

The Detroit River International Crossing Study
Draft Environmental Impact Statement (DEIS)
Wayne County, Michigan, U.S.A.
Ontario, Canada



Scoping Information

Prepared by the Michigan Department of Transportation in
partnership with the Federal Highway Administration

Cooperating Agencies:

U.S. Army Corps of Engineers
U.S. Coast Guard
U.S. Environmental Protection Agency
U.S. Fish & Wildlife Services
U.S. General Services Administration
U.S. Department of Homeland Security
U.S. Department of State

July 2005

Table of Contents

1. Introduction.....	1
2. Project Purpose	3
2.1 Overview.....	3
2.2 The Economy	3
2.3 Civil and National Defense and Homeland Security	4
3. Project Need	6
3.1 Capacity/Connectivity/Processing Capability	6
3.1.1 Ambassador Bridge and Related Connectivity	8
3.1.2 Detroit-Windsor Tunnel and Related Connectivity	9
3.2 Security and Reasonable Options	9
4. Public/Agency Involvement	11
4.1 Local Advisory Council (LAC)	11
4.2 Local Agency Group (LAG).....	11
4.3 Public Sector Advisory Group.....	11
4.4 Private Sector Advisory Group.....	12
4.5 Cooperating Agencies.....	12
5. Project Area, Alternatives and Evaluation Process	13
5.1 Area Characteristics	13
5.1.1 Downriver Study Area	13
5.1.2 Central Study Area.....	19
5.1.3 Belle Isle Area.....	20
5.2 Alternatives	22
5.2.1 Crossing Type	22
5.2.2 Plazas	24
5.2.3 Plaza Connections to Freeways	27
5.2.4 Connect Plazas with River Crossings	30
5.3 Evaluation Process	30
5.3.1 Evaluation Factors	37
5.3.2 Illustrative Alternatives Evaluation Process	40
6. Future Procedures	42

Attachment 1 Streamlining Agreement

List of Figures

Figure 1	Detroit River International Crossings	1
Figure 2	Travel Demand vs. Capacity: Combined Detroit River Crossings	7
Figure 3	Detroit River International Crossing Study Areas	14
Figure 4	Sample of Characteristics in Downriver Area	18
Figure 5A	Sample of Characteristics in Central Area.....	21
Figure 5B	Additional Examples of Central Area Characteristics	21
Figure 6	Sample of Characteristics in Belle Isle Area	22
Figure 7	Cable Stay Bridge Type	23
Figure 8	Suspension Bridge Type	23
Figure 9	Arch Bridge Type	24
Figure 10	Typical Plaza Concept	26
Figure 11	Preliminary Illustrative Alternatives.....	28
Figure 12	Proposed Connections of Plazas to Freeways.....	29
Figure 13	Detroit River International Crossing Downriver Corridor.....	31
Figure 14	Detroit River International Crossing Central Corridor	32
Figure 15	Detroit River International Crossing Central Corridor	33
Figure 16	Detroit River International Crossing Belle Isle Corridor.....	34
Figure 17	Preliminary End-to-End Illustrative Alternatives	35
Figure 18	Evaluation Process	36
Figure 19	Decision Structure.....	42

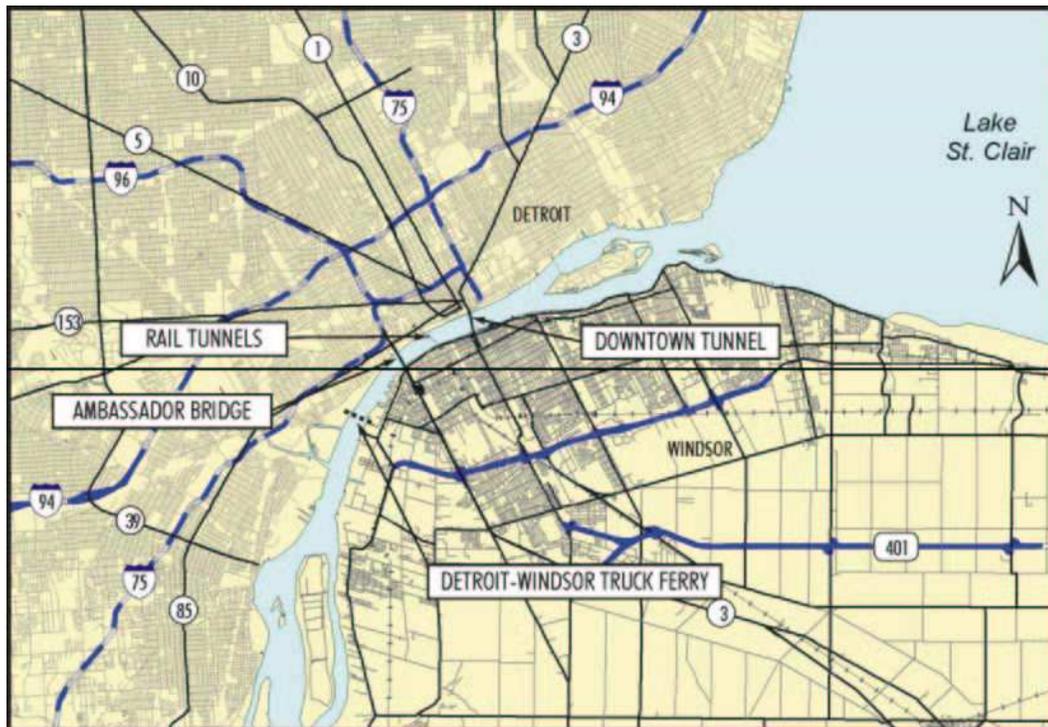
List of Tables

Table 1	Costs in 2030 of Not Addressing Congestion at the Detroit River Border	4
Table 2	2004 Daily International Traffic (Two-way) Crossing at Windsor-Detroit by Vehicle Type and Trip Type.....	6
Table 3	Windsor-Detroit: Future Capacity Needs	8
Table 4A	2000 Population and Total Households by Area	15
Table 4B	1990 Population and Total Households by Area	16
Table 5A	2000 Labor Force Characteristics (Population years and older).....	17
Table 5B	1990 Labor Force Characteristics (Population years and older).....	17
Table 6	Detroit River International Crossing Tunnel Characteristics.....	25
Table 7	Detroit River International Crossing Tunnel Feasibility	25
Table 8	Detroit River International Crossing Proposed Evaluation Factors and Performance Measures Illustrative Alternatives Phase	38
Table 9	Draft Detroit River International Crossing Project Scoring Form – Evaluation Factors	43

1. Introduction

The Detroit River International Crossing (DRIC) Study is a bi-national effort to complete the environmental study processes for the United States, Michigan, Canada and Ontario governments. The study will identify solutions that support the region, state, provincial and national economies while addressing civil and national defense and homeland security needs of the busiest trade corridor between the United States and Canada (Figure 1).

Figure 1
Detroit River International Crossings



The Detroit River separates the two countries with border crossings at the Ambassador Bridge, the Detroit-Windsor Tunnel, the Detroit-Canada Rail Tunnel, and the Detroit-Windsor Truck Ferry. These multi-modal transportation links provide the connections for freight and passenger movements between the two countries. The DRIC Study will consider transportation alternatives that improve the border crossing facilities, operations, and connections to meet existing and future mobility and security needs.

The Border Transportation Partnership (the Partnership) was formed to comprehensively assess mobility needs. This collaborative effort includes members from the following agencies:

1. Federal Highway Administration (FHWA)
2. Michigan Department of Transportation (MDOT)
3. Ontario Ministry of Transportation (MTO)
4. Transport Canada (TC)

The Partnership completed the Planning/Needs and Feasibility Study in February 2004. Its findings (available at www.partnershipborderstudy.com) serve as the foundation for the environmental study. The Partnership is also studying governance options to determine the structure for ownership, operation and maintenance of a new facility.

2. Project Purpose

The purpose of the Detroit River International Crossing Project is to: (for the foreseeable future, i.e., at least 30 years):

- Provide 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 Michigan, Ontario, Canada and the U.S.
- Support the mobility needs of national and civil defense to protect the homeland.

2.1 Overview

The Detroit River area has characteristics that could cause trade to grow at a higher rate than the economies of Canada and the United States, because the area is a major center of manufacturing in North America, is the automotive capital of the world, and because the economies of the two nations are increasingly integrated. Canada and the United States, as the largest bilateral trade partners in the world, have the responsibility to maintain access to the bilateral trade opportunities, and to protect their respective homelands and their shared strategic vital resources. To that end, the goals of the Border Transportation Partnership for the DRIC Study are:

- Approved location for a river crossing.
- Approved connections to freeways in Canada and the U.S.
- Approved locations for plazas in Canada and the U.S.
- Comprehensive engineering to support approvals, property acquisition, design and construction.
- Submission for approval by December 2007.

2.2 The Economy

The United States and Canada have the largest bilateral trading partnership in the world. In 2004, the total U.S. trade with Ontario alone was U.S. \$407 billion (CAN\$530 billion¹), which is larger than total U.S. trade with Japan. The U.S. is Canada's largest export market (86% of Canadian exports go to the US)². Statistics from the U.S. International Trade Administration identify Canada as the largest export market for 38 of the 50 states, including Michigan.²

Seventy percent of the U.S.-Canada trade moves by truck. Approximately 28 percent of surface trade between the United States and Canada passes through the Detroit River area (\$113.3 U.S. billion or \$158.7 CAN billion)³. This trade is critical to the manufacturing base of the region, as indicated by the fact that the dollar value of vehicles, electronics, precision goods, metal parts and machinery account for 85% of the trade.⁴ Manufacturing accounts for almost 20% of employment in Ontario, and in the five-state region of Michigan, Illinois, Indiana, Ohio, and Wisconsin.⁵

¹ Bureau of Transportation Statistics (BTS) Transborder Surface Freight Database.

² "Defense of North America: A Canadian Responsibility", The Standing Senate Committee on National Security and Defence, September 2002.

³ Detroit River International Crossing Study Travel Demand Forecasting Working Paper, July 2005, Preliminary for Discussion Purposes Only.

⁴ DRI-WEFA, Inc., U.S. Regional Economic Service, 2002.

⁵ Ibid.

A study commissioned by the Partnership⁶ indicated, if no improvements were made by 2030 to border crossing capabilities in the Detroit River area, the two nations will realize the loss of up to 80,000 U.S. jobs and 70,000 Canadian jobs (Table 1). The combined annual loss in 2030 of production is forecast to be \$13.4 billion (U.S.) (\$19.4 billion CANS).⁷

**Table 1
Costs in 2030 of Not Addressing Congestion at the Detroit River Border⁸**

	Michigan	United States	Ontario	Canada
Cumulative Lost Employment	25,000	79,000	52,000	70,000
Annual Lost Production	\$4,440	\$10,620	\$2,900	\$4,510
	millions 2000 US\$		millions 2000 CANS	

Source: URS Canada and HLB Decision Economics, Inc.

Over the past 30 years, bilateral trade in goods and services has grown faster than gross domestic product (GDP), i.e., at an annual rate of approximately 11 percent. A 1998 report commissioned by Industry Canada⁹ cited that “free trade forces will bring about a further increase in U.S.-Canada trade, which by 2005 or 2010 could be 20 to 30 percent above what it would have been in the absence of the recent trade agreements.” The North American Free Trade Agreement (NAFTA), and similar pacts, will continue to have significant positive impacts on trade between the two nations.

2.3 Civil and National Defense and Homeland Security

Homeland security involves protecting society against manmade threats and disasters. This involves protecting and restoring critical infrastructure to protect people and property and mitigate impacts to individuals, communities, and the environment. Each border crossing system component (crossing, plaza, and connecting roadway), including its design, location, and function (workforce/staffing, communications and information sharing) must be developed with homeland security in clear focus.

National and civil defense involve the mechanisms to protect the homeland against man-made and natural threats and disasters. Emergency response to foreign military threats, natural disasters, communicable disease outbreaks and environmental emergencies on the Great Lakes, all depend on critical links in the transportation system, both at the border itself, and on the national highway systems connecting to it.

The United States Congress recognized this dependence, when enacting the National Highway Act, which states that along with regional and interstate commerce, the purpose of the national highway system is to support the needs of national and civil defense. The border crossing at the Detroit River was expressly recognized in U.S. federal law in 1995 when the Ambassador Bridge was designated to be on the National Highway System. Additionally, it is integral to Michigan’s Interstate system which is on the Strategic Highway Network (STRAHNET) for defense purposes.

⁶ Planning/Needs and Feasibility Study, by URS Corporation, in association with The Corradino Group, IBI Group and HLB Decision Economics, Inc., January 2004.

⁷ Currency was converted using the rate of 1.6:1 Canadian to U.S. dollars.

⁸ In the SEMCOG-Essex County Region, there would be 10,000 fewer U.S. jobs and 12,000 fewer Canadian jobs, and a combined production loss of US\$3.2 billion or CAN\$5.1 billion.

