

Welcome to the Sixth
Public Information Open House
for the

DETROIT RIVER INTERNATIONAL CROSSING
E N V I R O N M E N T A L A S S E S S M E N T

June 18 & 19, 2008

>> Please Sign In <<

Members of the Study Team are available to discuss any questions that you may have.



U.S. Department of Transportation
**Federal Highway
Administration**



Ontario



The Detroit River International Crossing Study follows an Environmental Assessment process that is a proven, legislated process used throughout Ontario and Canada on infrastructure projects, ranging from simple road widenings to complex long span bridges.

The task of completing the DRIC EA falls to the Border Transportation Partnership, a dedicated bi-national team of leading engineers, planners, and policy experts from Transport Canada, the Ontario Ministry of Transportation, the U.S. Federal Highways Administration, and the Michigan Department of Transportation – committed to a new border crossing by 2013.

Ministry of Transportation

Windsor Border Initiatives

Implementation Group

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To provide for the safe, efficient and secure movement of people and goods across the Canada-U.S. border in the Detroit River area to support the economies of Ontario, Michigan, Canada and the U.S.

To construct a new end-to-end transportation system that will link Highway 401 to the U.S. interstate system with inspection plazas and a new river crossing in between.

In meeting the purpose, this study must address the following regional transportation and mobility needs:

- Provide new border crossing capacity to meet increased long-term travel demand;
- Improve system connectivity to enhance the continuous flow of people and goods;
- Improve operations and processing capabilities at the border; and
- Provide reasonable and secure crossing options (i.e. network redundancy).

The Study Team seeks to implement transportation solutions which minimize community and environmental impacts as much as possible. In particular, the Canadian Study Team is looking to address the local communities' goals to:

- *Improve quality of life*
- *Take trucks off local streets*
- *Improve traffic movement across the border.*

The assessment of Crossing, Plaza and Access Road alternatives is being conducted in accordance with the Environmental and Technical Work Plans and is based on the following factors and measures:

Factors	Performance Measures for Assessment of Practical Alternatives	
Changes to Air Quality	Particulate Matter Gaseous Pollutants	
Protection of Community and Neighborhood Characteristics	Residences and Social Features Existing Businesses Residents and Social Features	Noise and Vibration Community and Neighbourhood Impacts to Access
Maintain Consistency with Existing and Planned Land Use	Land Use (existing and planned) Development Plans Contaminated Sites/Disposal Sites	
Protect Cultural Resources	Built Heritage Features Parklands	Archaeological Features
Protect the Natural Environment	Ecological Landscapes Communities/Ecosystems Population/Species	Surface Water/Groundwater Recharge Areas Other Natural Resources
Improve Regional Mobility	Highway Network Effectiveness Continuous/ongoing River Crossing Capacity Operational Considerations of Crossing System (River Crossing and Plaza)	
Cost and Constructability	Cost Construction Duration	Construction Risk Utility Impacts

The **Canadian Environmental Assessment Act** (the Act) applies to federal authorities when they contemplate certain actions in relation to a *project* (e.g. funding and certain regulatory permits). Federal departments that have an environmental assessment (EA) responsibility in relation to a project are called Responsible Authorities (RAs).

Transport Canada (TC) is an RA for the Detroit River International Crossing project because TC is a co-proponent of the project, together with the Ontario Ministry of Transportation. As an RA, TC must ensure that an environmental assessment is carried out under the Act. The Windsor Port Authority also has an EA responsibility under the *Canada Port Authority Environmental Assessment Regulations*. The DRIC study has been designated to coordinate the federal and provincial EA requirements.

The CEAA process was formally initiated in March 2006, and a Notice of Commencement was posted on the Canadian Environmental Assessment Register, registry number 06-01-18170. Federal authorities also participating in the assessment include:

Environment Canada	Foreign Affairs Canada	Canadian Transportation Agency
Health Canada	Natural Resources Canada	Canada Border Services Agency
Fisheries and Oceans Canada		

Federal authorities have been participating in the coordinated EA process since it began in 2004, by reviewing the draft work plans to ensure that the information being collected as part of the DRIC process will be sufficient to meet federal information needs under CEAA.

Draft federal Environmental Assessment Guidelines have been developed to outline the specific requirements of the CEAA process. These guidelines were made available for public review in December 2006, and are currently being updated to reflect public input. In addition, the federal Public Participation Plan was developed, to describe the opportunities the public will have to provide input directly into the federal process. Both of these documents are available on the CEAA website at www.ceaa.gc.ca.

For more information about the CEAA process please contact:

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This study is being undertaken through a coordinated federal-provincial Environmental Assessment (EA) process. Both governments have agreed to coordinate their respective EA processes as outlined in the *Canada-Ontario Agreement on EA Cooperation* (November, 2004), which states that federal and provincial governments:

"will coordinate the environmental assessment processes whenever projects are subject to review by both jurisdictions... The agreement maintains the current level of environmental standards and the legislative and decision-making responsibilities of both governments. While projects requiring both provincial and federal environmental assessment approvals will still require separate approvals, decisions will be based on the same body of information and there will be an ability to make decisions concurrently".

The federal EA process was initiated early in the project planning stages in order to maximize opportunities for coordination with the provincial EA process.

All technical studies being prepared as part of the provincial individual EA process will form the basis for meeting the requirements of the *Canadian Environmental Assessment Act*.

Federal departments provided input into the development of the Work Plans developed for each of the various disciplines required for this study, as part of the coordinated process.

Public Oversight

The Partnership has heard that public oversight of a new crossing is important. We are committed to protecting the public interest with public oversight. The Partnership is exploring various forms of collaboration and innovation with the private sector, while maintaining an appropriate level of public oversight.

New Crossing and Plaza

The Government of Canada is the lead partner in the implementation of the bridge and inspection plaza on the Canadian side of the crossing system. Canada has indicated it intends to explore the opportunity for private-sector participation in the construction, financing, and operation of the new bridge. A public-private partnership will not affect the ownership of the new crossing and the Government of Canada remains committed to public ownership of the new bridge and inspection plaza.

New Access Road

Ontario is the lead partner in the implementation of the access road from Highway 401 to the new plaza in Canada and is also exploring various roles for the private sector in the delivery of the access road. The Government of Canada, in recognition of the importance of this project, has committed to cover 50 per cent of the eligible capital costs of the new access road.

Study Process

Developed initial set of alternatives based on public, agency and municipal input, Guiding Principles and recommendations made by other studies.

Identified sensitive community features.

Sought public input on the level of importance of each evaluation factor.

Developed Illustrative Crossing, Plaza Locations & Connecting Route Alternatives in Canada and the U.S., Summer 2005



Consultation

Initial Public Outreach, April 2005

Workshops

Tours of Detroit River area

Meetings with public, private sector municipalities and agencies

Public Information Open House 1, June 2005

Based on the assessment of Illustrative Alternatives, Area of Continued Analysis was identified.

Assessment considered Specialists' Evaluation and public input to level of importance of Evaluation Factors.

At-grade and below-grade alternatives considered.

Identified Area of Continued Analysis, Fall 2005



Workshops

Tours of Detroit River area

Meetings with public, private sector municipalities and agencies

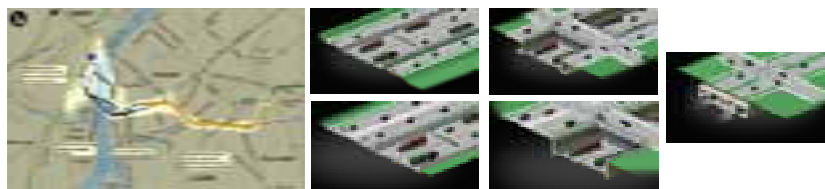
Public Information Open House 2, November 2005

Study Process

Consultation

Established Guiding Principles in generating practical alternatives.
Specific options generated based on community objectives, public, agency, municipal and specialists input.

Identified Practical Crossing, Plaza and Access Road Alternatives, Spring 2006



Public Workshops to define specific options and explore Context Sensitive Solutions.
Tours of Detroit River area.
Meetings with public, private sector municipalities and agencies.
Public Information Open House 3, March 2006.

Study Team sought and gathered information on key community features.
Field data, modeling, design work and secondary source info, incorporated in analysis of impacts and benefits.
Compile all analysis data.

Present Preliminary Analysis of Practical Alternatives, December 2006



Context Sensitive Solutions Workshops
Tours of Detroit River area
Workshops
Meetings with public, private sector municipalities and agencies
Public Information Open House 4, December 2006

Used knowledge gained from analysis of original practical alternatives and community input to develop the Parkway alternative.
Continued with foundation investigations for the plaza and crossing alternatives.
Compiled data, finalize and present analysis to public.

Update of Preliminary Analysis of Practical Alternatives, August 2007



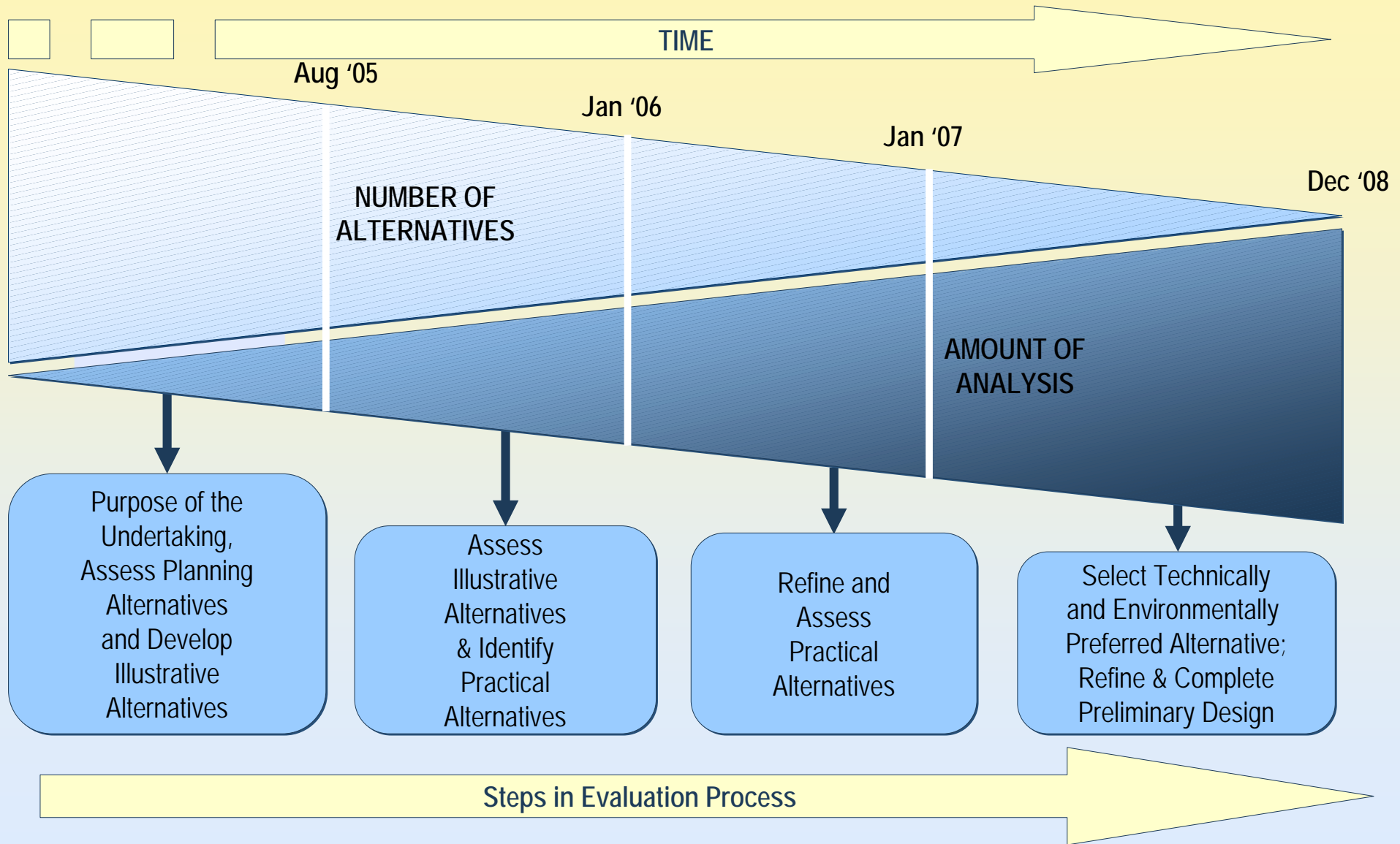
Meetings with public, private sector municipalities and agencies
Public Information Open House 5, August 2007

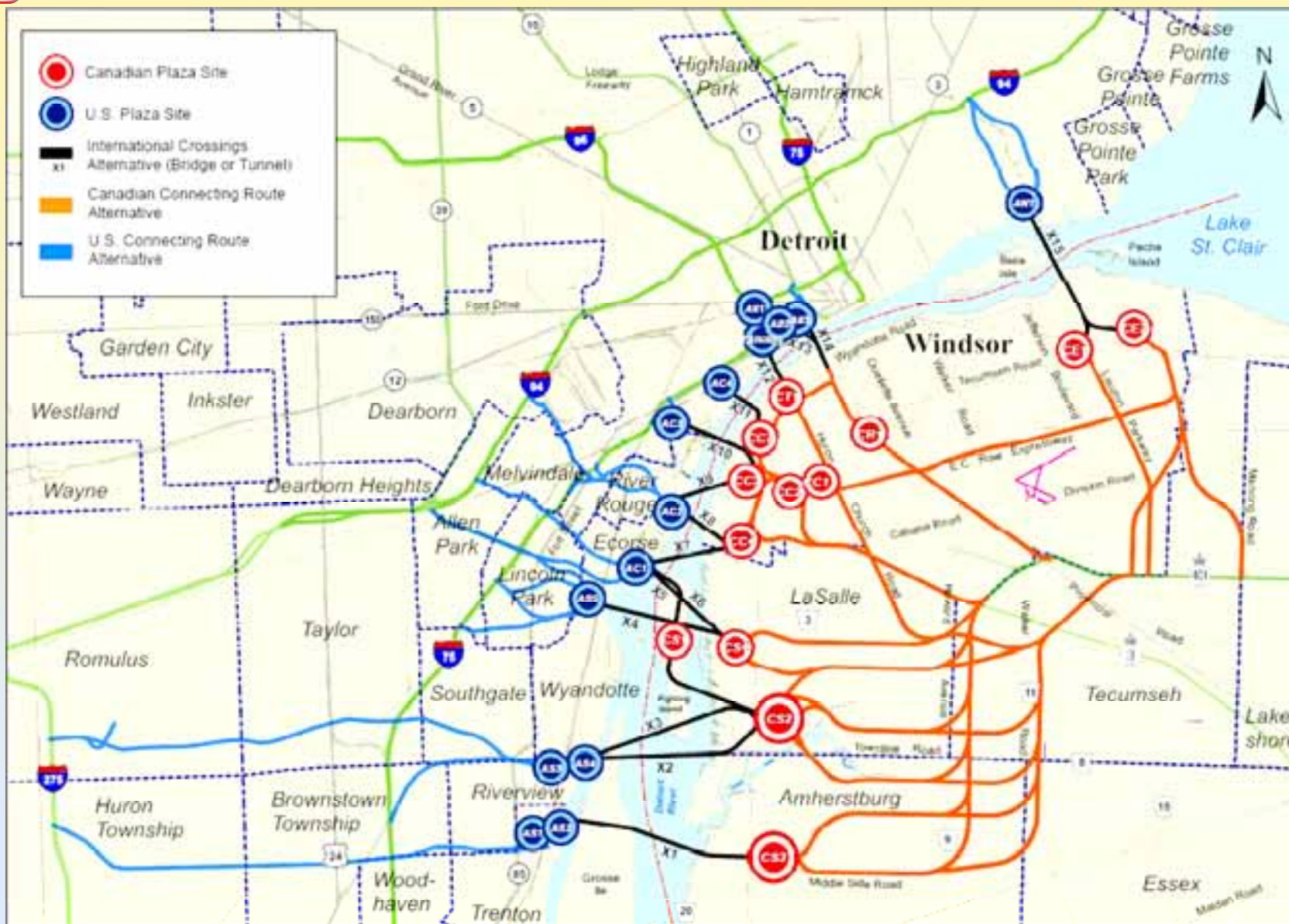
The evaluation process used during the Illustrative and Practical Alternatives phase to determine the Technically and Environmentally Preferred Alternative has involved two methods: **Reasoned Argument Method** and **Arithmetic Method**. The Reasoned Argument is the primary evaluation method with the Arithmetic approach used to substantiate the findings of the Reasoned Argument evaluation.

