Partnership of

Canada

U.S. Department of Transportation
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Canada-United States-Ontario-Michigan
Border Transportation Partnership

Detroit River International Crossing Environmental Assessment

Public Information Open House #4 Summary Report

January 2007

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Table of Contents

1.0 INTRODUCTION 1

2.0 PURPOSE 2

3.0 PUBLIC NOTIFICATION 2

4.0 ADVISORY GROUP MEETINGS 2

5.0 DISPLAY MATERIAL 3

6.0 ATTENDANCE AND COMMENTS 5

7.0 PIOH 4 WORKSHOP SIGN-UPS 13

APPENDIX A – NEWSPAPER ADVERTISEMENTS

APPENDIX B – ADVISORY GROUP MEETING NOTES

APPENDIX C – DISPLAYS / HANDOUT PACKAGES

1.0 Introduction

The Border Transportation Partnership representing the governments of Canada, the United States, Ontario, and Michigan is committed to working together to determine the long-term border crossing needs at the Windsor-Detroit Gateway. The Partnership is moving forward with the route planning and environmental studies to create additional crossing capacity. Through the Detroit River International Crossing Project, the Partnership will determine the location of a new crossing, with connections to freeways in Ontario and Michigan that meets the legislative requirements of both nations.

The Ontario Ministry of Transportation (MTO) is leading the Canadian work program in coordination with Transport Canada. URS Canada Inc. has been retained as part of the Study Team to assist in undertaking the route planning and environmental assessment in accordance with the Ontario Environmental Assessment Act (OEAA) and Canadian Environmental Assessment Act (CEAA).

Communities on both sides of the river are eager for a border transportation solution. Governments at all levels are committed to completing the work as rapidly as laws and regulations permit, while ensuring interested and affected parties have adequate opportunities to have their perspectives considered. Public input is an essential part of this project. The Detroit River International Crossing Project is a unique opportunity for all interested persons and organizations to contribute to the planning of a major transportation undertaking. The Study Team will listen to the ideas and perspectives of the community.

In late 2005, the Study Team identified the Area of Continued Analysis (ACA) for further study. Based on ongoing consultation with agencies and the public, locations for a river crossing, plaza and access routes were developed, including potential locations for interchanges, local access considerations (including service road options) and cross-sectional alternatives for at-grade, depressed and tunnelled roadways. The fourth round of Public Information Open House (PIOH) meetings were held to present to the public preliminary analysis of the practical alternatives. The Study Team will assess the alternatives to determine the single technically and environmentally preferred alternative by the end of 2007.

The PIOH meetings were held as follows:

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

The format for the PIOHs was informal drop-in sessions with displays showing the initial analysis completed for the Seven Major Evaluation Factors: Air Quality, Community and Neighbourhood Impacts, Land Use Impacts, Cultural Resources Impacts, Natural Resources Impacts, Regional Mobility, and Cost and Constructability. Technical experts in each of the seven evaluation factor categories were available to answer questions and receive feedback from the public. In addition, results from the Context Sensitive Solutions workshops held in June and October 2006 and the Value Engineering workshops held in September 2006 were presented. Visualizations of what each crossing would look like from various vantage points in Windsor were also on display.

This report summarizes the notification and display material prepared for the PIOH meetings, pre-PIOH activities, attendance, and the public input and comments provided at the Open House sessions.

2.0 Purpose

The purpose of the PIOHs was to receive comments from the public on the analysis completed to date. Specifically, the public was invited to:

- Comment on the analysis conducted on the Practical Alternatives;
- Provide feedback on the results of the analysis of the crossing, plaza and access road alternatives; and,
- Comment on the analysis and work and methods used to carry out the work conducted thus far.

At the PIOH sessions, members of the public were invited to sign up for the project mailing list. As well, sign-up forms were available to register for PIOH 4 Workshop sessions to be held in January 2007.

3.0 Public Notification

Prior to the PIOH meetings, the following notification activities were carried out to make details of the meetings known to the public:

1. An Ontario Government Notice (see Appendix A) was placed in the following newspapers on the specified dates:

   Windsor Star ..... Monday November 20 and Saturday November 25, 2006
   Amherstburg Echo ..... Tuesday November 21, 2006
   Harrow News ..... Tuesday November 21, 2006
   Kingsville Reporter ..... Tuesday November 21, 2006
   Leamington Post & Shopper ..... Wednesday November 22, 2006
   Essex Free Press ..... Wednesday November 22, 2006
   LaSalle Post ..... Wednesday November 22 and Friday December 1, 2006
   Le Rempart ..... Wednesday November 22, 2006

2. PIOH meeting dates and locations were announced at consultation events in advance of the PIOHs.

3. Notices were mailed directly to those on the Study Team's general public mailing list as well as project Advisory Group contact lists.

4. Notices were mailed directly to property owners as identified on property assessment roll plans supplied by municipalities within the Area of Continued Analysis.

5. Details of the PIOHs were posted on the project website at www.partnershipborderstudy.com.

6. Public Service Announcements were placed on local community electronic billboards and websites.

4.0 Advisory Group Meetings

Meetings were held in Windsor with the DRIC Advisory Groups with the purpose of presenting the Practical Alternatives. The meetings were held as follows:

Canadian Agency Advisory Group ..... December 6, 2006
Private Sector Advisory Group ..... December 8, 2006
Municipal Advisory Group ..... November 29, 2006

Notes of these meetings are provided in Appendix B.

5.0 Display Material

The following display material was presented at the Public Information Open House meetings (see Appendix C):

- The Study Team;
- Purpose of the DRIC Study;
- Chronology of DRIC;
- Components of a New Crossing;
- Public Information Open House #3;
- Consultation March to October 2006;
- Practical Alternatives;
- Summary of Analysis to Date;
- Crossing A Plaza A—U.S and Canadian Preliminary Analysis Summary;
- Crossing B Plaza A---U.S. and Canadian Preliminary Analysis Summary;
- Crossing B Plaza B1---U.S. and Canadian Preliminary Analysis Summary;
- Crossing C (via Brighton Beach) Plaza A—U.S. and Canadian Preliminary Analysis Summary;
- Crossing C (via Ojibway Parkway) Plaza A—U.S. and Canadian Preliminary Analysis Summary;
- Crossing C Plaza B—U.S. and Canadian Preliminary Analysis Summary;
- Crossing C Plaza C—U.S. and Canadian Preliminary Analysis Summary;
- U.S. Plaza Alternatives, #1 and #2;
- U.S. Plaza Alternatives, #3 and #4;
- U.S. Plaza Alternatives, #5 and #6;
- U.S. Plaza Alternatives, #7 and #8;
- U.S. Plaza Alternatives, #9 and #10;
- U.S. Plaza Alternatives, #11 and #12;
- U.S. Plaza Alternative #13;
- Route Summary;
- Air Quality Assessment (six boards);
- Community-Noise;
- Receptor Location for Noise Modeling;
- Sample Noise Model for Plaza B1-Crossing C;
- What is Traffic Noise & How is it Studied;
- Community-Vibration Monitoring Location Map;
- Community-Social Impact Assessment Map;
- Community-Economics;
- Land Use Map-Plaza Area;

- Land Use Map-Huron Church Road to Todd Lane;
- Land Use Map-Highway 3 to Howard Avenue;
- Land Use-Summary of Preliminary Land Use Analysis;
- Cultural-Archaeological Stage 1 Archaeological Assessment Map;
- Cultural-Archaeological Table of Identified Sites;
- Cultural-Archaeological Stage 2 Archaeological Assessment Map;
- Cultural-Built Heritage-Map of Cultural Heritage Features;
- Cultural-Built Heritage Table of Identified Built Heritage Resources in the ACA;
- Natural Environment-Vegetation Communities Map;
- Natural Environment-Watercourses and Fish Sampling Stations Map;
- Natural Environment-Wildlife Habitat and Point-Count Survey Stations;
- Regional Mobility Existing Conditions;
- Regional Mobility Future Conditions;
- Cost & Constructability;
- Construction Staging;
- Tunneling;
- Tunneling Ventilation;
- Foundations;
- Foundation Investigation Program Map;
- CSS Consultation Activities;
- Context Sensitive Solutions-June 2006;
- Context Sensitive Solutions-October 2006;
- Context Sensitive Solutions Bridges-November 2006;
- Value Engineering Workshop on Access Road Alternatives;
- What's Next?;
- Evaluation Process;
- Evaluation Process Con't;
- Evaluation Methods;
- Property Acquisition;
- PIOH 4 Workshop Registration;
- Canadian Study Team;
- Visualization Crossing A;
- Visualization Crossing B (suspension);
- Visualization Crossing B (cable-stayed);
- Visualization Crossing C (suspension); and
- Visualization Crossing C (cable-stayed).

In addition, video simulations of the five access road alternatives (1A, 1B, 2A, 2B and 3) were presented which depicted what the access road would look like in the future along the entire length of the corridor.

The attendees were provided with a handout package that contained a copy of the presentation boards (see Appendix C) and fact sheets. Attendees were also given a CD of the alternatives. Project Team Contact Sheets and comment sheets were made available to all attendees. Sign-up sheets for the Workshop sessions were available at the meetings.

6.0 Attendance and Comments

A total of **510** members of the public chose to sign the visitor's register for the two PIOH meetings (see table below).

In addition to verbal comments, the Study Team encouraged visitors to express in writing, all comments they had regarding the information presented. In total, written comment sheets were submitted at the PIOHs. In addition, **7** comment sheets were received via mail or fax and **3** comment sheets were submitted via e-mail or the Study Team website.

A breakdown of attendance and comments by meeting date/venue is provided as follows:

Date / Venue	Total Attendance	Written Comment Sheets Received
December 6, 2006– Windsor, Ontario	334	36
December 7, 2006 – Oldcastle, Ontario	176	
Total Comments received via fax / mail		7
Total Comments received via e-mail		3
Total	**510**	**46**

Attendees were encouraged to provide input to a number of questions on the comment sheets. The following lists the questions asked and written responses received.

***Question 1* – Please provide your comments on the preliminary analysis completed for the Seven Major Evaluation Factors listed in the table below. Consider the following:**

- **Do you have any concerns relating to the results of the analysis of the crossing, plaza, or access road alternatives?**
- **Are there any other issues that you feel should be addressed?**
- **Do you have any comments concerning the analysis work and the methods used to carry out the work?**

Some of the main comments made by participants when answering Question 1 included:

Changes in Air Quality	No. of Responses
• Air quality should be the primary consideration on this project	1
• The smell and soot that is dealt with regularly is pretty bad. Crossing C would be problem for Sandwich residents; Crossings A and B not so bad	1
• Thought the idea of a new bridge would include new access roads; not continuing the noise and pollution experienced on Huron Church Road	1

Changes in Air Quality	No. of Responses
• The tunnel options have some appeal but the quality of air pollutants would be the same for the at-grade options since each option would be carrying the same number of vehicles	1
• Moving roadway further west and having it elevated will help dilute exhausts	1
• Find it hard to believe that current conditions are acceptable	1
• Hope that air quality impacts will be easy to understand	1
• Did not mention pending improvements in diesel engine emission standards	1
• Air quality is not the best now; will this project be an improvement?	1
• Tunnel with ventilation would provide the best air quality and less noise and be least disruptive after construction.	1
• Looks as if you are doing what needs to be done to measure air quality.	1
• The data seems to be geared towards stating little or no difference of impact on the quality of air no matter what the alternative is, except tunneling.	1
• Government initiatives to reduce vehicle emissions will improve air quality	1
• Air quality should improve	1
• Disagree with air quality results; with modern day scrubbers discharged air would be many times over improved compared to present conditions	1
• Plaza A would negatively affect air quality of Malden Park as the prevailing wind is southeast in the summer	1
• Do not believe air quality will vary with any of the above ground alternatives; tunneling may produce higher emissions due to NOx; heat of the vehicles must also be considered in these emissions	1
• Simulations consider possible improvements in technology that would result in fewer emission of pollutants; this assumption might not reflect real conditions in the future	1
• Would like to see the simulations for 10, 20, 35 years from now reflect current truck emission levels for the various alternatives	1
• Evaluations target levels for specific pollutants under “levels of concern” instead of the best (lowest) level possible	1
• Air quality cannot be properly determined until proposed construction is completed.	1

Protection of Community and Neighbourhood Characteristics	No. of Responses
• Crossing C is too close to Sandwich; it will affect the west end of the town negatively	2
• Crossings A and B are ok, but Crossing A Plaza A negatively impacts Matchette Road; Crossing B is a decent compromise	1
• Access to Huron Church Road or the new highway will impact community	1
• Prefer to have most of the roadway below grade, but not all of it; need visibility to increase tourists to stop and visit the city	1
• Plaza C and Crossing C has the fewest community impacts	1
• A plaza with 100-150 trucks would increase pollution in an already sensitive area	1
• Fewer families and homes displaced with a tunnel	1
• Dirt, dust, noise, and vibration not acceptable or tolerable	1
• Study a below grade highway between North Talbot Road and Highway 3 interchange	1
• With predicted traffic increases, lack of space for natural barriers and high volume of adjacent homes, noise levels will become unacceptable; consider quiet road materials and noise barriers	1
• Amount of property to purchase is very high; very large impact to neighbours	1
• Noise, ugly sights and smells needs to be considered	1
• Plaza A – very high community impacts; too close to Armanda Street, Spring Garden Road, and Malden Road.	1
• Entire Mero Avenue should be closed; alternative brings the roads closer to the street	2
• Need improved noise barriers east of Howard Avenue	1
• Community relocation with Huron Church will be considerable and costly but necessary; ventilation buildings will have aesthetic and emission implications in the community.	1
• At grade alternatives will create a wider traffic “wall” separating both sides of Huron Church Road and Talbot Road	1
• Construction staging needs to be carefully planned	1
• Access to schools, public parks will be negatively impacted; maintain bicycle linkages	1
• Place interchange between Cabana/Todd Lane and Huron Church Road intersection; place an interchange at St. Clair College, do not place interchanges between Howard Avenue and E.C. Row Expressway.	1

Maintain Consistency with Existing and Planned Land Use	No. of Responses
• Land used for this project may infringe on parkland or other properties	1
• Use Brighton Beach area; roads which are never used impact almost no one by being closed	1
• Expansion of Huron Church Road will bring highway much closer to several residential neighbourhoods and affect businesses	1
• Take enough land to allow for future expansions beyond 2035; surplus lands can be landscaped in the interim	1
• Route avoids the Ojibway Prairie area	1
• Less land needed for a tunnel with the local access road on top of the tunnel	1
• Impacts to the Royal Canadian Legion not acceptable	1
• Minimize land use impacts	1
• Expropriation of properties along Huron Church Road and south side of EC Row will take years to complete and will add to the overall cost of this project.	1
• Concerned about being the only home left on the street; would negatively impact property value	1
• Project takes up a lot of land; put the ramps as close to the new freeway as possible.	1
• If tunneled alternative were chosen, create a mountain/ski slope for the community with excess soil	1

Protect Cultural Resources	No. of Responses
• Concerned that historic area of Windsor (Sandwich) will have a new crossing located adjacent to it	1
• Cultural resource impacts cannot be avoided	1
• Impacts due to Plaza C are very high	2

Protect the Natural Environment	No. of Responses
• There will be some impacts; not seen as too bad	1
• Rather disturb natural environment then disturb neighbourhoods	1
• Plaza locations for A and B will impact the natural environment; further erosion of these areas will be detrimental; Plaza C and Crossing C should be used	1

Protect the Natural Environment	No. of Responses
• Natural Resource impacts should be minimized	1
• Protect natural habitats for snakes and fish; do not destroy trees; concerned that endangered and rare species are being threatened.	3
• Plans encroach upon very environmentally significant areas, Ojibway, Spring Garden ANSI, Black Oak; buffer zone will be gone; DRTP adds trail system back	1
• Plaza A would destroy many plants and animals; tree coverage is very important	2
• Once construction is completed, the areas should be restored to the natural environment as soon as possible	1
• Concerned with ventilation building location in proximity to Oakwood Bush	1

Improve Regional Mobility	No. of Responses
• Plaza B1 impacts less important commuter roads; plaza impacts Matchette Road which is a key commuter road	1
• Alternatives 1A and 1B and 2A and 2B would divide the city and provide only limited road access at designated crossings	1
• Alternative 3 allows for more at grade crossings and would be less disruptive to neighbourhoods	1
• No indication of how the U.S. side will connect to I-75	1
• Truck plaza on Matchette will force traffic to Malden Road and Sandwich Street; improve Malden Road to deal with this increase.	1
• All the plans help to reduce truck traffic; maintain access to South Windsor arena.	1
• New route (whichever is chosen) will result in removing heavy traffic on city streets; traffic will move more easier in West Windsor	1
• How will slow traffic be avoided during construction	1
• Construction of the border crossing, access roads for any of the alternatives will cause severe obstructions to the flow of traffic (international and local) through Windsor; in the interest of regional mobility, a crossing outside the city should be considered	
• Depressed roadway or tunnel options should have crossover at Montgomery Street.	

Cost and Constructability	No. of Responses
• Cost must be obtained from provincial and federal levels; Windsor residents should not be assessed	2
• Sections should be tunneled to protect neighbourhoods but many areas can be at grade to lower cost	1
• Include cost of maintaining plaza and providing services on plaza (customs officers, custom brokers)	1
• Costs are enormous; DRTP makes most sense	2
• Tunnelling costs are much higher than the other options; partial tunnel in residential area would reduce this cost considerably.	2
• Don't spend billions of dollars on a tunnel; it would cost more than the bridge; no one wants to pay; Huron Church Road would be useless until construction is complete	1
• DRTP is much cheaper	1
• Tunnel would be the most expensive but it would be the best choice.	1
• Huge cost to taxpayers when cheaper and privately funded options are available	1
• The estimated cost for the project will not be the final cost; cost overruns may occur and will require both U.S. and Canadian taxpayers to contribute	1
• Cost of tunnelling is prohibitive as compared to the depressed roadway alternatives; funding comes from taxpayers.	1
• Tunneling is not ideal due to poor soil conditions in this area; cost will continue to increase if the project is delayed much longer.	1
• Concerned with the impact of a third crossing on the cost of tolls at other crossings.	1
• Customs and immigration belong on Highway 401	1

Question 2 – Suggest refinements and improvements to the crossing, plaza or access road alternatives.

The following table summarizes the offered written comments received in response to Question 2:

Comment	No. of Responses
• Combine customs and immigration plaza so that only one exists on one side of the border	1
• Place bridge in Brighton Beach area; away from Sandwich Towne	1
• Keep plazas away from natural and residential areas; access road should be constructed with minimal impact to natural environment	1
• Install entrance ramps off Malden Road to EC Row Expressway	1

Comment	No. of Responses
• Analyze alternatives for pedestrian access to land bridges over the highway; analyze proposed uses and size land bridges accordingly	1
• Include land bridges for Alternative 1B and 2B	1
• Consider Dominion/Campbell as an alternative route during construction; keep Matchette Road open	1
• Access road should be cut and cover between Cabana and Huron Line and EC Row and Huron Line	1
• Provide a buffer between service road and property line around Bellewood Estates area	1
• Tunnel near residential areas; cover the depressed areas with landscaping	1
• Show a combination option for the access road alternatives	1
• Maintain bike trails between Malden Park, Spring Garden and Turkey Creek	2
• Construct the freeway from Huron Church/Spring Garden Road to Plaza B1 as a raised road or skyway	1
• Place a noise barrier in the Southwood Lakes area.	1
• Provide more access to the Spring Garden neighbourhoods; install noise barriers	1
• Elevate the highway along Highway 3 and cut across part of Ojibway Prairie as outlined in the Schwartz Report; may be much less disruptive to homes and businesses	1
• Area between North Talbot Road and Highway 3 interchange should be depressed to help mitigate noise and vibration	1
• Depressed roadway seems reasonable compromise	1
• At grade has too many noise/pollution impacts	1
• Cut and cover all the way is an unreasonable expense	1
• Provide pedestrian access across depressed sections	1
• Costs shown for tunneling, at grade and depressed show a great difference	1
• Tunneling is not the best option for businesses	1
• Tunnel trucks to twinned Ambassador Bridge	1
• New freeway should be for trucks only	2
• Bridge crossing proposal is redundant with the twinning of Ambassador Bridge and DRTP	3
• Service road will have high volumes of traffic	1

Comment	No. of Responses
• If road is at grade; try a depressed crossing at Grand Marais instead of one over the highway	1

Question 3 – General Comments:

The following table summarizes the offered written comments received in response to Question 3:

Comment	No. of Responses
• Spring Garden ANSI should be sacrificed instead of homes near Grand Marais Road and Spring Garden Road.	1
• Consider trapping and temporarily relocating wildlife in the area during construction; consider transplanting vegetation during construction.	1
• Please consider keeping community linkages intact; especially bicycle routes and connections to parks and other recreation areas.	1
• Plazas A and B are too close to Black Oak and Malden Park and impact natural areas negatively	1
• Access route should be constructed with minimal impacts to the Spring Garden Area	1
• Tunneling is a good idea; but the construction and cost would probably prohibit it	1
• Tunnel as much of the route as you can; if not possible, depress the freeway	1
• Concerned with cost of project for the next 40-50 years	1
• Consider emergency procedures during a hazardous materials incident within the proposed tunnel; consider emergency access to/within a tunnel.	1
• Consider installing gates on off-ramps to allow for the re-routing of traffic in emergencies	1
• Provide information regarding ventilation buildings, emergency backup systems for lighting/power to ventilation buildings during power outages; noise levels during normal operations and emergency situations; snow removal for depressed alternatives	1
• Include reconstruction of existing Huron Church Road/Talbot Road intersection; include new pavement, curbs, drainage and sidewalks	1
• Access route should be cut and cover between Cabana Road and Huron Church Road and E.C. Row Expressway and Huron Church Road	1
• Concerned with vibration impacts to nearby residences during construction and after construction with traffic located closer to homes	1
• Videos of Alternatives 1A, 1B, 2A, and 2B show impacts from non-tunnel options; therefore tunnel	1

Comment	No. of Responses
• Cost of tunnel is outrageous; City of Windsor residents deserve the tunneling option no matter the cost	1
• Noise barriers should be put up before construction begins to help mitigate construction-related noise	1
• Reconsider the DRTP	1
• The video depictions help visualize what the alternatives will look like	1
• Please fast track this project to get it done quickly	1
• Study Team has done a terrific job siting the connector roads taking into consideration the sensitivity of all variables	1
• New crossing should be publicly owned; not privately owned	1
• This type of project should have been done years ago	1
• PIOH 4 was very professional and informative	1
• Place a new crossing in Amherstburg	1
• Handouts, videos and exhibits are particularly good this time	1
• Concerned that the tolls at the Ambassador Bridge and Detroit-Windsor tunnel will be impacted	1
• Concerned about decreased property values	1
• Improve pedestrian access on land bridges	1
• Plaza C and Crossing C are reasonable because it is the shortest crossing and is located in an industrial area	1
• Consider installing noise barriers before construction begins	1
• Consider expanding the mailing to SunValley and Whitney neighbourhoods	1
• In instances where only one house is proposed to remain on a street with a particular alternative, take all the homes on the street; do not leave one	1

7.0 PIOH 4 Workshop Sign-ups

At the PIOH sessions, the public was invited to register for workshops to be held January 9 and 10, 2007 to discuss any aspect of the project they wished to discuss with the Study Team. In total, 35 individuals signed up to attend both of the workshops.

APPENDIX A -
Newspaper Advertisements

DETROIT RIVER INTERNATIONAL CROSSING STUDY
NOTICE OF PUBLIC INFORMATION OPEN HOUSE MEETINGS
PRELIMINARY ANALYSIS OF PRACTICAL ALTERNATIVES
DECEMBER 6TH & 7TH, 2006

You are invited!

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

Get involved **Get the facts** **Visit the Open Houses**

Find out all the latest information on this important study including: the preliminary analysis of the practical alternatives; study overview, evaluation process and methods; and the results of previous Open Houses and Context Sensitive Solutions Workshops.

The Ontario Ministry of Transportation (MTO), in coordination with Transport Canada, is leading the Canadian Environmental Assessment study and has retained URS Canada Inc. to assist in this undertaking.

The Detroit River International Crossing (DRIC) study is a bi-national planning study that will lead to the identification of a single technically and environmentally preferred alternative for access roads, inspection plazas and a new river crossing in 2007. The DRIC study is being conducted in accordance with the requirements of the *Ontario Environmental Assessment Act* (OEAA) and the *Canadian Environmental Assessment Act* (CEAA) in Canada and the *U.S. National Environmental Policy Act* (NEPA) in the United States.

Since the Open Houses in March 2006, the study team has continued to consult with the public and agencies, refined the alternatives, collected necessary technical data and analyzed potential impacts of these alternatives. The findings will be presented at the December Open Houses. The study team will continue to collect data and conduct studies and evaluate the alternatives and present a single technically and environmentally preferred alternative in 2007.

Additional Information displays:

- Initial analysis completed for the Seven Major Evaluation Factors: Air Quality, Community and Neighbourhood Impacts, Land Use Impacts, Cultural Resources Impacts, Natural Resources Impacts, Regional Mobility, and Cost and Constructability
- The results of Value Engineering study
- Opportunities for public comment and involvement
- Next Steps

Technical experts will be available at the Open Houses to answer your questions and receive feedback. Your comments will become a part of the final study report and will help the study team to identify the single preferred alternative.

The federal Draft EA Guidelines and Public Consultation Plan will also be provided for public review. Members of the public are invited to provide comments to the study team. Draft copies will be available for viewing and the study team will answer questions. Information on the federal environmental assessment process is also available on the following web site: http://www.ceaa.gc.ca.

COMMENTS

Information collected at these Open Houses will be used in accordance with the Freedom of Information and Protection of Privacy Act and the Access to Information Act. With the exception of personal information, all comments become part of the public record. For further information, contact:

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For more information visit us at **www.partnershipborderstudy.com**

Traversée internationale de la rivière Détroit
Avis de journées d'information et d'accueil du public
Analyse préliminaire de solutions pratiques
Les 6 et 7 décembre 2006

Vous êtes invité ! Les journées d'information et d'accueil du public se tiendront comme suit :

Le mercredi 6 décembre 2006
de 14 h à 20 h
Holiday Inn Select Hotel, Ballroom
1855, rue Huron Church
Windsor, Ontario

Le jeudi 7 décembre 2006
de 14 h à 20 h
Ciociaro Club, Salon A & B
3745 North Talbot Road
Tecumseh, Ontario

Engagez-vous **Informez-vous** **Participez aux journées d'accueil**

Vous y apprendrez toutes les dernières informations sur cette importante étude, y compris : les résultats de l'analyse préliminaire des options praticables, un aperçu de l'étude, le processus et les méthodes d'évaluation, ainsi que les résultats des précédentes journées d'information et sessions de recherche de solutions contextuelles.

Le Ministère des Transports de l'Ontario (MTO) dirige l'évaluation environnementale canadienne en collaboration avec Transports Canada. Les services de la firme URS Canada Inc. ont été retenus pour assister les gouvernements dans cette tâche.

L'Étude sur la traversée internationale de la rivière Détroit est une étude de planification qui aboutira, en 2007, à l'identification de la meilleure solution, aux points de vue technique et environnemental, pour les voies d'accès, les aires d'inspection et la nouvelle traversée de la rivière. L'Étude sur la Traversée internationale de la rivière Détroit (ÉTIRD) est accomplie en vertu des exigences de la *Loi sur les évaluations environnementales de l'Ontario* (LÉEO) et de la *Loi canadienne sur l'évaluation environnementale* (LCÉE). Les études américaines répondent aux exigences NEPA (U.S. National Environmental Policy Act).

Depuis les journées d'information de mars 2006, l'équipe de recherche a poursuivi ses consultations du public et des agences, elle a affiné les options envisagées, elle a recueilli les données techniques nécessaires et elle a analysé les répercussions potentielles de ces options. Les résultats de ces activités seront présentés lors des journées d'information et d'accueil du public de décembre prochain. L'équipe de recherche continuera de recueillir des données, de réaliser des études et d'évaluer les différentes options afin de présenter en 2007 la meilleure solution aux points de vue technique et environnemental.

Les renseignements supplémentaires présentés seront :

- L'analyse initiale réalisée sur les sept principaux facteurs d'évaluation : qualité de l'air, répercussions sur la collectivité et le voisinage, répercussions sur l'utilisation des terres, répercussions sur les ressources culturelles, répercussions sur les ressources naturelles, mobilité régionale et coût et constructibilité
- Les résultats de l'analyse des coûts
- La possibilité pour le public de présenter ses commentaires et de s'engager
- Les prochaines étapes

Des experts techniques seront sur place pendant les journées d'information pour répondre à vos questions et écouter vos commentaires. Vos observations seront ajoutées au rapport final de l'étude et aideront l'équipe de recherche à déterminer la meilleure solution à adopter.

Le projet fédéral de lignes directrices visant l'évaluation environnementale ainsi que le programme de consultation du public seront également mis à la disposition de tous. Les membres du public sont invités à fournir leurs commentaires à l'équipe de recherche. Des copies du projet pourront être consultées sur place, et les membres de l'équipe seront là pour répondre à toutes les questions. Vous pouvez également consulter le site suivant pour plus de renseignements sur le processus d'évaluation environnementale du gouvernement fédéral : http://www.ceaa.gc.ca.

REMARQUES

L'usage qui sera fait des renseignements recueillis lors de ces journées d'information et d'accueil respectera les termes de la Loi sur l'accès à l'information et la protection de la vie privée ainsi que ceux de la Loi sur l'accès à l'information. À l'exception des renseignements personnels, la totalité des commentaires fournis sont intégrés au dossier public. Pour plus de renseignements, veuillez communiquer avec :

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Traversée internationale de la rivière Détroit
Bureau du projet à Windsor
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Windsor, Ontario
N8X 3N9
Tél. : 519 969-9696
Télécopieur : 519 969-5012

Consultez le **www.partnershipborderstudy.com** pour de plus amples renseignements.

APPENDIX B -
Advisory Group Meeting Notes

Detroit River International Crossing Study

Meeting Notes

Project:	Detroit River International Crossing	Meeting No.	CANAAG-005
Project No.	33015385	Date:	December 6, 2006
Location:	Hilton Hotel, Windsor, Ontario	Time:	10:00 a.m.
Purpose:	CANAAG Meeting		
Present:	See attached list		

Following introductions, URS presented an overview of results to date: ACA, Plazas, Crossings, and Route. *Please refer to attached presentation slide package.* SENES Consultants presented Air Quality Monitoring results. *Please refer to attached presentation slide package.* Discussion following the presentations included the following:

- Changes in Air Quality - Trucking companies are buying trucks today in order to get new trucks on the road before changes in fuels come into effect. How will this be accounted for in the modeling of air quality?

  Average fleet turnover rates are built into the modeling process. This is particularly relevant for the interim forecast years. By 2035, fleet turnover is expected to be complete.

- Has the modeling taken into account the impacts on the existing crossings?

  Yes, the existing crossings are both going to be there for the foreseeable future and are being considered in the modeling.

- There was an article recently in the local paper with complaints about businesses not being sufficiently informed about impacts. What is being done about business impacts?

  The Team has done an economic impact survey of businesses as part of the economic impact assessment. The article seemed to discuss how the property acquisition process should proceed as fast as possible. Individual owners are encouraged to contact MTO directly if they have questions or concerns.

- When will property acquisition start?

  Large-scale acquisition of property will start after approval of the Environmental Assessment. The Ministry does have a Hardship Policy for those property owners facing special circumstances. Each hardship situation is dealt with case by case. If any business owner has a property question they should speak to the MTO project team.

- Can the route portion fit been St Clair Woods ESA and the Alliance Church?

  In order to miss St. Clair Woods completely, the Alliance Church would have to be acquired. The Team is continuing to optimize the alignment and profile in this area. Future meetings with ERCA and the Church are being planned.

- How long will the two air monitoring stations installed for this study, operate?

  Air quality monitoring at the two temporary stations established as part of the DRIC Study will be undertaken for a 12-month period (October 2006 to September 2007).

- Will constraint mapping be available?

  Mapping of natural heritage resources has been prepared. The mapping will be made available to agencies as soon as possible.

- If a property owner wants to know the impacts to their specific property, whom do they contact?

  The property owner should contact MTO, who will have the property department contact the owner.

Dianne Damman presented an overview of the Draft Environmental Assessment Guidelines, Draft Public Participation Plan and Cumulative Effects Assessment Work Plan. *Please refer to attached presentation slide package.*

- Is the 'No Build' and comparison of other options part of the assessment of Cumulative Effects on the Canadian side of the boundary?

  Yes, the 'No Build' option is always part of the assessment work carried out.

- Canadian and U.S. Federal members of the partnership are in the process of bringing together a group of federal level agencies U.S. and Canadian, to address the bi-national nature of the project. The Canadian Cumulative Effects Work Plan will provide a starting point for the discussion of Trans-boundary issues.

Joe Corradino presented an overview of results to date on the U.S. side of the Detroit River. *Please refer to attached presentation slide package.*

Submitted by: Audrey Steele, LGL Limited

Distribution: Meeting Invitees & Participants
Project File

CANAAG Representatives:

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Project:	Detroit River International Crossing	Meeting No.	
Project No.	33015385	Date:	December 8, 2006
Location:	Holiday Inn Select, Windsor, Ontario	Time:	10:00 a.m.
Purpose:	Private Sector Advisory Group (PSAG) Meeting		
Present:	See attached list		

Dave Wake (MTO) and Tom Hanf (MDOT) welcomed participants. Following introductions, Len Kozachuk (URS Canada) provided an overview of the Canadian portion of the DRIC Study and Joe Corradino (The Corradino Group) provided an overview of the U.S. portion of the DRIC Study.

Discussion following the Canadian presentation included the following:

- Are the Canadian plazas sized large enough to accommodate traffic growth and the possibility of reverse customs?

