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Canada-United States-Ontario-Michigan Border Transportation Partnership Planning/Need and Feasibility Study

Strategic & Geographic Area Overview Working Paper

January 2004

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Preface

The Canadian, U.S., Ontario and Michigan governments are conducting a Needs and Feasibility Planning Study to provide a long-term strategy that will ensure the safe and efficient movement of people, goods and services between Southeast Michigan and Southwest Ontario. The study will assess the existing transportation network, including border crossings and will identify medium- and long-term transportation needs, alternatives and potential new crossings in the region of Southeast Michigan and Southwest Ontario.

The context under which this study was carried out, the justification for the project and the issues and opportunities to be addressed by the study is documented in the **Transportation Problems and Opportunities Report**. This Report incorporates the findings of four technical Working Papers:

- Strategic and Geographic Area Working Paper;
  - Will set the context of the study in terms of identifying jurisdictions involved and their respective legislation and policies which provide the framework for this study.
- Travel Demand Analysis Process Working Paper;
  - Determines the appropriate methodology to be used for travel demand forecasting.
- Existing and Future Travel Demand Working Paper;
  - The description, analysis and assessment of existing and future scenarios for road and rail to develop a quantitative and qualitative understanding of travel demand.
- Environmental Overview,
  - Inventory existing conditions to assist in the generation and evaluation of alternatives.

The Transportation Problems and Opportunities Report provided the basis for the identification, development and assessment of transportation alternatives.

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1. Strategic and Geographic Overview

In this section:

This is the first in a series of papers that will document an ongoing collaborative process to evaluate the need for, and feasibility of, transportation improvements to meet the long-term problems between Southwest Ontario and Southeast Michigan. Based on the nature and extent of these transportation problems a range of feasible alternatives will be developed to address the short-, medium-, and long-term needs of the border region. The project then will evaluate all feasible alternatives and through a participatory but technical process will identify the practical alternatives. Then the process will conduct the prescribed studies necessary to obtain the required planning and environmental approvals from a multitude of public sector agencies. Upon receipt of these approvals the process will move to the design of border crossing improvements followed by construction. This Planning/Need and Feasibility Study is the first step in a thorough and careful process that will balance the social, economic, environmental and technical interests.

It is the purpose of this document to establish the existing conditions that will permit an evaluation of need. It will describe information and data that have been acquired and will offer a summary review of that information. The study area will be graphically identified and the demographic characteristics of the study area on each side of the border will be summarized. Existing transportation infrastructure will be described including the border crossing structures themselves. A summary discussion of the cross border traffic flows, both in terms of trade and people, will be provided. Some insight into the best available projections of future conditions will be presented and this will be used in future reports to make the case for or against a new crossing.

1.1 The Ontario-Michigan Border Transportation Partnership

The Ontario-Michigan Border Transportation Partnership includes the transportation authorities from two federal governments and two provincial/state governments. The Federal Highway Administration (FHWA) is an arm of the U.S. Department of Transportation and Transport Canada (TC) is the corresponding federal level agency in Canada. The Ontario Ministry of Transportation (MTO) and the Michigan Department of Transportation (MDOT) are the provincial and state agencies that have roadway jurisdiction on each side of the border between Ontario and Michigan.

Each of the four partners sponsoring this project have among their mandates, statements of mission, purpose, or vision an expression of the importance of the border crossings that are the focus of this study.

1.1.1 Transport Canada (TC)

> The Canada Transportation Act – 1966 – c.10 – strives to ensure that "each carrier or mode of transportation, as far as is practicable, carries traffic to or from any point in Canada under fares, rates and conditions that do not constitute…(iv) an unreasonable discouragement to the development of

primary or secondary industries, to export trade in or from any region of Canada or to the movement of commodities through Canadian ports,"

TC's 2001-2004 Business Plan states that, "to effectively plan for continual increases in international traffic, the federal government will participate in several border crossing studies/projects to identify future demands."

1.1.2 Ontario Ministry of Transportation (MTO)

The primary goal of the MTO's "Strategic Transportation Directions" process is to develop a fiscally and environmentally sustainable transportation system that will foster economic development while addressing the needs of the transportation users, industry and the public. In Southwest Ontario that is expressed in an objective that proposes to support the efficient operation of international and interprovincial trade corridors and gateways.

The Toll Bridges Act – R.S.O. 1990, c T-11, section 5 states that the Minister of Transportation "may on behalf of Her majesty in right of Ontario enter into agreements with any Canadian or foreign authority for the joint financing, construction or operation of any international bridge or tunnel and for any matter incidental thereto."

1.1.3 U. S. Federal Highway Administration (FHWA)

The General Responsibilities of the Secretary of the U.S. Department of Transportation, the Cabinet officer under whom the FHWA functions, lists in 49CFR1.1.4 (a)1 includes "Leadership in formulating and executing well-balanced national and international transportation objectives, policies, and programs."

The FHWA responsibilities include in 49CFR1.1.4 (d)2 "Providing for improving, in cooperation with the States, roads on the Federal-aid primary, secondary, and interstate highway systems and urban extensions thereof."

The vision of the Federal Highway Administration is to provide expertise, resources, and information to continually improve the quality of our nation's highway system and its intermodal connections. And to undertake this mission in cooperation with all of our partners to enhance the country's economic vitality, quality of life, and the environment.

1.1.4 Michigan Department of Transportation (MDOT)

Public Act 51 of 1951 says that the state shall "provide for the continuing review of transportation needs within the state;"

and

Public Act 286 of 1964 Section 247.806a, paragraph (d) describes the powers of the Secretary of the Michigan Department of Transportation and

> states that the Secretary may "establish a program of current and long-range planning for the transportation systems under the department's jurisdiction."
>
> In its application MDOT's mission is to provide "the highest quality transportation for economic benefit and improved quality of life."

It is only natural that these organizations have formed a partnership to examine future prospects for the maintenance of people and freight movement between Ontario and Michigan.

1.1.5 Objective

While this study has several important and interrelated objectives that will be discussed in more detail in the summary of this document it is generally conceded that the overarching objective is to protect the free flow of people and goods by land across the border of Southwest Ontario and Southeast Michigan. This will require the identification of those conditions - whether policy, procedure or infrastructure - that have the tendency to create unacceptable delays and to project if, and when, such delays might become unacceptable. In any cases where critical delays are projected, remedies must be identified and the steps toward mitigation must be initiated. The issue at hand is one of international trade corridors as well as local access within major metropolitan areas whose interests are intertwined. Neither must take precedence at the expense of the other and neither can be allowed to reach a condition of immobility.

This report will examine the context of the study, review the recent literature related to the study area and issues, illustrate the area's land use and transportation issues with current mapping, describe the transportation network and its future development, and assess the socioeconomic conditions that prevail and that can be expected to develop during the thirty year view of this study.

The process proposed for this study has been developed in consideration of, and may be used to initiate scoping and Terms of Reference for, environmental studies to meet the requirements of the National Environmental Policy Act (NEPA), Canadian Environmental Assessment Act (CEAA), and the Ontario Environmental Assessment Act (OEAA).

2. Significance/Context

In this section:

2.1 Broad Geographic Area

The Broad Geographic Area includes the border crossings at the Blue Water Bridge, the Detroit-Windsor Tunnel, and the Ambassador Bridge plus train tunnels between Sarnia and Port Huron and between Windsor and Detroit and ferry crossings at the Detroit and St. Clair Rivers. There is also a ferry at Detroit that transports vehicles containing hazardous materials across the Detroit River between Detroit and Windsor.

The Broad Geographic Area (Exhibit 2.1) includes the area along the St. Clair River and the area along the Detroit River. Each of these areas will be examined for demand and for capacity issues that may arise between today and 2031.

