

DETROIT RIVER INTERNATIONAL CROSSING STUDY

Presentation to CANAAG

July 22, 2008

Canada



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



Ontario



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

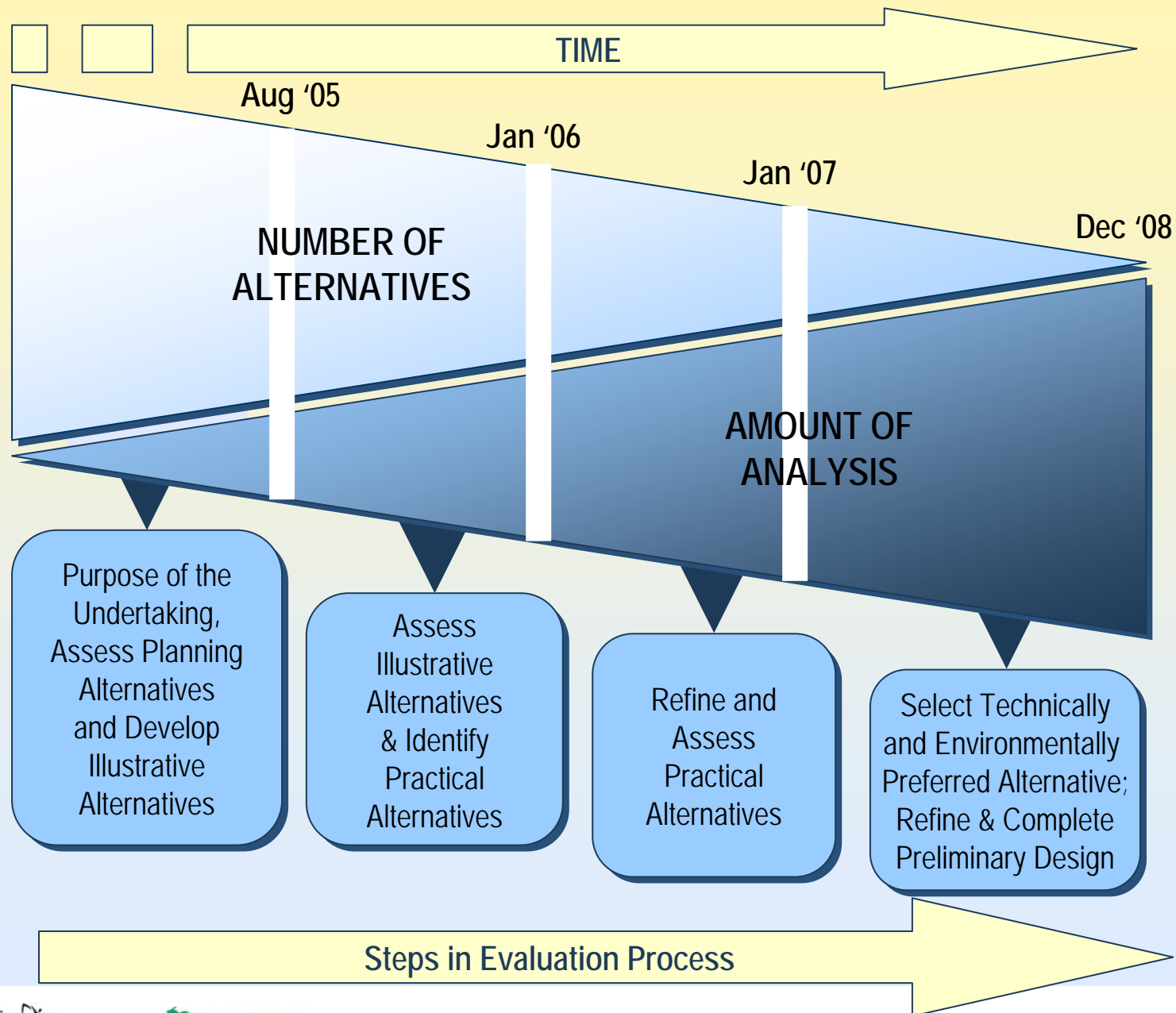
To construct a new end-to-end transportation system that will link Highway 401 to the U.S. interstate system with inspection plazas and a new river crossing in between.