  The plazas on the Canadian and U.S. sides have been developed based on future travel demands, and in consultation with the border agencies. On the Canadian side, the plaza sizes and layouts have been tested by Canada Border Services Agency (CBSA) and found to be adequate to meeting their needs beyond 2035. In the U.S., the plaza sizes are under review by staff at Department of Homeland Security Customs and Border Protection (CBP), but the size (150 acres) is generally felt to be adequate for the future demands at the new border crossing. It was noted that improvements are under construction at the Canadian and U.S. plazas at Ambassador Bridge. Between the new crossing/plazas and the improvements to the Ambassador Bridge, the Partnership and border agencies are satisfied that there will be adequate long-term capacity to process commercial traffic beyond the 2035 planning horizon for the DRIC Study.

  The plazas for the new crossing are being developed in accordance with the current 'inbound' inspection regime, but both the Canadian and U.S. plazas have made allowances for 'reverse' inspections to be conducted on each plaza, if this is warranted in future.

- Gerry Fedchun of APMA stated that, from the perspective of his organization, tunnels represent a risk to reliability for people using the border. He felt that a tunnel 'complicates' the road network in comparison to 'open' access road alternatives, increasing the likelihood of delays to cross-border movements.

- Has the Partnership begun any property acquisition for the new crossing?

  Dave Wake responded that MTO has not initiated any large-scale property acquisition at this time, as the preferred access road, plaza and crossing property requirements have not been defined. MTO is in discussions with some property owners that have approached the Ministry, where the owner's property is impacted by all alternatives (i.e. property is required regardless of which alternative is chosen) and the owner has been unable to sell the property to others due to the implications of the new crossing.

Discussion following the U.S. presentation included the following:

- A question was asked as to what processing rates were assumed in the future. CBP should not assume that processing rates will be greatly improved in future, as recent evidence suggests primary inspection processing rates per truck are increasing.

  Joe Corradino responded that processing rates are provided by CBP, that they would in all likelihood reflect a typical day, and that the modeling of traffic using CBP's own Border Wizard software will be used by CBP to determine the number of inspection lanes needed and plaza operation/circulation. The Ambassador Bridge also provides inspection capacity for commercial vehicles.

- What if the Ambassador Bridge is closed?

  We did not assume any long-term closures of the Ambassador Bridge; the new crossing and Ambassador Bridge will provide sufficient roadway and border processing capacity as well as choice in the transportation network. The Partnership is using 'high-side' estimates for sizing the plaza facilities. Staffing of the inspection booths is an issue that the Partnership has limited ability to influence; however, discussions are on-going now (7 years in advance of the scheduled opening) to provide the agencies responsible for staffing the border as much lead time as possible to arrange for sufficient resources.

  Joe Corradino also noted that U.S. General Services Administration is doing a master planning exercise for the Ambassador Bridge plaza; the future facility requirements will be better identified through that work.

- Anne Arquette of Border Gateways commented that the concerns expressed today about availability of inspection staff at both crossings suggest there is a great need to coordinate/manage the border crossings.

- Are there plans for I-75 improvements outside of those proposed as part of the new interchange connection to the new crossing?

  Joe Corradino responded that the DRIC Study would likely include planning for refurbishing/rebuilding I-75 somewhere north of the River Rouge bridge to the Ambassador Bridge Gateway Project as part of the new interchange for the new crossing. The Gateway Project itself includes improvements to I-75 and the I-75/I-96/I-94 interchange area. Plans for improvements to I-75 from Rouge River bridge southerly are not known at this time.

The meeting adjourned at 11:30 AM.

Submitted by: Len Kozachuk, URS Canada

Distribution: Meeting Invitees and Attendees

Detroit River International Crossing Study

Meeting Notes

Project:	Detroit River International Crossing	Meeting No.	
Project No.	33015385	Date:	November 29, 2006
Location:	Holiday Inn Windsor, LaSalle Room	Time:	1:30 p.m.
Purpose:	Meeting with Representatives of the Municipal Advisory Group (MAG)		

Present:			
	Larry Silani, Town of LaSalle	Penny Allen, GECDSB	Dave Wake, MTO
	Wes Hicks, City of Windsor	Murray Thompson, URS	Roger Ward, MTO
	Mark Galvin, City of Windsor	Len Kozachuk, URS	Joel Foster, MTO
	Brian Gregg, County of Essex	Audrey Steele, LGL	Kevin DeVos, MTO
	Jaime Garcia, County of Essex		

Action By

1. Notes from the September 5, 2006 MAG meeting had been previously circulated. Additional copies were made available to those present. There were no comments on the notes from the previous meeting.

2. Murray Thompson outlined the purpose of the meeting as being an overview of the analysis to date, which will be presented at the next round of PIOHs scheduled for December 6 and 7, 2006. Also, the meeting purpose will be to review the results of the Level 2 Traffic Analysis, which has been undertaken as part of the above analysis.

3. Len Kozachuk presented an overview of the analysis to date, as it relates to the 7 evaluation factors. Copies of the presentation material are appended to these notes. During the presentation, the following clarifications were provided:

   a. It was confirmed that the term "regional mobility" refers not only to international travel but also travel within the Windsor/Essex area.

   b. With respect to air quality, it was confirmed that the study is looking to understand whether impacts are better or worse than existing conditions and how the alternatives compare to each other. The study is looking well beyond simply whether the emissions meet provincial guidelines or not. It was also confirmed that traffic monitoring is being done to correlate with the air quality monitoring.

   c. It was confirmed that the Social Impact Analysis is looking at the qualitative impacts (i.e. the impacts on school uses and community uses crossing the corridor) as opposed to simply evaluating the economic impact of business loss or relocation. It was noted that the DRIC Team has spoken directly with specific groups along the corridor including the Heritage Park Alliance Church and the Legion.

   d. Municipal representatives inquired as to whether reports were available. The DRIC Team advised that summary information would be made available at the PIOHs. Reports have not yet been written, as the analysis is not complete. They will be made available as soon as possible, early in the New Year. Municipal representatives noted the importance of having documentation in their hands as early as possible in order to properly brief their elected representatives. Dave Wake indicated that the summary material would be made available to the MAG as soon as possible.

MTO/URS

4. Bruce Mori made a presentation on the Level 2 Traffic Analysis. Copies of the presentation material are appended to these notes. Copies of the Draft Level 2 Report were distributed to those present. During the presentation, the following clarifications were provided:

   a. It was confirmed that the Windsor/Essex model had been used to capture local and regional traffic movements within the Windsor/Essex area. During previous phases of the work, population and employment forecasts were extrapolated from the official plan numbers in consultation with Municipal representatives.

   b. It was confirmed that the Traffic Analysis is based on the 5 alternatives, as developed after the last round of PIOHs.

   c. It is still necessary to apply mitigation where there are operational problems and to consider the results of the Value Engineering Study and other refinements, as appropriate.

   d. It was noted that the model forecasts use of the new crossing as compared to the existing crossings based on overall travel time and congestion.

   e. The model also considers the effects of drawing some long distance trips from the Blue Water Bridge to the new crossing.

5. Copies of the final draft Value Engineering report were distributed to those present.

6. The next date for a meeting of the MAG will be in mid to late January. At that time, the DRIC Team would like to receive comments on the Level 2 Traffic Report and update the MAG regarding the results of the December PIOH. **ALL**

Submitted by: Murray Thompson, URS Canada
Copies To: Invitees & Attendees

APPENDIX C -
Displays / Handout Package

Detroit River
INTERNATIONAL CROSSING
S T U D Y

Welcome to the Fourth
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

December 6 and 7, 2006

>> Please Sign In <<

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

Canada | Federal Highway Administration | Ontario | MDOT | URS

Detroit River
INTERNATIONAL CROSSING
S T U D Y

The Border Transportation Partnership

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 a simple widening of an existing road to something as complex as building a new bridge.

The task of completing the Detroit River International Crossing Environmental Assessment 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.

Canada

U.S. Department of Transportation
Federal Highway Administration

Ontario

MDOT
Michigan Department of Transportation

Canada | Federal Highway Administration | Ontario | MDOT | URS

Detroit River INTERNATIONAL CROSSING STUDY

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.

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).*

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

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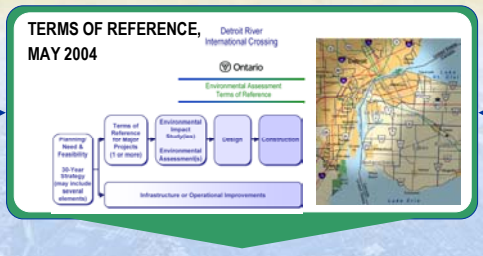
Detroit River INTERNATIONAL CROSSING STUDY

Chronology of DRIC

An Ontario Environmental Assessment Terms of Reference, outlining the process for the Detroit River International Study, was prepared by the Partnership.

TERMS OF REFERENCE, MAY 2004



Public Information Open House June 2003

Meetings with private sector and agencies

Meetings with Municipalities (Sarnia, Windsor, LaSalle, Essex County, Techumseh, Amherstburg

MOE Approval September 2004

Coordinate the U.S. and Canadian work programs.

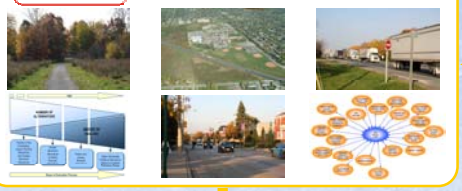
Investigate engineering, social, economic, cultural and natural environment.

Present assessment of impacts for public review.

Incorporate public and agency input.

Detroit River INTERNATIONAL CROSSING STUDY

ENVIRONMENTAL ASSESSMENT



6 Public Information Open Houses scheduled

Meetings with public, private sector and agencies.

Community Consultation Group.

Context Sensitive Solutions.

Meetings with Municipalities.

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Detroit River INTERNATIONAL CROSSING STUDY

Chronology of DRIC

Developed Illustrative 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.

Develop Initial Set of Crossing Alternatives, Plaza Locations & Connecting Routes in Canada and the U.S., Summer 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.

Identify Area of Continued Analysis, Summer – Fall 2005

Workshops.

Tours of Detroit River area.

Meetings with public, private sector municipalities and agencies.

Public Information Open House 2, November 2005.

Canada Federal Highway Administration Ontario MDOT URS

Detroit River INTERNATIONAL CROSSING STUDY

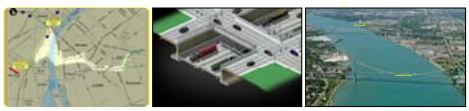
Chronology of DRIC

Specific options generated based on community objectives, public, agency, municipal and specialists input.

Identified sensitive community features

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

Specific Crossing, Plaza and Access Road Options, Fall 2005 to Spring 2006



Workshops to define specific options and explore Context Sensitive Solutions.

Tours of Detroit River area.

Meetings with public, private sector municipalities and agencies.

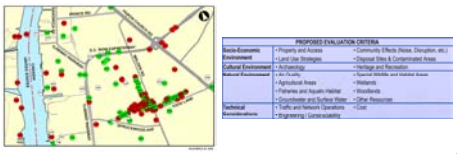
Public Information Open House 3, March 2006.

Study Team sought and gathered information on community features.

Established Guiding Principles in generating alternatives.

Presented Evaluation Factors

Identify Area Features and Opportunities, Spring – Summer 2006



Initial Public Outreach, April 2005

Meetings with public, private sector municipalities and agencies.

Established Community Consultation Group

Canada Federal Highway Administration Ontario MDOT URS

Detroit River INTERNATIONAL CROSSING STUDY

Chronology of DRIC

Based on field data (including investigations taken over <area of ACA> sq km), modeling, design work and secondary source info, analysis of the alternatives is to be completed.

Undertake additional foundations investigations.

Compile all analysis data.

Complete Social, Economic, Environmental and Engineering Assessments, Spring 2006 to Summer 2007

Context Sensitive Solutions Workshops.

Tours of Detroit River area.

Meetings with public, private sector municipalities and agencies.

Public Information Open House 4, December 2006.

Workshops

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Detroit River INTERNATIONAL CROSSING STUDY

Components of a New Crossing

The Partnership is studying an end-to-end solution connecting Highway 401 in Ontario to the interstate freeway system in Michigan.

International Bridge Crossing

The new bridge crossing will accommodate future 2035 traffic demand.

Inspection Plaza:

Plaza layouts on a 120 ha site in proximity to the Detroit River are being analyzed.

Inspection Plaza:

Plaza locations in proximity to the Detroit River and ranging in size from 30 to 40 ha are being analyzed.

Highway Connection:

Interchange connections to I-75 are being analyzed.

Highway Connection:

Freeway/controlled access alternative connecting to Highway 401 in Ontario are being analyzed.

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Detroit River INTERNATIONAL CROSSING STUDY

Public Information Open House #3

The third round of Public Information Open House meetings were held March 28 and March 30, 2006. Over 800 people signed the attendance registry and over 200 comment sheets were received. The public provided feedback on the potential locations for interchanges, local access considerations (including service road options) and cross-sectional alternatives for at-grade, depressed and tunneled roadways.

Most Frequent Comments

Review the Illustrative Alternatives Evaluation Process

Consider Other Alternatives

Protect Community Features

Preserve natural areas (Ojibway, Black Oak)

Consider Safety / Emergency Access

Minimize Air Quality and Noise Impacts

Canada Federal Highway Administration Ontario MDOT URS

Detroit River INTERNATIONAL CROSSING STUDY

Consultation March to October 2006

Community Consultation continues to provide us with valuable input and unique perspective. The concerns of residents, business owners, municipalities and politicians are important as suggestions made by the public are factored into the overall decision-making and assessment process. We are committed to listening to what local communities have to say, addressing their concerns and incorporating their ideas whenever possible.

Consultation March 2006 to end of November:
1 Public Information Open House
29 Workshop, Community Consultation Group and Community Group Meetings
15 Advisory Group Meetings
9 Other Interest Group Meetings

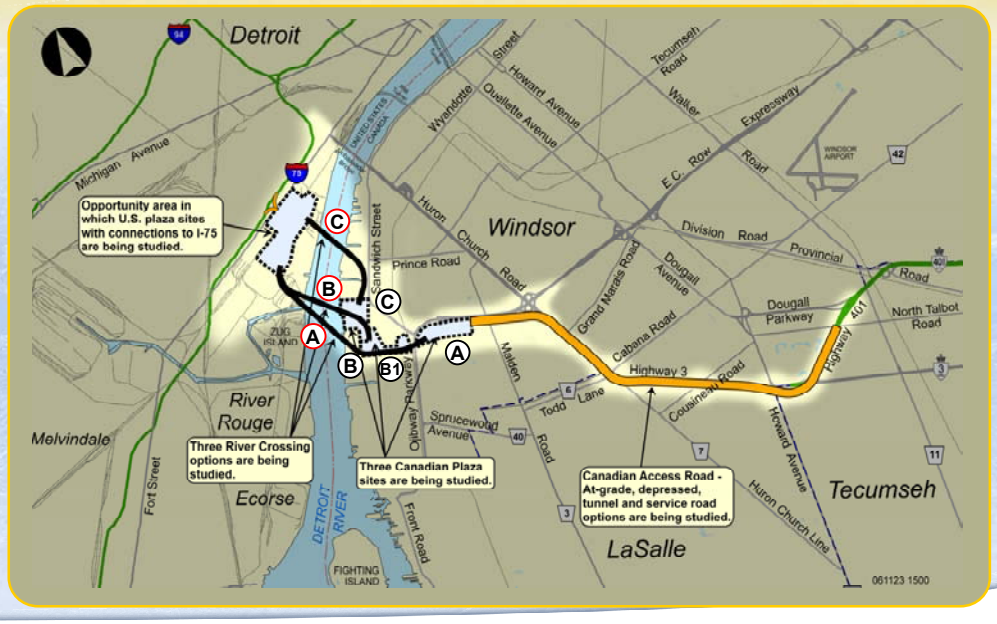
54 Meetings in the last 9 months
Over 100 meetings held since the study commenced

Study Contact List: Over 1,550 Addresses
Mailing Area: 8,000 + Property Owners, Tenants and Businesses

Canada Federal Highway Administration Ontario MDOT

Detroit River INTERNATIONAL CROSSING STUDY

Practical Alternatives



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Detroit River INTERNATIONAL CROSSING STUDY

Summary of Analysis to Date

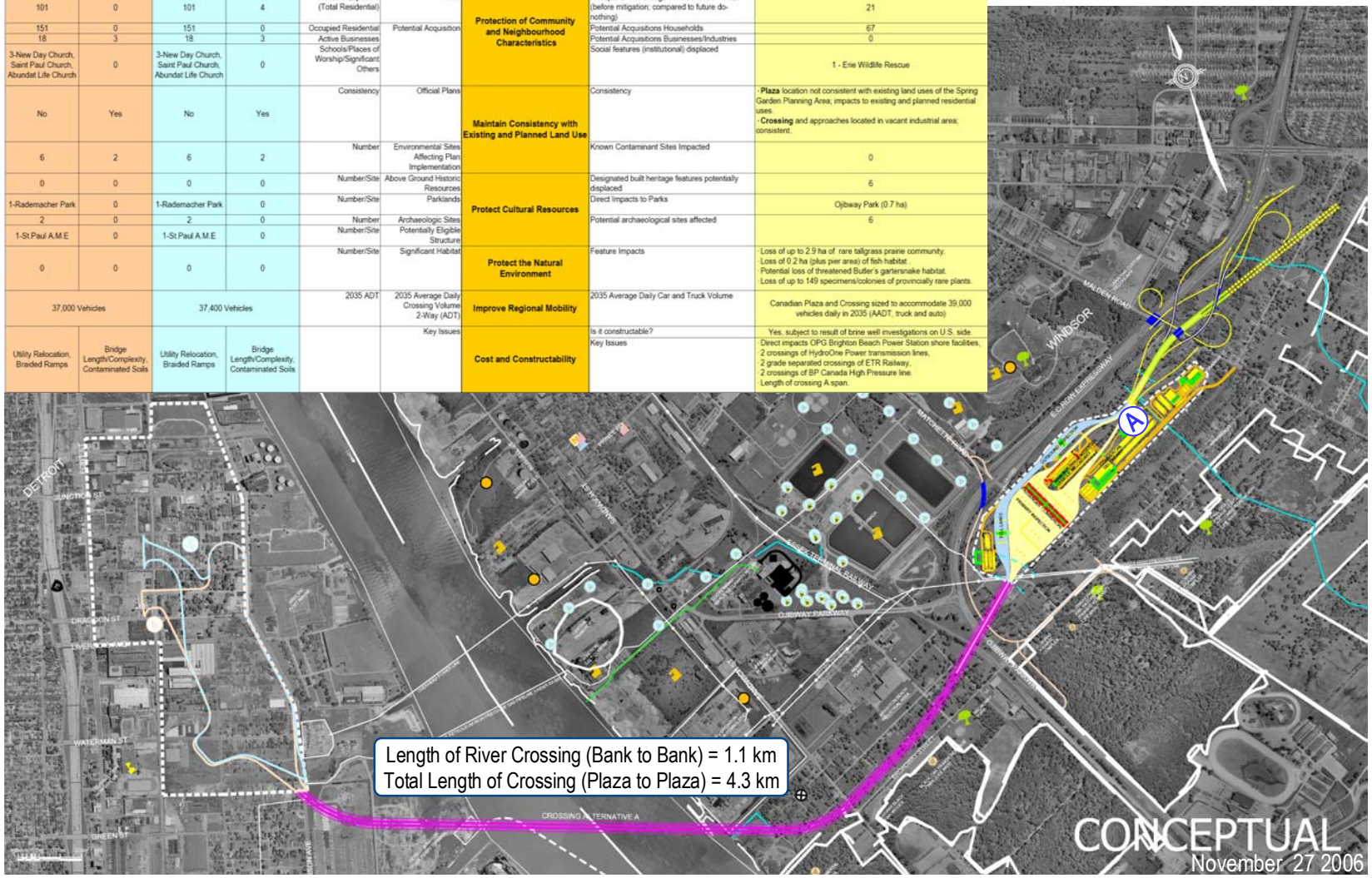
There is more work to do!

This Public Information Open House provides an overview of findings to date. The analysis will be completed in 2007, enabling the Partnership to identify a Technically and Environmentally Preferred Alternative.

Evaluation Factors	Analysis Work Completed	Additional Analysis Work Required
Changes in Air Quality	• Modeling of future conditions in progress for crossings, plazas and access roads • Two air quality monitoring stations installed on HCR/Hwy3	• Complete modelling and analysis • Additional analysis of alternatives, including modeling of interim future years (2015 and 2025) • Further refinement of traffic data, emissions and final QA/QC of results
Protection of Community & Neighbourhood Characteristics	• Surveyed households in ACA; Focus Groups Oct 2006; Traffic and access assessment in progress. • Noise & Vibration modeling of future conditions in progress • Surveyed retail and industrial operations in ACA	• Additional information on community features and characteristics • Assessment of the changes to noise levels associated with the tunnel alternative; assessment for all alternatives will be completed for the 2015 and 2025 traffic scenarios
Consistency with Existing & Planned Land Use	• Analysis of land use conducted for the practical access roads, plazas and crossing alternatives based on secondary sources and field reviews were also conducted to verify current land uses.	• Consultation with municipal planning staff and the local communities to more specifically identify land use impacts associated and mitigation
Protection of Cultural Resources	• Archaeological field work in progress; no substantive finds to date • Built heritage impact assessment underway	• Once the fieldwork is complete, the Stage 2 assessment report will be produced. • Stage 3 archaeological assessment (and possibly Stage 4 archaeological work. • Verification of the heritage significance of those features in the Area of Continued Analysis (research, field reviews, and interviews) • Confirm the location of the underground railway tunnel
Protection of 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 early in November	• Information collected from background sources and through field investigations will be compiled and used to compare practical alternatives. No further field investigations are planned at this time
Improvements to Regional Mobility	• Detailed Traffic Analysis to assess future conditions for each access road alternative ; assess travel demand at the crossings and plazas. • Interior Plaza modeling in progress	• Refine the access points, interchanges and cross-street intersection configurations • Determine operational improvements for plazas and crossings • Input to the bridge type study
Cost & Constructability	• Value Engineering Exercise • Tunnel Ventilation Requirements • In-progress analysis of bridge types (i.e. Cable-Stayed vs. Suspension) at each crossing location • Deep Borehole Program for international crossing alternatives • Access road foundations investigation program • Conceptual construction staging for each access road alternative • Preliminary Cost estimates, plazas and access roads • Storm water management investigations	• Foundations - Additional Soil Testing along Corridor • Structural - Refine Overpass, Retaining Wall and Tunnel Design and Construction Methods; Assess bridge type options • Tunnel - Develop Concepts for Ventilation Buildings, EMS, etc. • Utilities - Relocation Strategies • Cost Estimates, including Operating Systems • Safety Review • Assess Constructability

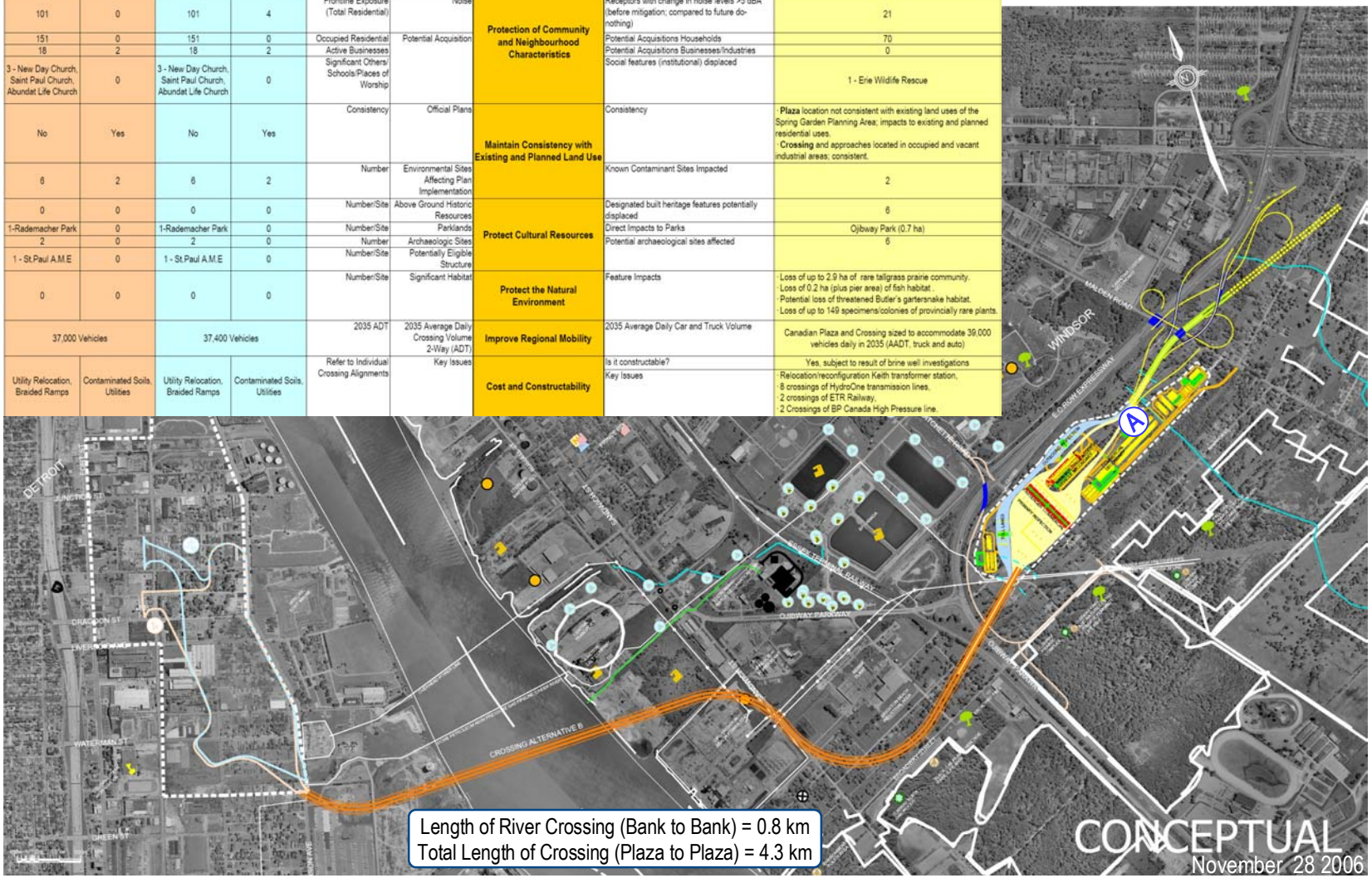
US Plaza – Crossing A – Plaza A Preliminary Analysis Summary

US Analysis						Evaluation Factor	CDN Analysis	
Plaza 4	Crossing A	Plaza Loc 6	Crossing A	Measure			Measure	Crossing A - Plaza A
Refer to Graphic		Refer to Graphic		CO Concentration Hotspots		Changes in Air Quality	Preliminary Assessment (subject to additional modelling)	Increases in $PM_{2.5}$ and NO_x in vicinity of crossing and approach roadway as well as plaza.
14	0	14	0	Streets Closed	Traffic	Protection of Community and Neighbourhood Characteristics	Effect on Local Access - Roads crossed/closed	7/7
101	0	101	4	Frontline Exposure (Total Residential)	Noise		Receptors with change in noise levels >5 dBA (before mitigation; compared to future do-nothing)	21
151	0	151	0	Occupied Residential	Potential Acquisition		Potential Acquisitions Households	67
18	3	18	3	Active Businesses			Potential Acquisitions Businesses/Industries	0
3-New Day Church, Saint Paul Church, Abundat Life Church	0	3-New Day Church, Saint Paul Church, Abundat Life Church	0	Schools/Places of Worship/Significant Others			Social features (institutional) displaced	1 - Erie Wildlife Rescue
No	Yes	No	Yes	Consistency	Official Plans	Maintain Consistency with Existing and Planned Land Use	Consistency	· **Plaza** location not consistent with existing land uses of the Spring Garden Planning Area; impacts to existing and planned residential uses. · **Crossing** and approaches located in vacant industrial area; consistent.
6	2	6	2	Number	Environmental Sites Affecting Plan Implementation		Known Contaminant Sites Impacted	0
0	0	0	0	Number/Site	Above Ground Historic Resources	Protect Cultural Resources	Designated built heritage features potentially displaced	6
1-Rademacher Park	0	1-Rademacher Park	0	Number/Site	Parklands		Direct Impacts to Parks	Ojibway Park (0.7 ha)
2	0	2	0	Number	Archaeologic Sites		Potential archaeological sites affected	6
1-St.Paul A.M.E	0	1-St.Paul A.M.E	0	Number/Site	Potentially Eligible Structure			
0	0	0	0	Number/Site	Significant Habitat	Protect the Natural Environment	Feature Impacts	· Loss of up to 2.9 ha of rare tallgrass prairie community. · Loss of 0.2 ha (plus pier area) of fish habitat . · Potential loss of threatened Butler's gartersnake habitat. · Loss of up to 149 specimens/colonies of provincially rare plants.
37,000 Vehicles		37,400 Vehicles		2035 ADT	2035 Average Daily Crossing Volume 2-Way (ADT)	Improve Regional Mobility	2035 Average Daily Car and Truck Volume	Canadian Plaza and Crossing sized to accommodate 39,000 vehicles daily in 2035 (AADT, truck and auto)
Utility Relocation, Braided Ramps	Bridge Length/Complexity, Contaminated Soils	Utility Relocation, Braided Ramps	Bridge Length/Complexity, Contaminated Soils		Key Issues	Cost and Constructability	Is it constructable?	Yes, subject to result of brine well investigations on U.S. side.
							Key Issues	· Direct impacts OPG Brighton Beach Power Station shore facilities, · 2 crossings of HydroOne Power transmission lines, · 2 grade separated crossings of ETR Railway, · 2 crossings of BP Canada High Pressure line. · Length of crossing A span.



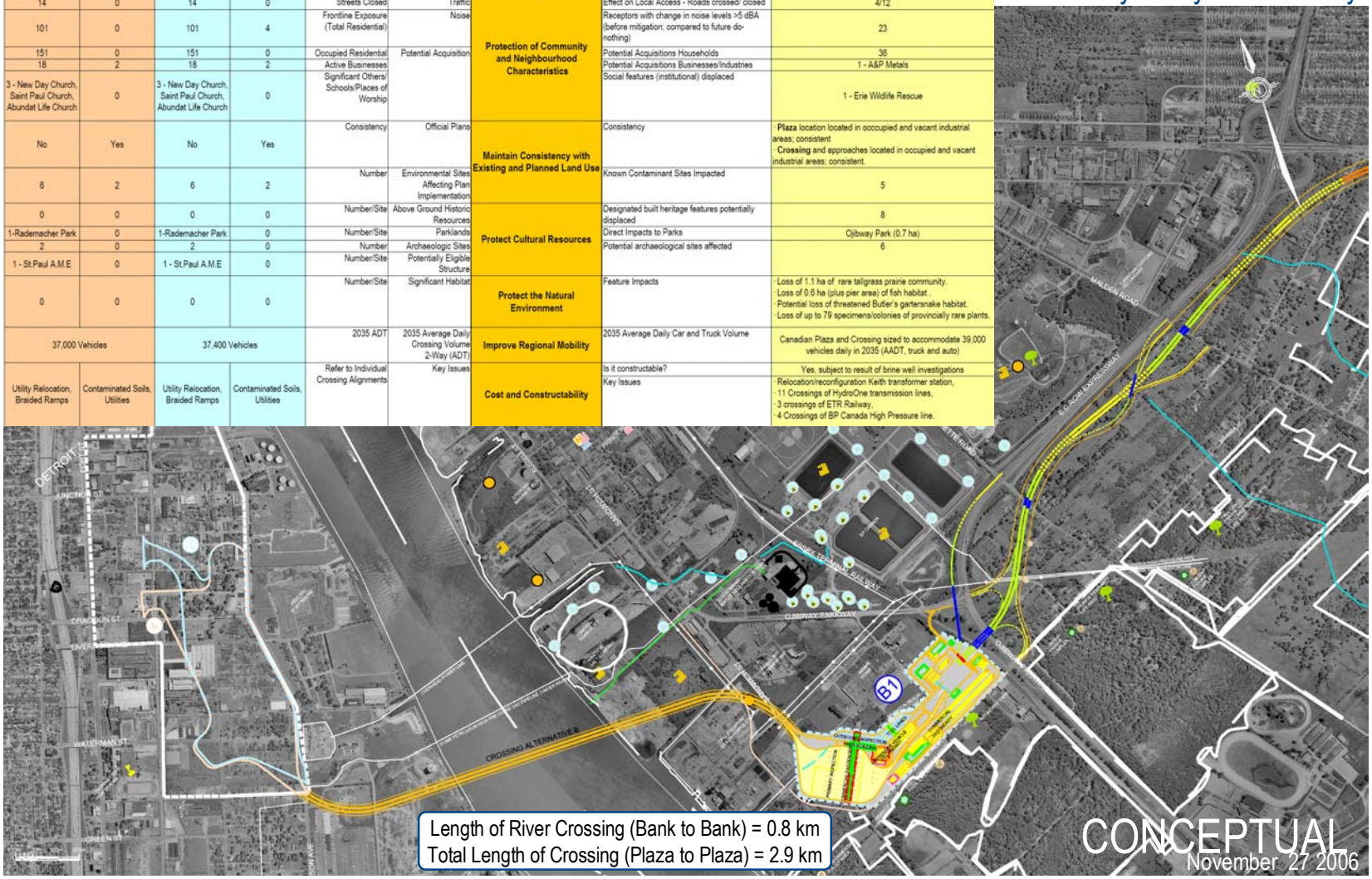
US Plaza – Crossing B – Plaza A Preliminary Analysis Summary

US Analysis						Evaluation Factor	CDN Analysis	
Plaza 4	Crossing B	Plaza Loc 6	Crossing B	Measure			Measure	Crossing B - Plaza A
Refer to Graphic		Refer to Graphic		CO Concentration Hotspots		Changes in Air Quality	Preliminary Assessment (subject to additional modelling)	Increases in $PM_{2.5}$ and NO_2 in vicinity of crossing and approach roadway as well as plaza.
14	0	14	0	Streets Closed	Traffic	Protection of Community and Neighbourhood Characteristics	Effect on Local Access - Roads crossed/ closed	4/9
101	0	101	4	Frontline Exposure (Total Residential)	Noise		Receptors with change in noise levels >5 dBA (before mitigation; compared to future do-nothing)	21
151	0	151	0	Occupied Residential	Potential Acquisition		Potential Acquisitions Households	70
18	2	18	2	Active Businesses			Potential Acquisitions Businesses/Industries	0
3 - New Day Church, Saint Paul Church, Abundat Life Church	0	3 - New Day Church, Saint Paul Church, Abundat Life Church	0	Significant Others/ Schools/Places of Worship			Social features (institutional) displaced	1 - Erie Wildlife Rescue
No	Yes	No	Yes	Consistency	Official Plans	Maintain Consistency with Existing and Planned Land Use	Consistency	· **Plaza** location not consistent with existing land uses of the Spring Garden Planning Area; impacts to existing and planned residential uses. · **Crossing** and approaches located in occupied and vacant industrial areas; consistent.
6	2	6	2	Number	Environmental Sites Affecting Plan Implementation		Known Contaminant Sites Impacted	2
0	0	0	0	Number/Site	Above Ground Historic Resources	Protect Cultural Resources	Designated built heritage features potentially displaced	6
1-Rademacher Park	0	1-Rademacher Park	0	Number/Site	Parklands		Direct Impacts to Parks	Ojibway Park (0.7 ha)
2	0	2	0	Number	Archaeologic Sites		Potential archaeological sites affected	6
1 - St.Paul A.M.E	0	1 - St.Paul A.M.E	0	Number/Site	Potentially Eligible Structure			
0	0	0	0	Number/Site	Significant Habitat	Protect the Natural Environment	Feature Impacts	· Loss of up to 2.9 ha of rare tallgrass prairie community. · Loss of 0.2 ha (plus pier area) of fish habitat. · Potential loss of threatened Butler's gartersnake habitat. · Loss of up to 149 specimens/colonies of provincially rare plants.
37,000 Vehicles		37,400 Vehicles		2035 ADT	2035 Average Daily Crossing Volume 2-Way (ADT)	Improve Regional Mobility	2035 Average Daily Car and Truck Volume	Canadian Plaza and Crossing sized to accommodate 39,000 vehicles daily in 2035 (AADT, truck and auto)
Utility Relocation, Braided Ramps	Contaminated Soils, Utilities	Utility Relocation, Braided Ramps	Contaminated Soils, Utilities	Refer to Individual Crossing Alignments	Key Issues	Cost and Constructability	Is it constructable?	Yes, subject to result of brine well investigations
							Key Issues	· Relocation/reconfiguration Keith transformer station, · 8 crossings of HydroOne transmission lines, · 2 crossings of ETR Railway, · 2 Crossings of BP Canada High Pressure line.