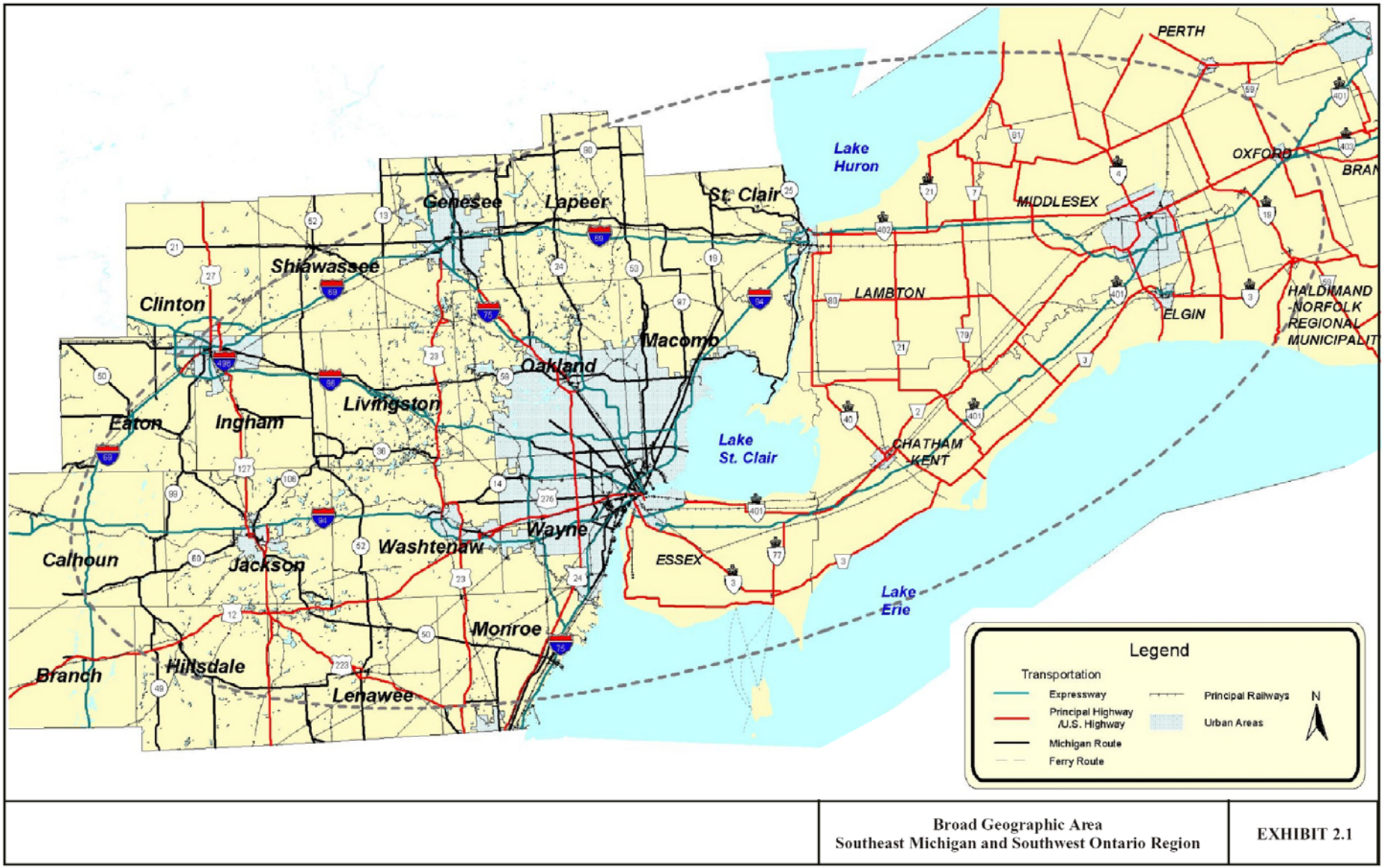
As seen in Exhibit 2.2, highway traffic moving west through Ontario bound for the U.S. has two alternative routes from London: Provincial Highway 401, that crosses the border on the Ambassador Bridge between Windsor and Detroit, and Provincial Highway 402, which crosses the border on the Blue Water Bridge between Sarnia and Port Huron. Each serves a different function and the two serve a similar function. The similar function is that the southerly 401 / I-94 and the northerly 402 / I-69 routes each connect the Greater Toronto Area, Southern Ontario and points east with the Midwestern U.S. and points west. The two routes are within 10 kilometers of being the same length. On the east this corridor splits at London, Ontario and on the west it reconnects near Battle Creek, Michigan. For this reason the Broad Geographic Area boundaries are extended as described in Exhibit 2.1.

2.2 International Trade

In 2000 the value of trade between the U.S. and its NAFTA trading partners, Canada and Mexico, amounted to 653.3 billion U.S. dollars that was an increase of 37% from 1997. Trucks carried 63% of the total value of this trade with rail carrying about 14% and air moving 7% of the total trade value. When compared by the weight of total trade moving between these same nations, trucks accounted for about 35% of the trade with 32% being carried by water and 17% by rail. The modal distribution of trade movement by weight between the U. S. and Canada was 41% by truck, 24% by rail, and 22% by pipeline.

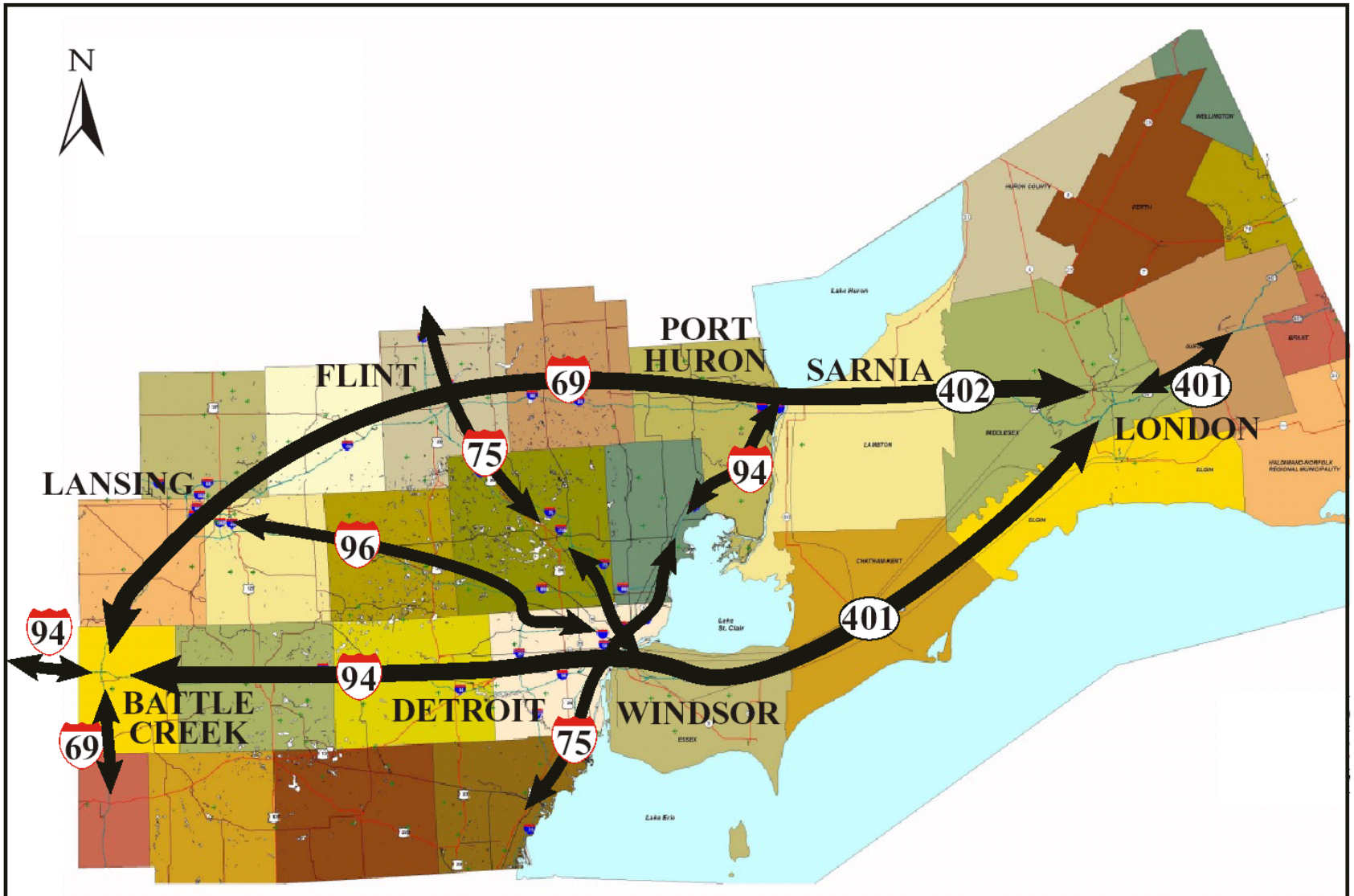
Border crossings in Southeast Michigan and Southwest Ontario carried about 40% of the value of all U.S. – Canadian trade in 2000.

In 2000, the SE Michigan and SW Ontario crossings recorded 5.25 million truck crossings and 21.5 million passenger vehicle crossings. That represents 46% of all U.S. land border crossings by truck (Canadian and Mexican borders).

