 104 2 encroachments on farm infrastructure, 1 between Road 104 and Road 106 and 1 on Road 106, south of the railway Impacts to subsurface farm infrastructure (e.g. tile drainage) and to area farm drainage systems are anticipated. The locations of subsurface farm infrastructure along the preferred route will be identified and mitigation concepts for these impacts will be developed during preliminary design 	 Medium potential impacts on farm infrastructure 1 minor encroachment on farm infrastructure west of Road 104 2 encroachments on farm infrastructure, 1 between Road 104 and Road 106 and 1 on Road 106, south of the railway Impacts to subsurface farm infrastructure (e.g. tile drainage) and to area farm drainage systems are anticipated. The locations of subsurface farm infrastructure along the preferred route will be identified and mitigation concepts for these impacts will be developed during preliminary design 	 Medium potential impacts on farm infrastructure 2 encroachments on farm infrastructure, 1 just west of Road 106 and 1 between Road 107 and Road 108 Impacts to subsurface farm infrastructure (e.g. tile drainage) and to area farm drainage systems are anticipated. The locations of subsurface farm infrastructure along the preferred route will be identified and mitigation concepts for these impacts will be developed during preliminary design 	 Medium potential impacts on farm infrastructure Displaces homestead on 1 livestock and cash crop operation west of Road 106 Impacts to subsurface farm infrastructure (e.g. tile drainage) and to area farm drainage systems are anticipated. The locations of subsurface farm infrastructure along the preferred route will be identified and mitigation concepts for these impacts will be developed during preliminary design
	2.4.3 Agriculture – Operations on Individual Farms	Potential and significance of:	Medium potential for impacts to operations on individual farms Long term alteration to in field farm operations in an established agricultural community including: Minor frontage impacts and encroachment on lands of 1 cash crop operation west of Road 104 Severs 1 parcel between Road 104 and Road 106 Very minor encroachment on lands in the corner of 2 parcels associated with a cash crop and livestock operation between Road 104 and Road 106 Significant encroachment on portions of land abutting the railway on 8 parcels which are associated with 5 different cash crop and livestock operations in the area Displaces portions of land abutting the railway on 3 parcels 6 parcels where nutrient	Medium potential for impacts to operations on individual farms Long term alteration to in field farm operations in an established agricultural community including: Minor frontage impacts and encroachment on lands of 1 cash crop operation west of Road 104 Severs 2 parcels, 1 between Road 104 and Road 106 and 1 west of Shakespeare Very minor encroachment on lands in the corner of 2 parcels associated with a cash crop and livestock operation between Road 104 and Road 106 Significant encroachment on portions of land abutting the railway on 8 parcels which are associated with 5 different cash crop and livestock operations in the area Displaces portions of land abutting the railway on 3 parcels	 High potential for impacts to operations on individual farms Long term alteration to in field farm operations in an established agricultural community including: Significant frontage impacts and encroachment and severance of lands on 1 livestock and cash crop operation west of Road 106 Severs 2 parcels associated with 2 different livestock and cash crop operations, both of which are adjacent to the Shakespeare village Significant encroachment and severance of 4 parcels north of the existing right-of-way and on both the east and west sides of Road 107 2 parcels where nutrient management has been reported by the farmer are significantly impacted 1 parcel where nutrient management is assumed to occur in association with 	Low potential for impacts to operations on individual farms Long term alteration to in field farm operations in an established agricultural community including: Minor frontage impacts and encroachment on lands on 12 livestock and cash crop operations Minor frontage impacts and encroachment on lands on 6 parcels 11 parcels where nutrient management has been reported by the farmer are significantly impacted 1 parcels where nutrient management is assumed to occur in association with livestock operations are significantly impacted Additional nutrient management operations may still be identified by potentially impacted farmers

LEGEND

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BEST OF SHAKESPEARE AREA ALTERNATIVES

Factor	Criteria	Indicator for Route Selection	Route Alternative				
/ Sub- Factor			Best of A plus E A3 + E: 1-2-4-7-10-12-14	Best of A plus F A3 + F: 1-2-4-7-10-12-15	Best of B B1: 1-2-4-5-11-13-15	Existing Highway 7&8 Alignment 1-2-4-6-13-15	
			management has been reported by the farmer are impacted significantly - 2 parcels where nutrient management has been reported by the farmer are impacted slightly - 3 parcels where nutrient management is assumed to occur in association with livestock operations are significantly impacted - Additional nutrient management operations may still be identified by potentially impacted farmers	 5 parcels where nutrient management has been reported by the farmer are impacted significantly 2 parcels where nutrient management has been reported by the farmer are impacted slightly 3 parcels where nutrient management is assumed to occur in association with livestock operations are significantly impacted Additional nutrient management operations may still be identified by potentially impacted farmers 	livestock operations is significantly impacted - Additional nutrient management operations may still be identified by potentially impacted farmers		
	2.4.4 Agriculture – Transportation Linkages between Integrated Agricultural Business Units (IABUs)	Potential to sever/disrupt transportation linkages between integrated agricultural business units (movement between integrated agricultural business units of equipment, materials, workers, etc.)	Medium potential to sever / disrupt transportation linkages Route alternative passes between parcels of land associated with 4 IABU's as identified to the study team by the farming community	Medium potential to sever / disrupt transportation linkages Route alternative passes between parcels of land associated with 4 IABU's as identified to the study team by the farming community	Medium potential to sever / disrupt transportation linkages Route alternative passes between parcels of land associated with 4 IABU's as identified to the study team by the farming community	Low potential to sever / disrupt transportation linkages Route alternative passes between parcels of land associated with 4 IABU's as identified to the study team by the farming community however, this alternative involves additional lanes to cross rather than a new route to cross.	
2.5 Land	5 Land Use / Resources						
	2.5.1 First Nations' Treaty Rights or Use of Land and Resources for Traditional Purposes (e.g. hunting, fishing, harvesting of country foods, harvesting of medicinal plants)	Potential and significance of:	Medium potential to affect First Nation Treaty Rights or use of land and resources for traditional purposes Route alternative has both existing highway and new corridor components.	Medium potential to affect First Nation Treaty Rights or use of land and resources for traditional purposes Route alternative has both existing highway and new corridor components.	Medium potential to affect First Nation Treaty Rights or use of land and resources for traditional purposes Route alternative has both existing highway and new corridor components.	Low potential to affect First Nation Treaty Rights or use of land and resources for traditional purposes Route alternative is almost entirely existing highway.	
	2.5.2 Parks and Recreational Areas (e.g. national/ provincial parks, conservation areas, municipal parks,	Potential and significance of: • encroachment, severance, displacement, property acquisition; • long-term alteration / disruption; • change in area character/ aesthetics; • nuisance impacts;	Low potential for impacts to parks and recreational areas Bypass of village to the south avoids isolating the village from the Shakespeare Pond conservation area on Perth Road	Low potential for impacts to parks and recreational areas Bypass of village to the south avoids isolating the village from the Shakespeare Pond conservation area on Perth Road	Low potential for impacts to parks and recreational areas Bypass of village to the north somewhat isolates the village from the Shakespeare Pond conservation area on Perth Road	Low potential for impacts to parks and recreational areas Widening through the village somewhat isolates the south half of the village from the Shakespeare Pond conservation	

MOST PREFERRED	MODERATELY PREFERRED	LEAST PREFERRED	NO DIFFERENCE	SELECTED ROUTE

Note – Evaluation of the route alternatives is based on a qualitative assessment of each route (high, medium or low). Relevant and site-specific information for each criterion/cell is provided to justify the high, medium or low assessment.

BEST OF SHAKESPEARE AREA ALTERNATIVES

Factor				Route A	Iternative	
/ Sub- Factor	Criteria	Indicator for Route Selection	Best of A plus E A3 + E: 1-2-4-7-10-12-14	Best of A plus F A3 + F: 1-2-4-7-10-12-15	Best of B B1: 1-2-4-5-11-13-15	Existing Highway 7&8 Alignment 1-2-4-6-13-15
	public spaces, golf courses, trails, greenways and open space linkages)	change to access / travel time; change to facilities / utilities / services. to parks and recreational areas.	 Segment east of Road 108 will bring new roadway closer to park near Optimist Hall and Sprucedale Public School/ Community Center playing fields. Area is already bounded by railway tracks so impact to area character/aesthetics is not likely to be significant. No encroachment or direct impacts to property boundaries of parks and recreational facilities and no long-term alteration/disruption likely. Field observation identified no change to facilities / services. Some potential for nuisance impacts at the park and playing fields. 	 Segment east of Road 108 will bring new roadway closer to park near Optimist Hall and Sprucedale Public School/ Community Center playing fields. Area is already bounded by railway tracks so impact to area character/ aesthetics is not likely to be significant. No encroachment or direct impacts to property boundaries of parks and recreational facilities and no long-term alteration/disruption likely. Field observation identified no change to facilities / utilities / services. Some potential for nuisance impacts at the park and playing fields. 	No direct impacts to parks and recreational areas as none are in the area.	area on Perth Road 107. No direct impacts to parks and recreational areas as none are in the area.
	2.5.3 Aggregates, Mineral-Resources	Potential and significance of:	No potential for impacts to current/future aggregate / mineral resources No impacts to mineral-aggregate resources	No potential for impacts to current/future aggregate / mineral resources No impacts to mineral-aggregate resources	High potential for impacts to current/future aggregate / mineral resources Displacement of aggregate / pit operations immediately east of Perth Road 107. Long term alteration/disruption of entire operation.	No potential for impacts to current/future aggregate / mineral resources No impacts to aggregates, mineral-resources
	r Utility Transmission oads, hydro, gas, oil)	Corridors				
		Potential and significance of:	Low potential for impacts to major utility transmission corridors One new railway crossing No major hydro transmission corridor crossings No major gas / oil corridor crossings	Medium potential for impacts to major utility transmission corridors	 No potential for impacts to major utility transmission corridors No railway crossings No major hydro transmission corridor crossings No major gas / oil corridor crossings 	 No potential for impacts to major utility transmission corridors No railway crossings No major hydro transmission corridor crossings No major gas / oil corridor crossings

			BEST OF SHAKESPEARE	E AREA ALTERNATIVES			
actor				Route Alternative			
/ Sub- Factor	Criteria	Indicator for Route Selection	Best of A plus E A3 + E: 1-2-4-7-10-12-14	Best of A plus F A3 + F: 1-2-4-7-10-12-15	Best of B B1: 1-2-4-5-11-13-15	Existing Highway 7&8 Alignment 1-2-4-6-13-15	
		d Waste Management e Sites, "Brownfield" Areas, other known contamina	ated sites, and high-risk contamination are	eas)			
0 1 00	Jacoba Companii an	Potential and significance of: • encroachment, severance, displacement; • long-term alteration / disruption; • change to access / travel time; • change to facilities / utilities / services. to contaminated property and waste management.	 Medium potential for impacts to contaminated property and waste Two vehicle fuel and repair facilities were identified in Shakespeare along Highway 7/8. Both sites, an Esso Service Station at Patrick Street and Patriot Gas east of Road 107, are at least 400 m north of proposed alignment at the west end of the alignment. Regional groundwater flow direction is anticipated to be flowing in a southerly direction. The distance of the service stations from the proposed realignment indicates that potential environmental concerns related to the service stations are minimal; however, consideration should be given to implementing a scoped subsurface investigation south of the service stations at the northern extent of the proposed road alignment to confirm soil and groundwater conditions. 	 Medium potential for impacts to contaminated property and waste Two vehicle fuel and repair facilities were identified in Shakespeare along Highway 7/8. Both sites, an Esso Service Station at Patrick Street and Patriot Gas east of Road 107, are at least 400 m north of proposed alignment at the west end of the alignment. Regional groundwater flow direction is anticipated to be flowing in a southerly direction. The distance of the service stations from the proposed realignment indicates that potential environmental concerns related to the service stations are minimal; however, consideration should be given to implementing a scoped subsurface investigation south of the service stations at the northern extent of the proposed road alignment to confirm soil and groundwater conditions. 	 Medium potential for impacts to contaminated property and waste Two vehicle fuel and repair facilities were identified in Shakespeare along Highway 7/8. An Esso Service Station at Patrick Street is approximately 150 m south of the B1 alignment and Patriot Gas located east of Highway 107 is at least 650 m south of proposed alignment B1. Regional groundwater flow direction is anticipated to be flowing in a southerly direction. The distance of the service stations from the proposed realignment indicates that potential environmental concerns related to the service stations are minimal; however, consideration should be given to implementing a scoped subsurface investigation north of the Esso service station at the southern extent of the proposed road alignment to confirm soil and groundwater conditions. 	Medium potential for impacts to contaminated property and waste Two vehicle fuel and repair facilities were identified in Shakespeare along Highway 7/8 An Esso Service Station is direct north of the alignment at Patrick Street and Patriot Gas is directly south of Highway 7/8 east of Highway 107. Regional groundwater flow direction is anticipated to be flowing in a southerly direction. The distance of the service stations from the existing ROW indicates potential environmental concerns.	
.8 Lands	scape Composition	T			I		
	2.8.1 Scenic Composition (total aesthetic value of landscape components)	Potential and significance of change to scenic composition (total aesthetic value of landscape components).	Medium potential to impact scenic composition for sensitive viewer groups and of views from the route alternative Low/Medium negative impacts on	Medium potential to impact scenic composition for sensitive viewer groups and of views from the route alternative Low/Medium negative impacts	 Medium potential to impact scenic composition for sensitive viewer groups and of views from the route alternative High negative impact on affected 	High potential to impact scenic composition for sensitive viewer groups and of views from the route alternative Low negative impact due to use	
	2.8.2 Sensitive Viewer Groups	Potential and significance of change vistas/outlooks for sensitive viewer groups.	urban community due to existing railroad, and existing hedge buffer Medium negative impact on	on urban community due to existing railroad, and existing hedge buffer	farmhouses on east and west entry • Low negative impact on urban	 of existing thoroughfare footpri Medium/High negative impact adjacent properties due to the 	
	2.8.3 Scenic value of views/vistas from the transportation facility	Potential and significance of views/vistas from the transportation facility.	 affected farmhouse on east entry, and south of route alternative medium/High negative impact on adjacent properties on route alternative due to the loss of frontage and associated potential 	 Medium negative impact on affected farmhouse on east entry, and south of proposed roadway medium/High negative impact on adjacent properties on route 	 community due to distance, and rolling terrain buffer Medium/High negative impact on adjacent properties on route alternative due to the loss of frontage and associated potential 	 loss of frontage and associated potential loss of vegetation Medium visual interest of agricultural fields, and hedgerows Medium/High visual interest of 	