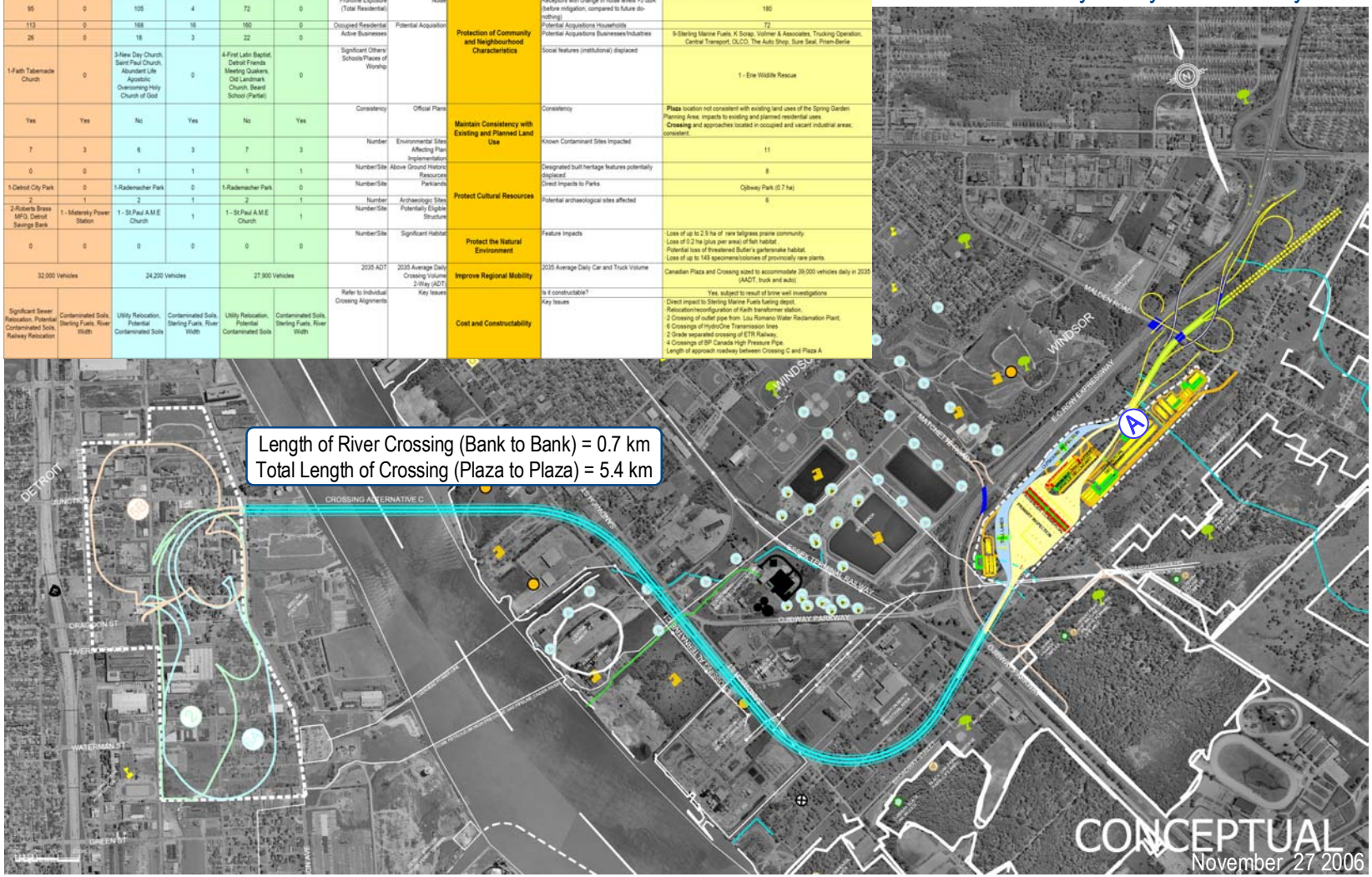
US Plaza – Crossing B – Plaza B1
Preliminary Analysis Summary

US Analysis						Evaluation Factor	CDN Analysis	
Plaza 4	Crossing B	Plaza Loc 6	Crossing B	Measure			Measure	Crossing B - Plaza B1
Refer to Graphic		Refer to Graphic		CO Concentration Hotspots		Changes in Air Quality	Preliminary Assessment (subject to additional modelling)	Increases in $PM_{2.5}$ and NO_2 in vicinity of crossing and approach roadway as well as plaza.
14	0	14	0	Streets Closed	Traffic	Protection of Community and Neighbourhood Characteristics	Effect on Local Access - Roads crossed/ closed	4/12
101	0	101	4	Frontline Exposure (Total Residential)	Noise		Receptors with change in noise levels >5 dBA (before mitigation; compared to future do-nothing)	23
151	0	151	0	Occupied Residential	Potential Acquisition		Potential Acquisitions Households	36
18	2	18	2	Active Businesses			Potential Acquisitions Businesses/Industries	1 - A&P Metals
3 - New Day Church, Saint Paul Church, Abundat Life Church	0	3 - New Day Church, Saint Paul Church, Abundat Life Church	0	Significant Others/ Schools/Places of Worship			Social features (institutional) displaced	1 - Erie Wildlife Rescue
No	Yes	No	Yes	Consistency	Official Plans	Maintain Consistency with Existing and Planned Land Use	Consistency	· **Plaza** location located in occupied and vacant industrial areas; consistent · **Crossing** and approaches located in occupied and vacant industrial areas; consistent.
6	2	6	2	Number	Environmental Sites Affecting Plan Implementation		Known Contaminant Sites Impacted	5
0	0	0	0	Number/Site	Above Ground Historic Resources	Protect Cultural Resources	Designated built heritage features potentially displaced	8
1-Rademacher Park	0	1-Rademacher Park	0	Number/Site	Parklands		Direct Impacts to Parks	Ojibway Park (0.7 ha)
2	0	2	0	Number	Archaeologic Sites		Potential archaeological sites affected	6
1 - St.Paul A.M.E	0	1 - St.Paul A.M.E	0	Number/Site	Potentially Eligible Structure			
0	0	0	0	Number/Site	Significant Habitat	Protect the Natural Environment	Feature Impacts	· Loss of 1.1 ha of rare tallgrass prairie community. · Loss of 0.6 ha (plus pier area) of fish habitat . · Potential loss of threatened Butler's gartersnake habitat. · Loss of up to 79 specimens/colonies of provincially rare plants.
37,000 Vehicles		37,400 Vehicles		2035 ADT	2035 Average Daily Crossing Volume 2-Way (ADT)	Improve Regional Mobility	2035 Average Daily Car and Truck Volume	Canadian Plaza and Crossing sized to accommodate 39,000 vehicles daily in 2035 (AADT, truck and auto)
Utility Relocation, Braided Ramps	Contaminated Soils, Utilities	Utility Relocation, Braided Ramps	Contaminated Soils, Utilities	Refer to Individual Crossing Alignments	Key Issues	Cost and Constructability	Is it constructable?	Yes, subject to result of brine well investigations
							Key Issues	· Relocation/reconfiguration Keith transformer station, · 11 Crossings of HydroOne transmission lines, · 3 crossings of ETR Railway, · 4 Crossings of BP Canada High Pressure line.



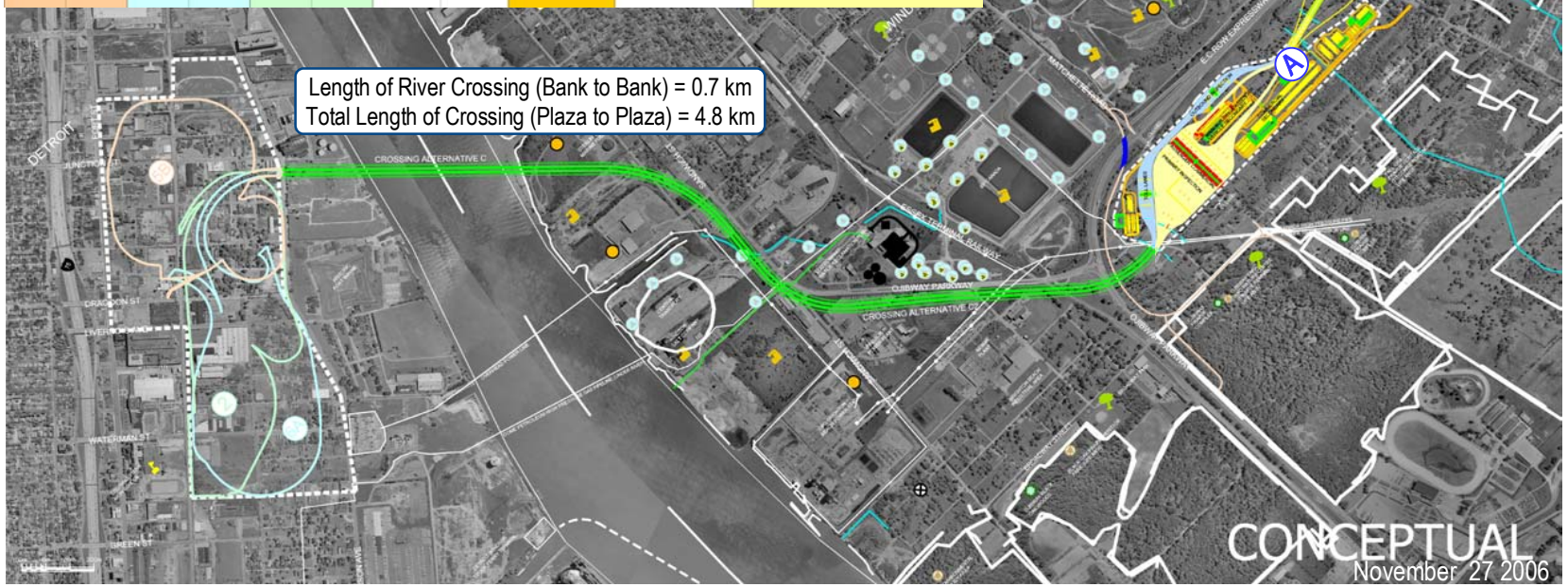
US Plaza – Crossing C (via Brighton Beach) – Plaza A Preliminary Analysis Summary

US Analysis								Evaluation Factor	CDN Analysis	
Plaza 5B	Crossing C	Plaza 6A	Crossing C	Plaza 2	Crossing C	Measure			Measure	Crossing C - Plaza A (via Brighton Beach Industrial Area)
Refer to Graphic		Refer to Graphic		Refer to Graphic		CO Concentration Hotspots		Changes in Air Quality	Preliminary Assessment (subject to additional modelling)	Increases in $PM_{2.5}$ and NO_2 in vicinity of crossing and approach roadway as well as plaza.
14	0	17	4	17	0	Streets Closed	Traffic	Protection of Community and Neighbourhood Characteristics	Effect on Local Access - Roads crossed/ closed	7/3
95	0	105	4	72	0	Frontline Exposure (Total Residential)	Noise		Receptors with change in noise levels >5 dBA (before mitigation; compared to future do-nothing)	180
113	0	168	16	160	0	Occupied Residential	Potential Acquisition		Potential Acquisitions Households	72
26	0	18	3	22	0	Active Businesses			Potential Acquisitions Businesses/Industries	9-Sterling Marine Fuels, K Scrap, Vollmer & Associates, Trucking Operation, Central Transport, OLCO, The Auto Shop, Sure Seal, Prism-Berlie
1-Faith Tabernacle Church	0	3-New Day Church, Saint Paul Church, Abundant Life Apostolic Overcoming Holy Church of God	0	4-First Latin Baptist, Detroit Friends Meeting Quakers, Old Landmark Church, Beard School (Partial)	0	Significant Others Schools/Places of Worship			Social features (institutional) displaced	1 - Erie Wildlife Rescue
Yes	Yes	No	Yes	No	Yes	Consistency	Official Plans	Maintain Consistency with Existing and Planned Land Use	Consistency	**Plaza** location not consistent with existing land uses of the Spring Garden Planning Area; impacts to existing and planned residential uses. **Crossing** and approaches located in occupied and vacant industrial areas; consistent.
7	3	6	3	7	3	Number	Environmental Sites Affecting Plan Implementation		Known Contaminant Sites Impacted	11
0	0	1	1	1	1	Number/Site	Above Ground Historic Resources	Protect Cultural Resources	Designated built heritage features potentially displaced	8
1-Detroit City Park	0	1-Rademacher Park	0	1-Rademacher Park	0	Number/Site	Parklands		Direct Impacts to Parks	Ojibway Park (0.7 ha)
2	1	2	1	2	1	Number	Archaeologic Sites		Potential archaeological sites affected	6
2-Roberts Brass MFG, Detroit Savings Bank	1 - Matersky Power Station	1 - St.Paul A.M.E Church	1	1 - St.Paul A.M.E Church	1	Number/Site	Potentially Eligible Structure			
0	0	0	0	0	0	Number/Site	Significant Habitat	Protect the Natural Environment	Feature Impacts	Loss of up to 2.9 ha of rare tallgrass prairie community. Loss of 0.2 ha (plus pier area) of fish habitat. Potential loss of threatened Butler's gartersnake habitat. Loss of up to 149 specimens/colonies of provincially rare plants.
32,000 Vehicles		24,200 Vehicles		27,900 Vehicles		2035 ADT	2035 Average Daily Crossing Volume (2-Way (ADT)	Improve Regional Mobility	2035 Average Daily Car and Truck Volume	Canadian Plaza and Crossing sized to accommodate 39,000 vehicles daily in 2035 (AADT, truck and auto)
						Refer to Individual Crossing Alignments	Key Issues		Is it constructable?	Yes, subject to result of brine well investigations
Significant Sewer Relocation, Potential Contaminated Soils, Railway Relocation	Contaminated Soils, Sterling Fuels, River Width	Utility Relocation, Potential Contaminated Soils	Contaminated Soils, Sterling Fuels, River Width	Utility Relocation, Potential Contaminated Soils	Contaminated Soils, Sterling Fuels, River Width			Cost and Constructability	Key Issues	Direct impact to Sterling Marine Fuels fueling depot. Relocation/reconfiguration of Keith transformer station. 2 Crossing of outlet pipe from Lou Romano Water Reclamation Plant. 6 Crossings of HydroOne Transmission lines 2 Grade separated crossing of ETR Railway. 4 Crossings of BP Canada High Pressure Pipe. Length of approach roadway between Crossing C and Plaza A



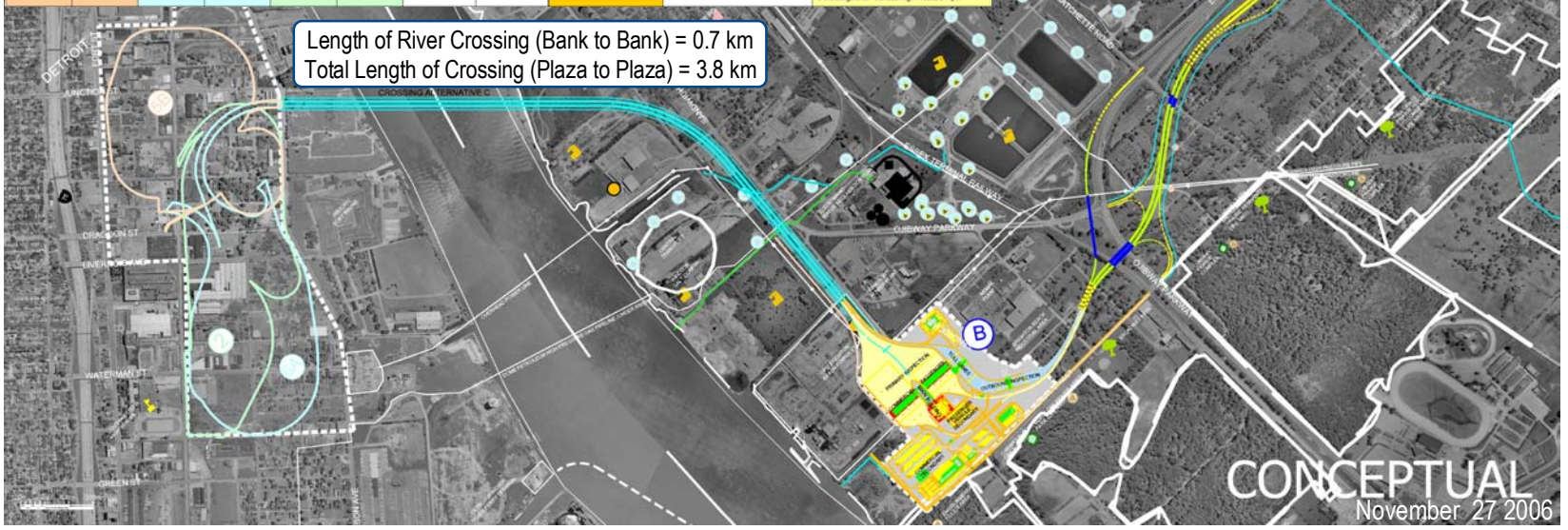
US Plaza – Crossing C (via Ojibway Parkway) – Plaza A Preliminary Analysis Summary

US Analysis								Evaluation Factor	CDN Analysis	
Plaza 5B	Crossing C	Plaza 6A	Crossing C	Plaza 2	Crossing C	Measure			Measure	Crossing C - Plaza A (via Ojibway Parkway)
Refer to Graphic		Refer to Graphic		Refer to Graphic		CO Concentration Hotspots		Changes in Air Quality	Preliminary Assessment (subject to additional modelling)	Increases in $PM_{2.5}$ and NO_2 in vicinity of crossing and approach roadway as well as plaza
14	0	17	4	17	0	Streets Closed	Traffic	Protection of Community and Neighbourhood Characteristics	Effect on Local Access - Roads crossed/ closed	7/4
95	0	105	4	72	0	Frontline Exposure (Total Residential)	Noise		Receptors with change in noise levels >5 dBA (before mitigation; compared to future do-nothing)	180
113	0	168	16	160	0	Occupied Residential/ Active Businesses	Potential Acquisition		Potential Acquisitions Households	67
26	0	18	3	22	0				Potential Acquisitions Businesses/Industries	9-Sterling Marine Fuels, K Scrap, Vollmer & Associates, Trucking Operation, Central Transport, OLCO, The Auto Shop, Sure Seal, Prism-Berlie
1-Faith Tabernacle Church	0	3-New Day Church, Saint Paul Church, Abundant Life Apostolic Overcoming Holy Church of God	0	4-First Latin Baptist, Detroit Friends Meeting Quakers, Old Landmark Church, Beard School (Partial)	0	Significant Others/ Schools/Places of Worship			Social features (institutional) displaced	1 - Erie Wildlife Rescue
Yes	Yes	No	Yes	No	Yes	Consistency	Official Plans	Maintain Consistency with Existing and Planned Land Use	Consistency	Plaza location not consistent with existing land uses of the Spring Garden Planning Area, impacts to existing and planned residential uses. Crossing and approaches located in occupied and vacant industrial areas; consistent.
7	3	6	3	7	3	Number	Environmental Sites Affecting Plan Implementation		Known Contaminant Sites Impacted	2
0	0	1	1	1	1	Number/Site	Above Ground Historic Resources	Protect Cultural Resources	Designated built heritage features potentially displaced	8
1-Detroit City Park	0	1-Rademacher Park	0	1-Rademacher Park	0	Number/Site	Parklands		Direct Impacts to Parks	Ojibway Park (0.7 ha)
2	1	2	1	2	1	Number	Archaeologic Sites		Potential archaeological sites affected	6
2-Roberts Brass MFG, Detroit Savings Bank	1 - Mistersky Power Station	1 - St.Paul A.M.E Church	1	1 - St.Paul A.M.E Church	1	Number/Site	Potentially Eligible Structure			
0	0	0	0	0	0	Number/Site	Significant Habitat	Protect the Natural Environment	Feature Impacts	Loss of up to 2.9 ha of rare tallgrass prairie community. Loss of 0.2 ha (plus per area) of fish habitat . Potential loss of threatened Butler's gartersnake habitat. Loss of up to 149 specimens/colonies of provincially rare plants.
32,000 Vehicles		24,200 Vehicles		27,900 Vehicles		2035 ADT	2035 Average Daily Crossing Volume 2-Way (ADT)	Improve Regional Mobility	2035 Average Daily Car and Truck Volume	Canadian Plaza and Crossing sized to accommodate 39,000 vehicles daily in 2035 (AADT, truck and auto)
Significant Sewer Relocation, Potential Contaminated Soils, Railway Relocation	Contaminated Soils, Sterling Fuels, River Width	Utility Relocation, Potential Contaminated Soils	Contaminated Soils, Sterling Fuels, River Width	Utility Relocation, Potential Contaminated Soils	Contaminated Soils, Sterling Fuels, River Width	Refer to Individual Crossing Alignments	Key Issues	Cost and Constructability	Is it constructable?	Yes, subject to result of brine well investigations
									Key Issues	Direct impact to Sterling Marine Fuels fueling depot, 2 Crossing of outlet pipe from Lou Romano Water Reclamation Plant, 6 Crossings of HydroOne Transmission lines 2 Grade separated crossing of ETR Railway, 4 Crossings of BP Canada High Pressure Pipe, Length of approach roadway between Crossing C and Plaza A



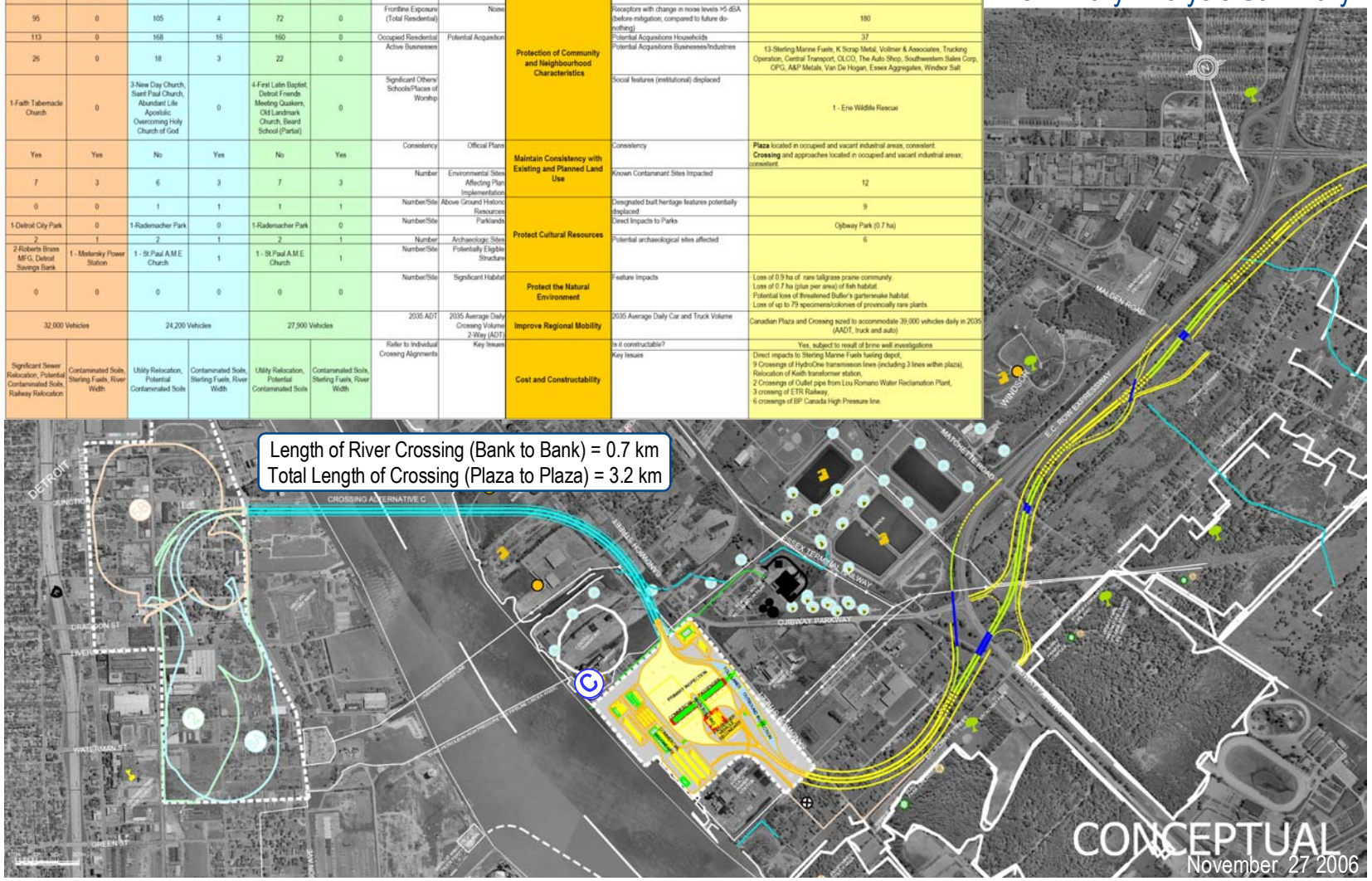
US Plaza – Crossing C – Plaza B Preliminary Analysis Summary

US Analysis						Measure		Evaluation Factor	CDN Analysis	
Plaza 5B	Crossing C	Plaza 6A	Crossing C	Plaza 2	Crossing C				Measure	Crossing C - Plaza B
Refer to Graphic		Refer to Graphic		Refer to Graphic		CO Concentration Hotspots		Changes in Air Quality	Preliminary Assessment (subject to additional modelling)	Increases in $PM_{2.5}$ and NO_x in vicinity of crossing and approach roadway as well as plaza
14	0	17	4	17	0	Streets Closed	Traffic	Protection of Community and Neighbourhood Characteristics	Effect on Local Access - Roads crossed/ closed	7/16
95	0	105	4	72	0	Frontline Exposure (Total Residential)	Noise		Receptors with change in noise levels >5 dBA (before mitigation; compared to future do-nothing)	180
113	0	168	16	160	0	Occupied Residential	Potential Acquisition		Potential Acquisitions Households	38
26	0	18	3	22	0	Active Businesses			Potential Acquisitions Businesses/Industries	9-Sterling Marine Fuels, K Scrap, Vollmer & Associates, Trucking Operation, Central Transport, OLCO, The Auto Shop, Sure Seal, A&P Metals
1-Faith Tabernacle Church	0	3-New Day Church, Saint Paul Church, Abundant Life Apostolic Overcoming Holy Church of God	0	4-First Latin Baptist, Detroit Friends Meeting Quakers, Old Landmark Church, Beard School (Partial)	0	Significant Others/ Schools/Places of Worship			Social features (institutional) displaced	1 - Erie Wildlife Rescue
Yes	Yes	No	Yes	No	Yes	Consistency	Official Plans	Maintain Consistency with Existing and Planned Land Use	Consistency	**Plaza** location located in occupied and vacant industrial areas, *consistent*. **Crossing** and approaches located in occupied and vacant industrial areas, *consistent*.
7	3	6	3	7	3	Number	Environmental Sites Affecting Plan Implementation		Known Contaminant Sites Impacted	11
0	0	1	1	1	1	Number/Site	Above Ground Historic Resources	Protect Cultural Resources	Designated built heritage features potentially displaced	9
1-Detroit City Park	0	1-Rademacher Park	0	1-Rademacher Park	0	Number/Site	Parklands		Direct Impacts to Parks	Ojibway Park (0.7 ha)
2	1	2	1	2	1	Number	Archaeologic Sites		Potential archaeological sites affected	6
2-Roberts Brass MFG, Detroit Savings Bank	1 - Metersky Power Station	1 - St.Paul A.M.E. Church	1	1 - St.Paul A.M.E. Church	1	Number/Site	Potentially Eligible Structures			
0	0	0	0	0	0	Number/Site	Significant Habitat	Protect the Natural Environment	Feature Impacts	Encroachment of Black Oak Woods ANSI Loss of up to 1.4 ha of rare tallgrass prairie community Loss of up to 0.4 ha (plus per area) of fish habitat. Potential loss of threatened Butler's gartersnake habitat. Loss of up to 79 specimens/colonies of provincially rare plants.
32,000 Vehicles		24,200 Vehicles		27,900 Vehicles		2035 ADT	2035 Average Daily Crossing Volume 2-Way (ADT)	Improve Regional Mobility	2035 Average Daily Car and Truck Volume	Canadian Plaza and Crossing sized to accommodate 39,000 vehicles daily in 2035 (AADT, truck and auto)
						Refer to Individual Crossing Alignments	Key Issues	Cost and Constructability	Is it constructable?	Yes, subject to result of brine well investigations
Significant Sewer Relocation, Potential Contaminated Soils, Railway Relocation	Contaminated Soils, Sterling Fuels, River Width	Utility Relocation, Potential Contaminated Soils	Contaminated Soils, Sterling Fuels, River Width	Utility Relocation, Potential Contaminated Soils	Contaminated Soils, Sterling Fuels, River Width				Key Issues	Direct impacts to Sterling Marine Fuels fueling depot, 2 Crossing of outlet pipe from Lou Romano Water Reclamation Plant, Relocation/reconfiguration of Keith transformer station, 7 Crossings of HydroOne Power transmission lines, 3 Grade separated crossings of ETR Railway, 6 Crossings of BP Canada High Pressure Pipe.



