Detroit River INTERNATIONAL CROSSING STUDY

DETROIT RIVER

INTERNATIONAL CROSSING STUDY

Presentation to MAG

November 29, 2006

Detroit River INTERNATIONAL CROSSING STUDY

The Border Transportation Partnership

Canada

U.S. Department of Transportation Federal Highway Administration

Ontario

MDOT Michigan Department of Transportation

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Purpose of the DRIC Study

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.

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)

In meeting these needs the Project Team is looking to implement transportation solutions which minimize community and environmental impacts as much as possible.

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Community Goals

Study has also been guided by community goals:

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

All options achieve these goals

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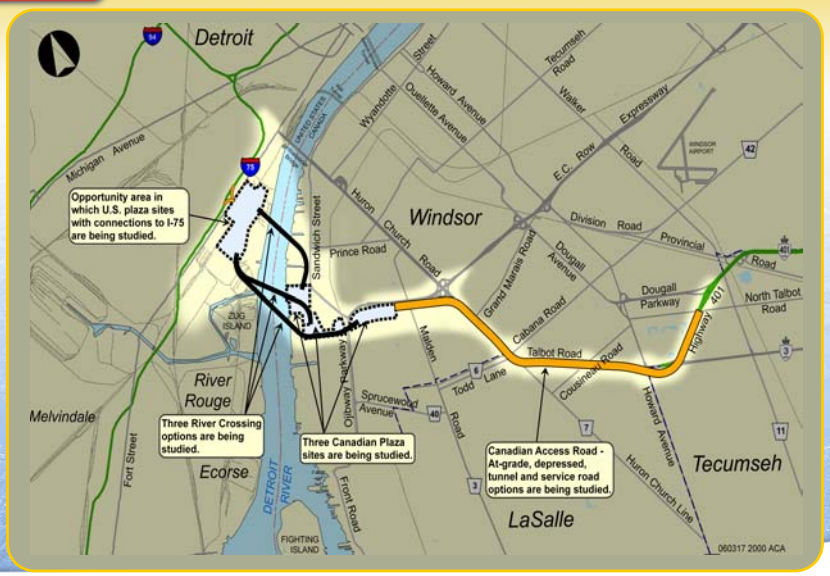
Practical Crossing, Plaza & Route Alternatives



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Environmental Assessment Key Study Activities

Study Area Features, Opportunities & Constraints	April '05	Initial Public Outreach
Initial Set of Crossing Alternatives, Plaza Locations & Connecting Routes in Canada and the U.S.	June '05	PIOH1
Area of Continued Analysis	December '05	PIOH2
Specific Crossing, Plaza and Access Road Options	March '06	PIOH3
Results of Social, Economic, Environmental and Engineering Assessments	December '06	PIOH4
Preferred Crossing Location, Plaza Locations & Connecting Routes in Canada and the U.S.	Spring '07	PIOH5
Finalize Engineering and Mitigation Measures	Summer '07	PIOH6
Document Study and Submit for Approvals	End of '07	Public Review

We are here

Evaluation Factors

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

- **Changes to Air Quality**
- **Protection of Community and Neighbourhood Characteristics**
  - *includes assessment of residential and business property impacts, social features including schools, impacts to noise levels, access and community features*
- **Consistency with Existing & Planned Land Use**
- **Protection of Cultural Resources**
  - *includes parks, historic sites and areas of archaeological significance*
- **Protection of Natural Environment**
  - *includes plant and animal species and habitat features*
- **Improvements to Regional Mobility**
- **Cost and Constructability**

Status of Alternatives Analysis

- **No decisions have been made to date**
- **No dominant alternative has emerged to date**
  - **All have certain advantages and disadvantages**
- **Analysis is on-going**
- **Results to date**
  - **Preliminary**
  - **Subject to refinements**
  - **Do not reflect mitigation**