LEGEND

MOST PREFERRED MODERATELY PREFERRED LEAST PREFERRED **NO DIFFERENCE** SELECTED ROUTE

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BEST OF SHAKESPEARE AREA ALTERNATIVES

Factor				Route A	Iternative	
/ Sub- Factor	Criteria	Indicator for Route Selection	Best of A plus E A3 + E: 1-2-4-7-10-12-14	Best of A plus F A3 + F: 1-2-4-7-10-12-15	Best of B B1: 1-2-4-5-11-13-15	Existing Highway 7&8 Alignment 1-2-4-6-13-15
			loss of vegetation High negative impacts on affected farms on western curve Low negative impact due to potential loss of vegetation through western rail corridor Medium visual interest through agricultural fields High visual interest of southern woodlot across fields High visual interest of riparian areas and associated vegetation Medium visual interest of hedge buffer of railroad tracks Low/Medium visual interest of flat terrain and railroad corridor	alternative due to the loss of frontage and associated potential loss of vegetation High negative impacts on affected farmhouses on east entry of route alternative High negative impacts on affected farms on western curve of route alternative Low negative impact due to potential loss of vegetation on western curve High negative impact on the nearby urban community because of proximity of the western portion of route alternative Medium visual interest through agricultural fields High visual interest of southern woodlot across fields High visual interest of riparian areas and associated vegetation Medium visual interest of hedge buffer of railroad tracks low/Medium visual interest of flat terrain and railroad corridor	loss of vegetation • Medium/High visual interest through rolling terrain and agricultural fields • Low visual interest of affected farmhouses backyards	community buffer zone of farm houses and established vegetation • Medium/High visual interest of urban community and urban core
	2.8.4 Specimen Trees	To be considered during Preliminary Design pha	se			
2.9 Air Q	luality	,				
	2.9.1 Local and Regional Air Quality (Total contaminant	Previously addressed during Needs Assessment	Phase			
	and greenhouse gas emissions)					
	2.9.2 Sensitive receptors to air pollutants and greenhouse gas emissions	Presence and potential for impacts to sensitive receptors to air pollutants and greenhouse gas emissions, including consideration of number of sensitive receptors immediately adjacent to the highway.	Low potential impact to sensitive receptors adjacent to the highway 1 sensitive receptor within 20m of the edge of the right-of-way.	Low potential impact to sensitive receptors adjacent to the highway 1 sensitive receptor within 20m of the edge of the right-of-way.	Low potential impact to sensitive receptors adjacent to the highway 2 sensitive receptors within the edge of the right-of-way.	 High potential impact to sensitive receptors adjacent to the highway 46 sensitive receptors within the edge of the right-of-way.

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BEST OF SHAKESPEARE AREA ALTERNATIVES

Factor			Route Alt	ernative	
/ Sub- Factor	Indicator for Route Selection	Best of A plus E A3 + E: 1-2-4-7-10-12-14	Best of A plus F A3 + F: 1-2-4-7-10-12-15	Best of B B1: 1-2-4-5-11-13-15	Existing Highway 7&8 Alignment 1-2-4-6-13-15
3 CHI THEAL ENVIRONMENT	TAL EACTORS				

3. CULTURAL ENVIRONMENTAL FACTORS

3.1.1 Buildings or

3.1 Cultural Heritage – Built Heritage and Cultural Landscapes

"Standing" Sites of Architectural or Heritage Significance or Ontario Heritage Foundation Easement Properties	 encroachment, severance, displacement, property acquisition; long-term alteration / disruption; change in area character / aesthetics; nuisance impacts; change to access / travel time; change to facilities / utilities / services. to buildings or "standing" sites of extreme local, provincial or national interest or Ontario Heritage Foundation easements properties.
3.1.2 Heritage Bridges	Potential for destruction or significant alteration of heritage bridges

Potential and significance of:

Medium potential for impacts to sites of heritage significance and Heritage Foundation Easement Properties

- There are 8 built heritage resources within or in immediate proximity to the route
- There are two in close proximity to the extreme east end of the route (1825 Highway 7/8 -George Kleinknecht Farmstead and 1834 Highway 7/8 outbuilding); these may be encroached but not likely physically impacted
- Setting may change somewhat.
- Six within the route and are generally in close proximity to the road; setting will be heavily altered and some buildings may be displaced. These six buildings are the John McTavish Farmstead (2026 Highway 7/8), the Andrew Riddell Junior Farmstead (2053 Highway 7/8), the Andrew Riddell Farmstead (2007 Highway 7/8), Dr. Flynn's House (1971 Hwy 7/8), Sebastian Fryfogel Farmstead (1899 Highway 7/8), and the Fryfogel Tavern/Inn (1931 Highway 7/8).

Medium potential for impacts to sites of heritage significance and Heritage Foundation Easement Properties

- There are 8 built heritage resources within or in immediate proximity to the route
- There are two in close proximity to the extreme east end of the route (1825 Highway 7/8 -George Kleinknecht Farmstead and 1834 Highway 7/8 outbuilding); these may be encroached but not likely physically impacted
- Setting may change somewhat.
- Six within the route and are generally in close proximity to the road; setting will be heavily altered and some buildings may be displaced. These six buildings are the John McTavish Farmstead (2026 Highway 7/8), the Andrew Riddell Junior Farmstead (2053 Highway 7/8), the Andrew Riddell Farmstead (2007 Highway 7/8), Dr. Flynn's House (1971 Hwy 7/8), Sebastian Fryfogel Farmstead (1899 Highway 7/8), and the Fryfogel Tavern/Inn (1931 Highway 7/8)

Medium potential for impacts to sites of heritage significance and Heritage Foundation Easement Properties

- There are 8 built heritage resources within or in immediate proximity to the route. These are within the Highway 7/8 portion of the route:
- There are two in close proximity to the extreme east end of the route (1825 Highway 7/8 -George Kleinknecht Farmstead and 1834 Highway 7/8 outbuilding); these may be encroached but not likely physically impacted
- Setting may change somewhat.
- Six within the Highway 7/8 portion of the route and are generally in close proximity to the road; setting will be heavily altered and some buildings may be displaced. These six buildings are the John McTavish Farmstead (2026 Highway 7/8), the Andrew Riddell Junior Farmstead (2053 Highway 7/8), the Andrew Riddell Farmstead (2007 Highway 7/8), Dr. Flynn's House (1971 Hwy 7/8), Sebastian Fryfogel Farmstead (1899 Highway 7/8), and the Fryfogel Tavern/Inn (1931 Highway 7/8).

High potential for impacts to sites of heritage significance and Heritage Foundation Easement Properties

- There are 18 built heritage resources within or in immediate proximity to the route. Eight of these are east of Shakespeare along Highway 7/8. Of these there are two in close proximity to the extreme east end of the route (1825 Highway 7/8 - George Kleinknecht Farmstead and 1834 Highway 7/8 – outbuilding): these may be encroached but not likely physically impacted
- Setting may change somewhat.
- Six along the Highway 7/8 portion of the route and are generally in close proximity to the road; setting will be heavily altered and some buildings may be displaced. These six buildings are the John McTavish Farmstead (2026 Highway 7/8), the Andrew Riddell Junior Farmstead (2053 Highway 7/8), the Andrew Riddell Farmstead (2007 Highway 7/8), Dr. Flynn's House (1971 Hwy 7/8), Sebastian Fryfogel Farmstead (1899 Highway 7/8), and the Fryfogel Tavern/Inn (1931 Highway 7/8).
- Ten structures are within Shakespeare and may be displaced or have their setting heavily altered. These include the Commercial Block at 2204 Hwy 7/8, the Union Hotel on the north side of the highway, the Shakespeare Presbyterian Church at 2196 Hwy 7/8, a Georgian House at 2182 Hwy 7/8, a row of Gothic Revival Houses at

LEGEND

MOST PREFERRED MODERATELY PREFERRED LEAST PREFERRED **NO DIFFERENCE SELECTED ROUTE**

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BEST OF SHAKESPEARE AREA ALTERNATIVES

actor				Route A	ternative	
/ Sub- Factor	Criteria	Indicator for Route Selection	Best of A plus E A3 + E: 1-2-4-7-10-12-14	Best of A plus F A3 + F: 1-2-4-7-10-12-15	Best of B B1: 1-2-4-5-11-13-15	Existing Highway 7&8 Alignment 1-2-4-6-13-15
						2215, 2217, 2219 Hwy 7/8 and 3997 Galt Street, a house at 2213 Hwy 7/8, a cottage at 2209 Hwy 7/8, the Capeling House near the intersection of Hwy 59, 7/8, a Gothic Revival house at the same general intersection and a small house at the corner of Byron Street and Hwy 7/8
	3.1.3 Areas of Historic 19 th Century Settlement	Potential and significance of: • encroachment, severance, displacement; • long-term alteration / disruption; • change in area character / aesthetics; • nuisance impacts; • change to access / travel time; • change to facilities / utilities / services. to areas of historic 19 th century settlement.	 Low potential for impacts to areas of historic settlement The route crosses a portion of Highway 7/8, an early transportation route but no major, concentrated centres of 19th Century settlement 	Low potential for impacts to areas of historic settlement The route crosses a portion of Highway 7/8, an early transportation route but no major, concentrated centres of 19 th Century settlement	 Low potential for impacts to areas of historic settlement The route crosses a portion of Highway 7/8, an early transportation route but no major, concentrated centres of 19th Century settlement 	 High potential for impacts to areas of historic settlement The route crosses through Shakespeare, an area of concentrated historic 19th century settlement
	3.1.4 Cultural Heritage Landscapes (collection of individual man- made features modifying pristine landscape)	Potential and significance of change to composition of cultural landscapes.	Medium potential for impacts to cultural heritage landscapes Dilse identified one large, continuous cultural heritage landscape that crosses the east end of this route (from Lingelbach Cemetery west to west of Road 106); only the extreme east end of the route is affected	Medium potential for impacts to cultural heritage landscapes Dilse identified one large, continuous cultural heritage landscape that crosses the east end of this route (from Lingelbach Cemetery west to west of Road 106); only the extreme east end of the route is affected	Medium potential for impacts to cultural heritage landscapes Two general areas of cultural heritage landscape are defined in Dilse's study one large, continuous cultural heritage landscape that crosses the east end of this route (from Lingelbach Cemetery west to west of Road 106); only the east end of the route is affected. The other includes Shakespeare and lands immediately north of it	High potential for impacts to cultural heritage landscapes Two general areas of cultural heritage landscape are defined in Dilse's study - one large, continuous cultural heritage landscape that crosses the east end of this route (from Lingelbach Cemetery west to west of Road 106). The other includes the entire community of Shakespeare.
	3.1.5 First Nations' Burial Sites	Potential and significance of: • encroachment, severance, displacement; • long-term alteration / disruption; • change in area character / aesthetics; • nuisance impacts; • change to access / travel time. to First Nations' burial sites.	No potential for impacts to First Nations burial sites There are no known / reported First Nations' burial sites within this route	No potential for impacts to First Nations burial sites There are no known / reported First Nations' burial sites within this route	No potential for impacts to First Nations burial sites There are no known/reported First Nations' burial sites within this route	No potential for impacts to First Nations burial sites There are no known/reported First Nations' burial sites within this route
	3.1.6 Cemeteries	Potential and significance of: • encroachment, severance, displacement; • long-term alteration / disruption; • change in area character/ aesthetics; • nuisance impacts;	Low potential for impacts to cemeteries There is one cemetery (Fryfogel) adjacent to this route; boundaries are poorly known	Low potential for impacts to cemeteries There is one cemetery (Fryfogel) adjacent to this route; boundaries are poorly known	Low potential for impacts to cemeteries There is one cemetery (Fryfogel) adjacent to this route; boundaries are poorly known	Low potential for impacts to cemeteries There is one cemetery (Fryfogel) adjacent to this route; boundaries are poorly known

MOST PREFERRED	MODERATELY PREFERRED	LEAST PREFERRED	NO DIFFERENCE	SELECTED ROUTE

Note – Evaluation of the route alternatives is based on a qualitative assessment of each route (high, medium or low). Relevant and site-specific information for each criterion/cell is provided to justify the high, medium or low assessment.