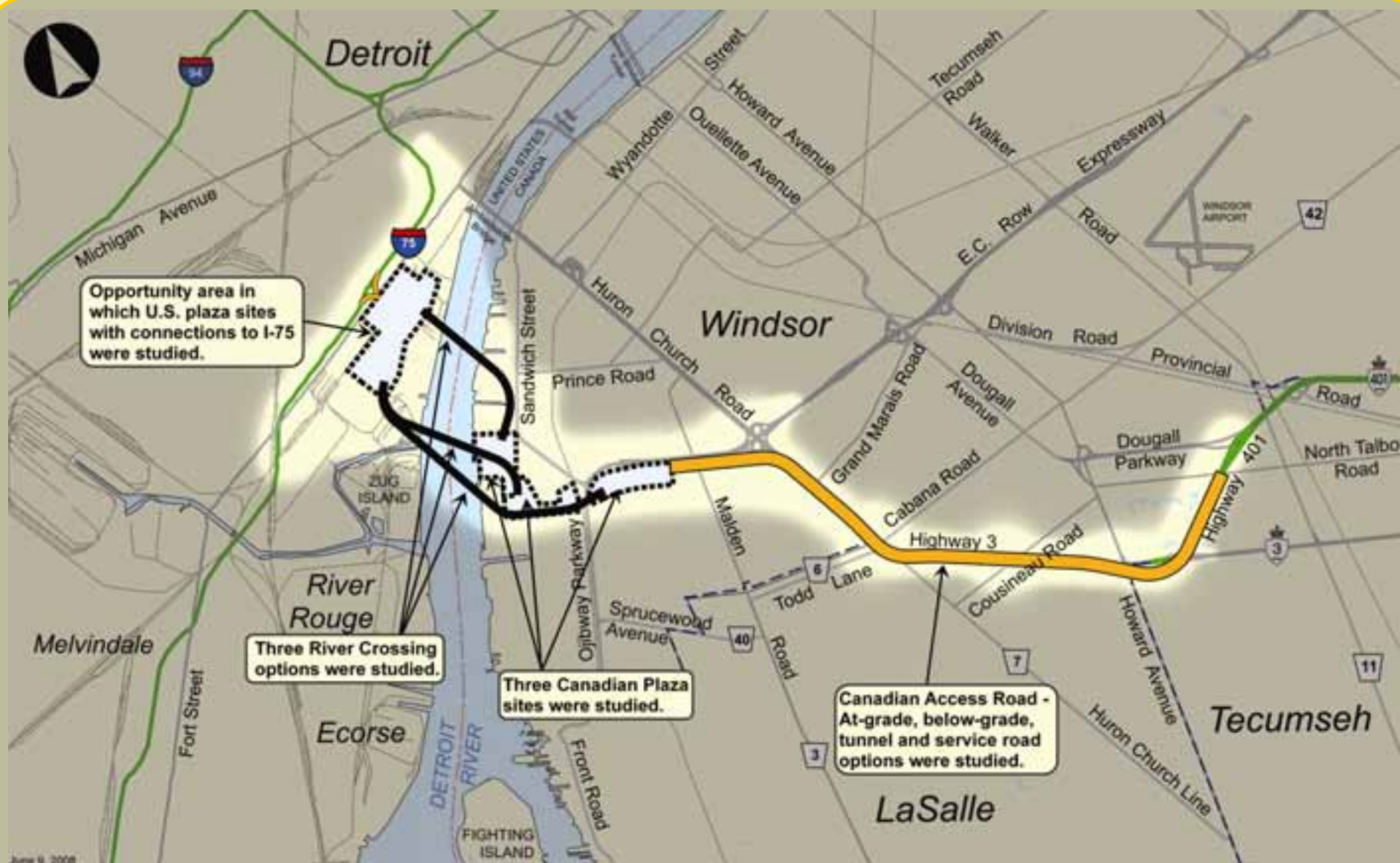
Reasoned Argument Method	Arithmetic Method
<p>Considers the advantages and disadvantages of each alternative and the relative significance of the impacts. The rationale to be used to select alternatives over others was derived from the following sources:</p> <ul style="list-style-type: none"> • National and international significance of the crossing; • Government legislation, policies and guidelines; • Existing Land Use and Municipal policy; • Technical Considerations • Issues and concerns identified during consultation; and • Study Team expertise. 	<p>Considers both the level of importance of each environmental attribute (i.e. weight) and the magnitude of the impact or benefit (i.e. score). Generally, more weight is assigned to features that are felt to be more important in assessing impacts.</p> <p>Weighting scenarios were developed based on feedback from the general public and other stakeholders. The results were presented in the <i>Draft Generation and Assessment of Illustrative Alternatives Report, November 2005</i>.</p>

In evaluating alternatives using the Reasoned Argument or Arithmetic Method, the decision-making has:

- Incorporated input from municipalities, communities, stakeholders and government agencies, First Nations and the general public;
- Considered the context of the national and international significance of the Detroit River crossing;
- Been replicable and defensible;
- Used a common set of criteria in both countries for all alternatives;
- Been traceable and open; and
- Reflected the bi-national needs and requirements of the project.







The fifth round of Public Information Open House meetings were held August 14 and 15, 2007.
The public provided feedback on the analysis of Practical Alternatives and were shown the Parkway Alternative.

Frequently Provided Comments

- End to end tunnel would protect current community and neighbourhood characteristics
- Air quality should be improved over current conditions and kept to the highest standard possible
- Concerns about property value and view (from front yard) of the Parkway
- Lengthen the short tunnels
- Maximize tunnel use in residential areas to minimize visual impact, air and noise pollution
- Neighbourhoods must be protected from excess noise and pollution
- Parkway does a nice job of joining Windsor and LaSalle communities
- Land uses will be acquired during construction; hope that similar land uses return after construction is completed
- Preserve what are truly historical features
- Natural resources are the most vulnerable and most important
- Cost should not be a major factor or defining factor
- Cost of tunneling is cheaper than the projected cost of health care
- The most efficient use of tax dollars should be considered
- Concerned with traffic flow during construction



| Attendance: 1672 + | Comment sheets received: 207 |

Following the last round of PIOHs in August of 2007, the Parkway was refined to include:

- Additional Tunnel in the vicinity of Spring Garden
- Location and Length of Tunnel at Oliver Estates revised
- Overall length of tunnels increased to 1.86 km
- Other Tunnel lengths and locations refined
- Pedestrian and Cyclist Trails refined
- New Loop ramp at Todd Lane (EW-S)
- Howard Avenue Interchange modified to include connection to possible future Laurier Parkway Extension

The analysis of the access roads is summarized as follows:

<i>Changes to Air Quality</i>	All alternatives offer similar benefits to air quality by eliminating stop and go traffic and getting trucks off local streets.
<i>Protecting Community and Neighbourhood Characteristics</i>	The Windsor-Essex Parkway has higher property requirements but also provides a greater buffer between neighbourhoods and the roadway resulting in fewer residences being next to the roadway corridor. In addition, new connections between communities and new recreation and green space areas are possible. No noise impacts are expected with the Parkway and some areas will realize a reduction in noise levels compared to today's conditions.
<i>Maintain Consistency with Existing and Planned Land Use</i>	The Windsor-Essex Parkway creates more open space along the corridor, which provides buffer for adjacent land uses and new recreational opportunities.
<i>Protect Cultural Resources</i>	The Windsor-Essex Parkway does not impact any significant archaeological or built heritage features. The Windsor-Essex Parkway provides greater opportunities for new parks and recreation trails to link to existing parks and trails.
<i>Protecting the Natural Environment</i>	The Windsor-Essex Parkway avoids the core areas of important natural areas but impacts some local features. These impacts are reduced somewhat by the greater opportunities provided for the enhancement of natural features and the restoration of long-forgotten natural linkages.
<i>Improve Regional Mobility</i>	The Windsor-Essex Parkway will provide sufficient capacity on the freeway and service drives to meet future travel needs for international and local traffic. The freeway will eliminate stop and go traffic for much of the international traffic and help keep trucks off of local streets. The Windsor-Essex Parkway also has better service road operation and better access between service roads and the below-grade freeway compared to other alternatives.
<i>Cost and Constructability</i>	The Windsor-Essex Parkway is estimated to cost \$1.6 billion, which means the Windsor-Essex Parkway has a higher construction cost than the initial below-grade alternatives. It is almost \$1 billion more expensive than the lowest cost at-grade alternative but over \$2 billion less expensive than the end-to-end tunnel alternative.

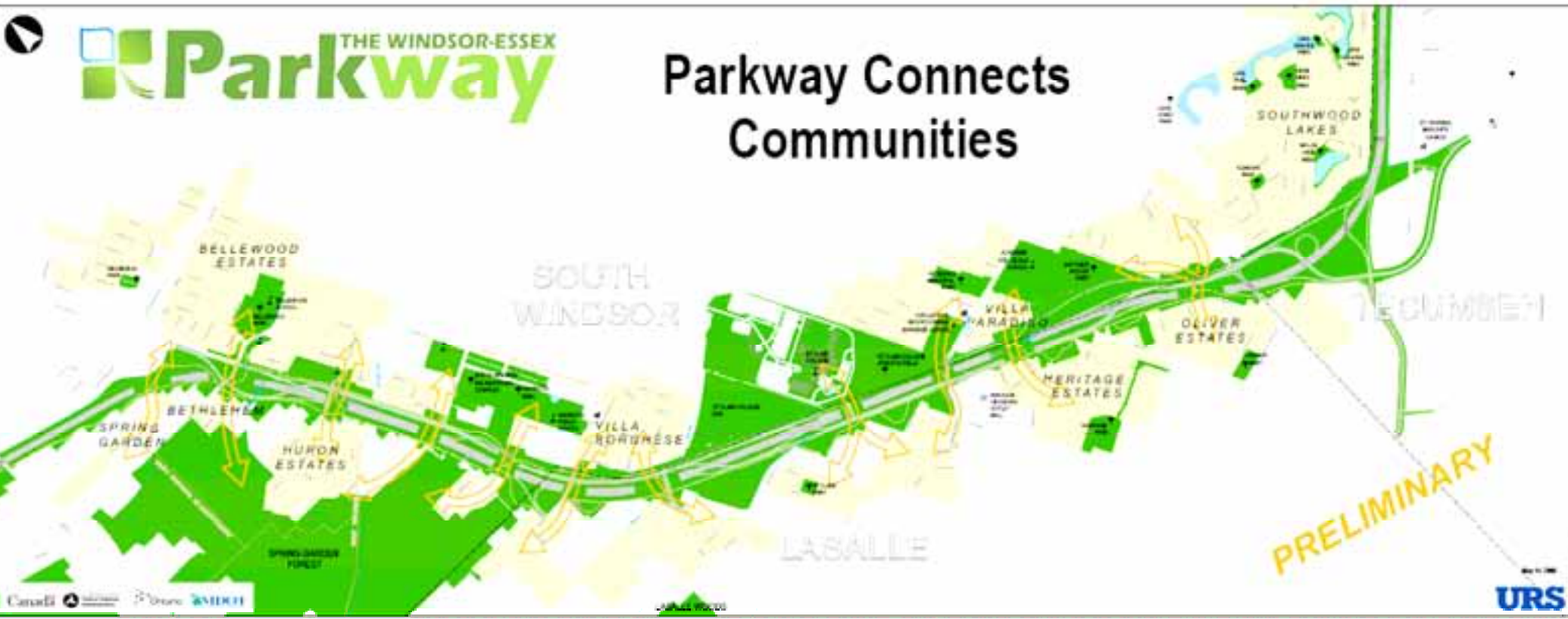
The following summarizes the results of the evaluation of access road alternatives based on the seven factors.

Factor	Preferred Alternative
Air Quality	No Clear Preference
Community & Neighbourhood	Windsor-Essex Parkway
Land Use	Windsor-Essex Parkway
Cultural Resources	Windsor-Essex Parkway
Natural Environment	No Clear Preference
Regional Mobility	Windsor-Essex Parkway
Cost & Constructability	At-grade

The Windsor-Essex Parkway is preferred or comparable to other alternatives in 6 of the 7 factors. In the only factor area where Windsor-Essex Parkway was not preferred, the at-grade alternatives were identified as having lower costs and fewer constructability risks;

Overall, the study team concluded that the advantages of the Windsor-Essex Parkway over the other alternatives outweighed the higher costs and constructability risks;

The Windsor-Essex Parkway was therefore identified as the preferred access road alternative.



The Parkway alternative was developed, based on refinements to the below-grade Practical Alternatives (Alternatives 1B and 2B), and the tunnel alternative (3) and reflects the study goals and the community input received to date. The Parkway subsequently underwent technical analysis to the same level of detail as the initial five Practical Alternatives. These studies combined with community input led to the development of The Windsor-Essex Parkway.







The Windsor-Essex Parkway is a below-grade access road, with separate service roads for local traffic, and extensive green space. It will allow communities on both sides of the corridor to reconnect and provides opportunities for new trails for pedestrians and cyclists and linkages for wildlife. The access road for international traffic would be below-grade from Howard Avenue to E.C. Row Expressway, with 11 tunnels located above it. The Windsor-Essex Parkway will address the future transportation and mobility needs of the region, improve traffic operations and safety, and protect people and communities.













