

# Detroit River International Crossing



---

Environmental Assessment  
Terms of Reference

**SUPPORTING DOCUMENTATION**

---

May 2004

---

Detroit River International Crossing  
Environmental Assessment Terms of Reference  
Supporting Documentation

- A) Record of Consultation During Preparation of the TOR
- B) Supporting Documentation
  - 1) Canada-U.S.-Ontario-Michigan Border Transportation Partnership Transportation Problems and Opportunities Report (January 2004)
  - 2) The FHWA/NEPA Planning and Approval Process
  - 3) Preliminary Description of Existing Environment and Potential Effects
  - 4) Proposed Factors to Assess Feasibility of the Opportunity Corridors
  - 5) Environmental Components to be Considered During the Generation of Alternatives
  - 6) Criteria for Evaluating Illustrative and Practical Alternatives
  - 7) Typical Elements of Concept Design
  - 8) Federal / Provincial EA Coordination Process
  - 9) Activities Following Approval of the EA

## Supporting Documentation

### 6) CRITERIA FOR EVALUATING ILLUSTRATIVE AND PRACTICAL ALTERNATIVES

6) CRITERIA FOR EVALUATING ILLUSTRATIVE AND PRACTICAL ALTERNATIVES

Criteria		Rationale	Data Source
<b>Socio-Economic Environment</b>			
Property and Access	1) Impacts to residential areas (i.e. property, access impacts)	<ul style="list-style-type: none"> <li>Property takings / displacements and changes / effects on local access have a significant impact on owners and tenants as well as the broader community.</li> </ul>	<ul style="list-style-type: none"> <li>1:50 000 topographic maps</li> <li>Information System (NRVIS)</li> <li>Municipal land use information</li> <li>MPAC records</li> </ul>
	2) Impacts to commercial/industrial areas (i.e. property, access impacts)	<ul style="list-style-type: none"> <li>Property takings / displacements and changes / effects on local access have a significant impact on owners and tenants as well as the broader community and customer/client base.</li> </ul>	<ul style="list-style-type: none"> <li>1:50 000 topographic maps</li> <li>Information System (NRVIS)</li> <li>Municipal land use information</li> <li>MPAC records</li> <li>School Boards</li> <li>Traffic counts</li> <li>Public consultation</li> </ul>
	3) Impacts to agricultural operations	<ul style="list-style-type: none"> <li>The Provincial Policy Statement requires highway projects to have regard for prime agricultural areas. Prime agricultural areas include specialty cropland and Class 1,2 and 3 soils in this order of priority.</li> </ul>	<ul style="list-style-type: none"> <li>Official land use plans</li> <li>OMAFRA</li> <li>Regional and local agricultural federations</li> <li>Soil reports</li> </ul>