⁹ North American Integration: 25 Years Backward and Forward, by Gary C. Hufbauer and Jeffrey J. Schott, Institute for International Economics, 1998.

The government of Canada is heightening emphasis on national and civil defense. A new Department of Public Safety and Emergency Preparedness Canada (PSEPC) has been created. The PSEPC includes a National Critical Infrastructure Program, which administers the Public Safety and Emergency Preparedness (PSEP) Portfolio. The PSEP will oversee intelligence and security functions and act as a coordinating body for border operations, as well as operations to combat natural disasters and security emergencies on the Canadian side.

In addition to transporting personnel and equipment, the border crossing system supports national security in two other ways:

- *Economic Security*: The strategic importance of the border is a component of the US's Homeland Security policies. Michigan's draft Homeland Security Policy Statement expressly links national security to economic security, and states that this depends on maintaining the security of trade flows across the Michigan-Ontario border.

A report by the Canadian Standing Senate Committee on National Security and Defence entitled "Defence of North America: A Canadian Responsibility", September 2002, noted that the Canadian and United States economies have effectively merged, becoming "one huge economy". Citing the impact of the terrorist attack of September 11, 2001 on the Canadian economy, the report linked economics to military security, and recognizing this interdependence, called for greater military collaboration and joint operations.

In its 2005 report this Canadian Senate Committee recommended, "...only those proposals for new crossing infrastructure at Windsor-Detroit which provide separate and secure infrastructure redundancy be considered (by such studies as the Detroit River International Crossing Study)."

- *Military Logistics*: The border crossing system supports military/defense industry logistics. There are almost 700 defense contractors in Michigan, and 300 in Canada. In 1956, the two nations signed a Defence Production Sharing Agreement that provides for Canadian contractors to compete on an equal footing with U.S. contractors in the U.S. market. As with civilian logistics, the increasing integration of military logistics and of manufacturing supply chains in the two nations is made possible by an efficient border crossing system.

3. Project Need

To address future mobility requirements (i.e., at least 30 years) across the Canada-U.S. border, there is a need to:

- Provide new border crossing capacity to meet increased long-term demand;
- Improve system connectivity to enhance the seamless flow of people and goods;
- Improve operations and processing capability; and,
- Provide reasonable and secure crossing options in the event of incidents, maintenance, congestion, or other disruptions.

The border crossing facilities, roads, interchanges, and processes operate as a system. Solving capacity problems involves a comprehensive approach. This means that roadway deficiencies on the cross border structures cannot be effectively addressed apart from issues dealing with interchange and processing capabilities, and, conversely, processing and interchange capacity issues cannot be effectively addressed without dealing with impending capacity problems on the cross border structures.

These needs, along with related background, are expanded upon below.

3.1 Capacity/Connectivity/Processing Capability

In recent years, lines of vehicles waiting to cross the border in the Detroit River area have demonstrated a need to improve capacity. Furthermore, connectivity to other links in the transportation network (i.e., roads, process/customs systems, etc.) is an issue as also evidenced in years previous to 2005 by the back-up of trucks for miles on Huron Church Road in Windsor and off the Ambassador Bridge plaza and onto I-75 in Detroit.

The vast majority (approximately 95%) of person trips crossing the border in the Detroit area are roadbased (Table 2). Trucks have most of the value of freight—approximately 88%. Rail carries most of the remaining freight.¹⁰

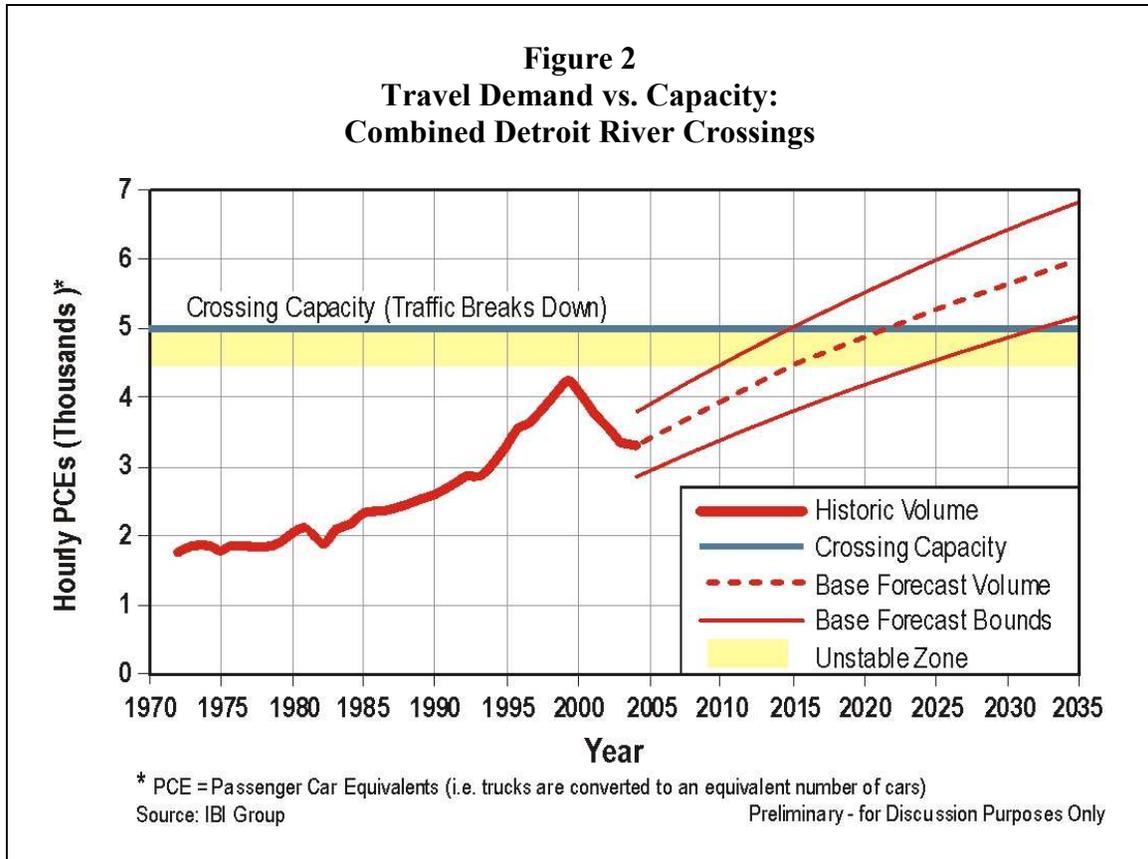
**Table 2
2004 Daily International Traffic (Two-Way) Crossing at Windsor-Detroit
By Vehicle and Trip Type
(Fall Weekday)**

Type of Traffic	Passenger	%	Commercial	%
Local to Local	28,450	79%	2,450	19%
Local in U.S. to Long Distance in Canada	2,700	8%	2,100	16%
Local in Canada to Long Distance in U.S.	2,600	7%	1,850	14%
Long Distance to Long Distance	2,000	6%	6,500	50%
Other*	120	0	100	1%
Total	35,850	100%	13,000	100%

*Includes unexpected/atypical trips where the shortest route is not taken.
Source: IBI Group

¹⁰ Ibid.

Over the next 30 years, Detroit River area cross-border passenger car traffic is forecast to increase by approximately 57 percent, and movement of trucks by 128 percent. Traffic demand could exceed the “breakdown” cross-border roadway capacity as early as 2015 under high growth scenarios. Even under “low” projections of cross-border traffic, the “breakdown” roadway capacity of the existing Detroit River border crossings (bridge and tunnel combined) will be exceeded by 2033 (Figure 2). Additionally, the capacity of the connections and plaza operations will be exceeded in advance of capacity constraints of the roadway. Without improvements, this will result in a deterioration of operations, increased congestion and unacceptable delays to the movement of people and goods in this strategic international corridor.



The forecast of capacity indicates that there will be inadequacies in: 1) the roads leading to the existing bridge and tunnel; 2) the ability to process vehicles through customs and immigration; and, 3) the capacities (number of lanes) of the Ambassador Bridge and Detroit-Windsor Tunnel themselves. The timeframes by which travel demand is anticipated to meet capacity at the Ambassador Bridge and Detroit-Windsor Tunnel are summarized in Table 3. So, even though incremental adjustments can and will be made to the plazas and, even though there is adequate border crossing capacity today (bridge and tunnel combined), the planning, design and construction of any major international crossing takes a long time. Therefore, it is prudent to address, at this time, how and when the capacity need is to be satisfied. And that is clearly an issue on the crossing itself as well as the connecting roads.

**Table 3
Windsor-Detroit: Future Capacity Needs**

Crossing	Time Capacity is Reached				
	U.S. Road Access	U.S. Border Processing	Bridge/Tunnel ^a	CAN Border Processing	CAN Road Access
Ambassador Bridge	Beyond 30 years	5 to 10 years	10 to 15 years	5 to 10 years	5 to 10 years
Detroit-Windsor Tunnel	0 to 5 years	5 to 10 years	After 30 years	5 to 10 years	5 to 10 years

^aIf no improvements are made at the Detroit River, there would be some diversion of car traffic from the Ambassador Bridge to the Detroit-Windsor Tunnel. Diversion of car traffic may move the timeframe that capacity is reached to between 25 and 30 years. Physical restrictions of the tunnel limit diversion of most types of trucks to the Detroit River Tunnel.

Source: IBI Group

It should be understood that the delays and resultant queuing are not limited to border locations, but have several negative effects associated with poor transportation network operations, including the following:

- Increased highway safety concerns, including higher potential for collisions at intersections, entrances and queue ends;
- Increased economic opportunity costs, including losses to businesses themselves and of businesses to other areas outside the region, and even, to other countries, outside the region;
- Increased air pollution;
- Impacts to access and adjacent land uses in the vicinity of the border crossings;
- Infiltration of cross-border traffic onto local roads;
- Impacts to incident/emergency response time;
- Increased vehicle operating costs and fuel consumption; and
- Increased driver frustration.

3.1.1 Ambassador Bridge and Related Connectivity

Ambassador Bridge connections to the interstate system are being addressed through the independent Ambassador Bridge Gateway Project (estimated completion 2008). That project may also help improve primary inspection of Canada-bound automobile traffic and secondary inspection of U.S.-bound trucks, but will not resolve cross-border capacity issues over the next 30 years. Border crossing programs, such as NEXUS and FAST also help relieve pressure on border processing, but current processing facilities, both U.S. and Canadian are expected to reach capacity, in their current configuration, in five to ten years. And, even if those configurations are adjusted/improved, the crossing itself and connecting roads have much more significant constraints which are more difficult to address than at the plazas.

The Ambassador Bridge itself is 75 years old and needs continuous maintenance. The bridge consists of two lanes in each direction. Often maintenance requires at least one lane to be closed. Under optimal conditions, with all four lanes open, the “breakdown” capacity of the bridge is projected to extend for another 10 years. But blockages due to maintenance and incidents are common, with queues and delays that reach beyond the limits of the bridge and its plazas.

In Canada, most of the signalized intersections along Huron Church Road (the access road to the bridge) are approaching capacity with several movements at critical levels. Under these conditions and, with the large percentage of commercial vehicles using this facility, traffic flow

can be unstable, with periods of congestion occurring unpredictably along the corridor. Anticipated increases in border crossing traffic, combined with modest growth in background traffic, will mean that Huron Church Road will likely exceed capacity within five to ten years. As the traffic volumes approach the capacity of the facility, congestion, queuing and infiltration of traffic onto other parallel roads will become more frequent. The effects of this problem can extend beyond the traffic and direct economic impacts associated with delays to the restriction in movement of people and goods. The local communities around the border crossings have expressed concerns with disruption to local access and impacts to air quality and noise levels during periods of congestion on the border crossing approach roadways.

East of Huron Church Road, MTO, under separate action, has planned improvements for the section of Highway 401 from Highway 3 east to Tilbury. Therefore, this component of the corridor is expected to have sufficient capacity beyond the 30 year planning horizon.

3.1.2 Detroit-Windsor Tunnel and Related Connectivity

The Tunnel is comprised of one lane in each direction with sharp curves in the approaches, which limits truck usage. The most limiting factor of the tunnel involves the approach roads. There are frequent queues at the border crossing that extend onto the downtown Detroit and Windsor road networks. The downtown road networks in each city are also subject to typical peak hour congestion.

As travel demand continues to increase, capacity constraints will increase delay and result in extensive queuing on the adjacent downtown road networks of both Windsor and Detroit. The tunnel operator has identified initiatives for plaza improvements on both sides of the border. Short-term measures (e.g. temporary turning restrictions and lane closures during peak periods) are implemented on a regular basis in both Windsor and Detroit. There are plans for further operational and border processing facilities improvements. Nevertheless, due to their downtown locations, both plazas are constrained by adjacent development and the connecting street network.