In order to meet 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)

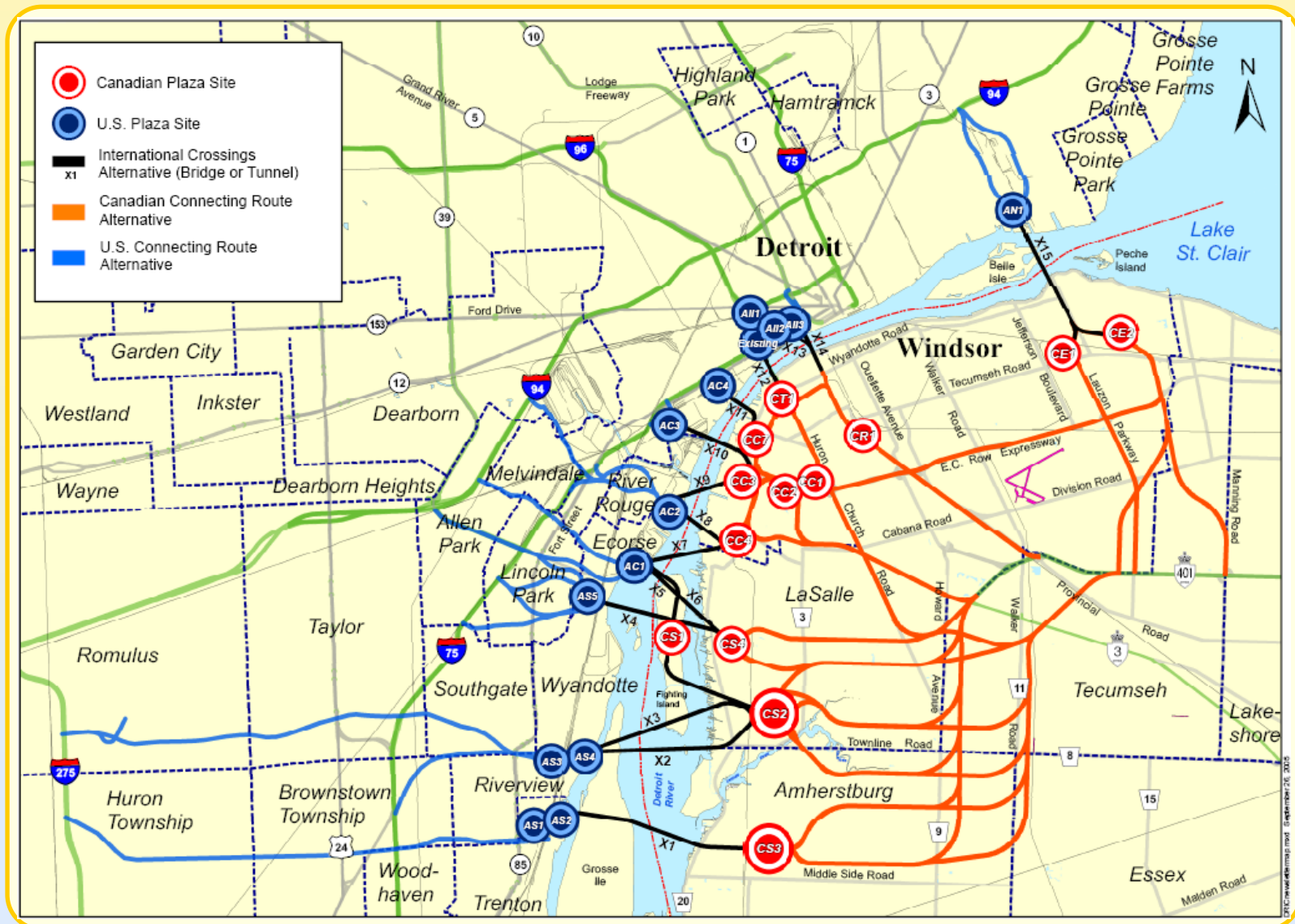
The Study Team seeks to implement transportation solutions which minimize community and environmental impacts as much as possible. In particular, the Canadian Study Team is looking to address the local communities' goals to:

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



The underlying principle for the alternatives generation and evaluation process is to start with a broad perspective and become more focused/ detailed as the project progresses.