Summary of Analysis – Access Road Alternatives

FACTOR/ MEASURE	ALTERNATIVE 1A		ALTERNATIVE 1B		ALTERNATIVE 2A		ALTERNATIVE 2B		ALTERNATIVE 3	PARKWAY			
	Option 1 (Widen to North on Hwy 3)	Option 2 (Widen to South on Hwy 3)	Option 1 (Widen to North on Hwy 3)	Option 2 (Widen to South on Hwy 3)	Option 1 (Widen to North on Hwy 3)	Option 2 (Widen to South on Hwy 3)	Option 1 (Widen to North on Hwy 3)	Option 2 (Widen to South on Hwy 3)					
Changes to Air Quality													
Results of modeling to date (before mitigation)	<ul style="list-style-type: none">Predicted concentrations of NO_x are lower in the future compared to today's values due to changes in fuels and vehicular technologies.Concentrations of Volatile Organic Compounds (VOC's) predicted to be well below provincial standards.		<ul style="list-style-type: none">Predicted concentrations of NO_x are lower in the future compared to today's values due to changes in fuels and vehicular technologies.Concentrations of Volatile Organic Compounds (VOC's) predicted to be well below provincial standards.Depressed alternatives result in slightly lower PM_{2.5} concentrations in comparison to the at-grade alternatives.		<ul style="list-style-type: none">Predicted concentrations of NO_x are lower in the future compared to today's values due to changes in fuels and vehicular technologies.Concentrations of Volatile Organic Compounds (VOC's) predicted to be well below provincial standards.		<ul style="list-style-type: none">Predicted concentrations of NO_x are lower in the future compared to today's values due to changes in fuels and vehicular technologies.Concentrations of Volatile Organic Compounds (VOC's) predicted to be well below provincial standards.Depressed alternatives result in slightly lower PM_{2.5} concentrations in comparison to the at-grade alternatives.		<ul style="list-style-type: none">Predicted concentrations of NO_x are lower in the future compared to today's values due to changes in fuels and vehicular technologies but NO_x concentrations are greater compared to non-tunnel alternatives over a broader area (greater dispersion from ventilation stacks)Concentrations of Volatile Organic Compounds (VOC's) predicted to be well below provincial standards.Tunnel results in lower concentrations of PM_{2.5} in vicinity of the first 50m from the ROW compared to the other alternatives.		<ul style="list-style-type: none">Predicted concentrations of NO_x are lower in the future compared to today's values due to changes in fuels and vehicular technologies.Concentrations of Volatile Organic Compounds (VOC's) predicted to be well below provincial standards.Depressed alternatives result in slightly lower PM_{2.5} concentrations in comparison to the at-grade alternatives.		
Protection of Community and Neighbourhood Characteristics													
Potential Acquisitions													
Residences	• 180-230	• 160-210	• 180-230	• 160-210	• 190-230	• 170-220	• 180-230	• 170-220	• 140-180	• 309-333			
Businesses	• 31	• 45	• 31	• 45	• 26	• 40	• 26	• 40	• 43-45	• 48			
Community Features Potentially Displaced	• 3 – Montessori Preschool, Royal Canadian Legion, Heritage Park Alliance Church	• 4 – Montessori Preschool, Royal Canadian Legion, Heritage Park Alliance Church, Trillium Court Housing (partial)	• 3 – Montessori Preschool, Royal Canadian Legion, Heritage Park Alliance Church	• 4 – Montessori Preschool, Royal Canadian Legion, Heritage Park Alliance Church, Trillium Court Housing (partial)	• 3 – Montessori Preschool, Royal Canadian Legion, Heritage Park Alliance Church (partial)	• 4 – Montessori Preschool, Royal Canadian Legion, Heritage Park Alliance Church, Trillium Court Housing (partial)	• 3 – Montessori Preschool, Royal Canadian Legion, Heritage Park Alliance Church (partial)	• 4 – Montessori Preschool, Royal Canadian Legion, Heritage Park Alliance Church, Trillium Court Housing (partial)	• 4 – Montessori Preschool, Royal Canadian Legion, Heritage Park Alliance Church, Trillium Court Housing (partial)	• 5 – Montessori Preschool, Royal Canadian Legion, Heritage Park Alliance Church, Trillium Court Housing (entire property), St. Clair College Athletic Fields			
Noise Receptors with >5 dB increase (after mitigation)	• 1 (additional investigations in Malden Road/ Spring Garden area are required)	• 0 (additional investigations in Malden Road/ Spring Garden area are required)	• 1 (additional investigations in Malden Road/ Spring Garden area are required)	• 0 (additional investigations in Malden Road/ Spring Garden area are required)	• 0 (additional investigations in Malden Road/ Spring Garden area are required)	• (additional investigations in Malden Road/ Spring Garden area are required)	• (additional investigations in Malden Road/ Spring Garden area are required)	• 0 (additional investigations in Malden Road/ Spring Garden area are required)	• 0 (additional investigations in Malden Road/ Spring Garden area are required)	• 0 (additional investigations in Malden Road/ Spring Garden area are required)			
Effect on Access	<ul style="list-style-type: none">9 road closings20 local access connections to new transportation facilityNo access to the new corridor from Cabana Road/Todd Lane; no access to Howard Avenue from Highway 401 Eastbound.Full access to St. Clair College.		<ul style="list-style-type: none">13 road closings14-15 local access connections to new transportation facilityPartial access to/ from the new corridor from/to Cabana Road/Todd Lane.Full access to St. Clair CollegeNo direct access to Howard Avenue.		<ul style="list-style-type: none">15 road closings15 local access connections to new transportat'n facilityFull access to/ from the new corridor from/to Cabana Road/ Todd Lane; no direct access to St. Clair College or Howard Ave.		<ul style="list-style-type: none">15 road closings14 local access connections to new transportat'n facilityFull access to/ from the new corridor from/to Cabana Road/ Todd Lane; no direct access to St. Clair College or Howard Ave.		<ul style="list-style-type: none">14 road closings10 local access connections to new transportat'n facilityFull access to/ from the new corridor from/to Cabana Road/ Todd Lane; no direct access to St. Clair College or Howard Ave.		<ul style="list-style-type: none">14 road closings11 local access connections to new transportat'n facilityFull access to/ from the new corridor from/to Cabana Road/ Todd Lane; no direct access to St. Clair College or Howard Ave.	<ul style="list-style-type: none">9 road closings13 local access connections to new transportation facilityNo access to/ from Cabana Road/Todd Lane; No access to Howard Avenue from Highway 401 Eastbound.	<ul style="list-style-type: none">18 road closings17 local access connections to new transportation facilityNo access to/ from Cabana Road/Todd Lane; No access to Howard Avenue from Highway 401 Eastbound











Summary of Analysis – Access Road Alternatives

FACTOR/ MEASURE	ALTERNATIVE 1A		ALTERNATIVE 1B		ALTERNATIVE 2A		ALTERNATIVE 2B		ALTERNATIVE 3	PARKWAY
										
	Option 1 (Widen to North on Hwy 3)	Option 2 (Widen to South on Hwy 3)	Option 1 (Widen to North on Hwy 3)	Option 2 (Widen to South on Hwy 3)	Option 1 (Widen to North on Hwy 3)	Option 2 (Widen to South on Hwy 3)	Option 1 (Widen to North on Hwy 3)	Option 2 (Widen to South on Hwy 3)		
Impact on Community Character/Cohesion	<ul style="list-style-type: none">Overall, similar impacts to community compared to other alternativesCommunities of Spring Garden, Bethlehem Street, Reddock Street and Talbot Road (between Cousineau Road and Howard Avenue) Montgomery-Chelsea Drive and Mero Avenue will experience change to community character and cohesionThe displacement of households within the neighbourhoods will result in a change in character within each communityReddock Street will experience a change in community character and cohesion due to the access road alignment encroaching into the communityThe Bethlehem community will experience a change in character and cohesion due to development of Bethlehem Street to accommodate local traffic traveling from Spring Garden to Huron Church Road		<ul style="list-style-type: none">Overall, similar impact to community compared to other alternativesCommunities of Spring Garden, Bethlehem Street, Reddock Street, Kendleton Court, and Talbot Road (between Cousineau Road and Howard Avenue) and Mero Avenue will experience change to community character and cohesionBelow grade alternative has lower aesthetic impacts than the at-grade optionsReddock Street will experience a change in community character and cohesion due to the access road alignment encroaching into the communityRemoves traffic from the viewshed of adjacent neighbourhoods		<ul style="list-style-type: none">Overall, similar impact to community compared to other alternativesCommunities of Spring Garden, Bethlehem Street, Reddock Street and Talbot Road (between Cousineau Road and Howard Avenue) and Mero Avenue will experience change to community character and cohesionOver half of the households on Reddock Street will be displacedThe residential in-fill area of Kendleton Court will be displaced with option 1; no households will be displaced in Kendleton Court with option 2Talbot Road community will experience a change in character and cohesion due to the displacement of one entire side of Talbot Road, with either option 1 or option 2		<ul style="list-style-type: none">Overall, similar impact to community compared to other alternativesCommunities of Spring Garden, Bethlehem Street, Reddock Street and Talbot Road (between Cousineau Road and Howard Avenue) and Mero Avenue will experience change to community character and cohesionAll Kendleton Court households will be displaced with alignment option 1; with alignment option 2 only one Kendleton Court household is displacedProvides for some aesthetic benefits to the community at large and to adjacent neighbourhoodsRemoves traffic from the viewshed of adjacent neighbourhoods		<ul style="list-style-type: none">Overall, similar impact to community compared to other alternativesImpacts to Spring Garden, Talbot Road, Bethlehem Street, Mero Avenue, and Montgomery-Chelsea Drive neighbourhoodsIn the Talbot Road community, the displacement of households is limited to the LaSalle side of Talbot Road; resulting in a change in community character and cohesion as approximately one half of the community is displacedTunnel alignment to Plaza A will result in a displacement of 32 out of 48 households on Bethlehem Street; which will result in a change in character and cohesionLowest aesthetic impact, but visual impact of ventilation buildings, which are not compatible with the surrounding landscape; residents will have the ventilation buildings and stacks as part of their permanent viewshed	<ul style="list-style-type: none">Impacts to Spring Garden, Talbot Road, Bethlehem Street, Reddock Street, Kendleton Court, Trillium Court neighbourhoodsTalbot Road (between Cousineau and Howard) community will experience a change in character and cohesion due to the displacement of all the households on both sides of the streetTrillium Court community will be entirely displaced, resulting in a change to community cohesion and characterIn the Kendleton Court community, the displacement of households is limited to one side of the streetParkway provides a greenspace buffer to adjacent neighbourhood communities, thus reducing the number of residents adjacent to the roadwayParkway provides connectivity between communities and community features that currently does not existGreenspace buffer between residents and freeway/service roads will result in fewer residents experiencing long term nuisance effects
Consistency with Existing & Planned Land Use										
Consistency	<ul style="list-style-type: none">Alternative utilizes Huron Church Road/Highway 3 Corridor (major roadway, historical connection to border crossing).Proposed facility is consistent with local Official Plans.		<ul style="list-style-type: none">Alternative utilizes Huron Church Road/Highway 3 Corridor (major roadway, historical connection to border crossing).Proposed facility is consistent with local Official Plans.		<ul style="list-style-type: none">Alternative utilizes Huron Church Road/Highway 3 Corridor (major roadway, historical connection to border crossing)Proposed facility is consistent with local Official Plans.		<ul style="list-style-type: none">Alternative utilizes Huron Church Road/Highway 3 Corridor (major roadway, historical connection to border crossing)Proposed facility is consistent with local Official Plans.		<ul style="list-style-type: none">Alternative utilizes Huron Church Road/Highway 3 Corridor (major roadway, historical connection to border crossing)Proposed facility is consistent with local Official Plans.	<ul style="list-style-type: none">Alternative utilizes Huron Church Road/Highway 3 Corridor (major roadway, historical connection to border crossing)Proposed facility is consistent with local Official Plans including the Healthy Communities policies and objectivesParkway provides opportunities for additional parkland and recreational features
Total area of land use impacts	• 78 ha	• 74 ha	• 75 ha	• 78 ha	• 81 ha	• 78 ha	• 80 ha	• 85 ha	• 65 ha	• 95-99 ha
Contaminated Sites/Potentially impacted area of high potential for contamination	• 17/9 ha	• 17/3.6 ha	• 18/3.5 ha	• 13/3.6 ha	• 17/4 ha	• 17/4 ha	• 16/3.8 ha	• 16/4 ha	• 16/3 ha	• 20/3 ha

Summary of Analysis – Access Road Alternatives

FACTOR/ MEASURE	ALTERNATIVE 1A		ALTERNATIVE 1B		ALTERNATIVE 2A		ALTERNATIVE 2B		ALTERNATIVE 3	PARKWAY
										
	Option 1 (Widen to North on Hwy 3)	Option 2 (Widen to South on Hwy 3)	Option 1 (Widen to North on Hwy 3)	Option 2 (Widen to South on Hwy 3)	Option 1 (Widen to North on Hwy 3)	Option 2 (Widen to South on Hwy 3)	Option 1 (Widen to North on Hwy 3)	Option 2 (Widen to South on Hwy 3)		
Protection of Cultural Resources										
Built Heritage Features Displaced	• 7 to 9 field identified built heritage features displaced		• 6 to 8 field identified built heritage features displaced		• 4 to 5 field identified built heritage features displaced		• 4 to 5 field identified built heritage features displaced		• 5 to 8 field identified built heritage features displaced	• 7 to 8 field identified built heritage features displaced
Disrupted	• 1 to 2 field identified built heritage features disrupted		• 2 field identified built heritage features disrupted		• 4 to 5 field identified built heritage features disrupted	• 5 to 6 field identified built heritage features disrupted	• 3 to 5 field identified built heritage features disrupted		• 2 to 3 field identified built heritage features disrupted	• 3 to 4 field identified built heritage features disrupted
Parks	• 1 Impacted – Property taking • 5 impacted – potential disruption to access	• 6 Impacted – Potential disruption to access	• 1 Impacted – Property taking • 5 impacted – potential disruption to access	• 6 Impacted – Potential disruption to access	• 1 Impacted – Property taking • 5 impacted – potential disruption to access	• 6 Impacted – Potential disruption to access	• 1 Impacted – Property taking • 5 impacted – potential disruption to access	• 6 Impacted – Potential disruption to access	• 1 Impacted – Property taking • 5 impacted – potential disruption to access	• 1 impacted-Property taking • 5 impacted – potential disruption to access • adds 240 acres of additional parkland and greenspace, and over 20 km of new recreational trails with the Windsor-Essex Parkway design
Archaeology Disturbance or destruction of known significant archaeological sites	• 1 to 2 small pre-contact habitation sites • 9 pre-contact findspots	• 1 to 2 small pre-contact habitation sites • 9 pre-contact findspots • e.g. no known sites of high to moderate significance impacted	• 1 to 2 small pre-contact habitation sites • 9 pre-contact findspots	• 1 to 2 small pre-contact habitation sites • 9 pre-contact findspots	• 2 to 3 small pre-contact habitation sites • 10 to 11 pre-contact findspots	• 2 to 3 small pre-contact habitation sites • 10 pre-contact findspots	• 2 to 3 small pre-contact habitation sites • 10 to 11 pre-contact findspots	• 2 to 3 small pre-contact habitation sites • 9 to 10 pre-contact findspots	• 1 to 3 small pre-contact habitation sites • 8 pre-contact findspots	• 3 to 4 small pre-contact habitation sites • 15 to 17 pre-contact findspots
Protection of Natural Environment										
Fish and Fish Habitat	• No critical fish habitat impacted by any access road alternatives									
Plant/Vegetation Species	• 0.44 ha to 1.43 ha of provincially rare vegetation impacted	• 0.50 ha to 1.53 ha of provincially rare vegetation impacted	• 0.43 ha to 1.46 ha of provincially rare vegetation impacted	• 0.54 ha to 1.46 ha of provincially rare vegetation impacted	• 1.19 ha to 2.22 ha of provincially rare vegetation impacted	• 1.18 ha to 2.22 ha of provincially rare vegetation impacted	• 0.82 ha to 1.86 ha of provincially rare vegetation impacted	• 0.82 ha to 1.86 ha of provincially rare vegetation impacted	• 0.50 ha to 1.48 ha of provincially rare vegetation impacted	• 1.47 ha to 2.54 ha of provincially rare vegetation impacted
Wildlife Species and Habitat	• 102 to 142 specimens/colonies of species at risk	• 92 to 134 specimens/colonies of species at risk	• 112 to 152 specimens/colonies of species at risk	• 103 to 152 specimens/colonies of species at risk	• 122 to 162 specimens/colonies of species at risk	• 116 to 155 specimens/colonies of species at risk	• 105 to 145 specimens/colonies of species at risk		• 92 to 131 specimens/colonies of species at risk	• 141 to 180 specimens/colonies of species at risk • wider right of way/buffer areas provides greater opportunities for restoration and enhancement of natural features along the corridor
Improvements to Regional Mobility										
Highway Capacity	• Six lane freeway with controlled access and service roads provides sufficient capacity to meet future (2035) travel demand; Peak Hour LOS (2035) = C									