3.2 Security and Reasonable Options

“Security” has two different aspects in this Statement of Purpose and Need:

- Protection of the homeland through national and civil defense security measures. This involves protecting society at-large against manmade and natural threats and disasters. This is a project purpose, discussed in Section 2.
- The physical security of the border crossing itself is a project objective listed in Section 3, and discussed below. The border crossing facilities and processes must be protected from interruptions due to man-made or natural calamities to secure national and international trade and commerce. These interruptions may include threats from terrorism or sabotage, aging or failing infrastructure, or other natural disasters. Assuring homeland security requires the border be protected from disruptions caused by terroristic actions.

Security at the border is of critical importance. It entails 1) providing a reasonable assurance that crossborder movements and trade will not be disrupted; and, 2) providing adequate personnel and facilities for processing and screening people and goods passing between Canada and the United States. Increased scrutiny of people and goods has the collateral effect of improving the security in the Detroit River area while increasing processing time, which reduces the effective capacity of border operations. The latter issue manifests itself in the need for expanded physical facilities for

agencies responsible for border security and reasonable options to cross between nations in the event that one of the existing crossing points is compromised.

The Ambassador Bridge and the Detroit-Windsor Tunnel together represent a strategic link between Canada and the United States. Both are over 75 years old and will inevitably need significant maintenance. Furthermore, congestion and disruptions continue to occur through vehicular crashes, breakdowns and similar incidents. The logistics industry needs travel routes with predictable travel times for just-in-time delivery. Major disruptions at either the Ambassador Bridge or Detroit-Windsor Tunnel will have significant economic effects. The longer the duration of the disruption, the greater the effects. Therefore, it is essential to have reasonable options to move people and goods across the border in the Detroit River area. Commerce in this situation not only depends upon reliable transportation links but multiple links as well.

This need is recognized in the “Smart Border Declaration,” signed by Canada and the United States in December 2001. The Declaration is accompanied by a 30-point Action Plan, several points of which relate to the Partnership’s border crossing study. For example, the Action Plan calls for border infrastructure improvements. It also supports further development of FAST and NEXUS.¹¹ Both programs allow customs and immigration authorities to concentrate on potentially high-risk travelers and goods, thereby enforcing security and protection standards at the border. The Action Plan notes the establishment of a bi-national Steering Committee “to assess threats to our shared critical infrastructure.” The Action Plan, therefore, makes it clear that both governments place an exceptionally high priority on border security and infrastructure needs.

¹¹ FAST (Free and Secure Trade) provides expedited clearance for certain low-risk freight shipments. NEXUS allows speedier processing of qualifying persons who regularly cross the border.

4. Public/Agency Involvement

Public meeting events of the Detroit River International Crossing Study are scheduled as follows:

Public Meeting Event	Date
A Study Kickoff	Mid April 2005
B Illustrative Alternatives Definition	Third week of June 2005
C Scoping	Fourth week of August 2005
D Preliminary Illustrative Alternatives Evaluation	Second week of December 2005
E Practical Alternatives Selection	Third week of March 2006
F Context Sensitive Design 1	First week of April 2006
G Community Impact Assessment 1	First week of May 2006
H Context Sensitive Design 2	First week of June 2006
I Community Impact Assessment 2	First week of July 2006
J Context Sensitive Design 3	First week of August 2006
K DEIS Available for Review	Second week of December 2006
L DEIS Public Hearing	Second week of January 2007
M Recommended Alternative Presentation	Second week of December 2007

4.1 Local Advisory Council (LAC)

The LAC, which began to meet monthly beginning in March 2005, consists of local elected officials and stakeholders (e.g., Southwest Detroit Business Association, Jefferson Avenue Housing Development, etc.). Its role is to act in an advisory capacity to the project leadership by providing insight and knowledge of community concerns that may affect or be affected by the transportation decisions regarding a new border crossing. The Local Advisory Council has the following specific roles:

- provide insight to the concerns of their respective community/organization;
- review and evaluate draft project-related information, as appropriate;
- facilitate commitments to meeting the project schedule; and,
- help provide liaison with a variety of interests regarding the project including: affected communities, residents, individual legislators, community leaders and interest groups.

4.2 Local Agency Group (LAG)

This group involves, in the DRIC Study, technical staff of local U.S. governmental units that might be affected by one of the crossing corridors. SEMCOG is also a member of the LAG to provide input from a regional perspective. As with the Local Advisory Council, the LAG meets monthly; the first meeting was held in April 2005.

4.3 Public Sector Advisory Group

All U.S. governmental units that might be affected by one of the corridors under consideration are invited to send an elected official as its representative to the meetings of the Public Sector Advisory Group. Meetings are expected to be held every six months to share current information and receive comments. The first meeting of the Public Sector Advisory Group was held in February 2005.

4.4 Private Sector Advisory Group

This group has a bi-national makeup and consists of private sector businesses with an interest in the functioning of the border crossing. It includes shippers, bridge operators, proponents of a new crossing, the auto industry, and businesses located near the existing crossing. Meetings are held quarterly. The first two meetings were held in March 2005 and June 2005.

The Partnership, with LAC and other input, has responsibility for final decisions on all project elements.

4.5 Cooperating Agencies

The Michigan Department of Transportation and the Federal Highway Administration met on May 18, 2005 (following the first round of public meetings) to engage those federal organizations which will be “cooperating agencies” in the review of the DRIC EIS documents. A draft agreement has been developed to streamline this cooperative engagement. It is included as Attachment 1. The cooperating agencies are as follows:

- U.S. Army Corps of Engineers
- U.S. Coast Guard
- U.S. Environmental Protection Agency
- U.S. Fish & Wildlife Services
- U.S. General Services Administration
- U.S. Department of Homeland Security
- U.S. Department of State

5. Project Area, Alternatives and Evaluation Process

5.1 Area Characteristics

Below is a summary description of the general characteristics of the areas potentially affected by a new border crossing system of plazas and roadways.

Three broad areas on the U.S. side of the border were identified at the outset of the Detroit River International Crossing environmental impact study phase (Figure 3). Each will host one or more “illustrative” plaza/roadway connections to a border crossing. A summary of each area’s characteristics is provided next.

5.1.1 Downriver Study Area

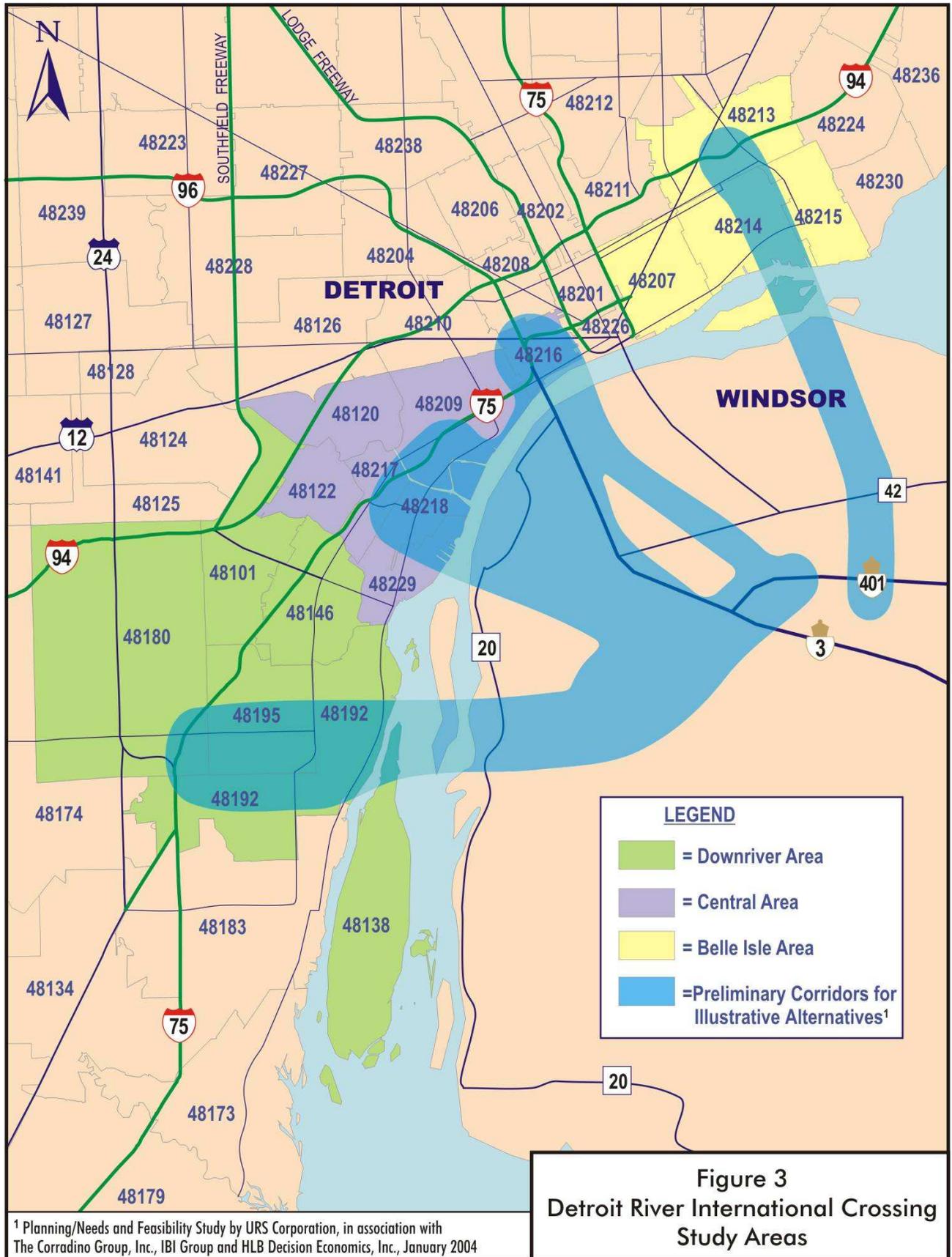
The Downriver Study Area includes all or parts of the communities of Wyandotte, Riverview, Southgate, Trenton, Grosse Ile, Romulus and Brownstown Township. Historically, the area has been an industrial hub for 150 years. Much of the area was acquired by the Eureka Iron works after 1854. The extensive oak forests that dominated the area were reduced to coke for fueling local industry with the resulting cleared tracts being sold off as farmland. By 1867 the village that surrounded the iron works was incorporated as the City of Ecorse, the only one that existed at that time within Wayne County, beyond the City of Detroit.

Today, the Downriver Study Area is comprised of about 220,000 people according to the 2000 U.S. Census (Tables 4A and 4B). This is a decline of about five percent from the 1990 population level. Minorities, as defined by the Presidential Executive Order 12898 on Environmental Justice, total between nine and ten percent of the area, up from about six percent in 1990. The largest minority groups are African-American and Hispanics/Latinos, each of which represented about four percent of the area’s total in 2000. Households below the poverty level (\$13,290 per year in 1999 for a family of three; \$17,029 for a family of four) dropped from 8.7 to 7.1 percent between 1990 and 2000.

Non-minority groups that represent at least two percent of the region’s population are also covered on Tables 4A and 4B. Those groups of people more concentrated in the Downriver area than the region as a whole are those whose ancestry is English, French, German, Irish, Italian, Polish and Scottish. All of these groups experienced a decrease in numbers between 1990 and 2000.

Employment of those who live in the Downriver area declined about four percent in the 1990s (Tables 5A and 5B). Unemployment in 2000 was just over five percent, down from about seven percent in 1990. People in the Downriver study area are mostly employed in manufacturing, but employment in this job sector was lower in 2000 compared to 1990. The list of largest employers in the area include Detroit Edison, BASF, MPI Material Processing, Henry Ford Hospital, and 4star Aluminum Corporation.

Major transportation facilities serving this area are I-75, I-275, I-94 and Telegraph Road (U.S. 24). The Wayne County Metropolitan Airport is on the western edge. A smaller, general aviation (no commercial service) airport is located on Grosse Ile. Major arterials include Sibley, Pennsylvania and Eureka Roads as well as Biddle Avenue, Fort Street (M-85), and Jefferson Avenue.



**Table 4A
2000 Population and Total Households by Area**

Population	Downriver		Central		Belle Isle	
	Number	Percent	Number	Percent	Number	Percent
Total Population	221,526	100.0	98,585	100.0	134,455	100.0
Black or African American alone	8,493	3.8	25,298	25.7	124,327	92.5
American Indian & Alaska Native alone	1,221	0.6	909	0.9	428	0.3
Asian alone	2,762	1.2	637	0.6	522	0.4
Native Hawaiian & Other Pacific Islander	59	0.0	45	0.0	0	0.0
Hispanic/Latino	8,463	3.8	28,705	29.1	1,116	0.8
TOTAL MINORITY	20,998	9.5	55,594	56.4	126,393	94.0
Total Households	88,491	100.0	34,622	100.0	49,474	100.0
Households with Income < Poverty Level	6,323	7.1	8,487	24.5	15,048	30.4
<i>Ancestry^a</i>						
Arab	1,451	0.7	4,627	4.7	372	0.3
English	19,748	8.9	2,574	2.6	725	0.5
French (except Basque)	15,379	6.9	2,580	2.6	357	0.3
German	43,547	19.7	6,085	6.2	1,420	1.1
Irish	32,823	14.8	5,743	5.8	1,258	0.9
Italian	16,834	7.6	2,129	2.2	486	0.4
Polish	32,655	14.7	4,000	4.1	784	0.6
Scottish	5,921	2.7	932	0.9	254	0.2

^aPercent of those who reported ancestry in one or more categories. Not all persons reported ancestry.