What Alternatives Were Studied?



Crossing, Plaza & Access Road Alternatives



July 11, 2007

Practical Access Road Alternatives



1a

One-way service roads on either side of 6-lane freeway at grade;



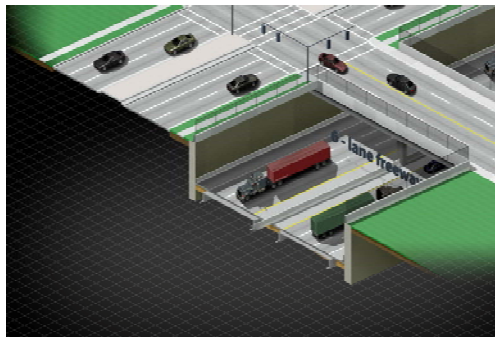
1b

One-way service roads either side of 6-lane freeway below grade;



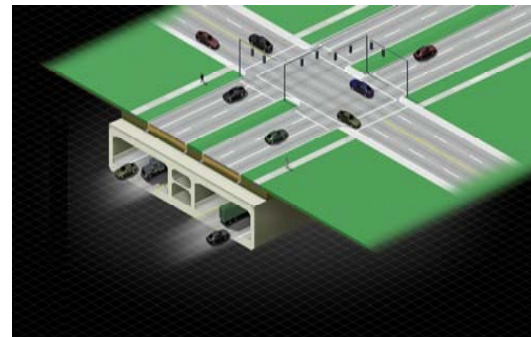
2a

Six-lane freeway at-grade, parallel to Huron Church/Highway 3;



2b

Six-lane freeway below grade, parallel to Huron Church/Highway 3;



3

Cut and cover tunnel below rebuilt Huron Church Road/Highway 3 Corridor;

The Windsor – Essex Parkway



Changes in Air Quality

- All alternatives provide a net benefit to local air quality by reducing tailpipe emissions and reducing traffic diversion to city streets
- No substantive difference in changes in air quality among all alternatives considered
- End-to-end tunnel with ventilation buildings can result in minor reductions in particulate concentrations within 50 to 100m of right-of-way when compared to other alternatives
- The Windsor-Essex Parkway has similar benefits to air quality as other below-grade alternatives

Protect Community & Neighbourhood Characteristics

All Alternatives:

- Reduce international traffic on local streets
- Have no predicted noise impacts
- Have impacts in the Spring Garden Road / Malden Road area
- Have similar effect to neighbourhoods/businesses/social features
- Affect the same neighbourhoods to varying degrees

Plaza A connection has greater impacts than Plaza B/C connections

Below-grade alternatives provide aesthetic benefits

Protect Community & Neighbourhood Characteristics

- The Windsor-Essex Parkway provides greater buffer between neighbourhoods and roadway and as such requires more property
 - New tunnel connections reduce the 'barrier effect' of the roadway
 - New recreational and greenspace areas are possible along the corridor
 - Buffering effect reduces exposure of residences adjacent to roadway



*  **THE WINDSOR-ESSEX Parkway**
BUILDING THE RIGHT SOLUTION NOW preferred

Maintain Consistency with Existing & Planned Land Use

- Windsor-Essex Parkway design enables buffer areas and landscaping
- Recreational uses can be developed with the Parkway, consistent with Windsor and LaSalle planning policies promoting active and healthy communities
- Parkway converts taxable property uses to passive/recreational uses
- The Windsor-Essex Parkway is consistent with Provincial Planning Policies
- Plaza A connection has greater impacts than Plaza B/C connection



Protect Cultural Resources

- No difference among alternatives in terms of built heritage and archaeological features impacted
- Windsor-Essex Parkway provides greater opportunities for new parks/recreation areas linked to existing parks/trails