US Plaza – Crossing C – Plaza C Preliminary Analysis Summary

US Analysis								Evaluation Factor	CDN Analysis	
Plaza 5B	Crossing C	Plaza 6A	Crossing C	Plaza 2	Crossing C	Measure			Measure	Crossing C - Plaza C
Refer to Graphic		Refer to Graphic		Refer to Graphic		CO Concentration Hotspots		Changes in Air Quality	Preliminary Assessment (subject to additional modelling)	Increases in $PM_{2.5}$ and NO_x in vicinity of crossing and approach roadway as well as plaza
14	0	17	4	17	0	Streets Closed	Traffic	Protection of Community and Neighbourhood Characteristics	Effect on Local Access - Roads crossed/ closed	13/5
95	0	105	4	72	0	Frontline Exposure (Total Residential)	Noise		Receptors with change in noise levels >5 dBA (before mitigation; compared to future do-nothing)	180
113	0	168	16	160	0	Occupied Residential	Potential Acquisition		Potential Acquisitions Households	37
26	0	18	3	22	0	Active Businesses			Potential Acquisitions Businesses/Industries	13-Sterling Marine Fuels, K Scrap Metal, Vollmer & Associates, Trucking Operation, Central Transport, OLCO, The Auto Shop, Southwestern Sales Corp, OPG, A&P Metals, Van De Hogan, Essex Aggregates, Windsor Salt
1-Faith Tabernacle Church	0	3-New Day Church, Saint Paul Church, Abundant Life Apostolic Overcoming Holy Church of God	0	4-First Latin Baptist, Detroit Friends Meeting Quakers, Old Landmark Church, Beard School (Partial)	0	Significant Others/ Schools/Places of Worship			Social features (institutional) displaced	1 - Erie Wildlife Rescue
Yes	Yes	No	Yes	No	Yes	Consistency	Official Plans	Maintain Consistency with Existing and Planned Land Use	Consistency	**Plaza** located in occupied and vacant industrial areas, consistent. **Crossing** and approaches located in occupied and vacant industrial areas; consistent
7	3	6	3	7	3	Number	Environmental Sites Affecting Plan Implementation		Known Contaminant Sites Impacted	12
0	0	1	1	1	1	Number/Site	Above Ground Historic Resources	Protect Cultural Resources	Designated built heritage features potentially displaced	9
1-Detroit City Park	0	1-Rademacher Park	0	1-Rademacher Park	0	Number/Site	Parklands		Direct Impacts to Parks	Ojibway Park (0.7 ha)
2	1	2	1	2	1	Number	Archaeologic Sites		Potential archaeological sites affected	6
2-Roberts Brass MFG, Detroit Savings Bank	1 - Mistersky Power Station	1 - St.Paul A.M.E Church	1	1 - St.Paul A.M.E Church	1	Number/Site	Potentially Eligible Structure			
0	0	0	0	0	0	Number/Site	Significant Habitat	Protect the Natural Environment	Feature Impacts	Loss of 0.9 ha of rare tallgrass prairie community. Loss of 0.7 ha (plus per area) of fish habitat. Potential loss of threatened Butler's gartersnake habitat. Loss of up to 79 specimens/colonies of provincially rare plants.
32,000 Vehicles		24,200 Vehicles		27,500 Vehicles		2035 ADT	2035 Average Daily Crossing Volume 2-Way (ADT)	Improve Regional Mobility	2035 Average Daily Car and Truck Volume	Canadian Plaza and Crossing sized to accommodate 39,000 vehicles daily in 2035 (AADT, truck and auto)
Significant Sewer Relocation, Potential Contaminated Soils, Railway Relocation	Contaminated Soils, Sterling Fuels, River Width	Utility Relocation, Potential Contaminated Soils	Contaminated Soils, Sterling Fuels, River Width	Utility Relocation, Potential Contaminated Soils	Contaminated Soils, Sterling Fuels, River Width	Refer to Individual Crossing Alignments	Key Issues	Cost and Constructability	Is it constructable?	Yes, subject to result of brine well investigations
									Key Issues	Direct impacts to Sterling Marine Fuels fueling depot, 9 Crossings of HydroOne transmission lines (including 3 lines within plaza), Relocation of Keith transformer station, 2 Crossings of Outlet pipe from Lou Romano Water Reclamation Plant, 3 crossing of ETR Railway, 6 crossings of BP Canada High Pressure line.



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US Plaza Alternatives

Canada Federal Highway Administration Ontario MDOT CORRADINO URS

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Route Summary

FACTOR/ MEASURE	ALTERNATIVE 1A		ALTERNATIVE 1B		ALTERNATIVE 2A		ALTERNATIVE 2B		ALTERNATIVE 3
	 One-way service roads on either side of 6-lane freeway at grade.		 One-way service roads either side of 6-lane freeway depressed.		 Six-lane freeway at grade, along side Huron Church/Highway 3.		 Six-lane freeway depressed, parallel to Huron Church/Highway 3.		 Cut and cover tunnel below rebuilt Huron Church Road/Highway 3 Corridor.
	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)	• Concentrations of Volatile Organic Compounds (VOC's) predicted to be well below provincial standards • Predicted concentrations of NOx associated with the alternatives are lower in the future compared to today's values due to changes in fuels and vehicle technologies • 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, but NO_x concentrations increase over a broader area compared to at grade alternatives (greater dispersion from ventilation stacks)								
Protection of Community and Neighbourhood Characteristics									
Potential Acquisitions									
Residences	• 150-190	• 145-185	• 150-190	• 150-190	• 175-210	• 160-200	• 170-205	• 160-200	• 125-175
Businesses	• 30	• 45	• 30	• 45	• 25	• 40	• 25	• 40	• 44
Community Features Potentially Displaced	3 (Royal Canadian Legion, Heritage Park Alliance Church, Erie Wildlife Rescue)								
Noise Receptors with >5 dB increase (before mitigation)	• 90 +/-	• 50 +/-	• 40 +/-	• 40 +/-	• 140 +/-	• 90 +/-	• 60 +/-	• 60 +/-	• To be determined
Effect on Access	• 10 road closings • 20 local access connections to new transportation facility • No access to the new corridor from Cabana Road/Todd Lane; no access to Howard Avenue from Highway 401 Eastbound;		• 12 road closings • 15 local access connections to new transportation facility • Partial access to/from the new corridor from/to Cabana Road/Todd Lane; No access to Howard Avenue from Highway 401 Eastbound		• 14 road closings • 14 local access connections to new transportation facility • Full access to/from the new corridor from/to Cabana Road/Todd Lane; Access to Howard Avenue from Highway 401 Eastbound	• 15 road closings • 7 local access connections to new transportation facility • Full access to/from the new corridor from/to Cabana Road/Todd Lane; Access to Howard Avenue from Highway 401 Eastbound	• 13 road closings • 10 local access connections to new transportation facility • Full access to/from the new corridor from/to Cabana Road/Todd Lane; Access to Howard Avenue from Highway 401 Eastbound	• 14 road closings • 11 local access connection to new transportation facility • Full access to/from the new corridor from/to Cabana Road/Todd Lane; Access to Howard Avenue from Highway 401 Eastbound	• 8 road closings • 13 local access connections to new transportation facility • No access to/from Cabana Lane/Todd Lane; No access to Howard Avenue from Highway 401 Eastbound
Consistency with Existing & Planned Land Use									
	All alternatives make use of Huron Church Road/Highway 3 Corridor (major roadway, historical connection to border crossing); localized land use impacts with all alternatives Proposed route is consistent with local Official Plans Impacts to existing residential, commercial and vacant lands zoned commercial/residential with all alternatives								
Protection of Cultural Resources									
Built Heritage Features	All access road alternatives potentially displace nine built heritage features								
Parks	All alternatives impact 6 parks (Bellewood Park, Aboriginal (Indian) Memorial Park, Beals Park (Oakwood Bush), Veteran's Memorial Park, St. Clair College Athletic Field, Matthew Rodzick Park)								
Archaeology	No known sites of high to moderate significance are impacted; no notable difference among the alternatives in terms of potential to disturb archaeological features								

PRELIMINARY

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Detroit River
INTERNATIONAL CROSSING
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Route Summary

FACTOR/ MEASURE	ALTERNATIVE 1A		ALTERNATIVE 1B		ALTERNATIVE 2A		ALTERNATIVE 2B		ALTERNATIVE 3
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Protection of Natural Environment									
Fish and Fish Habitat	No critical fish habitat identified for any access road alternatives								
Plant/Vegetation Species	• 0.38 ha to 0.82 ha of tallgrass prairie impacted	• 0.49 ha to 0.92 ha of tallgrass prairie impacted	• 0.43 ha to 0.86 ha of tallgrass prairie and deciduous swamp impacted	• 0.55 ha to 0.84 ha of tallgrass prairie and deciduous swamp impacted	• 1.54 ha to 1.98 ha of tallgrass prairie and deciduous swamp impacted	• 1.54 ha to 1.98 ha of tall grass prairie and deciduous swamp impacted	• 0.92 ha to 1.36 ha of tall grass prairie and deciduous swamp with impacted	• 0.92 ha to 1.36 ha of tallgrass prairie and deciduous swamp impacted	• 0.48 ha to 0.87 ha of tallgrass prairie impacted
Wildlife Species and Habitat	• 70 to 129 specimens/colonies of provincially rare plants impacted	• 60 to 149 specimens/colonies of provincially rare plants impacted	• 70 to 139 specimens/colonies of provincially rare plants impacted	• 60 to 149 specimens/colonies of provincially rare plants with Plaza A connection	• 80 to 159 specimens/colonies of provincially rare plants impacted	• 120 to 159 specimens/colonies of provincially rare plants with Plaza B or C	• 70 to 139 specimens/colonies of provincially rare plants impacted	• 70 to 139 specimens/colonies of provincially rare plants impacted A	• 70 to 139 specimens/colonies of provincially rare plants impacted
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								
Continuous Capacity	• Safety of controlled access freeway for access road is greatly increased compared to present arterial roadway with signalized intersections and other entrances/conflict points • Elements of tunnel driving that negatively effect 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 site. • The 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 space. • The consequences of a crash in a tunnel are greatly increased over those on an open road, however the frequency of a catastrophic event are low, and the occurrence of general traffic crashes (on a tunneled freeway) is marginally less than on an open road. • The crash risk near the portals of the tunnel is higher than elsewhere within the tunnel • All practical alternatives will provide substantial travel time savings for local traffic when compared to the "do nothing" alternative • All of the service road alternatives provide increased local and regional mobility over the "do nothing" alternative								
Reasonable and Secure Options	• All access road alternatives provide connections to Huron Church Road at E.C. Row enabling choice between new and existing crossings								
Cost and Constructability									
Estimated Construction Cost ($CAD)	$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 Issues	• Traffic management during construction • Utility relocations • Watercourse crossings		• Traffic management during construction • Utility relocations • Watercourse crossings • The high water table and relatively poor ground conditions, particularly towards the north and west ends of the project, complicate access road construction. These problems increase with the depth of construction.		• Traffic management during construction • Utility relocations • Watercourse crossings		• Traffic management during construction • Utility relocations • Watercourse crossings • The high water table and relatively poor ground conditions, particularly towards the north and west ends of the project, complicate access road construction. These problems increase with the depth of construction		• Traffic management during construction • Utility relocations • Watercourse crossings • Construction of the tunnel alternative is more complex and more intense than other alternatives due to the necessity to build the tunnel box, ventilation, electrical and communication systems
Parks	All alternatives impact 6 parks (Bellewood Park, Aboriginal (Indian) Memorial Park, Beals Park (Oakwood Bush), Veteran's Memorial Park, St. Clair College Athletic Field, Matthew Rodzick Park)								
Archaeology	No known sites of high to moderate significance are impacted; no notable difference among the alternatives in terms of potential to disturb archaeological features								

PRELIMINARY

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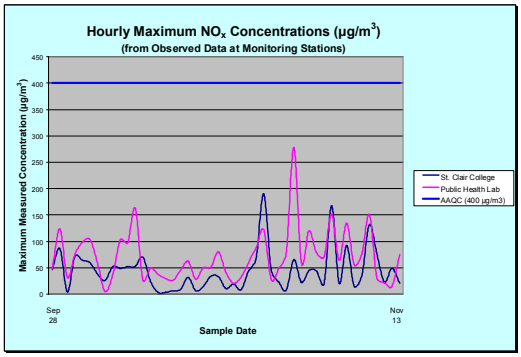
Air Quality Assessment

Ambient Air Monitoring – Preliminary Results (October 2006)



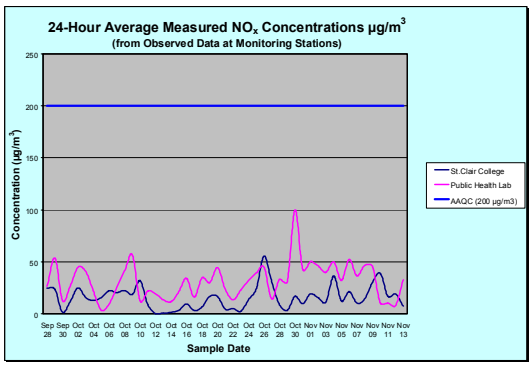
NO_x Results

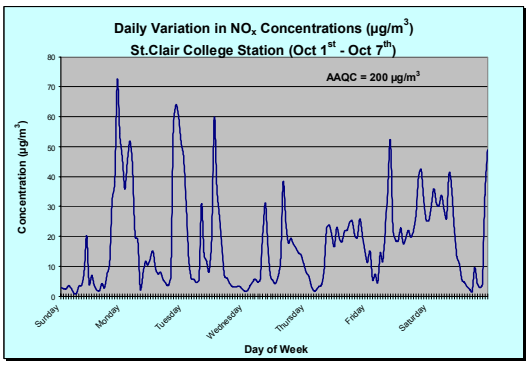
- Two ambient air monitoring stations installed in Huron Church / Highway 3 corridor
- adjacent to Ontario Public Health Laboratory and across from entrance to St.Clair College
- Measuring PM10, PM2.5, NOx, VOCs and weather

- Measured NOX 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 MOE Ambient Air Quality Criterion (AAQC) for NOx (400 ug/m3)

Detroit River INTERNATIONAL CROSSING STUDY

Air Quality Assessment





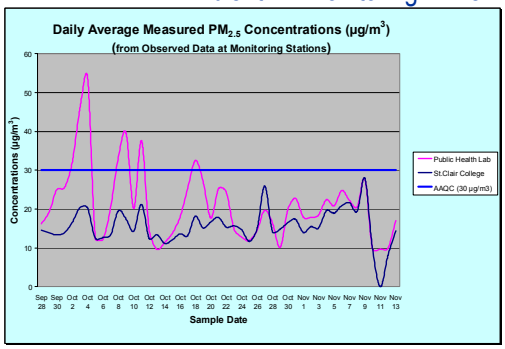
NO_x Results

- No observed exceedances of the 24-hour MOE Ambient Air Quality Criterion (AAQC) for NOx (200 ug/m3)
- Average concentration is slightly higher at the OPHL site in comparison to the SCC site

- NOX concentrations were generally elevated during the morning and afternoon rush hour periods, but remained well below MOE criteria

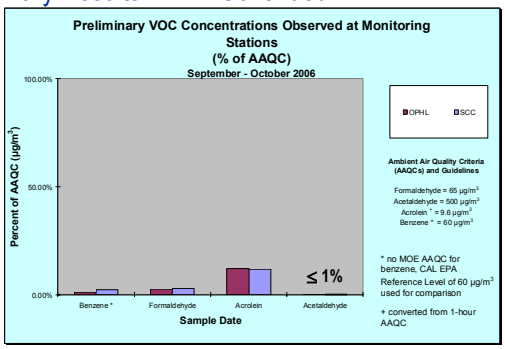
Canada Federal Highway Administration Ontario MDOT URS

Ambient Air Monitoring – Preliminary Results ……Continued



PM2..5 Results

- Measured PM2.5 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 30ug/m3 at the OPHL site.
- Average concentration is slightly higher at the OPHL site in comparison to the SCC site
- There were no measured exceedances of the CWS at the SCC site



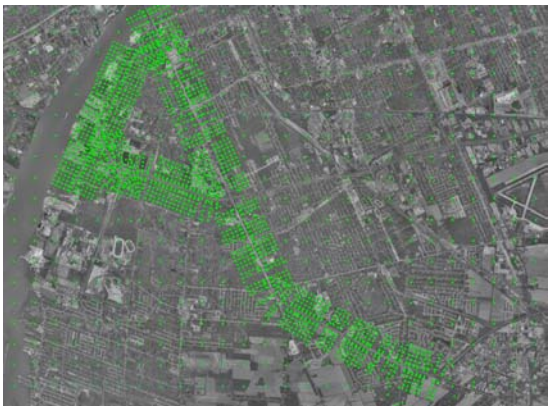
VOC Results

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

Detroit River INTERNATIONAL CROSSING S T U D Y

Air Quality Assessment

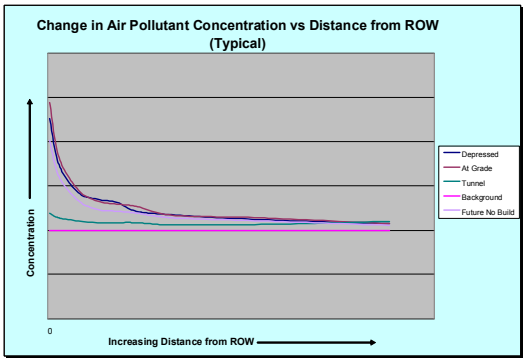
Air Dispersion Modelling – Preliminary Results

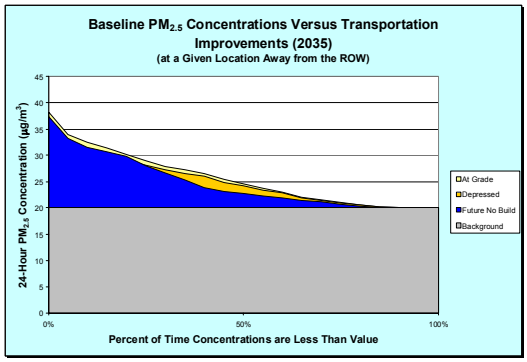


- Modelling is used to assess the impact of future changes
- implementation of alternatives
- changes in fuels, vehicle technologies and traffic volumes
- CAL3QHCR air dispersion model was used for each of the alternatives
  - Connecting route, Plazas, Crossings

- Model is specifically designed for roads and highways
  - Moving vehicles assessed differently from queued, idling vehicles
  - "at grade" sources assessed differently than depressed and bridge sources
  - Model is also appropriate for slowly moving (creeping) vehicles such as those in parking lots and customs plazas
- Results are PRELIMINARY, the analysis is still ongoing
  - results are subject to refinement of alternatives and model inputs
- results do not incorporate mitigation measures
- Model results were produced at almost 2500 receptor locations
  - a fine grid close to the alternatives
- a coarser grid farther away
- Model results were also determined at various "sensitive receptor" locations
  - schools, places of worship, parks, etc.

Air Dispersion Modelling – Preliminary Results





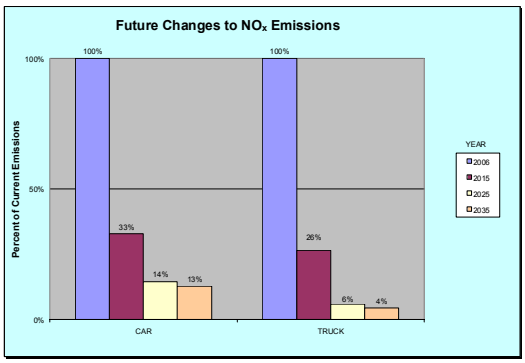
- Concentrations decrease moving away from the Right-of-Way(ROW) for all Alternatives
- Results are similar for depressed and at grade Alternatives
- Concentrations are slightly less for depressed alternatives at a given distance from the ROW compared to at grade
- Tunnel shows least change in concentration with distance compared to other alternatives
- Concentrations increase slightly at farther distances from the ROW

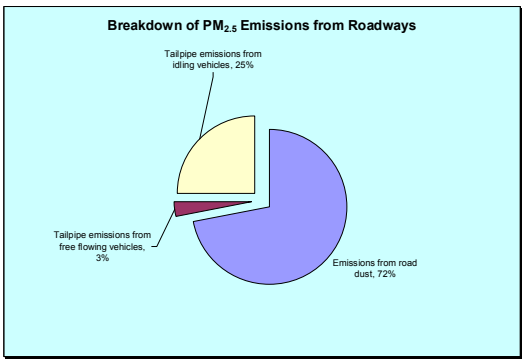
- Most of the time PM2.5 concentrations are dominated by future baseline / background conditions
- Transportation improvements show only slight increases in PM2.5 concentrations compared to future baseline (i.e. no build) conditions

Detroit River INTERNATIONAL CROSSING S T U D Y

Air Quality Assessment

Air Dispersion Modelling – Preliminary Results …Continued





- NOx emissions from cars and heavy trucks will decrease dramatically due to changes in fuels and improvements in vehicle and engine technologies over the next 20 years
- Tailpipe fraction of PM2.5 will also decrease (not shown

- PM2.5 emissions from roads are comprised of two fractions: road dust and tailpipe emissions
- Road dust is the largest contributor
- Idling vehicles emit more PM2.5 than free flowing vehicles

Key Modeling Parameters used in the Analysis of Traffic Noise

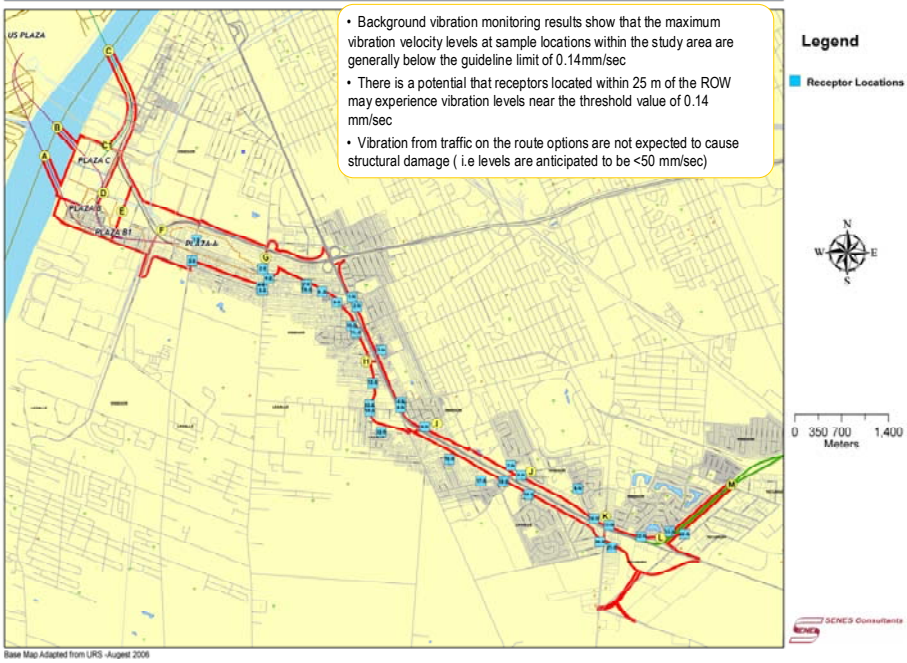
Key Modeling Parameters used in the Analysis of Traffic Noise:

- Annual Average Daily Traffic (AADT)
- Volume of automobiles, medium trucks and heavy trucks;
- Percentage split between daytime (07:00 – 23:00) and nighttime (23:00 – 07:00) traffic; and
- Posted speed limit

Results to date:

- In general, in comparison with at-grade alternatives (1A and 2A), depressed alternatives (1B and 2B) seem to generate lower noise levels at the receptor locations
- Alternative 2B had the least occurrences where the project sound levels exceeded the background sound levels by greater than 5 dB
- In cases along the access roads where receptors were estimated to receive greater than 5 dB increase in sound levels, additional assessment was undertaken
- For each segment where such exceedance as predicted, the effect of a 5m (16 ft) high noise barrier was estimated for either the receptor with the highest estimated exceedance, or the area within the segment with the highest cluster of homes
- Receptors along the crossing approach roadway from Matchette Road to Malden Road, which connects Plaza B, B1 and C are likely to experience a high noise impact from all access road alternatives; the effectiveness of implementing noise mitigation measures in this area is currently being assessed
- Noise from the plaza locations will not result in significant noise level increases at the receptors closest to the plazas

Receptor Locations for Noise Modeling



- Background vibration monitoring results show that the maximum vibration velocity levels at sample locations within the study area are generally below the guideline limit of 0.14mm/sec
- There is a potential that receptors located within 25 m of the ROW may experience vibration levels near the threshold value of 0.14 mm/sec
- Vibration from traffic on the route options are not expected to cause structural damage (i.e levels are anticipated to be <50 mm/sec)

Base Map Adapted from URS -August 2006

Receptor Locations for Noise Modeling

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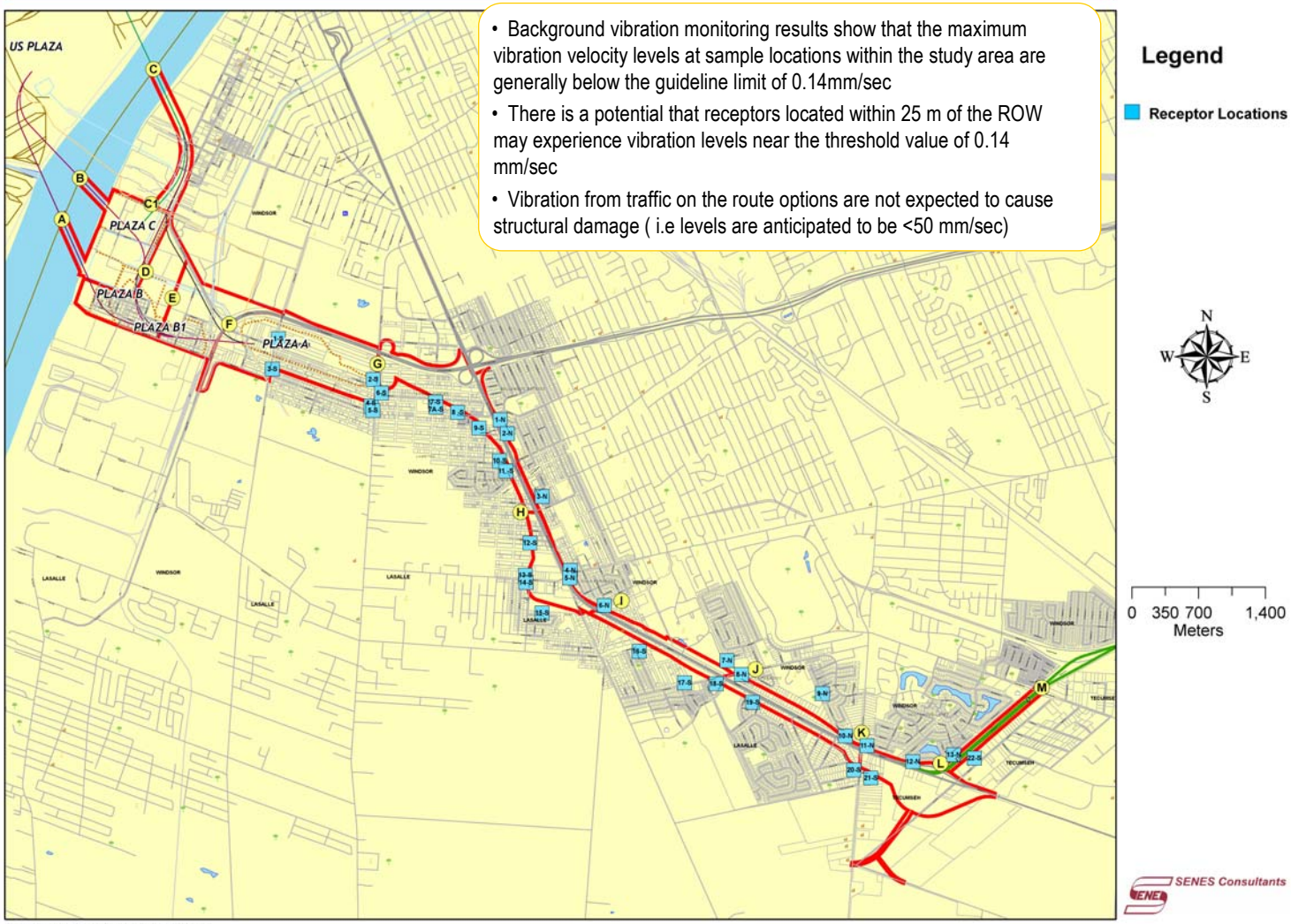
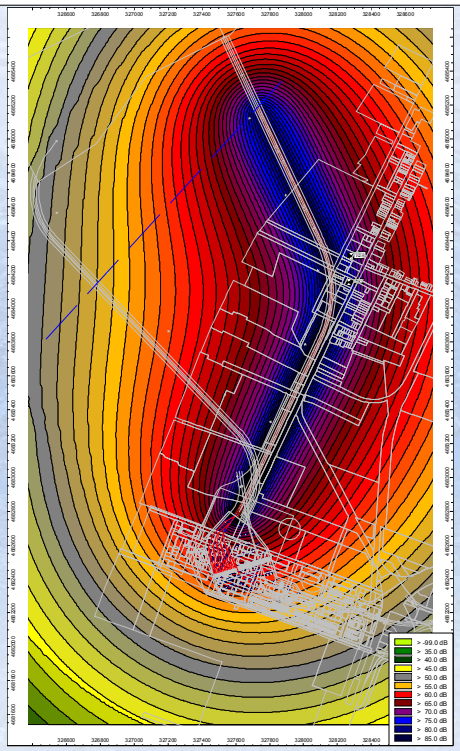
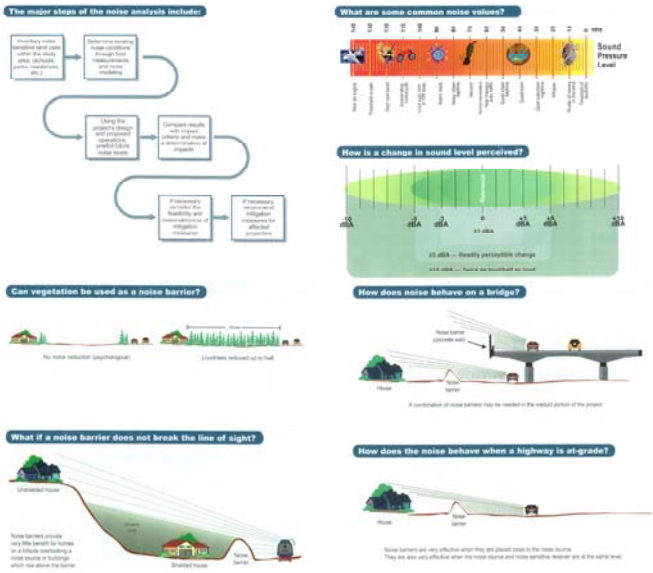


Base Map Adapted from URS -Augest 2006



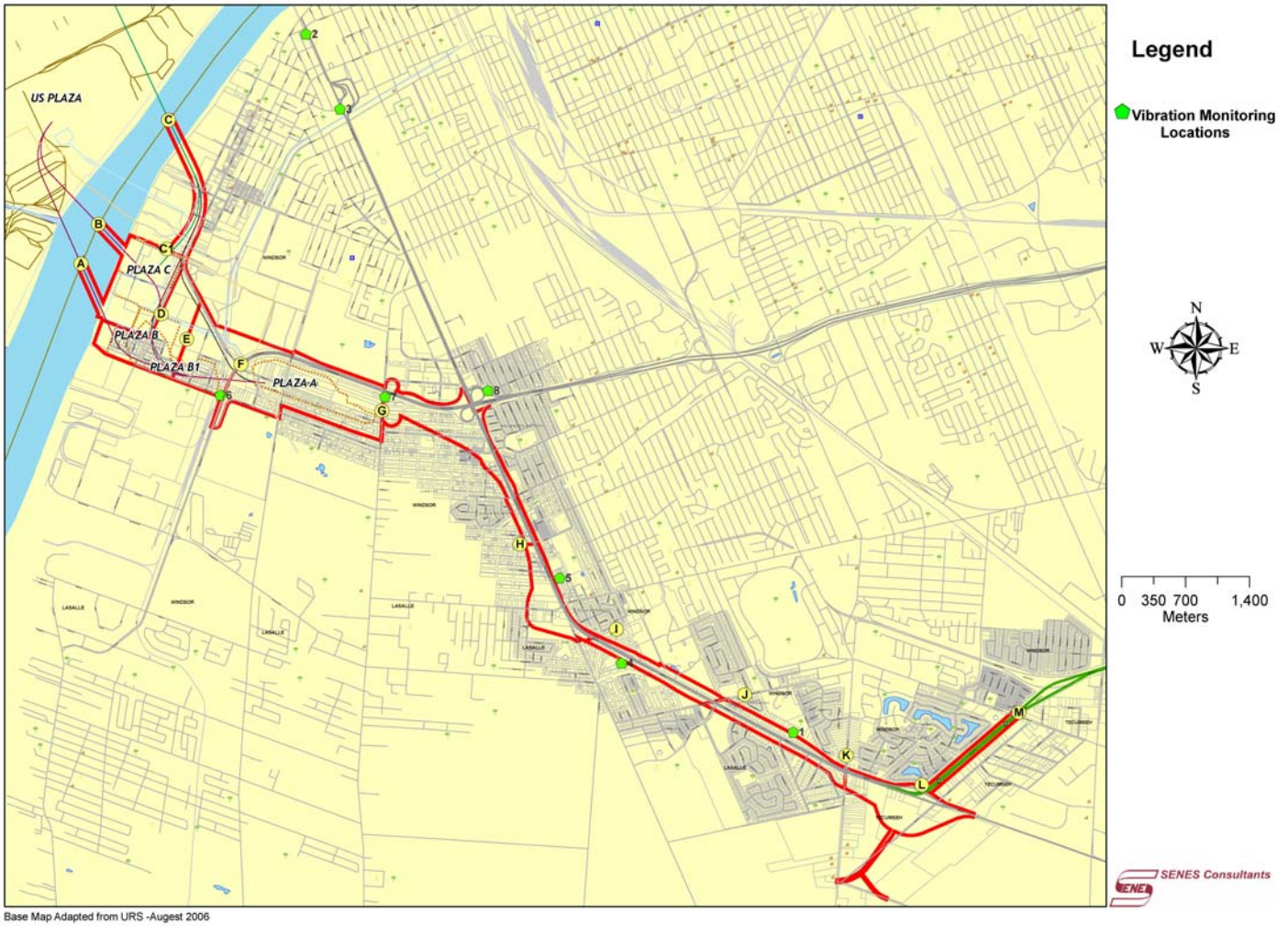
Sample Cadna-a Noise Model for Plaza B1 – Crossing C

What is Traffic Noise & How is it Studied?



