The Detroit River International Crossing Environmental Assessment Study
Submitted by the Ontario Ministry of Transportation's Windsor Border Initiatives Implementation Group

Overview

The Windsor-Detroit Gateway is Canada's busiest land border crossing. With increased security, aging infrastructure, and a competitive need to get goods to market quicker than ever, a long-term solution to improve border transportation in this gateway is required that protects the local community while responding to the economic needs of two nations.

Enter the Border Transportation Partnership. This team of experts from Canada, the U.S., Ontario and Michigan aimed to address capacity, system connectivity, and redundancy at the Windsor-Detroit border through a comprehensive transportation environmental study. The study process followed the requirements of the *Ontario Environmental Assessment Act* (OEAA), the *Canadian Environmental Assessment Act* (CEAA) and the U.S. *National Environmental Policy Act* (NEPA). They began the Detroit River International Crossing (DRIC) study in 2005.

The Ontario Ministry of Transportation (MTO) led the Canadian study, in partnership with Transport Canada. The study team worked closely with the local community to address their goals of improving quality of life, taking trucks off local streets, and improving the movement of traffic across the border. Members of the public, local municipalities, First Nations, and various stakeholders contributed to the study providing valuable input and information.

The study team filed the Environmental Assessment (EA) report with Ontario's Minister of the Environment in December 2008. The EA outlined a recommended plan for the locations of a new access road, plaza and international border crossing in Canada. Approved under the *Ontario Environmental Assessment Act* (OEAA) in August 2009 and under the *Canadian Environmental Assessment Act* (CEAA) in December 2009, work has already begun on the new access road in Windsor.

Ontario is leading the delivery of the Canadian access road—The Windsor-Essex Parkway [Appendix 1]. The Windsor-Essex Parkway is unlike any road, anywhere in Canada. The six-lane freeway is 11 km long and is below-grade meaning international-bound traffic is dropped below the line of site the local communities. The Parkway features 11 tunnels and a four-lane service road allowing long-distance international traffic to travel unimpeded by traffic signals to a new inspection plaza and river crossing while improving community linkages and providing new recreational opportunities including trails and green space. For the first time Highway 401 will connect to the border uninterrupted.

Background

With more than 35 per cent of Ontario-U.S. trade and more than 9,000 trucks per day, the Windsor-Detroit border crossing represents the premier trade corridor between the United States and Canada and yet it is home to only one international border crossing facility (Ambassador Bridge) that can handle both personal and commercial vehicles with a second facility for personal vehicles only (Detroit-Windsor Tunnel). Delays and queuing at these crossings caused ripple effects in the local network and impacted the economy as goods sat at the border waiting to cross. With only one crossing for commercial vehicles the flow of trade between Canada and the U.S. carried in the 3.7 million commercial vehicles that travel through the Windsor-Detroit gateway each year is put in a precarious situation.

Ontario relies on an interconnected network of highways moving people and goods through the province continuously and efficiently. It is also important that the provincial transportation network connect directly with the United States interstate system. As a result of a decision made over a half a century ago, there is currently no direct connection from Highway 401 the U.S. interstate highway system in Windsor-Detroit. Traffic heading to the

border on Highway 401 travels a distance of approximately 11 kilometres along Highway 3 and Huron Church Road through a total of 17 signalized intersections to the Ambassador Bridge.

The horrific events of September 11, 2001, taught the world an important lesson – the unimaginable can happen at any time and at any place. So what happens if the flow of trade between these primary trading partners is cut off for some reason? How quickly are economies impacted and how great are the impacts? The governments in the Border Transportation Partnership did not want to wait for a catastrophic incident to reflect on what they should have done. Instead, they started working on a solution that would provide redundancy in terms of a new international border crossing, improved system connectivity with a new link between Highway 401 to the U.S. interstate system, improved border processing capabilities with state-of-the-art inspection plazas, and provide capacity that will accommodate projected traffic volumes.

The study area on the Canadian side of the Detroit River has a combined population of over 300,000, including the City of Windsor, Town of LaSalle, Town of Tecumseh and rural communities in adjoining Essex County. The study area is characterized by both heavily urbanized and intensive agricultural land uses that are interspersed with a patchwork of remnant natural heritage features, including wetlands, prairies, and woodlots. As home to the busiest land border crossing in Canada, residents in Windsor and Essex County were well-aware of the impacts of commercial vehicles cutting through their communities on their way to the border and they had a lot to say about a new plan to address this trans-border project. Doing what was good for the travellers wasn't going to be enough. The community wanted improvements to their quality of life as a part of the benefits of this project. A very involved community wanted trucks off local streets, traffic movement across the border improved, and a better quality of life. The study team would need to recommend a solution that addressed capacity, system connectivity, and redundancy but not at the sake of the local community and environment.