Protect the Natural Environment

- No significant difference among alternatives
- The Windsor-Essex Parkway provides greater opportunities for restoration, enhancement and ecological connections
- Plaza A connection has greater impacts than Plaza B/C connection

Improve Regional Mobility

- All alternatives provide a high benefit to regional mobility
 - Add capacity
 - Separate international and local traffic
 - Get trucks off local streets
- The Windsor-Essex Parkway provides
 - Better access between freeway and service road
 - Better service road operation

*  preferred

Cost and Constructability

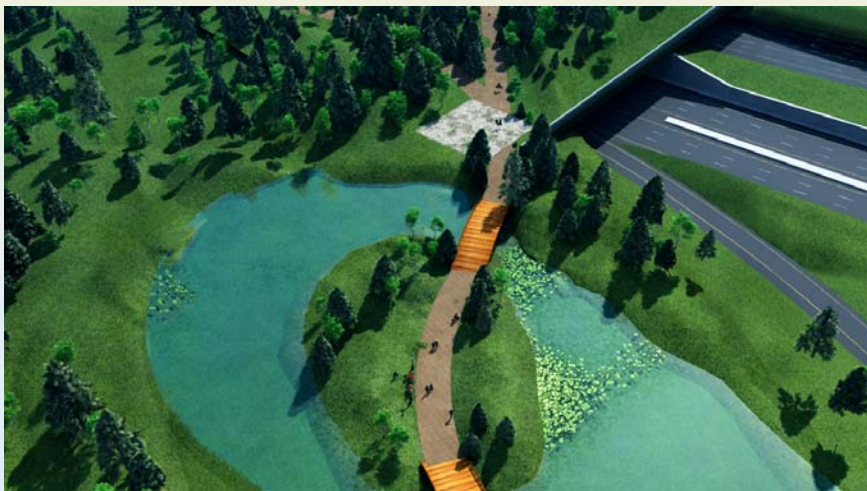
- The Windsor-Essex Parkway alternative (\$1.6 billion) is comparable in construction cost to other below-grade alternatives
- Cost estimates (\$CDN for year 2011, Highway 401 to Malden Road)
 - At-grade alternatives: \$620 million to \$920 million
 - Below-grade alternatives: \$1.0 billion to \$1.4 billion
 - Tunnel alternatives: \$3.6 billion to 3.8 billion
- Higher than at-grade alternatives but much less than end-to-end tunnel

