

DETROIT RIVER INTERNATIONAL CROSSING STUDY

Presentation to Windsor Rotary Club

October 23, 2006

1. Overview
2. Progress Update
 - Technical Work Program
 - Environmental Work Program
 - Consultation
3. Next Steps

Canada

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

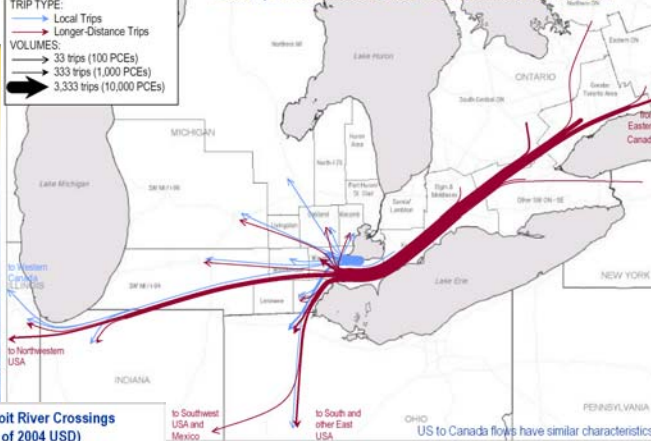
Ontario

MDOT
Michigan Department of Transportation

Windsor-Detroit: A Vital Link

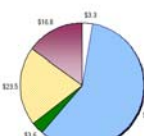
LEGEND:
TRIP TYPE:
→ Local Trips
→ Longer-Distance Trips
VOLUMES:
→ 33 trips (100 PCEs)
→ 333 trips (1,000 PCEs)
→ 3,333 trips (10,000 PCEs)

Weekday Detroit-Windsor Cross-Border Commercial Flows, 2000



Estimate of 2004 and 2005 Trade at Detroit River Crossings by Commodity All Modes (Billions of 2004 USD)

□ Agriculture □ Auto & Metal ■ Forest □ Machinery & Equipment ■ Other



2004 Canada/U.S.



2005 Canada/U.S.

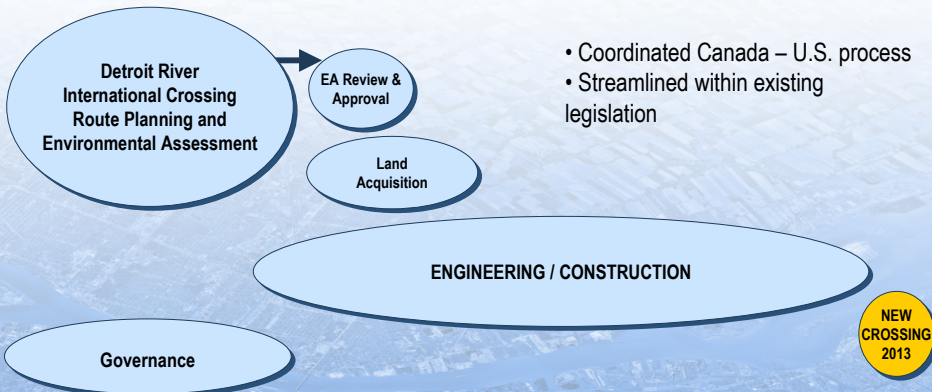
To provide for the safe, efficient and secure movement of people and goods across the Canadian-U.S. border in the Detroit River area to support the economies of Ontario, Michigan, Canada and the U.S.