			BEST OF SHAKESPEAR	E AREA ALTERNATIVES		
Factor				Route A	lternative	
/ Sub- Factor	Criteria	Indicator for Route Selection	Best of A plus E A3 + E: 1-2-4-7-10-12-14	Best of A plus F A3 + F: 1-2-4-7-10-12-15	Best of B B1: 1-2-4-5-11-13-15	Existing Highway 7&8 Alignment 1-2-4-6-13-15
		change to access / travel time;change to facilities / utilities / services.				
		to cemeteries.				
3.2 Cultu	ıral Heritage – Archae	ology				
	3.2.1 Pre-Historic and Historic First Nations Sites	Potential for destruction or disturbance of pre- historic and historic First Nations archaeological sites of extreme local, provincial or national interest	 Medium potential for destruction or disturbance of archaeological sites There are four known registered sites within this route (Riddell 1, 	 Medium potential for destruction or disturbance of archaeological sites There are four known registered sites within this route (Riddell 1, 	 Medium potential for destruction or disturbance of archaeological sites There are four known registered sites within this route (Riddell 1, 	 Medium potential for destruction or disturbance of archaeological sites There are four known registered sites within this route (Riddell 1,
	3.2.2 Historic Euro- Canadian Archaeological Sites Of Hatiorial interest Potential for destruction or disturbance of historic Euro-Canadian archaeological sites of extreme local, provincial or national interest		Riddell 2, Fryfogel, Fryfogel Inn); all have portions likely present There is potential for previously undocumented archaeological sites	Riddell 2, Fryfogel, Fryfogel Inn); all have portions likely present There is potential for previously undocumented archaeological sites	Riddell 2, Fryfogel, Fryfogel Inn); all have portions likely present There is potential for previously undocumented archaeological sites	Riddell 2, Fryfogel, Fryfogel Inn); all have portions likely present There is potential for previously undocumented archaeological sites
4. AREA	ECONOMY - Previou	Isly addressed during Needs Assessment Phas	se .			
5. TRAN	ISPORTATION FACTO	PRS				
5.1 Area	Transportation System	m Capacity and Efficiency				
	5.1.1 Federal/ Provincial/Municipal transportation planning policies/goals/ objectives	Previously addressed during Needs Assessment	Phase.			
	5.1.2 Efficient movement of people	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	 High potential to support efficient movement of people. Route is predominantly on new alignment, with high level of service due to few intersections and few driveways Direct route Some out-of-way travel for local access from Shakespeare to route 	High potential to support efficient movement of people. Route is predominantly on new alignment, with high level of service due to few intersections and few driveways Direct route Some out-of-way travel for local access from Shakespeare to route	High potential to support efficient movement of people. Route is predominantly on new alignment, with high level of service due to few intersections and few driveways Direct route Some out-of-way travel for local access from Shakespeare to route	 Medium potential to support efficient movement of people. Route predominantly utilizes existing corridor, with reduced level of service through developed area of Shakespeare given number of existing intersections and driveways. Direct route No out-of-way travel for local access from Shakespeare to corridor
	5.1.3 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)	High potential to support efficient movement of goods. Route is predominantly on new alignment, with high level of service due to few intersections and few driveways Direct route	High potential to support efficient movement of goods. Route is predominantly on new alignment, with high level of service due to few intersections and few driveways Direct route	High potential to support efficient movement of goods. Route is predominantly on new alignment, with high level of service due to few intersections and few driveways Direct route	Medium potential to support efficient movement of goods. Route predominantly utilizes existing corridor, with reduced level of service through developed area of Shakespeare given number of existing intersections

LEGEND

MOST PREFERRED MODERATELY PREFERRED LEAST PREFERRED NO DIFFERENCE SELECTED ROUTE

Note – Evaluation of the route alternatives is based on a qualitative assessment of each route (high, medium or low). Relevant and site-specific information for each criterion/cell is provided to justify the high, medium or low assessment.

			BEST OF SHAKESPEAR	E AREA ALTERNATIVES		
Factor				Route A	Iternative	
/ Sub- Factor	Criteria	Indicator for Route Selection	Best of A plus E A3 + E: 1-2-4-7-10-12-14	Best of A plus F A3 + F: 1-2-4-7-10-12-15	Best of B B1: 1-2-4-5-11-13-15	Existing Highway 7&8 Alignment 1-2-4-6-13-15
			Some out-of-way travel for local access from Shakespeare to route	Some out-of-way travel for local access from Shakespeare to route	Some out-of-way travel for local access from Shakespeare to route	 and driveways. Direct route No out-of-way travel for local access from Shakespeare to corridor
5.2 Area	Transportation Syste	m Reliability / Redundancy				
		Potential to support system reliability and redundancy for travel (people and goods) between regions and communities during adverse conditions	High potential to support system reliability and redundancy Route is predominantly on new alignment, which provides a new connection in the Shakespeare area to accommodate travel during adverse conditions (i.e. provides an alternate route)	High potential to support system reliability and redundancy Route is predominantly on new alignment, which provides a new connection in the Shakespeare area to accommodate travel during adverse conditions (i.e. provides an alternate route)	High potential to support system reliability and redundancy Route is predominantly on new alignment, which provides a new connection in the Shakespeare area to accommodate travel during adverse conditions (i.e. provides an alternate route)	Low potential to support system reliability and redundancy Route is all existing roadway, which does not provide a new connection in the Shakespeare area to accommodate travel during adverse conditions (i.e. provides an alternate route)
5.3 Safe	ty					
	5.3.1 Traffic 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	High potential to improve traffic safety Route is predominantly on new alignment, with limited number of access points at intersection locations and a few access points associated with private entrances A four/five lane cross section provides for good passing opportunity, provides a wider platform to accommodate evasive moves during potential accidents, and a centre left turn lane would accommodate safer left turns along the highway at intersection and driveway locations	High potential to improve traffic safety Route is predominantly on new alignment, with limited number of access points at intersection locations and a few access points associated with private entrances A four/five lane cross section provides for good passing opportunity, provides a wider platform to accommodate evasive moves during potential accidents, and a centre left turn lane would accommodate safer left turns along the highway at intersection and driveway locations	High potential to improve traffic safety Route is predominantly on new alignment, with limited number of access points at intersection locations and a few access points associated with private entrances A four/five lane cross section provides for good passing opportunity, provides a wider platform to accommodate evasive moves during potential accidents, and a centre left turn lane would accommodate safer left turns along the highway at intersection and driveway locations	Medium potential to improve traffic safety All of route is existing corridor with numerous access points associated with private entrances A four/five lane cross section provides for good passing opportunity, provides a wider platform to accommodate evasive moves during potential accidents, and a centre left turn lane would accommodate safer left turns along the highway since limited opportunity to reduce number of intersections and driveways
	5.3.2 Emergency Access	Potential to support emergency access to/from existing and/or new provincial facilities.	 High potential to support emergency access to/from route Full moves connection will be provided at Perth Road 107 Opportunity to provide connections to existing Highway 7&8 at east and west ends of Shakespeare Direct access from existing fire hall east of Perth Road 107 to existing Highway 7&8 will be maintained 	 High potential to support emergency access to/from route Full moves connection will be provided at Perth Road 107 Opportunity to provide connections to existing Highway 7&8 at east and west ends of Shakespeare Direct access from existing fire hall east of Perth Road 107 to existing Highway 7&8 will be maintained 	 High potential to support emergency access to/from route Full moves connection will be provided at Perth Road 107 Opportunity to provide connections to existing Highway 7&8 at east and west ends of Shakespeare Direct access from existing fire hall east of Perth Road 107 to existing Highway 7&8 will be maintained 	 High potential to support emergency access to/from route Full moves connection retained at Perth Road 107 Direct access from existing fire hall east of Perth Road 107 to existing Highway 7&8 will be maintained

Note – Evaluation of the route alternatives is based on a qualitative assessment of each route (high, medium or low). Relevant and site-specific information for each criterion/cell is provided to justify the high, medium or low assessment.

BEST OF SHAKESPEARE AREA ALTERNATIVES

Factor				Route Al	ternative	
/ Sub- Factor	Criteria	Indicator for Route Selection	Best of A plus E A3 + E: 1-2-4-7-10-12-14	Best of A plus F A3 + F: 1-2-4-7-10-12-15	Best of B B1: 1-2-4-5-11-13-15	Existing Highway 7&8 Alignment 1-2-4-6-13-15
5.4 Mohi	5.3.3 Pedestrian, Cyclist and Snowmobile Safety within the highway right-of-way Potential and significance of change to ease and safety of movement across the highway and within the right-of-way. High potential to improve pedestrian, cyclist and snowmobile safety Route situated south of developed area of Shakespeare so need for movement within the right-of-way eliminated; reduced traffic on existing Highway 7&8 in developed area where pedestrian / cyclist movements predominately occur Pedestrian, cyclist and snowmobile movements arross right-of-way can be provided at intersection locations and/or designated crossing locations		High potential to improve pedestrian, cyclist and snowmobile safety Route situated south of developed area of Shakespeare so need for movement within the right-of-way eliminated; reduced traffic on existing Highway 7&8 in developed area where pedestrian / cyclist movements predominately occur Pedestrian, cyclist and snowmobile movements across right-of-way can be provided at intersection locations and/or designated crossing locations	Medium potential to improve pedestrian, cyclist and snowmobile safety Route situated north of developed area of Shakespeare so need for movement within the right-of-way eliminated; reduced traffic on existing Highway 7&8 in developed area where pedestrian / cyclist movements predominately occur; however, traffic destined to/from south on Road 107 must pass through Shakespeare to access new Highway 7&8 alignment Pedestrian, cyclist and snowmobile movements across right-of-way can be provided at intersection locations and/or designated crossing locations	Low potential to improve pedestrian, cyclist and snowmobile safety Route situated within developed area of Shakespeare where pedestrian / cyclist movements predominately occur Pedestrian, cyclist and snowmobile movements across right-of-way can be provided at intersection locations and/or designated crossing locations	
3.4 MODI	5.4.1 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 connection to concentrations of population, travel performance indicators (LOS, v/c, travel speed) at critical screenlines and on potential to provide higher order transit service.	 Medium potential to improve modal integration, balance and efficiency. Transit service is potentially constrained by the bypass of the community of Shakespeare, but is supported by the direct connection to development along Highway 7&8 both east and west of Shakespeare. Use of existing Highway 7&8 would constrain transit travel performance. Opportunity to support interface between rail transit service and highway 	Medium potential to improve modal integration, balance and efficiency. Transit service is potentially constrained by the bypass of the community of Shakespeare, but is supported by the direct connection to development along Highway 7&8 both east and west of Shakespeare. Use of existing Highway 7&8 would constrain transit travel performance. Opportunity to support interface between rail transit service and highway	 Low potential to improve modal integration, balance and efficiency. Transit service is potentially constrained by the bypass of the community of Shakespeare, but is supported by the direct connection to development along Highway 7&8 both east and west of Shakespeare. Use of existing Highway 7&8 would constrain transit travel performance. 	Medium potential to improve modal integration, balance and efficiency. Potential transit service is supported by direct connection to the community of Shakespeare and the development along Highway 7&8. Use of existing Highway 7&8 would constrain transit travel performance.
	5.4.2 Linkages to Population and Employment Centres	Potential to improve linkages to population and employment centres for people and goods movement	Medium potential to improve linkages to population and employment centres. Linkage to Stratford and New Hamburg improved Linkages to Shakespeare may be reduced because of limitations imposed by intersection design	Medium potential to improve linkages to population and employment centres. Linkage to Stratford and New Hamburg improved Linkages to Shakespeare may be reduced because of limitations imposed by intersection design	Medium potential to improve linkages to population and employment centres. Linkage to Stratford and New Hamburg improved Linkages to Shakespeare may be reduced because of limitations imposed by intersection design	High potential to improve linkages to population and employment centres. Linkage to Stratford and New Hamburg improved Direct connection through Shakespeare

LEGEND

MOST PREFERRED MODERATELY PREFERRED LEAST PREFERRED NO DIFFERENCE SELECTED ROUTE

Note – Evaluation of the route alternatives is based on a qualitative assessment of each route (high, medium or low). Relevant and site-specific information for each criterion/cell is provided to justify the high, medium or low assessment.