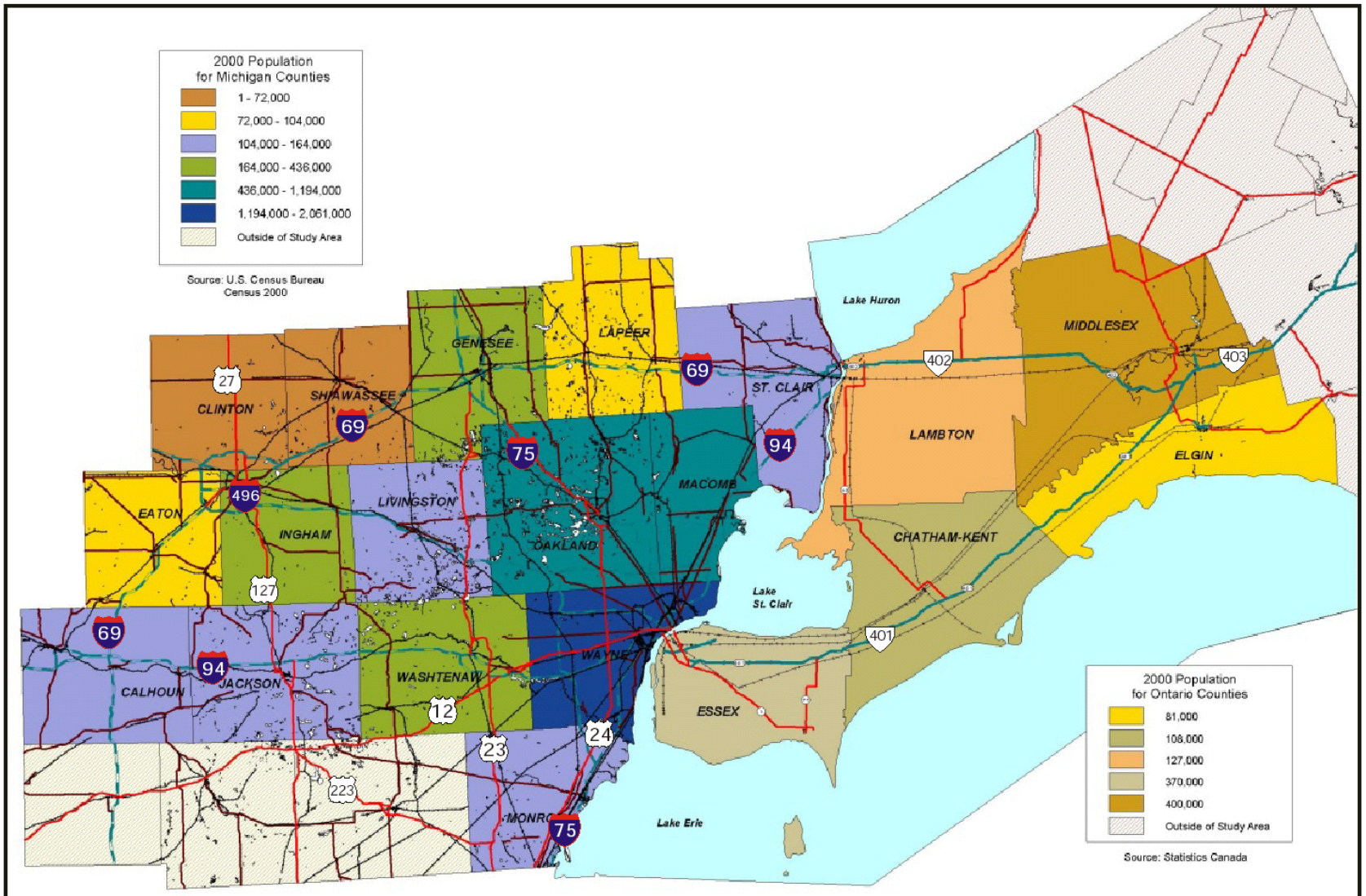


Broad Geographic Area
Southeast Michigan and Southwest Ontario Region

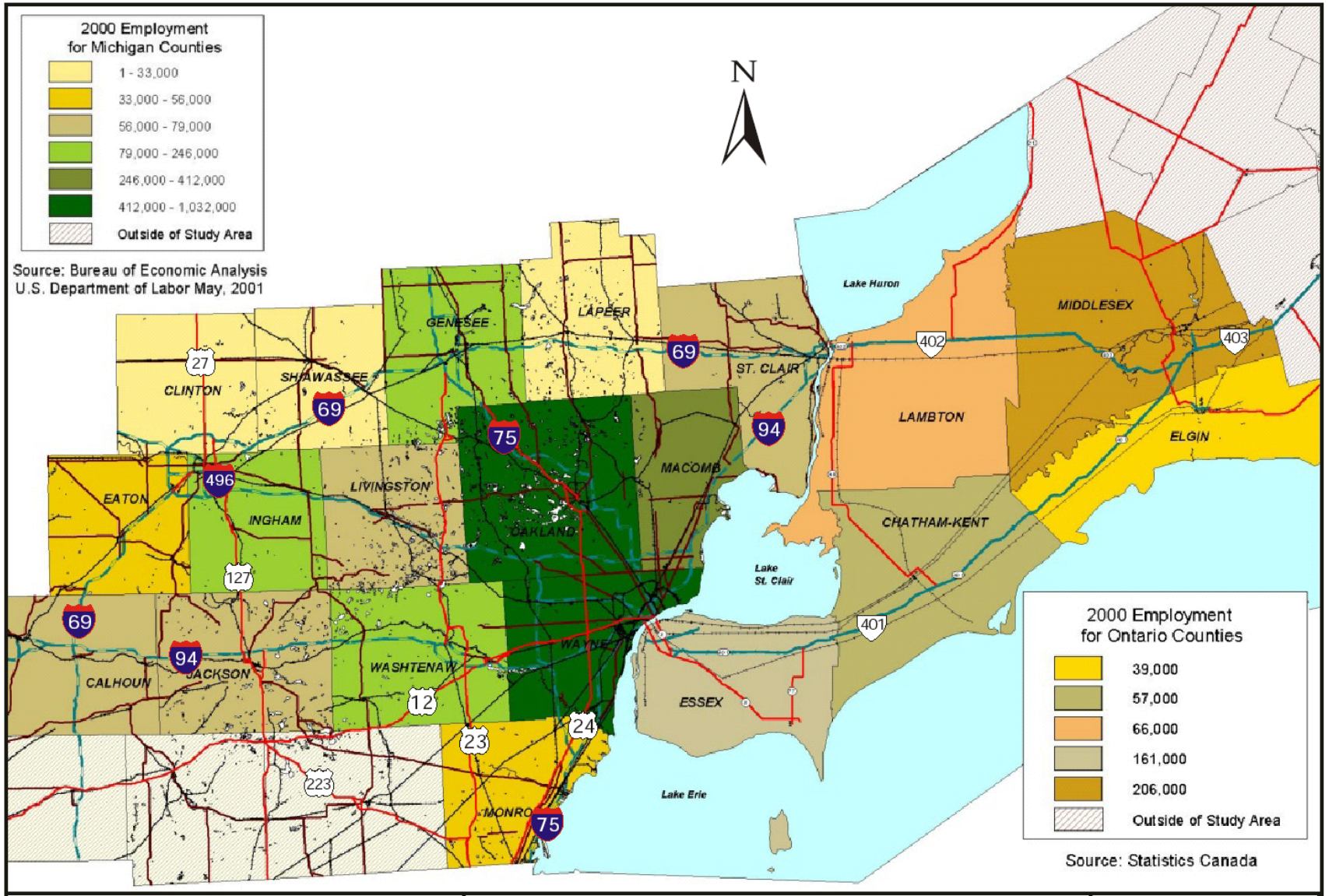
EXHIBIT 2.1



	MAJOR TRADE CORRIDORS	EXHIBIT 2.2



	2000 MICHIGAN AND ONTARIO COUNTY POPULATION	EXHIBIT 2.3



1999 MICHIGAN AND CANADIAN COUNTY EMPLOYMENT

EXHIBIT 2.4

2.3 Mapping

The Broad Geographic Area (BGA) of this study is displayed in Exhibit 2.1 and shows the rich network of streets, roads, highways, and rail lines serving the heavily urban areas of the BGA in the U.S. and the direct, but more lightly developed transportation network in the primarily rural areas of western Ontario. On each side of the border the predominant border roadways are the federal highways, interstates, and provincial highways that connect to the border crossings. This roadway network, as well as the locations and routes of other modes and the characteristics of the border crossings are discussed in greater detail in Section 4 – Transportation Networks.

2.4 Toll and Inspection Facilities

Each of the three roadway crossings in the BGA is a toll facility. Tollbooths are located at the entrances to the Blue Water Bridge and the Detroit-Windsor Tunnel and beyond the Customs Inspection station on the U.S. side of the Ambassador Bridge for traffic entering the U.S. The collection of tolls seldom results in significant delays at border crossings.

The Ambassador Bridge has created four different entrances on the Canada-bound U.S. side each with its own tollbooths to serve the Duty Free shops and gasoline service stations operated by the bridge owner. A new plaza plan currently in the design stage will consolidate these tollbooth facilities and will provide easier movement through the toll paying experience. Most recently the Ambassador Bridge removed the tollbooths from the Canada-side of the Bridge and placed them beyond the U.S. Customs inspection booths for automobiles on the U.S. side. The effect of this is to meter the traffic into the tollbooths and to provide more even flow from Customs inspection to the Bridge egress.