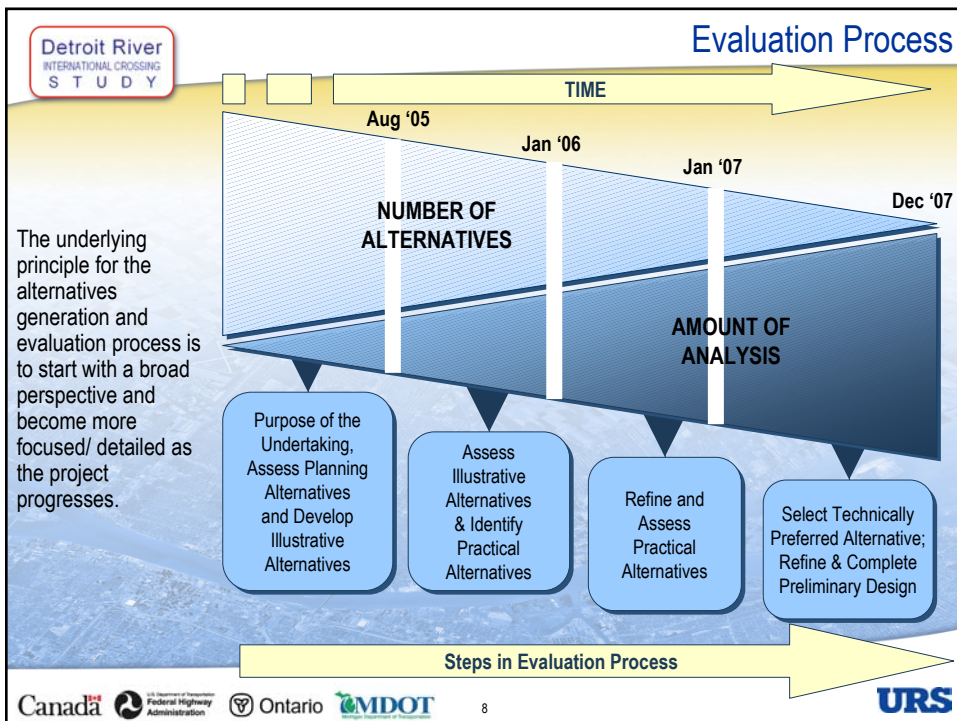
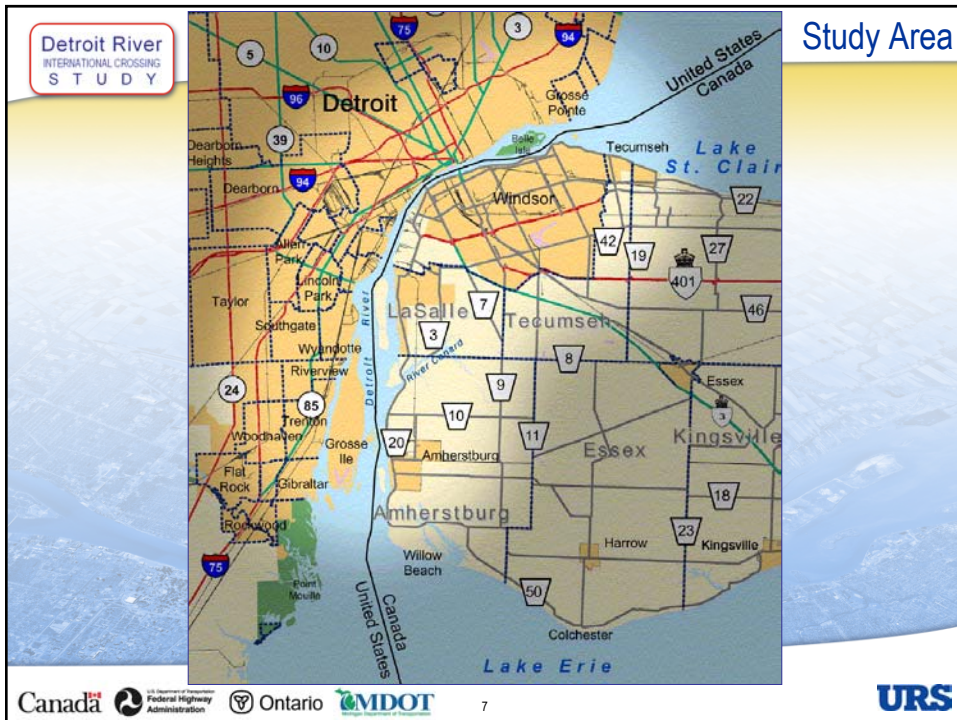
In order to meet the purpose, this study must address the following regional transportation and mobility needs:

- 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.