Community Effects	4) Nuisance impacts	<ul style="list-style-type: none"> <li>Residents adjacent to a new transportation facility could potentially be affected by nuisance effects such as noise, vibration, lighting during construction and / or operation of the facility.</li> </ul>	<ul style="list-style-type: none"> <li>1:50 000 topographic maps</li> <li>Information System (NRVIS)</li> <li>Municipal land use information</li> <li>MPAC records</li> <li>Municipal staff</li> <li>Public consultation</li> </ul>
	5) Impacts to cemeteries, schools, places of worship, unique community features	<ul style="list-style-type: none"> <li>Disruption or displacement of institutional features may adversely affect the users of the facility and the broader community.</li> </ul>	<ul style="list-style-type: none"> <li>1:50 000 topographic maps</li> <li>Information System (NRVIS)</li> <li>Municipal land use information</li> <li>MPAC records</li> <li>School Boards</li> <li>Traffic counts</li> <li>Public consultation</li> </ul>
	6) Effects on community activity / mobility	<ul style="list-style-type: none"> <li>Disruption to community activities may affect quality of life for residents, businesses and community groups.</li> </ul>	<ul style="list-style-type: none"> <li>Stakeholder input</li> <li>Consultation with Community Groups</li> </ul>
	7) Effects on aesthetic / community character	<ul style="list-style-type: none"> <li>Visual impacts on adjacent land use and effects on the visual experiences for users of the facility.</li> </ul>	<ul style="list-style-type: none"> <li>Windshield surveys</li> <li>Site visits</li> <li>Stakeholder input</li> </ul>
Governmental Land Use Strategies	8) Compatibility with government goals/objectives / policies	<ul style="list-style-type: none"> <li>The Ontario Provincial Policy Statement notes that a healthy economy is vital to the prosperity of the Province and that there are complex inter-relationships among environmental, economic and social factors in land use planning. Transportation facilities also play a key role in achieving federal, provincial/state and local economic objectives, as well as federal safety and security objectives.</li> <li>There is a need to integrate the transportation facility site location with municipal land objectives as established through Official Plans, Secondary Plans and Zoning by-laws as these specify land uses supported by residents, municipalities and the province / state.</li> <li>Growth has potential environmental and socio-economic implications.</li> </ul>	<ul style="list-style-type: none"> <li>Provincial, municipal land use plans</li> <li>Federal/provincial land use goals, objectives, policies and Policy Statements</li> <li>Current land use proposals</li> <li>Public consultation</li> <li>Agency consultation (MMAH, Ministry of Tourism, Transport Canada, Public Works and Government Service Canada)</li> </ul>