The Blue Water Bridge has particularly difficult movements for vehicles approaching the U.S. side of the border where trucks and automobiles must weave across each other's path. This is caused by the tollbooths for autos and trucks being arranged respectively on the left and right side while the Customs inspection booths are located on the right side for autos and the left side of the roadway for trucks. A review of options for improving this situation that may result in a redesigned plaza on the U.S. side will begin in the next few months.

Each of the roadway crossings contains toll and customs and immigration facilities, including primary and secondary inspection facilities. The secondary inspection areas for the Detroit-Windsor Tunnel and for the Canadian-bound traffic of the Ambassador Bridge are located off-site from the crossings. Table 2.1 outlines the basic facilities of each roadway crossing.

The Detroit-Windsor Rail Tunnel is a twin-tube tunnel operated by Canadian Pacific Railways. One of the tubes has been expanded to accommodate multi-level motor vehicle carriers, trailers on flatcars, and some specialized double-stack cars, although the largest double stacks are too large for this tunnel. The St. Clair Rail Tunnel, operated by Canadian National, is large enough to accommodate the full-size double-stack containers.

TABLE 2.1 ROADWAY CROSSING FACILITIES

Crossing	Traffic Lanes (to US / to CAN)	Toll Booths (to US / to CAN)	Inspection Lanes for Trucks (to US / to CAN)	Inspection Lanes for Autos (to US / to CAN)
Ambassador Bridge	2 / 2	19 / 18	9 / 10	12 / 10
Detroit-Windsor Tunnel	1 / 1	6 / 6	1 / 3	10 / 9
Blue Water Bridge	3 / 3	6 / 5	5 / 7	8 / 12

Source: Southeast Michigan / Southwest Ontario Binational Transportation Planning Project, November 2001.

2.5 Border Traffic Characteristics

The type of truck traffic using the three primary border crossings differs in ways that account for some of the issues that must be addressed in this study. The Blue Water Bridge carries a higher percentage of long-haul trucks among its users than the Ambassador Bridge and the Detroit-Windsor Tunnel, each of which carry high percentages of traffic with a trip end in the immediate vicinity of the crossing.

The Blue Water Bridge carries more LTL (Less than Truckload Lots) while the Ambassador Bridge carries a high number of truckloads from a single source including automakers and auto parts suppliers. Many more truck inspections are required for LTL trucks because of the multitude of types of cargo on board. Each secondary inspection requires more time with LTL than with truckloads.

Because of the frequency of trips by carriers connected with local area shippers in and around Detroit, the Ambassador Bridge carries more trucks that qualify for pre-processing as frequent users of the crossing.

The Ambassador Bridge and the Detroit-Windsor Tunnel do not allow hazardous cargo to cross. Such cargo must use the alternate commercial ferry service southwest of the Ambassador Bridge. The Ambassador Bridge has a maximum weight restriction of 144,000 gross pounds and a maximum height restriction of 15 feet. The Detroit-Windsor Tunnel has a maximum height restriction of 13 feet 2 inches and a maximum single trailer length of 48 feet, although multiple trailer “trains” may be longer. The only restriction for the Blue Water Bridge limits the time of crossing for explosive materials to the hours between 2AM and 8AM.

Each of these factors impacts the time required for obtaining Customs clearance for a truck moving across the border.

3. Data Collection

In this section:

3.1 Literature Review

A number of studies have been reviewed by the project team and the primary resources are listed below. Detailed summaries of studies marked with an asterisk are provided in **Appendix A: Literature Review**.

- City of Windsor Official Plan; City of Windsor Planning Division; adopted May 25, 2000.
- Official Plan of the City of Sarnia; Planning and Building Department; January, 2001.
- County of Essex Official Plan; County of Essex, Ontario; (Prince and Associates Limited); April, 2002.
- St. Clair County, Michigan Master Plan; St. Clair County; Spring, 2000.
- Windsor Area Long Range Transportation Study; City of Windsor; (Stantec Consulting Limited); – August, 1999.*
- London Regional Analysis - Draft; London Regional Analysis Working Group; (Planning Policy Section, Provincial Planning and Environmental Services Branch, Ministry of Municipal Affairs and Housing); September, 2001.
- City of London Population and Housing Forecast 1996-2016; City of London; (Department of Planning & Development); May, 1999.
- North American Trade and Travel Trends; U.S. Department of Transportation; (Bureau of Transportation Statistics); 2002.
- Getting Back In Gear: A New policy Vision for Canada's Auto Industry; Canadian Auto Workers; May, 2002.
- Prospects for Canadian Industries to 2006 - Sectoral Outlook, Bank of Montreal Economic Department; March, 2002.
- "Bringing Order to the Border" Binational Informational Booklet – Southeast Michigan / Southwest Ontario Binational Transportation Planning Project; (SEMCOG); November, 2001.
- 2030 Regional Development Forecast for Southeast Michigan; Southeast Michigan Council of Governments (SEMCOG); October, 2001.
- Non-residential Development Activity in Southeast Michigan 2000; SEMCOG; October, 2001.
- Canada Vehicle Survey, Annual 2000; Statistics Canada, Transport Canada, and Canadian Council of Motor Transport Administrators; August, 2001.
- Ontario-Michigan Border Crossing Traffic Study; Ontario Ministry of Transportation, Michigan Department of Transportation; (Paradigm Transportation Solutions Limited); August, 2001.*

- Census 2000 Supplementary Survey; U.S. Census Bureau; July 2001.
- The Automotive Competitiveness Review, A report on the Competitiveness of the Canadian Automotive Industry, Industry Canada, 1998.
- North American Integration: 25 Years Backward and Forward, by Gary C. Hufbauer and Jeffrey J. Schott, Institute for International Economics, 1998.
- Northern New York Border Crossing Study – Summary Report; New York State Department of Transportation; (Sear-Brown Group); December, 1998.
- Southwestern Ontario Frontier International Gateway Study; Ontario Ministry of Transportation; December, 1998.*
- Southwestern Ontario Frontier International Gateway Study, Technical Report; Ontario Ministry of Transportation; December, 1998.*
- Trade Issues at Ontario's National Gateways; Ontario Ministry of Transportation; (McCormick Rankin Corp, Parsons Brinckerhoff); June, 1998.*
- Trade and Traffic Flows Across the Eastern US-Canada Border - Volume 2:Statistical Review of Border Crossing Trade and Traffic Data– Eastern Border Transportation Coalition (EBTC); (Parsons Brinckerhoff Quade & Douglas); March, 1998.
- Trade and Traffic Flows Across the Eastern US-Canada Border– Eastern Border Transportation Coalition (EBTC); (Parsons Brinckerhoff Quade & Douglas); May, 1997.*
- Preliminary Engineering and Design of Ivhs/Avi New Technology Applications – Michigan-Ontario-New York Highway Border Crossings; (Marshall Macklin Monaghan, JHK & Associates, and Constance Consultants; January, 1997.*
- Southern Ontario – Rural Rail Rationalization; Ontario Ministry of Transportation and Ontario Ministry of Agriculture, Food and Rural Affairs; (The Research and Traffic Group); March, 1995.
- Greater Detroit Area Intermodal Study – Phase II: Intermodal Transportation Centre Concept; Michigan Department of Transportation; (Mercer Management Consulting); August, 1994.
- Assessment of the Adequacy of U.S. – Canadian Infrastructure to Accommodate the Trade Through Eastern Border Crossings; U.S. Department of Transportation; (John A. Volpe National Transportation Systems Center); February, 1994.
- Assessment of Border Crossings & Transportation Corridors for North American Trade; U.S. Department of Transportation Federal Highway Administration; 1993.
- Greater Detroit Area Intermodal Study – Final Report; Michigan Department of Transportation; (Mercer Management Consulting); December, 1993.
- Economic Benefits of the Detroit River Tunnel Double Stack Enlargement; Detroit Economic Development Corporation; (Booz-Allen & Hamilton Inc.); November 1993.

- Economic Corridor Series, Highways 401 and 402 Corridor, Phase 1 - London to Ontario/Michigan Border; Ontario Ministry of Transportation; (Freight Transportation Policy Branch – Logistics Policy Office); October, 1992.
- Border Crossing Infrastructure Development: The Role of Public Authorities and the Private Sector in Development Projects and An Assessment of Development Options and Issues for a Second Span at the Blue Water Bridge; Michigan Department of Transportation; (Dr. John C. Taylor, Wayne State University); July, 1992.
- Michigan-Ontario Railroad Border Crossing Infrastructure: An Evaluation of Modernization Proposal benefits and Recommendations for Future Action; Michigan Department of Transportation; (JCT Services); December, 1991.
- Intermodal Options Study – Final Report; Ontario Ministry of Transportation; (KPMG Peat Marwick Stevenson & Kellogg); November, 1990.
- St. Clair and Detroit Rivers International Crossings Study – Ontario Ministry of Transportation (MTO), Michigan Department of Transportation, and Transport Canada; (A.T. Kearney); June, 1990.*
- Michigan/Ontario Trade and Transborder Transportation: Current Levels, Forecasts, and Problems and Opportunities; Michigan Department of Transportation; (JCT Services); October, 1988.