Source: U.S. 2000 Census

Table 4B
1990 Population and Total Households by Area

Population Category	Downriver		Central		Belle Isle	
	Number	Percent	Number	Percent	Number	Percent
Total Population	232,532	100.0	104,134	100.0	158,602	100.0
Black or African American alone	4,140	1.8	27,394	26.3	144,354	91.0
American Indian & Alaska Native alone	1,429	0.6	1,064	1.0	277	0.2
Asian alone	2,394	1.0	577	0.6	316	0.2
Native Hawaiian & Other Pacific Islander	26	0.0	27	0.0	0	0.0
Hispanic/Latino	6,691	2.9	16,698	16.0	673	0.4
TOTAL MINORITY	14,680	6.3	45,760	43.9	145,620	91.8
Total Households	87,464	100.0	38,688	100.0	56,933	100.0
Households with Income < Poverty Level	7,616	8.7	11,859	30.7	22,901	40.2
<i>Ancestry^a</i>						
Arab	1,218	0.5	4,273	4.1	273	0.2
English	30,071	12.9	5,902	5.7	1,953	1.2
French (except Basque)	22,473	9.7	4,760	4.6	1,143	0.7
German	63,548	27.3	13,490	13.0	3,598	2.3
Irish	45,393	19.5	12,833	12.3	2,379	1.5
Italian	17,753	7.6	3,222	3.1	731	0.5
Polish	37,744	16.2	6,673	6.4	1,643	1.0
Scottish	6,736	2.9	1,313	1.3	523	0.3

^aPercent of those who reported ancestry in one or more categories. Not all persons reported ancestry.

Source: U.S. 1990 Census

Table 5A
2000 Labor Force Characteristics
(Population 16 years and older)

Population Category	Downriver		Central		Belle Isle	
	Number	Percent	Number	Percent	Number	Percent
Total Population 16 and Over	173,615	100.0	72,445	100.0	97,674	100.0
In Armed Forces	35	0.0	4	0.0	52	0.1
In Civilian Labor Force	109,092	62.8	39,107	54.0	50,713	51.9
Employed	103,245	94.6	34,430	88.0	41,735	82.3
Unemployed	5,847	5.4	4,677	12.0	8,978	17.7
Not in Labor Force	64,488	37.1	33,334	46.0	46,909	48.0

Source: U.S 2000 Census

Table 5B
1990 Labor Force Characteristics
(Population 16 years and older)

Population Category	Downriver		Central		Belle Isle	
	Number	Percent	Number	Percent	Number	Percent
Total Population 16 and Over	181,255	100.0	77,667	100.0	115,798	100.0
In Armed Forces	130	0.1	45	0.1	103	0.1
In Civilian Labor Force	115,029	63.5	39,753	51.2	55,809	48.2
Employed	106,525	92.6	32,386	81.5	40,152	71.9
Unemployed	8,504	7.4	7,367	18.5	15,657	28.1
Not in Labor Force	66,096	36.5	37,869	48.8	59,886	51.7

Source: U.S. 1990 Census

With the depletion of area timber resources, the Wyandotte Foundry also gave rise to the earliest upper Great Lakes Iron ship building works during the early 1870s. Over the following three decades the creation of the Michigan Alkali Company and Wyandotte Portland Cement Company further consolidated the city's position as a manufacturing and population center while first depending upon a combination of lake shipping and year-round railroad delivery systems, the regional transportation network was further augmented during the first half of the 20th Century with the introduction of the automotive industry and road development.

As an anchoring component of the Downriver industrial corridor that emerged with World War I, the riverfront zone stretching from Sibley Road in Riverview to the Ecorse Creek boundary, at the north end of Wyandotte, was considered to represent the southerly extreme of Detroit area urban growth as of 1940.

The Downriver area is characterized by mature suburban development. Its river edge is part of the Detroit International Wildlife Refuge and there are a host of sensitive areas such as the Hennepin Point marsh, BASF Waterfront Park and the Wyandotte Shores Golf Course (open to public) (Figure 4).

Figure 4
Sample of Characteristics in Downriver Area



The Detroit River in this area is approximately three miles wide so any bridge crossing would likely require piers to be placed in the river which would involve a number of environmental issues. More information on crossing types is presented later.

5.1.2 Central Study Area

The Central crossing area includes all or part of the cities of Lincoln Park, Ecorse, River Rouge and part of Detroit. Historically, Detroit expansion towards the River Rouge was directly driven by the spread of industry and population along the riverfront and the Michigan Central Railroad yard development beyond Livernois Avenue beginning during the early 1870s. By the 1880s and 1890s the Michigan Carbon Works and Solvay Process Company were dominating features at the mouth of the Rouge River.

The village incorporations of River Rouge, Oakwood, and Ecorse had been established during the short six-year period between 1898 and 1903. Although dominated by a scatter of lumber processing and supply firms, the overall importance of the area dramatically altered with the opening of World War I. The Great Lakes Engineering Company landed a lucrative contract with the Emergency Fleet Corporation and, in one instance, set a record in the launching of a 3,500-ton steamer over a short 14-day period. At the same time, the Ford Motor Company began construction of its Eagle Boat (sub-chaser) plant requiring the widening of the Rouge River an additional 100 feet to accommodate lake freighters. Iron and steel for these enterprises likely drew upon the potentials of steel and iron production offered by the Detroit Iron and Steel Company's Zug Island blast furnaces established in 1902. Incorporated as a part of the National Steel Corporation in 1929, the Zug Island complex formed one of two extended production locales of Great Lakes Steel. The main complex was opened in September 1930 on a landfilled 275-acre swamp that fronted Ecorse Village. Although small when compared to Ford's 2,000-acre tract on the Rouge, the facility set a standard for quality steel production.

Industrialization and population growth were driving factors in incorporation of River Rouge, Melvindale and Lincoln Park as cities between 1922 and 1925.

In the area around I-75/I-96 early growth was the product of a combination of heavy and light industrial activities inclusive of iron and copper founding and processing, lumber milling, meat packing, pharmaceutical manufacturing and the production of sundry household conveniences ranging from matches to picture frames and toiletries.

Transportation redevelopment of this corridor has been an ongoing feature since the 1912/1913 construction of the Michigan Central Station on Vernor and Michigan Avenue and the 1929 opening of the Ambassador Bridge. Subsequent expressway development, coupled with building demolitions and the removal of railway sorting yards along the riverfront, significantly altered the area over the past four decades.

According to the 2000 U.S. Census, the Central Study Area has a population of about 99,000 people, down about five percent from 1990 (Table 4A). African-Americans (25.7%) and Hispanics/Latinos (29.1%) together comprised about 55 percent of the area's 2000 population. The Hispanic population in this area is the fastest growing, up from 16 percent of the area's population in 1990 to 29.1 percent in 2000. Households with incomes below the poverty level in 2000 totaled 24.5 percent of all households in the area, down from about 31 percent in 1990. People in the Central study area are mostly employed in the manufacturing sector.

Non-minority groups that represent at least two percent of the region's population are also presented on Tables 4A and 4B. Only people of Arab ancestry are more concentrated in the Central Area than in the region as a whole. The Arab population increased in the Central Area between 1990 and 2000 while all other non-minority groups declined.

The number of employed persons living in the Central area increased in the period 1990 to 2000 from about 81 percent to 88 percent. Major employers in the area include Ford Motor Company (Rouge Plant), U.S. Steel, Marathon Oil, and Arvin-Meritor.

Major transportation facilities serving this area are the Ambassador Bridge, the Detroit-Canada Rail Tunnel for railroad vehicles, the Detroit-Windsor Truck Ferry, and the Port of Detroit (Figures 5A and 5B). Freeways such as I-75, I-94 and the Lodge Freeway (M-10) all serve the area. Major arterials include Southfield Road (M-39), Schaefer Highway, Fort Street (M-85) and Jefferson Avenue. The Detroit River in this area is ranges between 0.5 and about two miles wide. The Rouge River is also located here.

5.1.3 Belle Isle Area

The Belle Isle area is in the City of Detroit. Historically, the Belle Isle area, while primarily devoted to agriculture and truck gardening until about 1920, experienced wholesale redevelopment thereafter as an extensive land filling program altered the topography rendering it suitable for airport and industrial development. Chrysler, Dodge, Hudson and Packard automotive production sites were located in the area. This was accompanied by a wide grouping of automotive machining supply shops and working class residential neighborhoods. At one time, this area was one of three of Detroit's major industrial centers that dominated the city.

In terms of recent trends, population declined by more than 15 percent from 1990 to 2000, triple the decline of the two other study areas (Table 4). More than 90 percent of this area's population are African-American. The second largest minority group—Hispanic/Latino—is below one percent. Households with incomes below the poverty level were about 30 percent in 2000 which is a decline from 40 percent in 1990.

Non-minority groups that represent at least two percent of the region's population are also presented on Tables 4A and 4B. None are concentrated in the Belle Isle Area at a rate (percentage) greater than in the region as a whole.

People in the Belle Isle area are mostly working in the educational, health and social services sector (21.9 percent of all employed persons). This has remained relatively constant between 1990 and 2000. Employment is second highest in the manufacturing sector; but, jobs here declined in the decade of the 1990s, even with the presence of the DaimlerChrysler and Budd plants along Conner Avenue. Other major employers in this study area include Wayne County Community College and Detroit Edison.

The Belle Isle area is characterized by dense residential development, typical of Detroit. It is the home of the jewel of Detroit parks, Belle Isle (Figure 6). Conner Creek flows through the area.

Major transportation facilities serving the area include the Detroit City Airport and I-94. Significant arterials include Jefferson Avenue, Conner Street and St. Jean Street. The Detroit River is about one mile wide in this area.

Figure 5A
Sample of Characteristics in Central Area

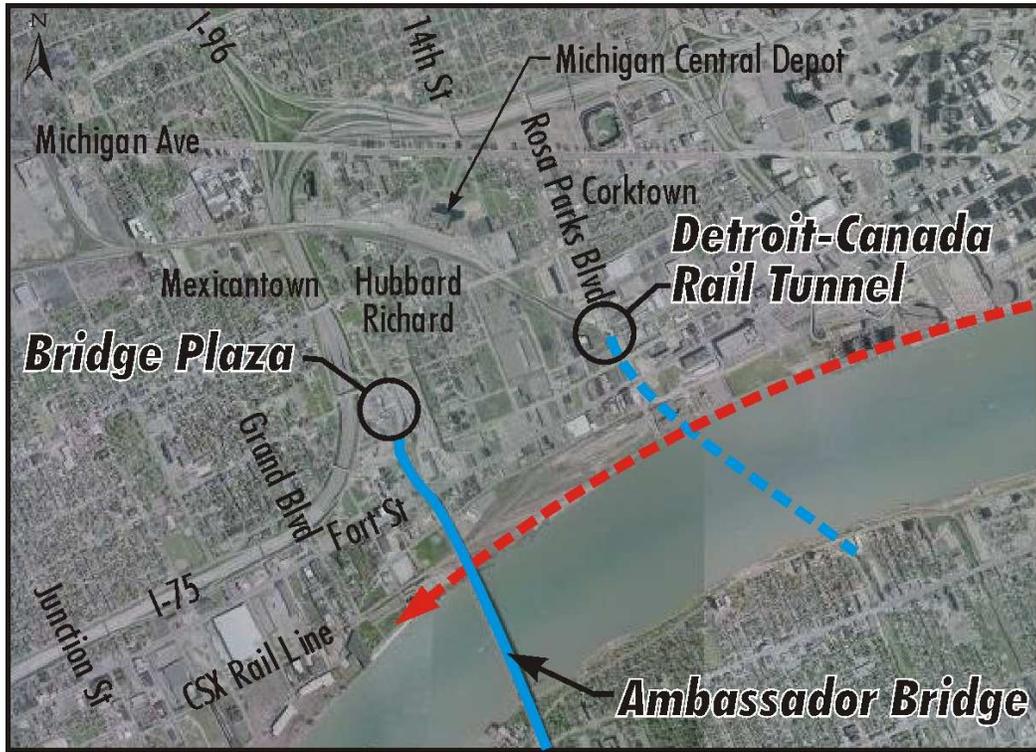


Figure 5B
Additional Examples of Central Area Characteristics



Figure 6
Sample of Characteristics in Belle Isle Area



5.2 Alternatives

Each alternative at this point in the Detroit River International Crossing Study is considered “Illustrative” or preliminary. An Illustrative Alternative consists of a border crossing plus a plaza and connecting roadway on each side of the river. The No Action alternative, defined as “no new border crossing,” in the Detroit River area, is the baseline against which the impacts of each Illustrative Alternative will be measured.