Community - Vibration

Vibration Monitoring Locations



Base Map Adapted from URS -Augest 2006

Community - Social Impact Assessment

Households Potentially Displaced: Characteristics

- 37.5% of respondents lived in their home <5 yrs; 26.9 % lived in their home between 11 and 30 years
- Households with children under 18 represent 32% of total households;
- Households with adults over 65 years of age account for 26% of total households

Social Features Potentially Displaced

- 3 potentially along the access route alternatives: uses relate to religious functions, community outreach, recreation and leisure

Households Disrupted

- Both short term (during construction) and long term (post-construction) may be experienced. This assessment considers the results of noise and vibration, air and traffic, and limitations in access to properties

Social Features Disrupted

- Both short term and long term may be experienced
- Features within close proximity to one or more of the practical alternatives include parks, recreation fields and facilities, schools, places of worship, and a cemetery

Community - Economics

Purpose of the Economic Impact Analysis

-identify potential positive and negative effects on the local and regional economy

-Focus on the effects on businesses along or close to the access route and at the plazas

-Analysis based on surveys of businesses, direct discussions, field work and map and property data

Retail Area along Huron Church Road, north of EC Row

-No direct impact from the access route or crossing

-potential positive and negative indirect impacts from reduce traffic. Some loss of business is expected by those relying on cross-border and truck traffic. Reduced truck traffic will make Huron Church Road a more attractive location for local consumers.

Overall, long-term effects on total business activity are not expected to be large in this area.

Retail Area along Talbot Road-Huron Church Road

-approximately 83 businesses: mostly highway-oriented, such as restaurants, accommodation, retail and gas stations

-Over 30% of businesses here would be displaced regardless of the option; some others would be adversely affected by a reduction in traffic access or visibility

Effects vary according to route alternative:

-tunnel is least preferred, displacing over 50% businesses as well as significant reduction in highway access and visibility for the remaining businesses

-at-grade with service roads (option 2A) is preferred since it displaces fewest businesses; it maximizes access and visibility for the remaining businesses

Industrial Area west of Huron Church Road

-Businesses in this area are some of Windsor's largest employers

-Direct effect of access route on business activity is minimal

-Plaza A and Crossing A would have little effect on businesses. Crossing C has the greatest impact; it has the potential to displace up to 100 jobs

-Area businesses relying on truck access, especially cross-border trucks, will benefit from improved accessibility

Economic Impacts in the Greater Windsor Area

-Regional economic impacts, beyond the ACA are mostly positive

-The industrial business climate will improve as a result of less local traffic congestion and improved goods movement

Commercial business, including tourism, will experience benefits as a result of reduced congestion and increased travel in the region.

Detroit River
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Land Use

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Detroit River
INTERNATIONAL CROSSING
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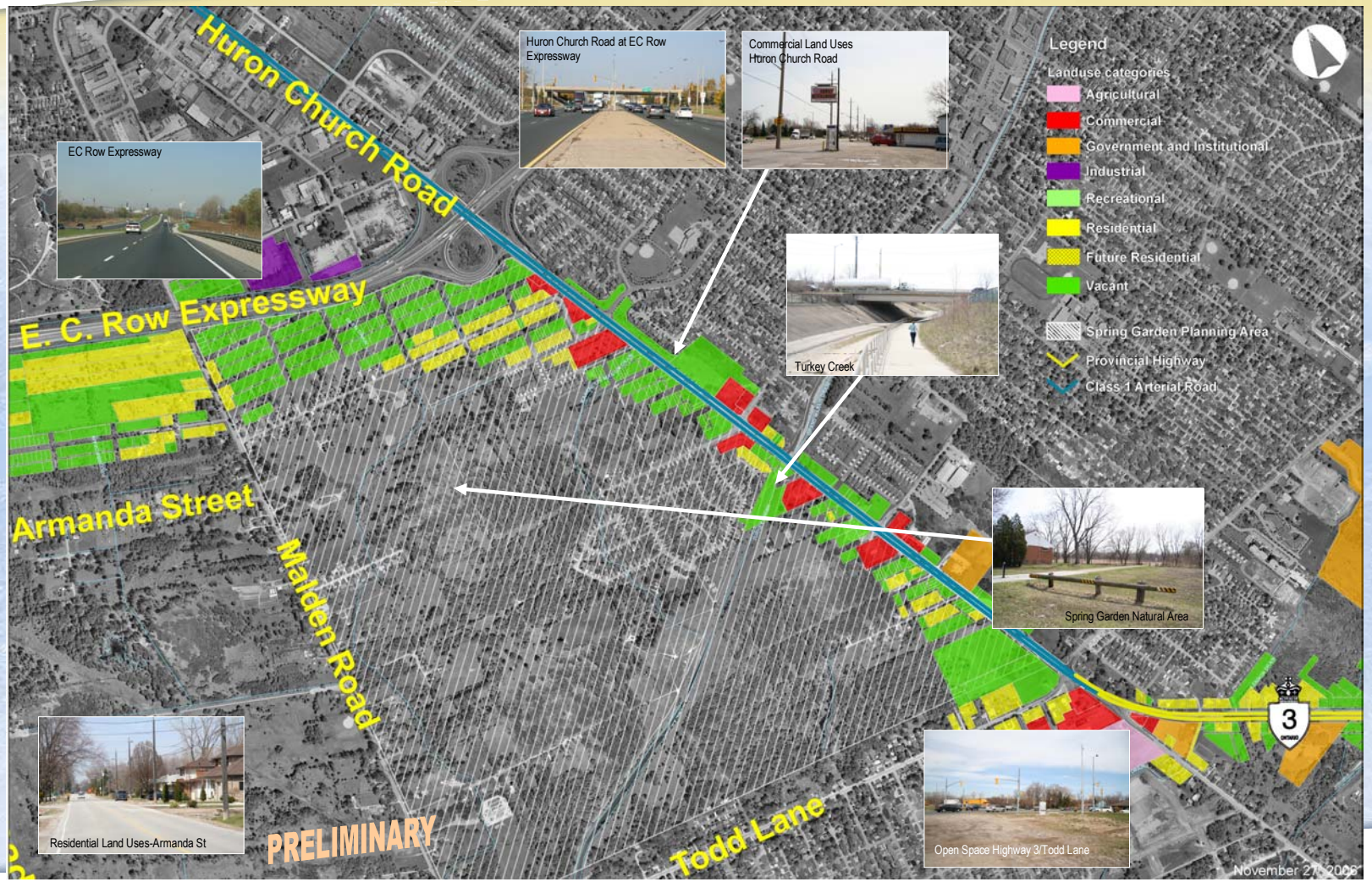
Land Use



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Detroit River
INTERNATIONAL CROSSING
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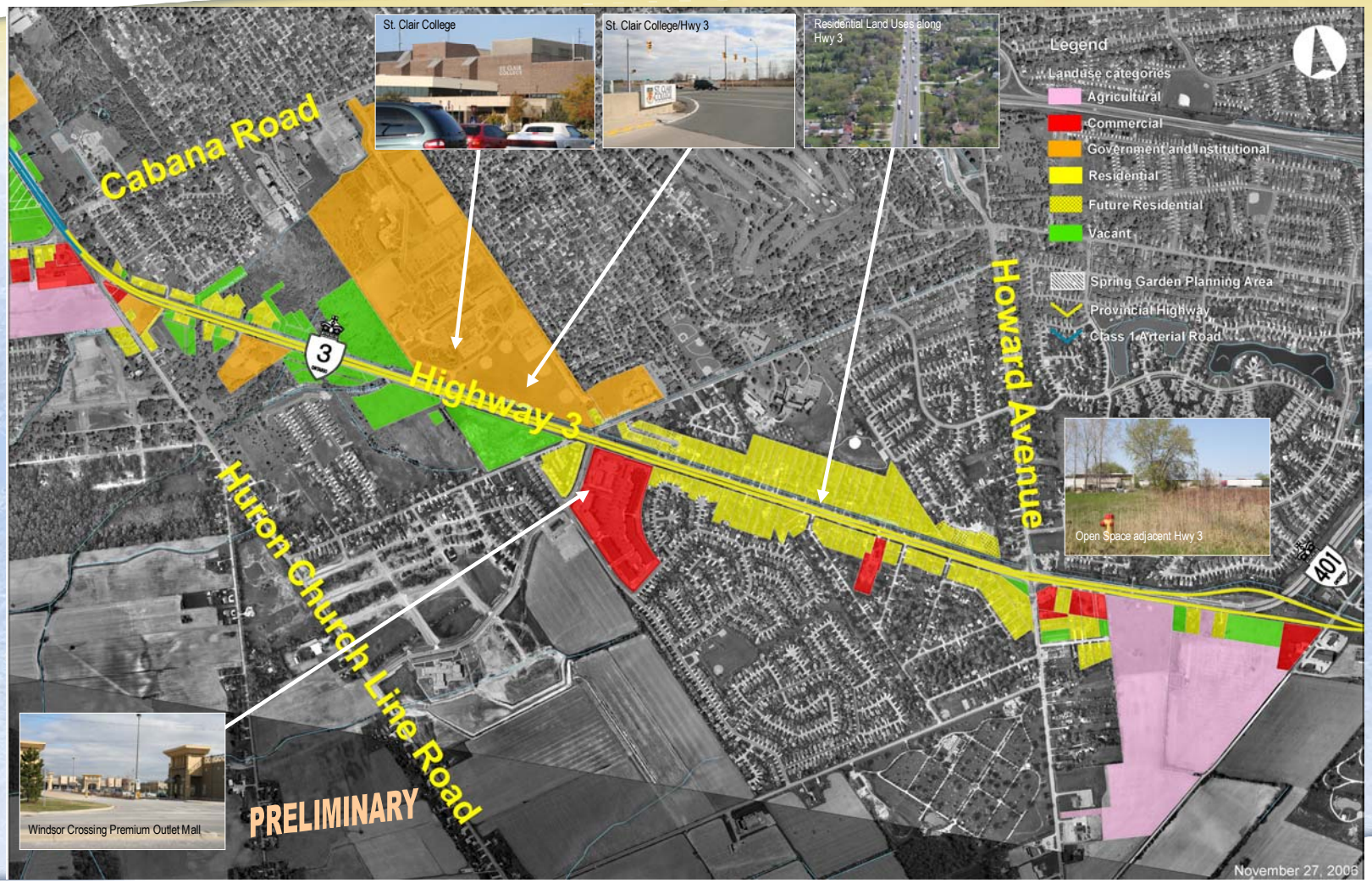
Land Use



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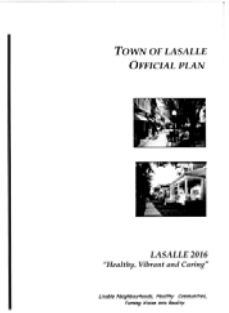
Land Use

Summary of Preliminary Land Use Analysis

	Alternative 1A Option 1	Alterative 1A Option 2	Alternative 1B Option 1	Alternative 1B Option 2	Alternative 2A Option 1	Alterative 2A Option 2	Alternative 2B Option 1	Alternative 2B Option 2	Alternative 3	Plaza A from Crossing A	Plaza A from Crossing B	Plaza A from Crossing C (C-G)	Plaza A from Crossing C (C-E-G)	Plaza B from Crossing C	Plaza B1 from Crossing B	Plaza C from Crossing C
Land Use	Approximate Area of Impact (in hectares)															
Residential	16	16	16	17	21	18	21	25	13	19	19	19	19	<1	12	12
Commercial	9	9	9	10	9	10	9	10	8	0	1	<1	<1	<1	1	9
Industrial	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	3	10	9	21	8	39
Recreational	0	0	0	0	0	0	0	0	0	<1	0	0	0	1	0	0
Government and Institutional	5	1	3	1	3	2	3	3	1	<1	<1	<1	<1	0	<1	<1
Vacant (Residential and Commercial)	37	38	37	40	37	37	36	36	34	25	23	20	23	12	28	16
Agricultural	10	9	9	9	10	10	10	10	8	0	0	0	0	0	0	0

Land Use Documents Consulted:

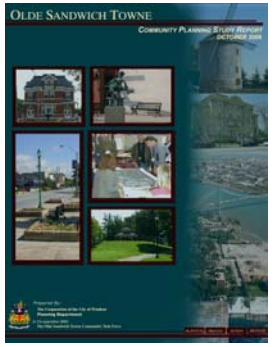
Zoning Bylaws



Zoning Bylaws

Official Plans

Zoning Bylaws



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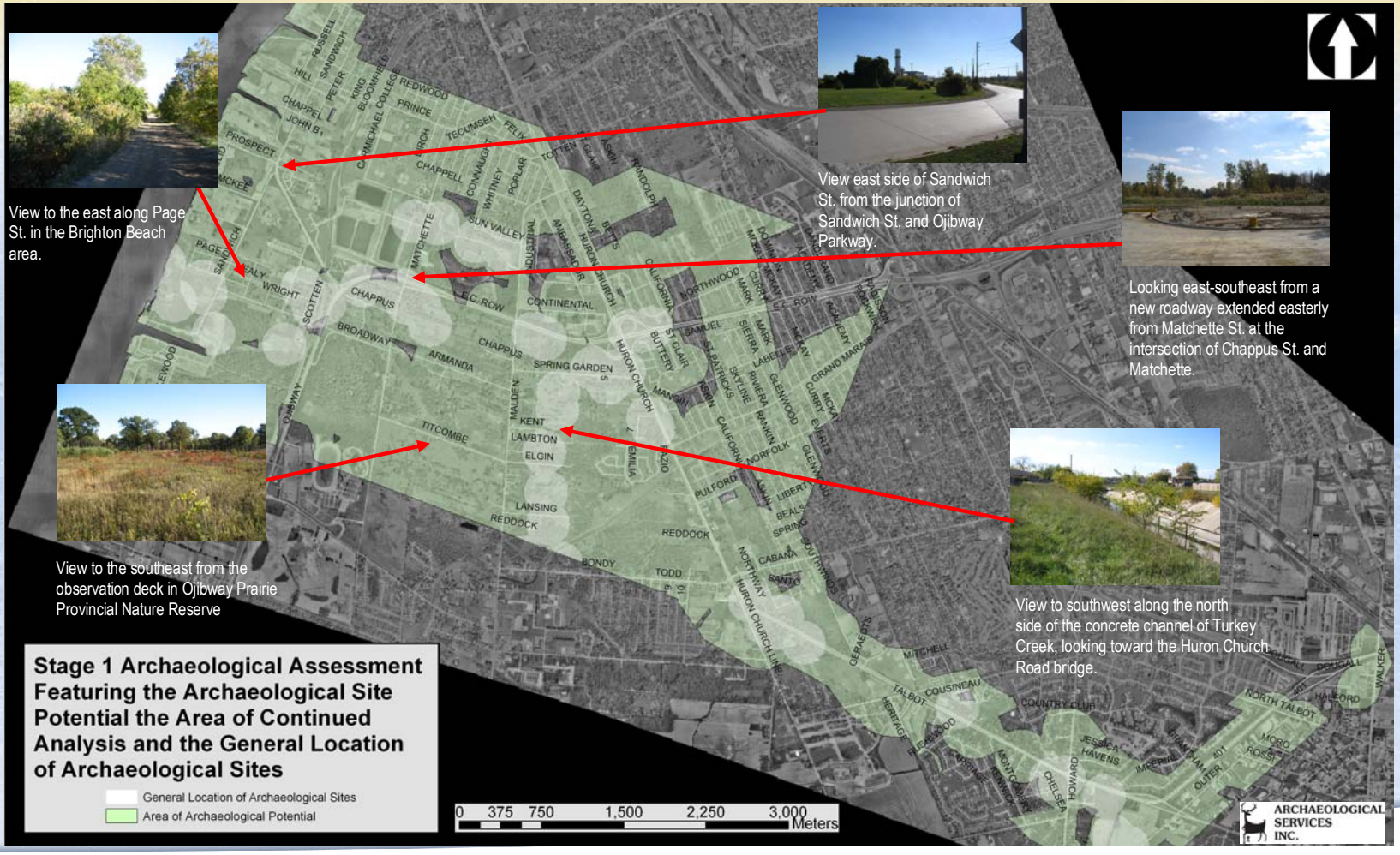
Cultural - Archaeological



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Cultural - Archaeological

Find Identifier	Description	Survey Type When Find Made	Date of Find	Preliminary Recommendation for Next Steps
P1	Aboriginal scatter	Pedestrian	6/12/2006	Register site with Ministry of Culture, then no further work
P2	Aboriginal Isolated find	Pedestrian	6/12/2006	Register site with Ministry of Culture, then no further work
H1	Euro-Canadian scatter	Pedestrian	6/12/2006	Artifact examination and archival to better interpret find prior to making recommendations
H2	Euro-Canadian scatter	Test pit	6/12/2006	Artifact examination and archival to better interpret find prior to making recommendations
Site 1	Aboriginal Isolated find	Test pit	6/26/2006	No Further work
Site 2	Euro-Canadian scatter	Test pit	7/10/2006	Artifact examination and archival to better interpret find prior to making recommendations
Site 3	Euro-Canadian scatter	Test pit	7/10/2006	Artifact examination and archival to better interpret find prior to making recommendations
Site 4	Euro-Canadian domestic rtefact scatter	Test pit	Sept. 13	Artifact examination and archival to better interpret find prior to making recommendations
Site 5	Euro-Canadian domestic artifact scatter	Test pit	Sept. 14 – 15	Further testing (auger) required. Artifact examination and archival to better interpret find prior to making recommendations
Site 6	Euro-Canadian/Modern domestic rtefact scatter	Test pit	Sept. 19	No further work
Site 7	Unknown Euro-Canadian and Aboriginal	Test pit	Sept. 19	Artifact examination and archival to better interpret find prior to making recommendations
Site 8	Aboriginal Isolated find	Test pit	Sept. 20	No further work
Site 9	Aboriginal Isolated find	Test Pit	Sept. 21	Artifact examination and archival to better interpret find prior to making recommendations
Site 10	Aboriginal scatter	Test Pit	Sept. 21	Artifact examination and archival to better interpret find prior to making recommendations

Find Identifier	Description	Survey Type When Find Made	Date of Find	Preliminary Recommendation for Next Steps
Site 11	Aboriginal Isolated find	Test Pit	Sept. 21	Artifact examination and archival to better interpret find prior to making recommendations
Site 12	Unknown – Aboriginal and Euro-Canadian	Test pit	Sept. 25	Recommend Stage 3 Assessment – controlled surface pick-up
Site 13	Euro-Canadian	Test pit	Sept. 26	Artifact examination and archival to better interpret find prior to making recommendations
Site 14	Aboriginal	Test pit	Sept. 26	Artifact examination and archival to better interpret find prior to making recommendations
Site 15	Aboriginal	Test pit	Sept. 27	Artifact examination and archival to better interpret find prior to making recommendations
Site 16	Aboriginal	Test pit	Sept 28	Artifact examination and archival to better interpret find prior to making recommendations
Site 17	Aboriginal	Test pit	Oct. 3	Artifact examination and archival to better interpret find prior to making recommendations
Site 18	Euro-Canadian	Test pit	Oct. 3	Artifact examination and archival to better interpret find prior to making recommendations
Site 19	Euro-Canadian	Test pit	Oct. 11	Artifact examination and archival to better interpret find prior to making recommendations
Site 20	Aboriginal	Test pit	Oct 12	Artifact examination and archival to better interpret find prior to making recommendations
Site 21	Euro-Canadian	Test pit	Oct. 18	No further work
Site 22	Euro-Canadian	Test pit	Oct. 30	Artifact examination and archival to better interpret find prior to making recommendations
Site 23	Aboriginal	Test pit	Oct. 31	Artifact examination and archival to better interpret find prior to making recommendations
Site 24	Aboriginal	Test pit	Nov. 1	No Further work

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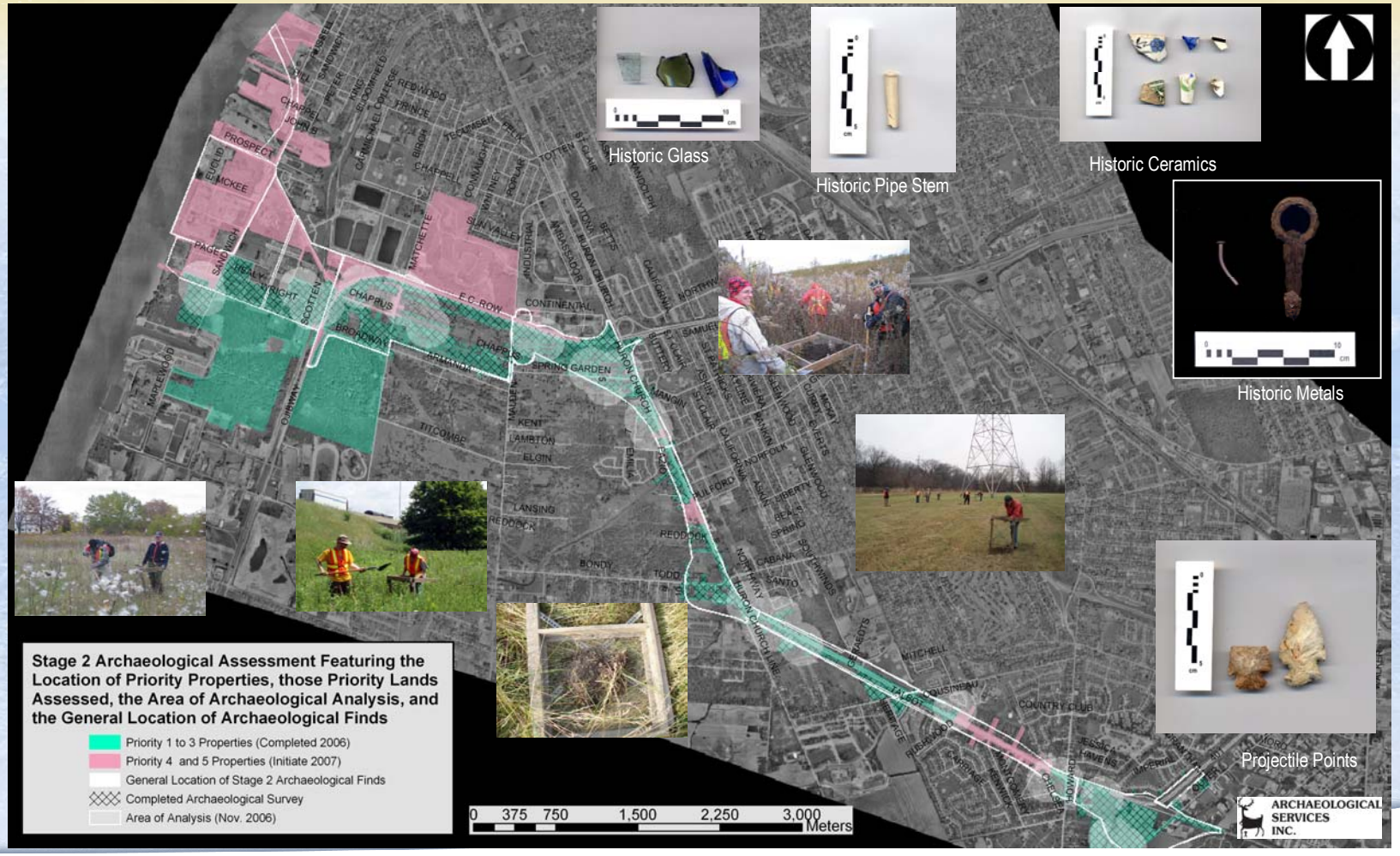
Cultural - Archaeological



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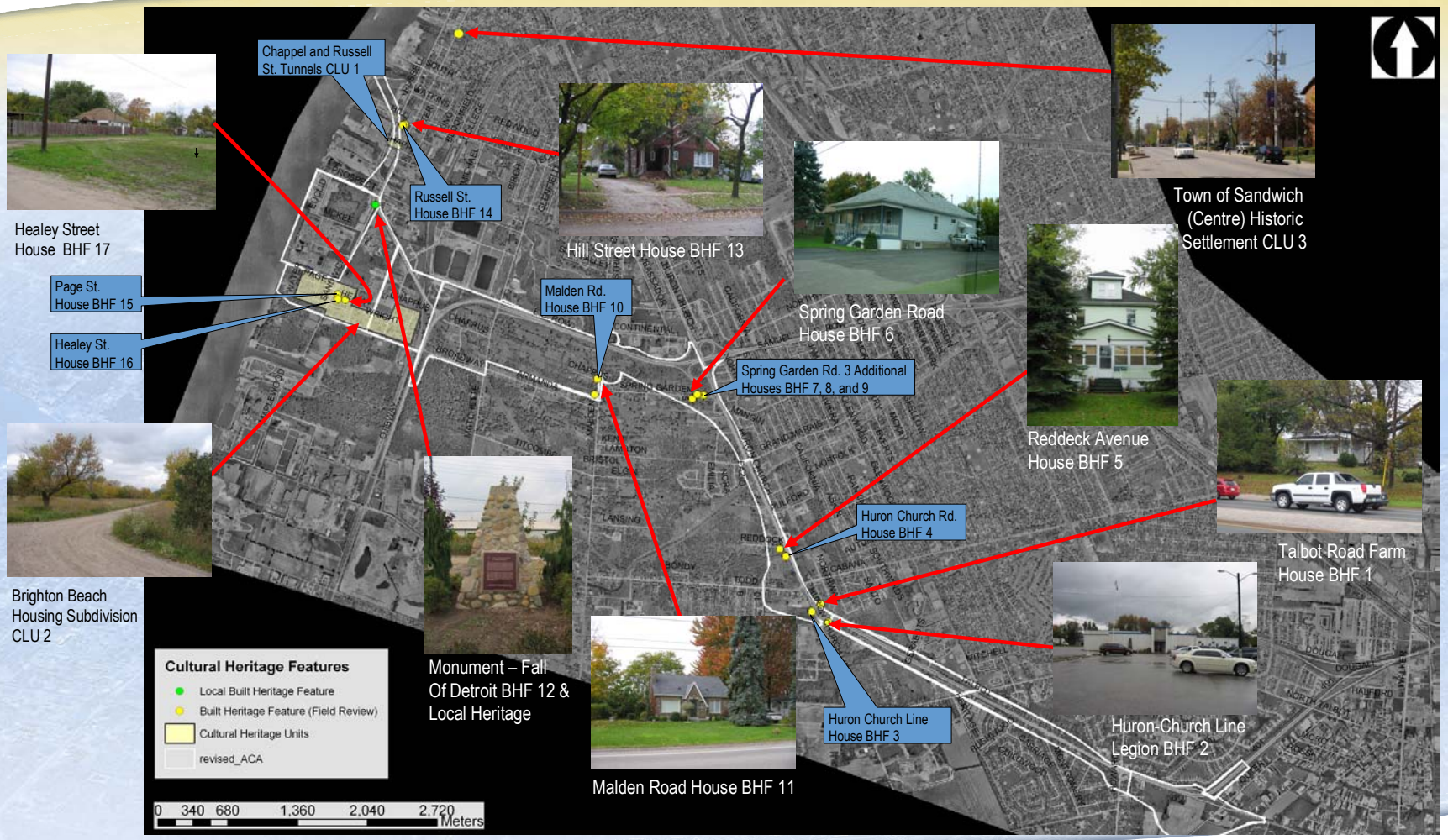
Cultural - Built Heritage



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Cultural - Built Heritage

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Cultural - Built Heritage

Identified Cultural Heritage Resources in the ACA Built Heritage Features (BHF) and Cultural Landscape Units (CLU)

Feature	Address	Feature Type	Approx. Age
BHF 1	Talbot Road	Farmhouse	1860-1880
BHF 2	Huron Church Line	Legion	1961
BHF 3	Huron Church Line	House	1901-1939
BHF 4	Huron Church Road	House	1901-1939
BHF 5	Reddeck Avenue	House	1901-1939
BHF 6	Spring Garden Road	House	1901-1939
BHF 7	Spring Garden Road	House	1901-1939
BHF 8	Spring Garden Road	House	1901-1939
BHF 9	Spring Garden Road	House	1901-1939
BHF 10	Malden Road	House	1901-1939
BHF 11	Malden Road	House	Pre-1900
BHF 12	Ojibway Parkway at Sandwich Street	Monument	
BHF 13	Hill Street	House	1901-1939
BHF 14	Russell Street	House	1901-1939
BHF 15	Page Street	House	1901-1939
BHF 16	Healy Street	House	1901-1939
BHF 17	Healey Street	House	Pre-1900
CLU 1	Chappel Street and Russell Street Unconfirmed oral report	Tunnels	Pre-1900
CLU 2	Water Street to the west, Chappus to the north, Scotten to the east and Broadway/Wright to the south	Brighton Beach housing subdivision	
CLU 3	Town of Sandwich	Historic settlement	

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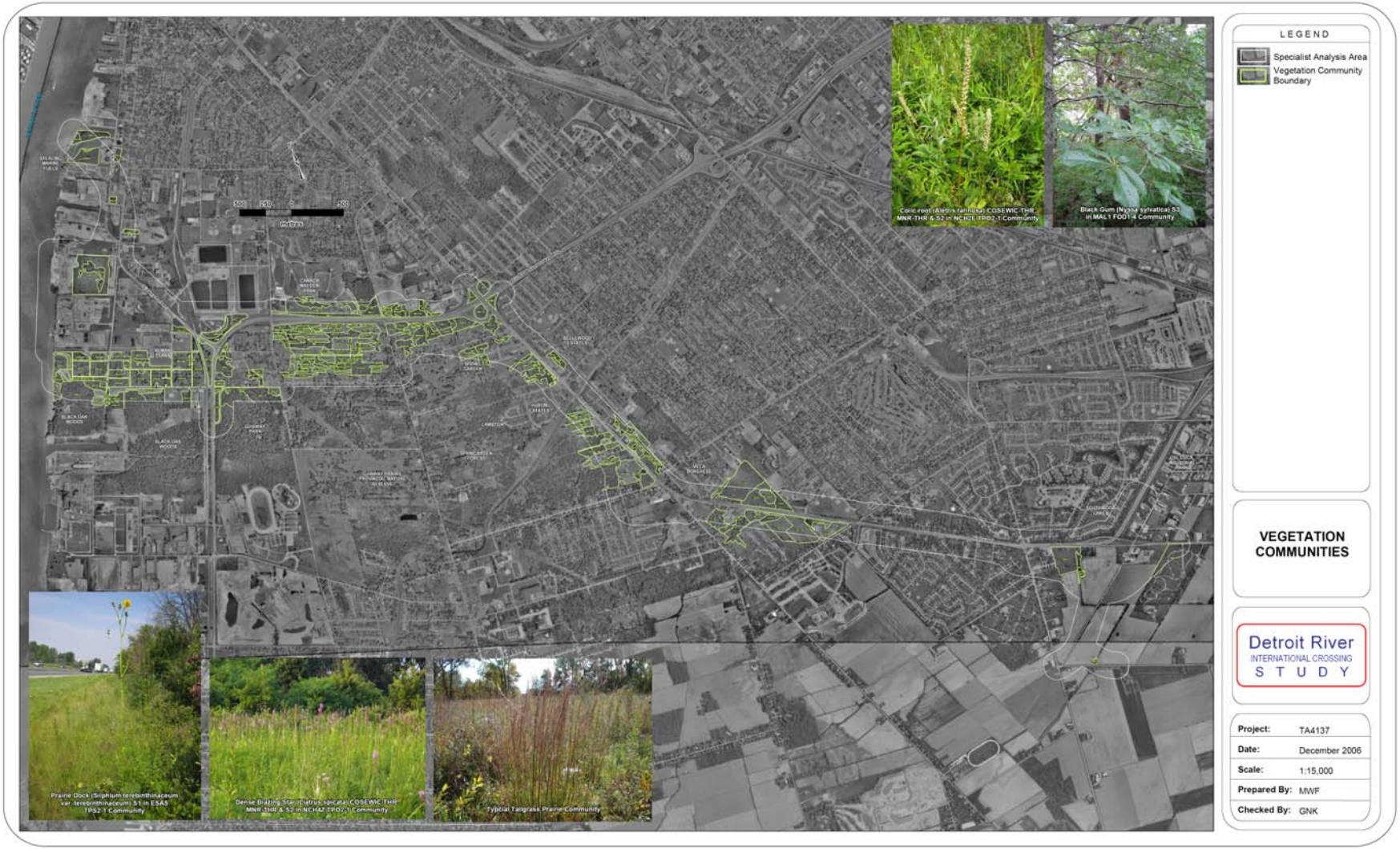
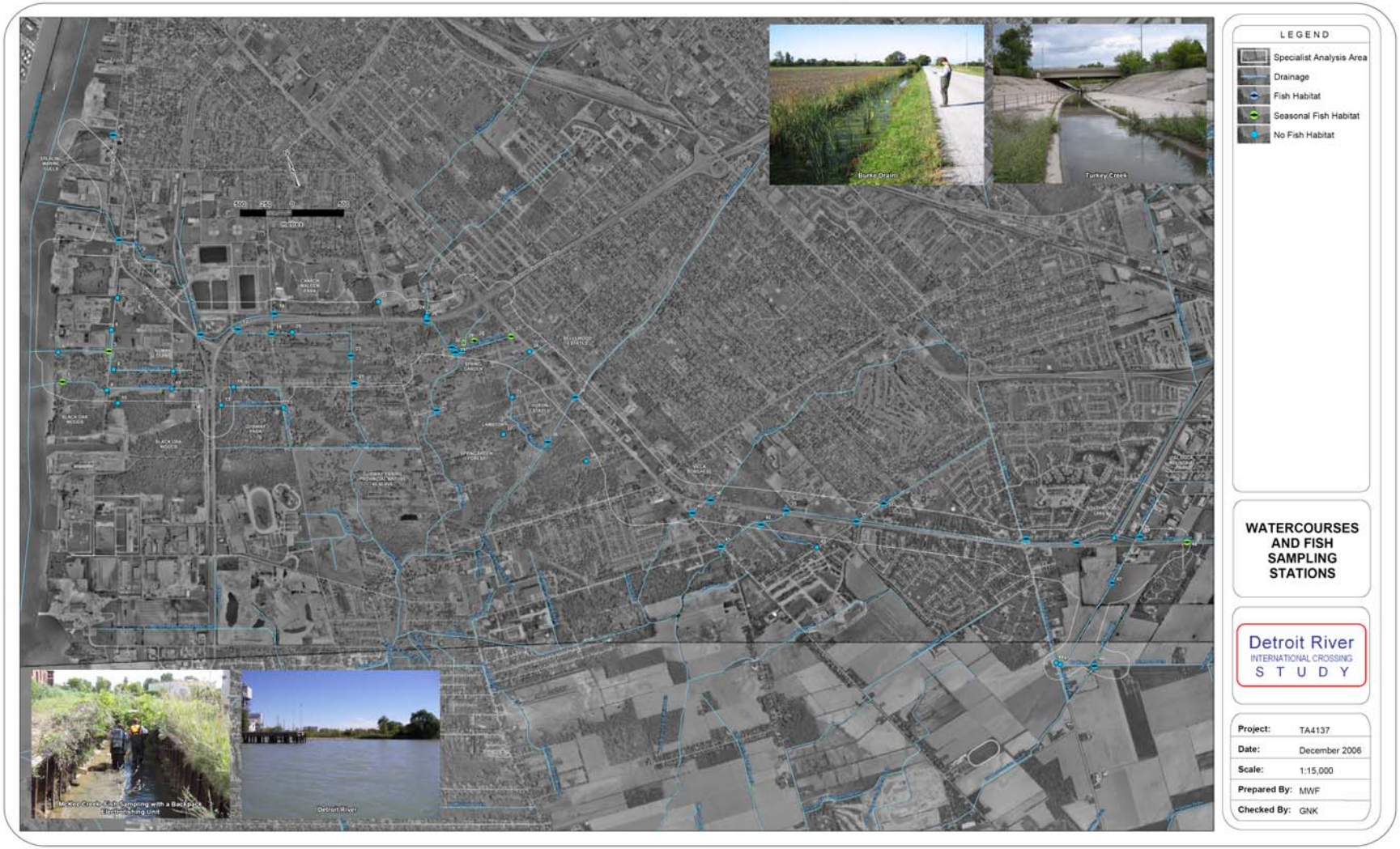
Natural Environment



Natural Environment



Natural Environment

Detroit River INTERNATIONAL CROSSING STUDY

Regional Mobility

As part of the environmental assessment of the Detroit River International Crossing (DRIC) Study, a detailed traffic analysis was completed to assess existing and future (2015, 2025 and 2035) traffic conditions. The practical alternatives were assessed for levels of service, intersection delays, travel times, network flexibility, local connections and anticipated changes to travel patterns.