The DRIC Study

The DRIC study was a bi-national transportation improvement study that was undertaken by the governments of Canada, the United States, Ontario, and Michigan, who formed the Canada-U.S.-Ontario-Michigan Border Transportation Partnership.

A Planning Need and Feasibility Study (P/NF) was commissioned by the Partnership in 2001 to develop a long-term strategy for the safe and efficient movement of people and goods between Southwestern Ontario and Southeastern Michigan.

The formal Environmental Assessment (EA) process for a new or expanded Detroit River International Crossing began in 2005. The study team generated and assessed 15 illustrative crossing alternatives with various corresponding plaza and access road alternatives within the Preliminary Analysis Area (PAA). Further evaluation and public comment led to a refined Area of Continued Analysis (ACA) [Appendix 2A] in November 2005. Within the ACA, five practical access road alternatives (at-grade, below-grade and tunnelled) [Appendix 2B], three practical plaza alternatives, and three practical crossing alternatives were generated, assessed and evaluated.

The study team used seven key evaluation factors (Changes to Air Quality; Protection of Community and Neighbourhood Characteristics; Consistency with Existing and Planned Land Use; Protection of Cultural Resources; Protection of the Natural Environment; Improvements to Regional Mobility; and Cost and Constructability) to evaluate all of the alternatives developed during the study.

During the development of the alternatives for the access road, plaza and crossing location, the study team focused on utilizing the existing infrastructure to the maximum extent, seeking areas or land uses that were

compatible with transportation corridors and facilities, or areas in transition to compatible land uses, thereby minimizing impacts to significant natural features and city centres.

Consultations from 2005 to 2007 led to a growing interest around a concept that combined tunnelled and below-grade alternatives. During discussions with the City of Windsor, the vision of a more "green", parkway-like, alternative emerged. The concept would include a green corridor with tunnelled sections, a grade separated recreational trail system, and extensive urban design of the green areas.

Following technical studies and in response to comments and feedback, the study team developed a modified access road alternative based on the below-grade and tunnel alternatives. The Parkway alternative was presented for public consultation in August 2007. More analysis, evaluation and comment followed and in May 2008, the study team announced The Windsor-Essex Parkway as the Technically and Environmentally Preferred Alternative for the access road portion of the project as it was considered to provide the best balance of impacts and benefits.

World-class consultants used a variety of study techniques including hundreds of hours of field work, modelling, monitoring and sampling resulting in thousands of pages of reports which was rigorously analysed against the seven evaluation factors to determine the recommended plan that best met the goals of both the study team and the local community.

The study team finalized the EA in late 2008 and submitted the formal Environmental Assessment Report to the Ministry of the Environment in December 2008. Public and agency comments were accepted until the end of February 2009 and the MOE submitted their comments to the team in April 2009, to which the study team responded prior to the approval decision. The EA was approved in August 2009 (Ontario) and December 2009 (Canada).

Innovation

From the outset of the study, the study team realized that the DRIC study would benefit and impact many of the stakeholders throughout the Windsor and Essex County area [Appendix 3]. Community input was key to understanding the community and environmental impacts of this project to minimize them wherever possible. This input helped to identify the concerns that were considered in the development of The Windsor-Essex Parkway and specific mitigation measures.

A Community Consultation Group (CCG) was formed at the beginning of the study with invitations extended to interested individuals from the City of Windsor, Town of LaSalle, and Essex County. Members of the public with a variety of backgrounds and interests joined the CCG and volunteered their time to meet and share their ideas and concerns. Their primary role was to operate as a forum for open dialogue and information exchange between the study team and the public. Over time the membership in CCG changed as participants saw that their concerns were being addressed and as new concerns arose. Members contributed to the study team's awareness of the need for a new border crossing and connection to the freeway network and articulated concerns regarding air quality, the natural environment, specific community concerns, and tunnelling. One contribution of particular note is the modification of the analysis to include a full year of air quality monitoring along the Highway 3/Huron Church Road corridor.

A Municipal Advisory Group (MAG) consisting of representatives from the three municipalities provided many useful contributions to the project. Among the many useful contributions, the MAG outlined a vision of the role and

function of the service roads. This had considerable influence on the development of the alignments of the service road, as well as the ramp locations. The MAG also outlined a vision for the Highway 3 interchange, which would help direct traffic away from the existing intersection of Howard Avenue and Highway 3 and more towards Highway 401—taking trucks off local streets and moving international traffic away from residential neighbourhoods. These discussions had a direct bearing on the development of alternatives and the final selection of an interchange design in the Highway 3-Highway 401 area.