5.2.1 Crossing Type

Both bridge and tunnel crossings of the Detroit River are being studied. The likely bridge types are cable stay, suspension, and arch bridges (Figures 7, 8, and 9, respectively). Tunnel types include:

- Soft ground bored
- Rock bored
- Submerged
- Mined (drill and blast)

Figure 7
Cable Stay Bridge Type

Main spans up to 1,500 feet



Figure 8
Suspension Bridge Type

Main spans over 1,500 feet



Figure 9
Arch Bridge Type

Main spans up to 1,000 feet



In urban environments, like the Detroit River area, a mined tunnel is not considered prudent because of its tremendous negative effects from drilling and blasting. There are also constraining factors for all other tunnel types, including: insufficient soil depth between the river surface and the underlying rock; poor rock conditions; and, environmental conditions, particularly those associated with submerging a tunnel in the Detroit River (Table 6). A complete report on these factors is entitled “Preliminary Tunnel Evaluation, Proposed Detroit River International Crossing,” May 23, 2005. The information there leads to the conclusion that, while a bridge crossing is feasible and prudent along the Detroit River from the Belle Isle to Downriver areas, only a soft ground bored tunnel is feasible and prudent and, then, only in the Central and Belle Isle areas (Table 7). Even in the Central area, a soft ground tunnel may not be feasible if two tunnels have to be bored, each three lanes wide.

5.2.2 Plazas

Before crossings can be located, potential plaza sites on each side of the Detroit River must be located. By working with the Department of Homeland Security/Customs and Border Protection Agency and the General Services Administration, a typical plaza/border station has been defined (Figure 10). The minimum desirable plaza area of 80 to 100 acres has also been identified. Then, based on travel demand analysis from the Planning/Needs and Feasibility Study, the riverfront from Grosse Ile to Belle Isle was studied for plaza locations. Aerial photography, data in a Geographic Information System (GIS) on housing, community/land use characteristics, combined with field review of this information were used in this process. Areas with few structures, brownfields or otherwise underutilized tracts of land were a first priority for siting plazas. However, to address the project’s purpose and need, more densely developed/more active properties could not be avoided. This is particularly the case in the central part of the study area.

**Table 6
Detroit River International Crossing
Tunnel Characteristics**

Category	Downriver	Central	Belle Isle
Soft Ground Bored Tunnel (4 lane)	Not Feasible ■ Insufficient soil depth	Feasible ■ Marginal soil depth	Feasible ■ Adequate soil depth
Soft Ground Bored Tunnel (6 lane)	Not Feasible ■ Insufficient soil depth	Not Feasible ■ Insufficient soil depth	Feasible ■ Marginal soil depth
Rock Tunnel (4 or 6 lane)	Not Feasible ■ Poor rock ■ Deep tunnel/long approaches ■ Poor history	Not Feasible ■ Poor rock ■ Even deeper tunnel/long approaches ■ Poor history	Not Feasible ■ Poor rock ■ Very deep tunnel/long approaches
Submerged Tunnel (4 lane)	Not Feasible ■ Rock excavation required ■ Environmental issues	Feasible ■ Environmental issues	Feasible ■ Environmental issues
Submerged Tunnel (6 lane)	Not Feasible ■ Rock excavation required ■ Environmental issues	Feasible ■ Environmental issues	Feasible ■ Environmental issues

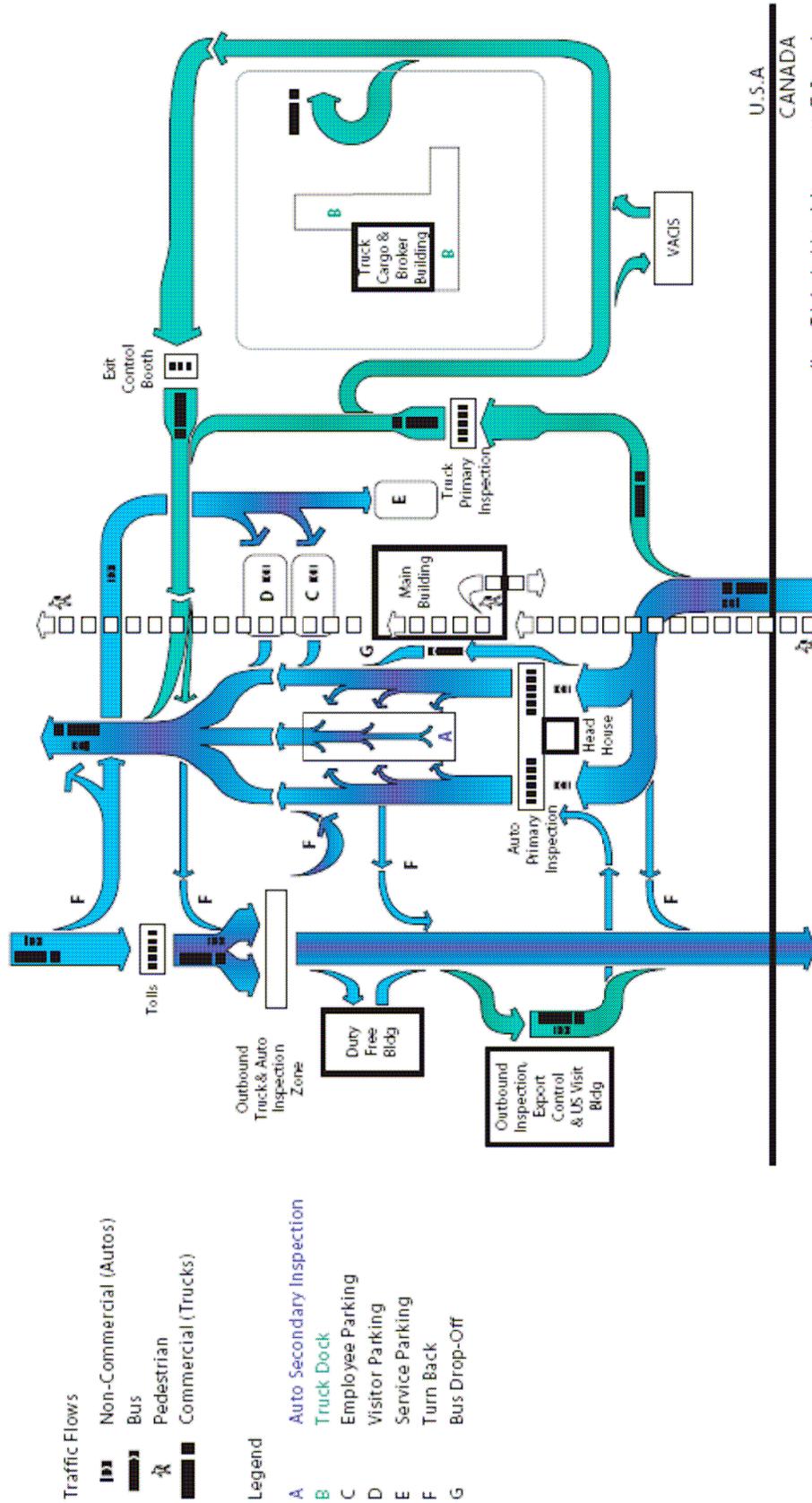
Source: Parsons Transportation Group

**Table 7
Detroit River International Crossing
Tunnel Feasibility**

Category	Downriver	Central	Belle Isle
Soft Ground Bored Tunnel	Not Feasible ■ Insufficient soil depth	Possibly Feasible ■ Soil depth varies from marginal to insufficient	Feasible ■ Marginal soil depth
Rock Tunnel	Not Feasible ■ Poor rock ■ Deep tunnel/long approaches ■ Poor history	Not Feasible ■ Poor Rock ■ Even deeper tunnel/long approaches ■ Poor history	Not Feasible ■ Poor rock ■ Very deep tunnel/long approaches
Submerged Tunnel	Not Feasible ■ Rock excavation required ■ Environmental issues	Technically Feasible – Engineering Not Feasible & Prudent – Environmental Issues	Technical Feasible – Engineering Not Feasible & Prudent – Environmental Issues

Source: Parsons Transportation Group

Figure 10
Typical Plaza Concept



Thirteen new illustrative plazas were located for analysis (Figure 11). Detailed depictions of each site are shown on the CD included at the end of this report.

5.2.3 Plaza Connections to Freeways

As plazas define one end of a route from a river crossing, a freeway interchange defines the other. Some plazas are associated with more than one interchange connection to the freeway system to completely explore the list of prudent and feasible alternatives. Figure 12 shows the proposed plazas and the possible freeway interchange locations for the purpose of developing Illustrative Alternatives.

A computer program known as QUANTM was employed to assist in examining all feasible and prudent plaza-to-freeway connections. It uses sophisticated mathematical techniques to generate 50 alignments for every plaza-freeway connection. In doing so, input provided by the study team includes the terrain (topography, roads, railroads, etc.) over which the roadway connection will travel; design criteria (grades, degree of curvature, etc.); and, what are known as “avoidance” areas. For the purposes of the analysis on the U.S. side of the border, avoidance areas are those which are protected by law (parks, National Register-eligible cultural and historic sites). Also, cemeteries and active major industrial areas, major utilities (such as power plants and sewage treatment plants) and landfills were considered to be avoidance areas on a case-by-case basis.

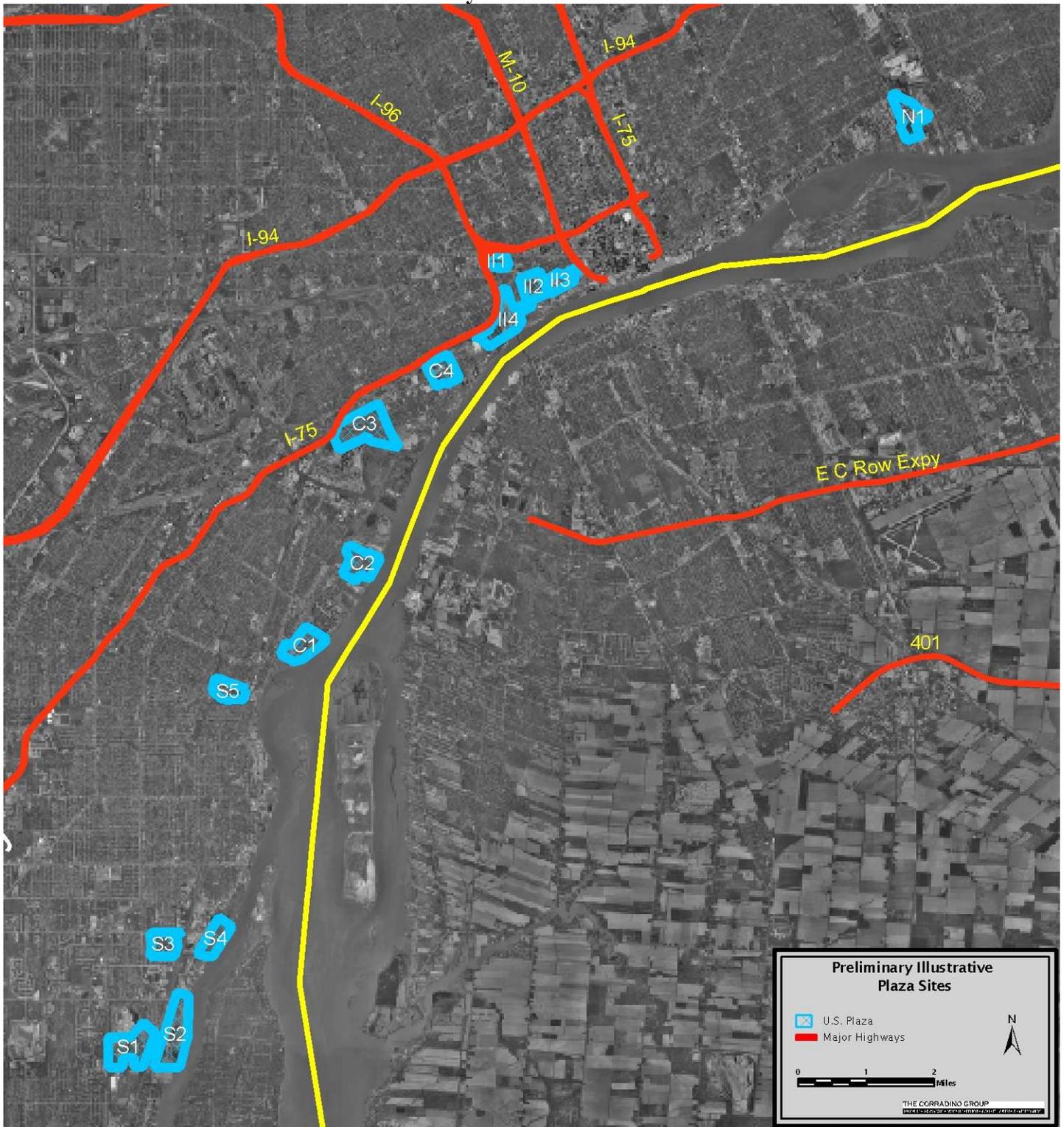
As noted above, QUANTM generates 50 alignments for every connection of a plaza to a freeway. For the purposes of QUANTM starting (plaza) and ending (freeway) points were established near each plaza and each candidate interchange. The ultimate connections to the plaza and freeway were developed by engineering design following field investigation.