All crossing, plaza and access road alternatives will meet future travel demand and provide a greater improvement to mobility compared to *Do Nothing*.

Existing Conditions

Huron Church Road/Highway 3 operates with some congestion and near capacity during the peak hours. The proportion of trucks is largest nearest to the Ambassador Bridge plaza and during off-peak periods is as high as 60% and is approximately 30% during peak hours.

Future Conditions

By 2035, both international car and truck traffic through Windsor-Detroit is expected to grow significantly.

- Afternoon peak hour truck traffic is expected to more than double
- International car traffic is expected to increase by 50%

Future PM Peak Hour Traffic Volumes (U.S. to Canada)

Crossing	Year	Cars		Trucks		Total	
		Volume	% Growth	Volume	% Growth	Volume	% Growth
Ambassador Bridge	2004	1,180	0%	390	0%	1,570	0%
	2015	1,500	27%	510	31%	2,010	28%
	2025	1,670	42%	680	74%	2,350	50%
	2035	1,880	59%	770	97%	2,650	69%
Detroit-Windsor Tunnel	2004	930	0%	10	0%	940	0%
	2015	1,220	31%	40	300%	1,260	34%
	2025	1,310	41%	60	500%	1,370	46%
	2035	1,300	40%	150	1400%	1,450	54%
Total	2004	2,110	0%	400	0%	2,510	0%
	2015	2,720	29%	550	38%	3,270	30%
	2025	2,980	41%	740	85%	3,720	48%
	2035	3,180	51%	920	130%	4,100	63%

Detroit River INTERNATIONAL CROSSING STUDY

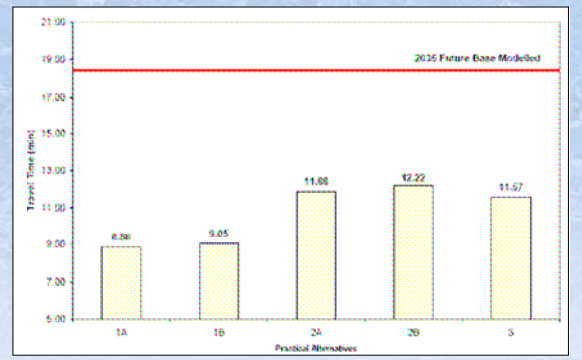
Regional Mobility

Future Conditions (Cont'd)

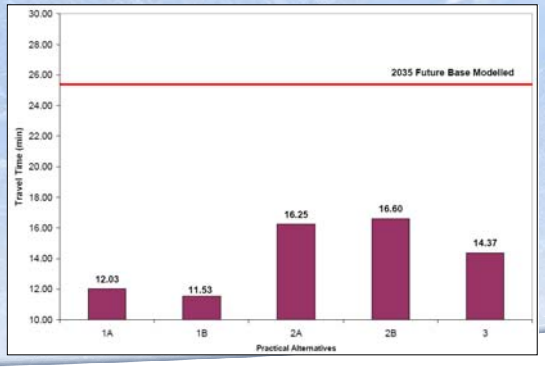
If no new crossing facility is built:

- Significant road capacity problems can be expected by 2015;
- Conditions will deteriorate further by 2035 to a point where most intersections will operate over capacity;
- Unacceptable delays with travel times nearly doubling over existing conditions;
- Excess traffic (international, regional and local) would overflow onto other roads in to avoid congestion on Huron Church Road and Highway 3.

Travel Time Comparison Highway 3 / Huron Church Road: Westbound/Northbound AM Peak Hour, Howard Avenue to College Avenue



Travel Time Comparison Highway 3 / Huron Church Road: Eastbound/Southbound PM Peak Hour, College Avenue to Howard Avenue



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Cost & Constructability

Practical Alternatives	Cost ($ millions CDN 2011)	Key Issues
Access Roads HWY 401 to Malden Road	620 to 3,780	Complex construction staging will also be required for alternatives at the Grand Marais Drain/Turkey Creek.
At-Grade – Alternatives 1A, 2A	620 to 920	
Below-Grade – Alternatives 1B, 2B	1,030 to 1,360	
Tunnel – Alternative 3	3,610 to 3,789	Increased costs related to greater excavation, concrete required, ventilation, electrical, drainage, communications and Emergency Management Systems.
Inspection Plazas Including Access Road connection from Malden Road to Plazas	180 to 280	Plaza B and C require a longer freeway link from Malden Road. Cost does not include the relocation of the Keith Transformer Station.
International Crossing	TBD	Costs are being developed in collaboration with the U.S. team.

Constructability - *All the alternatives are constructible*. Traffic flow can be 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, particularly towards the north and west ends of the project. These problems increase with the depth of construction.

Detroit River INTERNATIONAL CROSSING STUDY

Construction Staging

Sequence

1. Utilities - Relocation of utilities (e.g. Hydro, Bell, Union Gas, cable television, watermains, storm sewers, municipal drains and sanitary sewers).

2. Service Roads - Focus on building service roads, realignment of the existing municipal roadways, and construction temporary staging roads. During this phase, traffic will remain primarily on existing Huron Church Road/Highway 3.

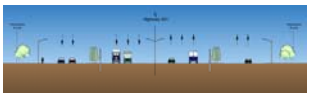
3. New Highway 401

Objectives

Maintain existing traffic within the corridor.

Maintain access to and from all major crossing roads, commercial and residential entrances.

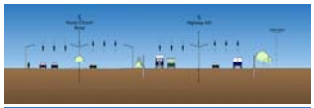
1a



1b

At-grade sections constructed using conventional freeway methods typical on 400-series highways. Depressed sections constructed using excavation techniques suitable for urban areas. Variety of methods available to minimize the overall property requirements of the project.

2a



2b

Methods similar to 1A and 1B. With the alignment beside the existing roadway, there will be less utility relocation and realignment of roadways.

3

First step focuses on realignment of existing roadways and temporary staging roads. Traffic would remain primarily on existing Huron Church Road/Highway 3. The next phase of construction focuses on the construction of the tunnel structure itself using the cut and cover tunnel method. The below grade and tunnel alternatives require significantly more complex construction than the at grade alternatives.

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Detroit River INTERNATIONAL CROSSING STUDY

Tunneling

Cut and Cover Construction *(Bottom-up Method)*

This construction method utilizes drilling rigs to install caissons, which form part of the tunnel walls. The soil between the walls is excavated to a depth below the tunnel floor. The floor slab is poured, followed by the side walls, constructed from 'bottom-up'. Roof construction follows, and the surface roadway on top is completed.

Tunnel Safety Considerations:

Ventilation systems and buildings;

Illumination;

Closed Circuit Television (CCTV);

Intelligent Transportation Systems (ITS);

Emergency access between tunnels;

Tunnel/Surface Emergency access and egress

Ice prevention at portals and ramps;

Emergency telephone systems;

Containment of spills;

Flood prevention system;

Smoke detector, carbon monoxide and dioxide monitoring system;

Fire sprinkler system;

Emergency power supply;

Storage for emergency supplies; and

Additional training for Emergency Services staff and education for motorists.

Detroit River INTERNATIONAL CROSSING STUDY

Tunneling Ventilation

Why is Tunnel Ventilation Required?

Air quality within a tunnel;

Air emissions from the tunnel's entrance and exit portals; and,

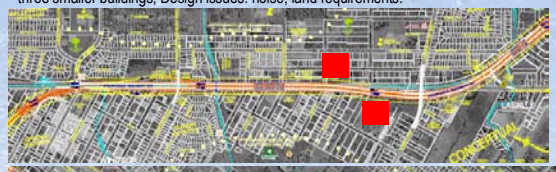
Fire and/or emergency conditions within the tunnel.

Ventilation Design Options

✖ **Natural Ventilated Tunnels** - Tunnels less than approximately 150 to 200 metres in length can be ventilated naturally.

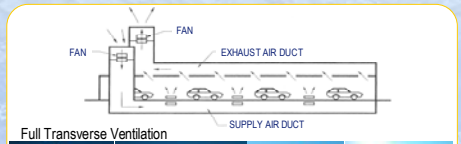
✓ **Mechanically Ventilated Tunnels –** *Longitudinal Ventilation* (e.g. jet fans) and *Full Transverse Ventilation* systems would be practical methods for the tunneled access road alternatives, as they could accommodate the 6 km (approximate) length the alternatives.

- **Longitudinal Ventilation** – 6 km tunnel would require approximately 300 jets; Suitable for low traffic volumes; Design issues:effectiveness of limiting portal emissions and fan noise;
- **Full Transverse Ventilation** – 6 km tunnel tunnel would require one large building two or three smaller buildings; Design issues: noise, land requirements.



Natural Ventilation

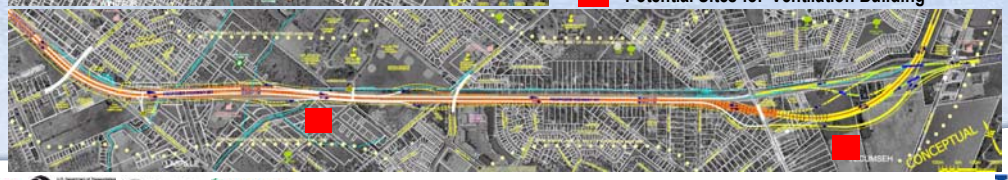
Longitudinal Ventilation with Jet Fans



Full Transverse Ventilation

Typical scales of constructed Ventilation Buildings

Potential Sites for Ventilation Building



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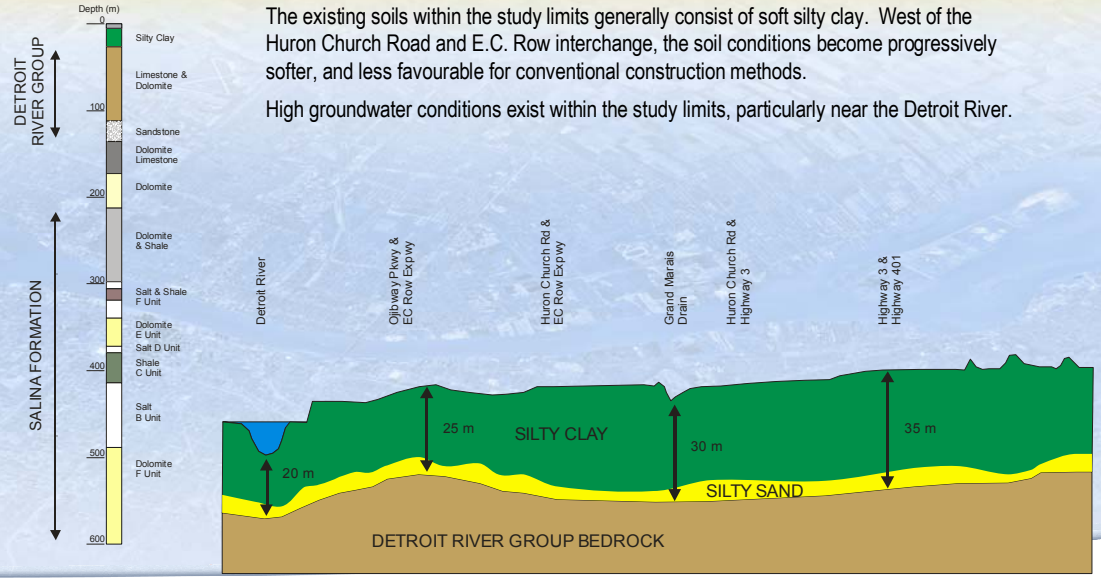
Detroit River INTERNATIONAL CROSSING STUDY

Foundations

Existing Soil and Groundwater Conditions

The existing soils within the study limits generally consist of soft silty clay. West of the Huron Church Road and E.C. Row interchange, the soil conditions become progressively softer, and less favourable for conventional construction methods.

High groundwater conditions exist within the study limits, particularly near the Detroit River.



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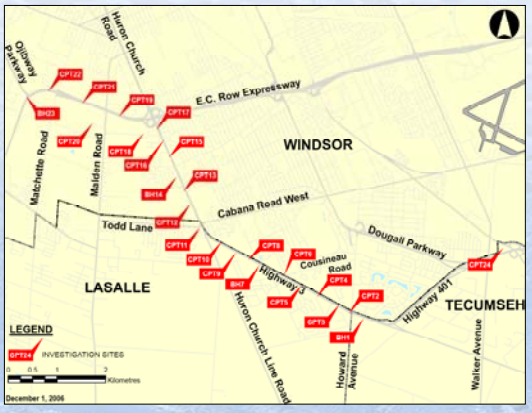


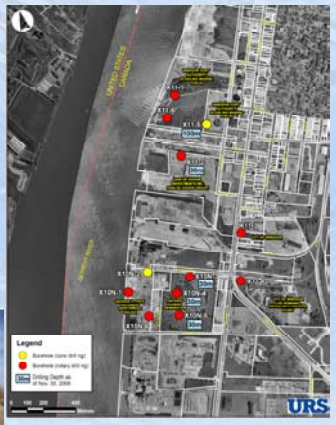
Foundation Investigation Program for the Access Road Practical Alternatives

Completed in November 2006. Program included drilling 24 boreholes along the access road corridor. The boreholes extended to a maximum depth of 35m. Most of the boreholes were located within existing road allowances. Boreholes are required to provide additional information on existing soil types and preliminary design recommendations for various structural components of the practical crossing route alternatives, including walls, roof, floor slabs and footings for tunnels, retaining walls for depressed sections, and bridge abutments.

Foundation Investigation Program for the International Bridge Crossing

Being undertaken to better understand the effects of solution mining and confirm integrity of the underlying bedrock to support a new international bridge. Drilling operations are currently underway in Canada and on the U.S. side of the river.

Canadian program includes 12 deep boreholes in the vicinity of practical alternative crossings 'B' and 'C'. Each borehole will be drilled to a depth of up to 500m.



Coring on Sterling Fuels Property, Nov 2006 (left)
Cable Tool Rig on OPG Property, Nov 2006 (Right)

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Detroit River International Crossing STUDY

CSS Consultation Activities

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

CSS is a key component of the development of practical alternatives for DRIC. Beside is a table outlining the various CSS activities held over the course of 2006.

Workshop Date/Topic	Workshop Agenda
January 2006 Inspection Plaza Location Development	• Participants were asked to define preferred inspection plaza locations • Several locations were mapped based on community input
February 2006 Access Road Refinement	• Participants were asked to provide input into the design aesthetic look of the new freeway • Participants suggested berming and noise wall treatments
April 2006 Access Road Refinement	• Participants provided input regarding refining the design the access road alternatives
June 2006 Context Sensitive Solutions Preference Workshop	• Participants were asked for their preferences/ opinions regarding the type/and look of the new crossing, aesthetic treatment options in and around the plazas, and the landscape treatment options along the access road alternatives • Participants indicated what concepts they preferred; what themes the new access road, plaza and crossing should convey
October 2006 Access Road and Plaza Theme Examples	• Workshop built upon concepts shown at the June 2006 workshop • Participants were shown examples of landscape treatments as they relate to three focus areas of the access roads, and landscape treatments for the plazas • Three themes were developed: Rose City, Carolinian, and Motor City • Participants were asked for their preferences/opinions regarding the themes developed for the aesthetic treatments of the access road and plazas
November 2006 Crossing Type Preference	• Joint workshop with U.S. DRIC team; drop-in format; participants used computer workstations, hands on drawing areas to produce drawings for the physical preferences of a new crossing • Focused on bridge crossing type, lighting treatment options, crossing theme, colour of bridge crossing

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Detroit River INTERNATIONAL CROSSING STUDY

Context Sensitive Solutions – June 2006

Workshop sessions were held on June 23, 2006 and June 24, 2006 to gather the public's preferences/opinions regarding the type and look of the new crossing, aesthetic treatment options for the plaza alternatives, and landscape treatment options along the access road alternatives. There was a total of 189 participants.

Crossing Alternatives suggestions:

Preference for suspension or cable-stayed split;

incorporate native plantings; naturalized look around the base of the bridge

Heritage and history and friendship elements of both cities should be included in the bridge design

Plaza Alternatives suggestions:

Include naturalized berms in areas between plaza and existing land uses

Incorporate native plantings; naturalized look

Include sounds walls

Access Road Alternatives suggestions:

Vegetation should be low maintenance; attractive and native

Include Rose City themed motifs

Include automotive/industrial elements into landscape design

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Detroit River INTERNATIONAL CROSSING STUDY

Context Sensitive Solutions – October 2006

Workshop sessions were held on October 2, 2006 and October 3, 2006 to gather the public's preferences/opinions regarding the themes developed for the aesthetic treatment of the access road and plaza alternatives, as well as input on other aesthetic or landscape elements not presented at the workshop sessions. There was a total of 167 participants. From these three themes, the public's preference for the aesthetic treatment of the new access road and plaza alternatives was the naturalized look of the CarolinianTheme. The public's secondary preference was for the Rose City theme followed by the Motor City theme.

CAROLINIAN

Reminiscent of the natural heritage of the Detroit River and of Windsor-Essex. Provides the most naturalized look, with native trees, shrubs and grasses. Main comments expressed include:

- plant along entire access road corridor
- incorporate native plantings; maintain a naturalized look
- considered low maintenance; easy to maintain

Rose City

Includes formal plantings, brick and iron accents, and a focus on roses. Reminiscent of classical turn of the century parks and gardens. Main comments expressed include:

- plant along linear areas; plant near pedestrian-oriented areas (i.e. schools, residential areas)
- incorporate into the at-grade alternatives
- viewed as high-maintenance; expensive to maintain

motor city

Includes aspects of both past and future technologies, includes linear plantings, glass, steel, and concrete accents and state-of-the-art lighting and signage. Main comments expressed include:

- vegetation should be low maintenance; attractive
- include automotive/industrial elements
- modern; urban; contemporary feel; may look dated in the future

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Context Sensitive Solutions Bridges – November 2006

Workshop sessions were held on November 2nd in Detroit and November 15th in Windsor to gather the public's preferences/opinions regarding the aesthetics of suspension and cable-stayed bridge alternatives. There was a total of 194 participants. Participants documented their preferences with visualization programs and provided input to bridge artists & architects.

Preferences asked for each bridge type:

- Theme
- Colour
- Light Stands
- Barriers types
- Lighting treatments

Results:

- History theme dominated the option for Suspension (62%)
- Friendship theme dominated the option for Cable-stayed (68%)

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Detroit River INTERNATIONAL CROSSING STUDY

Value Engineering Workshop on Access Road Alternatives

Value Engineering (VE), is a systematic and function-based approach to improving the value of products, projects, or processes.

On highway projects, improvements to value might include enhancing safety in a design or reducing impacts to the public by providing ideas for shortening the duration of a construction project.

A Value Engineering Workshop was conducted from September 6-8 and 12-15, 2006 with various Canadian and American experts in the environmental and engineering disciplines, including local municipal staff representatives.

Members of the VE Team were independent of the Study Team, so that a review of the roadway approach to the new Detroit River International Crossing could be undertaken from a "fresh" perspective.

Generally, the VE Workshop confirmed the findings of the DRIC study team including :

- Need for a 6-lane freeway and 4-lane service road cross-section;
- Bored tunnels are not practical based on the required size of the tunnel boring machine;
- Geotechnical concerns with below grade crossings of the Grand Marais Drain/Turkey Creek;

Study Team currently reviewing 50+ design refinements and suggestions from the VE Team including:

- Interchange design options at Highway 401/ Highway 3;
- Crossing of the Grand Marais Drain/Turkey Creek; and
- Additional community linkages.

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Detroit River INTERNATIONAL CROSSING STUDY

What's Next?

Environmental Assessment Key Study Activities

- ✓ 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
- Complete 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

Public Meetings:

Dec 5, 5pm, Southwestern High School, Detroit – U.S. Public Meeting

Dec 6, 2 to 8pm, Holiday Inn Select, Windsor – Public Information Open House #4

Dec 7, 2 to 8pm, Ciociaro Club, Oldcastle – Public Information Open House #4

Proposed Public Meetings:

Jan 2007 – Public Information Open House #4 Workshops (register today)

Summer 2007 – Public Information Open House #5

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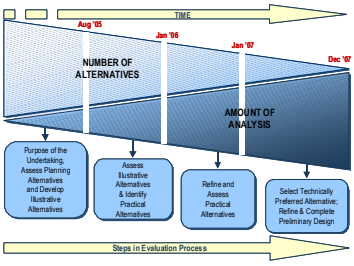
Detroit River INTERNATIONAL CROSSING STUDY

Evaluation Process

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:

Factors	Performance Measures for Assessment of Practical Alternatives	
Changes to Air Quality	•Effect on concentration of particulate matter •Effect on concentration of gaseous pollutants	
Protection of Community and Neighborhood Characteristics	•Displacement of Residences and Social Features •Direct Impacts on Existing Businesses •Disruption to Residents and Social Features •Noise and Vibration Impacts •Community and Neighbourhood Impacts	•Traffic Impacts •Municipal Impacts •Displacement of Businesses •Disruption of Businesses •Other Effects on Businesses
Maintain Consistency with Existing and Planned Land Use	•Impacts to Land Use (existing and planned) •Impacts to Development Plans •Impacts to Contaminated Sites/Disposal Sites	
Protect Cultural Resources	•Impacts to Built Heritage Features •Impacts to Cultural Landscape Units	•Impacts to Parklands •Impact to Archaeological Features
Protect the Natural Environment	•Impacts to Ecological Landscapes •Communities/Ecosystems •Population/Species	•Surface Water/Groundwater Recharge Areas •Other Natural Resources
Improve Regional Mobility	•Assessment of Highway Network Effectiveness •Assessment of Continuous/ongoing River Crossing Capacity •Operational Considerations of Crossing System (River Crossing and Plaza)	
Cost and Constructability	•Primary Construction Cost	•Assessment of Constructability

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.



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Detroit River INTERNATIONAL CROSSING STUDY

Evaluation Process

- 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

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Detroit River INTERNATIONAL CROSSING STUDY

Evaluation Methods

The evaluation process for the Practical Alternatives will involves two methods: **Reasoned Argument Method** and **Arithmetic Method**. The Reasoned Argument (trade-off) is the primary evaluation method with the Arithmetic approach used to substantiate the findings of the Reasoned Argument (trade-off) evaluation.

Reasoned Argument Method

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:

- National and international significance of the crossing;
- Government legislation, policies and guidelines;
- Existing Land Use and Municipal policy (i.e., Official Plans);
- Technical Considerations (i.e. degree to which the identified transportation problems are solved);
- Issues and concerns identified during consultation; and
- Study Team expertise.

Arithmetic Method

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 those features that are felt to be more important in assessing impacts. Weighting scenarios were developed based on feedback from the general public and other stakeholders.

- Scores will be assigned by qualified Study Team specialists with expertise in impact assessment;
- Relative impacts will range from those that are positive (benefit the environment) to negative (detrimental to the environment);
- 1 to 7 scoring scale will be used to identify magnitude of an impact/benefit whereby:

1 = high impact	5 = low benefit	
2 = moderate impact	4 = neutral/no impact	6 = moderate benefit
3 = low impact	7 = high benefit	

- The weight is multiplied by the score to obtain a weighted score. The weighted scores will be compared to determine the preferred alternative.

- Incorporates input from municipalities and communities, stakeholders and government agencies, First Nations and the general public
- Considers 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
- Traceable and open
- Bi-national

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Detroit River INTERNATIONAL CROSSING STUDY

Property Acquisition

After the preferred alternative is identified in the Summer of 2007, the Ministry will begin to work with homeowners and businesses to acquire property in a mutually agreeable way. The acquisition process would follow the following general steps:

- Notification to affected property owners;
- Land survey of the property requirements;
- Appraisal of the property according to fair market value;
- Offer of compensation;

Compensation is based on the market value of the property. Market value is based on what similar land in the neighbourhood might be expected to sell for if sold on the open market by a willing seller to a willing buyer. If a property owner is not satisfied with the offer of compensation presented, there is a legislated appeal process available.

For more information on property purchasing speak to representatives present at this meeting or contact:

Ministry of Transportation
Windsor Border Initiatives Implementation Group
659 Exeter Road, 2nd Floor, London ON N6E1L3
Phone 519.873.4800 Fax 519.873.4789

Contact: Amy Viragos, Property Supervisor
Phone 519.873.4798 amy.viragos@ontario.ca

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Detroit River INTERNATIONAL CROSSING STUDY

PIOH 4 Workshop Registration

Workshops are being arranged to provide interested persons with opportunities to discuss the crossing, plaza and access road alternatives as well as study issues in greater detail with the Study Team.

- The workshops are tentatively scheduled for Tuesday January 9 and Wednesday January 10, 2007.
- Proposed topics of discussion include:
  - Engineering and environmental issues relating to the international bridge crossing, plaza and access road alternatives
  - Analysis of impacts for the Practical Alternatives
  - Measures for reducing impacts and increasing benefits of the project
  - Refinements to Practical Alternatives
- If you are interested in attending one of these workshops, please provide your contact information on the registration form available at this PIOH.
- For further information, please visit **www.partnershipborderstudy.com** or speak to a member of the Study Team.

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Detroit River INTERNATIONAL CROSSING STUDY

Canadian Study Team

Ministry of Transportation

Windsor Border Initiatives Implementation Group

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Tel. 905-882-3540

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

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Visualization Crossing A

Visualization Crossing B

Suspension

Visualization Crossing B

Cable-Stayed

Visualization Crossing C

Visualization Crossing C

Detroit River
INTERNATIONAL CROSSING
S T U D Y

Facts at a Glance: The Detroit River International Crossing Study
December 2006 Public Information Open Houses

For almost two years, teams of experts in both Canada and the United States have been working diligently on the Detroit River International Crossing study. From developing a coordinated study framework to narrowing the focus of the study to practical alternatives within the Area of Continued Analysis, we are making excellent progress.

Over the past eight months, the Canadian study team has been intently focused on collecting more detailed data and conducting specific technical studies of the Practical Alternatives announced in March 2006. We continue to work closely with the community to both meet the purpose of the study – to provide for the safe, efficient and secure movement of people and goods across the Canadian-U.S. border in the Windsor-Detroit corridor – and to achieve the local community's goals of:

- **improving quality of life**
- **taking trucks off city streets**
- **improving the movement of traffic across the border**

We're listening to you. In fact, over 125 public consultation sessions have been held since the beginning of the study, and we have met with more than 50 stakeholder groups including local homeowners and business owners since March 2006, as part of ongoing consultation.

All options being considered achieve the community's goals outlined above, and we are working to further refine the alternatives to ensure that when the final preferred alternative is identified in 2007, community and environmental impacts are minimized as much as possible. How we do that is by evaluating each of the alternatives based on the seven evaluation factors. Detailed fact sheets on the seven evaluation factors, and the technical findings, are contained in this package and can also be found on our website www.partnershipborderstudy.com.

These Open Houses are different from previous ones held in June and November 2005 and March 2006 because **no announcements or decisions have been made**. **No alternatives will be eliminated at this time**, and all options identified in the Area of Continued Analysis continue to be considered.

The purpose of these PIOHs is simply to inform you, the public, about the preliminary technical data and findings we have made since March 2006, and provide a summary of that data and preliminary analyses of the practical alternatives. No preferred alternative has been identified at this time, and all of the alternatives have certain advantages and disadvantages. The analysis is ongoing, and the results are subject to refinements and do not reflect mitigation measures, such as context sensitive solutions that the community is helping to develop. Some key highlights of the findings include:

Access Roads

Changes to Air Quality

- Total concentrations of nitrogen oxides are predicted to decrease due to improvements in fuels and engine technologies, even though traffic volumes will increase.
- Predicted concentrations of fine particulate are projected to be higher in the future due to increases in traffic volumes. Although tailpipe emissions are decreasing, there will be a greater contribution from road dust.
- Depressed roadway sections result in lower concentrations of fine particulate and nitrogen oxides in the vicinity of the right-of-way (ROW) compared to at-grade alternatives.
- Tunnel results in lower concentrations of fine particulate in the vicinity of the ROW compared to at-grade alternatives, however nitrogen oxide concentrations increase over a broader area compared to at-grade alternatives because of a greater dispersion from ventilation stacks.

Protection of Community and Neighbourhood Features

- Between 125 to 210 households and 25 to 45 businesses would potentially need to be acquired.
- Noise impacts of at-grade and depressed alternatives can be addressed through mitigation.
- Noise modelling of tunnel option is still in progress.

Consistency with Land Use

- All alternatives make use of existing Huron Church Road/Highway 3 corridor, which is the historical connection to the border crossing, and the proposed route is consistent with official plans.
- There are impacts to existing residential, commercial and zoned vacant lands with all alternatives.

Regional Mobility

- If no new crossing system is built, significant capacity problems are expected to begin by 2015 and by 2035 most intersections will operate over capacity.
- In the absence of a new crossing system, travel times will nearly double, and capacity problems will be widespread. Excess traffic demand will spill over onto other municipal streets.
- New six-lane roadway will meet future demands to 2035 and beyond, and the provision of local service roads will save substantial travel times for local traffic, when compared to "do nothing."

Cost and Constructability

- All access road alternatives are constructible, and traffic flow can be reasonably 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, and those problems increase with the depth of construction.
- The cost of the three alternatives from Highway 401 to Malden Road ($CDN 2011):
    - At-grade alternatives: $620 million to $920 million
    - Depressed alternatives: $1.0 billion to $1.4 billion
    - Tunnel alternatives: $3.8 billion

Plazas and Crossings

- There is a combined total of 18 possible alternatives for plaza-crossing-plaza solutions between Canada and the U.S.

Protection of Community and Neighbourhood Features

- In Canada, Plaza A alternatives have the highest number of residential displacements (70).
- Crossing C alternatives have the highest business and industry impacts (13), including the only local marine fuelling station.
- Crossing C alternatives have the highest noise impacts before mitigation (180) due to proximity to Sandwich.

Protection of Cultural Features

- Between five to eight homes dating pre-1930 could be displaced, depending on the plaza and crossing alternative.
- All three crossing alternatives affect cultural landscapes.

Regional Mobility

- Confirmed all alternatives are practical in terms of location and layout, subject to the final results of geotechnical investigations. Plazas and crossings meet all transportation and mobility needs.

Cost and Constructability

- Geotechnical investigations are ongoing and will be completed by early 2007.
- Construction cost of the crossing is somewhat a function of the length of span.
- Shortest bank-to-bank is Crossing C (0.7 km), with longest bank-to-bank Crossing A (1.1 km).
- Shortest plaza-to-plaza is Crossing B to Plaza B1 (2.9 km), with longest plaza-to-plaza is Crossing C to Plaza A (5.4 km).

For more information on the Detroit River International Crossing study, including reports, maps and public meeting notices, please visit our website at www.partnershipborderstudy.com.

Detroit River
INTERNATIONAL CROSSING
S T U D Y

Detroit River International Crossing Study
Public Information Open Houses
December 6 and 7, 2006

Information Kits

What's Inside

Thank you for joining us! To better help you understand the information presented at this round of Open Houses, we have put together this information kit summarizing the key technical findings in fact sheet format. You can find the latest information on:

- The Environmental Study Process
- The Seven Evaluation Factors
- Changes to Air Quality
- Protection of Community and Neighbourhood Characteristics: Noise Impact Assessment
- Protection of Community and Neighbourhood Characteristics: Social Impact Assessment
- Protection of Community and Neighbourhood Characteristics: Economic Impact Assessment
- Consistency with Existing and Planned Land Use
- Protection of Cultural Resources: Built Heritage Features Impact Assessment
- Protection of Cultural Resources: Archaeological Assessment
- Protection of Natural Environment: Natural Heritage Features Impact Assessment
- Improvements to Regional Mobility
- Cost and Constructability

Additional fact sheets on topics including: types of tunnels, air monitoring, air dispersion modelling, construction staging, the Ojibway Prairie Complex, foundations investigations, context sensitive solutions, transportation of dangerous goods, and accidents and malfunctions, are available from any study team member upon request.