BEST OF SHAKESPEARE AREA ALTERNATIVES

Factor			Route Alternative				
/ Sub- Factor	Criteria	Indicator for Route Selection	Best of A plus E A3 + E: 1-2-4-7-10-12-14	Best of A plus F A3 + F: 1-2-4-7-10-12-15	Best of B B1: 1-2-4-5-11-13-15	Existing Highway 7&8 Alignment 1-2-4-6-13-15	
			requirements at potential tie-in points between the bypass and the current highway	requirements at potential tie-in points between the bypass and the current highway	requirements at potential tie-in points between the bypass and the current highway		
	5.4.3 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)	Medium potential to support recreation and tourism travel Shakespeare tourist area is bypassed, but tourist travel through the analysis area is facilitated	Medium potential to support recreation and tourism travel Shakespeare tourist area is bypassed, but tourist travel through the analysis area is facilitated	Medium potential to support recreation and tourism travel Shakespeare tourist area is bypassed, but tourist travel through the analysis area is facilitated	Medium potential to support recreation and tourism travel Shakespeare tourist area is not bypassed, but tourist travel through analysis area is slowed by congestion in Shakespeare	
	5.4.4 Accommodate mobility of pedestrians, cyclists and snowmobiles	Potential to accommodate mobility of pedestrians, cyclists within critical travel corridors in urbanized areas and snowmobiles in recognized rural trails	High potential to accommodate mobility of pedestrians, cyclists and snowmobiles Route situated south of developed area of Shakespeare so need for movement within the right-of-way eliminated; reduced traffic on existing Highway 7&8 in developed area provides opportunity to improve mobility of pedestrian / cyclist movements within developed area Existing snowmobile trail crossings east and west of Shakespeare can be maintained	High potential to accommodate mobility of pedestrians, cyclists and snowmobiles • Route situated south of developed area of Shakespeare so need for movement within the right-of-way eliminated; reduced traffic on existing Highway 7&8 in developed area provides opportunity to improve mobility of pedestrian / cyclist movements within developed area • Existing snowmobile trail crossings east and west of Shakespeare can be maintained	Medium potential to accommodate mobility of pedestrians, cyclists and snowmobiles Route situated north of developed area of Shakespeare so need for movement within the right-of-way eliminated; reduced traffic on existing Highway 7&8 in developed area provides opportunity to improve mobility of pedestrian / cyclist movements within developed area; however traffic destined to/from south on Road 107 must pass through Shakespeare to access new Highway 7&8 alignment Existing snowmobile trail crossings east and west of Shakespeare can be maintained	Low potential to accommodate mobility of pedestrians, cyclists and snowmobiles Route passes directly through developed area of Shakespeare where pedestrian / cyclist movements predominately occur; confined boulevard area constrains pedestrian / cyclist mobility Existing snowmobile trail crossings east and west of Shakespeare can be maintained	
5.5 Netv	vork Compatibility				,		
	5.5.1 Network Connectivity	Potential to improve transportation system connectivity within and to/from the analysis area.	High potential to improve transportation system connectivity Provides improved linkage between Stratford and New Hamburg	High potential to improve transportation system connectivity Provides improved linkage between Stratford and New Hamburg	High potential to improve transportation system connectivity Provides improved linkage between Stratford and New Hamburg	High potential to improve transportation system connectivity Provides improved linkage between Stratford and New Hamburg	
	5.5.2 Flexibility for Future Expansion	Potential to address future transportation needs beyond the forecasted planning horizons.	High potential for future expansion Route is outside Shakespeare urban boundary, and since it is predominantly on new alignment, the majority of the right-of-way could accommodate future expansion	High potential for future expansion Route is outside Shakespeare urban boundary, and since it is predominantly on new alignment, the majority of the right-of-way could accommodate future expansion	High potential for future expansion Route is outside Shakespeare urban boundary, and since it is predominantly on new alignment, the majority of the right-of-way could accommodate future expansion	Low potential for future expansion Route passes directly through developed area of Shakespeare, and the right-of-way through Shakespeare could not readily accommodate further expansion beyond the 4/5-lane section associated with this route alternative	

MOST PREFERRED	MODERATELY PREFERRED	LEAST PREFERRED	NO DIFFERENCE	SELECTED ROUTE

Note – Evaluation of the route alternatives is based on a qualitative assessment of each route (high, medium or low). Relevant and site-specific information for each criterion/cell is provided to justify the high, medium or low assessment.

			BEST OF SHAKESPEARE	AREA ALTERNATIVES		
Factor				Route A	Iternative	
/ Sub- Factor	Criteria	Indicator for Route Selection	Best of A plus E A3 + E: 1-2-4-7-10-12-14	Best of A plus F A3 + F: 1-2-4-7-10-12-15	Best of B B1: 1-2-4-5-11-13-15	Existing Highway 7&8 Alignment 1-2-4-6-13-15
5.6 Engi	neering					
	5.6.1 Constructability	Potential ease of implementation considering feasibility/difficulty of physical, property or environmental constraints	Low potential for constructability issues Utilizes segment of existing Highway 7&8 corridor One railway crossing Two new watercourse crossings	High potential for constructability issues Utilizes segment of existing Highway 7&8 corridor Two railway crossings Two new watercourse crossings	Low potential for constructability issues Utilizes segment of existing Highway 7&8 corridor No railway crossings No new major watercourse crossings	Medium potential for constructability issues Utilizes existing Highway 7&8 corridor; confined environment through Shakespeare No railway crossings No new major watercourse crossings
	5.6.2 Compliance with Design Criteria	Conformity to applicable provincial safety and design standards.	High conformity to safety and design standards Supports use of better than minimum horizontal and vertical alignment elements Can accommodate standard lane and shoulder widths	High conformity to safety and design standards Supports use of better than minimum horizontal and vertical alignment elements Can accommodate standard lane and shoulder widths	High conformity to safety and design standards Supports use of better than minimum horizontal and vertical alignment elements Can accommodate standard lane and shoulder widths	Medium conformity to safety and design standards Supports use of better than minimum horizontal and vertical alignment elements Can accommodate standard lane widths Constrained boulevard area
5.7 Traff	ic Operations					
		Potential for negative impact on traffic operations due to factors such as design features, private access, and transportation network connections	 Low potential for negative impact on traffic operations Route is predominantly on new alignment, with limited number of access points at intersection locations and a few access points associated with private entrances. Can accommodate full moves connection at Perth Road 107 Can accommodate connections to existing Highway 7&8 at east and west ends of Shakespeare 	 Low potential for negative impact on traffic operations Route is predominantly on new alignment, with limited number of access points at intersection locations and a few access points associated with private entrances. Can accommodate full moves connection at Perth Road 107 Can accommodate connections to existing Highway 7&8 at east and west ends of Shakespeare 	 Medium potential for negative impact on traffic operations Route is predominantly on new alignment, with limited number of access points at intersection locations and a few access points associated with private entrances. Can accommodate full moves connection at Perth Road 107 Can accommodate connections to existing Highway 7&8 at east and west ends of Shakespeare Traffic destined to new route from the south must pass through Shakespeare to access the new route 	 High potential for negative impact on traffic operations Route is all existing highway, with multiple entrances and intersections Can accommodate full moves connection at Perth Road 107 Can accommodate connections to existing Highway 7&8 at east and west ends of Shakespeare
5.8 Cons	struction Cost (exclud	es property costs and engineering costs)				
		Relative road construction cost, excluding property and engineering costs	Medium Cost	High Cost	Low Cost	Low Cost
		property and originouring costs	\$10 M	\$15 M	\$5 M	\$5 M

Highway 7&8 Transportation Corridor Planning and Class EA Study

EVALUATION OF ROUTE ALTERNATIVES

Note - Evaluation of the route alternatives is based on a qualitative assessment of each route (high, medium or low). Relevant and site-specific information for each criterion/cell is provided to justify the high, medium or low assessment.

			AI TERNATIVE:	

Factor			Route Alt	ernative	
/ Sub- Criteria Factor	Indicator for Route Selection	Best of A plus E A3 + E: 1-2-4-7-10-12-14	Best of A plus F A3 + F: 1-2-4-7-10-12-15	Best of B B1: 1-2-4-5-11-13-15	Existing Highway 7&8 Alignment 1-2-4-6-13-15

SUMMARY OF EVALUATION

Summary of Natural Environment

Route Alternatives 'Best of A plus E' and 'Best of A plus F' are preferred from a natural environment perspective as they have lower potential impacts to wildlife, groundwater and surface water relative to the other two alternatives.

Summary of Land Use / Socio-Economic Environment

Route Alternative 'Best of A plus F' is preferred from a land use / socio-economic environment perspective as it has lower potential impacts to the community, including urban and rural residential areas, commercial and industrial areas, and community facilities, and to local resources and moderate potential impacts to agriculture relative to the other alternative.

Summary of Cultural Environment

Route Alternatives 'Best of A plus F', 'Best of A plus F' and 'Best of B' are preferred as they result in comparable impacts to built heritage and archaeological sites and reduced impacts relative to the 'Existing Highway 7&8 Alignment' alternative.

Summary of Transportation

Route Alternatives 'Best of A plus E' and 'Best of A plus F' are preferred for the majority of the transportation criteria. However, Route Alternative 'Best of A plus E' is preferred because it has lower potential for constructability issues and a lower relative construction cost than Alternative 'Best of A plus F'.

<u>Conclusion</u>

Based upon the above, Route Alternative 'Best of A plus E" (i.e. southern by-pass which remains south of the railway corridor west of Shakespeare) is the preferred alternative for the Shakespeare area.