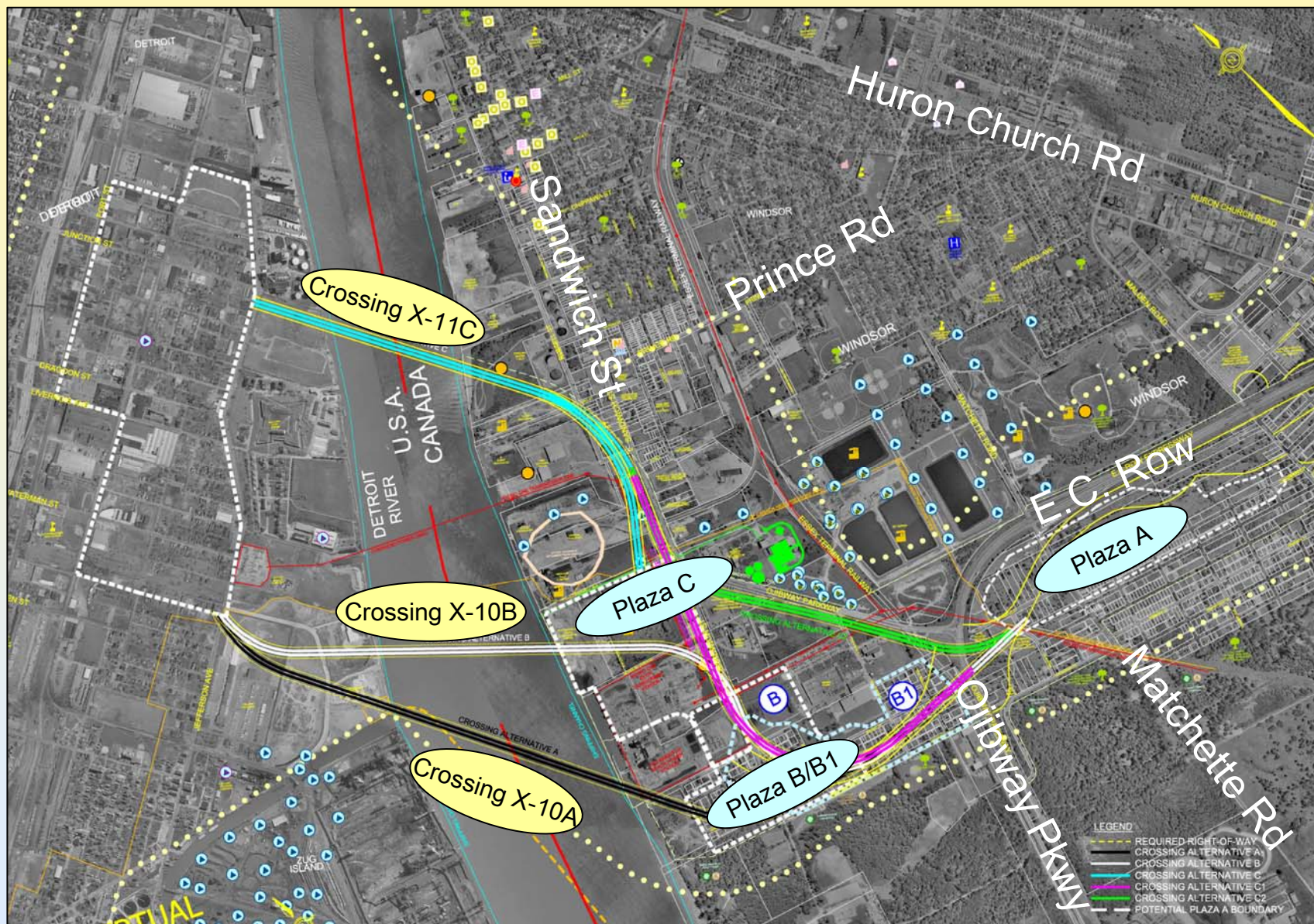
Summary of Assessment

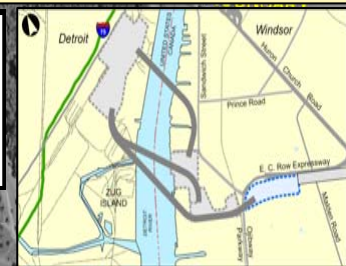
Factor	Preferred Alternative
Air Quality	No Clear Preference
Community & Neighbourhood	Parkway
Land Use	Parkway
Cultural Resources	Parkway
Natural Environment	No Clear Preference
Regional Mobility	Parkway
Cost & Constructability	At-grade

- Overall: Advantages of Windsor-Essex Parkway outweigh higher costs and constructability concerns associated with this alternative