The 50 alignments generated by QUANTM cover virtually every conceivable routing from a plaza area to a freeway interchange area. The 50 alignments generated by QUANTM tend to cluster. This is particularly true considering the relatively short distances between plazas and interchanges being studied. For example, every time an “avoid” area is encountered in QUANTM, alignments pass around one side of the area or the other. If there is no other way to go, QUANTM will push through an “avoid” area by moving from the fringe to the center. The result is a “bunching” of alignments so that the number of distinct routes is much fewer than 50. Twenty “representative” alignments are defined to represent these bunches.

A Geographic Information System (GIS) program known as ArcView® (Versions 3.3 and 9.1) was then used to illustrate at a general level the impacts of each of the 20 representative routes derived from the 50 QUANTM alignments. Land use and other spatial data were input to Arc View. These include schools, hospitals, places of worship, water features, and many features that define a community. Housing is an underlying layer in the aerial photography of the GIS.

The 20 “representative” alignments are defined as a path 100 meters (about 300 feet) wide to include the proposed road and enough property to control access to it. Arc View then queried the layers of data in the GIS was then used to determine how many areas with community facilities/services are intersected by each roadway alignment path. The community features queried included: the avoidance areas (parks, cemeteries, historic/cultural sites eligible for the National Register of Historic Places or an archaeological site that may contain human remains), plus community centers, fire stations, police stations, libraries, major medical facilities, places of worship, etc. The analysis also included a determination of the streets crossed by the plaza-to-freeway connection as an indication of the extent to which an alignment potentially disrupts communities.

Figure 11
Preliminary Illustrative Plaza Sites



Source: The Corradino Group of Michigan, Inc., July 2005

Figure 12
Proposed Connections of Plazas to Freeways



Source: The Corradino Group of Michigan, Inc., July 2005

The data defined by Arc View for each of the 20 representative alignments were examined through a limited field review to assess the magnitude of the potential effects on any given resource. For example, while a day care center was inventoried as a school, it was considered to have a lesser institutional presence than an elementary school with extensive grounds and facilities. This examination of each of the 20 representative alignments led to a definition of those few considered candidates for designation as Illustrative Alternatives. These alignments are shown on the CD included at the end of this report.

5.2.4 Connect Plazas with River Crossings

Analysis of geotechnical considerations has led to the understanding, at the Illustrative Alternatives level of detail, that bridge crossings are viable to connect all the plazas defined on each side of the Detroit River. However, only the tunnel type known as “soft ground bored tunnel” is considered viable and only in the area along the river from the south side of Zug Island to Belle Isle (Tables 6 and 7).

With these conclusions, plazas on each side of the river were connected as shown in Figures 13 through 16. Figure 17 summarizes the U.S.-to-Canada alternatives.

5.3 Evaluation Process

The Detroit River International Crossing Study requires a structured process to evaluate Illustrative Alternatives. It must be consistent with laws/regulations governing such analyses. It must also allow decisions to be made such that: 1) a Draft Environmental Impact Statement can be published by the end of 2006; 2) a Preferred Alternative can be approved by the Partnership Steering Committee by mid-2007, if not sooner; and, 3) an FEIS can be completed by the end of 2007 (Figure 18).

This evaluation process begins with a determination by the Partnership Steering Committee, with input from the Working Group and Consultants,¹² of only those options that will meet the project’s purpose and need. These are then to be compared to the No Action (sometimes called the “Do Nothing”) option. And, while No Action does not meet the purpose and need, it forms the baseline against which alternatives are measured.

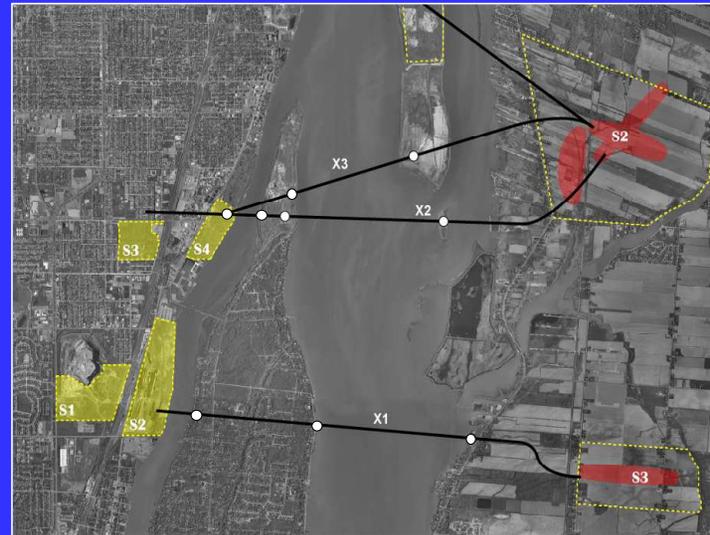
To begin this evaluation process, an alternative’s performance in a number of transportation information categories, such as “capacity,” was assessed. For example, travel demand modeling results produced in the earlier Planning/Needs and Feasibility Study (P/N&F), and updated for the ongoing environmental analysis work, indicate road-based solutions outside the Detroit River area do not meet the project’s purpose and need, as they do not divert enough traffic from the Detroit River area to render adequate existing crossings’ border capacity. While continued use of public transit by cross-border travelers/workers and shipping freight by barge and intermodal rail/truck facilities is expected, these modes, by themselves or in combination, do not meet the project’s purpose and need. On the other hand, road/plaza/crossing facilities will (bridge or tunnel) meet the purpose and need if they are located in the Detroit River area (refer to Figure 1).

¹² The Partnership Steering Committee is comprised of representatives of the Federal Highway Administration, Transport Canada, the Ministry of Transportation Ontario and the Michigan Department of Transportation. The Consultant teams are led by URS Canada (Canadian Team) and The Corradino Group of Michigan (U.S. Team).

Figure 13

Detroit River International Crossing Downriver Corridor

- ◆ River Width up to 3.25 miles (17,000 Feet)
- ◆ Piers in the River
- ◆ Pier on Grosse Isle
- ◆ Towers Height Impacts on Flight Paths of:
 - Grosse Isle Municipal Airport
 - Migratory Birds

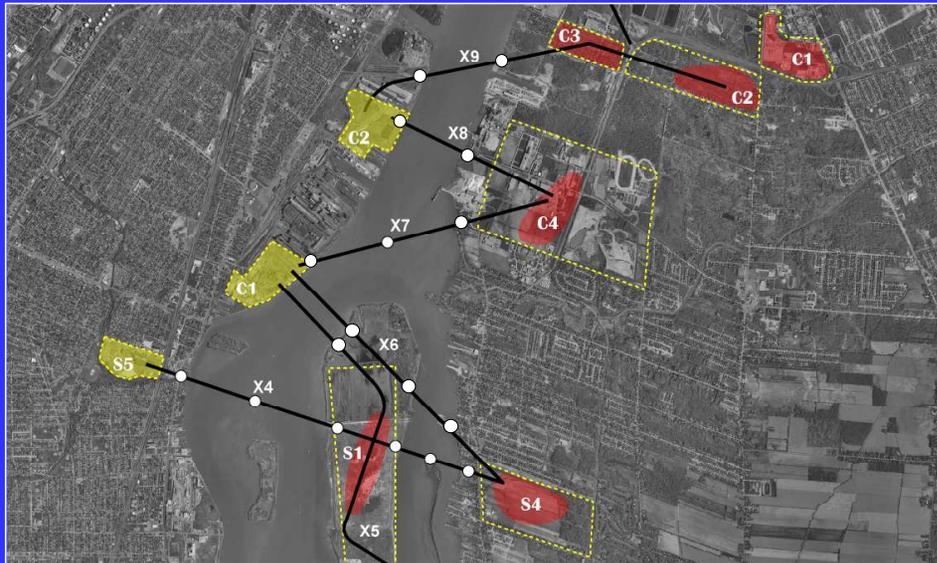


Source: Parsons Transportation Group, July 2005

Figure 14

Detroit River International Crossing Central Corridor

- ◆ River Width up to 1.8 Miles (9,500 Feet)
- ◆ Piers in River
- ◆ Piers on Fighting Island



Source: Parsons Transportation Group, July 2005

Figure 15

Detroit River International Crossing Central Corridor

- ◆ River Width up to 0.4 Miles (2,300 Feet)



Source: Parsons Transportation Group, July 2005

Figure 16

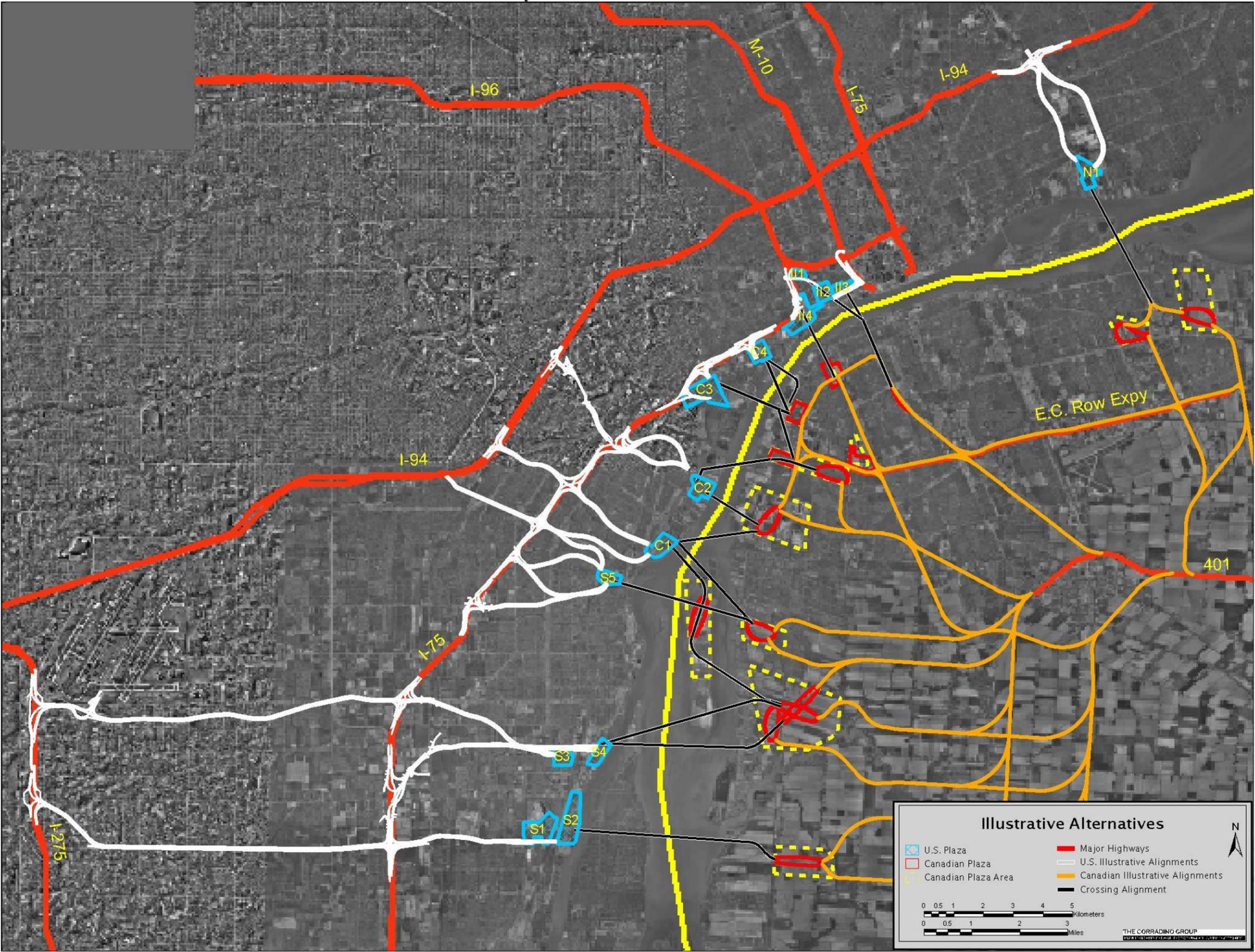
Detroit River International Crossing Belle Isle Corridor

- ◆ River Width up to 1.1 Miles (6,200 Feet)
- ◆ Piers in the River
 - Proximity to Belle Isle
 - Piers on Belle Isle
- ◆ Tower Height Impacts on Wildlife and Detroit City Airport