2005	2006	2007	2008	2009	2010	2011	2012	2013
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- ✓ Identify Study Area Features, Opportunities & Constraints
- ✓ Developed Initial Set of Crossing Alternatives, Plaza Locations & Connecting Routes in Canada and the U.S.
- ✓ Define Area of Continued Analysis
- ✓ Present Specific Crossing, Plaza and Access Road Options

Present Results of Social, Economic, Environmental and Engineering Assessments

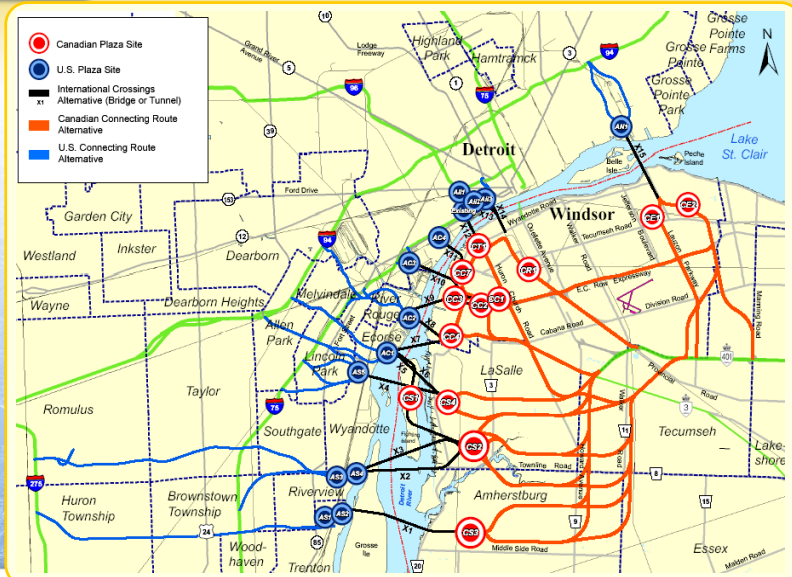
Identify Preferred Crossing Location, Plaza Locations & Connecting Routes in Canada and the U.S.