The study team consulted with the broader public through several Public Information Open Houses (PIOH) and follow-up workshops, bus and boat tours, several context sensitive solutions workshops and an initial public outreach meeting, as well as several question and answer sessions attended by more than 200 people. Each meeting was extensively advertised and well attended, in some cases by more than 1,000 members of the public. Comments were solicited at these meetings for consideration and response.

Context Sensitive Solutions (CSS) workshops were held following PIOHs in 2006 and 2007. The study team worked with citizens to identify themes for buffers and landscaping. There was strong community interest in naturalized areas and ecological restoration, which influenced the development of The Parkway alternative and mitigation treatments for the preferred alternative.

By the end of the formal study period, the study team had conducted over 300 public consultation events.

To further general public knowledge about the project, the study team established a study website (www.partnershipborderstudy.com), which has been maintained throughout the course of the study with technical reports, news releases, statements, and project updates. Meeting information on both sides of the border was also included to foster participation from the community. A second website was added in the spring of 2008 to highlight the Technically and Environmentally Preferred Alternative for the access road portion of the study (www.weparkway.ca). The public has been further informed about the study through the local media. Study progress has been widely covered by the local newspaper, radio stations, and television stations. For example, in the month spanning the lead up to and immediately following the August 2007 announcement of the Parkway alternative, the DRIC study was the focus of over 200 print, radio and TV media clips.

To allow for productive two-way conversations between the study team and the interested public, it was critical that the study's specialized technical information be presented in a format and language that was easy for the general public to understand and that the public have direct access to the study team. Display boards at public meetings included charts, sketches and graphic illustrations and hard copy and digital versions were given to participants to take home and review. Meeting attendees were given plain language fact sheets that used familiar and consistent wording. Workshop participants were able to draw on maps to express their ideas and work in smaller break-put groups to share thoughts and devise solutions to their concerns. All printed information was made available on the study's easy-to-navigate website. Public consultation events included opportunities to ask questions directly to the study team and the study team responded to questions received through a toll-free phone number and through a dedicated email address.

The information received through these various consultation activities was considered in the development, analysis and evaluation of alternatives. For the most part, comments reinforced the analysis/evaluation and/or caused the team to adjust its thinking regarding the balance of impacts and benefits of the undertaking. In this way, the consultation has influenced the outcome of the project in many significant ways, and has helped shape the study leading up to the recommended plan and development of mitigation measures.

Based on all of this input, the study team was able to understand impacts to residents, businesses, municipalities, and special interest groups. Following the announcement of The Windsor-Essex Parkway, the study team continued to look at input and made several more refinements that: moved the access road alignment further away a residential community while reducing impacts to a predominantly forested natural areas by 25 acres and increasing the size of a buffer area providing opportunities for natural habitat enhancement; incorporated a modern roundabout instead of a traditional signalized intersection at a key intersection which will reduce the number/severity of collision, noise and air pollution by removing the idling of stopped vehicles, and delays caused by poor traffic flow; and extended a tunnel which will provide improved community connections and more greenspace for additional recreation opportunities.

Following the announcement of the access road, plaza and crossing locations, several meetings were held with local neighbourhood communities to discuss road alignments and impacts to their properties. As a result of these discussions, refinements to the alignment of The Windsor-Essex Parkway, the location of tunnels, and buffer area/right-of-way were all implemented into the Recommended Plan.

Protection of the Natural Environment

Windsor-Essex is home to unique flora and fauna. Impacts to the natural environment were the focus of field investigations to document wildlife habitat and to characterize the nature, extent and significance of animal habitat in the study area. Data was collected through different measures that included an innovative way of tracking two snake species through the use of electronic tracking devices.

The study team rejected alternatives that directly impacted important natural features including the Ojibway Prairie Provincial Nature Reserve, an area of scientific significance that is protected by three levels of government. Instead, the study team focused on ways to enhance existing transportation corridors while limiting impacts to both natural habitat and existing residential communities. For example, the preferred Parkway corridor was refined to reduce the footprint of the proposed highway by combining it with the existing E.C. Row Expressway corridor into a core-collector system, moving the roadway farther away from an existing residential area as well as protecting more natural habitat.

Eight species at risk were discovered in the corridor and habitat restoration and enhancement will be implemented to create new and higher quality habitat. This marks a significant protection measure as it improves upon existing conditions and provides for long-term survival of species at risk in the area. Areas of habitat to be retained will be clearly marked in the field and protected from construction activities with wildlife salvage carried out prior to clearing for construction. Restoration and enhancement of habitat located along The Windsor-Essex Parkway will be used at strategic locations to reconnect significant wildlife habitat located on both sides of The Windsor-Essex Parkway. The Oakwood tunnel in particular will provide a natural connection for wildlife to travel between the Oakwood Bush and the Spring Garden Natural Prairie area.