BEST OF SHAKESPEARE AREA ALTERNATIVES

FACTORS		Weighting			rnative	
		A00-000-000-000-000-000-000-000-000-000	1	2	3	4
1.0 NATURAL ENVIRONMENT 1.1 Fisheries and Aquatic Ecosystems		20.00				
1.1 Fisheries and Aquatic Ecosystems	Weighted Score	8.00	5.36	5.36	5.36	5.36
1.2 Terrestrial Ecosystems	I THE RESERVE	5.00			111111111111111111111111111111111111111	
1.3 Groundwater	Weighted Score	774 550 5745	3.35	3.35	3.10	3.10
1.5 Groundwater	Weighted Score	5.00	3.68	3.68	3.00	3.68
1.4 Surface Water		2.00				
	Weighted Score		0.66	0.66	1.34	0.66
Factor	Score	20.00	13.05	13.05	12.80	12.80
2 A LAND HEE / COOLO ECONOMIC ENVIDE	AND STATES	25.00				
2.0 LAND USE / SOCIO-ECONOMIC ENVIRO 2.1 Land Use Planning Policies, Goals, Objectives	DNMENT	35.00				
2.1 Land Ose Franning Foncies, Goais, Objectives	Weighted Score	3.50	2.35	2.35	2.17	2.35
2.2 Land Use / Community		7.00		T. Littur		
2.2 N. J. S W. A	Weighted Score	271000	4.92	4.56	4.09	1.05
2.3 Noise Sensitive Areas	Weighted Score	5.25	1.73	1.73	3.52	0.00
2.4 Agriculture		7.00				3.00
2.5 Land Use / Resources	Weighted Score	2.50	2.08	2.08	1.16	3.74
2.5 Land Use / Resources	Weighted Score	3.50	2.46	2.46	1.76	2.58
2.6 Major Utility Transmission Corridors		0.70				2.00
27 C	Weighted Score	0.70	0.47	0.23	0.70	0.70
2.7 Contaminated Property and Waste Management	Weighted Score	0.70	0.23	0.23	0.23	0.23
2.8 Landscape Composition		2.10				0.20
2.0 A. O	Weighted Score	5.05	0.69	0.69	0.69	0.00
2.9 Air Quality	Weighted Score	5.25	3.52	3.52	3.52	0.00
Factore	ed Score	35.00	18.45	17.85	17.83	10.64
3.0 CULTURAL ENVIRONMENT	ALL DO ENLY	20.00		The San		
3.1 Cultural Heritage - Built Heritage and Cultural Landscapes		16.00			ta I Pist	
2.2. A melhanology	Weighted Score	100	6.30	6.30	6.30	2.01
3.2 Archaeology	Weighted Score	4.00	1,32	1.32	1.32	1.32
Factore	ed Score	20.00	7.62	7.62	7.62	3.33
5.0 TRANSPORTATION	10 8 0 9 3	25.00	THE TOWN			
5.1 Area Transportation System Capacity and Efficiency		3.75				
5.2 Area Transportation System Reliability / Redundancy	Weighted Score	3.75	3.75	3.75	3.75	2.51
A A A A Thusportation System Renability / Redundancy	Weighted Score	5.75	3.75	3.75	3.75	1.24
5.3 Safety		6.25				
5.4 Mobility and Accessibility	Weighted Score	2.50	6.25	6.25	5.43	3.75
A TANAMA A COSSIDING	Weighted Score	2.30	1.92	1.92	1.59	1.67
5.5 Network Compatibility		1.25				
5.6 Engineering	Weighted Score	2.50	1.25	1.25	1.25	1.08
Engineering	Weighted Score	2.50	1.84	0.50	1.84	1.00
5.7 Traffic Operations		3.75				
5.8 Construction Cost	Weighted Score	1.00	2.51	2.51	1.24	0.00
5.6 Construction Cost	Weighted Score	1.25	1.24	0.00	2.51	2.51
Factore	ed Score	25.00	22.51	19.94	21.36	13.76
		100.00				20110
250 A. 140 A. 250 Yes Wat			SW 52	92924 595	150 Sept. 450 Sept. 150 Se	WS 75
Total Alternative Scor	Care II		61.63	58.46	59.60	40.52

- ALTERNATIVE DESCRIPTIONS

 1: Best of A plus E = A3 + E = 1-2-4-7-10-12-14

 2: Best of A plus F = A3 + F = 1-2-4-7-10-12-15

 3: Best of B = B1 = 1-2-4-5-11-13-15

 4: Existing Highway 7&8 Alignment = 1-2-4-6-13-15

NATURAL ENVIRONMENT WEIGHTING TABLE - BEST OF SHAKESPEARE AREA ALTERNATIVES

	Factor / Sub-factor / Criteria	Indicator	Net Effect	Weighting	1	Alte 2	rnative 3	1 4
1.0	NATURAL ENVIRONMENT			20.00		2	3	4
	Fisheries and Aquatic Ecosystems	And the second s						
	1.1.1 Fish Habitat	Potential and significance of: encroachment, severance, displacement; and long-term alteration/disruption as applicable to the following: critical fish habitat features, riparian areas and habitat rehabilitation goals.	52 (67) (1284) (10) (22)	8.00				
	1.1.2 Fish Community	Potential and significance of: encroachment, severance, displacement, and long-term alteration/disruption as applicable to the following: fish species at risk (vulnerable, threatened or endangered fish species), fish movement/migration, critical fish life stage processes (spawning, rearing, nursery, feeding) and long-term fish community management goals.	No / Low / Medium / High Effects	8.00	0.67	0.67	0.67	0.67
_			Weighted Score	The state of the s	5.36	5.36	5.36	5.36
2 7	Cerrestrial Ecosystems		Carle over 1 where	5.00			0.00	0.00
		SMELTINE TEACHER TO LEAD		2.007			E VILLE	
	1.2.1 Wildlife	Potential and significance of encroachment, severance, displacement; and long-term alteration/disruption as applicable to the following: wildlife species at risk (vulnerable, threatened or endangered wildlife species); wildlife of local and regional importance; migratory birds; critical wildlife habitat features; ecologically functional areas such as connective corridors or travel ways for movement/migration; important wildlife areas such as deeryards, heroories, waterfowd areas, important bird areas; wildlife management, rehabilitation/research programs sites; and interference with critical wildlife life stage processes (eg mating/rearing, etc.).	No / Low / Medium / High Effects	0.75	0.67	0.67	0.33	0.33
	1.2.2 Wetlands	Potential and significance of, encroachment, severance, displacement, and long-term alteration/disruption as applicable to the following: provincially significant wetlands, their buffer areas, and their wetland function; evaluated and un-evaluated wetlands, their wetland buffer areas, and their wetland function; and wetland management, research and/or wetland conservation programs/areas.	No / Low / Medium / High Effects	1,25	0.67	0.67	0.67	0.67
	1.2.3 Forests	Potential and significance of: encroachment, severance, displacement, and long-term alteration/disruption as applicable to the following: significant woodlands/valley lands: and forest management/research program areas.	No / Low / Medium / High Effects	1,25	0.67	0.67	0.67	0.67
	1.2.4 Vegetation	Potential and significance of: encroachment, severance, displacement; and long-term alteration/disruption as applicable to the following: sub-populations of vegetation species at risk (vulnerable, threatened or endangered species), species of conservation concern and significant regional/focal flora/communities; areas/corridors supporting known populations of vegetation species at risk (vulnerable, threatened or endangered species), species of conservation concern and significant flora/communities; and vegetation management, rehabilitation/research program sites.	No / Low / Medium / High Effects	0.75	0.67	0.67	0.67	0.67
	1.2,5 Designated/Special Areas	Potential and significance of: encroachment, severance, displacement, long- term alteration/disruption, change in area character/aesthetics, nulsance impacts, change to access/travel time, and change to facilities/utilities/services to designated/special areas.	No / Low / Medium / High Effects	1.00	0.67	0.67	0.67	0.67
İ			Weighted Score		3.35	3.35	3.10	3.10
3 G	roundwater	ii patelukututa an asa	TEL MANDEN TO	5.00		ETIT	PART	
	1.3.1 Areas of Groundwater Recharge and Discharge	Potential and significance of alteration to areas of groundwater recharge and discharge due to physical intrusion or groundwater inception, drawdown, impoundment, obstruction, or soil compaction impacting groundwater base-flow and quality.	No / Low / Medium / High Effects	0.50	0.67	0.67	0.33	0.67
	1.3.2 Groundwater Source Areas and Wellhead Protection Areas	Potential and significance of alteration to areas of groundwater resource areas and wellhead protection areas due to physical intrusion, or groundwater interception, draw-down, impoundment, obstruction and by soil compaction.	No / Low / Medium / High Effects	1,00	0.67	0.67	0.33	0.67
	1.3.3 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.	No / Low / Medium / High Effects	0.50	0.67	0.67	0.33	0.67

NATURAL ENVIRONMENT WEIGHTING TABLE - BEST OF SHAKESPEARE AREA ALTERNATIVES

	Factor / Sub-factor / Criteria	Indicator	Net Effect	Weighting		Alter	native	
		Thinteact	- Act Lineet	rreigning	1	2	3	4
)	NATURAL ENVIRONMENT			20.00				
	1.3.4 Private Wells	Potential and significance of alteration to private well use due to physical intrusion, or groundwater interception, draw-down, impoundment, obstruction and by soil compaction.	No / Low / Medium / High Effects	1.00	0.67	0.67	0.67	0.67
	1.3.5 Groundwater-Dependent Commercial Enterprises (e.g. water bottling operations)	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.	No / Low / Medium / High Effects	1.00	1.00	1.00	1.00	1.00
	1.3.6 Groundwater-Sensitive Ecosystems (e.g. groundwater fed wetlands, coldwater streams)	Potential and significance of alteration to groundwater-sensitive ecosystems due to physical intrusion, or groundwater interception, drawdown, impoundment, obstruction and by soil compaction.	No / Low / Medium / High Effects	1.00	0.67	0.67	0.67	0.67
			Weighted Score		3.68	3.68	3.00	3.68
S	Surface Water			2.00				
	1.4.1 Watershed / Sub-Watershed Drainage Features / Patterns	Potential and significance of: encroachment, severance, displacement; and long-term alteration/disruption as applicable to the following: watercourse crossings (permanent, intermittent and ephemeral); floodplain or meander belts; riparian areas; sensitive headwater areas; and watershed and sub watershed management plans.	No / Low / Medium / High Effects					
	1.4.2 Surface Water Quality and Quantity	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 waterbodies.	No / Low / Medium / High Effects	2.00	0.33	0.33	0.67	0.33
			Weighted Score		0.66	0.66	1.34	0.66
Г			Factored Score	20.00	13.05	13.05	12.80	12.80

- ALTERNATIVE DESCRIPTIONS

 1: Best of A plus E = A3 + E = 1-2-4-7-10-12-14

 2: Best of A plus F = A3 + F = 1-2-4-7-10-12-15

 3: Best of B = B1 = 1-2-4-5-11-13-15

 4: Existing Highway 78.8 Altignment = 1-2-4-6-13-15

SUMMARY WEIGHTING TABLE - BEST OF SHAKESPEARE AREA ALTERNATIVES

	Factor / Sub-factor / Criteria	Indicator	Net Effect	Weighting	1	Alte 2	rnative 3	4
.0	LAND USE / SOCIO-ECONOMIC	ENVIRONMENT		35.00				
0 1	Land Use Planning Policies, Goals and Obj	ectives		3.50			Than so s	
	2.1.1 First Nations Land Claims	Potential and significance of encroachment, severance, displacement to areas for which there are First Nations outstanding land claims	No / Low / Medium / High Effects	0,18	0.67	0.67	0.67	0.67
	2.1.2 Provincial/Federal land use planning policies/goals/objectives	Degree of compatibility with federal/provincial land use policies/goals/objectives	No / Low / Medium / High Effects	0.52	0.67	0.67	0.33	0,67
	2.1.3 Municipal (regional and local land use planning policies/goals/ objectives (Official Plans)	Degree of compatibility with municipal Official Plans	No / Low / Medium / High Effects	2.28	0.67	0.67	0.67	0.67
	2.1.4 Development Objectives of Private Property Owners	Potential to isolate property from current/future urban envelope. Impact on future land use.	No / Low / Medium / High Effects	0.52	0.67	0.67	0.67	0.67
			Weighted Score	- Tana 19000	2.35	2.35	2.17	2.35
2 L	Land Use / Community			7.00				
	2.2.1 First Nation Reserves	Potential and significance of encroschment, severance, displacement, long-term alternation / disruption, change in area character / aesthetics, naisance impacts and change to access / travel time to First Nation Reserves.	No / Low / Medium / High Effects	0.35	1.00	1.00	1.00	1.00
	2.2.2 First Nations' Sacred Grounds	Potential and significance of encroachment, severance, displacement, long-term alteration / disruption, change in area character / aesthetics, naisance impacts and change to necess / travel time to First Nations' sacred grounds.	No / Low / Medium / High Effects	0.35	0.67	0.67	0.67	0.67
	2.2.3 Urban and Rural Residential	Potential and significance of: encroechment, severance, displacement, property acquisition: long-term alteration/disruption (e.g., loss of parking areas); change in area character? a seatherics (e.g. loss of treat/glordon areas); missione impacts (e.g. intrusion of highway into current residential envelope); change to access / travel time; change to facilities / studies / services; interference with residential community cohesion; change to highway operational impacts (e.g. snow atonge and highway access viability) to urban and rural residential areas (residents (owners/tenants) and community groups).	Nα / Low / Medium / High Effects	1.05	0.67	0.33	0.67	0,00
	2.2.4 Commercia/Industrial	Potential and significance of: encroachment, severance, displacement, property acquisition: long-term alteration/disruption; change in aron character/aesthetics; nuisance impacts; change to travel accesstraved time; change to foellines/utilisas/services; interference with commercial community colesion; change to highway operation timpacts (e.g., tassomer packing, cargo losdingsforf-kodings) to commercial and industrial areas (business owners/ternants and customers).	No / Low / Medium / High Hifteens	1.05	0.67	0.67	0.33	0.00
	2.2.5 Tourist Areas and Attractions (e.g. museums, theatres, etc.)	Potential and significance of encroachment, severance, displacement, properly acquisition: long-term alteration/disruption; change in area character/acuthetics; nuisance impacts; change to travel access/travel time; change to facilitee/attilities/services; loss of "critical mass" in number of signature business attractions (e.g. number of antique shops); to tourist areas and attractions.	No / Low / Medium / High Effects	1.05	0.67	0.67	0.67	0.93
	2.2.6 Community Facilities/Institutions (e.g. hospitals, schools, places of worship, unique community features)	Potential and significance of: eneroschment, severance, displacement, property acquisition; long-term alteration/disruption; change in area character/aesthetics; nuisance impacts; change to traved access/travel time; change to facilities/attilities/services; change to east adstey of podestrian movements across the highway and within the highway right-of-way; change to highway operation impacts to current use e.g., highway noise and vibration interfering with church services); to community facilities and institutions.	No /Low / Medium / High Effects	1.05	0.67	0.67	0.33	0.00
	2.2.7 Municipal Infrastructure and Public Service Facilities (e.g. sewage and water services, polics/emergency services, local utilities)	Potential and significance of: encroschment, severance, displacement, long-term alteration/disruption; change to access/travel time; change to facilities/utilites/services; to municipal infrastructure and public service facilities.	No / Low / Medium / High Effects	0.35	1.00	1.00	0.67	0.33
	2.2.8 Dewatown Historic Crossroads Function	Posential and significance of interference by long-distance through- traffic on: "main street" function and structure; character/aesthetics; change to ease and safety of pedestrian movements across the highway and whim the highway right-of-way; change to on-street parking: in historic downtown area.	No / Low / Medium / High Effects	1.75	0.67	0.67	0.67	0.00
1 10 7	oleo Consiste Acres (NCA)		Weighted Score	6.00	4.92	4.56	4.09	1.05
N	oise Sensitive Areas (NSAs) (residential ar	eas and sensitive institutional uses)		5.25				
	2.3.1 Highway Noise	Potential for significant traffic noise increases in NSAs and for noise-sensitive receivers immediately adjacent to the highway	No / Low / Medium / High Effects	5,25	0.33	0.33	0.67	0.00
			Weighted Score		1.73	1.73	3.52	0.00