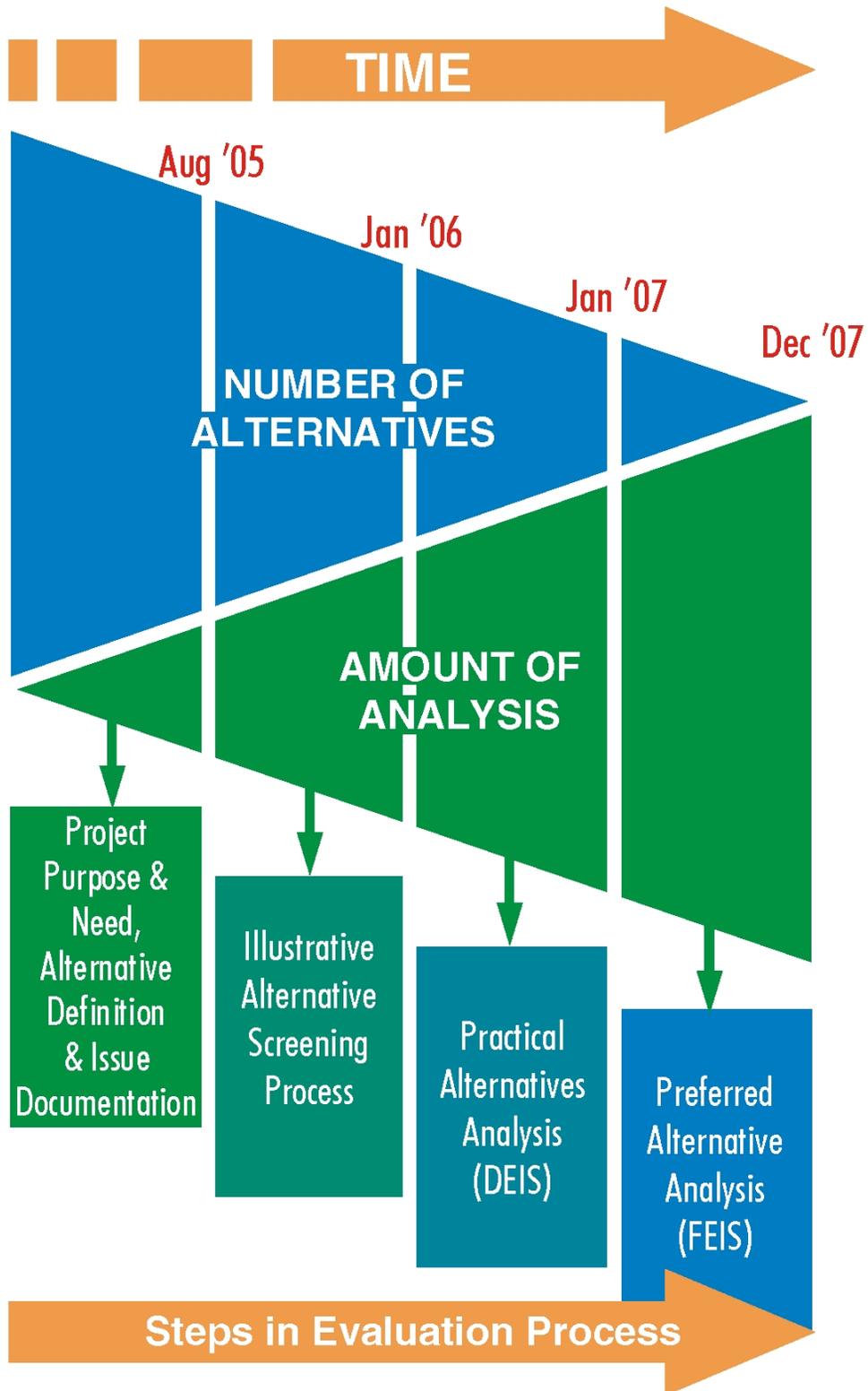
Source: Parsons Transportation Group, July 2005

Figure 17
Preliminary End-to-End Illustrative Alternatives



Source: The Corradino Group of Michigan, Inc., July 2005

Figure 18
Evaluation Process



Source: The Corradino Group of Michigan, Inc.

The purpose of the environmental study process that is a key part of the current phase of work is to evaluate impacts of Illustrative Alternatives and to feed this information back to the alternatives selection process. This will help the Partnership refine alternatives and to reduce impacts. The goal is to meet the project's purpose and need while avoiding, minimizing or mitigating impacts to the extent practicable. Additionally, the analysis process may uncover impacts that are so significant to be deemed "fatals." In such cases, the alternative associated with a fatal flaw(s) would be eliminated from further consideration. However, at this time, reconnaissance in the P/N&F, and new work on the environmental phase, do not indicate any "fatal flaws" associated with road-based crossings in this area.

These preliminary conclusions that roadway-based solutions meet the project purpose and need have been reviewed by the Partnership Working Group and Steering Committee to establish a list of Illustrative (or preliminary) Alternatives. They considered each proposed alternative's international and national importance from economic and travel/transportation (including freight) perspectives. National/international issues are and will continue to be overriding considerations throughout the evaluation process.

5.3.1 Evaluation Factors

The evaluation of the U.S. Illustrative Alternatives will be conducted in the summer of 2005. The results of this screening will then be combined to form end-to-end solutions connecting the freeway system on both sides of the border with Detroit River crossings. Table 8 displays the list of factors to be used in this evaluation process. All of these factors are of importance and their relative importance Performance Measures Categories are included on Table 8 to further define each factor. They are to be used, along with a spectrum of qualitative and quantitative measures, to aid in alternatives definition/refinement and, therefore, to inform the decision-making process. The summary definition of each evaluation factor listed on Table 8 is presented next. The complete definition of analysis techniques for the DRIC Study is included on the Web site (www.partnershipborderstudy.com).

Maintain Air Quality – Under the U.S. Clean Air Act, the seven-county SEMCOG region is now classified as non-attainment for the PM_{2.5} standard and is in marginal non-attainment for the eight-hour ozone standard. To assess the relative effect of Illustrative Alternative transportation proposals on key roadway links (to be specified in cooperation with MDOT and MTO), the border crossing plaza, and for the regional system overall, pollutant burdens will be calculated for carbon monoxide (CO), hydrocarbons (HC), oxides of nitrogen (NO_x), particulates of 10 microns (PM₁₀) and 2.5 microns (PM_{2.5}), Diesel Particulate Matter (DPM), carbon dioxide (CO₂), and air toxics (benzene, 1,3-butadiene, formaldehyde, acetaldehyde, and acrolein). Hotspot analyses at the plaza and key locations along the roadway system connecting to the border crossing will be conducted through dispersion modeling for carbon monoxide concentrations for the U.S.

Protect Community/Neighborhood Characteristics – The transportation network of the future will have traffic volumes on the crossing, plaza and connecting highway links that are expected to be different from those of today, if a new/expanded border crossing is developed. Any "build" alternative is likely to have significant adverse impacts on community and neighborhood character. To measure the effects of the Illustrative Alternatives on plaza and key roadway links in or near neighborhood areas, the forecast volumes by vehicle type on selected roadway segments will be determined. Additionally, the change in local access will be defined, including that for emergency services and pedestrians. Sensitive receptors (residences, churches, schools, libraries and similar institutions/land uses) that might be negatively affected by noise will be sited

Table 8
Detroit River International Crossing Study
Proposed Evaluation Factors and Performance Measures
Illustrative Alternatives Phase

Evaluation Factor	Performance Measure Categories	Performance Measure
Maintain Air Quality	Regional Burden	Mobile 6.2 analysis based on traffic model results.
	Dispersion (CO in U.S./Canada and other Green House Gases/pollutants in Canada)	CALQ3HC hotspot analysis for key roadway links.
Protect Community/Neighborhood Characteristics	Traffic Impacts <ul style="list-style-type: none"> ▪ Volumes by Vehicle Type 	Peak period volumes on specific links by mode (cars, trucks, and int'l. trucks).
	<ul style="list-style-type: none"> ▪ Local Access 	Number of streets crossed, closed, or with an interchange.
	Noise	TNM2.5 model analysis based on traffic model results for key roadway links.
	Community Cohesion/Community Character	Encroachment/severance on neighborhood based on professional judgment. Impact on delivery of community services (function of road closures) based on professional judgment.
	Acquisitions <ul style="list-style-type: none"> ▪ Residential 	Number of dwelling units (du) by type; population estimate based on average persons per du.
	<ul style="list-style-type: none"> ▪ Business 	Number of business establishments; employment estimate based on average employees per business for area.
	<ul style="list-style-type: none"> ▪ Institutions 	Number of institutions by type (church schools, etc.).
	<ul style="list-style-type: none"> ▪ Farm Property/Structures 	Operations/structures affected.
	Environmental Justice	EJ areas (census tracts) affected.
	Public Safety/Security (Plaza Only)	Assessment based on professional judgment.
Maintain Consistency with Local Planning	Land Use (existing and planned)	Designation of “consistent,” “not consistent,” or “not applicable” with goals, objectives and/or policies based on review of official planning documents.
	Development Plans	Designation of “compatible,” “not compatible,” or “not applicable” with plans for upcoming development that may not be covered by official plans.
	Contaminated Sites/Disposal Sites	Number of documented sites affected.

Table 8 (continued)
Detroit River International Crossing Study
Proposed Evaluation Factors and Performance Measures
Illustrative Alternatives Phase

Evaluation Factor	Performance Measure Categories	Performance Measure	
Protect Cultural Resources	Historical	Number of listed or eligible sites affected.	
	Parklands	Number of parks by type; number of acres affected. Includes subset for Coastal Zone Management sites.	
	Archaeological	Number of sites affected.	
Protect the Natural Environment	Surface Water Quality/Groundwater	Number of acres of wildlife refuges affected; floodplains affected; number of water crossings (including secondary rivers and streams); Detroit River channel alteration; number and general location of in-water piers; number of water intakes affected.	
	Environmentally Significant Species/Habitat	Number of acres affected by type; list of species; other significant features.	
	Farmland/Prime Agricultural Soils	Number of acres by soil type.	
	Other Natural Resources	Underground area affected measured by area of roadway above.	
Improve Regional Mobility	Highway Network Effectiveness <ul style="list-style-type: none"> ▪ Service Levels¹ ▪ Vehicle Miles of Travel² ▪ Vehicle Hours of Travel² ▪ Distance Traveled² 	Miles by LOS classification by major facility type. By major facility type. By major facility type. Average miles for car, local truck, and international truck.	
	Continuous/ongoing river crossing capacity ³	Miles of detour to alternate crossing. Redundancy assessment.	
	Operational Considerations of Crossing System (River Links and Plaza) ⁴	To be determined.	
	Assess How Project Can Be Built	Constructability	Site constraints; geotechnical constraints; construction staging/duration; traffic maintenance; risk assessment.

¹To address the “capacity” need.

²To address the “system connectivity” need.

³To address the “reasonable and secure” options need.

⁴To address the “processing capability” needs.

Source: The Corradino Group of Michigan, Inc.

and the noise impacts on them determined. Potential acquisition of residential, business, and institutional structures (churches, libraries and the like), and farm property/structures will be determined. Areas of significant numbers of minority and low-income people will be identified and the intrusion of new roadway development into these areas will be evaluated. Finally, the public safety concerns related to the plaza will be addressed.

Maintain Consistency with Local Planning – The existing and future land use patterns of affected communities will be examined to assess the degree of consistency of the proposed transportation improvements. This will include development known through other documents publicly available but not included in “official plans.” Finally, the intrusion of a plaza or new roadway that is part of the border crossing system on contaminated sites/disposal sites will also be evaluated.

Protect Cultural Resources – The use of properties of historic and/or archaeological significance and publicly-owned parklands for transportation facilities is protected by various U.S. and Canadian laws/regulations. The transportation systems’ use of such sites/properties, including those areas covered by U.S. Land & Water Conservation Funds (6(f)) and Tribal lands, will also be defined for each Illustrative Alternative.

Protect the Natural Environment – There is potential to affect wetlands, surface and groundwater resources and other ecologically sensitive areas, including those which may be populated by threatened and/or endangered species. This is particularly true along the Detroit River and the International Wildlife Refuge. The acreage of these areas possibly intruded upon by an Illustrative Alternative will be quantified and the species potentially impacted will be identified. Likewise, the potential use of productive resources, such as farmland or mineral mines, will be determined. Water quality issues will also be addressed in this category by defining the water crossings affected, floodplain acres intruded upon, and possible impacts to the Detroit River, including the release of contaminated sediments. If any water intakes would be potentially affected, they will be enumerated.