MTO is working with the Ontario Ministry of Natural Resources to implement a comprehensive mitigation strategy to protect the species at risk identified in the corridor under the *Endangered Species Act* (ESA). Mitigation plans developed in accordance with the ESA include the protection and restoration of habitat for species at risk. These mitigation strategies include long term protection for the restoration areas. MTO will look at ways of partnering with local stakeholders and interested groups to assist in maintaining the long term strategies put in place.

The comprehensive mitigation plan established to meet ESA permit guidelines includes plans to partner with local agencies, municipalities and special interest groups to protect endangered and threatened species. These plans could include the sharing of resources and creation of long-term strategies to ensure the survival of species in the

corridor. MTO will seek ways to partner with local environmental groups to assist with mitigation and implementation of strategies for long term monitoring.

The mitigation plans play a role in the overall landscape plan as many of the protected plant species will be propagated throughout the corridor as part of the visual design of natural areas. The urban design and aesthetic plan will work in tandem with the landscape plan to improve views, aesthetics, ecological function and screening. These mitigation measures will improve the visual character, aesthetic presence and landscape impact of the Recommended Plan. The result of this will be a landscape that is unified, green, connected, integrated, and functions as a culturally significant gateway.

Permits for construction of The Windsor-Essex Parkway under the ESA were received in late 2009 and early 2010. A comprehensive mitigation strategy for species at risk under the ESA will create and restore habitat for species at risk prior to the construction of the Parkway. This project is the first of its kind to receive a permit under the economic justification provisions of the ESA and will feature comprehensive mitigation strategies that protect species at risk and enhance habitat for future survival.

The current roadway does not provide either quality or quantity treatment for runoff from the highway during storms. In addition, pollutants from the corridor are discharged directly into the adjacent watercourses. To accomodate this, the study team proposed a series of stormwater management ponds along the corridor to treat and manage excess runoff before releasing it into the existing watercourses.

Nine stormwater management wetponds are proposed within the corridor to provide quality, quantity and erosion treatment of roadway runoff before being discharged to existing watercourses. The wetponds will provide removal of 80 per cent of total suspended solids, as well as providing erosion attenuation of the 25mm storm for 24 hours. The ponds will also provide quantity storage to control peak flows in receiving watercourses during rainfall events up to and including the 100-year storm. As part of the concept design, oil/grit separators are proposed at various locations along the proposed service road to provide additional quality treatment for runoff.

Cost

Building a project of this size and scope is not cheap. Initial estimates for the Parkway are more than $1 billion. Cost and constructability was studied as part of the analysis of the access road, plaza and crossing alternatives for the DRIC study. “Cost and constructability” was one of the seven major evaluation factors for the study. The assessment included 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.

The study team evaluated five options for the access road ranging from an at-grade design to a fully tunnelled route. The selection of the Parkway alternative over the end-to-end tunnel provided major cost savings (preliminary construction cost estimates of $1.6 billion versus $3 billion respectively) as the Parkway option provided similar benefits for natural environment restoration and enhancement without the added costs and risk. During the preliminary design stage, further design efforts were made to reduce the depth of the parkway profile. This resulted in projected cost savings of approximately $100 million and provided additional green space for ecological restoration.

Conclusion

After four years of study and over 300 public consultation sessions, the Recommended Plan was submitted for approval in December 2008. This plan, approved by Ontario in August 2009 and Canada in December 2009

includes an access road, plaza and crossing location in Canada [Appendix 4].

The Windsor-Essex Parkway will be the most significant single highway investment made in Ontario history. It reflects a commitment by the Governments of Canada and Ontario to build the right solution. It is unparalleled in terms of the scale and uniqueness of its community enhancement features for any highway, anywhere in Ontario. It provides for the safe, efficient and timely movement of border-bound traffic and goods while directly addressing community concerns and goals.