Summary of Analysis – Access Road Alternatives

FACTOR/ MEASURE	ALTERNATIVE 1A		ALTERNATIVE 1B		ALTERNATIVE 2A		ALTERNATIVE 2B		ALTERNATIVE 3	PARKWAY
										
	Option 1 (Widen to North on Hwy 3)	Option 2 (Widen to South on Hwy 3)	Option 1 (Widen to North on Hwy 3)	Option 2 (Widen to South on Hwy 3)	Option 1 (Widen to North on Hwy 3)	Option 2 (Widen to South on Hwy 3)	Option 1 (Widen to North on Hwy 3)	Option 2 (Widen to South on Hwy 3)		
Continuous Capacity	<ul style="list-style-type: none">All alternatives provide comparable access between the service roads and the cross streets with slight differences;Safety of controlled access freeway for access road is greatly increased compared to present arterial roadway with signalized intersections and other entrances/conflict pointsProvides increased local and regional mobility over the "do nothing" alternativeProvides substantial travel time savings for local traffic when compared to the "do nothing" alternative		<ul style="list-style-type: none">Safety of controlled access freeway for access road is greatly increased compared to present arterial roadway with signalized intersections and other entrances/conflict pointsProvides increased local and regional mobility over the "do nothing" alternativeProvides substantial travel time savings for local traffic when compared to the "do nothing" alternative		<ul style="list-style-type: none">Safety of controlled access freeway for access road is greatly increased compared to present arterial roadway with signalized intersections and other entrances/conflict pointsProvides increased local and regional mobility over the "do nothing" alternativeProvides substantial travel time savings for local traffic when compared to the "do nothing" alternative		<ul style="list-style-type: none">Safety of controlled access freeway for access road is greatly increased compared to present arterial roadway with signalized intersections and other entrances/conflict pointsProvides increased local and regional mobility over the "do nothing" alternativeProvides substantial travel time savings for local traffic when compared to the "do nothing" alternative		<ul style="list-style-type: none">Safety of controlled access freeway for access road is greatly increased compared to present arterial roadway with signalized intersections and other entrances/conflict pointsProvides increased local and regional mobility over the "do nothing" alternativeProvides substantial travel time savings for local traffic when compared to the "do nothing" alternativeThe positive effects of tunnels on safety include elimination of adverse weather conditions and increased driver attention and/or slower speeds due to the confined driving spaceElements of tunnel driving that negatively affect safety may include limited visibility due to tunnel walls and light changes at the portals; it is much more difficult to control events in a tunnel crash; motorists' escape is not simple, and it is harder for emergency response teams to reach the crash siteThe consequences of a crash in a tunnel are greatly increased over those on an open road, however, the frequency of catastrophic events is low, and the occurrence of general traffic crashes (on a tunneled freeway) is marginally less than on an open road	<ul style="list-style-type: none">Safety of controlled access freeway for access road is greatly increased compared to present arterial roadway with signalized intersections and other entrances/conflict pointsProvides increased local and regional mobility over the "do nothing" alternativeProvides substantial travel time savings for local traffic when compared to the "do nothing" alternativeProvides more favourable traffic operations on the service road than the other alternativesProvides higher degree of mobility between the service road and the new freeway when compared to the other alternatives.
Reasonable and Secure Options	<ul style="list-style-type: none">All access road alternatives provide freeway connection to a river crossing as well as connections to Huron Church Road at E.C. Row enabling choice between new and existing crossings									
Cost and Constructability										
Estimated (\$CAD) Construction Cost (North Talbot Road to Malden Road) 2011 dollars	\$750 M to \$920 M		\$1.19 B to \$1.36 B		\$620 M to \$790 M		\$1.03 B to \$1.20 B		\$3.6 B to \$3.78 B	
Key Constructability Issues	<ul style="list-style-type: none">Traffic management during constructionAvailability of resources and materialsUtility relocationsWatercourse crossings0.3 km zone requiring soil stabilization techniques		<ul style="list-style-type: none">Traffic management during constructionAvailability of resources and materialsUtility relocationsWatercourse crossingsSoil stabilization techniques required over 2.5 km		<ul style="list-style-type: none">Traffic management during constructionAvailability of resources and materialsUtility relocationsWatercourse crossings0.3 km zone requiring soil stabilization techniques		<ul style="list-style-type: none">Traffic management during constructionAvailability of resources and materialsUtility relocationsWatercourse crossingsSoil stabilization techniques required over 2.5 km		<ul style="list-style-type: none">Traffic management during constructionAvailability of resources and materialsUtility relocationsWatercourse crossingsSoil stabilization required over 2.5 kmTesting, commissioning and maintenance of tunnel support systems (ventilation, lighting communications, etc.)	

The results of the evaluation were verified using Arithmetic Weighting-Scoring. The scores representing the magnitude of impact were assigned by factor specialists. The weightings representing the relative importance of the factor areas were determined earlier in the study by (a) study team, (b) general public, and (c) Community Consultation Group.

Factor	Weight	1A		1B		2A		2B		3		Parkway	
		Score	Weighted Score	Score	Weighted Score	Score	Weighted Score	Score	Weighted Score	Score	Weighted Score	Score	Weighted Score
Air	12.39	3	37.17	3	37.17	3	37.17	3	37.17	3	37.17	3	37.17
Community	15.93	1	15.93	1	15.93	1	15.93	1	15.93	1	15.93	1	15.93
Land Use	12.39	2	24.78	2	24.78	2	24.78	2	24.78	2	24.78	2	24.78
Cultural	12.39	3	37.17	3	37.17	3	37.17	3	37.17	3	37.17	3	37.17
Natural	15.93	3	47.79	3	47.79	3	47.79	3	47.79	3	47.79	3	47.79
Mobility	17.70	6	106.20	6	106.20	6	106.20	6	106.20	6	106.20	7	123.90
Cost/Constructibility	13.27	3	39.81	2	26.54	3	39.81	2	26.54	1	13.27	2	26.54
Total	100.00	21	308.85	20	295.58	21	308.85	20	295.58	19	282.31	21	313.28
Rank	Unweighted	1		4		1		4		6		1	
	Weighted		2		4		2		4		6		1

Factor	Weight	1A		1B		2A		2B		3		Parkway	
		Score	Weighted Score	Score	Weighted Score	Score	Weighted Score	Score	Weighted Score	Score	Weighted Score	Score	Weighted Score
Air	17.32	3	51.96	3	51.96	3	51.96	3	51.96	3	51.96	3	51.96
Community	15.49	1	15.49	1	15.49	1	15.49	1	15.49	1	15.49	1	15.49
Land Use	12.69	2	25.38	2	25.38	2	25.38	2	25.38	2	25.38	2	25.38
Cultural	13.14	3	39.42	3	39.42	3	39.42	3	39.42	3	39.42	3	39.42
Natural	16.34	3	49.02	3	49.02	3	49.02	3	49.02	3	49.02	3	49.02
Mobility	15.28	6	91.68	6	91.68	6	91.68	6	91.68	6	91.68	7	106.96
Cost/Constructibility	9.54	3	28.62	2	19.08	3	28.62	2	19.08	1	9.54	2	19.08
Total	100.00	21	301.97	20	292.43	21	301.97	20	292.43	19	282.89	21	307.71
Rank	Unweighted	1		4		1		4		6		1	
	Weighted		2		4		2		4		6		1

Factor	Weight	1A		1B		2A		2B		3		Parkway	
		Score	Weighted Score	Score	Weighted Score	Score	Weighted Score	Score	Weighted Score	Score	Weighted Score	Score	Weighted Score
Air	17.30	3	51.9	3	51.9	3	51.90	3	51.90	3	51.90	3	51.90
Community	13.88	1	13.88	1	13.88	1	13.88	1	13.88	1	13.88	1	13.88
Land Use	13.69	2	27.38	2	27.38	2	27.38	2	27.38	2	27.38	2	27.38
Cultural	13.12	3	39.36	3	39.36	3	39.36	3	39.36	3	39.36	3	39.36
Natural	17.11	3	51.33	3	51.33	3	51.33	3	51.33	3	51.33	3	51.33
Mobility	14.83	6	88.98	6	88.98	6	88.98	6	88.98	6	88.98	7	103.81
Cost/Constructibility	10.07	3	30.21	2	20.14	3	30.21	2	20.14	1	10.07	2	20.14
Total	100.00	21	303.04	20	292.97	21	303.04	20	292.97	19	282.90	21	307.80
Rank	Unweighted	1		4		1		4		6		1	
	Weighted		2		4		3		4		6		1

GreenLink

- Concept was presented by the City of Windsor as input to The Parkway
- The DRIC study team reviewed the materials provided by Windsor:
 - Same basic alignment as the Windsor-Essex Parkway but includes greater emphasis on tunnelling
 - Provides access to local road network at similar locations
 - Many features of GreenLink have been incorporated in the Windsor-Essex Parkway and are reflected in the analysis

Understanding GreenLink

- Knowledge of GreenLink helped the DRIC team to develop the Parkway
- The Parkway was developed from DRIC Practical Alternatives
 - Alternative 2B (below-grade freeway)
 - Alternative 3 (end-to-end tunnel option)
- The DRIC team analyzed the end-to-end tunnel and found that tunnels offer little improvement in air quality
 - Tunnels in GreenLink would not provide substantial improvement in air quality, in comparison to the Parkway

In October 2007, the City of Windsor produced a concept for the access road as input to the DRIC Study. The DRIC Study Team reviewed the information provided on the GreenLink Concept. There are many similarities between GreenLink and The Windsor-Essex Parkway.

Both Plans:

- Feature a six lane below-grade freeway with separate service roads for local traffic
- Provide tunnelled sections in key locations
- Include continuous trails that succeed in linking communities
- Have nearly identical property requirements with buffer areas between the roadway and the adjacent community
- Provide a considerable amount of greenspace
- Provide an opportunity to create a signature gateway welcoming travellers to Canada, Ontario and Windsor and Essex County

There are also many differences between GreenLink and The Windsor-Essex Parkway.

- GreenLink does not meet provincial standards including:
 - Substandard shoulder widths
 - Insufficient drainage system
- GreenLink cost estimate does not include all expenditures required including:
 - **Only** accounts for road work from Highway 3 to E.C. Row Expressway
 - Substandard shoulder widths
 - Does not account for engineering and contract administration
 - Insufficient drainage system (Designed for 20 year storm standard)
 - Cost does not include adjustments for inflation
- Adjusting GreenLink cost estimate to same basis used for other DRIC alternatives, for total length of project, and to 2011 dollars, total cost estimated increases to \$2.3 and \$2.5 billion, or nearly \$1 billion more than The Windsor-Essex Parkway, with no additional benefits.
- The GreenLink concept was considered in the development and refinements to the Parkway.

Summary of Analysis – Plaza and Crossing Alternatives

On the Canadian side, 7 possible Crossing-Plaza Combinations were identified. An evaluation using the seven factors was carried out to determine which crossing-plaza combination for each crossing corridor was to be carried forward.

Crossing A – Plaza A → Best Crossing A Alternative

Crossing B – Plaza A
Crossing B – Plaza B1 → Best Crossing B Alternative

Crossing C – Plaza A via Brighton Beach
Crossing C – Plaza A via Ojibway Parkway
Crossing C – Plaza B
Crossing C – Plaza C → Best Crossing C Alternative

The evaluation determined that:

- For Crossing B, Plaza B1 was preferred over Plaza A on the basis that Plaza B1:
 - has fewer residential displacements
 - represented less of a change to community character and land use
 - would have lower nuisance effects
 - has lower impacts to natural features
 - places the plaza closer to the border
- For Crossing C, Plaza B was preferred over other plaza alternatives on the basis that Plaza B:
 - has fewer residential displacements, nuisance effects, represented less of a change to community character and land use and has fewer impacts to natural features than the plaza A alternatives
 - avoids relocation of the Keith Transformer Station; Plaza C requires relocation of this feature, which introduces substantial cost and schedule risks for the crossing project

The Canadian Team selected three crossing-plaza alternatives to be carried forward in a collaborative analysis and evaluation with the U.S. Study. The results are summarized in the accompanying table.

The analysis of Canadian and U.S. impacts and benefits of the crossing and plaza alternatives has determined that Crossing B/Plaza B1:

- has the lowest impacts to community and neighbourhood features,
- provides the greatest benefits to regional mobility
- was found to have the least construction risk of the alternatives
- was preferred or comparable to the other alternatives in other factor areas

The Canadian study team has therefore identified **Crossing B/Plaza B1** as the preferred crossing/plaza alternative for the DRIC Study. This alternative offers the greatest advantages and has no disadvantages in comparison to the other alternatives.



The analysis of the plaza and crossings is summarized as follows:

Factors	Canadian Analysis	U.S. Analysis
Changes to Air Quality	All plaza and crossing alternatives increase concentrations of pollutants in the immediate area of the plaza, when compared to the no-build scenario. The greatest changes to air quality occur around the plaza areas as opposed to the crossings. Plazas B and B1 are located in industrial areas away from sensitive receptors. With Plaza A, impacts to adjacent residences may occur under certain conditions. All three crossing-plaza alternatives were found to have moderate impacts.	Air quality will improve even under no-build scenario. All of the new DRIC crossing/plaza alternatives will aid in improving air quality by spreading the automotive traffic in Southwest Detroit and reducing the number of heavy-duty diesel trucks within the neighborhoods.
	Conclusion: No crossing-plaza preference was determined on the basis of impacts to air quality	
Protection of Community and Neighborhood Characteristics	Crossing X-10A/Plaza A results in higher degree of change in neighbourhood character from residential with natural vacant space to industrial. Crossing X-11C/Plaza B would have a notable impact to community character in Sandwich Towne related to potential increases in traffic and nuisance impacts (noise, dust) and the relative proximity of the new crossing to Ambassador Bridge. Crossing B/Plaza B1 is not expected to have a substantial impact to the community and neighbourhood features.	Crossing X-11 would have a greater number of impacts to active residential and business units; albeit relatively few in comparison to the plaza and interchange.
	Conclusion: Crossing X-10B/Plaza B1 has lowest impacts to community and neighbourhood characteristics. Crossing X-10B/Plaza B1 is preferred.	
Maintain Consistency with Existing and Planned Land Use	Crossing X-10A/Plaza A has higher impacts to land use in comparison to the other alternatives. Existing land use in the Malden Planning District is primarily residential, integrated with natural features. The other crossing/plaza alternatives are located generally within industrial lands in the Windsor port area and cause less impact to land use.	With the No Build Alternative, trends indicate continued industrialization of the Delray area will occur at the cost of the residential area that now exists. If the DRIC crossing is built, positive land use changes are possible in the U.S. The vision is to create a better place to live, with a new crossing system as its neighbor. MDOT, in partnership with FHWA is exploring a number of concepts by which enhancements may be made to the Delray area if it becomes the "host community" for the DRIC project. These concepts are applicable with either an X-10 or X-11 Crossing.
	Conclusion: Crossing X10A-Plaza A is the least preferred alternative in this factor area.	
Protect Cultural Resources	The alternatives impact 6 to 7 archaeological sites generally considered of low/medium significance. The Crossing X-11C alternative was noted as having a higher impact to the cultural landscape of historic town of Sandwich. The alternatives have the same impact to Ojibway Park; a corner of the park (0.7 ha) is impacted near Ojibway Parkway/Broadway Street.	It was determined that no prehistoric archaeological resources are affected by any of the DRIC alternatives. Three aboveground (built) heritage features are in, or partially in, the footprint of all DRIC alternatives and will require removal, resulting in an adverse effect to be mitigated as will be stipulated in the U.S. Final Environmental Impact Statement. South Rademacher Playground, South Rademacher Community Recreation Center and the Post-Jefferson Playlot are each located in the plaza area of every DRIC alternative and would be removed (used) by the plaza.
	Conclusion: Crossing X-11C-Plaza B is the least preferred alternative in this factor area.	