SUMMARY WEIGHTING TABLE - BEST OF SHAKESPEARE AREA ALTERNATIVES

	Factor / Sub-factor / Criteria	Indicator	Net Effect	Weighting		Altern		
4 4	griculture	100,000,000		Light of the Atlanta	1	2	3	- 4
4 A	griculture			7.00		44441	11111	
	2.4.1 Agriculture - Canada Land Inventory Class 1, 2, 3 Land	Potential and significance of encroachment, severance of Canada Land inventory. Classes 1, 2 and 3 soils	No / Low / Medium / High Effects	0.70	0.00	0.00	0.00	0.67
	2.4.2 Agriculture - Farm Infrastructure	Potential and significance of: encroachment, severance, displacement long-term alteration/disruption; nuisance impacts to farm infrastructure (field tile drainage systems/outlets, irrigation systems, berns/sios/structures, etc.).	No / Low / Medium / High Effects	2.80	0.33	0.33	0.33	0.33
	2.4.3 Agriculture - Operations on Individual Farms	Potential and significance of: encroachment, severance, displacement; long-term alteration/disruption; nuisance impacts; to in-farm field operations (planting, harvesting, grazing, nutrien management, etc.) as applicable to the following; specially crops/cropland; disty/hossuck operations; field crop operations; high investment agricultural operations; established agricultural farm communities.	No/Low/Medium/High Effects	2.80	0.33	0.33	0.00	0.67
	2.4.4 Agriculture - Transportation Linkages between Integrated Agricultural Business Units	Potential to sever/disrupt transportation linkages between integrated agricultural business units (movement between integrated agricultural business units of equipment, materials, workers, etc.)	No / Low / Medium / High Effects	0.70	0.33	0.33	0.33	0.67
			Weighted Score		2.08	2.08	1.16	3.74
5 L	and Use / Resources		STATE THE	3.50				
	2.5.1 First Nations' Treaty Rights or Use of Land and Resources for Traditional Purposes (s.g. hunting, fishing, harvesting of country foods, harvesting of medicinal plants)	Potential and significance of: encroachment, severance, displacement: long-term alteration/disruption; nuisance impacts; change to access/travel time; to First Nations' treaty rights or use of land and resources for traditional purposes.	No / Low / Medium / High Effects	0.35	0.33	0.33	0.33	0.67
	2.5.2 Parks and Recreational Areas (e.g., national/provincial parks, conservation areas, municipal parks, public spaces, golf courses, trails, greenways and open space linkages)	Potential and significance of: encroachment, severance, displacement, property acquisition; long-term alteration/disruption; change in area character/ nesthetics; nutsiance impacts; change to necess/meet time; change to facilities/utilities/services; to parks and recreational areas.	No / Low / Medium / High Effects	2.45	0.67	0.67	0.67	0.67
	2.5.3 Aggregates, Mineral-Resources	Potential and significance of: encroachment, severance, displacement, property acquisition; long-term alteration/disruption; change to access/travel time; change to facilities/utilities/services; to current/future extraction of aggregate and mineral resources.	No / Low / Medium / High Effects	0.70	1.00	1.00	0.00	1.00
			Weighted Score		2.46	2.46	1.76	2.58
6 M	ajor Utility Transmission Corridors (e.g. r	ailroads, hydro, gas, oil)	Weighted Score	0.70	2.46	2.46	1.76	2.58
5 M	ajor Utility Transmission Corridors (e.g. r	ailroads, hydro, gas, oil) Potential and significance of encroachment, severance, displacement, property acquisition; long-term alteration/disruption; change to accessivative time; change to facilities/stillites/services; to major utility transmission corridors.	Weighted Score No / Low / Medium / High Effects	0.70	0.67	0.33	1.76	1.00
6 M	ajor Utility Transmission Corridors (e.g. r	Potential and significance of encroachment, severance, displacement, property acquisition; long-term alteration/disruption; change to access/travel time; change to facilities/strillines/services; to	No/Low/Medium/High				14/1 m/s	
7 C		Potential and significance of encroachment, severance, displacement, property acquisition; long-term alteration/disruption; change to access/travel time; change to facilities/stillites/services; to major utility transmission corridors. ment (e.g. landfills, hazardous waste sites, "brow	No/Low/Medium/High Effects Weighted Score		0.67	0.33	1.00	1.00
7 C	ontaminated Property and Waste Manager contaminated sites, and high-risk contaminated sites.	Potential and significance of encroachment, severance, displacement, property acquisition; long-term alteration/disruption; change to access/travel time; change to facilities/stillites/services; to major utility transmission corridors. ment (e.g. landfills, hazardous waste sites, "brow	No/Low/Medium/High Effects Weighted Score	0.70	0.67	0.33	1.00	1.00
7 Coowr	entaminated Property and Waste Manager contaminated sites, and high-risk contaminated sites, and high-risk contaminated sites.	Potential and significance of: encroachment, severance, displacement, property acquisition; long-term alteration/disruption; change to access/travel time; change to facilities/atilities/services; to major utility transmission corridors. ment (e.g. landfills, hazardous waste sites, "brow ation areas) Potential and significance of: encroachment, severance, displacement, property acquisition; long-term alteration/disruption; change to access/travel time; change to facilities/time/toes; to	No/Low / Medium / High Effects Weighted Score Infield" areas, other	0.70	0.67	0.33	0.70	0.70
7 Coowr	ontaminated Property and Waste Manager contaminated sites, and high-risk contaminated sites.	Potential and significance of: encroachment, severance, displacement, property acquisition; long-term alteration/disruption; change to access/travel time; change to facilities/atilities/services; to major utility transmission corridors. ment (e.g. landfills, hazardous waste sites, "brow ation areas) Potential and significance of: encroachment, severance, displacement, property acquisition; long-term alteration/disruption; change to access/travel time; change to facilities/time/toes; to	No / Low / Medium / High Effects Weighted Score nfield" areas, other No / Low / Medium / High Effects	0.70	0.67	0.33	0.70	0.70
7 Coowr	entaminated Property and Waste Manager contaminated sites, and high-risk c	Potential and significance of: encroachment, severance, displacement, property acquisition; long-term alteration/disruption; change to access/travel time; change to facilities/atilities/services; to major utility transmission corridors. ment (e.g. landfills, hazardous waste sites, "brow ation areas) Potential and significance of: encroachment, severance, displacement, property acquisition; long-term alteration/disruption; change to access/travel time; change to facilities/time/toes; to	No / Low / Medium / High Effects Weighted Score nfield" areas, other No / Low / Medium / High Effects	0.70	0.67	0.33	0.70	0.70
7 Coowr	ntaminated Property and Waste Manages contaminated sites, and high-risk contamin ndscape Composition 2.8.1 Semic Composition (total aesthetic value of landscape components)	Potential and significance of encroachment, severance, displacement, property acquisition; long-term alteration/disruption; change to access/travel time; change to facilities/stillites/services; to major stillity transmission corridors. ment (e.g. landfills, hazardous waste sites, "browatlon areas) Potential and significance of encroachment, severance, displacement, property acquisition; long-term alteration/disruption; change to access/travel time; change to facilities/utilities/services; to contaminated property and waste management. Potential and significance of change to scenic composition (total	No / Low / Medium / High Effects Weighted Score nfield" areas, other No / Low / Medium / High Effects Weighted Score	0.70	0.67	0.33	0.70	0.70
7 Coowr	entaminated Property and Waste Manager. Contaminated sites, and high-risk contaminated sites sites, and high-risk contaminated sites	Potential and significance of encroachment, severance, displacement, property acquisition; long-term alteration/disruption; change to access/travel time; change to facilities/strillities/services; to major utility transmission corridors. ment (e.g. landfills, hazardous waste sites, "browation areas) Potential and significance of: encroachment, severance, displacement, property acquisition; long-term alteration/disruption; change to access/travel time; change to facilities/utilities/services; to contaminated property and waste management. Potential and significance of change to scenic composition (total aesthetic value of landscape components).	No / Low / Medium / High Effects Weighted Score No / Low / Medium / High Effects Weighted Score No / Low / Medium / High Effects No / Low / Medium / High Effects No / Low / Medium / High Effects	0.70	0.67 0.47 0.33 0.23	0.33	0.33	0.70
7 Coowr	ntaminated Property and Waste Manager contaminated sites, and high-risk co	Potential and significance of encroachment, severance, displacement, property acquisition; long-term alteration/disruption; change to access/travel time; change to facilities/artitities/services; to major utility transmission corridors. ment (e.g. landfills, hazardous waste sites, "browation areas) Potential and significance of encroachment, severance, displacement, property acquisition; long-term alteration/disruption; change to access/travel time; change to facilities/utilities/services; to contaminated property and waste management. Potential and significance of change to scenic composition (total aesthetic value of landscape components). Potential and significance of change to vistas/outlooks for sensitive viewer groups.	No / Low / Medium / High Effects Weighted Score nfield" areas, other No / Low / Medium / High Effects Weighted Score No / Low / Medium / High Effects No / Low / Medium / High Effects No / Low / Medium / High	0.70	0.67	0.33	1.00 0.70 0.33	0.70
7 Coowr	entaminated Property and Waste Manager. Contaminated sites, and high-risk contaminated sites sites, and high-risk contaminated sites	Potential and significance of encroachment, severance, displacement, property acquisition; long-term alteration/disruption; change to access/travel time; change to facilities/artitities/services; to major utility transmission corridors. ment (e.g. landfills, hazardous waste sites, "browation areas) Potential and significance of encroachment, severance, displacement, property acquisition; long-term alteration/disruption; change to access/travel time; change to facilities/utilities/services; to contaminated property and waste management. Potential and significance of change to scenic composition (total aesthetic value of landscape components). Potential and significance of change to vistas/outlooks for sensitive viewer groups.	No / Low / Medium / High Effects Weighted Score No / Low / Medium / High Effects Weighted Score No / Low / Medium / High Effects No / Low / Medium / High Effects No / Low / Medium / High Effects	0.70	0.67 0.47 0.33 0.23	0.33	0.33	0.70
7 Coowr	entaminated Property and Waste Manager. Contaminated sites, and high-risk contaminated sites, and high-risk	Potential and significance of encroachment, severance, displacement, property acquisition; long-term alteration/disruption; change to access/travel time; change to facilities/artitities/services; to major utility transmission corridors. ment (e.g. landfills, hazardous waste sites, "browation areas) Potential and significance of encroachment, severance, displacement, property acquisition; long-term alteration/disruption; change to access/travel time; change to facilities/utilities/services; to contaminated property and waste management. Potential and significance of change to scenic composition (total aesthetic value of landscape components). Potential and significance of change to vistas/outlooks for sensitive viewer groups.	No / Low / Medium / High Effects Weighted Score No / Low / Medium / High Effects Weighted Score No / Low / Medium / High Effects No / Low / Medium / High Effects No / Low / Medium / High Effects	0.70	0.67 0.47 0.33 0.23	0.33	0.33	0.70
7 Coowr	Intaminated Property and Waste Manager Contaminated sites, and high-risk c	Potential and significance of encroachment, severance, displacement, property acquisition; long-term alteration/disruption; change to access/travel time; change to facilities/attilities/services; to major utility transmission corridors. ment (e.g. landfills, hazardous waste sites, "browatlon areas) Potential and significance of: encroachment, severance, displacement, property acquisition; long-term alteration/disruption; change to access/travel time; change to facilities/utilities/services; to contaminated property and waste management. Potential and significance of change to scenic composition (total neatheric value of landscape components). Potential and significance of change to vistas/outlooks for sensitive viewer groups. Potential and significance of views/vistas from the transportation facility. Presence and potential for impacts to sensitive receptors to air pollutants and greenhouse gas emissions, including consideration of number of sensitive receptors to air pollutants and greenhouse gas emissions, including consideration of number of sensitive receptors to the	No / Low / Medium / High Effects Weighted Score No / Low / Medium / High Effects Weighted Score No / Low / Medium / High Effects 0.70 0.70 2.10	0.67 0.47 0.33 0.23	0.33 0.23 0.33 0.33	1.00 0.70 0.33 0.23	0.70	