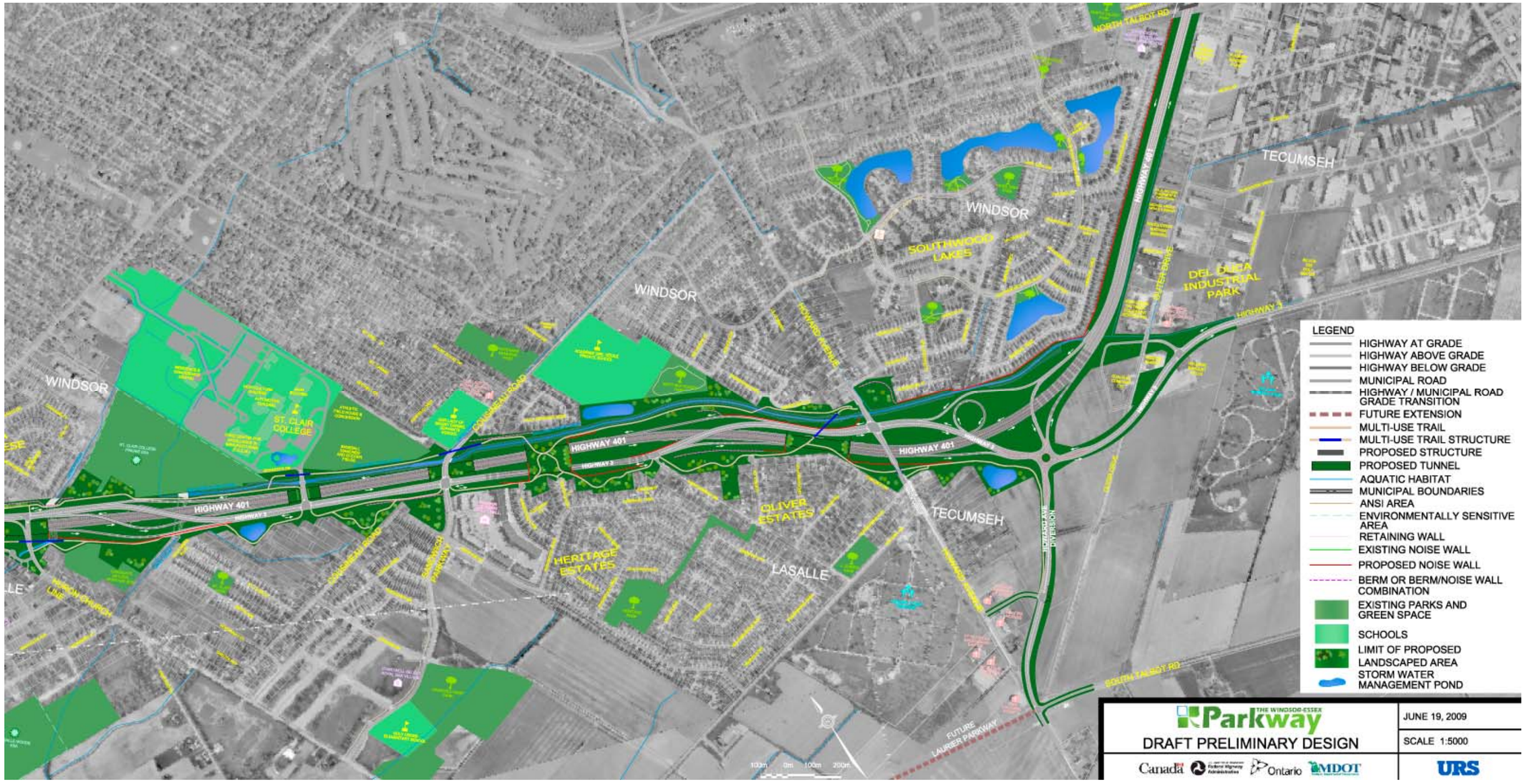
The Windsor-Essex Parkway will reduce transportation related air quality impacts due to the wide right-of-way and the elimination of stop-and-go conditions caused. The lowering of the highway, tunnelling, and elimination of stop-and-go conditions will reduce noise levels. The community will benefit from the 300 acres of greenspace, 20 kilometres of trails and connections across the corridor through tunnelled sections. Endangered species and natural habitat will be protected through restoration and enhancement measures and tunnels will provide movement across the corridor for species [Appendix 5].

The Windsor-Essex Parkway is planned as a six-lane urban freeway with 11 tunnels, and service roads. It allows long-distance international traffic to travel unimpeded by traffic signals to a new inspection plaza and river crossing while improving community linkages and providing extensive new trails, green space and other recreational opportunities.

This new access road will finally connect Highway 401 to a new crossing, removing the existing traffic signals allowing international traffic to continue unimpeded to the new crossing meeting community and transportation needs in Windsor-Essex and the border gateway for the long-term.

The solution included input from experts, members of the community, special interest groups, and municipalities. Thanks to comprehensive study and input, the right solution is being implemented that will serve to protect the community, boost the economy, and allow for the efficient movement of traffic through one of Canada's most important international gateways.