Finalize Engineering and Mitigation Measures

Document Study and Submit for Approvals

Detroit River
INTERNATIONAL CROSSING
S T U D Y

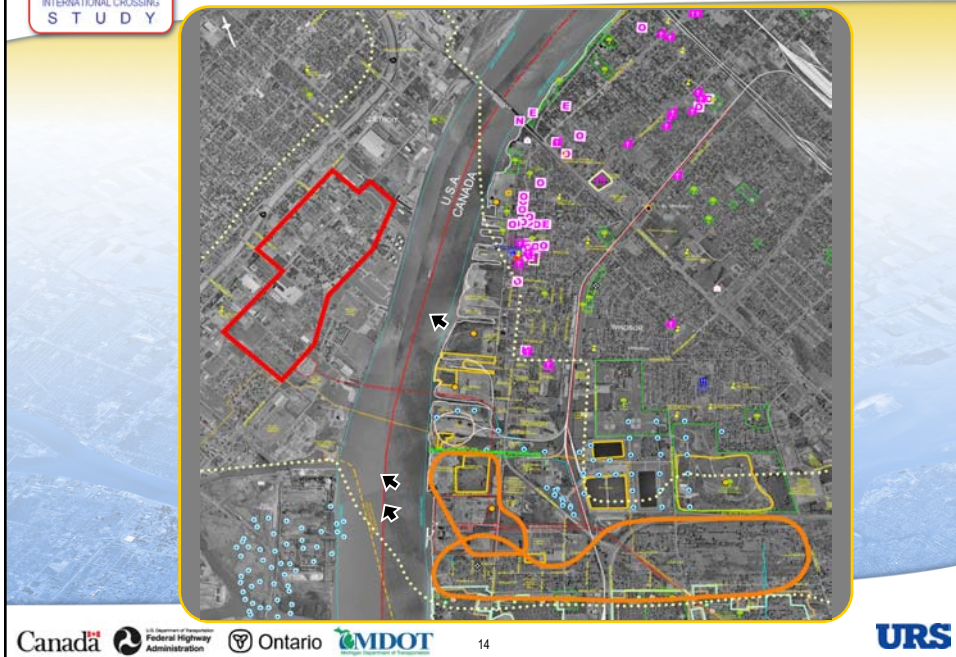
Illustrative Alternatives

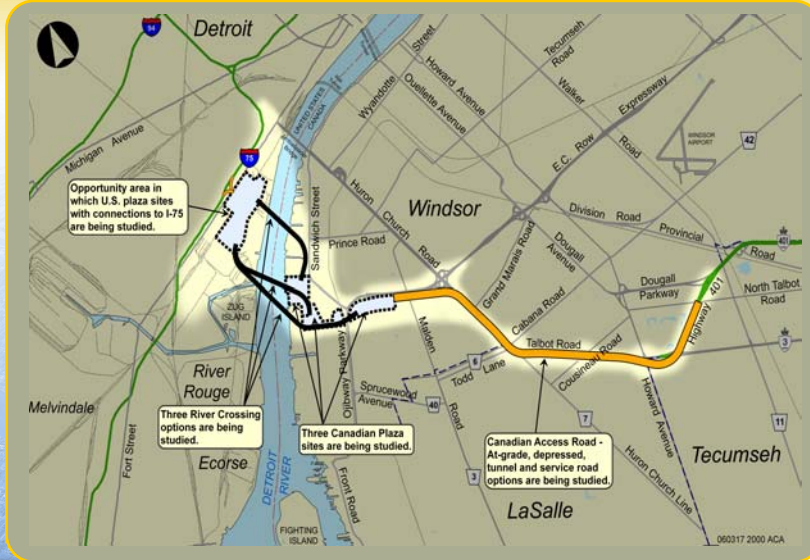


- Incorporated input from municipalities and communities, stakeholders and government agencies, First Nations and the general public
- Considered in the context of the national and international significance of the Detroit River crossing
- Replicable and defensible decision-making
- Common set of criteria used in both countries for all alternatives
- Two evaluation methods
- Traceable and open
- Bi-national

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**





1a

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





2b

Six-lane freeway depressed, parallel to Huron Church/Highway 3.

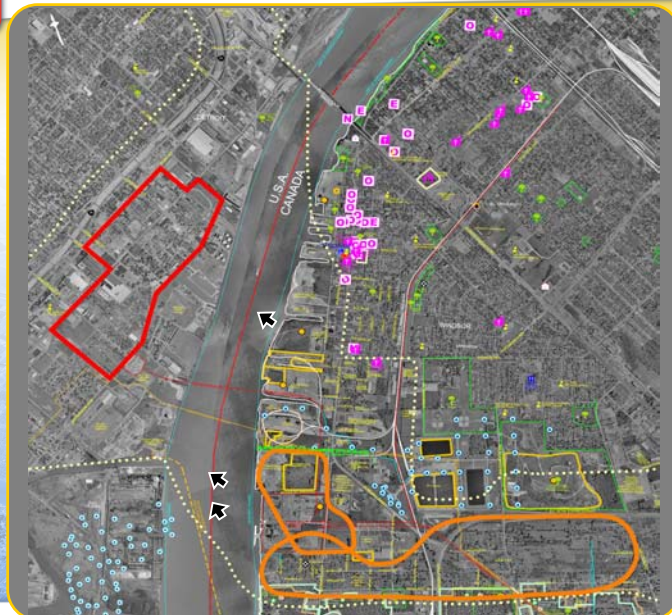


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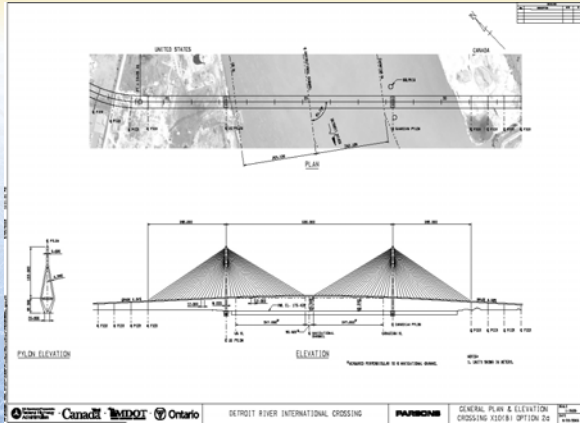
Cut and cover tunnel below rebuilt Huron Church Road/Highway 3 Corridor.