- ALTERNATIVE DESCRIPTIONS

 1: Best of A plus E = A3 + E = 1-2-4-7-10-12-14

 2: Best of A plus F = A3 + F = 1-2-4-7-10-12-15

 3: Best of B = B1 = 1-2-4-5-11-13-15

 4: Existing Highway 7&8 Alignment = 1-2-4-6-13-15

SUMMARY WEIGHTING TABLE - BEST OF SHAKESPEARE AREA ALTERNATIVES

Factor / Sub-factor / Criteria	Indicator	Net Effect	Weighting			rnative	
				1	2	3	4
.0 CULTURAL ENVIRONM	ENT		20.00	100			
.1 Cultural Heritage - Built Herita	ge and Cultural Landscapes		16.00			U Bassa	
3.1.1 Buildings or "Standing" Sites of Ar Heritage Significance or Ontario Heritag Easement Properties		No/Low/Medium/High Effects	8.00	0.33	0.33	0.33	0.00
3.1.2 Heritage Bridges	Potential for destruction or significant alteration of heritage bridges.	No / Low / Medium / High Effects					
3.1.3 Areas of Historic 19th Century Sett	Potential and significance of encroachment, severance, displacement, long-term alteration / disruption, change in area character / aesthetics, nuisance impacts, change to access / travel, change to facilities / utilities/ service to areas of historic. 19th century settlement,	No / Low / Medium / High Effects	3.00	0.33	0,33	0.33	0.00
3.1.4 Cultural Heritage Landscapes (coll- individual manmade features modifying landscape)		No / Low / Medium / High Effects	2.00	0.33	0,33	0.33	0.00
3.1.5 First Nations' Burial Sites	Potential and significance of encroachment, severance, displacement, long-term alteration / disruption, change in area character / aesthetics, nuisance impacts, change to access / travel, to First Nations' burial sites.	No / Low / Medium / High Effects	0.00	1.00	1.00	1.00	1.00
3.1.6 Cemeteries	Potential and significance of encroachment, severance, displacement, long-term alteration / disruption, change in area character / aesthetics, muisance impacts, change to access / travel, change to facilities / utilities/ service to cemeteries.	No / Low / Medium / High Effects	3.00	0.67	0.67	0.67	0.67
		Weighted Score		6,30	6.30	6.30	2.01
Cultural Heritage - Archaeology			4.00				
3.2.1 Pre-Historic and Historic First Nati	Potential for destruction or disturbance of prehistoric and historic First Nations archaeological sites of extreme local, provincial or national interest	No / Low / Medium / High Effects		63204	VI22V	Westers	15778434
3.2.2 Historic EuorCanadian Archaeologi	Potential for destruction or disturbance of historic EuroCanadian archaeological sites of extreme local, provincial or national interest	No / Low / Medium / High Effects	4.00	0.33	0.33	0,33	0.33
		Weighted Score		1.32	1.32	1.32	1.32
		Factored Score	20.00	7.62	7.62	7.62	3.33

- ALTERNATIVE DESCRIPTIONS

 1: Best of A plus E = A3 + E = 1-2-4-7-10-12-14

 2: Best of A plus F = A3 + F = 1-2-4-7-10-12-15

 3: Best of B = B1 = 1-2-4-5-11-13-15

 4: Existing Highway 7.88 Alignment = 1-2-4-6-13-15

	Factor / Sub-factor / Criteria	Indicator	Net Effect	Weighting	-	T	native	
5.0	TRANSPORTATION			25.00		2		BEER
5.1 A	Area Transportation System Capacity a	nd Efficiency		3.75			1151-3	
10000000	and the second s	Potential to support the efficient movement of people between communities and regions based on Level of Service (LOS) and	No/Low/Medium/High		Ustraview Ustraview	1000	30585	MEAN
	5.1.2 Efficient movement of people	volume to capacity (v/c) on a network, screenline and critical link basis	Effects	1.88	1.00	1.00	1.00	0.67
	5.1.3 Efficient movement of goods	Potential to support the efficient movement of goods between communities and regions based on Level of Service (LOS) and volume to capacity (v/c) on a network, screenline and critical link basis	No / Low / Medium / High Effects	1.88	1.00	1.00	1.00	0.67
5150			Weighted Score		3.75	3.75	3,75	2.51
5.2 A	Area Transportation System Reliability			3.75				
		Potential to support system reliability and redundancy for travel (people and goods) between regions and communities during adverse conditions.	No / Low / Medium / High Effects	3.75	1,00	1.00	1.00	0.33
E 2 C	of at		Weighted Score	6.26	3.75	3.75	3,75	1.24
5 5	iafety			6,25			11000	Indian i
	5.J.1 Truffic Safety	Potential to improve traffic safety based on opportunity to reduce congestion on area road network (LOS and vic) and reduce the frequency of intersections and entrances in the Highway 7.88 corridor	No / Low / Medium / High Effects	2,50	1.00	1.00	1.00	0.67
	5.3.2 Emergency Access	Potential to support emergency access to/from existing and/or new provincial facilities	No / Low / Medium / High Effects	1.25	1.00	1.00	1.00	1.00
	5.3.3 Pedestrian, Cyclist and Snowmobile Safety within the highway right-of-way	Potential and significance of change to ease and safety of movement across the highway and within the right-of-way.	No / Low / Medium / High Effects	2.50	1.00	1.00	0.67	0.33
			Weighted Score		6.25	6.25	5.43	3.75
5.4 N	Aobility and Accessibility			2.50				EL M
	5.4.1 Modal integration, balance and efficiency	Potential to improve modal choice and increase mode split for person trips between communities, regions and major tramit station areas based on connection to concentrations of population, travel performance indicators (LOS, vic, travel speed) at critical servenlines and on potential to provide higher order tramit service.	No / Low / Medium / High Effects	0.25	0.67	0.67	0.33	0.67
	5.4.2 Linkages to Population and Employment Centres	Potential to improve linkages to population and employment centres for people and goods movement.	No / Low / Medium / High Effects	0.75	0.67	0.67	0.67	1.00
	5.4.3 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)	No / Low / Medium / High Effects	0.75	0.67	0.67	0.67	0.67
T	5.4.4 Accommodate mobility of pedestrians, cyclists and snowmobiles	Potential to accommodate mobility of pedestrians, cyclists within critical travel corridors in urbanized areas and snowmobiles in recognized rural trails.	No / Low / Medium / High Effects	0.75	1.00	1.00	0.67	0.33
2000			Weighted Score	W-20	1.92	1.92	1.59	1.67
5.5 N	letwork Compatibility			1.25				7-3-15
	5.5.1 Network Connectivity	Potential to improve transportation system connectivity within and to/from the analysis area.	No / Low / Medium / High Effects	1.00	1.00	1.00	1.00	1.00
	5.5.2 Flexibility for Future Expansion	Potential to address future transportation needs beyond the forecasted planning horizons.	No / Low / Medium / High Effects	0.25	1.00	1.00	1.00	0.33
			Weighted Score		1.25	1.25	1.25	1.08
.6 E	ngineering			2.50	r an		March 1	LIN III
	5.6.1 Constructability	Potential case of implementation considering feasibility/difficulty of physical, property or environmental constraints.	No / Low / Medium / High Effects	2.00	0.67	0.00	0.67	0.33
	5.6.2 Compliance with Design Criteria	Conformity to applicable provincial safety and design standards.	No / Low / Medium / High Effects	0.50	1.00	1.00	1.00	0,67
-			Weighted Score		1.84	0.50	1.84	1.00
.7 T	raffic Operations			3.75		-		
		Potential for negative impact on traffic operations due to factors such as design features, private access, and transportation network connections.	No / Low / Medium / High Effects	3.75	0.67	0.67	0.33	0,00
V-500			Weighted Score	7,00	2.51	2.51	1.24	0.00
.8 C	onstruction Cost (excludes property cos	its and engineering costs)	BUSINESS IN	1.25	7.111	118		
		Relative road construction cost, excluding property and engineering costs.	No / Low / Medium / High Effects	1.25	0.33	0.00	0.67	0.67
			Weighted Score		1.24	0.00	2.51	2.51
			Factored Score	25.00	22.51	19.94	21.36	13.76

ALTERNATIVE DESCRIPTIONS

1: Best of A plus E = A3 + E = 1-2-4-7-10-12-14

2: Best of A plus F = A3 + F = 1-2-4-7-10-12-15

3: Best of B = 11-2-4-5-11-31-5

4: Existing Highway 7&8 Alignment = 1-2-4-6-13-15

SUMMARY WEIGHTING TABLE - BEST OF SHAKESPEARE AREA ALTERNATIVES SUMMARY OF SENSITIVITY ANALYSIS - RANKING OF ALTERNATIVES

FACTORS	RATING	WEIGHT	Alternative 1	Alternative 2	Alternative 3	Alternative 4
Evaluation Team	Initial \	Weights	+	3	2	4
		SE	SENSITIVITY ANALYSIS			
Natural Environment	High	20%	1	3	2	4
	Low	10%	-	3	2	4
l and I lea / Socio-Economic Environment	High	85%	1	8	2	4
	Low	10%	1	3	2	4
Cultural Environment	High	20%	+	3	2	4
	Low	10%	+	က	2	4
Transportation	High	%02	1	3	2	4
	Low	10%	1	3	2	4
Stakeholder Input (SARA)	SARA	SARA Weights	1	ъ	2	4
	Ove	verall Ranking	1	3	2	4