Appendix 1: The Windsor-Essex Parkway



Appendix 1: The Windsor-Essex Parkway

EXHIBIT 2A– AREA OF CONTINUED ANALYSIS

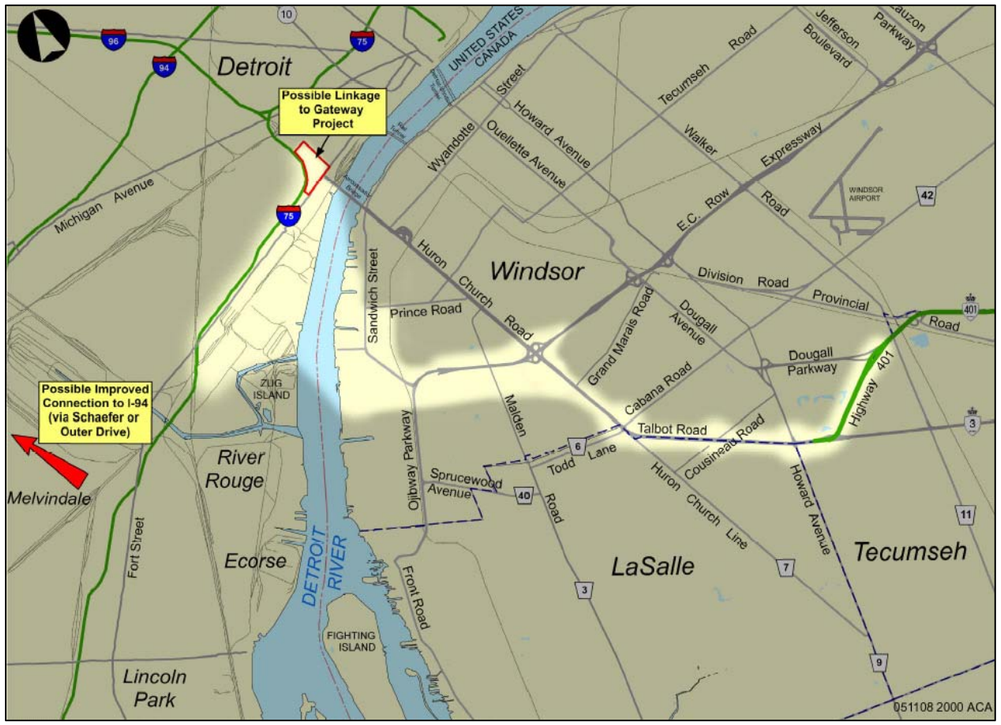


EXHIBIT 2B– ACCESS ROAD ALTERNATIVES

1A One-way service roads on either side of 6-lane freeway at-grade.

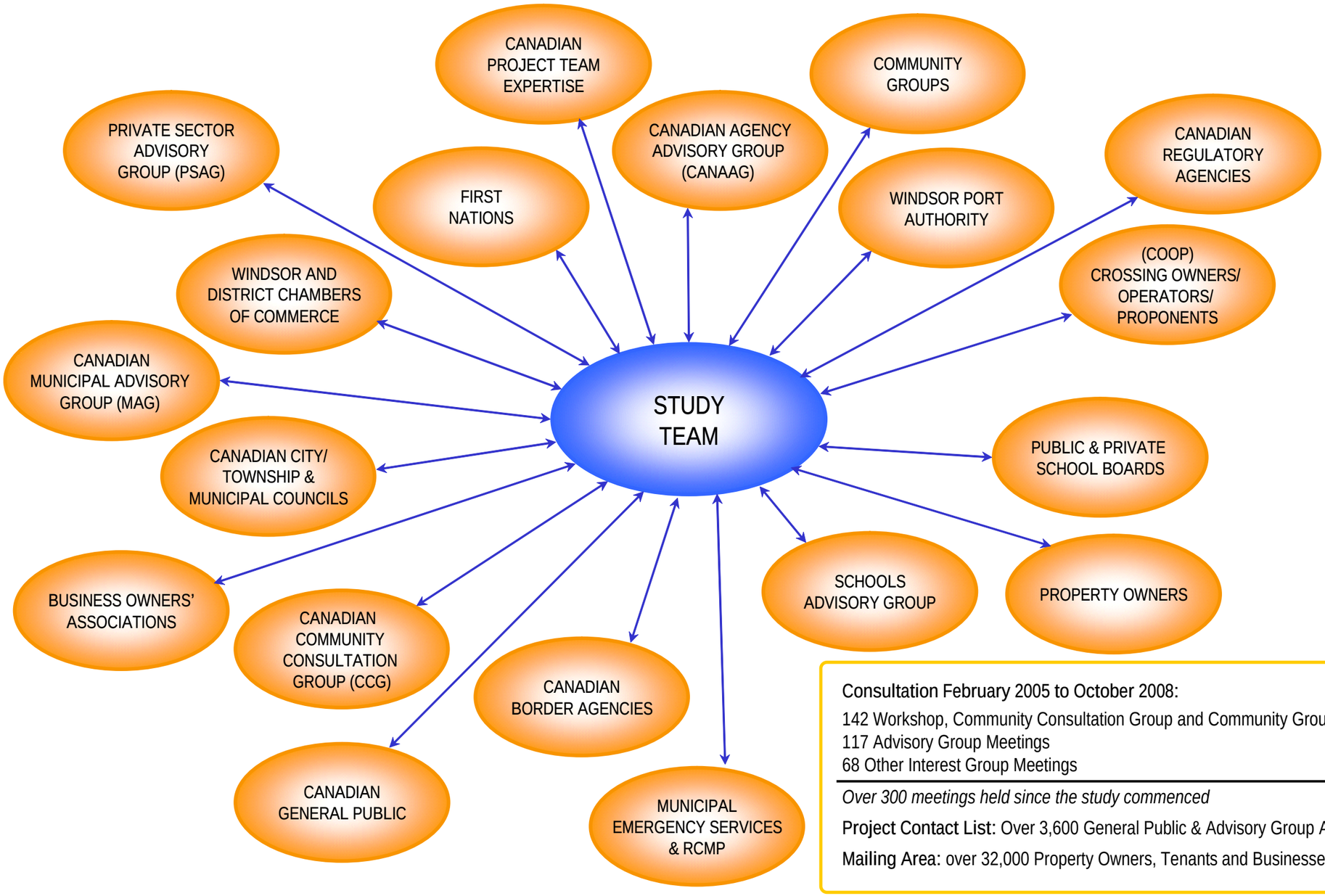
1B One-way service roads either side of 6-lane freeway below-grade.