Improve Regional Mobility – The purpose of the Detroit River International Crossing Project is, in part, “to provide 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 Michigan, Ontario, Canada and the U.S.” Therefore, the ability of the overall highway network to move vehicles efficiently will be evaluated on a number of key roadway links using Highway Capacity Manual methodology (e.g., service volumes at LOS E). Regional vehicle miles, vehicle hours of travel, and travel distances will also be calculated. In the U.S., the “region” will likely be a subarea of the SEMCOG seven-county area to better define variations among alternatives. Also included here will be an assessment of: 1) ability of an alternative to provide continuous/ongoing river crossing capacity; and, 2) the operational considerations of the system (plaza and crossing).

Assess How Project Can Be Built – In this category, an assessment will be made based on professional judgment of the constructability of the proposed alternative (river crossing and roadway system) and its border plaza. The measures to be defined are site constraints, geotechnical constraints, construction staging/duration, traffic maintenance, and risk assessment.

5.3.2 Illustrative Alternatives Evaluation Process

All of the evaluation factors listed on Table 8 are of importance. The relative importance is to be established by both the citizens who engage in the evaluation process and the DRIC Project Team. To establish these levels of importance, the example scoring form shown on Table 9 has been used. It, and the scoring process in which it is used, have been applied successfully on a

number of projects in Southeast Michigan and elsewhere in the U.S. This scoring process will only apply to evaluation factors. It will be done independently by the public and the Project Team (Working Group and Consultants combined). The “performance” of each Illustrative Alternative will be measured by the Consultants by studying the data for each Illustrative Alternative in the categories listed on Table 8. Scores of 0 to 100 will be assigned by each member of the Consulting team participating in the evaluation based on these data. The “bottom line” score of each alternative will be a result of combining the Consultant team’s composite performance score by evaluation factor, multiplied by the weight of that factor established by: 1) the public, and 2) the Project Team. So, two scores will be available per alternative to compare and contrast the public and Project Team assessments of evaluation factors.

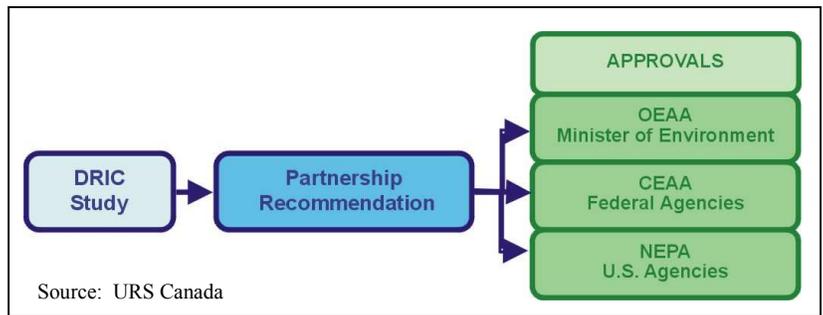
It is noteworthy that cost will be applied after the evaluation scoring to determine “cost effectiveness.” Cost is also a measure of how prudent it is to pursue an alternative, i.e., an alternative that is too costly may not be prudent to construct defined as “score (points) per dollar.” Cost will be developed on an order-of-magnitude basis from unit construction costs (e.g., dollars per square meter or per linear meter). Factors will be applied to the basic construction cost to account for right-of-way costs, design, construction administration, contingencies and the like.

6. Future Procedures

At the end of the determination of performance of the Illustrative Alternatives (evaluation scoring) and cost effectiveness, the Steering Committee will examine the alternatives according to how well each addresses the objective of providing for the mobility requirements across the US-Canada border consistent with issues of international and national importance so that the best end-to-end proposals can be “short listed” as Practical Alternatives. Following public input, these will be subject to detailed analysis and documentation in the Environmental Impact Statement (U.S.) for eventual selection of a Preferred Alternative. That is scheduled to occur in mid-2007, but every effort will be made to accelerate that timetable.

The final step in each phase of the DRIC Study evaluation will be a Partnership recommendation. All approaches will be consistent with National Environmental Policy Act in the U.S. and the Ontario Environmental Assessment Act and the Canadian Environmental Assessment Act (Figure 19).

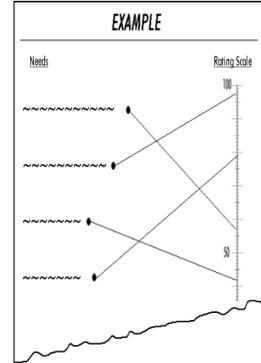
Figure 19
Decision Structure



**Table 9
DRAFT
Detroit River International Crossing Project
Scoring Form – Evaluation Factors**

How Important Are These Items?

We want to know how you value the seven evaluation factors listed below. To provide us your opinion, please rate them on the scale of "1" through "100", with the highest rating indicating the item you believe is most important. Draw a line from the dot (•) following each factor on the left, to the scale on the right, to indicate your opinion. If you choose, you can have all factors at the same point on the scale at the right. When finished, return your form to a project representative, or by email, or by fax at the addresses listed at the bottom of this form.



Your opinions will be used to evaluate the impacts of the Illustrative Alternatives of the Detroit River International Crossing Project. In that process the Detroit River International Crossing Partnership must also consider the project's Purpose and Need Statement (attached). Therefore, a proposed river crossing alternative's international and national importance from economic and travel/transportation (including freight) perspectives may be overriding considerations throughout the evaluation. Thank you.

<u>Factor</u>		<u>Rating Scale</u>
Maintain Air Quality	•	<div style="text-align: center;"> <p>100</p> <p>0</p> </div>
Protect Community/Neighborhood Characteristics	•	
Maintain Consistency with Local Planning	•	
Protect Cultural Resources	•	
Protect the Natural Environment	•	
Improve Regional Mobility	•	
Assess How Project Can Be Built	•	

Name of Person Completing Form: _____

Please return the completed form by July 31, 2005.

www.partnershipborderstudy.com
Hotline: 800.900.2649
Fax: 248.799.0146

Detroit River International Crossing Draft Purpose and Need (July 2005)

Project Purpose

The Purpose of the Detroit River International Crossing Project is to: (for the foreseeable future, i.e., at least 30 years):

- *Provide 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 Michigan, Ontario, Canada and the U.S.*
- *Support the mobility needs of national and civil defense to protect the homeland.*

Project Need

To address future mobility requirements across the Canada-U.S. border, there is a need to:

- *Provide new border crossing capacity to meet increased long-term demand;*
- *Improve system connectivity to enhance the seamless flow of people and goods;*
- *Improve operations and processing capability; and,*
- *Provide reasonable and secure crossing options in the event of incidents, maintenance, congestion or other disruptions.*

Attachment 1

Streamlining Agreement

DRAFT
(July 11, 2005)
Interagency Streamlining Agreement for Preparation
of The Detroit River International Crossing
Environmental Impact Statement

The Federal Highway Administration (FHWA) is committed to streamlining preparation of the Detroit River International Crossing (DRIC) Environmental Impact Statement (EIS). As the lead federal agency for the NEPA process, FHWA will ensure environmental protection through a coordinated decision-making process with other federal, state, and local agencies.

I. PURPOSE

The purpose of this Streamlining Agreement (Agreement) is to establish a framework within which the exercise of the responsibilities associated with preparation and review of the DRIC EIS is efficient. This Agreement is designed to anticipate and avoid surprises and delays through collaboration.

This Agreement is neither a fiscal nor a funds-obligation document. The provisions of this Agreement do not replace, but are supplemental to, the Council on Environmental Quality (CEQ) regulations, (40 Code of Federal Regulations (CFR) Parts 1500-1508), and all other agency regulations, orders, and policies. It is in the interest of the participants in this Agreement, where independent but overlapping jurisdictional program responsibilities exist, that these responsibilities be addressed and fulfilled within a coordinated documentation and public involvement/decision-making process. But, in every case this document does not supersede, modify or abrogate any existing agreements between or among agencies to this Agreement.¹³

II. AUTHORITY

In accordance with the spirit and intent of interagency coordination directed by NEPA, Section 1309 of TEA-21 and consistent with Executive Order 13274, FHWA and participating agencies are authorized to enter into this Agreement.

III. KEY POINTS

The Agreement involves commitments to:

¹³ Specific reference is made to the "U.S. Coast Guard/Federal Highway Administration Memorandum of Understanding on Coordinating the Preparation and Processing of Environmental Documents," signed 6 May 1981, or the "Coast Guard/FHWA Procedures for Projects Which Require a Coast Guard Bridge Permit," signed 10 December 2001.

1. Work concurrently with other resource agencies through the DRIC environmental analyses, while respecting each agency's mission, technical expertise, and statutory authority.
2. Set mutually agreed upon timeframes to fulfill each agency's role throughout the DRIC environmental review process.
3. Document mutually acceptable understandings reached at key points spaced throughout the environmental review process. The key points foreseen at the signing of this Agreement are:
 - Project Purpose and Need (2nd Quarter of 2005)
 - The ranges of Illustrative (2nd Quarter of 2005) and Practical Alternatives (4th Quarter of 2005) capable of achieving the Purpose and Need
 - Scoping Meeting (3rd Quarter of 2005) including Analysis Techniques (3rd and 4th Quarters of 2005)
 - Results of Key Environmental Studies (3rd and 4th Quarters of 2006)
 - Selection of the Preferred Alternative (4th Quarter of 2006)
 - Selection of the Recommended Alternative (2nd Quarter of 2007)
 - Mitigation Requirements (2nd and 3rd Quarters of 2007)
4. Agree not to revisit any key point(s) unless substantive information, substantial project changes, or changes to laws and regulations warrant reopening an agreed-upon consensus point. This recognizes that an agency's individual public notice may generate concerns in areas acted upon previously, but which may require additional discussion/analysis so that these concerns are adequately addressed and/or mitigated.
5. Address unresolved issues expeditiously to develop a collaborative problem-solving/issue-resolution framework. The framework will include reasons for initiating issue resolution processes, procedures, and timeframes.

A Key Point is defined as a milestone in the environmental review process that is best accommodated by a decision (or a non-decision) on a specific point. FHWA will work toward obtaining general agreement from the parties to this Agreement at each Key Point. The parties to this Agreement will execute at each Key Point the Form that is included in Attachment A.

The process to achieve general agreement will be as follows:

1. FHWA distributes or presents the issue in a document distributed to the parties to the Agreement.
2. FHWA requests a completed Key Point Agreement Form from each party to the Agreement on the Key Point.

3. Within thirty (30) calendar days, each party to the Agreement indicates whether or not it can agree to the Key Point. If the agency does not agree, written reasons for the disagreement will be provided to the FHWA.
4. Within 14 calendar days, FHWA will review the reasons for disagreement and where appropriate 1) revise the Key Point process described above; or 2) proceed to the next Key Point.

The decision to revisit a Key Point will only occur when FHWA or FHWA and any one more signatory of a Key Point Agreement Form request in writing to revisit the consensus issue because a) substantive new information has become available; b) there has been a substantive change to the proposed project; and c) conditions, laws and the regulations have resulted in a substantially different picture of social, economic or environmental impacts than those previously analyzed and/or described in Technical Reports and/or the Environmental Impact Statement.

It is once again stressed that participating in a Streamlining Agreement for the DRIC Project does not imply endorsements of any aspects of the proposed DRIC Project. Nothing in this Agreement will diminish, modify, or affect the statutory or regulatory authorities of the agencies involved. And, it is recognized that each participating party's responsibilities under this Streamlining Agreement are subject both to the availability of each agency's funding and to all applicable statutory and regulatory provisions governing each agency.

This Agreement may be executed in separate counterpart originals with separate execution pages for each of the participating agencies.

DRAFT
**Interagency Streamlining Agreement for Preparation
of The Detroit River International Crossing
Environmental Impact Statement**

Signatories

James J. Steele	Federal Highway Administration
Division Administrator	

Bharat Mathur	U.S. Environmental Protection Agency
Acting Regional Administrator	

Donald P. Lauzon	U.S. Army Corps of Engineers Detroit
District Engineer	

Craig A. Czarnecki	U.S. Fish & Wildlife Service East Lansing Field Office
Field Supervisor	

J. David Hood	U.S. General Services Administration – Great Lakes Region
Assistant Regional Administrator	

N.E. Mpras	U.S. Coast Guard Chief, Office of Bridge Administration
District Commander	

Don Bathurst	U.S. Department of Homeland Security U.S. Customs & Border Protection
Director, Field Operations-Detroit	

Roger F. Noriega	U.S. Department of State Bureau of Western Hemisphere Affairs
Assistant Secretary of State	

DRAFT
**Interagency Streamlining Agreement for Preparation
of The Detroit River International Crossing
Environmental Impact Statement**

Appendix A
Sample Agency Key Point Form

DRAFT
**Interagency Streamlining Agreement for Preparation
of The Detroit River International Crossing
Environmental Impact Statement**

Key Point: _____

Please check one:

- My signature indicates that

Agency Name

has achieved general agreement with the FHWA on the above Key Point.

- My signature indicates that

Agency Name

has no statutory authority with regard to this Key Point.

- My signature indicates that

Agency Name

has not achieved general agreement with the FHWA on the above Key Point for
the following reasons:

Print Name

Signature

Date