Factors	Canadian Analysis	U.S. Analysis
Protect the Natural Environment	<p>All alternatives result in some loss of provincially rare specimens or colonies, impacts to ecological landscapes and impacts to terrestrial communities and ecosystems of high significance. The Crossing X-10A/Plaza A alternative has the greatest impact on provincially rare vegetation communities (2.98 ha (7.4 acres) impacted) and species at risk (232 specimens/colonies impacted). The Crossing X-10B/Plaza B1 alternative was considered to have slightly lower impacts to natural features than Crossing X-11C/Plaza B.</p> <p>Conclusion: Crossing X-10A-Plaza A is the least preferred alternative in this factor area.</p>	<p>Crossing X-11 would impact a total of 0.01 acre (0.004 ha) of low quality wetland at the edge of the Detroit River. Loss of this wetland will result in minimal impacts to wetland function and value. No natural features are impacted by Crossing X-10 alternatives.</p>
Improve Regional Mobility	<p>All three crossing alternatives are expected to work effectively under future (2035) peak travel demands and add additional border crossing and border processing capacity to the Detroit River border transportation network. The X-11 alternative could result in greater traffic volumes on Huron Church Road during peak travel periods to the point that intersections along Huron Church Road will remain congested as in the No Build condition, lowering the transportation level of service on this key roadway link in the border transportation network. By comparison, the X-10 crossing alternatives are more likely to result in improved transportation levels of service on Huron Church Road over the No Build condition as well as the X-11 Alternative, thereby providing greater benefits to regional and local mobility. Crossing X-10A/Plaza A was noted as having several security/monitoring concerns, including undesirable distance from Plaza A to the international border (2.5 km), no direct line of sight between the border and the plaza, and a 700 m section of at-grade roadway that is out of the direct line of sight from the plaza in the vacant portion of the Brighton Beach industrial park area.</p> <p>Conclusion: Crossing X-10B has greatest improvements to regional mobility.</p>	<p>There may be an increase in traffic due to additional development stimulated by the new border crossing. But, negative congestion effects are not expected either on major arteries or local neighborhood streets in the study area. Further analysis undertaken by the U.S. study team pertaining to travel time comparisons between Crossing X-11 and Crossing X-10 alternatives suggests the volume of traffic using the X-10 crossings could be as much as 50% more than the traffic using the X-11 crossing. This variance is reflective of differences in access and circulation between the U.S. plaza layouts serving crossings X-10 and X-11.</p>
Cost and Constructability	<p>Geotechnical investigations have confirmed that the proposed approach roadway to Crossing X-11C passes over the eastern end of the former solution mining well field and a subsurface anomaly that is suspected to be a brine-filled cavity, rubble zone and disturbed rock mass. Initial estimates suggest that the rock mass above this anomaly might experience subsidence ranging up to values on the order of 3m (10 feet). Even with a second bridge on the approach road spanning the area of concern, there remains some risk as to the acceptability of this solution and the continual operation of this crossing, even with this mitigation. The constructability and maintenance risks associated with the approach roadway to Crossing X-11C, are significant disadvantages of the Crossing X-11C Alternative. This long-span structure will also have its own impacts on the character of the nearby community, as well as noise and aesthetic impacts. In addition, having two long-span structures on the Crossing X-11C alignment increases the construction and maintenance costs of this alternative.</p> <p>Conclusion: Crossing X-10B/Plaza B1 is preferred over Crossing X-10A/Plaza A and Crossing X-11C/Plaza B based on the nature and severity of constructability issues associated with these alternatives.</p>	<p>The difference between Crossings X-10A and X-10B is in how each can be built. The X-10A bridge is the longest of the alternatives with a main span of 1300 metres (4,265 feet). Although suspension bridges with main spans exceeding that length do exist, this would become the longest bridge of its type in the Americas. Cost, risk to controlling cost, schedule duration, and risk to controlling the schedule were considered to be differentiating among the crossings. The estimated construction cost of the X-10A Crossing at \$920 million is significantly greater than the other suspension bridges at Crossings X-10B and X-11 (X-10B @ \$550 million and X-11 @ \$600 million). The construction duration of 62 months for Crossing X-10A is over one year more than the other alignments.</p>

Factor	Crossing Alternative (including plazas)		
	X-10A	X-10B	X-11C
Air Quality	No Preference	No Preference	No Preference
Community and Neighbourhood Characteristics		Preferred	Least Preferred
Existing and Planned Land Use	Least Preferred		
Cultural Resources			Least Preferred
Natural Environment	Least Preferred		
Regional Mobility		Preferred	
Constructability		Preferred	

Summary of Canadian Analysis – Plaza and Crossing

FACTOR/ MEASURE	Plaza A				Plaza B	Plaza B1	Plaza C
	From Crossing A	From Crossing B	From Crossing C via Ojibway Parkway	From Crossing C via Brighton Beach	From Crossing C	From Crossing B	From Crossing C
Changes to Air Quality							
Results of modeling to date (before mitigation)	• Slight increase in PM _{2.5} within 250m of crossing and plaza under certain conditions	• Slight increase in PM _{2.5} within 250m of crossing and plaza under certain conditions	• Slight increase in PM _{2.5} within 250m of crossing and plaza under certain conditions; potential to influence air quality in Armada Street area and portion of Sandwich Towne	• Slight increase in PM _{2.5} within 250m of crossing and plaza under certain conditions; potential to influence air quality in a portion of Sandwich Towne	• Slight increase in PM _{2.5} within 250m of crossing and plaza under certain conditions; potential to influence air quality in a portion of Sandwich Towne	• Slight increase in PM _{2.5} within 250m of crossing and plaza under certain conditions	• Slight increase in PM _{2.5} within 250m of crossing and plaza under certain conditions; potential to influence air quality in a portion of Sandwich Towne
	• Slight increases in NO _x within 250 m of crossing and plaza under certain conditions	• Slight increases in NO _x within 250 m of crossing and plaza under certain conditions	• Slight increase in NO _x within 250m of crossing and plaza under certain conditions; potential to influence air quality in Armada Street area and portion of Sandwich Towne	• Slight increase in NO _x within 250m of crossing and plaza under certain conditions; potential to influence air quality in a portion of Sandwich Towne	• Slight increase in NO _x within 250m of crossing and plaza under certain conditions; potential to influence air quality in a portion of Sandwich Towne	• Slight increase in NO _x within 250m of crossing and plaza under certain conditions	• Slight increase in NO _x within 250m of crossing and plaza under certain conditions; potential to influence air quality in a portion of Sandwich Towne
Protection of Community and Neighbourhood Characteristics							
Potential Acquisitions							
Residences	• 62	• 65	• 64	• 66	• 38	• 36	• 35
Businesses	• 1	• 1	• 8	• 5	• 5	• 1	• 5
Community Features Potentially Displaced	• 1 - Erie Wildlife Rescue						
Noise Receptors with >5 dB increase (after mitigation)	• 1	• 2	• 3	• 3	• 0	• 0	• 0
Effect on Access	• 7 Crossings • 7 Road closings • 4 Local access connections • Matchette Road realignment and closures of the roads within the Brighton Beach area will result in minor out-of-way travel.	• 4 Crossings • 9 Road closings • 4 Local access connections • Matchette Road realignment and closures of the roads within the Brighton Beach area will result in minor out-of-way travel.	• 7 Crossings • 4 Road closings • 4 Local access connections • Matchette Road realignment will result in minor out-of-way travel.	• 7 Crossings • 3 Road closings • 4 Local access connections • Matchette Road realignment and closures of the roads within the Brighton Beach area will result in minor out-of-way travel.	• 7 Crossings • 16 Road closings • 5 Local access connections • Relocation of Broadway Street/ Sandwich Street connection and closure of Brighton Beach area roads will result in minor out-of-way travel.	• 4 Crossings • 12 Road closings • 4 Local access connections • Closure of Broadway Street/ Sandwich Street connection and closure of Brighton Beach area roads will result in minor out-of-way travel.	• 5 Crossings • 13 Road closings • 4 Local access connections • Closure of Broadway Street/ Sandwich Street connection and closure of Brighton Beach area roads will result in minor out-of-way travel.
Impact on Community Character/Cohesion	• Negative effect on community character for Armada Street neighbourhood due to proximity of new plaza	• Negative effect on community character for Armada Street neighbourhood due to proximity of new plaza	Negative effect on community character for Armada Street neighbourhood due to proximity of new plaza; negative effect on community character for Sandwich Towne due to proximity of new crossing		• Negative effect on community character for Sandwich Towne due to proximity of new crossing	• negative effect of community character for adjacent neighbourhood due to displacement of several homes to accommodate interchange connection at E.C. Row Expressway/Ojibway Parkway	• Negative effect on community character for Sandwich Town due to proximity of new crossing
Consistency with Existing & Planned Land Use							
Consistency	• Due to nature of plaza operations, proximity to residential areas on Armada/Malden/Matchette is less desirable. Plaza A alternatives are less consistent with existing land uses. Crossings are located in portland industrial areas and are considered to be consistent with this land use.				• Being in proximity to industrial uses and away from residential areas is more desirable. Plaza B, B1 and C alternatives are more consistent with existing land uses. Crossings are located in portland industrial areas and are considered to be consistent with this land use.		
Total area of land use impacts	• 47 ha	• 47 ha	• 51 ha	• 57 ha	• 42 ha	• 50 ha	• 78 ha
Contaminated Sites/Potentially impacted area of high potential for contamination	• 4/1 ha	• 9/3 ha	• 15/8 ha	• 4/1 ha	• 18/16 ha	• 12/14 ha	• 18/22 ha

Summary of Canadian Analysis – Plaza and Crossing

FACTOR/ MEASURE	Plaza A				Plaza B	Plaza B1	Plaza C
	From Crossing A	From Crossing B	From Crossing C via Ojibway Parkway	From Crossing C via Brighton Beach	From Crossing C	From Crossing B	From Crossing C
Protection of Cultural Resources							
Built Heritage Features Displaced	• 1 field identified built heritage features displaced.	• 2 field identified built heritage features displaced.	• 1 field identified built heritage features displaced.	• 2 field identified built heritage features displaced.	• 3 field identified built heritage features displaced.	• 3 field identified built heritage features displaced.	• 2 field identified built heritage features displaced.
Disrupted	• 3 field identified built heritage features disrupted.	• 2 field identified built heritage features disrupted.	• 2 field identified built heritage features disrupted.	• 4 field identified built heritage features disrupted.	• 2 field identified built heritage features disrupted.	• 0 field identified built heritage features disrupted.	• 1 field identified built heritage features disrupted.
Parks	• Disrupts part of Ojibway Park (0.7 ha)						
Archaeology Disturbance or destruction of known significant archaeological sites	• 0 small pre-contact habitation sites • 6 pre-contact findspots.	• 0 small pre-contact habitation sites • 6 pre-contact findspots.	• 0 small pre-contact habitation sites • 5 pre-contact findspots	• 0 small pre-contact habitation sites • 6 pre-contact findspots.	• 3 small pre-contact habitation sites • 4 pre-contact findspots.	• 2 small pre-contact habitation sites • 4 pre-contact findspots.	• 1 small pre-contact habitation sites • 3 pre-contact findspots.
Protection of Natural Environment							
Fish and Fish Habitat	• No critical fish habitat impacted by any plaza or crossing alternatives						
Plant/Vegetation Species	• 2.98 ha of provincially rare vegetation impacted.	• 2.70 ha of provincially rare vegetation impacted.	• 2.70 ha of provincially rare vegetation impacted.	• 2.69 ha of provincially rare vegetation impacted.	• 2.02 ha of provincially rare vegetation impacted.	• 1.09 of provincially rare vegetation impacted.	• 0.98 ha of provincially rare vegetation impacted.
Wildlife Species and Habitat	• 232 specimens/ colonies of species at risk.	• 223 specimens/ colonies of species at risk.	• 186 specimens/ colonies of species at risk.	• 231 specimens/ colonies of species at risk.	• 195 specimens/ colonies of species at risk.	• 185 specimens/ colonies of species at risk.	• 153 specimens/ colonies of species at risk.
Improvements to Regional Mobility							
2035 Average Daily Car and Truck Volume	• Canadian plaza and crossing sized to accommodate average daily traffic of 39,000 vehicles (cars and trucks) in 2035						
Distance from plaza to international border	• 2.5 km	• 2.5 km	• 1.4 km	• 3.6 km	• 2.0 km	• 0.9 km	• 2.5 km
Canadian Plaza Operational Considerations	• good accessibility to/from local road network • distance from border to plaza > 1.5 km is less desirable; requires on-going security monitoring; 700 m section of at-grade roadway through vacant lands also a security/monitoring concern	• good accessibility to/from local road network • distance from border to plaza acceptable	• good accessibility to/from local road network • distance from border to plaza > 1.5 km is less desirable; requires on-going security monitoring;	• good accessibility to/from local road network • distance from border to plaza > 1.5 km is less desirable; requires on-going security monitoring;	• good accessibility to/from local road network • distance from border to plaza > 1.5 km is less desirable; requires on-going security monitoring;	• good accessibility to/from local road network • distance from border to plaza is acceptable	• good accessibility to/from local road network • distance from border to plaza > 1.5 km is less desirable; requires on-going security monitoring; 700 m section of at-grade roadway through vacant lands also a security/monitoring concern • operation and maintenance requirements for Crossing C alternatives are higher due to the need for the additional main-span structure over the brine well areas
Cost and Constructability							
Estimated (\$CAD) Construction Cost (s) suspension (cs) cable-stayed	\$830 M (s)	\$750 M (s) \$687 M (cs)	\$1055 M (cs) \$985 M (cs)	\$1049 M (s) \$979 M (cs)	\$1080 M (s) \$1010 M (cs)	\$707 M (s) \$643 M (cs)	\$1212 M (s)(Includes additional \$180 million to relocate Keith Transformer Station) \$1142 (cs)