2A Six-lane freeway at grade, parallel to Highway 3/Huron Church Road corridor.

2B Six-lane freeway below-grade, parallel to Highway 3/Huron Church Road corridor.

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

Appendix 2: DRIC Study Area of Continued Analysis and Access Road Alternatives



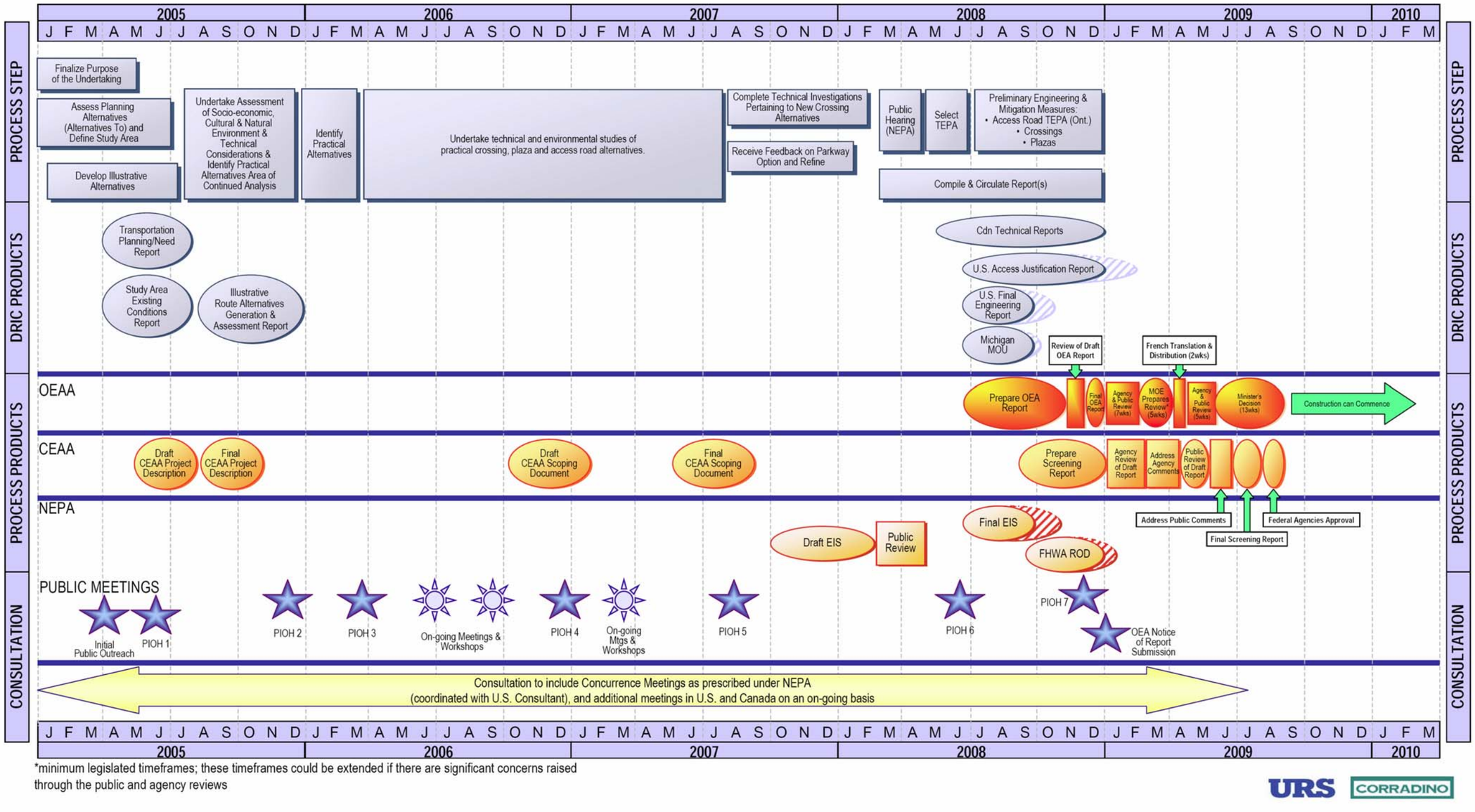
Appendix 3: Study Stakeholders

Detroit River INTERNATIONAL CROSSING STUDY

Study Process Schedule

Canada · Federal Highway Administration · Ontario · MDOT

The activities and studies for the DRIC project will be conducted in accordance with the requirements of approval agencies in Canada and the U.S.



*minimum legislated timeframes; these timeframes could be extended if there are significant concerns raised through the public and agency reviews

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Appendix 4: DRIC Study Process Schedule

Main Principles

UNIFIED: The open spaces associated with The Windsor-Essex Parkway will be considered as a unified whole. These spaces will be planned to function in an integrated manner and to present a unified aesthetic and visual environment for drivers and community users.

GREEN: The vision for The Windsor-Essex Parkway is to create a green corridor that supports new, viable natural communities and links existing natural areas.

CONNECTION: The Windsor-Essex Parkway is an opportunity to create connections between communities.

INTEGRATION: The Windsor-Essex Parkway passes through three municipalities, Tecumseh, LaSalle and Windsor. Plans for The Windsor-Essex Parkway open spaces must integrate seamlessly within the urban design, parks and recreation plans for these three municipalities as well as local and regional natural heritage/greenlands systems.

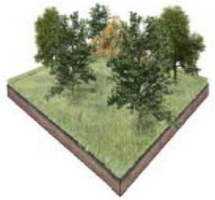