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Plazas and Crossings

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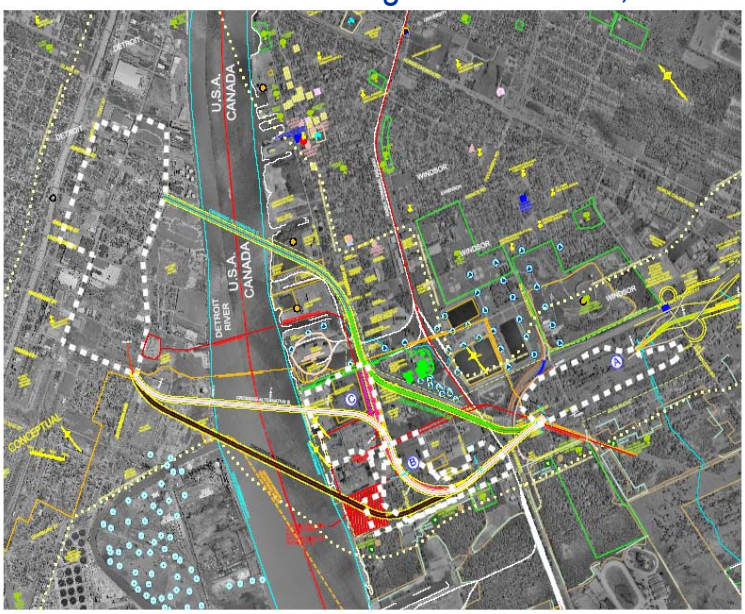
Crossing Alternatives A, B and C



Changes to Air Quality

Preliminary model results – Plazas and Crossings:

- **Volatile Organic Compounds (VOC's) are predicted to remain well below provincial standards**
- **Total concentrations of NO_x are predicted to decrease due to improvements in fuels and engine technologies, even though traffic volumes will increase.**
- **Modeling results are also showing localized increases in $PM_{2.5}$ and NO_x in vicinity of plaza and crossing alternatives.**
  - **Plaza A and Crossing C alternatives are in vicinity of residential areas**

Protection of Community and Neighbourhood Features

Preliminary results – Plazas and Crossings:

- **Highest residential displacements with Plaza A alternatives (70)**
  - **Residential area at Matchette Road/Armanda Street**
- **Highest business/industry impacts with Crossing C alternatives (13)**
  - **Sterling Marine Fuels among those directly impacted**
- **Highest noise impacts (before mitigation) with Crossing C alternatives (180)**
  - **Proximity to Sandwich Town**
- **Closure/realignment of Matchette Road with Plaza A alternative**
  - **Impact to local/emergency access**

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Plazas and Crossings

Consistency with Land Use:

- Plaza A not consistent with residential uses
- Other Plaza and Crossing alternatives consistent with industrial uses

Protection of Cultural Features:

- Between 5 and 8 homes (pre-1930) displaced, depending on the plaza and crossing alternative
- All three crossings disrupt cultural landscapes
  - Brighton Beach (all alternatives)
  - Sandwich Town vista (Crossing C)
  - Tunnels ('Underground Railroad')* (Crossing C)

* - unconfirmed

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Natural Environment

Preliminary results – Plazas and Crossings:

- No critical fish habitat impacted, including by possible pier locations in Detroit River
- Plaza A has greatest impact to tallgrass prairie and specimens/colonies of provincially rare plant species
- Plaza A has greatest impact to threatened Butler's gartersnake habitat

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Regional Mobility

Preliminary results – Plazas and Crossings:

- Confirmed that all alternatives are practical in terms of location and layout
  - Subject to results of geotechnical investigations
- Plazas and crossings meet all four Partnership transportation and mobility needs
  - Sufficient long-term capacity
  - Improve system connectivity
  - Improved border processing capabilities
  - Reasonable and secure options

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Cost and Constructability

Preliminary results – Plazas and Crossings:

- Geotechnical investigations to confirm bedrock conditions are on-going
  - Completed by early 2007
- Crossing Cost is somewhat a function of length of span*:
  - Shortest Crossing (Bank to Bank) = 0.7 km (0.4 mi) (Crossing C)
  - Shortest Crossing (Plaza to Plaza) = 2.9 km (1.8 mi) (Crossing B to Plaza B1)
  - Longest Crossing (Bank to Bank) = 1.1 km (0.7 mi) (Crossing A)
  - Longest Crossing (Plaza to Plaza) = 5.4 km (2.7 mi) (Crossing C to Plaza A)
  - Plaza C displaces Keith Transformer Station

* - Meetings with Coast Guards and Great Lakes Shipping to discuss impacts of piers in river on navigability are being arranged

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Access Roads

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Changes to Air Quality

Preliminary model results – Access Roads:

- Volatile Organic Compounds (VOC's) are predicted to remain well below provincial standards
- Total concentrations of NO_x are predicted to decrease due to improvements in fuels and engine technologies, even though traffic volumes will increase.
- Predicted concentrations of $PM_{2.5}$ associated with the alternatives are higher in the future due to increases in traffic volumes
  - Tailpipe emissions of $PM_{2.5}$ are decreasing
  - Greater contribution from road dust
- Depressed roadway sections result in lower concentrations of $PM_{2.5}$ and NO_x in vicinity of ROW compared to at grade alternatives
- Tunnel results in lower concentrations of $PM_{2.5}$ in vicinity of ROW compared to at grade alternatives
  - NO_x concentrations increase over a broader area compared to at grade alternatives (greater dispersion from ventilation stacks)

Protection of Community and Neighbourhood Features

Preliminary results – Access Roads:

- **Potential acquisitions of households range from 125 to 210**
  - Highest impacts with Alternative 2A Option 1 connecting to Plaza A
  - Lowest is Alternative 3 connecting to Plaza B, B1 or C
- **Potential acquisitions of businesses range from 25 to 45**
  - Highest impacts with Alternative 1A and 1B, both Option 2
  - Tunnel also has high direct impacts (44) and higher visibility impacts
  - Lowest impacts with Alternative 2A and 2B, both Option 1
- **Noise impacts of at-grade and depressed alternatives can be addressed through mitigation**
  - Noise modeling of tunnel option is in progress

Access Roads

Consistency with Land Use:

- **All alternatives make use of existing high order road corridor**
- **Localized land use impacts with each alternative**

Protection of Cultural Features:

- **Nine built heritage features potentially displaced by each alternative**
- **No known sites of high to moderate significance impacted by any alternative**

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Natural Environment

Preliminary results – Access Road:

- No critical fish habitat impacted
- Between 0.4 ha and 2 ha of rare tallgrass prairie/deciduous swamp impacted
  - Highest impacts with Alternative 2A options with connection to Plaza A
  - Lowest impacts with Alternative 1A with connection to Plaza B, B1 or C
- Between 60 and 160 specimens/colonies of provincially rare plants impacted
  - No substantial difference among the alternatives

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Regional Mobility

Preliminary results – Access Road:

- If no new crossing facility is built, significant road capacity problems are expected to begin to occur by 2015.
  - by 2035, most intersections will operate over capacity.
  - travel times nearly doubling over existing conditions.
  - capacity problems will be widespread and not isolated to particular locations on Huron Church Road and Highway 3.
  - excess traffic demand will spill over to other municipal streets.
- New six-lane freeway will meet future demands to year 2035 and beyond
  - provides free flow traffic conditions from Highway 401 to the border.
  - provides flexibility to designate lanes for streaming of border traffic (e.g. separate lanes for FAST/NEXUS traffic)
  - greatly improves safety in comparison to the current roadway
- Provision of local service roads will also provide substantial travel time savings for local traffic when compared to the do nothing alternative.

Regional Mobility

Preliminary results – Access Road:

- **Positive aspects of tunnels include:**
  - **elimination of adverse weather conditions**
  - **increased driver attention and/or slower speeds due to the confined driving space.**
- **Negative aspects of tunnels include:**
  - **limited visibility due to tunnel walls and light changes at the portals.**
  - **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 site.**
- **Crash risk near the portals of the tunnel is higher than elsewhere within the tunnel**

Cost and Constructability

Preliminary results – Access Road:

- **All access road alternatives are constructible,**
  - **traffic flow can reasonably be maintained in the Huron Church Road/Highway 3 corridor throughout the construction period**
- **Access road construction is complicated by the high water table and relatively poor ground conditions,**
  - **problems increase with the depth of construction.**
- **Complex construction staging will also be required for alternatives at the Grand Marais Drain/Turkey Creek.**
- **Construction of the tunnel alternative is more complex and intensive than other alternatives due to the necessity to build the tunnel box, ventilation, electrical and communication systems.**

Cost and Constructability

Preliminary results – Access Road:

Highway 401 to Malden Road ($CAD):