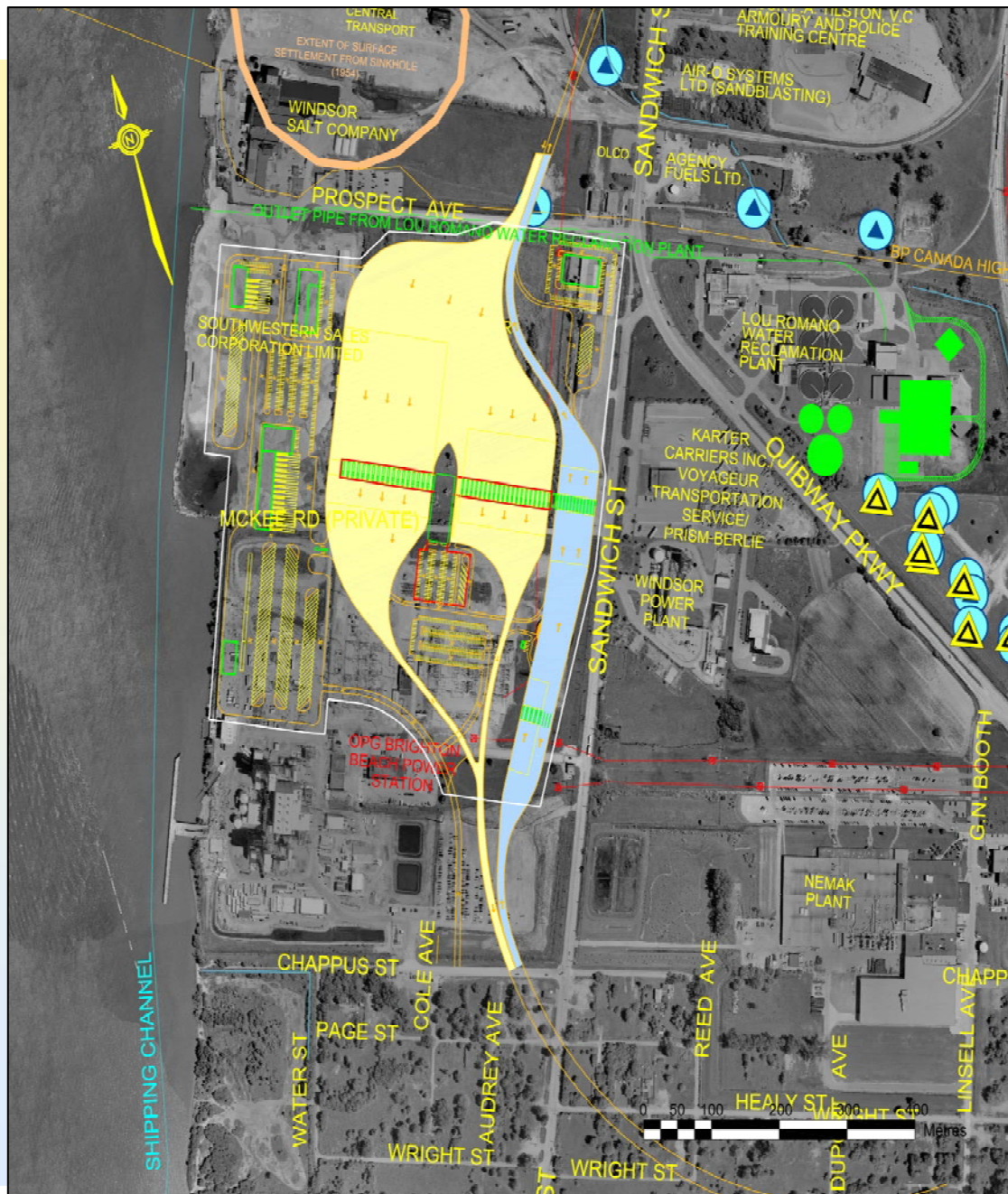
*  **THE WINDSOR-ESSEX Parkway** preferred
BUILDING THE RIGHT SOLUTION NOW