Technical Work Program - Crossings

Development of Plaza and Crossing Options



- 10 Conceptual Alternatives for 3 Crossing Locations
- Assessment being carried out with U.S. Project Team
- Report expected in November identifying short-list of practical options
- U.S. and Canadian Workshops in November to obtain public input into look of the new crossing



- 12 deep boreholes @500m depth
- Cross-borehole Seismic Tomography
- Commencing this month; completion early 2007
- Similar program in U.S.
- Results vetted through a Geotechnical Advisory Group of independent experts

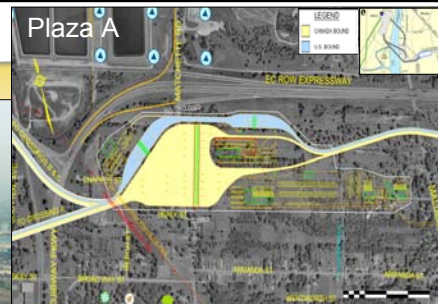


Technical Work Program - Plazas

Plaza A



Plaza A





Technical Work Program – Access Roads

At-Grade, Depressed and Tunnel are being studied.

- Tunneling is a means to mitigate some impacts, but tunneling also has impacts
- Advantages and disadvantages of at-grade, depressed and tunnel sections are being assessed for comparison
- Refinements have been made to access route alternatives presented at PIOH3 based on comments received through consultation program
- Combination alternatives are being developed

Bored Tunnels

- The layer of soft ground available for boring is generally 25 m to 30 m, which is not thick enough for a 3-lane bored tunnel.

Bored Tunnel Requirement:	Ground to top of tunnel	15 m
	- Tunnel	15 m
	- Bottom of tunnel to bedrock	5 m

- The new freeway would have sub-standard shoulders.
- Access/egress by ramps would be difficult because of tunnel depth:
 - Constructability concerns at tunnel portals
 - Risks associated with dewatering and groundwater
 - Risks with respect to stability

Conclusion: Bored tunnels are not considered practical.

Value Engineering Exercise for Access Road Alternatives

- Completed in mid-September by independent specialists
- Confirmed that a bored tunnel was not practical but a cut and cover tunnel is a practical alternative
- Project Team currently reviewing design refinement recommendations

✗ Naturally Ventilated Tunnels

- For tunnels between 150 to 200 meters in length can be ventilated naturally. **Not considered practical for Access Road alternatives.**

Natural Ventilation

✓ Mechanically Ventilated Tunnels

- Full Transverse Ventilation** – 6 km tunnel would require one, two or three ventilation buildings; Design issues include noise, large land requirements but provides pollutant dispersal. Examples include Detroit-Windsor Tunnel.

Full Transverse Ventilation

SUPPLY AIR DUCT

EXHAUST AIR DUCT

FAN

FAN

Scale of Ventilation Buildings



Potential Sites for Ventilation Buildings

Opposite St. Clair College

Ministry Owned Lands



HCR/Todd Lane

Potential Sites for Ventilation Building

Mitigation Measures: Access Roads



I-696, OAK PARK, MI



Additional Work Required	Details
Foundations	Additional Soil Testing along Corridor
Structural	Refine Overpass, Retaining Wall and Tunnel Design and Construction Methods
Systems Requirements (Tunnel)	Develop Concepts for Ventilation Buildings, EMS, etc.
Utilities	Relocation Strategies
Cost	Cost Estimate, including Operating Systems
Safety and Risk Analysis	Safety Review
Constructability	Assess
Air Quality and Ventilation	Complete Modeling and Analysis
Noise and Vibration	Complete Modeling and Analysis

Environmental Work Program

- 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



Social Impact Assessment:

- Surveyed households within ACA
- Focus group meeting of households in ACA scheduled for October 21
- Traffic and access impact assessment in progress

Noise and Vibration Impact Assessment:

- Modeling of future conditions in progress for access routes and plazas

Economic Impact Assessment

- Surveyed retail and industrial operations in ACA

Providing Project Team with an understanding of impacts to community features, character and cohesion