6) CRITERIA FOR EVALUATING ILLUSTRATIVE AND PRACTICAL ALTERNATIVES CON'T

Criteria		Rationale	Data Source
<b>Socio-Economic Environment Con't</b>			
Governmental Land Use Strategies Con't	9) Effects on approved private development proposals	<ul style="list-style-type: none"> <li>There is a need to integrate the transportation facility site location with municipal land objectives as established through Official Plans, Secondary Plans and Zoning by-laws as these specify land uses supported by residents, municipalities and the province / state.</li> </ul>	<ul style="list-style-type: none"> <li>Provincial, municipal land use plans</li> <li>Federal/provincial land use goals, objectives, policies and Policy Statements</li> <li>Current land use proposals</li> <li>Public consultation</li> <li>Agency consultation (MMAH, Ministry of Tourism, Transport Canada, Public Works and Government Service Canada)</li> </ul>
<b>Cultural Environment</b>			
Archaeology	10) Impacts to historic/ archaeological sites	<ul style="list-style-type: none"> <li>Disturbance or destruction of certain archaeological sites of extreme local, provincial/state, or national interest represents a significant cultural loss.</li> <li>Impacts to archaeological resources/sites should be avoided or minimized to the extent possible.</li> </ul>	<ul style="list-style-type: none"> <li>Data gathering exercise to identify any archaeological sites of extreme significance.</li> <li>Data sources:                             <ul style="list-style-type: none"> <li>Ontario Ministry of Tourism, Culture and Recreation (Ontario Archaeological Sites Database)</li> <li>Michigan State Historic Preservation Office</li> <li>Archaeological/heritage studies and reports</li> <li>Historic mapping</li> <li>Other published and unpublished archaeological literature</li> <li>First Nation groups</li> </ul> </li> </ul>
Heritage and Recreation	11) Impacts to built heritage features and cultural landscape units	<ul style="list-style-type: none"> <li>A new transportation facility may result in the loss of built heritage features resulting in a depletion of the cultural heritage resources / heritage character in the area.</li> </ul>	<ul style="list-style-type: none"> <li>Historical mapping and aerial photographs, cemetery lists, municipal, provincial and federal inventories, listings, plaques, easements and designations of National Historic Sites and under the Ontario Heritage Act.</li> <li>Input from other factor areas</li> <li>Consultation with municipal and regional heritage planning staff or designates, Local Architectural Advisory Committees (LACACS), historical societies and other heritage groups as necessary</li> <li>Consultation with Ministry of Culture, and the Niagara Escarpment planning staff</li> <li>Field survey</li> <li>Michigan State Historic Preservation Office</li> <li>Provincial Policy Statement</li> </ul>
	12) Impacts to National, State/ Provincial and local parks/ recreation sites, Conservation Authority Lands and NEPA 4(f) lands including the function of these features	<ul style="list-style-type: none"> <li>Disruption or displacement of recreational / community features may adversely affect the users of the facility/feature.</li> <li>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 placed within 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. Within the study area, parks and conservation authority lands are most abundant along the escarpment and associated with aquatic systems.</li> <li>There are no national or state parks in the Metropolitan Detroit area, but there are dozens of municipal parks and playgrounds of varying size scattered throughout it. All publicly owned parks and recreational areas are subject to NEPA 4(f) requirements. If they have been acquired or enhanced by grants from the Land and Water Conservation Fund Act, they must be replaced.</li> </ul>	<ul style="list-style-type: none"> <li>Detroit River Area of Concern Remedial Action Plan</li> <li>Official land use plans</li> <li>OMNR resource maps</li> <li>MNR</li> <li>Interest Groups</li> <li>Municipal plans</li> <li>Consultation with municipal and regional governments</li> <li>P/NF Study</li> <li>Ontario Parks</li> <li>Conservation Authorities</li> <li>USGS topographical maps</li> </ul>