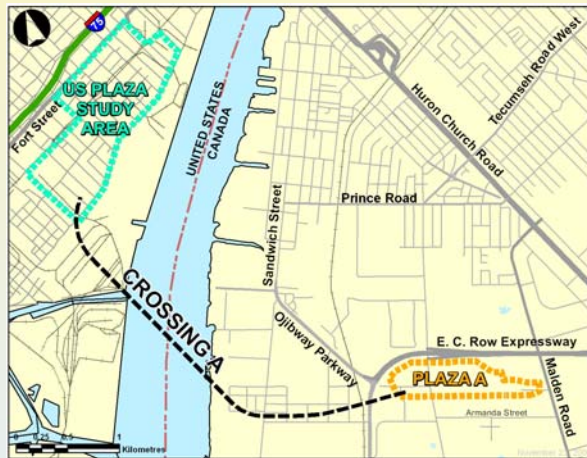






Final Crossing/Canadian Plaza Alternatives

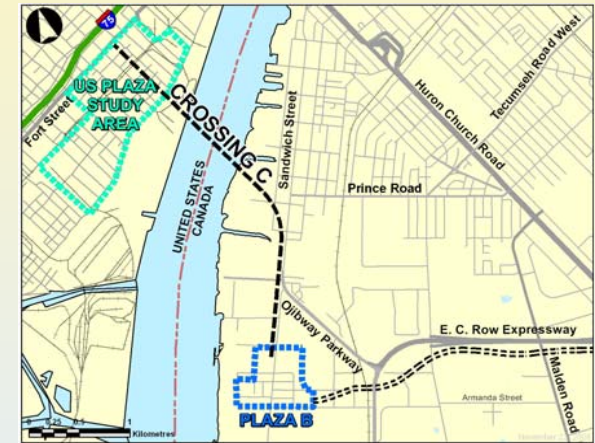
Crossing X-10A/Plaza A



Crossing X-10B/Plaza B1



Crossing X-11C/Plaza B



Canadian Analysis

- Increased concentrations of pollutants in the immediate area of the plaza
- Plazas B and B1 located away from sensitive receptors
- All alternatives have moderate impacts

U.S. Analysis

- Air quality will improve
- All alternatives spread traffic and reduce truck volumes on local streets

No clear preference determined

Community and Neighbourhood Characteristics

Canadian Analysis

- Crossing X-10A/Plaza A results in higher degree of change in character
- Crossing X-11C/Plaza B impacts community character of Sandwich Towne
- Crossing X-10B/Plaza B1 has no substantial impacts

U.S. Analysis

- Crossing X-11 impacts a greater number of homes and businesses than Crossing X-10

Crossing X-10B/Plaza B1 is preferred

Canadian Analysis

- Crossing X-10A/Plaza A has highest impacts
- Plazas B and B1 located on vacant industrial land

U.S. Analysis

- With no-build, continued industrialization of neighbourhood will continue
- With DRIC crossing, positive land use changes are possible
- Concepts with both crossings are being explored

Crossing X-10A/Plaza A is least preferred

Canadian Analysis

- No sites of high significance impacted
- Crossing X-11C has impact to cultural landscape of Sandwich Towne

U.S. Analysis

- No archaeological resources affected
- Two parks and a community centre removed by either plaza

Crossing X-11C/Plaza C is least preferred

Canadian Analysis

- Crossing X-10A/Plaza A has greatest impact to features of high significance
- Crossing X-10B/Plaza B1 has lowest impact

U.S. Analysis

- Crossing X-11 impacts small (0.01 acre) area of low quality wetland
- Crossing X-10 A and B have no impacts

Crossing X-10A/Plaza A is least preferred

- All three crossings will add capacity and work effectively
- X-10 A & B crossings could attract up to 50% more traffic from Huron Church Road
 - Improved levels of service on this important local road
 - Greater benefits to regional and local mobility
- Crossing X-10A/Plaza A has security/monitoring concerns
 - Distance to border
 - No direct line of sight

Crossing X-10B/Plaza B1 is preferred

- Canadian approach to Crossing X-11C passes over suspected underground cavity
 - Risk of future settlements
- Main Span Costs (2007 USD):
 - Crossing X-10A = \$620 million (suspension)
 - Crossing X-10B = \$487 million (suspension) / \$442 million (cable stay)
 - Crossing X-11C = \$435 million (suspension) / \$377 million (cable stay)
- Length of Crossing X-10A increases cost, schedule as well as risks to cost and schedule
 - At 1300 metres/4,265 feet, would be longest suspension bridge in the Americas

Crossing X-10B/Plaza B1 is preferred

Factor	Crossing/Plaza Alternative		
	X-10A/Plaza A	X-10B/Plaza B1	X-11C/Plaza B
Air Quality	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	

Canadian Plaza B1 with Cable Stay Bridge



Canadian Plaza B1 with Suspension Bridge



- Additional refinements possible following consultation
- CSS Workshops
 - July 23/24
- Mitigation of Impacts
 - PIOH #7 – Late Summer/Early Fall 2008
 - Circulation of Draft EA documents
- Complete Environmental Assessment Documentation
 - Late Fall 2008

**Ministry of Transportation
Windsor Border Initiatives
Implementation Group**

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