3.2 Past Studies

A review of the literature shows that a number of studies have projected a need for additional capacity at the border crossings that are being studied in this project. The details differ but the conclusions are similar.

The *Southwestern Ontario Frontier International Gateway Study Technical Report* – produced by the Ministry of Transportation of Ontario (MTO) –in December 1998 arrived at the following conclusions:

- International trade carried by trucks is projected to increase at an average annual rate of four to five percent.
- Trade and truck traffic will double by 2021 increasing delays.
- Blue Water Bridge will provide adequate capacity; however, truck processing on the Michigan side needs to be improved.
- Detroit-Windsor Tunnel is close to capacity.
- Ambassador Bridge will reach capacity of a four-lane bridge between 2011 and 2021.

The Eastern Border Transportation Coalition produced the *Trade and Traffic Flows Across the Eastern US-Canada Border* in May, 1997 –and reported:

- Projected continued growth would likely result in major deficiencies in the near term as auto volumes return to earlier rates of increase (decreases occurred 1992-94 due to the recession, changes in tariffs, reduced value of the Canadian

dollar, reduced cross border shopping, etc.), with a potential economic crisis over the next 20 years due to the potential for very major delays to truck traffic.

In December, 1998, the *Southwestern Ontario Frontier International Gateway Study Technical Report* –produced by the Ministry of Transportation of Ontario showed that*:*

- the Ambassador Bridge would meet or exceed existing bridge capacity by the year 2014;
- the Detroit-Windsor Tunnel was approaching capacity in 1997, with limited opportunities for increasing capacity. It was expected that capacity limitations of the tunnel would divert traffic to the Ambassador Bridge, moving up the need for capacity improvements at the bridge to 2012;
- the Blue Water Bridge, in the process of being expanded from three to six lanes at the time, was expected to provide adequate capacity beyond the year 2021.

The *Ontario-Michigan Border Crossing Traffic Study* produced by MTO, Transport Canada, MDOT, FHWA**.** in August 2001 found that:

- Nearly 90 percent of weekday tunnel traffic is local.
- Ambassador Bridge traffic is 70 percent local.
- At Ambassador Bridge, 72 percent of all trips into Canada, 68 percent of all trips into the U.S. started and ended within the Southeast Michigan Council of Governments (SEMCOG)/Essex area.
- At the tunnel, 90 percent of all trips into Canada and 86 percent of all trips into the U.S. started and ended within the SEMCOG/Essex area.
- At the Blue Water Bridge, 44 percent of all trips into Canada, 49 percent of all trips into the U.S. started and ended within the SEMCOG/Lambton County area.

The *Windsor Area Long Range Transportation Plan (WALTS)* of 1998-98 indicated that:

- over 90 percent of cross border trips either originate or terminate in the SEMCOG /WALTS area
- 76 percent of cross border trips have both ends in the local area.

3.3 Limitations

The data collection process has been uneven and likely will continue to be so. First, this study is starting at a time when an increasing amount of data is being issued from the U.S. Census 2000 but, as would be expected, a much smaller data release is available from Statistics Canada which conducted a census in 2001. Also, most of the Michigan side of the Broad Analysis Area is served by a single planning agency, the Southeast Michigan Council of Governments (SEMCOG), and thus data, analysis, and graphical displays from the U.S. side are comprehensive on a area-wide basis. The amount of data from the Canadian side has been produced by the independent planning agencies of the major cities and counties and at this time is current but less comprehensive.

A further limitation is the fact that each crossing is owned and operated under different circumstances, including public and private ownership and management arrangements. As a result, propriety information may not always be available.

4. Transportation Networks

In this section:

4.1 Highway and Road System

Cross-border vehicular traffic within the study area occurs at locations in Windsor-Detroit (bridge and tunnel), and Sarnia-Port Huron (bridge), each serving local traffic, major trade corridors in the United States and Canada and international gateways for recreational/tourist travel. A large proportion of the traffic is associated with the integrated economies that each city has with its adjacent border city.

The Ambassador Bridge in Windsor-Detroit and the Blue Water Bridge in Sarnia-Port Huron accommodate heavy commercial vehicle flows between Ontario and Michigan and also provide the primary international gateways to the Midwest and southern USA for commercial vehicle traffic originating in Canada. These represent the two highest volume crossings between Canada and the United States in terms of commercial vehicle traffic, with goods transported accounting for over 40 percent of the total value of trade between these two countries. The Ambassador Bridge is also the busiest truck crossing in North America and the crossing between Canada and the United States serving the largest number of vehicles annually, with the Detroit-Windsor Tunnel ranking second. The Tunnel accommodates a high proportion of local traffic, mostly autos.

Much of the traffic is associated with the auto industry located on both sides of the border, resulting in large commercial vehicle movements between Ontario and Michigan. One quarter of Windsor-originated auto traffic is destined to the Detroit Area. Significant volumes also flow over longer distances in Ohio, Indiana and Illinois. Machinery, electronics and transportation equipment are the main trade imports to Canada, with trucks carrying almost 70 percent of goods across the Canada-United States border. The Ambassador Bridge, Detroit Windsor Tunnel and the Blue Water Bridge each serve different travel markets in accommodating cross-border commercial vehicle and auto traffic.

The highway system serving the Ambassador Bridge, Blue Water Bridge, and the Detroit-Windsor Tunnel is presented in Exhibit 2.1, which shows provincial and state highways under jurisdiction of the MTO and MDOT, respectively, and the local and regional road network under jurisdiction of the local municipality or county. Highway 401 is the primary access used to reach the border crossings, before branching near the City of London with Highway 401 continuing southwest to Windsor-Detroit and Highway 402 continuing west to Sarnia-Port Huron. Highway 401 is the predominant highway facility and trade corridor in Ontario, spanning the entire southern portion of the province, linking major urban/manufacturing centres in London, Waterloo Region, the Greater Toronto Area (GTA), and eastward to Quebec.

The existing roadway crossings of the Detroit River are more than 70 years old. As the structures age, the need for significant maintenance inevitably increases. Significant maintenance activities often have the potential to partially or completely close such structures to traffic. Also, the potential impact of disruption due to major traffic incidents, roadway maintenance operations and security concerns can only be lessened by having another crossing, a redundant system, in place. Given the importance of this trade corridor and the substantial number of people dependent upon safe, reliable access across the Detroit River on a daily basis, governments must take all reasonable steps to reduce the likelihood of disruption to this corridor; i.e., sufficient alternative crossings to

meet existing and projected capacity needs, even if some of its components fail or are impaired, are required if the trade link between Canada and the United States is to be sustained.

The division of value of goods (in $U.S. billion) carried across the two sections of frontiers (Detroit River bridge/tunnel and the St. Clair River bridge) is as follows:

TABLE 4.1 DIVISION OF VALUE OF GOODS CROSSING BORDERS ($US [$CDN] BILLION)[1]

	1998	1999	2000	2001
St. Clair River[2] Value of Goods from Canada to U.S.	14.6 [23.36]	15.1 [24.16]	16.60 [25.56]	15.40 [24.64]
St. Clair River[2] Value of Goods from Canada to U.S.	12.3 [19.68]	15.1 [24.16]	16.1 [25.76]	14.5 [23.20]
Total at St. Clair Crossings	26.9 [43.04]	30.2 [48.32]	32.7 [52.32]	29.9 [47.84]
Detroit River[1] Value of Goods from Canada to U.S.	41.8 [66.88]	46.6 [74.56]	47.4 [75.84]	44.8 [71.68]
Detroit River[1] Value of Goods from U.S. to Canada	34 [54.4]	37.2 [59.52]	38 [60.8]	34.9 [55.84]
Total at Detroit River Crossings	75.8 [121.28]	83.8 [134.08]	85.4 [136.64]	79.7 [127.52]
Total at Both Crossings	102.7 [164.32]	114 [182.4]	118.1 [188.96]	109.6 [175.36]

Source: U.S.D.O.T., Bureau of Transportation Statistics

[1] Detroit River refers to border crossings between the Cities of Detroit, Michigan and Windsor, Ontario, including the Ambassador Bridge, the Detroit-Windsor Tunnel (auto and truck), the Windsor-Detroit rail tunnel, and a truck ferry service.

[2] St. Clair River refers to border crossings between the Cities of Port Huron, Michigan and Sarnia, Ontario, including the Blue Water Bridge and the Sarnia-Port Huron rail tunnel.