6) CRITERIA FOR EVALUATING ILLUSTRATIVE AND PRACTICAL ALTERNATIVES CON'T

Criteria		Rationale	Data Source
<b>Cultural Environment Con't</b>			
Heritage and Recreation Con't			<ul style="list-style-type: none"> <li>• U.S. National Wetland Inventory</li> <li>• Act 451, Michigan Public Acts of 1994</li> <li>• Michigan Natural Resources Inventory</li> <li>• The Michigan Natural Resources and Environmental Protection Act</li> <li>• Great Lakes Shorelands Section of the MDEQ</li> <li>• Field investigations as required</li> </ul>
<b>Natural Environment</b>			
Groundwater	13) Impacts to groundwater recharge and discharge areas, as well as identified wellhead and source protection areas and areas susceptible to groundwater contamination	<ul style="list-style-type: none"> <li>• PPS Policy 2.4.1 identifies that the quality and quantity of groundwater and the function of sensitive groundwater recharge/discharge areas and aquifers will be protected or enhanced. The assessment should have regard for this objective. Transportation facilities have the potential to impact groundwater resources through removal of recharge areas, interference with discharge areas/shallow groundwater zones, and introduction of contaminated runoff. Consequently, impacts to areas identified as being susceptible to groundwater contamination and/or interference should be avoided/minimized to the extent possible.</li> </ul>	<ul style="list-style-type: none"> <li>• Ministry of the Environment mapping of susceptibility to groundwater contamination</li> <li>• P/NF Study</li> <li>• Watershed and subwatershed studies</li> <li>• Provincial Policy Statement and associated OMNR Natural Heritage Training Manual</li> <li>• MOE well record data</li> <li>• Field investigations as required</li> </ul>
Aquatic Habitat, Fisheries & Surface Water	<p>14) Impacts to critical fish habitat features (spawning, rearing, nursery, important feeding areas)</p> <p>15) Number of water crossings required</p> <p>16) Impacts to water bodies, including channel realignments, fill, and encroachment into riparian zones</p>	<ul style="list-style-type: none"> <li>• The Federal Fisheries Act prohibits the harmful alteration, disruption or destruction of fish habitat, the introduction of deleterious substances to fish habitat and the blockage of fish passage. Where impacts cannot be mitigated, a Fisheries Compensation Plan is prepared in consultation with the CA/DFO to address agency concerns/requirements.</li> <li>• It is an objective of the Ontario Provincial Policy Statement (PPS) to protect or enhance the quality and quantity of surface water, including headwaters. Surface water features are an important part of the natural, economic and cultural landscape (Policy 2.4.1). There are numerous watercourses in the project area and aquatic ecosystems are primarily warmwater urbanized, warmwater baitfish and warmwater sportfish.</li> <li>• The Detroit River has been designated an Area of Concern (AOC) under the United States and Canada Great Lakes Water Quality Agreement. Under this agreement, there are 14 water quality parameters known as "beneficial uses." Specific water use goals have been established for each of these beneficial uses and a Remedial Action Plan (RAP) has been developed and is being implemented to attain them. As a result, any activities involving dredging or the use of wetlands within the AOC will involve sensitive and potentially complicated permitting issues. The Rouge River is also designated as an AOC.</li> <li>• The crossing of water bodies by transportation facilities has the potential to affect fish and fish habitat 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. Critical habitats for spawning, nursery and rearing life functions of the warmwater fish communities are anticipated to be important components of the Provincially Significant Wetlands that are distributed in the Detroit and Canard Rivers, as well as in Turkey Creek. The PPS permits development and site alteration in fish 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 (Policy 2.3.1 (b)).</li> <li>• In addition to the permitting requirements that use of the Detroit River/Rouge River areas for transportation projects may entail, these areas are also subject to the Section 4(f) requirements of the National Environmental Protection Agency (NEPA). Section 4(f) requires that publicly owned parks, recreational areas, and wildlife and waterfowl refuges be avoided unless it is demonstrated that no prudent and feasible alternatives to their use exist, and any use must be mitigated. In cases where the subject site has been acquired or enhanced through grants from the Land and Water Conservation Fund Act, replacement of lands will be necessary in accordance with Section 6(f) of that act.</li> </ul>	<ul style="list-style-type: none"> <li>• 1:50 000 or 1:25 000 topographic maps</li> <li>• 1:10 000 base maps</li> <li>• OMNR Natural Resource Values Information System (NRVIS)</li> <li>• Conservation Authorities</li> <li>• Watershed Management Plans</li> <li>• Interest Groups</li> <li>• Public consultation</li> <li>• NHIC</li> <li>• Provincial Policy Statement and associated MNR Natural Heritage Training Manual</li> <li>• Great Lakes Commission</li> <li>• U.S. EPA</li> <li>• Greater Detroit American Heritage River Initiative</li> <li>• MDNR Director's FO-210.01, 2002 Inland Trout &amp; Salmon Guide</li> <li>• Field investigations as required</li> </ul>