GATEWAY: The Windsor-Essex Parkway will be designed as a unique and recognizable gateway into Canada, Ontario and Windsor-Essex.

Ecological Landscape Target Results

Open Tallgrass Prairie

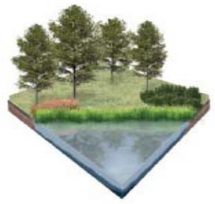
Tallgrass Savannah

Tallgrass Woodland



Fresh Oak Deciduous Forest

Stormwater Management Landscape



Typical Applications of Landscape Types

Institutional Land Use Facing The Windsor-Essex Parkway (St. Clair College)

Principles:

- Integrate St. Clair College into The Windsor-Essex Parkway landscape
- Create connections across The Windsor-Essex Parkway and to the multi-use trail
- Screen residential areas from noise created by roadway

At the interface of St. Clair College and The Windsor-Essex Parkway:

- A short tunnel and a new street across to St. Clair College from the service road
- Multi-use trail access to the new entrance to St. Clair College

Schools Near The Windsor-Essex Parkway

Principles:

- Create safe, active routes to school across and along The Windsor-Essex Parkway

The Windsor-Essex Parkway connects schools by:

- Providing sidewalks and multi-use trails between schools and neighbourhoods
- Providing safe intersections and signalization at major crossings
- Providing new green space for recreation and education near schools

Industrial Land Use Facing the Plaza

Principles:

- Provide a secure environment within the Plaza
- Screen Plaza activities from outside views
- Buffer plaza and visitors to Canada from adjacent industrial activities by providing landforming and vegetative screening

Commercial Land Use Facing The Windsor-Essex Parkway (Windsor Crossing)

Principles:

- Provide drivers with visual access (views) to retail and commercial opportunities
- Facilitate safe and comfortable pedestrian and cycling access to commercial opportunities