ALTERNATIVE DESCRIPTIONS

1: Best of A plus E = A3 + E = 1-2-4-7-10-12-14

2: Best of A plus F = A3 + F = 1-2-4-7-10-12-15

3: Best of B = B1 = 1-2-4-5-11-13-15

4: Existing Highway 7&8 Alignment = 1-2-4-6-13-15

BEST OF SHAKESPEARE AREA ALTERNATIVES	REA ALTERN	ATIVES				National SCPs.					Natural 10%	-			
*** **********************************	Weighting		Attenuative	free 3		Weighting	ŀ	Alternative	ative	Π.	Weighting	1	Aber	age	П
1.0 NATURAL ENVIRONMENT	20.00	Married Marrie				20.00					_	-			-
1.1 Fiduries and Aquatic Ecosystems	8.00					20.00					2.5 10,00				
Weighted Score		536	236	5.26	5.30		13.40	13.40	13.43	13.43		2.66	248	288	2.68
1.2 Terrettis Longstons	200					12.50					2.50				
13 Greenfester	200	329	139	210	310	44	120	8.78	7.72	777		188	1.68	1.55	138
Weighted Scien		368	2.68	908	3.68	277	0.00	-		200	2.30		1	-	
1.4 Serface Water	2.00					5.00	-	200	100	0	1.00		100	057	184
Weighted Score		800	990	138	0.00		1.65	1.65	328	145		0.73	0.23	290	0.23
Factored Score	20.00	13.05	13.05	12.80	12.80	50,00	32.63	32.63	31.99	31.99	10.00	6.53	6.53	728	6.40
2.0 LAND USE / SOCIO-ECONOMIC ENVIRONMENT	35.00					22.00					05 00 000				
2.1 Land Use Planning Pullcles, Goals, Objectives	3.50					2.20					П				
Weighted Score	1	2.35	2.35	217	2.35		1.0	1.0	136	1.0		2.55	2.05	245	2.65
	7.00		-	-		440					2.60		The second second		
2.1 Noise Sensitive Areas	3636	***	8	4.09	100		300	2.87	2.50	99.0		25.5	515	4.62	1,18
Wented Score		121	1000	169	900	2		1 400	1	-	3.01			1	
2.4 Apriculture	2.00					1.00		1 000	- 03	0000	100	81	138	352	900
Weighted Score		2.00	2.06	1.16	274		177	121	17.0	238		3.30	2.00	100	7 7 7
2.5. Land Un / Resource	350					2.20				2	3.95				
Wrighted Score		2.45	2.48	1.36	2.56		154	154::	1.00	1.62		.277	277	1.00	2.01
2.6 Mayor Utility Insuminates Combons	0.0					70					0.79				
2.7 Contraducted Presents and Winds Measurement	0.20	0.47	023	0.00	Re		0.28	6.15	974	0.44		0.50	0.28	0.70	0.70
Writing Score		8.23	678	202	0.79	10	Ja w		-	-	0.70				9.
2.8 Landscape Composition	2.10					1.10			600	67.0	2.83	80	020	020	No.
Wrighted Score		0.00	0.60	0.00	0.00		0.44	770	344	989		828	0.78	8.78	900
23 Air Quality	3.25					3.30					5.93				
Weighted Score		350	25.00	155	000		122	221	223	00/0		3.87	2.87	387	900
Factored Score	35.00	18.45	17.85	17.83	10.64	22.00	11,59	11.22	11.21	69.9	39.50	20.82	20.15	20.12	12.00
											=				
3.0 CULTURAL ENVIRONMENT	20.00				100	12.50					22.50				112
A.L. Cothorni Herstage - Built Herstage and Oshurai Landscapes	10.00					10.00					18.00	H. Carrier of			
12 Archaeller	400	0.00	020	000	201		3.04	334	354	120		7.00	7.00	100	228
Writhol Som		130	1.10	1 20		87	0.00	4 40	****	-	7 4 50				
Factored Score	20.00	7.62	7.62	7.62	333	12 50	476	A 7E	A 7E	0000	45.50	100	9 1		1.6
							2	2	2	900	0577	100	100	100	2.75
SO TRANSPORTATION	35.00					10.50					1				
5.1 Arm Transportation System Capacity and Efficiency	3.75					1300					045 ZX.00				115
Weighted Score		273	2.75	378	251	2	3.11	2.62	9.00		420		-	-	
S.2. Arra Transportation System Reliability / Redinstancy	3.75					2.23					430	***	*	480	280
Wrighted Som		375	175	2.75	124		222	222	220	0.77		27	87	4.20	典
Same of	623			-	Ī	3.88					2.00				
5.4 Mobility and Accomplishy	250	67	91	200	272	35.1	200	2.63	118	233		1,00	7.00	909	4.20
Weighted Score		186	1 92	1.59	187		1.18	1.18	000	103		215	215	1.78	1.87
S.S. Network Compatibility	125					87.0					1.40				
S.d. Engineering	2.6	2	120	123	106	31.	0.78	0.78	0.78	290		140	146	141	121
Weighted Score		194	050	1.84	100		134	033	134	29.0	7700	200	950	206	4.01
5.7 Indite Operations	3.75					2.33					4.20				
5.3 Creatraction Cost	125	251	251	124	000	200	136	1.56	110	000		2.81	2.0	120	900
Weighted Score	A Property	124	0.00	2.51	251		0.77	000	1.56	1.56	1.40	1 30	000	3.00	- 100
Factored Score	25.00	22.51	19.94	21.36	13.76	15.50	13.96	12.36	13.24	8.53	28.00	25.21	22.33	2	15.41
	100.00													H	
Total Alternative Score		61.63	58.46	99.69	40.52	100.00	62.94	26'09	61.20	49.28	100.00	61.13	57.57	50 01 3	37 56
							-		-	-		-	10110		0000

Cileani Kry.	Weighting	12.50		326 328 338 338	2.00 2.00 1.02	-		041 041 041			22.00		440 147 147 158 140	3.00 2.87 2.67 0.66	330		121 121 0.73 2.05	DI 51 51		0.21 0.15 0.16 0.44	0.15 0.15 0.15 0.15		3.30	221 221 221	22.00 11.59 11.22 11.21 6.69		250	45.2	0001	5 19.05 19.05	15.50	233 230 230 240	748 220 222 222 274	356 356 233		0.78 1.09 0.00 1.03	780 078 070	134 031 114 042		156 077 000	077 000 138	15.50 13.96 12.36 13.24 8.53		100.00 52.76 50.79 51.49 31.54
O Constitution Alternative	•	28,000	113031	750 750 750 750	107 (07 (07	313 067 918 515		0.92 0.92 1.08	28.00 18.27 18.27 17.91 17.91		10.00	ŀ		141 130 117 030	950 950 950	200	1000 039 033 100	470 050 070 000		0.70 0.70 0.00 0.70	007 007 00T	0.60	-	101 101 101	10.00 5.27 5.10 5.09 3.04	20.00	22.40	8.82 8.62 2.8T	360 186 186 186	10.67 10.67	34.00	5.10 5.30 5.32 3.42	\$50 5.10 5.10 1.00	0.50 0.50 7.38 5.10	340	66.7	241 170 170 140	250 0.00 250 126		1.70	148 000 342	34,00 30,62 27,11 29,04 18,71	30.00	100.00 64.83 61.15 62.72 44.32
nd Use i Some Economic 85%. Walnutive.	1 2 3 4	5.00		12 12 12 12 12 12 12 12 12 12 12 12 12 1	770 TTO MO MO	090 030 030		212 012	5.00 3.26 3.26 3.20 3.20		85.00	520 520 520		12.35	421 425 159 000		506 505 281 906	557 557 427 626	-	1.70	850 860 960	150 150 150		158 158	85.00 44.80 43.35 43.30 25.83	500		136 136 050	622 623 633	1.91 1.91	 5.00	0.0 0.0 0.0 0.00 0.00 0.00 0.00 0.00 0	125	120 021 120 022	100 100 100		0.25 0.25 0.22	020 021 030	0.75	200	025 000 036	5.00 4.50 5.09 4.27 2.75	00 00 00 00	100,000 54.47 52.50 52.68 32.61
BEST OF SHAKESPEARE LAND DAY (September). FACTOR Reports and Case A Share A Share Case A Share Case A Share A		1.0 NATURAL ENVIRONMENT		Perghad Sonr	1.3 Greathater	Wrighted Score	<u> </u>	Score	Factored Score 5	-	THE THE PART OF THE PART OF THE PARTY OF THE			23 Noise Smalline Areas	Weighted Score		2.5 Lond De / Resource	Weighted Some	A.A. Magne Citally International Combiners		Weighted Some	Wrighted Some	000	Score	Factored Score 8	0		Weighted Score	Wrighted Score		St Am Township Sales Comments State	Weighted Score	C3 Subty	Weighted Score	Wrighted Som	8	S.6 Engineering	Weighted Some	Weighted Son	Nº	Wrighted Score	racoved score		1 0tal Alternative Score

ALTERNATIVE DESCRIPTIONS

1. That of April 6 = A3 + E = 12 + E = 1

	Weiglaine Alternative	1 2 9 4	0.00	ŀ		201 201 201		100 100		020	10.00 6.53 6.53 6.40 6.40	20.00	250	74. 74. 75.		281 281 234 0.00		250 250 200	400	9000	271 001 001		027 213 540 040		0.00 0.00 0.00	-	100	201 201 201 000	10.20 10.19	30.00	1000	000 000 000 000 000 000 000 000 000 00		122 132	20.00 7.62 7.62 7.62 3.33		50,00	730		7.90 7.90 2.40		1230 1230 1230 1230	345 335 334 334		250 250 217	348 100 348 148		250 800 200 000	248 000 500 500	50.00 45.03 39.87 42.71 27.52	100.00 69.71 64.22 66.92 43.32
Transposation 10%	Weighing Alternative Wei			200		175 175 277		27 200 45		076 181 079 079	24.00 15.66 15.66 15.35 15.35 10	1	200	200 200		551 548 401 138		277 277	249 248 136 448		235 236 2.11 3.09		656 62# 0.FM 0.BM		250 020 020 020 240	200	200	422 422 000	2 21.40 12.76	24.00	(X)	155		150 150 150	24,00 9,14 9,14 9,14 4,00 21	40.00	90	180 (40)		150 050		65 113 662	077 077 064 06T		1.00 050 050 050	074 020 074 040		0.00 0.00 101 0.00	101 101 101	10.00 9.01 7.97 8.54 5.50 50	100.00 55.94 54.20 54.44 37.62 10
Transportation 72%	Weighting	8.00	1	214 214 314 314		(A) (A) (A)		1,47 1,47 1,47		250 250	8.00 5.22 5.22 5.12 5.12	1120	The state of the s	MG 180 MG MG		1,07 1,00 1,54 0,42	2.10	200	000 000 000		101 010 010		820 820 600 640	-	0.00 0.00 0.00	20 E0 E0		141 141 141	14.00 7.38 7.14 7.13 4.25	THE RESERVE AND ADDRESS OF THE PERSON NAMED IN COLUMN TWO IS NOT THE PERSON NAMED IN COLUMN TWO IS NAMED IN COLUMN TWO IS NAMED IN COLUMN TWO IS NAMED IN COLUMN TWO IS NAMED IN COLUMN TWO IS NAMED IN COLUMN TWO IS NAMED IN COLUMN TWO IS NAMED IN COLUMN TWO IS NAMED IN COLUMN TWO IS NAMED IN COLUMN TWO IS NAMED IN COLUMN TWO IS NAMED I	019	252 252 0.80		200 200 200	5	2000	70,00	25 05 to 10		10.50 10.50 10.50 2.4C	11.50 at 1	100	297 297 105	1 200	7.00	515 140 515 279		330 347 000	347 000 7.04	70.00 63.04 55.82 59.79 38.52	100.00 78.68 71.23 75.09 49.23
Collect 11%	Alternative	22.50	0.0	600 600 600		277 \$77 248 348		414 414 328 414	+	034 034 136	22.50 14.68 14.68 14.39 14.39	39.50	106	245 245 245 245		535 546 118	200		235 235 139 423		277 277 136 250		E0 E0 E0 E0	20 No.	650	000 820 820 820		387 387 387	39.50 20.82 20.15 20.12 12.00	10,00	8.00	315 315 315 101		20 000 000 000 000 000 000 000 000 000	1000	28.00	7.70	420 420 231		420 420 130	84 88		2.15 1.78 1.87	41 41	-	206 855 206 111	420	100	120 000 280	28.00 25.21 22.33 23.92 15.41	 100.00 64.52 60.96 62.25 43.47
BEST OF SHAKESPEARE JOHNNI 10%	Hydrate All Languadidos/Carder FACTORamog and Class EA Sudy	1.0 NATURAL ENVIRONMENT	1.11 Figheries and Annule Reserviens	Wrighted Score	1.2 Terrestchi Ecognisms	Weighted Score	13 Greadwater	Weighted Some	1.4 Seeher Water	along populari	Factored Score	2.0 LAND USE/SOCIO-ECONOMIC ENVIRONMENT	2.1 Land Use Planning Pulicies, Goals, Objectives	Weighted Scote	2.2 Lead Uvr Commonly	13 N. J. C. Mar. 2	Weight Con	2.4 Agriculture	Weighted Score	2.5 Lond Use / Researces	Weighted Score	2.6 Major Dillity Transmission Cortifies	7.7 Contembered Process and Water Management	Workland Com-	28 Landscape Composition	Weighted Scien	2.9 Air Quadity	Weighted Score	Factored Score	3.0 CULTURAL ENVIRONMENT	3.1 Others Herlings - Boll Herlings and Others Landscapes	Weighted Score	32 Archaeology	Factored Cone	2 MICH DE MANAGER DE M	S.0 TRANSPORTATION	S.I. Aven Transmission Systems Connective and Efficiency	Weighted Score	5.2. Avra Tramportation System Reliability / Redundancy	Freighted Score	Weighted Score	S.4. Mobility and Accombility	Weighted Score	5.5 Network Compatibility Whenthold Some	5.5 Englocering	Weighted Score	N. Iralia Operations Workford Com-	S. Custowine Cut	Wrighted Score	Factored Score	Total Alternative Score

ALTERNATIVE DESCRIPTIONS

1. Bins of A plus E = A3 + E = 1.24-2.10 stp.14

2. Bins of A plus E = A3 + E = 4.24-2.10 stp.15

2. Bins of B = 610 = 1.24-2.11 stp.15

4. Excloy Highway 749 Alternet = 1.44-6.13 stp.15