6) CRITERIA FOR EVALUATING ILLUSTRATIVE AND PRACTICAL ALTERNATIVES CON'T

Criteria		Rationale	Data Source
<b>Natural Environment Con't</b>			
Wetlands	<p>17) Impacts to Provincially Significant Wetlands and wetland function</p> <p>18) Impacts to evaluated and unevaluated wetlands to the extent possible</p>	<ul style="list-style-type: none"> <li>PPS Policy 2.3.1 (a) prohibits development and site alteration in significant wetlands located south and east of the Canadian Shield. The assessment should have regard for this objective. Several wetlands are located on the Canadian side of the Detroit River, and are remnants (4%) of the submergent and land-based wetlands that once made up the more extensive Detroit River Wetland. These remaining coastal and river-mouth wetlands have been evaluated by the Ministry of Natural Resources and the Essex Region Conservation Authority in 1993 and are recognized as being Provincially Significant. Wetlands serve ecological functions to varying degrees including groundwater recharge/discharge, flood attenuation, wildlife movement corridors, habitat for flora and fauna, and water filtration.</li> <li>The Canadian Federal Policy on Wetland Conservation promotes the goal of no net loss of wetland function in areas where wetland loss has reached critical levels.</li> <li>The wetlands remaining after urbanization in the metropolitan Detroit area are typically small, scattered fragments. Encroachments/impacts may require permits from both the MDEQ under the Michigan Department of Natural Resources (MDNR) and EPA and by the U.S. Army Corps of Engineers (USACOE) under Section 404 of the Clean Water Act. These agencies may, in their permit application processing deliberations, be expected to consider the goals of the various preservation and enhancement programs active in the Detroit area, including the Detroit River Area of Concern Remedial Action Plan, the American Heritage Rivers Initiative, and the International Wildlife Refuge. Further, Federal Executive Order 11990 actively discourages the use of federal funding for construction of projects within wetlands unless it can be established that there is no alternative. Wetlands used in transportation projects must be replaced or otherwise suitably mitigated.</li> </ul>	<ul style="list-style-type: none"> <li>MNR</li> <li>CA</li> <li>P/NF Study</li> <li>NHIC</li> <li>1:10 000 MNR wetland mapping</li> <li>Provincial Policy Statement and associated MNR Natural Heritage Training Manual</li> <li>USGS topographical maps</li> <li>U.S. National Wetland Inventory</li> <li>Field investigations as required</li> </ul>
Wildlife	<p>19) Effects on species at risk / endangered species (vegetation, fish and wildlife)</p>	<ul style="list-style-type: none"> <li>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, this will seek to avoid or minimize impacts to areas where the presence of species at risk is suspected or confirmed. 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) will also be considered.</li> <li>The U.S. federal Endangered Species Act and the Michigan's Endangered Species Protection Act are directed at the protection of bird, plant, animal, insect, and fish species that are near extinction (endangered) or on the verge of becoming endangered (threatened). Under the Michigan law there is also a category of "special concern" listing animals whose populations are declining or whose habitat have undergone significant changes on a state-wide basis.</li> </ul>	<ul style="list-style-type: none"> <li>NHIC</li> <li>OMNR</li> <li>CA</li> <li>Species at Risk database</li> <li>Species at Risk Act (SAR)</li> <li>Species at Risk Recovery Plans and Management Guidelines (where available)</li> <li>OMNR Significant Wildlife Habitat Technical Guide (SWHTG)</li> <li>Provincial Policy Statement and associated MNR Natural Heritage Training Manual</li> <li>Canadian Canada Big Picture Mapping</li> <li>Michigan Department of Natural Resources</li> <li>U.S. Fish and Wildlife Service</li> <li>Michigan Natural Resources Inventory</li> <li>Field investigations as required</li> </ul>
	<p>20) Effects on ecologically functional areas such as connective corridors or travel ways</p>	<ul style="list-style-type: none"> <li>Not only is it important to consider the individual environmental factors or habitats, it is also important to recognize identified ecologically functional linkages that contribute to landscape connectivity. The assessment should have regard for PPS Policy 2.3.3 that the diversity of natural features in an area, and the natural connections between them should be maintained and improved where possible. 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).</li> </ul>	<ul style="list-style-type: none"> <li>OMNR</li> <li>NHIC</li> <li>CA</li> <li>SWHTG</li> <li>Provincial Policy Statement and associated OMNR Natural Heritage Training Manual</li> <li>Field investigations as required</li> </ul>
Special Areas	<p>21) Impacts to wildlife areas such as deeryards, heronries, waterfowl areas, important bird areas (IBA). Other areas to be considered are any identified wildlife management, rehabilitation and research program sites.</p>	<ul style="list-style-type: none"> <li>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 (for example Jefferson Salamander or Important Bird Areas). The assessment should have regard for PPS Policy 2.3.1(b). 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.</li> </ul>	<ul style="list-style-type: none"> <li>Identified by municipality, CA, OMNR, Interest Groups or other background sources</li> <li>Bird Studies Canada</li> <li>SWHTG</li> <li>Provincial Policy Statement and associated MNR Natural Heritage Training Manual</li> <li>Michigan Natural Resources Inventory</li> <li>Field investigations as required</li> </ul>