The corresponding tonnage of goods entering the U.S. expressed in thousands of metric tonnes [imperial tons] are as follows:

TABLE 4.2 DIVISION OF TONNAGE OF GOODS CROSSING BORDERS METRIC TONS [IMPERIAL TONS]

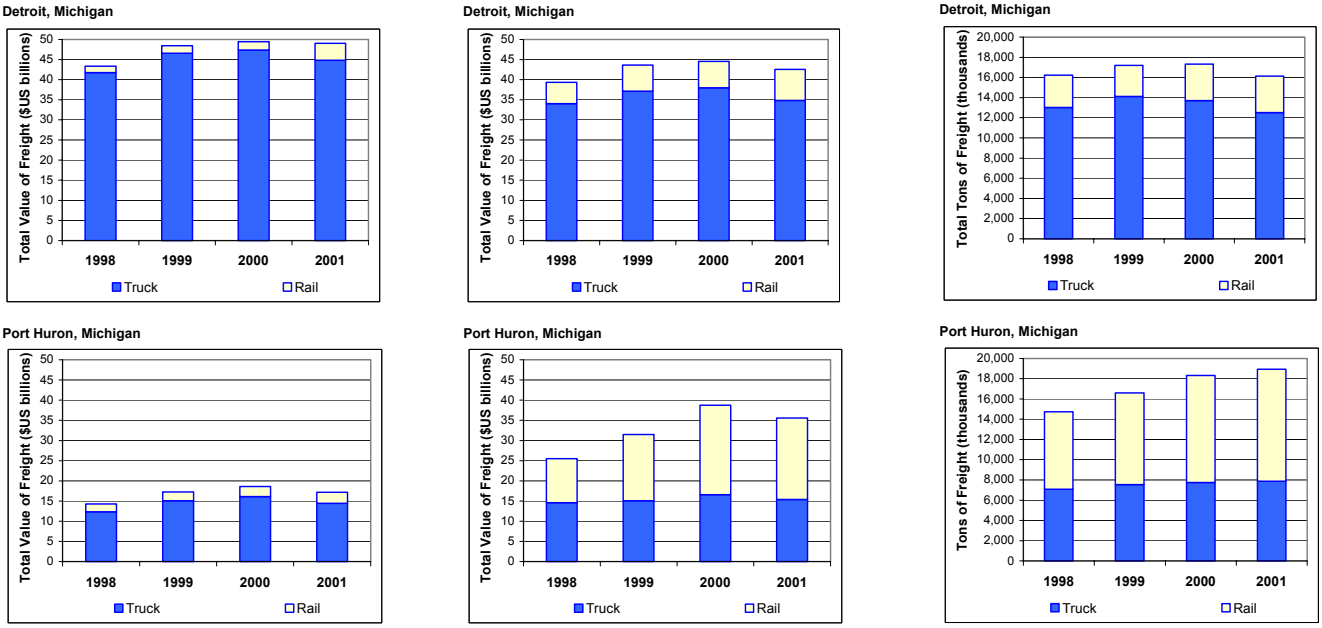
	1998	1999	2000	2001
Detroit River[1] Tonnage of Goods from Canada to U.S. (thousands)	13,028 [14,351]	14,130 [15,565]	13,714 [15,107]	12,510 [13,781]
St. Clair River[1] Tonnage of Goods from Canada to U.S. (thousands)	7,078 [7,797]	7,547 [8,314]	7,744 [8,531]	7,882 [8,683]

Source: U.S.D.O.T., Bureau of Transportation Statistics

[1] See footnote 1 from Table 4.1.

[1] Unless otherwise indicated a currency conversion rate of 1.6:1, Canadian to U.S., is used throughout this document.

Figure 4. 1: Truck and Rail Traffic: Detroit and Port Huron

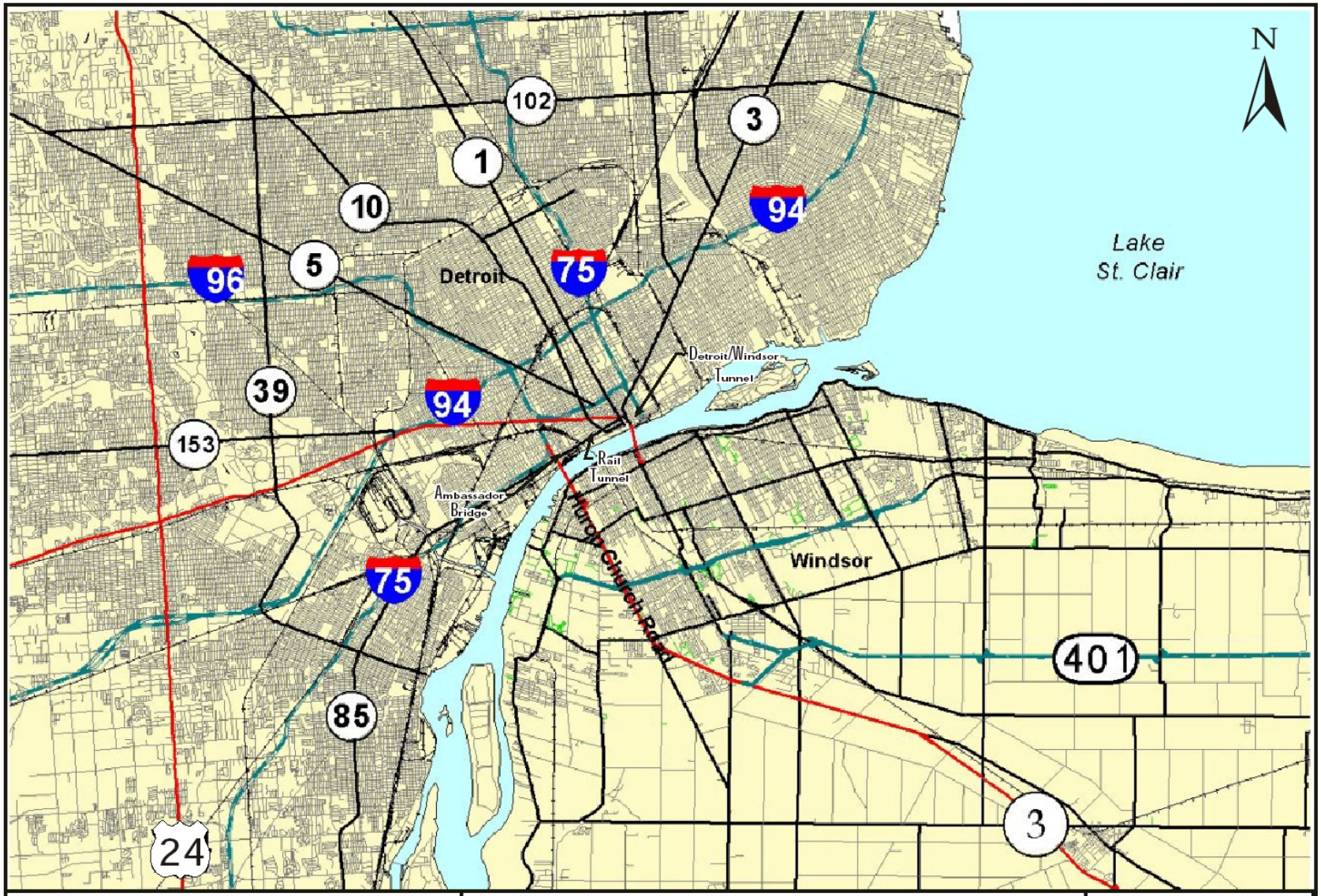


Thus, the Detroit River crossings handle in the order of two or more times as much freight traffic as does the Blue Water Bridge. Figure 4. 1, Truck and Rail Traffic: Detroit and Port Huron, provides graphs that compare the levels of road and rail traffic between Detroit-Windsor and Port Huron-Sarnia.

4.1.1 Windsor-Detroit Crossings

A travel routing through Windsor-Detroit provides highway connections in Michigan to Interstate 75, a north-south travel corridor through the United States leading ultimately to Florida. Interstate 75 is regarded as the new auto-manufacturing corridor of the U.S. For travel destined to locations within Michigan, there is a network of highways that extends from the two border crossings: Interstate-94 continues east to Ann Arbor, Kalamazoo and Chicago; Interstate 96 extends northeast to Lansing and Grand Rapids. Interstate 75 also travels north to Flint and Saginaw; and Interstate 94 extends northeast to Port Huron. There is also significant local commuter traffic between Windsor and Detroit.

Exhibits 4.1 – 4.2 show the local road network in Windsor-Detroit and the access routings to the international border crossings by automobile. Highway 401 is a four lane controlled access highway that approaches Windsor from the south, with principle access provided at Dougall Avenue, which routes traffic to the Detroit-Windsor Tunnel via Ouellette Avenue and Goyeau Street; and at Highway 3, where Highway 401 terminates. At the intersection with Highway 401, Highway 3 becomes Talbot Road and continues in a northwest direction until it links with and becomes Huron Church Road. Huron Church Road is a 6-lane roadway that links directly to the Ambassador Bridge. Over the past 10 years, the City of Windsor has been consolidating road entrances and implementing traffic control measures (e.g., reduced speed limit, raised median, turnaround loops) to control traffic movements and improve operations on Huron Church Line.