Summary of Canadian Analysis – Plaza and Crossing

FACTOR/ MEASURE	Plaza A				Plaza B	Plaza B1	Plaza C
	From Crossing A	From Crossing B	From Crossing C via Ojibway Parkway	From Crossing C via Brighton Beach	From Crossing C	From Crossing B	From Crossing C
Key Constructability Issues	<ul style="list-style-type: none">Plaza and crossing avoid areas of known brine wells on Canadian side of Detroit River.The construction risk for completing Crossing A from Plaza A within the project timeframe is high due to the magnitude of required construction and the longer main-span.All plazas are of similar duration to construct.Crossing A requires the longest duration to construct (41-52% longer than Crossing C).	<ul style="list-style-type: none">Plaza avoids area of known brine wells. Crossing is outside of zone of influence associated with known brine wells on Canadian side of Detroit River.The construction risk for completing Crossing B from Plaza A within the project timeframe is moderate due to the magnitude of required construction.All plazas are of similar duration to construct.	<ul style="list-style-type: none">Plaza avoids area of known brine wells. Crossing traverses area of known brine wells on Canadian side of Detroit River. The approach passes directly through the zones of primary and secondary solution mining influence where there is potential to result in significant settlement of overlying bedrock. Approach roadway concept to include additional bridge to span entire zone of solution mining influence to lower risk of settlement impacts to new crossing. However, some risk associated with constructing crossing over this zone remains.The construction risk for completing Crossing C from Plaza A via Brighton Beach within the project timeframe is high due to the magnitude of required construction, utility relocations and the requirement for significant additional study to traverse the brine well area.	<ul style="list-style-type: none">The construction risk for completing Crossing C from Plaza B within the project timeframe is high due to the magnitude of required construction, the requirement for reconfiguration of Keith Transformer Station, other utility relocations, and the requirement for significant additional study to traverse the brine well area.Plaza avoids areas of known brine wells. Crossing traverses area of known brine wells on Canadian side of Detroit River. The approach passes directly through the zones of primary and secondary solution mining influence where there is potential to result in significant settlement of overlying bedrock. Approach roadway concept to include additional bridge to span entire zone of solution mining influence to lower risk of settlement impacts to new crossing. However, some risk associated with constructing crossing over this zone remains.All plazas are of similar duration to construct.Crossing C requires the shortest duration to construct.	<ul style="list-style-type: none">The construction risk for constructing Crossing B from Plaza B1 within the project timeframe is moderate due to the magnitude of required construction and utility relocations.Plaza avoids area of known brine wells. Crossing is outside of zone of influence associated with known brine wells on Canadian side of Detroit River.All plazas are of similar duration to construct.	<ul style="list-style-type: none">The construction risk for completing Crossing C from Plaza C within the project timeframe is very high due to the magnitude of required construction, the requirement for relocating the Keith Transformer Station, other utility relocations, and the requirement for significant additional study to traverse the brine well area.Portion of plaza is in proximity to known brine wells. Crossing traverses area of known brine wells on Canadian side of Detroit River. The approach passes directly through the zones of primary and secondary solution mining influence where there is potential to result in significant settlement of overlying bedrock. Approach roadway concept to include additional bridge to span entire zone of solution mining influence to lower risk of settlement impacts to new crossing. However, some risk associated with constructing crossing over this zone remains.All plazas are of similar duration to construct.Crossing C requires the shortest duration to construct. Plaza C requires complete relocation of Keith Transformer Station prior to beginning plaza construction which results in several years of delay in construction.	
	<ul style="list-style-type: none">Access to local residences/businesses to be maintained during constructionLocal access can be maintained for all plaza and crossing alternatives.						

Details of the U.S. Analysis of the Crossing, Plazas and Interchanges are available in the Draft Environmental Impact Statement (DEIS). For additional information, contact:

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Oakwood Tunnel area



Looking north at Bethlehem/Labelle rooftop



Looking east at Oakwood Tunnel



Comparison of Tunnel Lengths and Local Features



St. Denis Athletics
and Community Centre



179m



Regulation Soccer Field



91.4m



Regulation Canadian
Football Field



107.0m

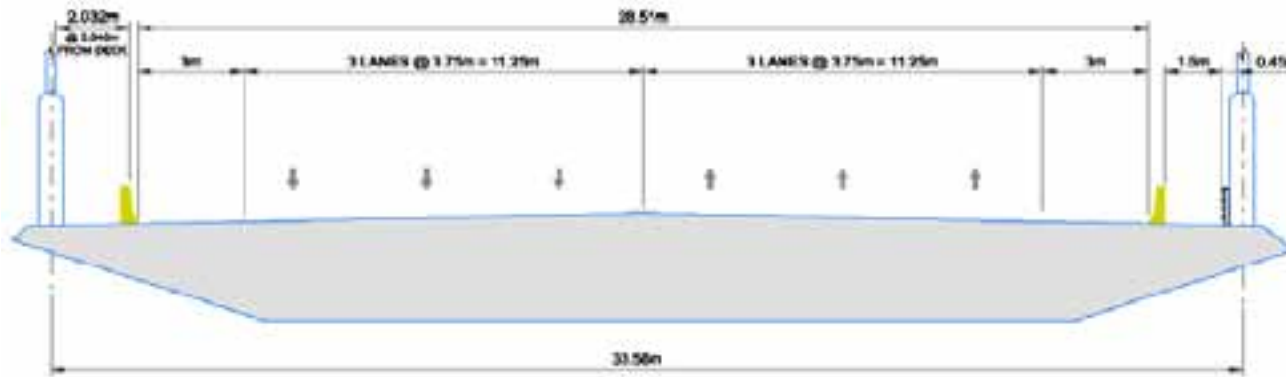


South Windsor Arena



100m

Typical Detroit River Crossing Cross Section



All alternatives feature 6 traffic lanes and a clear span of the Detroit River.

Next Steps

- Consultation with the public on Context Sensitive Solutions (CSS).
- Initiate concept design of preferred crossing.

The Canadian and U.S. Study Teams have completed a study of the types of bridges to be considered for the new Detroit River crossing. Two crossing options were identified for further study.

Cable Stayed



Suspension

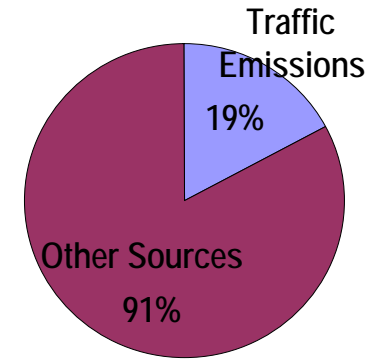






Summary of Assessment

- Local air quality is more strongly influenced by background sources and transboundary flow than by transportation sources.
- Concentrations of fine particulate are projected to be higher in the corridor than present due primarily to increased road dust as traffic increases. Particulate from vehicle tailpipes are predicted to decrease.
- Total concentrations of nitrogen oxides (NO_x) are predicted to decrease due to improvements in fuels and engine technologies.
- Below-grade alternatives result in slightly lower particulate and NO_x concentrations in comparison to at-grade alternatives.
- The air quality benefits of a below-grade roadway may be further enhanced through buffer zones, plantings and maintenance practices to reduce road dust.
- All plazas cause increases in the predicted maximum $\text{PM}_{2.5}$ and NO_x concentrations in the vicinity of the plaza. These increases are experienced up to 250 m (820 ft) away from the property boundaries of each plaza under certain conditions.
- Each of the three crossing alternatives results in increases in the predicted $\text{PM}_{2.5}$ and NO_x concentrations within 250 m (820 ft) of the crossings and the approach roadways between each plaza and bridge under certain conditions.



Traffic Emissions are mostly comprised of road dust, with a relatively small component (2%) of total particulate being attributed to tailpipe emissions.

Next Steps

- Model additional air pollutants and compare to MOE criteria and guidelines.
- Conduct more detailed analysis of the Technically and Environmentally Preferred Alternative.
- Assess potential construction impacts and recommend mitigation measures.

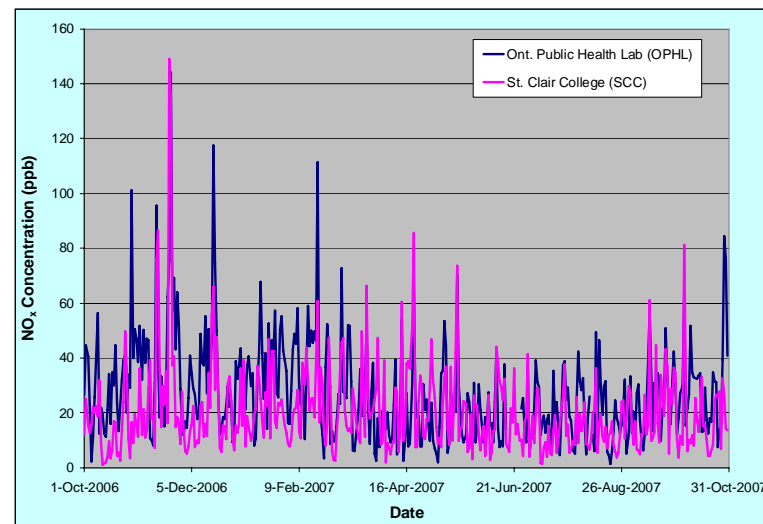
Ambient Air Monitoring – Results: October 2006 – October 2007



- Two ambient air monitoring stations installed in Huron Church Road/Highway 3 corridor
- Adjacent to Ontario Public Health Laboratory and across from entrance to St. Clair College
- Measuring fine particulate matter (i.e. $PM_{2.5}$), nitrogen oxides (NO_x), volatile organic compounds (VOCs) and weather
- Observations from these two monitoring stations were compared to data obtained from existing MOE monitoring stations located at College & South St. and University Avenue

NO_x Results

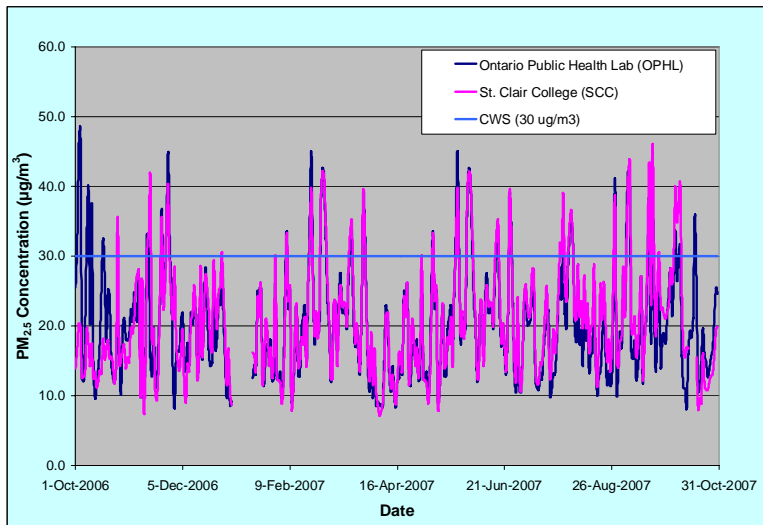
24-Hour Average Measured NO_x Concentrations ($\mu g/m^3$)
(from Observed Data at Monitoring Stations)



- Measured NO_x concentrations are within the expected range
- No observed exceedances of the 24-hour MOE Ambient Air Quality Criterion (AAQC) for NO_x ($200 \mu g/m^3$)
- Concentrations at both stations are slightly elevated in comparison to MOE monitoring stations, but remain well below the criteria
- Observed NO_x concentrations reflect local + transboundary sources, traffic patterns and meteorological conditions

PM_{2.5} Results

24-Hour Average Measured PM_{2.5} Concentrations (µg/m³)
(from Observed Data at Monitoring Stations)



- Measured PM_{2.5} concentrations are within the expected range
- Concentrations at both stations are slightly elevated in comparison to MOE monitoring stations.
- Several observed exceedances of 30 µg/m³ at both sites
- Concentrations are generally similar at both sites
- Observed PM concentrations reflect local + transboundary sources, traffic patterns and meteorological conditions

VOC Results

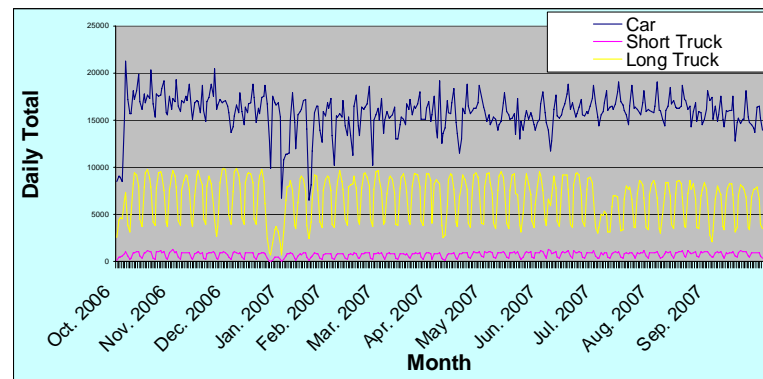
Daily Max/Min/Average VOC Concentrations (µg/m³)
(from Observed Data at Monitoring Stations)

Monitoring Station	Contaminant	Guideline Limit (µg/m ³)	Maximum Measured Concentration (µg/m ³)					Minimum Measured Concentration (µg/m ³)					Average Measured Concentration (µg/m ³)				
			Oct - Dec 2006 (µg/m ³)	Jan - Mar 2007 (µg/m ³)	Apr - Jun 2007 (µg/m ³)	Jul - Sep 2007 (µg/m ³)	Sampling Period (µg/m ³)	Oct - Dec 2006 (µg/m ³)	Jan - Mar 2007 (µg/m ³)	Apr - Jun 2007 (µg/m ³)	Jul - Sep 2007 (µg/m ³)	Sampling Period (µg/m ³)	Oct - Dec 2006 (µg/m ³)	Jan - Mar 2007 (µg/m ³)	Apr - Jun 2007 (µg/m ³)	Jul - Sep 2007 (µg/m ³)	Sampling Period (µg/m ³)
Ontario Public Health Laboratory	Acetone	9.6 ^a	1.2	2.7	4.6	2.2	4.6	0.1	0.1	0.1	0.2	0.1	0.6	0.4	0.9	1.2	0.8
	Benzene	0.7 ^a	1.0	1.8	2.0	2.2	2.2	0.4	0.3	0.3	0.3	0.3	0.6	0.6	0.7	0.8	0.7
	Acetaldehyde	500	2.4	1.2	3.2	0.7	2.4	0.6	0.6	0.2	0.3	0.2	1.5	0.8	0.6	0.4	0.6
	Formaldehyde	47	5.0	2.8	3.6	3.4	3.4	2.1	1.0	0.5	0.5	0.5	3.3	1.8	2.1	1.8	2.1
St. Clair College	Acetone	9.6 ^a	1.1	1.5	3.4	3.4	3.4	0.1	0.1	0.1	0.3	0.1	0.3	0.3	0.7	1.1	0.7
	Benzene	0.7 ^a	3.1	1.3	2.0	2.9	3.1	0.4	0.3	0.6	0.4	0.3	0.8	0.6	0.7	0.8	0.7
	Acetaldehyde	500	2.5	1.3	3.3	0.5	2.5	0.5	0.6	0.3	0.2	0.2	1.5	0.8	0.7	0.4	0.9
	Formaldehyde	47	5.7	3.2	3.4	3.4	3.7	2.5	0.9	0.3	0.3	0.3	3.3	1.7	2.3	1.9	2.2

Observed VOC concentrations are well below the relevant MOE standards and guidelines

Traffic Data

Daily Traffic Count Totals (Oct 2006 – Sept 2007)