- **At-grade alternatives:** **$620M - $920M**
- **Depressed alternatives:** **$1.03B - $1.36B**
- **Tunnel alternatives:** **$3.8B**
  - Vast increase in excavation and concrete required to build the tunnel
  - Ventilation, electrical, drainage, communications and other Emergency Management Systems also increase costs

- **Costs for operations and maintenance, as well as property acquisition are to be considered separately.**

Next Steps

- **Complete remaining field investigations and analysis**
  - Geotechnical investigations
  - Air dispersion and noise modeling
  - Define tunnel ventilation and support systems requirements for emergency response/fire and life safety
  - Identify appropriate mitigation measures to reduce impacts

- **Continue consultation to obtain input on analysis to date, mitigation measures and context sensitive solutions**
  - Respond to comments from this round of Open Houses
  - Continue community consultation and consultation with property/business owners
  - Coordinate next round of Open Houses with U.S. Draft EIS Public Hearing

- **Continue working with the public, communities, and interested groups of Windsor and Essex County, in consultation with our U.S. partners, to develop the solution that best meets current and future transportation needs, while minimizing community impacts on both sides of the border.**

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Next Steps

Canadian Public Information Open Houses

Wednesday, December 6, 2006
2:00 p.m. to 8:00 p.m.

Holiday Inn Select Hotel, Ballroom
1855 Huron Church Road
Windsor, Ontario

Thursday, December 7, 2006
2:00 p.m. to 8:00 p.m.

Ciociaro Club, Salon A&B
3745 North Talbot Road
Tecumseh, Ontario

Project Web Site: **www.partnershipborderstudy.com**
Toll Free : **1-800-900-2649**

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Canadian Federal EA Process

Draft Environmental Assessment Guidelines

- Describes the basis for the conduct of the federal EA, and for focusing the assessment on relevant issues and concerns
- Similar to provincial environmental assessment Terms of Reference document
- Posted on the website of the Canadian Environmental Assessment Registry: **www.ceaa-acee.tc.ca**
- Also posted on DRIC website: **www.PartnershipBorderStudy.com**
- Hard copies available for viewing at PIOH
- Notification provided in newspaper notices for PIOH
- Thirty (30) day public review period ends December 22, 2006

Federal Public Participation Plan

- A plan for providing members of the public with an opportunity to participate in the federal environmental screening being undertaken by Transport Canada (TC)
- Posted on Partnership website **www.PartnershipBorderStudy.com**
- Hard copies available for viewing at PIOH
- Notification provided in newspaper notices for PIOH

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Air Monitoring

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Ambient Air Monitoring

- Modeling of future conditions in Progress for access routes and plazas
- Two air quality monitoring stations installed on HCR/Hwy 3 Corridor

Opposite SCC Entrance

Windsor Health Lab

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Ambient Air Monitoring

Observations (October 2006)

- Measured NOx and $PM_{2.5}$ concentrations are within the expected range
- Volatile Organic Compounds (VOC's) are well below applicable provincial standards

Preliminary Results (October 2006) - NO_X

- Measured NO_X concentrations are within the expected range
- Concentrations at both stations are slightly elevated in comparison to MOE monitoring stations.
- No observed exceedances of the 1-hour or 24-hour MOE Ambient Air Quality Criteria (AAQC) for NO_X (400 ug/m^3 and 200 ug/m^3 respectively)
- NO_X concentrations were generally elevated during the morning and afternoon rush hour periods
- Measured concentrations are slightly higher at the OPHL site in comparison to the SCC site

Observations (October 2006) - $PM_{2.5}$

- Measured $PM_{2.5}$ concentrations are within the expected range
- Concentrations at both stations are slightly elevated in comparison to MOE monitoring stations.
- 7 observed exceedances of the CCME Canada Wide Standard (CWS) of 30 ug/m^3 at the OPHL site.
- Average concentration is slightly higher at the OPHL site in comparison to the SCC site
- There were no observed exceedances of the CWS at the SCC site

Ambient Air Monitoring

Preliminary Results - VOCs

Pollutant	Monitoring Station	Maximum Concentration (ug/m^3)	MOE AAQC (ug/m^3)
Formaldehyde	OPHL	1.6	65
	SCC	2.0	
Acetaldehyde	OPHL	1.2	500
	SCC	1.2	
Acrolein	OPHL	1.2	24
	SCC	1.1	
Benzene	OPHL	0.7	NS
	SCC	1.4	

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