DETROIT AND WINDSOR ROADWAY SYSTEM | **EXHIBIT 4.1**

	ESSEX COUNTY ROADWAY SYSTEM	EXHIBIT 4.2

International traffic from the Ambassador Bridge creates significant queuing and traffic delay on Huron Church Road. During peak crossing periods, truck queues emanating from the Ambassador Bridge are at times over one kilometre in length. These long queues, exacerbated by the seventeen traffic signals on Huron-Church Road over this section, have undermined the intended role of Huron Church Road as a major urban arterial road within Windsor. The queues and delays also have associated impacts to adjacent residences and businesses, including the diversion of trucks onto other city streets that are not designed to handle high levels of heavy truck traffic.

Highway 3 itself is the second major access facility to the Ambassador Bridge, connecting Windsor to communities and recreational areas to the southeast and along the north shore of Lake Erie. At the city limits of Windsor, Highway 3 switches from being a provincial facility to a municipal facility at the junction with Highway 401, becoming Talbot Avenue/Huron Church Road before connecting with the Ambassador Bridge.

On the American side of the border, the Ambassador Bridge connects with Detroit's Interstate Highway system at Interstate 75, near key system interchanges with Interstates 96 and 94. These limited-access highways serve Detroit's downtown and distribute traffic to and from highway corridors connecting other parts of the state and other major trade corridors throughout the U.S. All traffic bound for Canada can approach the bridge directly from Interstate 75, while only auto traffic can directly connect to the Interstate system from the bridge. Trucks entering the U.S. must use Fort Street to access Interstate 75 at the Clark Street entrance ramp, which is approximately one mile southwest of the bridge. Recent restrictions further prohibit trucks exiting the bridge from traveling northeast on Fort Street.

The central location and heavy volume of the Interstate facilities at the bridge ensure significant system congestion to which traffic from the Ambassador Bridge does contribute. It is common for queuing to occur on exit ramps to the bridge. However, because truck traffic to Canada goes through secondary inspection off-site, back-ups related to truck traffic are less severe than those on the Canadian side.

The Detroit-Windsor Tunnel is accessed in Canada from Goyeau Street, a minor arterial that is part of the core business district of the City of Windsor. Access for long distance trips is provided via a signed exit at Highway 401 leading motorists along urban arterial roads Dougall Avenue and Ouellette Avenue to the Tunnel entrance. This crossing is most convenient to those local travelers with one trip end in either the Detroit or Windsor central business districts. In Detroit, the tunnel connects into the city's central business district via Randolph Street and Jefferson Avenue. Interstate 375 and M-10, a state freeway, which connect to the regional interstate network, can be accessed in close proximity to the tunnel via Jefferson Street. Significant queuing on Jefferson Street also occurs during peak crossing periods.

In general, the Ambassador Bridge serves longer distance vehicular travel with a high commercial vehicle component. The Detroit-Windsor Tunnel serves more local traffic between the two cities, given its connectivity to the urban road systems and the geometric constraints that preclude many large trucks from using this facility.

Huron Church Road is a primary artery and a significant commercial corridor in Windsor. Thus, a significant issue to be addressed by this study is the mix of long distance (primarily commercial) traffic mixing with local traffic and conflicting with access to area businesses.

4.1.2 Sarnia-Port Huron Crossing

The road and highway system in the Sarnia-Port Huron area is shown in Exhibit 4.3. As noted earlier, Highway 402 is the primary highway facility leading to Sarnia and Michigan from Ontario, and tying into the major industrial/manufacturing and population centres in southcentral Ontario through its connection with Highway 401. This highway extends directly to the Blue Water Bridge Plaza. Other provincial facilities serving the Sarnia area include Highway 40 and Highway 21.

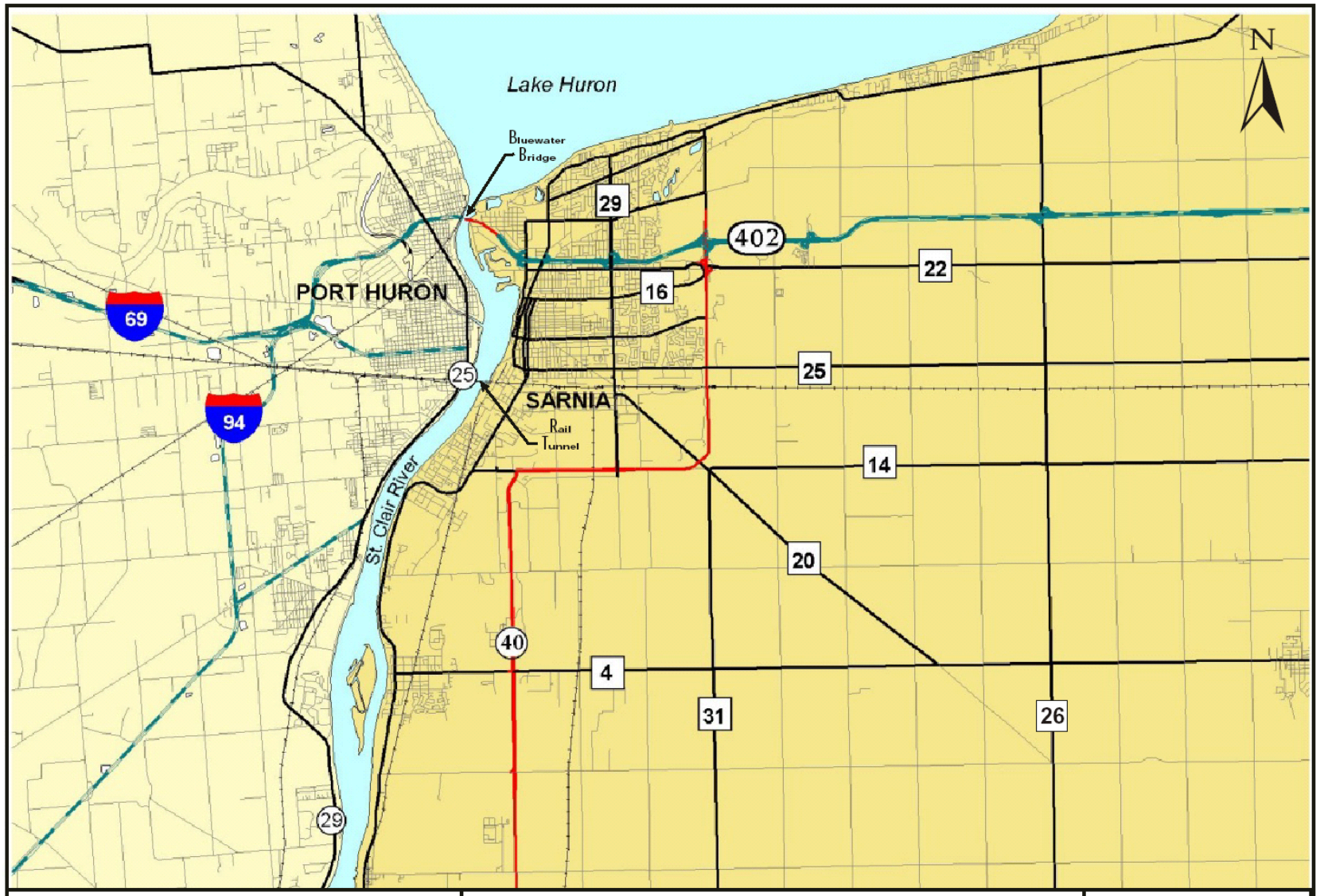
At Port Huron, the Blue Water Bridge ties directly to Interstate 69 to provide access to the western parts of Michigan, with Interstate 94 branching off to serve Detroit-bound traffic. A routing via Sarnia-Port Huron serves travel destined to the Flint area and also provides a continuous routing to Lansing and Chicago bypassing the heavy congestion and border delays associated with the Windsor-Detroit crossings. Traffic levels on the Blue-Water Bridge are also much more seasonal, owing to a higher proportion of recreation/tourist travel to vacation locations situated in the more northerly parts of Ontario and Michigan. Interstate 69 is also part of a strategic transportation corridor that links Canada with various central and Midwest locations in the United States and Mexico.

4.2 Border Crossing Issues

Accessibility to the three vehicular border crossings has been a challenge for some time. Both the bridge and tunnel crossings and their surrounding infrastructure were built more than seventy years ago and are surrounded by mature urban development. All efforts to resolve current and future capacity problems are constrained by these conditions. However, to date, the problem has not been with roadway capacity but rather with delays related to the volume of traffic moving through tollbooths and Customs inspection stations. This problem is more chronic on the U.S. side but has occurred occasionally on the Canadian side as well. This leads to extensive queuing on the roadways approaching the border crossings.