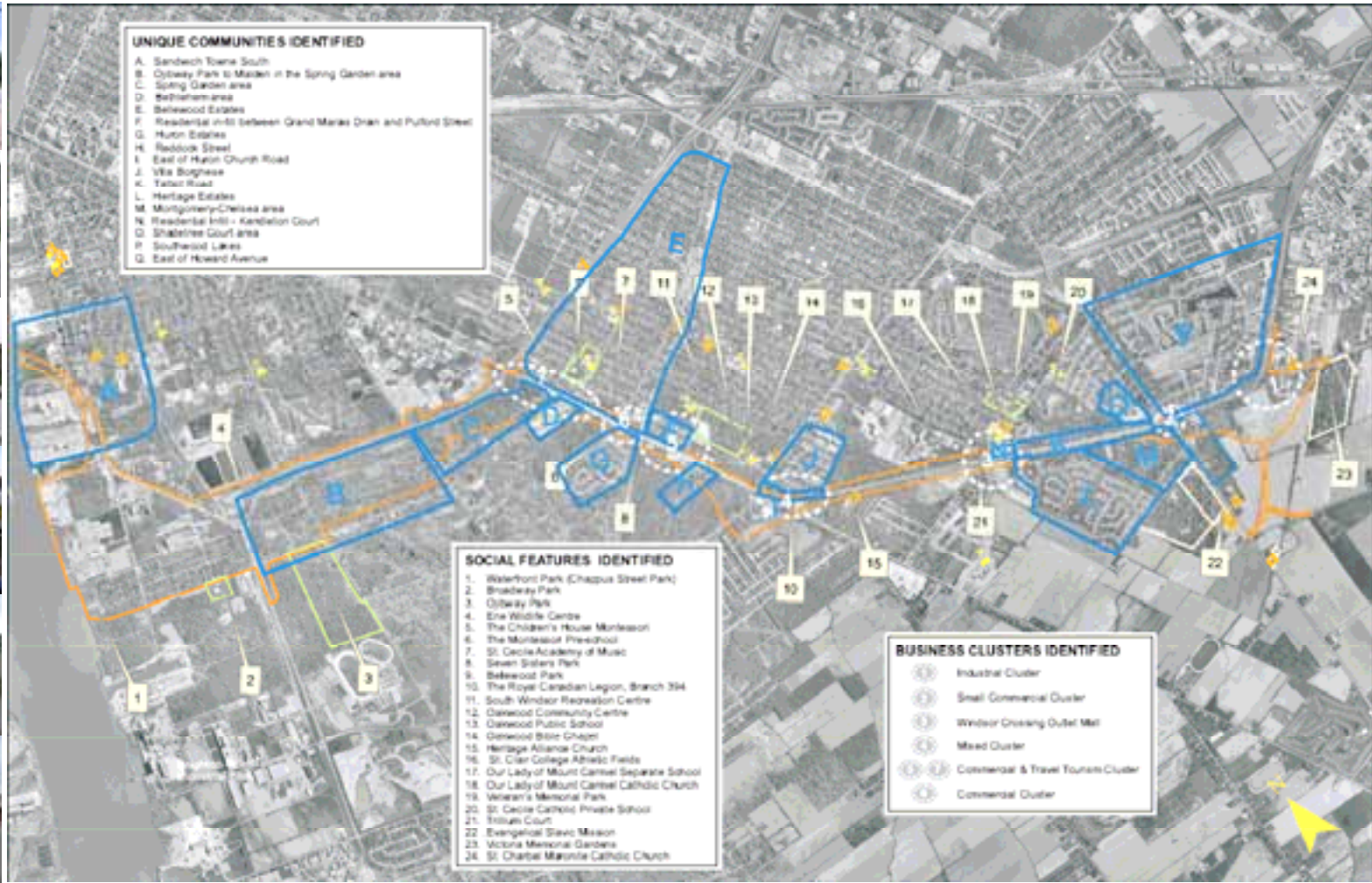
Observed traffic patterns are cyclical on a weekly basis, but relatively constant

Summary of Assessment

- Potential changes to community cohesion and character for specific neighbourhood communities due to the displacement and disruption of residents and social features are similar for all alternatives.
- The Windsor-Essex Parkway is slightly preferred from a community impact standpoint as it provides benefits to the community that the others do not including a green space buffer between residents and the ROW, an opportunity for additional parkland and recreational features, and connectivity between communities and community features that currently does not exist.
- Business displacement losses will be offset by gains in other businesses, or the displaced businesses will relocate to other suitable areas.
- Plaza A has the greatest potential to impact community character and cohesion due to the changes to the existing park-like setting, greater displacements of residents, and proximity to the adjacent Armanda Street residential area.
- Crossing C has the greatest potential to impact community character due to its proximity to Sandwich Towne. The Plaza B1 and Crossing B alternative is considered to have the fewest overall impacts to the community, including the displacement of residents and businesses, in comparison to the other alternatives.
- Due to the current design of the plaza-crossing alternatives and the nature of the businesses disrupted, almost all businesses in the area will be able to operate in the same manner with no economic impact.
- The Windsor-Essex Parkway provides connectivity not previously enjoyed between neighbourhood communities on both sides of the right-of-way and adjacent to one another.

What's Next?

- Conduct impact analysis of the Technically and Environmentally Preferred Alternative.
- Assess potential construction impacts and recommend mitigation measures.
- Conduct agency and community stakeholder consultation.
- Investigate opportunities to enhance visibility and signage for businesses along the new access road alternative.



Summary of Assessment

- All alternatives use existing Huron Church Road/Highway 3 corridor – the historical connection to the border.
- Impacts to the various types of land uses along the corridor are considered to be similar for all alternatives. It is anticipated that the majority of land uses displaced can be re-established in other areas.
- All alternatives are considered consistent with existing municipal and provincial policies; the Windsor-Essex Parkway is more consistent with the City of Windsor and Town of LaSalle Official Plan policies.
- No known contaminated/disposal sites impacted by any of the access road alternatives. All alternatives have similar impacts to areas of high to moderate potential for contamination.

What's Next?

- Conduct impact analysis of the Technically and Environmentally Preferred Alternative.
- Monitor new development plans and changes to zoning within the Area of Continued Analysis (ACA).
- Conduct Context Sensitive Solutions workshops with the public to gather input into the design of the recreationways and trail systems proposed for the Windsor-Essex Parkway
- Assess potential construction impacts and recommend mitigation measures.

Land use documents consulted:



Summary of Assessment

- Potentially impacted features are without any recognized heritage status – all alternatives are considered to have a low impact.
- All access road alternatives impact six parks/recreation areas. Alternative 2A will disrupt access to the St. Clair College baseball and soccer fields. Other parks/recreation areas will experience minor disruptions.
- Little to no difference between access road alternatives in terms of impact to archaeological features. None of the alternatives impact either human remains or large pre-contact Aboriginal sites. All access road alternatives have low to medium impact to known archaeological sites.
- Plaza A will displace one field-identified feature, which represents a very minor impact.
- Plaza B, B1 and C will each displace three houses in the former Brighton Beach area; these features have no recognized heritage status. The impacts of Plazas B, B1 and C are considered to be minimal and mitigation of these features is probable.

What's Next?

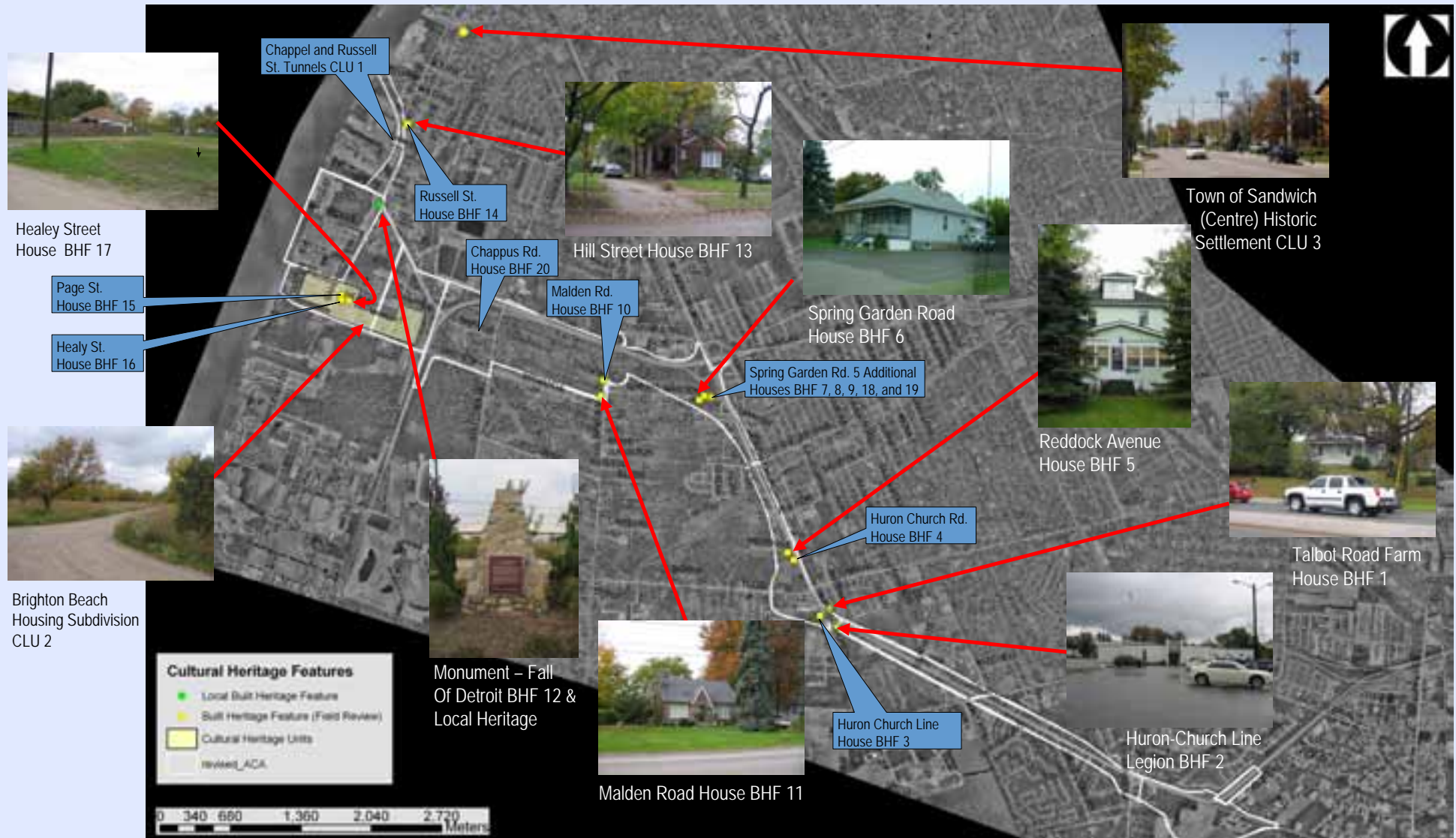
- Conduct impact analysis of the Technically and Environmentally Preferred Alternative on cultural and archaeological sites.
- Conduct an archaeological site-specific assessment (test unit excavation) on sites within the Technically and Environmentally Preferred Alternative
- Conduct Stage 2 and 3 Archaeological Assessments for the Technically and Environmentally Preferred Alternative as required.
- Assess potential construction impacts and recommend mitigation measures.



Protect Cultural Resources – Archaeological Features



Protect Cultural Resources – Built Heritage Features



Summary of Assessment

- There is no significant difference among the alternatives because footprint impacts are comparable.
- None of the access road alternatives directly impact any designated Areas of Natural and Scientific Interest (ANSI) including the Ojibway Prairie Complex.
- All access road alternatives (1A, 2B, 2A, 2B, 3 and the Windsor-Essex Parkway) encroach on the St. Clair College Prairie ESA.
- The Windsor-Essex Parkway provides greater opportunities for restoration, enhancement and ecological connections with the placement of the tunneled sections and adjacent landscaped areas.
- Plaza C, Crossing C is the most preferred combination as it avoids the natural heritage features in the Brighton Beach area north of Chappus Road.
- Plaza A, Crossing A is the least preferred as it will displace the natural features in the Brighton Beach area.
- Plaza B1 from Crossing C may disturb designated natural heritage features because of its close proximity to the Black Oak Woods ANSI/ESA. These impacts are avoidable through alternations to site design for Plaza B1.

Next Steps

- Conduct detailed in-season field investigations within the zone of influence of TEPA including species at risk surveys;
- Meet with regulatory agencies to discuss impacts and environmental protection measures;
- Perform site-specific impact assessment of TEPA including identifying impacts, mitigation measures, net environmental effects and cumulative effects; and,
- Identify environmental approval requirements and submit applications (i.e. Endangered Species Act, Fisheries Act, etc).



Vegetation Communities



Fish Habitat and Watercourses



Summary of Assessment

- All alternatives provide a significant improvement to regional mobility by getting long distance truck traffic off local streets and providing full freeway access to and from the border.
- There are no substantive differences in the safety performance between a tunnel and non-tunnel alternatives. Studies suggest that frequency of crashes in a tunnel may be less than a non-tunnel, but the consequences of crashes within a tunnel are generally more severe and challenging for emergency services.
- All alternatives provide a safety benefit compared to “do-nothing” by transferring long distance traffic from existing Huron Church Road to a controlled access freeway.
- The Parkway Alternative provides slight advantages over other alternatives in relation to both Highway Network Effectiveness and Continuous/Ongoing River Crossing Capacity. It provides slightly more favourable traffic operations on the service road than the other alternatives. It also provides a slightly higher degree of mobility between the service road and the new freeway when compared with the other alternatives.
- U.S. and Canadian border agencies have reviewed and tested functional layouts of the plaza alternatives to confirm their suitability under future traffic conditions. All plaza alternatives were found to be acceptable.
- The capacity of the new crossing will accommodate future travel demand, both in terms of meeting capacity and providing flexibility to stream traffic on the crossing to improve border processing (e.g. designated NEXUS/FAST lane).

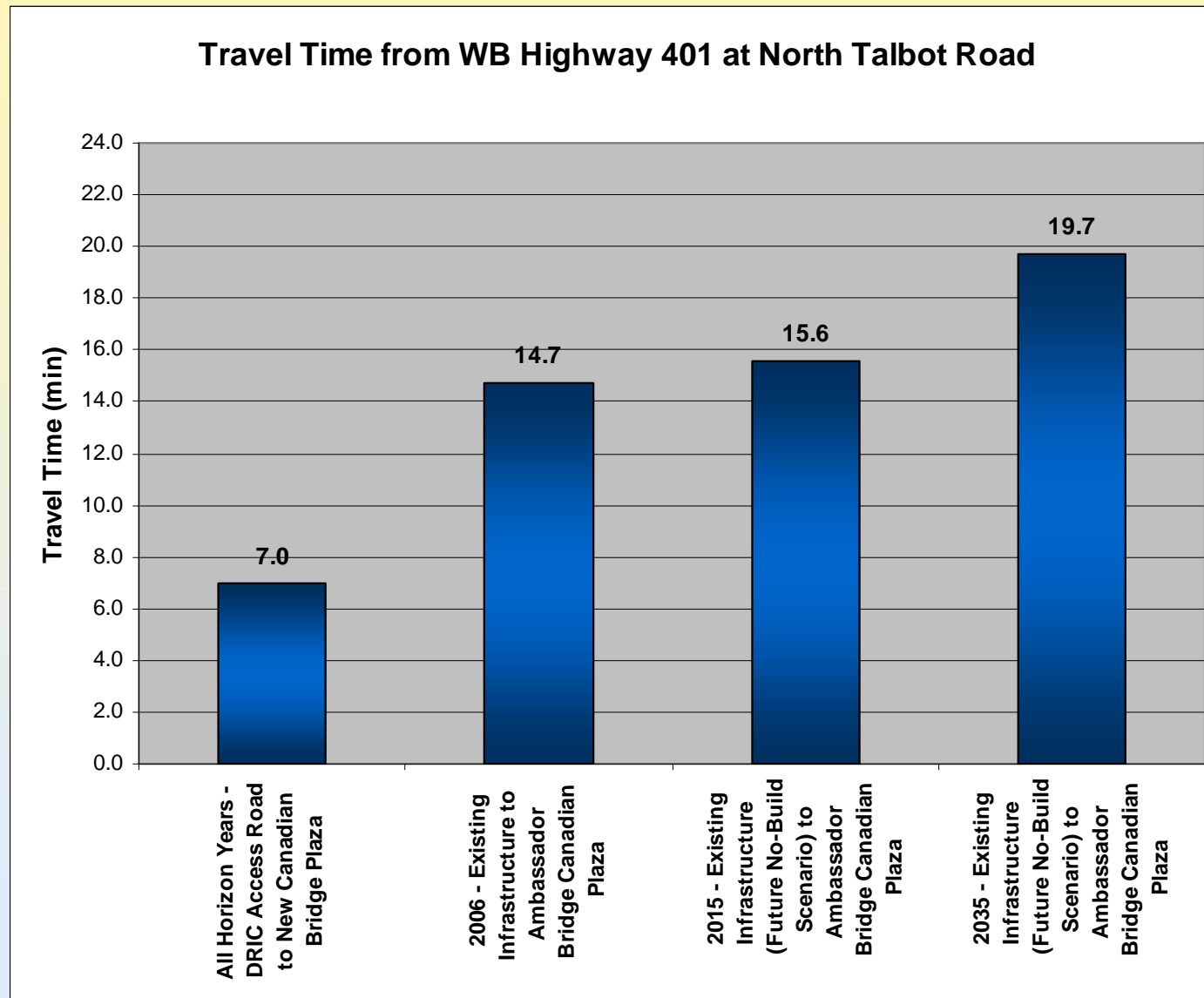
What's Next?