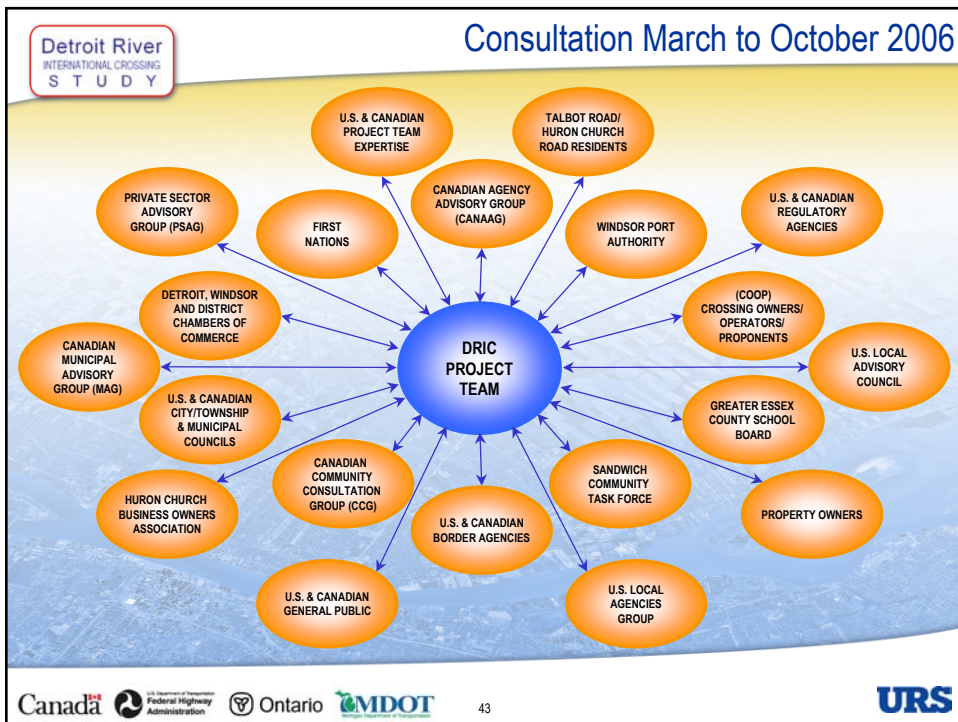
Archaeology and Heritage Impact Assessment:

- Archaeological field work in progress; no substantive finds to date
- Built heritage impact assessment underway

Natural Environment:

- Three-season field work completed; presence of endangered/at-risk species have been confirmed in ACA
- Detroit River in-water investigation was conducted earlier this month

Consultation



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Consultation

March 2006 (PIOH3) to Date:

- 22 Workshop, CCG, Community Group Meetings
- 13 Advisory Group Meetings
- 8 Other Interest Group Meetings
- 44 Meetings in the last 6 months
- *More than 140 meetings held since the study commenced*

Project Contact List: Over 1,500 Addresses

Mailing Area: 8,000+ Property Owners, Tenants and Businesses

Logos: Canada, U.S. Department of Transportation Federal Highway Administration, Ontario, MDOT, URS

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Context sensitive solutions (CSS) is a collaborative, interdisciplinary approach that involves all stakeholders to develop a transportation facility that fits its physical setting and preserves scenic, aesthetic, historic and environmental resources, while maintaining safety and mobility. CSS is an approach that considers the total context within which a transportation improvement project will exist.

- U.S. Federal Highways Administration

Access Roads and Plazas

- Workshops June 22 and 23; October 2 and 3
- Preference for natural Carolinian landscaping and finishes

International Crossing

- Workshops June 22 and 23; **November 2 (Detroit) and 15 (Windsor)**
- Preferred Themes – Friendship and History

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Workshops on International Crossing

- Opportunity to provide input on look (type, colour, lighting, etc.) of new crossing
- Nov 2 (Detroit); Nov 15 (Windsor)
- Drop-in format
- Notification includes direct mailings and news ads

PIOH #4 – Early December 2006

- Progress update on assessment of alternatives
- Displays of data collected and analysis completed to date
- Drop-in format
- 2 sessions
- Notification includes direct mailings and news ads

- Public oversight and the protection of the public interest
- Secure, efficient and well managed crossings
- Options being considered include:
 - Government ownership
 - Various forms of collaboration with the private sector
 - Creation of an authority

Ministry of Transportation

**Windsor Border Initiatives
Implementation Group**

949 McDougall Street, Suite 200, Windsor
Detroit.River@ontario.ca

Mr. Dave Wake
Manager, Planning
Tel. 519-873-4559

Mr. Roger Ward
Senior Project Manager
Tel. 519-873-4586

URS Canada Inc.

DRIC Project Office

2465 McDougall Street, Suite 100, Windsor
info@partnershipborderstudy.com

Mr. Murray Thompson
Project Manager
Tel. 905-882-4401

Mr. Len Kozachuk
Deputy Project Manager
Tel. 905-882-3540

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