All of these documents can be found on the DRIC study web site: www.partnershipborderstudy.com, along with all previously published/presented DRIC study materials. Speak to any of the DRIC study team members for more details on these and other topics related to the ongoing environmental assessment.

Detroit River
INTERNATIONAL CROSSING
S T U D Y

The Environmental Study Process

The Windsor-Detroit border is the busiest commercial land border crossing in North America and trade travelling through this corridor is expected to increase well into the future. This is good news for the economies of Windsor-Essex County and for the provincial and national economies as well.

The governments of Canada, the U.S., Ontario and Michigan have recognized the importance of the Windsor-Detroit Gateway and have come together to form the Border Transportation Partnership (the Partnership). The purpose of the Detroit River International Crossing (DRIC) study is 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. In other words, 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.

A Coordinated Process

This international transportation improvement project will require approvals from governments on both sides of the border. The Partnership has developed a coordinated process that will enable the joint selection of a recommended river crossing location that meets the requirements of the *Ontario Environmental Assessment Act* (OEAA), *Canadian Environmental Assessment Act* (CEAA), and U.S.*National Environmental Policy Act* (NEPA) in an effective and efficient manner.

A key principle of this process is that all affected and interested parties are being given the opportunity to participate and offer input throughout the study. The Partnership is proactively seeking community and stakeholder input at key points during the study.

Requirements of the *Ontario Environmental Assessment Act* (OEAA)

As required under the OEAA, a Terms of Reference (TOR) document was prepared and received approval prior to commencement of the DRIC Environmental Assessment study. This document outlines the framework that the DRIC study team must follow in completing the environmental assessment including key opportunities for public participation.

At the completion of this study, the Environmental Assessment (EA) Report will be submitted to the Ontario Minister of Environment for approval. The formal review process provides opportunities for public comment.

Requirements of the *Canadian Environmental Assessment Act* (CEAA)

CEAA applies to certain projects that require a decision by the Canadian Federal Government. In the case of this study Transport Canada has partnered with the Ontario Ministry of Transportation in the conduct of the Canadian portion of the study. The requirements of the OEAA and CEAA are being coordinated in a manner that will ensure that the most rigorous EA standards are met.

A Project Description document has been prepared for the DRIC study and federal agencies with an interest in the study have been identified.

A Screening Report identifying project impacts and mitigation needs will be prepared and reviewed by the appropriate federal authorities.

As part of the coordinated EA process, the federal Draft EA Guidelines and Public Consultation Plan are being provided for public review. Members of the public are invited to review these documents and provide comments to the study team. Draft copies are available to view at the Public Information Open Houses (PIOHs) and members of the study team are available to answer questions. These documents can also be downloaded or viewed on line at the

Partnership web site (www.partnershipborderstudy.com). Information on the federal environmental assessment process is also available on the following web site: http://www.ceaa.gc.ca.

Requirements of the *U.S. National Environmental Policy Act* (NEPA)

In the United States, the umbrella environmental law is the National Environmental Policy Act (NEPA). NEPA provides for a decision-making process relying on interdisciplinary analysis, and consultation and commenting by the public, stakeholders and regulatory agencies.

For major federal actions an Environmental Impact Statement (EIS) is prepared. A draft EIS is to explain the purpose and need for a project, examine alternatives, describe the impacts of the practical alternatives, and document the public involvement and coordination that occurs. The draft EIS is released for formal comment and a public hearing is held. Subsequently, a decision is made on a Preferred Alternative, based on the comments received and any further analysis that is required to respond adequately to the comments. That decision is made available to the public and agencies through the formal availability of the Final EIS. When comments on the FEIS are addressed and the decision is to pursue an "action" alternative, a Record of Decision (ROD) is prepared. Under NEPA, a ROD allows a project to advance to the design stage.

What does all of this mean?

The DRIC study is following three legislated processes. These processes require that the DRIC Environmental Study be thorough, open, transparent and fully accessible to the public for scrutiny and evaluation. The DRIC study team is fully committed to working with the public, communities, and interested groups in Windsor-Essex County, in consultation with the U.S. partners, to develop a solution that best meets future transportation needs, while minimizing community impacts.

Detroit River
INTERNATIONAL CROSSING
S T U D Y

The Seven Evaluation Factors

As part of the Environmental Study, the DRIC study teams in Canada and the U.S. established seven evaluation factors to assess the various alternatives identified by the study team. In consultation with stakeholders, these factors were weighted, giving more weight to factors whose impacts are considered to be more important. These factors have guided the technical studies and have helped the DRIC study teams focus on the issues that matter most to the host communities. Evaluation throughout the Environmental Study has been and will continue to be measured against the seven factors. This will ensure a fair and replicable evaluation process takes place and a solution is identified that best balances project objectives, community needs and technical requirements.

The evaluation of the Practical Alternatives will be considered in the overall context of the international and national significance of the Detroit River crossing in terms of the economy, security, and ability to provide continuous river crossing capacity. A full evaluation, however, cannot be completed without input from the community. Throughout the Canadian DRIC study, the study team has met with the members of the community to get a local perspective on these issues. The public has helped the study team identify key areas of interest, historical features, and natural areas that need preserving. Through community consultation the study team gained a greater understanding of the importance of current air quality measurements to the community and added a field measurement component into the air quality workplan. Residents have told the study team how they feel about their community, how they use their property and how the proposed project may impact those uses. These are just a few examples of the influences the people of Windsor-Essex County have had on the DRIC study.

Data gathered from public meetings, open houses, workshops, focus groups and other correspondence has been included as important information to be considered in relation to the seven major factors groups in the analysis of Practical Alternatives. The public has a role to play in the evaluation of the Practical Alternatives and the public's continued involvement will guarantee the success of the DRIC study.

The table below shows how the various factors are used in evaluating alternatives against each other and in comparison with future conditions without a new crossing (or the "do nothing" alternative).

Factors	What does this mean?
Changes to Air Quality	What is the air like now and will there be changes in the levels of pollutants in the atmosphere in the next 10, 20, and 30 years?
Protection of Community and Neighbourhood Characteristics	How will each alternative affect homes and businesses? How will traffic change? Will there be additional noise and vibration? Can they be mitigated?
Consistency with Existing and Planned Land Use	What currently exists in this area? What is planned for the future of this area? Will introducing any of the alternatives into this area radically change the current uses of the area?
Protection of Cultural Resources	What historical, cultural and archaeological features exist in this area? Are there parks and recreation sites in the area? How will these be impacted by any of the alternatives and how can these be avoided or impacts be mitigated?
Protection of the Natural Environment	What is the natural environment composed of in this area? What species inhabit this area? Will the introduction of any of the alternatives negatively impact ecosystems, species, water systems or other important natural resources? Are there areas of environmental significance or species at risk that may be affected? Are impacts avoidable or can they be reduced or mitigated?

Improvements to Regional Mobility	What will be needed to improve traffic flows in this area? How can a new river crossing and plaza be efficiently managed?
Cost and Constructability	What is the cost of each alternative? Is each alternative constructable? Will each alternative provide value for the tax dollar?

Detroit River
INTERNATIONAL CROSSING
S T U D Y

Changes to Air Quality

Identifying how the Detroit River International Crossing (DRIC) study may change air quality is an important consideration in the DRIC Environmental Assessment.

Air quality effects of the Practical Alternatives are currently being assessed using a combination of existing air monitoring data and air dispersion modelling. Air dispersion modelling must be used to assess the impacts of future changes, such as implementation of the alternatives, and changes in fuels, vehicle technologies and traffic volumes. The predictive air quality model being used is specifically designed to assess impacts from roads and highways. The model incorporates the differences between moving vehicles, and queued vehicles that are idling, as well as differences in roads that are at-grade, depressed, tunnelled or elevated on bridges.

Existing concentrations of gaseous pollutants in Windsor such as SO_2, CO and VOCs (such as acrolein) were assessed as part of the assessment of Illustrative Alternatives and found to be well below Ontario Ministry of the Environment (MOE) Ambient Air Quality Criteria (AAQCs) under future traffic conditions. The two indicator pollutants selected for this phase of the analysis to represent one gaseous compound and one particulate compound are Particulate Matter less than 2.5 microns ($PM_{2.5}$) and Nitrogen Oxides (NO_x). Changes in the total predicted concentrations of these two air pollutants were examined for each alternative in relation to one another.

The results presented herein are discussed as a "work in progress" since generation of results and analysis are still ongoing.

How the Analysis was Done

The analysis was completed using the following approach:

- determine background concentrations
- compile data on existing $PM_{2.5}$ and NO_x concentrations
- input traffic data for existing and future conditions, including access road, plaza and crossing alternatives
- calculate pollutant emissions from the highway corridor for existing and future conditions, and
- use air dispersion model (CAL3QHCR) with meteorological data from Windsor Airport to determine future air pollutant concentrations in the vicinity of the corridor (essentially all of west Windsor) and at sensitive receptor locations (such as schools).

Data on the existing air pollutant concentrations in the Windsor area was obtained from the two MOE air monitoring stations located on College Street and on University Avenue. The highest 24-hour 90th percentile $PM_{2.5}$ and NO_x concentrations measured at these stations in the past four years were conservatively selected as the interim background concentrations, which were added to all model predicted results. Data from the two new DRIC air monitoring stations will be used to refine the background concentrations.

Traffic data was provided by IBI Group for all main roads in the corridor for existing, baseline conditions (2006) and the future "do nothing" case (2035), as well as for each access road, plaza and crossing alternative in 2035.

Emission rates from these vehicles were input into the U.S. Environmental Protection Agency CAL3QHCR roadway dispersion model, which is accepted for use in Ontario by the MOE. The model was run using meteorological data from Windsor Airport, to determine predicted air pollutant concentrations at points on a grid that covered west Windsor, in addition to specific sensitive receptor locations and receptors used in the Social Impact Assessment (SIA), such as schools and places of worship.

Results to Date

Although this phase of the study focused on $PM_{2.5}$ and NO_x specifically, additional pollutants will be examined when assessing the technically and environmentally preferred alternative.

Presently, road based transportation sources are responsible for approximately 45% of the total NO_x emissions in the Windsor airshed. Emissions from the Huron Church Road corridor contribute approximately 2% of the total NO_x emissions to the Windsor airshed. Improvements in technologies and fuels will combine to reduce the emissions from transportation sources. Based on the regulated and anticipated changes in both Canada and the U.S., preliminary estimates indicate that annual emissions of NO_x from road related transportation sources in Windsor will be reduced from approximately 4000 tonnes in 2004 to 500 tonnes in 2035. Based on these projected decreases, road transportation related sources will likely comprise a much smaller fraction of the total emissions. For example, if emissions from all other sources remain the same, transportation related sources in Windsor will comprise less than 10% of the total regional NO_x emissions, even considering future growth in traffic volumes.

Fine particulate matter ($PM_{2.5}$) emissions from road based transportation sources are comprised of two contributing fractions. The first is tailpipe emissions resulting from fuel combustion. The second, and higher fraction, is from road dust, which is generated from the resuspension of surface material and debris, tire and brake wear, and roadway abrasion. Since total road emissions of $PM_{2.5}$ are predominantly comprised of road dust, $PM_{2.5}$ emissions will increase as traffic increases in the Highway 3/Huron Church Road corridor. However, the tailpipe fraction of $PM_{2.5}$ emissions is currently a maximum of 30% of the total road based $PM_{2.5}$ emissions in Windsor. In future, tailpipe emissions of $PM_{2.5}$ will be reduced to less than 10% of the total $PM_{2.5}$ emissions through providing a continuous freeway for international traffic (avoids braking, idling and acceleration at traffic signals) between the present terminus of Highway 401 and the new border crossing and improvements in fuels and vehicle technologies.

Preliminary Assessment of Alternatives

Access Road Alternatives

Service Road Configurations

Preliminary modelling of air quality impacts of the Practical Alternatives indicates that between Alternatives 1 (one-way service roads) and 2 (parallel 2-way service raods), there is very little difference in the predicted changes to $PM_{2.5}$ and NO_x concentrations.

Route Alignments Between St. Clair College and Howard Avenue

Two route alignment options were studied for the area between St. Clair College and Howard Avenue. Option 1 considers a widening of the present roadway corridor more to the north (Windsor) side of Highway 3, whereas Option 2 considers a widening of the corridor more to the south (LaSalle) side of Highway 3.

The preliminary air dispersion modelling results indicate that there is a slight difference in the change in $PM_{2.5}$ and NO_xconcentrations between Option 1 and Option 2 at receptors located within 50 m (164 ft) of the right-of-way (ROW) between St. Clair College and Howard Avenue. Receptors located to the north of the proposed ROW experience slightly higher predicted concentrations with the Option 1 alignment versus the Option 2 alignment. This difference is primarily due to the change in the proximity of these receptors to the proposed ROW.

Right-of-Way Elevation (i.e. at-grade vs. depressed vs. tunnelled)

Preliminary modelling of air quality impacts of the Practical Alternatives indicates that within 50 – 100 m (164 – 328 ft) from the ROW there are differences between the alternatives. For example, within 100 m (328 ft) from the ROW, depressed sections show slightly lower predicted concentrations of $PM_{2.5}$ and NO_x than at-grade sections. Beyond 100 m (328 ft), there is no discernible difference between at-grade and depressed alternatives.

Depressed alternatives result in a reduction in $PM_{2.5}$ concentrations in the vicinity of the ROW, in comparison to at-grade alternatives. NO_x concentrations are also reduced with depressed alternatives in comparison to at-grade alternatives in the vicinity of the ROW.

The tunnel alternative results in lower concentrations of $PM_{2.5}$ relative to at-grade and depressed alternatives in the vicinity of the ROW.

The tunnel alternative with a ventilation building results in slight decreases in the maximum predicted 1-hour NO_x concentration in the vicinity of the ROW, relative to at-grade and depressed options. However, slight increases in the maximum predicted 1 hour NO_x concentrations are indicated over a broader area in comparison to the at-grade and depressed options. This reflects the dispersion characteristics of the exhaust stacks at the ventilation buildings.

Tunnel Ventilation Options

Four different options for tunnel ventilation are being assessed. These are as follows:

- Option 1A – Two ventilation buildings each located approximately one third away from the main tunnel entrance/exits
- Option 1B – Two ventilation buildings each located at the main tunnel entrance/exits
- Option 1C – A single ventilation building located approximately half-way between the tunnel main entrance/exits
- Option 2 – Jet fans placed on the tunnel ceiling throughout the tunnel with pollutants being exhausted out the portals instead of ventilation buildings

The preliminary results of the atmospheric dispersion modelling assessment indicate that of the four tunnel ventilation options studied, Option 2 (i.e. using jet fans to ventilate the tunnel through the portals instead of a vent building) is least preferable as it produces the highest concentrations in $PM_{2.5}$ and NO_x at the receptors relative to the other three ventilation options. Also, the jet fans tunnel alternative resulted in higher predicted 1 hour maximum NO_x concentrations in comparison to the at-grade and depressed options, for all of the sensitive and SIA receptors examined.

Of the three ventilation building options assessed, each showed similar slight changes in NO_x and $PM_{2.5}$ concentrations, relative to each other. In general, Option 1B indicated slightly higher concentrations for both $PM_{2.5}$ and NO_x at many of the sensitive and SIA receptors examined.

Plaza Alternatives

Four plaza alternatives are currently being studied (Plazas A, B, B1 & C). The preliminary results indicate that each of the four plaza alternatives studied results in increases in the predicted maximum $PM_{2.5}$ and NO_x concentrations in the vicinity of each of them. The effects of Plazas B, B1 and C are predominantly seen in the area to the west of Ojibway Parkway/E.C. Row Expressway interchange at non-sensitive receptors. In Sandwich Towne, there is no discernible difference in the maximum predicted concentrations between Plaza B and Plaza C.

The effects of Plaza A are seen primarily in the immediate vicinity of the plaza footprint. However, there is no discernible difference in maximum predicted $PM_{2.5}$ and NO_x concentrations between Plaza A and Plaza B alternatives in this area. This is likely due to the effects of the connecting road that leads to Plaza B.

Crossing Alternatives

Three bridge crossing alternatives are currently being studied. Preliminary atmospheric dispersion modeling indicates that each of the three crossing alternatives results in increases in the predicted $PM_{2.5}$ and NO_x concentrations in the vicinity of the crossings and the connecting route between each plaza and bridge. Changes in the predicted concentrations of $PM_{2.5}$ and NO_x resulting from Crossings A and B are primarily seen in the area to the west of Ojibway Parkway/E.C. Row Expressway interchange at non-sensitive receptors. In Sandwich Towne, there is no discernible difference in the predicted maximum $PM_{2.5}$ and NO_x concentrations from these crossing alternatives.

However, Crossing C (including the connection to the crossing from the plaza sites) shows slight increases in the predicted maximum $PM_{2.5}$ and NO_x concentrations in Sandwich Towne.

Remaining Activities

Modelling of the changes in air quality is ongoing. Further analysis of the data is required to assess all of the potential changes to air quality, to assess specific impacts or benefits related to individual alternatives. The results presented in this document are preliminary, and are subject to change.

Additional activities to be completed are as follows:

- additional analysis of alternatives, including modelling of interim future years (2015 and 2025)
- further refinement of traffic data, emissions and final QA/QC of results
- assessment of refinements to alternatives.

These tasks will be completed in the following months, such that all analysis will be completed and the results finalized in 2007.

Detroit River
INTERNATIONAL CROSSING
S T U D Y

Protection of Community and Neighbourhood Characteristics: Noise Impact Assessment

This document provides an overview of the noise impact analysis completed to date as part of the Detroit River International Crossing (DRIC) Environmental Assessment.

Noise is generally described as unwanted sound. However, noise and sound are sometimes used interchangeably. The unit used for measuring sound is the decibel (dB). To better reflect the response of human receptors to sounds measured by instruments, "*weighting scales*" are used. The "*A weighted scale*" is used to duplicate the human response to the audible frequency range. Sound levels so adjusted are referred to as "*A weighted decibels*" and assigned the unit abbreviation dBA.

Purpose of the Noise Impact Assessment

The Ontario Ministries of Transportation (MTO) and the Environment (MOE) have developed a specific protocol for establishing noise impacts from transportation projects. In general terms, the noise impact is determined by comparing the noise specifically caused by the project, with the existing noise experienced by sensitive receptors in the vicinity of the project. Where the project noise exceeds the background/existing noise levels by five or more decibels (dB) mitigation measures including sound barriers are to be considered for the project.

How the Analysis was Done

The methodology for estimating noise levels consisted of the following key steps:

1. Traffic data was established for the current year, as well as for future years (2015, 2025 and 2035), representing baseline conditions and for each access road alternative. For each alternative, certain key information was determined, including Annual Average Daily Traffic (AADT), percentage of automobiles, percentage of heavy and medium trucks, speed limit, road elevation, local topography, surrounding ground conditions, etc.
2. Sensitive noise receptors were identified. The receptors selected for assessment were those that were most potentially impacted by the various alternatives. Multiple receptors were selected to capture the anticipated variations in exposure to noise from traffic based on the alignment of existing roads, the alignment of the Practical Alternatives, and variations in traffic volumes. On this basis, a total of 35 receptors were selected.
3. For the year 2035, baseline ("no-build") and project noise levels were estimated at each of the receptors identified for each access road alternative, using the MOE's STAMSON traffic noise model. The key inputs to the STAMSON noise model are: traffic volume, percentage of automobiles, percentage of heavy and medium trucks, posted speed limit, road gradient, road surface type, local topography, surrounding ground surface cover, noise source height, receptor height and source to receptor distance.
4. The CADNA-A noise model was used to estimate receptor noise levels for each of the four plaza and corresponding crossing alternatives. This model, approved by the MOE, can be used to predict noise levels from both stationary and mobile noise sources. The modelling approach considered vehicle queuing, idling and acceleration. The key inputs to this model included maximum hourly vehicular traffic (cars and trucks), plaza layout, vehicle sound levels, locations of vehicles at plaza sites.

Results to Date

1. In general, in comparison with at-grade alternatives (1A and 2A), the depressed alternatives (1B and 2B) seem to generate lower noise levels at the receptor locations. Of all the alternatives, Alternative 2B had the least occurrences where the project sound levels exceeded the background sound levels by greater than five dB. Noise mitigation is to be considered whenever the project sound levels exceed the receptor background sound levels by greater than five dB.
2. The route segment extending from Malden Road to Pulford Street showed increases in sound levels beyond the future base case ("do nothing" alternative)) with both the at-grade and depressed alternatives. The increases in

this route segment were often greater than five dB at the receptors; therefore, noise mitigation measures are to be considered.

3. In cases along the access roads where receptors were estimated to receive greater than a five dB increase in sound levels, additional assessment was undertaken. For each segment where such exceedance was predicted, the effect of a 5 m (16 ft) high noise barrier was estimated for either the receptor with the highest estimated exceedance, or the area within the segment with the highest cluster of homes. In all cases, the noise barrier was effective in reducing the predicted project noise to within five dB of the estimated baseline noise levels.
4. Receptors along the crossing approach roadway from Matchette Road to Malden Road, which connects to the Plaza B, B1 and C alternatives, are likely to experience a high noise impact from all access road alternatives (i.e. greater than 10 dB increase above background receptor sound levels). The impact is expected to be highest near the Matchette Road/E.C. Row Expressway intersection, due to the proximity of the closest receptor to the roadway right-of-way (~50 m or 164 ft), the roadway elevation (8 m or 26 ft above grade), and high traffic volumes. The effectiveness of implementing noise mitigation measures in this area is currently being assessed.
5. The noise from the plaza locations will not result in significant noise level increases at the receptors closest to the plazas. In most cases, the receptors are more than 50 m (164 ft) away from the plazas. However, a high noise impact (greater than 10 dB above background receptor sound levels) is anticipated for receptors adjacent to all crossings. Noise mitigation measures are to be considered for these crossings.

Remaining Activities

The assessment of the changes to noise levels associated with the tunnel alternative (Alternative 3) will be completed. This will include consideration of noise emanating from the portal areas as well as the ventilation buildings. In addition, the noise impact assessment for all alternatives will be completed for the 2015 and 2025 traffic scenarios.

Once completed, this work will be incorporated into the assessment of Practical Alternatives.

Detroit River
INTERNATIONAL CROSSING
S T U D Y

Protection of Community and Neighbourhood Characteristics: Social Impact Assessment

Social impact assessment is being undertaken to assess the social consequences that are likely to follow from the construction and operation of the Detroit River International Crossing (DRIC), including the access roads and plaza, as well as to identify ways of reducing negative effects.

How the Analysis was Done

Social impacts can occur at various units of social order: individuals, businesses, families, communities, economic sectors or broader societal units such as whole cultures or nations. For the purposes of this analysis, a property was considered displaced (buyout) if any part of the property is directly impacted by the proposed right-of-way (ROW) of the access road, the service roads, plazas or crossings. A final decision on acquiring properties will be made on a property-by-property basis once the study team has identified a preferred alternative and the associated property requirements are defined.

The social impact assessment for the analysis of Practical Alternatives for the DRIC study involved an assessment of several indicators, including:

- number of households/dwellings displaced
- number of households/dwellings disrupted
- number of special populations displaced
- qualitative and quantitative assessment of social features and uses displaced
- qualitative and quantitative assessment of social features and uses disrupted
- qualitative assessment of the impact on community cohesion, character, and function.

The property limits of potentially displaced households were obtained from the local municipality and mapped using ArcGIS 9.1 Geographical Information System (GIS) software.

Residences that could be displaced by any of the Practical Alternatives under consideration were mailed a questionnaire. Follow-up contact was made to non-respondents by re-sending the questionnaires and by contacting them directly by phone. Of a total of 479 questionnaires, 294 (61%) of property owners completed the questionnaire.

Focus group meetings were used to collect information from residents that may be displaced or disrupted. Residents living within the DRIC Area of Continued Analysis were invited to a focus group meeting held October 21, 2006. A total of 78 people representing 57 households attended the focus group meetings.

Participants completed a mental mapping exercise that provided information on how participants define their neighbourhood boundaries and interact within the community, including where people shop for groceries, worship, and recreate.

Results to Date

Households/Dwellings Displaced

Property requirements and the consequent displacement of households and dwellings (all forms of housing) can have a negative impact on community residents (owners and tenants). The total number of households potentially displaced was identified. For this study, the terms 'households' and 'dwellings' are used interchangeably.

Preliminary results indicate that:

- The number of households potentially displaced by the access road alternatives varies between 125 to 220, depending on the alignment and location of service roads.
- The tunnel alternative generally results in fewer household displacements than the other alternatives.

- The one-way service road alternatives (Alternatives 1A and 1B) displace fewer households than the parallel service road alternatives (Alternatives 2A and 2B).
- More households are displaced by the access road to Plaza A than with a connection to the other plazas.
- More households are displaced with the Plaza A alternative than Plaza B, B1 or C alternatives.
- More households are displaced by the access road by widening to the north (Windsor) side of Highway 3 than the south (LaSalle) side.

The completed questionnaires of potentially displaced households identified that:

- households with children under 18 represent 32% of total households
- households with adults over 65 years of age account for 26% of total households
- most dwellings are detached single family homes (79%) with 38% of residents living there for less than five years and 27% of residents living there between 11 and 30 years.

Households/Dwellings Disrupted

The extent to which each alternative may have short-term (i.e. during construction) and long-term (i.e. post-construction) disruptive effects to residents adjacent to the ROW, such as: dust, noise, lighting, visual intrusion, traffic, vibration, limitations in access to properties, loss of enjoyment of property, interruption of day to day activities, and pedestrian access/safety, as well as the ability to mitigate such effects, is presently being assessed.

In general, a mental mapping exercise conducted as part of a Focus Group workshop with residents showed that:

- Residents engage in activities within their general neighbourhood vicinity.
- Residents often considered their home as the hub of their community.
- Many residents consider Highway 3 and Huron Church the physical barrier or boundary to their neighbourhood.
- Neighbourhood boundaries vary from small areas concentrated in close proximity to homes, while others are widespread over several kilometres.
- Many residents indicated they appreciate the accessibility of the transportation network (E.C.Row Expressway, Highway 401, Highway 3).
- A common shopping spot is the Zehrs in LaSalle.

Focus group participants also discussed a series of questions aimed at understanding how they feel about their community, how they use their property and how the proposed project may impact on those uses. This data is being interpreted for inclusion in the assessment of the Practical Alternatives and additional workshops are being organized to gather more community input on disruption.

Social Features and Uses Displaced

Property requirements and the consequential displacement of social, recreational and cultural institutions can have a substantial negative impact on the users, employees and managers of such facilities. The measurement involved a quantitative assessment of the total number of institutional uses, wholly or partially, in the proposed ROW based on GIS mapping, field reconnaissance and key informant interviews. Interviews with facilities/institutional members provided information on programs, facility uses, service catchment areas, membership population, and access routes to the facilities.

The maximum number of institutions wholly and partially displaced along the ROW is three facilities with uses relating to religious functions, community outreach, recreation and leisure. This information will be used to compare the project alternatives.

Social Features and Uses Disrupted

The extent to which each alternative may have short-term (i.e. during construction) and long-term (i.e.post-construction) disruptive effects to institutional uses adjacent to the ROW such as: dust, noise, odour, lighting, visual

intrusion, traffic, vibration, limitations in access to properties, and pedestrian access/safety, as well as the ability to mitigate such effects, is presently being assessed. Institutional/social/recreational disruption is based on the qualitative assessment of information gathered from site visits, facility interviews with employees, focus group meetings and review of secondary literature/document sources.

Site visits were made to the facilities within close proximity to the Practical Alternatives which include: parks (Broadway, Ojibway, Malden, Indian Memorial, Bellwood, Beals, Veterans, St. Clair Athletic Field and Matthew Rodzick); Victoria Memorial Cemetery; recreational facilities (Oakwood Community Centre, South Windsor Recreational Complex); schools (Oakwood Public School, Montessori Pre-School, Ste. Cecile Academy of Music, Ste. Cecile Academy, The Children's House Montessori, Our Lady of Mount Carmel Separate School); and places of worship (Heritage Park Alliance Church, Our Lady of Mount Carmel Catholic Church, Evangelical Slavic Mission, Oakwood Bible Chapel, St. Charbel Maronite Catholic Church). These visits noted functional uses and public access to the sites/facilities. Site visits coupled with key informant interviews gathered information on the types of uses, description of existing facilities/equipment, population/catchment areas served, and personal opinions on how the DRIC project might affect the daily activities associated with each social feature.

General findings indicate that all parks and facilities would experience varying degrees of short-term disruption due to noise, traffic congestion, dust, and limitations in road access during construction. Some facilities voiced long-term disruption concerns due to reduced access points (that may sever their service area), heavier traffic and associated child/elderly safety concerns in accessing and using certain facilities/institutions. As these results are preliminary, detailed listings of disruption impacts for each facility will be prepared and incorporated in the analysis of Practical Alternatives.

Effects on Community Cohesion, Character and Function

Community cohesion is generally described as a measure of how a community is tied together. Some residents have identified that Huron Church Road and Highway 3 represents a barrier or boundary in their communities, citing high traffic volumes and limited access across and along the corridor. As well, residents are concerned that the proposed project has the potential to segment and divide existing neighbourhoods and communities. Social patterns, functions, and linkages in the community may also be disrupted, such as changes to community centre catchment areas as a result of changes in access. The Practical Alternatives also have the potential to address these issues and to upgrade or enhance connections between existing communities where there is currently a lack of social cohesion. A qualitative assessment of the impact of the undertaking on the function of existing neighbourhoods and identification of methods to reduce any such impacts is ongoing. Once completed, this information will be used in the assessment of the Practical Alternatives.

Data collection that contributes to this part of the analysis includes examination of existing and planned land uses as presented in Official Plans and other planning documents, field examination, focus group inputs, household questionnaires, comments recorded at public and stakeholder meetings, and key informant interviews.

Remaining Activities

The results of the analysis to date will be used to review alternative alignments and make refinements where possible to further reduce property and community impacts. Additional information on community features and characteristics is also being collected. This information will be incorporated in the analysis prior to determining a technically and environmentally preferred alternative.

Detroit River
INTERNATIONAL CROSSING
S T U D Y

Protection of Community and Neighbourhood Characteristics: Economic Impact Assessment

As part of the Detroit River International Crossing (DRIC) Environmental Assessment, the potential economic impacts of the access road, plaza and crossing alternatives are being assessed.

Purpose of The Economic Impact Analysis

The purpose of the economic impact analysis is to identify the potential positive and negative economic affects of a new border crossing and Highway 401 extension to the local and regional economies of the Windsor area.

The focus of the economic impact analysis is on assessing economic impacts to businesses along, and in close proximity to, the access road, plaza and crossing alternatives, within the Area of Continued Analysis (ACA). Economic impact data generated from this assessment will be used in conjunction with data from other disciplines, in the overall evaluation of the Practical Alternatives.

How the Analysis was Done

Over the past six months, several methods of data collection and analysis were used. These included:

- business surveys
- municipal business directories
- municipal property assessment data
- meetings with local business owners
- traffic forecasts
- other field analysis.

The principle considerations in assessing the degree of economic impact are:

- number of employees affected
- gross revenues of affected businesses
- impact on municipal tax base
- reliance of business on non-local traffic.

Results To Date

A substantial amount of analysis has been conducted regarding local business operations in Windsor and the potential impacts of the new highway access road and new international crossing.

Three areas of impact were identified:

- along the proposed highway access road
- within the plaza and crossings
- outside of the ACA.

Some of the preliminary findings include:

Commercial

- Approximately 83 businesses exist today along the proposed access road, not including businesses within designated industrial parks. The majority of these businesses are highway-oriented, including restaurants, accommodation, retail and gas stations. The largest concentration of businesses is found in the Windsor Crossing Premium Outlets, with 45 businesses.
- Between 25 and 45 businesses along Highway 3/Huron Church Road will be displaced by any option. Other remaining businesses will likely be disrupted through property infringement and/or by a reduction in traffic access or visibility.
- The displacement and disruption of commercial businesses is estimated to result in a loss of revenue of approximately $10 million and approximately 100 jobs.
- The nature of the retail businesses affected is such that this economic activity and the jobs lost will likely be replaced elsewhere in the Windsor area through both existing and new developments.
- There are notable differences among the various access road alternatives in terms of economic impact. The tunnel option (Alternative 3) is considered to have the highest impact to local businesses. In addition to the number of businesses and the volume of business activity displaced – 44 businesses which is higher than some of the options – there will be substantial disruption to the majority of the remaining businesses, especially as a result of loss of highway visibility. The at-grade freeway option with adjacent 2-way service roads comprised mostly of the existing Huron Church Road (Alternative 2A) displaces the fewest number of businesses relative to the rest of the alternatives and is expected to create the least economic disruption with less obstruction to both access and visibility.

Industrial

- Businesses in the area of the crossings and Plazas B and C are predominately industrial in nature. These businesses are some of Windsor's largest employers.
- Economic impact varies greatly between each of the potential locations of the crossings and plazas. Preliminary economic impacts from displacement/dislocation within certain crossing and plaza locations can result in approximately 100 job losses and a loss of revenue close to a $100 million.
- These impacts to industrial businesses are more directly associated with displacement and property infringement. Access and visibility are less of a concern for such businesses.
- With Crossing A connecting to Plaza A, no businesses are expected to be displaced or substantially disrupted. Crossing B connecting to Plaza A is very similar with limited business disruption expected.
- All options that involve Crossing C displace at least five businesses and disrupt several more. The businesses that are displaced and disrupted are all significant industrial businesses.

Outside of the ACA

- Regional economic impacts, beyond the ACA, are mostly positive. Industrial businesses, especially those close to the proposed crossing and access route, will be positively affected as a result of less local traffic congestion and improved transportation for the movement of people goods, as a result of less local and border traffic congestion and increased highway capacity and speed.
- Commercial businesses, including those that are tourism based, will also benefit from less traffic congestion for tourists travelling through the region.
- Businesses likely to be negatively affected are those businesses that are highway dependant; namely, those that rely on heavy volumes of non-local traffic i.e. restaurants, accommodation, and gas stations. These affects can be mitigated depending on degree of access provided with new access road and associated signage.