- Conduct detailed analysis of the Technically and Environmentally Preferred Alternative.
- Assess refinements to alternatives with ongoing consultation with municipalities.



Example of Designated Lanes (i.e. NEXUS, FAST) at border crossing

Estimated travel times from Highway 401 at North Talbot Road to Plaza B1 in base year (2006) and 2015 and 2035 horizon years.

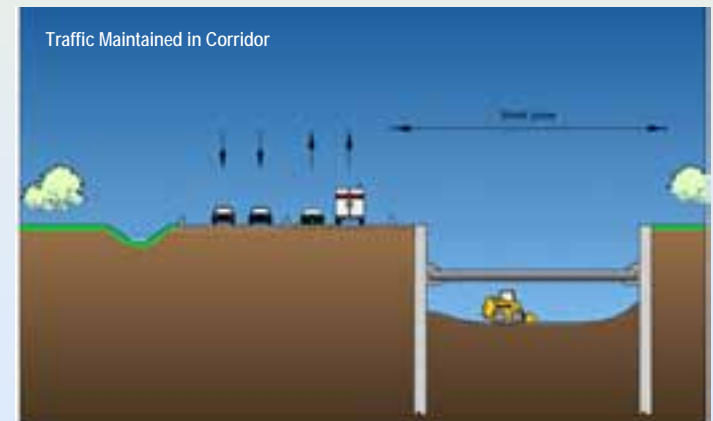


Summary of Assessment

- All access road alternatives are constructable. Traffic flow can be reasonably maintained in the Huron Church Road/Highway 3 corridor throughout the construction period.
- Construction is complicated by the high water table and relatively poor ground conditions, and those problems increase with the depth of construction.
- Cost estimate (\$CDN for year 2011) access road alternatives from Highway 401 to Malden Road is:
 - At-grade alternatives: \$620 M to \$920 M
 - Below-grade alternatives: \$1.0 B to \$1.4 B
 - Tunnel alternative: \$3.6 B to \$3.8 B
 - Windsor-Essex Parkway: \$1.5 B to \$1.6 B
- Complexity of construction, risks to schedule and overall project costs are greatest for a tunnelled option.

What's Next:

- Conduct detailed analysis of the Technically and Environmentally Preferred Alternative.
- Conduct preliminary design for Technically and Environmentally Preferred Alternative.
- Develop construction staging documentation.



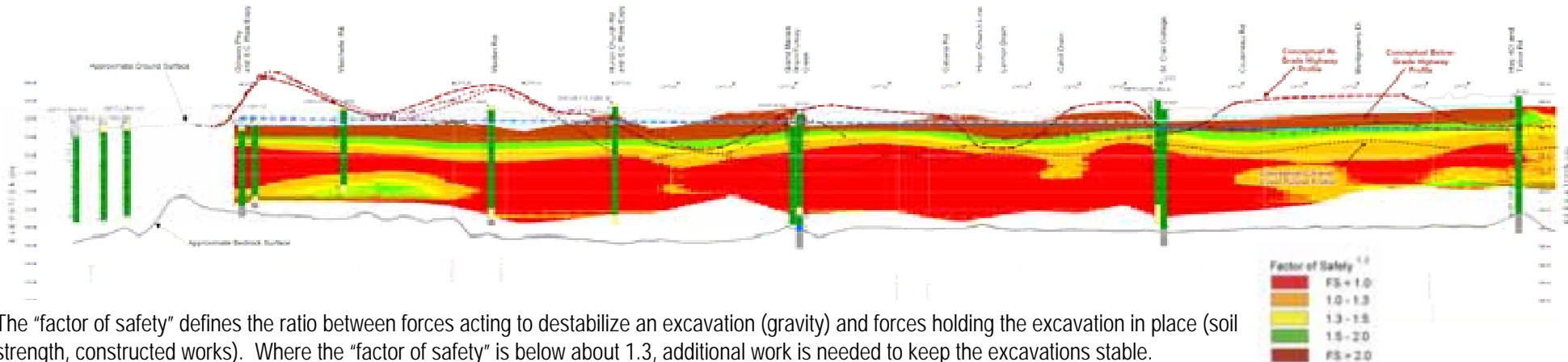
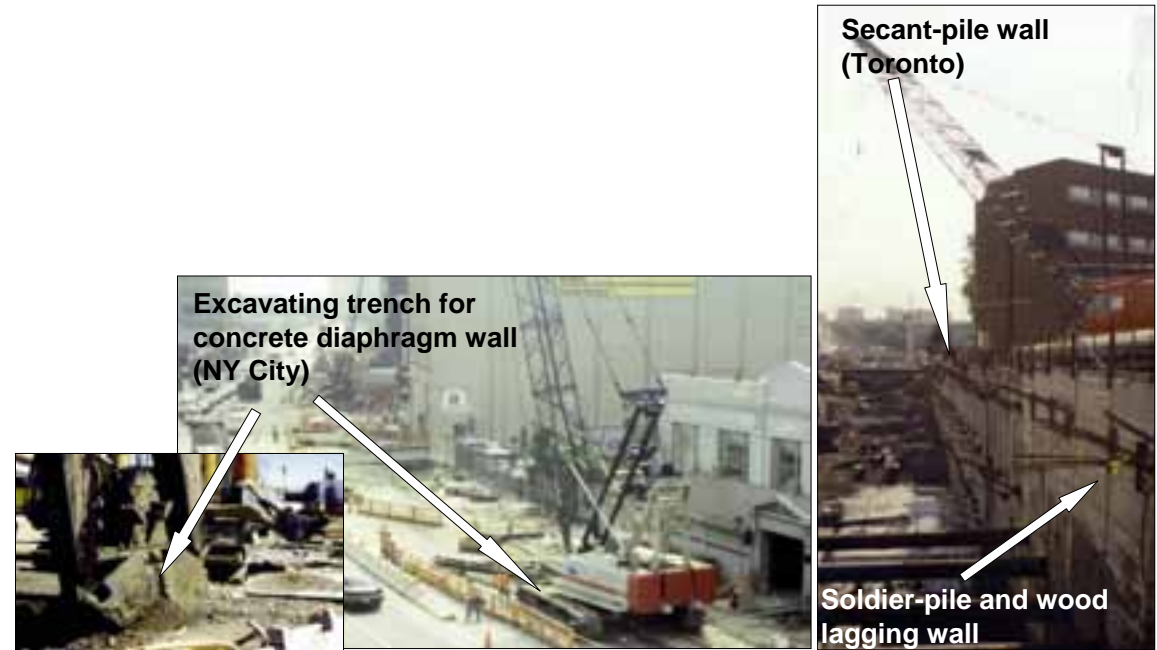
Underground Construction

The ground conditions influence constructability and cost because:

- The silt and clay soils have a strong “crust” in the top 5 to 10 m, below which they become much weaker
- Groundwater in the bedrock produces hydrogen sulphide gas when exposed to air

Construction methods suitable for constructing below-grade retaining walls:

- Conventional retaining walls (< 5 m)
- Soldier-piles and lagging (limited applications)
- Secant-pile or concrete diaphragm walls (deep excavations)



The “factor of safety” defines the ratio between forces acting to destabilize an excavation (gravity) and forces holding the excavation in place (soil strength, constructed works). Where the “factor of safety” is below about 1.3, additional work is needed to keep the excavations stable.

Results of Deep Borehole Drilling – Crossing Locations



LEGEND

- Drilled Holes
- Other Wells or Boreholes
- Cavern Storage Well
- Solution Mining Well
- Boundary of Primary Solution Mining Influence
- Boundary of Secondary Solution Mining Influence
- Major Road
- Local Road
- Orange, 10ft/s
- Water



ACKNOWLEDGEMENT

Base Data: MRP Aerials, January 2005, Contour 1:1,000
 Cartography: 2005, January 2005 and 2006
 Maps from MRP, and the Ontario Ministry of Natural Resources, US and Canadian National Library
 Produced by: Geomatics International Ltd. under license from Ontario Ministry
 of Natural Resources, 40 Victoria Avenue, 2nd Floor
 Toronto, M5G 1S1, Canada. 2005. 2006. 2007. 2008. 2009. 2010. 2011. 2012. 2013. 2014. 2015. 2016. 2017. 2018. 2019. 2020. 2021. 2022. 2023. 2024. 2025. 2026. 2027. 2028. 2029. 2030. 2031. 2032. 2033. 2034. 2035. 2036. 2037. 2038. 2039. 2040. 2041. 2042. 2043. 2044. 2045. 2046. 2047. 2048. 2049. 2050. 2051. 2052. 2053. 2054. 2055. 2056. 2057. 2058. 2059. 2060. 2061. 2062. 2063. 2064. 2065. 2066. 2067. 2068. 2069. 2070. 2071. 2072. 2073. 2074. 2075. 2076. 2077. 2078. 2079. 2080. 2081. 2082. 2083. 2084. 2085. 2086. 2087. 2088. 2089. 2090. 2091. 2092. 2093. 2094. 2095. 2096. 2097. 2098. 2099. 2100. 2101. 2102. 2103. 2104. 2105. 2106. 2107. 2108. 2109. 2110. 2111. 2112. 2113. 2114. 2115. 2116. 2117. 2118. 2119. 2120. 2121. 2122. 2123. 2124. 2125. 2126. 2127. 2128. 2129. 2130. 2131. 2132. 2133. 2134. 2135. 2136. 2137. 2138. 2139. 2140. 2141. 2142. 2143. 2144. 2145. 2146. 2147. 2148. 2149. 2150. 2151. 2152. 2153. 2154. 2155. 2156. 2157. 2158. 2159. 2160. 2161. 2162. 2163. 2164. 2165. 2166. 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As part of the completion of the Environmental Assessment studies, methods of mitigation (reducing) impacts during construction will be identified. The following identifies common mitigation measures implemented on roadway construction projects:

Factors	
Air Quality	<p>Dust and debris will be controlled through the use of standard techniques within the construction industry. These measures include:</p> <ul style="list-style-type: none">• cover or wet down dry materials to prevent blowing dust and debris;• prevent dust from blowing across the site and from leaving the site, in particular frequently wet paved and unpaved temporary roads and excavated areas;• comply with Provincial ordinances and engineer's requirements regarding the minimization of dust and airborne pollution;• securely cover excavated materials being removed from the site and all fill materials being delivered to the site to prevent blowing from dust into the streets and haul routes;
Noise	<p>Contractors are expected to comply with all applicable requirements of the contract and local noise by-laws</p> <p>All equipment will be properly maintained to limit noise emissions, and operated with effective muffling devices that are in good working order</p>
Natural Environment	<p>Leave vegetation in right-of-way when possible to reduce loss of native vegetation</p> <p>Employ erosion and sedimentation controls that are MTO acceptable best practices</p>
Traffic and Pedestrian Safety	<p>Construction activities will be carried out in a manner as to ensure the least interference with pedestrians, cyclists and vehicular traffic and shall include fencing and lighting as required providing a safe environment</p> <p>Traffic management plans will be developed to maintain adequate traffic flow for all streets, driveways and property entrances</p>

The DRIC Study Team is interested in hearing your concerns and ideas for mitigating construction impacts on this project.

A collaborative, interdisciplinary approach to transportation planning that considers the greater context within which a transportation improvement project will exist. CSS involves all stakeholders in the development of a transportation facility that fits its physical setting and preserves the scenic, aesthetic, historic and environmental resources, while maintaining safety and mobility.

CSS is a key component of the development of practical alternatives for DRIC. CSS workshops and activities held over the course of the study included:

- Inspection Plaza Location Development
- Access Road Refinement
- Context Sensitive Solutions Concept Preference
- Bus Tour of Bridges, Toledo, Ohio and Port Huron, Michigan
- Bus Tour of Freeway Types, Detroit, Michigan
- Access Road and Plaza CSS Themes
- Crossing Concepts and Preference Survey
- Crossing Concepts and Preference Survey



Context Sensitive Solutions Workshops are being arranged to provide interested persons with opportunities to help provide input into the look of the Windsor-Essex Parkway as well as study issues in greater detail with the DRIC Study Team. **More information will be available in the upcoming weeks.**

Owners may initiate the sale of their property on a willing buyers/willing seller basis. The Partnership members have considered purchase requests from owners of properties currently having direct access to existing Highway 3 (Talbot Road) or Huron Church Road between Highway 401 and E.C. Row Expressway. Each property has been considered on a case by case basis, based on qualifications determined by the Ministry of Transportation.

Once the project has received Environmental Assessment (EA) approval, the Partnership members will approach the remainder of impacted homeowners and business owners to acquire property in a mutually agreeable way.

After EA approval has been obtained, a representative will contact you if any part of your property is required. They will carry identification that you should insist on seeing. They will explain the procedures for the sale of your property.

Compensation is based on the appraised market value of your property. Market value is based on what a similar property might be expected to sell for on the open market by a willing seller to a willing buyer. A professional property appraiser will inspect each property individually and consider various factors that influence market value, including sales of similar properties which are adjusted to reflect the specific characteristics of your property. An allowance for moving costs and other eligible expenses will be paid.

For more information on a specific property, please go to the adjacent room where MTO property personnel are available to answer your property questions.

Owners wishing to sell their property may initiate a review to determine if their property qualifies for advance purchase by contacting the MTO, Windsor Border Initiatives Implementation Group

Phone: 519-973-7367 or 1-800-265-6072 ext.4800 or email: detroit.river@ontario.ca

- Complete analysis for the Technically and Environmentally Preferred Alternative
- Complete field work related to additional natural heritage, archaeological, cultural, social, and geotechnical studies
- Conduct a Context Sensitive Solutions workshop to gather public input into the design of the Windsor-Essex Parkway and plaza/crossing design
- Conduct meetings with key stakeholders and the public
- Complete Environmental Assessment document and submit to environmental agencies by end of 2008
- Next open houses late summer/early fall 2008

Stay involved!



Attend the workshops!