6) CRITERIA FOR EVALUATING ILLUSTRATIVE AND PRACTICAL ALTERNATIVES CON'T

Criteria		Rationale	Data Source
<b>Natural Environment Con't</b>			
Special Areas Con't	22) Impacts to environmentally significant features such as Environmentally Sensitive Areas (ESAs), Areas of Natural and Scientific Interest (ANSIs) or other areas of provincial, regional or local significance including the functions of these features	<ul style="list-style-type: none"> <li>There are 14 ESA's, 3 of which are also designated as ANSIs (Ojibway Prairie Complex, Ojibway Black Oak Woods and Spring Garden Prairie). The ESA's are most prevalent in west Windsor. The types of ESA's include marshes, prairies and islands.</li> <li>ESAs are not explicitly included in the Provincial Policy Statement, but are often associated with other features subject to the policy statement (e.g. PSWs, ANSIs, significant woodlands, and wildlife habitat). They are also reflected in the MNR Land Use Guidelines, Conservation Authority Plans and municipal land use plans.</li> <li>Policy 2.3.1(b) permits development in significant Areas of Natural and Scientific Interest if it has been demonstrated that there will be no negative impacts on the natural features or the ecological functions for which the area is identified. The assessment should have regard for the PPS protection objective.</li> <li>There are no state or U.S. federal designations for Environmentally Sensitive Areas as such. However, there are numerous federal and state designations that constitute the same thing. There are no such designated areas in the metropolitan Detroit area.</li> </ul>	<ul style="list-style-type: none"> <li>P/NF Study</li> <li>NHIC</li> <li>MNR Land Use Guidelines</li> <li>Conservation Authority Plans and Inventories</li> <li>Municipal Plans</li> <li>SWHTG</li> <li>Provincial Policy Statement and associated MNR Natural Heritage Training Manual</li> <li>Watershed and subwatershed studies</li> <li>Act 451, Michigan Public Acts of 1994</li> <li>The Michigan Natural Resources and Environmental Protection Act</li> <li>Great Lakes Shorelands Section of the MDEQ</li> <li>Field investigations as required</li> </ul>
Special Areas Con't	23) Impacts to special spaces, including the Detroit River.	<ul style="list-style-type: none"> <li>There are several unique features within the study area that warrant special mention because of their environmental, cultural or historical importance. The Detroit River is designated a Heritage River under both the American Heritage Rivers Initiative and the Canadian Heritage Rivers System, the first river to receive such a bi-national designation. The U.S. program has the broad charge of preserving and restoring its designated rivers through the partnership of the federal government with state and local governments, the business community, and private organizations. One of the outcomes of this initiative in late 2001 was the establishment of the Detroit River International Wildlife Refuge, itself the first such entity.</li> </ul>	<ul style="list-style-type: none"> <li>Detroit River Area of Concern Remedial Action Plan</li> <li>MNR</li> <li>Interest Groups</li> <li>Municipal plans</li> <li>Consultation with municipal and regional governments</li> <li>P/NF Study</li> <li>Ontario Parks</li> <li>Conservation Authorities</li> <li>USGS topographical maps</li> <li>U.S. National Wetland Inventory</li> <li>Act 451, Michigan Public Acts of 1994</li> <li>The Michigan Natural Resources and Environmental Protection Act</li> <li>Great Lakes Shorelands Section of the MDEQ</li> <li>Field investigations as required</li> </ul>
Air Quality	24) Effects on sensitive receptors to air quality 25) Air pollutants and GHG emissions	<ul style="list-style-type: none"> <li>Air Quality impacts have the potential to affect human health.</li> <li>Alternatives through or near urban areas create the potential for increased contaminant levels.</li> <li>Dust emissions associated with construction related activities could cause temporary air quality issues.</li> <li>GHGs contribute to global warming.</li> </ul>	<ul style="list-style-type: none"> <li>1:50,000 or 1:25,000 topographic maps</li> <li>1:10,000 Ontario Base Maps</li> <li>Aerial Photographs</li> <li>Municipal land use information</li> <li>Official regional land use plans</li> <li>Traffic data</li> <li>Public consultation</li> <li>Plans of alternatives</li> <li>Air Quality Monitoring Data</li> <li>Dispersion and Pollutant Analysis</li> </ul>
Woodlands	26) Impacts to significant forest stands and woodlots	<ul style="list-style-type: none"> <li>The PPS Policy 2.3.1(b) permits development and site alteration in significant woodlands south and east of the Canadian Shield if it has been demonstrated that there will be no negative impacts on the natural features or the ecological functions for which the area is identified. The assessment should have regard for the PPS protection objectives. Both the City of Windsor and Town of LaSalle have undertaken biological inventories of the remnant forest and prairie habitat features to provide detailed information regarding local significance. Each watershed will be assessed at the illustrative alternative stage to determine woodland significance. Significance is based on several factors that could include size, shape, association to other features, linkages, diversity, specialized habitat, management value etc.</li> </ul>	<ul style="list-style-type: none"> <li>P/NF Study</li> <li>NHIC</li> <li>MNR Land Use Guidelines</li> <li>Conservation Authority Plans</li> <li>SWHTG</li> <li>Provincial Policy Statement and associated OMNR Natural Heritage Training Manual</li> <li>USGS topographical maps</li> </ul>