Interpretation

The economic impact assessment has led to two preliminary conclusions:

1) The negative economic impacts are expected to be almost entirely locally oriented, affecting businesses within the ACA and some within close proximity.

2) The positive economic impacts that the proposed access road and new international crossing will have in Southern Ontario and the greater Windsor region, including the city of Windsor and the towns of LaSalle and Tecumseh will be substantial. International exports account for $225 billion in provincial GDP, this represents over 40% of Ontario's GDP. It is estimated that the Windsor-Essex County area accounts for over 3%, $7.5 billion, of Ontario's international export GDP. Given the economic scale, any improvement to the speed and efficiency of goods and services crossing the border will have a tremendous impact on the economies of both Ontario and the Windsor-Essex County area. In addition, there is expected to be greater opportunity for industrial and large-scale commercial development along Highway 401 within the Windsor-Essex County area. The region will become more attractive for tourists from the United States to travel into the Windsor area and the reduction of traffic along local streets will, in many cases, assist local businesses.

Remaining Activities

Businesses that have not completed a survey will be contacted for their input in order to allow as many businesses as possible to be accounted for and heard from in the analysis. This information will be used to update and refine the data collected to date and incorporated in the assessment of Practical Alternatives.

Detroit River
INTERNATIONAL CROSSING
S T U D Y

Consistency with Existing and Planned Land Use

As part of the impact assessment of the DRIC study, an analysis of potential land use impacts was, and continues to be, conducted. This assessment's goal is to examine what currently exists in this area, what is planned and what impacts the Practical Alternatives may have on the land use.

How the Analysis was Done

An analysis of land use has been conducted for the Practical Alternatives for the access road, inspection plaza and river crossing based in part on information provided in the City of Windsor Official Plan (April 2000), zoning bylaws for the City of Windsor, the Huron Church Road Urban Design Master Plan & Development Guidelines (February 2006), the Olde Sandwich Towne Community Planning Study Report (October 2006), as well as Town of LaSalle and Town of Tecumseh Official Plans. Field reviews were also conducted to verify current land uses. Approved development plans obtained by the study team were also incorporated in the analysis.

Results to Date

Access Road Alternatives

The Highway 3/Huron Church Road corridor has served as an access road to the Ambassador Bridge for over 75 years. Huron Church Road is classified in the City of Windsor Official Plan as a Class 1 Arterial Road, on the basis of the volumes carried and its significance in the road network. The road is a multi-functional transportation corridor for transportation of goods, international travellers, and local residents of Windsor-Essex County. Due to the high volume of traffic on this roadway, access along the road corridor is controlled and the City of Windsor has been closing street entrances and constructing parallel service drives to reduce points of conflict along the roadway. More recent residential developments adjacent to the corridor have been constructed with a property buffer and fences and berming along the edges of the corridor to shield roadway impacts. Development in the Town of LaSalle has also been planned to limit access to Highway 3 at signalized intersections only.

Land uses within the access road corridor consist of residential, commercial, and vacant or open lands. Commercial uses include highway-oriented businesses including restaurants, hotels, service stations, fast food restaurants, and shopping plazas. Residential uses include single family homes that have frontage on Huron Church Road and Highway 3. There are a few industrial businesses located along the access road corridor. A portion of the vacant land located along the Highway 3/Huron Church Road corridor has been designated for commercial use. Future land uses that have been identified adjacent to the Highway 401/Highway 3 interchange area include new residential subdivision developments in the Town of LaSalle, which are part of the Town's long-range planning strategy. In addition, future commercial land uses have been identified adjacent to Highway 3 across from St. Clair College and future residential land uses have been identified on the vacant lands adjacent to E.C. Row Expressway.

As the future right-of-way for the access road is wider than that of the existing road right-of-way, there will be impacts to land use with the access road alternatives. The extent of impacts of the alternatives and opportunities to reduce the effects of these impacts to land uses adjacent to the corridor is being investigated. Effects may be reduced through access features, aesthetics and other treatments to reduce the presence of the freeway, and planning of uses for remnant properties or parcels

The proposed access road will alter somewhat the land use characteristics of the Highway 3/Huron Church Road corridor. Although the existing roadway carries high traffic volumes and serves as the primary connection to the Ambassador Bridge for long-distance international traffic, introducing a six-lane freeway with service roads (at-grade, depressed or tunnelled) and widening the transportation corridor will have localized impacts on land use.

The new access road has the potential to impact land uses in the area of the E.C. Row Expressway, due to a loss of vacant lands zoned for residential uses, but which presently provide a naturalized buffer between residential and transportation uses. The Plaza A option is located between the E.C. Row Expressway and a predominantly residential and natural area in the Spring Garden Planning Area, as defined by the City of Windsor Official Plan. The

Spring Garden Planning Area is a largely residential community encircling an expansive natural area feature, the Spring Garden Area of Natural and Scientific Interest (ANSI). A new residential subdivision development has begun in this area with approximately 20 homes completed. Placing a plaza adjacent to a residential and natural area is not consistent with the established zoning for the area. It has the potential to conflict with the neighbourhood characteristics of the area and may disrupt the manner in which this area functions as a cohesive neighbourhood.

Plaza and Crossing Alternatives

The plaza alternatives situated primarily in the industrial area of west Windsor are more consistent with existing and planned land use. A plaza is considered more compatible with industrial uses. Plaza C disrupts water-dependant industrial land uses, as such, relocation of these industrial uses elsewhere along the Detroit River may be difficult. Plaza C and Crossing C are also located closest to the Sandwich community. Recently, the City of Windsor adopted the Olde Sandwich Towne Community Planning Study Report, which is designed to provide direction for residents and business owners to actively participate in the plan-making and priority-setting process for the community. The plan outlines the continuation of industrial land uses in the waterfront area under consideration for Crossing C.

Impacts to individual properties (e.g. property acquisition, displacements and indirect effects) are considered in the 'Protection of Community and Neighbourhood Characteristics' and 'Maintain Air Quality' factors.

Hazardous Waste and Waste Management

Consideration of hazardous waste, waste management and potential impacts to contaminated sites is considered as part of the broader 'Maintain Consistency with Existing and Planned Land Use' factor. The evaluation of hazardous waste and waste management sites were based on data collected from selected environmental databases, aerial photographs, base land uses, technical reports, historical topographic maps and fire insurance maps. There are no known properties along the access road options that have been identified as being contaminated/disposal sites. Land uses associated with industrial operations near the western riverfront (i.e. in vicinity of Plazas B, B1 and C as well as Crossings B and C) are among those that are listed as being known contaminate/disposal sites. These sites include properties that historically were part of a municipal waste disposal landfill or construction debris disposal site, but that are currently assigned to different land uses, such as a hydro corridor across the landfill.

Remaining Activities

Consultation with municipal planning staff and the local communities will be held to more specifically identify land use impacts associated with the project and means of mitigating such impacts, as appropriate. This work will be undertaken as part of the on-going consultation process for the DRIC study.

As part of the impact assessment of the Detroit River International Crossing (DRIC) study, an assessment of built heritage features and cultural landscapes is being undertaken. Built heritage resources are structures or objects that people have made or modified and that are valued for the contribution they make to our understanding of the history of a place, an event, or a people.

Detroit River
INTERNATIONAL CROSSING
S T U D Y

Protection of Cultural Resources: Built Heritage Features Impact Assessment

As part of the impact assessment of the Detroit River International Crossing (DRIC) study, an assessment of built heritage features and cultural landscapes is being undertaken. Built heritage resources are structures or objects that people have made or modified and that are valued for the contribution they make to our understanding of the history of a place, an event, or a people.

Built Heritage Features (BHF): generally defined as structures or objects that are 50 years of age or older.

Cultural Landscapes Units (CLUs): are areas of land that have experienced human modification and that are valued for the contribution they make to our understanding of the history of a place, an event or a people.

Purpose of the Cultural Heritage Features Impact Assessment

As a means of determining the existence of previously identified built heritage features and cultural landscapes within the Area of Continued Analysis (ACA), contact was made with the City of Windsor's Heritage Planner. The Ministry of Culture's Ontario Heritage Properties Database and Parks Canada listing of National Historic Sites were also consulted. Additional information was sought from the residents of Sandwich with respect to locally identified sites of heritage significance.

How the Analysis was Done

Historical research was conducted to identify broad agents or themes of historical change and cultural landscape development in this area. Previously identified heritage resources were then categorized according to their heritage protection status and their inclusion on municipal, provincial and federal inventories and heritage designation lists. All heritage sites and heritage sensitive areas were mapped using Geographic Information Systems (GIS) data co-ordinates.

In October 2006, a field review of the ACA was conducted and previously identified features were confirmed. Additional field investigations led to the identification of features of heritage interest, including Built Heritage Features (BHFs) and Cultural Landscape Units (CLUs) that were then added to the inventory. An inventory page was prepared for each above-ground cultural heritage resource and all features of heritage interest were mapped using GIS data co-ordinates.

Results to Date

Within the ACA there are 17 BHFs and three CLUs. Of these, one property is listed on the City of Windsor's heritage inventory and one monument was erected by the Historic Sites and Monuments Board of Canada to commemorate the Capture of Detroit. The majority of the field identified built heritage features were constructed between 1900 and 1930 and are residences of the same general building type and era. These houses represent the first suburban infill of rural agricultural lands in the early twentieth century. The heritage significance of these houses has not been determined but will be confirmed as part of the assessment of Practical Alternatives. At this time, it is known that only three BHFs pre-date 1900. Also of interest is Branch 594 of the Royal Canadian Legion, which was constructed in the early 1960s. Although the Legion does not meet the 50 year cut off date, it is considered to be of historic importance to the community.

The three CLUs identified within the ACA are:

1. a reported tunnel associated with the Underground Railroad in Sandwich (background research has yet to confirm the location this feature)
2. the abandoned Brighton Beach subdivision, and
3. historic Sandwich.

Although no significant portion of Sandwich is within the ACA, Sandwich as a whole is a heritage sensitive area and the selection of a bridge crossing location must take into account any direct or indirect impacts on the adjacent historic community. These impacts may include the introduction of physical, visual, audible or atmospheric elements that are not in keeping with the resources and/or their setting.

For the purposes of this assessment, a heritage feature was considered to be displaced if the proposed right-of-way for the new crossing, plaza or access road passed through the property limits of the heritage feature. A feature was considered disrupted (indirectly affected) if the edge of the proposed right-of-way was within 50 m (164 ft) of the heritage feature.

Access Road Alternatives

In total, nine built heritage features will be potentially displaced by access road alternatives. Of these, two features (a pre-1900 farmhouse and the Royal Canadian Legion) are of potential heritage significance.

Plaza Alternatives

Plaza A will displace two features in the Malden Road area. Both are houses constructed prior to 1940, one of which is on the municipal heritage inventory. Plaza B and Plaza B1 will both displace three houses in the former Brighton Beach area. These features are of indeterminate significance although one is likely a pre-1900 farmhouse.

Crossing Alternatives

Depending on which crossing alternative is selected, between two and five homes constructed before 1954 will be disrupted or displaced. Crossing A doesn't displace any BHFs but it disrupts three, Crossing B displaces three BHFs, Crossing C1 will displace five BHFs (including a historic monument) and Crossing C2 will displace three BHFs (including a historic monument).

Practical Alternative	BHFs Displaced	BHFs Disrupted	CLUs Displaced	CLUs Disrupted
Access Roads	9			
Plaza A	2			
Plaza B	3			
Plaza B1	3			
Crossing A		3		Portions of Brighton Beach area
Crossing B	3			
Crossing C	5			
Crossing C2	3			

In addition, the three crossings have the potential to disrupt identified cultural landscapes in this area of the city. Portions of the Brighton Beach area will be affected by all crossing alternatives, while Crossing C will disrupt two additional CLUs - the underground tunnels reported to be in the Chappell/Russell area and the Sandwich vista.

Remaining Activities

The next steps in the cultural heritage impact assessment include verification of the heritage significance of those features in the ACA that are potentially displaced or disrupted by the Practical Alternatives. This can include further research, field reviews, and interviews with property owners and/or local heritage conservation representatives. Additional research will be conducted to confirm the location of the Underground Railroad tunnel.

Detroit River
INTERNATIONAL CROSSING
S T U D Y

Protection of Cultural Resources: Archaeological Assessment

As part of the impact assessment of the Detroit River International Crossing (DRIC) study, an assessment of the impacts of the archaeological sites and areas of archaeological potential within the Area of Continued Analysis (ACA) is being undertaken.

Following the generation of Practical Alternatives for the crossing, plaza and access road, 'properties of interest' in the vicinity of these alternatives were identified for investigation. The archaeological assessment is ongoing. Many of the properties of interest have been investigated over the past several months.

How the Analysis was Done

The archaeological assessment involves up to four stages of investigation:

Stage 1 – Evaluation of Archaeological Potential
Stage 2 – Property Assessment
Stage 3 – Site-specific Assessment
Stage 4 – Protection and Avoidance, Excavation or Construction Monitoring.

To date, Stage 1 has been completed and the DRIC study team and their consultants are currently conducting Stage 2 archaeological fieldwork.

Stage 1: Evaluation of Archaeological Potential

The tasks involved in the Stage 1 investigation include:

- detailed documentary research of the archaeological and land use history
- an inspection visit to the area to gain first hand knowledge of the area's geography, topography, and current conditions and to determine and map the potential for archaeological resources
- evaluate the area's potential to contain archaeological remains.

Based on the Ontario Ministry of Culture's criteria for determining archaeological potential (Ministry of Culture 2006), the following areas within the Area of Continued Analysis (ACA) were considered to have archaeological site potential, pending a determination of the likely integrity of any archaeological resources.

For Aboriginal (Pre-contact and Contact Period) Archaeological Sites

- Areas within 250 m (820 ft) of a known archaeological site, where location information for the site is relatively precise
- For sites with relatively imprecise location information, the area wherein such sites are likely to be located based on available descriptive information
- Areas within 300 m (980 ft) of a primary water source such as a lakeshore, river, or large creek
- Areas within 300 m (980 ft) of an ancient water source such an ancient shoreline, relict beach features, or former watercourse as shown on historic mapping
- Areas within 200 m (656 ft) of a secondary water source such as a stream, spring, wetland, swale, or drain
- Areas within 200 m (656 ft) of the edge of the Ojibway Prairie.

For Euro-Canadian Archaeological Sites

- Areas within 250 m (820 ft) of a known archaeological site, where location information for the site is relatively precise
- For sites with relatively imprecise location information, the area wherein such sites are likely to be located based on available descriptive information
- Designated heritage properties and easements
- Cemeteries

- Core settlement areas (towns, villages) where it is possible to make a reliable determination based on analysis of period maps
- Areas within 100 m (328 ft) of the centreline of existing roadways that follow the approximate alignment of historic roadways, or within 100 m (328 ft) of the approximate alignment of no-longer-extant roadway corridors as determined by period map examination
- Areas within 250 m (820 ft) of the likely location of historic features (dwellings, mills, churches, cemeteries, etc.) as shown on more precise period maps.

During the Stage 1 assessment of the ACA, archaeological potential was determined to be present. As a result, the archaeological assessment proceeded to Stage 2 fieldwork.

Stage 2: Property Assessment (Survey)

The Stage 2 assessment consists of the systematic field investigation of areas determined to have archaeological potential. This assessment was conducted on properties in the areas of interest impacted by or in proximity to the Practical Alternatives. Permission to Enter (PTE) from the property owner was obtained before the property of interest was investigated. This assessment involves the documentation and inventory of archaeological resources within those areas. Field methodology involves two types of survey - pedestrian and test pit.

Lands subject to Stage 2 archaeological field survey have been assigned priority levels (Priority 1 through Priority 5, with Priority 1 being the highest). The priority levels indicate the order in which lands are being surveyed and were determined based on criteria pertinent to the project: proximity to sensitive known Aboriginal sites, and critical to the evaluation and siting of the various Practical Alternatives.

Pedestrian survey is conducted on lands with open surface visibility (e.g. lands that are ploughed or with open, immature crops), and it involves the location, mapping and collecting of artifacts observed on the surface.

Test pit survey is conducted on lands with closed surface visibility (e.g. scrub farmland, windrows, lands within forest or valley floor, or with dense, mature crop), and it involves the location, mapping and collection of artifacts by test pitting using hand shovels.

Results to Date

Sixteen Aboriginal and 14 Euro-Canadian archaeological sites have been located within the higher priority lands of interest that have been surveyed to date. No substantive finds are associated with any of these sites, with the exception of one find of pre-contact ceramic shards.

With respect to the Practical Alternatives for the access road, at this time, there is no notable difference among the alternatives in terms of potential to disturb archaeological features. No known sites of high to moderate significance are impacted. Additional investigations are being undertaken to verify the finds made and complete the field reviews.

Analysis of crossings and plazas are incomplete at this time. The majority of the lower priority lands are situated in these areas.

Remaining Activities

The consultants are continuing Stage 2 archaeological assessment as follows:

Priority 1 Lands

- Over 95% of the available properties of interest have been surveyed to date within the ACA.
- Outstanding properties to survey: 3 small parcels outside of right-of-way lands at north-west quadrant of Huron Church Road and E.C. Row Expressway.

Priority 2 Lands

- Over 95% of available properties of interest have been surveyed to date.
- Outstanding properties to survey must be ploughed prior to pedestrian survey.

Priority 3 Lands

- Approximately 60% of the available properties of interest have been surveyed to date.
- Expect to complete Priority 3 lands by early December.

Once the fieldwork is complete, the Stage 2 assessment report will be produced. This report will make recommendations on further archaeological assessment where necessary. It is anticipated that Stage 2 archaeological assessment will continue in 2007 on Priority 4 and 5 lands within the ACA.

It is also anticipated that Stage 3 archaeological assessment (and possibly Stage 4 archaeological work) may be conducted on sites determined by the Stage 2 assessment to have archaeological interest, and this work would likely commence in 2007.

Detroit River
INTERNATIONAL CROSSING
S T U D Y

Protection of Natural Environment: Natural Heritage Features Impact Assessment

Assessing the project impacts to natural features such as fish and fish habitat, vegetation and vegetation communities and wildlife and wildlife habitat is an important part of the Detroit River International Crossing (DRIC) Environmental Assessment. The analysis of natural heritage features entailed a three-season program of field investigations, as well as research and interviews.

FISH AND FISH HABITAT

The DRIC study team investigated all watercourses and waterbodies located within the Area of Continued Analysis (ACA) to confirm the presence/absence of fish and fish habitat and species at risk.

How the Analysis was Done

Background information was obtained from Fisheries and Oceans Canada, Ontario Ministry of Natural Resources (MNR) and Essex Region Conservation Authority (ERCA). Field investigations were performed in May, September and October 2006. The fish community was investigated at 58 stations using backpack electrofishing equipment, minnow traps, dip nets or direct observation. Fish habitat along 38 watercourse reaches was characterized and photographed. The Detroit River bed was also videotaped using underwater video camera and sediment was sampled.

Results to Date

Most watercourses in the ACA are designated as agricultural municipal drains and are altered by agricultural or urban development. No watercourses or waterbodies in the ACA support coolwater or coldwater fish communities. The Detroit River, Turkey Creek, Lennon Drain, McKee Creek and Cahill Drain directly support warmwater sportfish communities (i.e. bass, sunfish, etc.). Remaining fish habitat supports warmwater baitfish communities (i.e. minnows, chubs, etc.). Many watercourses function as drains and do not support fish habitat. No critical fish habitat or fish species at risk were identified in the ACA.

VEGETATION AND VEGETATION COMMUNITIES

The DRIC study team investigated all vegetation communities located within the ACA to classify vegetation communities, inventory plants and confirm the presence/absence of species at risk.

How the Analysis was Done

Background information was obtained from MNR, ERCA and local field naturalists. Field investigations were performed in April, May, June, July, August and September 2006, throughout the growing season. Vegetation communities were delineated on air photos and refined through ground truthing. The Ecological Land Classification (ELC) system was used to describe vegetation communities.

A plant survey was conducted in each vegetation community to identify composition, structure and function. Representative photographs were taken. Species at risk were identified in the field where possible or photographs or samples were taken for identification or verification purposes. The locations of species at risk were recorded using a Global Positioning System (GPS).

Results to Date

- Seven types of vegetation communities located in the ACA are considered rare, very rare or extremely rare in Ontario and very rare, imperiled or critically imperiled globally.
- Fifty-five plant species located in the ACA are considered rare, very rare or extremely rare in Ontario.
- Three plant species (dense blazing star, colicroot and climbing prairie rose) are regulated as "threatened."
- One plant species (butternut) is regulated as "endangered" in Schedule 1 of the *Species at Risk Act*.

Access Road Alternatives

Among the access road alternatives:

- Alternative 2A (at-grade with parallel service road) impacts a greater area of tallgrass prairie and deciduous swamp (between 1.54 and 1.98 ha) than the other access road alternatives.
- Alternative 2B (depressed with parallel service road) impacts between 0.92 and 1.36 ha.
- Alternatives 1A (at-grade with one way service roads) and 1B (depressed with one way service roads) and Alternative 3 (cut and cover tunnel) impact between 0.38 and .092 ha.
- Access roads connecting to Plaza A impact a greater area of tallgrass prairie than those connecting to Plazas B, B1 or C, reflecting the presence of tallgrass prairies in the Spring Garden Road/Malden Road area.

Between 70 and 159 specimens/colonies of provincially rare plants are impacted by the access road alternatives, with minor differences among the alternatives in terms of impacts.

Plaza Alternatives

Among the plaza alternatives:

- Plaza A impacts approximately 3 ha of tallgrass prairie.
- Plazas B and B1 impact between 1.1 and 1.4 ha.
- Plaza C impacts 1 ha.

The impacts with Plaza B and C alternatives result primarily from the roadway connections into the plazas from the Malden Road area.

Practical Alternative	Impacts to tallgrass prairie and deciduous swamp	Impact to specimens/ colonies
Access Road 1A	Between 0.38 – 0.92 ha	
Access Road 1B	Between 0.43 and 0.86 ha	
Access Road 2A	Between 1.54 – 1.98 ha	
Access Road 2B	Between 0.92 and 1.36 ha	
Plaza A	3 ha	Up to 149
Plaza B	Between 1.1 – 1.4 ha	Up to 79
Plaza B1	Between 1.1 – 1.4 ha	Up to 79
Plaza C	1 ha	Up to 79

Similarly, Plaza A results in a greater impact to specimens/colonies of provincially rare plants (up to 149 specimens/colonies impacted) in comparison to Plaza B/B1 (both up to 79 specimens/colonies impacted) and Plaza C (up to 79 specimens/colonies impacted).

WILDLIFE AND WILDLIFE HABITAT

The study team investigated all wildlife habitats located in the ACA to identify important habitat for wildlife, inventory wildlife and confirm the presence/absence of species at risk.

How the Analysis was Done

Background information was obtained from the MNR, ERCA and local field naturalists. Field investigations were performed in March, April, May, June, July, August, September, October and November 2006. Wildlife habitat was delineated on air photos and refined through ground truthing. The Ecological Land Classification (ELC) system was used to describe wildlife habitat, where appropriate.

Wildlife was identified through direct observation, vocalizations, tracks, scats and browse. One hundred and twenty point-count breeding bird surveys were performed at 60 stations. Species at risk were identified in the field and a photograph was taken for verification purposes. The locations of species at risk were recorded using a GPS.

Results to Date

One hundred and twenty-one wildlife habitat units were identified and fifty species of breeding birds were recorded in the ACA. Three eastern foxsnake and four Butler's gartersnake were recorded in the ACA. Both species are regulated as "threatened" in Schedule 1 of the *Species at Risk Act*.

One notable potential impact among the alternatives is to the habitat of the Butler's gartersnake. The area between Malden Road and Matchette Road alongside E.C. Row Expressway has been identified as habitat for Butler's gartersnake. This area is more highly impacted by Plaza A, although the access road into Plazas B, B1 and C also impacts this area to a lesser extent.

Remaining Activities

Information collected from background sources and through field investigations will be compiled and used to compare Practical Alternatives. No further field investigations are planned at this time.

The results of this assessment will be reviewed with appropriate government agencies following the Public Information Open Houses.

Detroit River
INTERNATIONAL CROSSING
S T U D Y

Improvements to Regional Mobility

As part of the impact assessment of the Detroit River International Crossing (DRIC) study, a review of transportation systems in Southwestern Ontario and Southeastern Michigan was undertaken. This review identified the improvements to mobility for international traffic (both truck and auto traffic) through increased capacity, improvements to border processing facilities, providing continuous access to the border crossing, and providing options in the border transportation network (redundancy) as compared to the "do nothing" alternative.

How the Analysis was Done

The detailed traffic analysis incorporates an assessment of existing traffic operations at key locations as well as a detailed assessment of future traffic conditions for 2015, 2025 and 2035 horizon years. Passenger and commercial traffic volume forecasts were obtained from the Travel Demand Model developed for this study.

Existing traffic volumes were collected from a variety of sources including a series of traffic surveys undertaken by the study team in February 2006. The Practical Alternatives were assessed for measures of effectiveness such as levels of service, intersection delays, travel times, as well as network flexibility/local connections and anticipated changes to travel patterns.

The Synchro 6 and HCS 2000 software packages were used to predict traffic operations for various traffic, road network and horizon year scenarios. The analysis was undertaken for the intersections, arterial roadway sections as well as freeway segments within the Area of Continued Analysis.

Existing Conditions

Highway 3 and Huron Church Road are high-order arterial roadways. In addition to providing a connection between Highway 401 and Highway 3 to the Ambassador Bridge, the road provides access to commercial and residential areas, as well as community and institutional uses.

Currently, both Highway 3 and Huron Church Road are generally operating with some congestion and near capacity during the peak hours. The proportion of trucks is largest nearest to the Ambassador Bridge plaza and during off-peak periods is as high as 60% and is approximately 30% during peak hours. Enhancements to border processing, such as FAST and pre-notification requirements along with additional primary inspection booths have reduced occurrences of resultant queues on Huron Church Road. Even with these enhancements the transportation system remains fragile.

Future Conditions

By 2035, both international car and truck traffic through Windsor-Detroit is expected to grow significantly. Afternoon peak hour truck traffic is expected to more than double. International car traffic is expected to increase by about 50% over the next 30 years. If no new crossing facility is built, significant road capacity problems are expected to begin to occur by 2015. Conditions will deteriorate further by 2035 to a point where most intersections will operate over capacity. Unacceptable amounts of delay will be experienced, with travel times nearly doubling over existing conditions.

In the absence of improvements, it is expected that capacity problems will be widespread and not isolated to particular locations on Highway 3 and Huron Church Road. Traffic growth on Highway 3 and Huron Church Road will be constrained by its capacity limitations. By 2035, a significant amount of international traffic will divert to other Windsor/LaSalle area roads in order to avoid congestion on Highway 3 and Huron Church Road.

Practical Alternatives

Access Road Alternatives

All Practical Alternatives for the access road incorporate a new 6-lane freeway facility between the Highway 401/Highway 3 interchange and the new inspection plaza. The proposed new six-lane freeway will meet future demands to year 2035 and beyond by providing free flow traffic conditions from Highway 401 to the new inspection plaza. The six-lane freeway will also provide flexibility to designate lanes for streaming of border traffic (e.g. separate lanes for FAST/NEXUS traffic) in the vicinity of the new inspection plaza.

A service road will also be incorporated to enhance local access and mobility. All of the service roads will be two lanes in each direction with auxiliary turning lanes where required. All of the service road alternatives provide increased local and regional mobility over the "do nothing" alternative. This is primarily due to the creation of new capacity and shifting international traffic onto the new freeway. All Practical Alternatives will provide substantial travel time savings for local traffic when compared to the do nothing alternative.

Practical Alternatives 1A and 1B provide one-way service roads on each side of the freeway between Howard Avenue and the E.C. Row Expressway. Practical Alternatives 2A and 2B provide a parallel two-way service road beside the freeway. Major side streets will be connected across the new freeway and access ramps will connect the service roads to the freeway at key locations. Practical Alternatives 1A and 1B provide the most opportunities for connections between the service roads and the freeway. Practical Alternative 3 is a tunnel option that would have the two-way service road at-grade and generally above the tunnel itself. Existing side-street connections between Howard Avenue and Labelle Street/Spring Garden Road could remain in place under this alternative.

Plaza Alternatives

In terms of providing improved border processing facilities to meet future travel demand and security requirements at the border crossing, both the Canadian and U.S. study teams are developing plaza alternatives that are much larger than those currently existing at the Ambassador Bridge and the Detroit-Windsor Tunnel. The plazas will be designed to serve the future (2035) travel demands at the border crossing. These new plazas are being developed in consultation with Canada Border Services Agency and the U.S. Department of Homeland Security Customs and Border Protection Branch to provide sufficient areas for primary inspection lane booths and on-site secondary inspection of people and goods. All the plaza alternatives will allow for dedicated NEXUS and FAST lanes and will provide for a substantial improvement of border processing capabilities including areas for permanent gamma ray inspection equipment.

Crossing Alternatives

The new Detroit River crossing is being developed as a six-lane bridge, providing three Canada-bound lanes and three U.S.-bound lanes. 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).

Remaining Activities

The next steps for the access road are to refine the access points, interchanges and cross-street intersection configurations to improve operations and reduce impacts, where possible.

With respect to the plazas, U.S. and Canadian border agencies are reviewing the layouts of the plaza alternatives and will provide suggestions for operational improvements. These comments will be incorporated in the assessment of the alternatives.

For the crossing, a bridge type study is being undertaken to determine the preferred bridge alternative at each of the three crossing locations.

Detroit River
INTERNATIONAL CROSSING
S T U D Y

Cost and Constructability

An assessment of cost and constructability is being undertaken as part of the impact assessment for the Detroit River International Crossing (DRIC) study. This assessment includes the access road, plaza areas and the international bridge. The assessment includes engineering design sufficient to define the alternative at a concept level of detail, development of construction staging to determine overall feasibility, traffic management requirements, and consideration of operation and maintenance costs.

How the Analysis was Done

Construction costs for the access road and plaza have been estimated based on the engineering concepts presented at PIOH 3 with refinements based on the results of consultation to date. Quantities for major construction items were estimated from the plan, profile and cross-section drawings. Unit costs were taken from the Ontario Ministry of Transportation's inventory of costs from recent highway construction projects and other sources, as appropriate. Percentages are added for minor items, engineering and contingencies leading to development of an overall construction cost. Costs for operations and maintenance, as well as property acquisition are considered separately.

The costs for the international bridge are being developed jointly with the U.S. team. Engineers from both Canadian and U.S. teams are undertaking a Bridge Type Study that is considering numerous options for cable stayed and/or suspension bridges at each crossing location. The study is considering optional locations for piers, anchor blocks and touchdown points, as well as elements that affect the width of the bridge (lane widths, shoulder areas, medians, sidewalks and protection of the cables). Consultation is ongoing with the Canadian and U.S. Coast Guards and Great Lakes Shippers to consider the possibility of placing piers in the river, which would result in a shorter main bridge span and could reduce the cost of the main structure.

Results to Date

Access Road Alternatives - Construction

The construction staging and constructability reviews to date confirm that all the alternatives are constructible, and that traffic flow can be reasonably maintained in the Highway 3/Huron Church Road corridor throughout the construction period. It is clear that access road construction is complicated by the high water table and relatively poor ground conditions, particularly towards the north and west ends of the project. These 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 time consuming than other alternatives due to the necessity to build the tunnel box, ventilation, electrical and communication systems.

Plaza Alternatives - Construction

With respect to the plaza locations, the major differences in cost and constructability are associated with plaza C. Construction of plaza C would require the relocation of the Keith Transformer Station, which would add considerable time and cost to the project.

Crossing Alternatives - Construction

Construction staging and constructability issues for the international bridge alternatives often relate directly to the main span and the overall length of approach between the bridge and the plaza. The detailed Bridge Type Study currently in progress will identify these matters more explicitly.

Access Road Alternatives - Cost

Preliminary construction cost estimates for the access road from Highway 401 to Malden Road from approximately $620M to $3.8B. Specifically:

- the at-grade alternatives are in the order of $620M – $920M
- the depressed options are about $1.0B - $1.4B
- the tunnel is estimated at $3.8B. The increased costs for the tunnel relate directly to the increase in excavation and concrete required to build the tunnel, as well as the ventilation, electrical, drainage, communications and other Emergency Management Systems.

Practical Alternative		Estimated Access Road Costs $CDN 2011
Access Road	Plaza	Highway 401 to Malden Road
1A	A	$920,000,000
1B	A	$1,360,000,000
2A	A	$790,000,000
2B	A	$1,200,000,000
3	A	$3,780,000,000
1A	B & C	$750,000,000
1B	B & C	$1,190,000,000
2A	B & C	$620,000,000
2B	B & C	$1,030,000,000
3	B & C	$3,610,000,000

Plaza Alternatives - Cost

Cost for the access road from Malden Road to the plaza, the plaza itself and the approach roadway to the international bridge range from $180 - $280M depending on which plaza alternative is chosen (not inclusive of costs associated with the potential relocation of the Keith Transformer Station under plaza C).

Crossing Alternatives - Cost

The international bridge costs are being developed in collaboration with the U.S. team and are not yet available; however, it is clear that longer span structures will be significantly more costly.

Remaining Activities

The current estimates provide a reasonable basis for a construction cost comparison of alternatives and will provide useful input to the assessment and evaluation. Further work will be done to refine construction, operating and maintenance costs.

Cost and constructability estimates will continue to be updated in concert with any refinements to the alternatives or the development of any new combination alternatives. In addition, the completion of the Bridge Type Study will provide more insight into bridge costs. The Bridge Type Study is expected to short-list the most practical bridge types for each proposed crossing location.