6) CRITERIA FOR EVALUATING ILLUSTRATIVE AND PRACTICAL ALTERNATIVES CON'T

Criteria		Rationale	Data Source
<b>Natural Environment Con't</b>			
Resources	27) Impacts to mineral, petroleum and mineral aggregate resources	<ul style="list-style-type: none"> <li>The Provincial Policy Statement has the objective of protecting petroleum, minerals and mineral aggregate resources for the long term. The policy statement requires the protection of both existing operations and known deposits.</li> </ul>	<ul style="list-style-type: none"> <li>OMNR Mapping</li> <li>US Natural Features Inventory</li> <li>US GS Mapping</li> </ul>
Property Waste & Contamination	28) Effect on operating and closed waste disposal sites	<ul style="list-style-type: none"> <li>Localized significant sources of property contamination can be associated with operating and closed waste disposal sites, the latter being of more significance due to their difficulty in accurately locating them. Consideration should be given to avoiding/ minimizing effects in the "area of influence" of waste disposal sites.</li> </ul>	<ul style="list-style-type: none"> <li>Field Reconnaissance</li> <li>Historical Plans</li> <li>MOE Waste Generator Database</li> <li>MOE PCB Storage Site Database</li> <li>MOE Waste Disposal Site Inventory</li> <li>Technical Standards &amp; Safety Authority</li> <li>Aerial Photographs</li> <li>Municipal Directories</li> <li>Municipal Assessment Maps</li> <li>OBM and NTS Mapping</li> <li>Soils, Hydrogeological and Geological Maps</li> <li>Libraries</li> <li>Historical Archives</li> <li>Land Registry Offices</li> <li>Municipal Offices</li> </ul>
	29) Impacts to other known contaminated sites	<ul style="list-style-type: none"> <li>There is the potential that some of the lands in the Windsor/Detroit area may be contaminated due to the nature of existing and historical land use especially in older commercial/industrial areas and in areas with heavy industrial activity. Sources of potential property contamination in rural areas are most commonly associated with service stations; isolated pockets of commercial/industrial areas; unknown fill areas; scrap yards and other high-risk land uses. Impacts to these areas should be avoided / minimized to the extent possible.</li> </ul>	
<b>Technical Considerations</b>			
Transportation Operations		<ul style="list-style-type: none"> <li>The effectiveness (i.e. level of service) of each alternative needs to be determined.</li> <li>These transportation agencies have developed design standards to ensure that safety objectives are reflected in all new infrastructure.</li> <li>These standards are not subject to modification or compromised to avoid/reduce impacts, costs, etc.</li> </ul>	<ul style="list-style-type: none"> <li>Draft Safety Standards Manual for New Rural Freeways</li> <li>Ontario Geometric Design Standards Manual</li> <li>Transportation Association of Canada (TAC Manual)</li> <li>FHWA Highway Design Manual</li> <li>MDOT Highway Design Manual</li> <li>Base Mapping</li> <li>Field Reviews</li> </ul>
Network Compatibility		<ul style="list-style-type: none"> <li>There is the need to determine how transportation solutions address future needs in relation to existing and proposed future transportation infrastructure (like and other transportation modes).</li> </ul>	<ul style="list-style-type: none"> <li>Traffic operations simulations (e.g. models)</li> </ul>
Border Processing		<ul style="list-style-type: none"> <li>There is the need to determine how transportation solutions impact existing border crossing service and infrastructure / ability to accommodate required border crossing services and infrastructure.</li> </ul>	<ul style="list-style-type: none"> <li>Consultation with Public Border Agencies (Canadian Border Services Agency and U.S. Customs Border Protection, private border agencies and border users.</li> <li>Federal standards and specifications</li> </ul>
Engineering / Constructability		<ul style="list-style-type: none"> <li>There is the need to determine issues related to construction of a transportation solution(s). Physical conditions and staging issues can affect the feasibility of implementing transportation solutions.</li> </ul>	<ul style="list-style-type: none"> <li>Ontario Geometric Design Standards Manual/TAC Manual</li> <li>FHWA Highway/MDOT Highway Design Manuals</li> <li>Construction Standards and Specifications</li> <li>Field Reviews and Geotechnical Sampling</li> <li>Consultation with Border Agencies, Municipalities</li> </ul>
Cost		<ul style="list-style-type: none"> <li>There is the need identify the short and long term costs associated with possible transportation solutions. Construction, operating, maintenance and property costs can influence the feasibility of a given alternative.</li> </ul>	<ul style="list-style-type: none"> <li>Cost data</li> <li>Base Mapping</li> <li>Field Reviews</li> </ul>

Note: Route generation criteria listed in Table 3.2 represent the minimum objectives for generating route alternatives. These objectives are subject to refinement and modification during the Integrated Environmental Study Process based on study findings and input received from stakeholders.