On each of the border crossings, the roadway capacity of the facility itself will not become a factor until issues of tollbooths, Customs inspection stations and local access/egress are at a level that will permit free flow on the facility. Even under such “free flow” conditions, roadway capacity on the Blue Water Bridge is unlikely to become a limiting factor with six lanes of traffic available in each direction.

The Detroit-Windsor Tunnel has an absolute capacity limit with its one lane in each direction and this crossing periodically reaches a stop-and-go condition during peak a.m. and p.m. periods. However, it is tollbooth operations, Customs inspection delays and local access/egress issues on each side of the Tunnel that place the limit on its ability to carry a significant amount of projected regional traffic demands. It generally serves travelers going from one city core to the other although it does provide access to I-75 and M-10 (the Lodge Expressway) on the U.S. side.



	PORT HURON AND SARNIA ROADWAY SYSTEM	EXHIBIT 4.3

The Ambassador Bridge has two lanes available for traffic in each direction but has traffic backups that extend across the span on many occasions. The right driving lane in each direction is reserved for trucks. Congestion is a result of delays in processing trucks through the Customs inspection booths on the U.S. side. A new bridge deck and ramps are planned for the Ambassador Bridge and these will help alleviate backups from tollbooths that, at times, extend onto the adjacent interstate highways in the U.S.

Of considerable local concern in regard to the current traffic flow configuration to the Ambassador Bridge is the role of Huron Church Road, the six-lane boulevard that provides the final three miles of access to the Bridge on the Canadian side. Huron Church Road is a major arterial for local traffic and is bordered by extensive shopping and entertainment attractions as well as the University of Windsor, which is adjacent to the roadway for the final mile before the bridge. Despite the high capacity of the roadway, extensive queues resulting from regular delays at the Ambassador Bridge have made truck-dominated congestion on Huron Church Road a daily occurrence. As a result of this congestion, local resistance to operational measures to increase the number of trucks on Huron Church Road is strong. Specifically, there is local resistance to the idea of widening Huron Church Road to solve the congestion problems created by delays at the bridge. It is the assertion of the City of Windsor Traffic Engineering Department that strategies to improve traffic flow should first address improving the operational capacity of the bridge before considering the need for increased capacity on Huron Church Road.

Ferries between Algonac, Michigan and Wallaceburg, Ontario and Marine City, Michigan and Sombra, Ontario provide limited crossing capacity between the two major crossing areas of Detroit-Windsor and Port Huron-Sarnia. However, the ability of additional ferries to create significant additional capacity is hampered by several factors, particularly in the Detroit-Windsor area. Like the other crossings, the ferries require adequate space for vehicle queuing and inspection, sufficient access and egress routes, and customs services. In the case of ferries, the cost of providing customs services must be encumbered by the ferry operator. Further, ferries must bear the additional cost of maintaining a safe crossing route, which in winter months could entail ice removal.

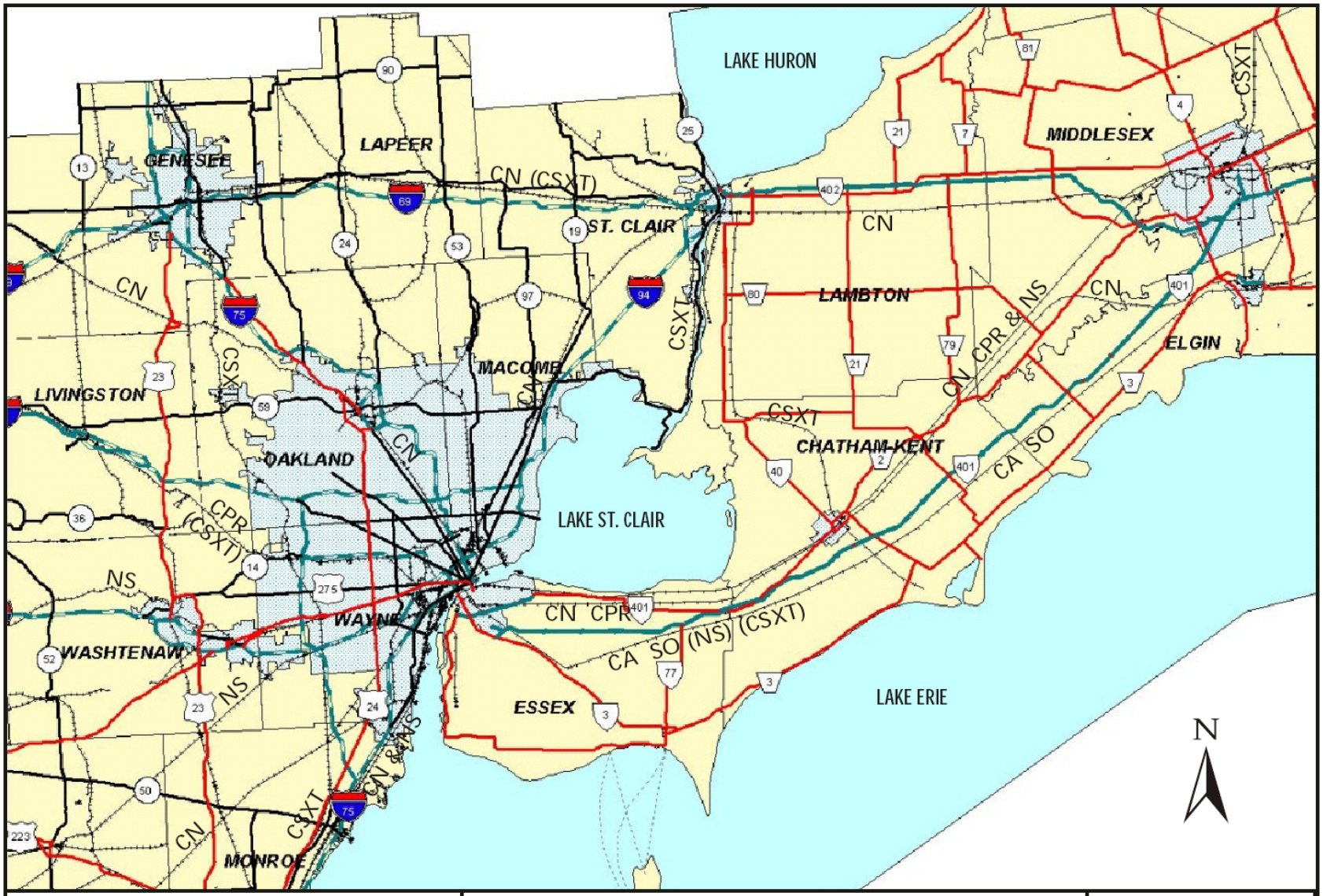
4.3 Non-Roadway

4.3.1 Railways

There are four major freight railway companies active in the study area (Exhibit 4.4):

- Canadian National (CN);
- Canadian Pacific Railway (CPR);
- CSX Transportation (CSX);
- Norfolk Southern Corporation (NS).

All four railways operate on both sides of the international border, although the first two are Canadian headquartered and the last two are U.S. headquartered.



STUDY AREA RAIL LINES | **EXHIBIT 4.4**

The CN main line between Toronto and Chicago passes via London, Sarnia/Port Huron and Flint. There is also a second main line connection to the Windsor area from London. At Chicago, CN connects with the former Wisconsin Central line, which it recently purchased, to give it its own line through to western Canada. At Chicago CN also connects with the former Illinois Central railway which it purchased a couple of years ago. Thus the line through Sarnia/Port Huron provides not only a connection between Canada and the United States, but a second connection to western Canada. This route offers minimal service to the areas in and around the border and is almost exclusively a long-haul route between Toronto and Chicago.

The Detroit-area service that is available is through the Sarnia/Port Huron tunnel west on the CN main line to Durand, west of Flint, and then southwest Detroit. Traffic then approaches Detroit from the northwest, from Durand.

The CPR main line from the east also goes through London and connects to Windsor. CPR trains pass through the Detroit-Windsor tunnel and use CSX tracks to access Chicago. From Chicago west, CPR has its own trackage (Soo Line) that connects with western Canada.

CN and CPR both offer all types of freight rail services, including merchandise and intermodal trains. Both railways have, in recent years, attempted to compete with trucks over shorter distances, less than 800 miles. They used two different approaches. CPR has implemented its Expressway service, i.e., a piggyback service carrying trailers on flat cars; the service is marketed to for-hire and private trucking operators, rather than being retailed to shippers directly. Currently, services are offered between Montreal and Toronto and between Toronto and Detroit. CN has used a different approach to re-enter the short-haul market. It uses RoadRailers, which are specially-built trailers pulled over the road by truck tractors and then mounted on rail wheels and made up into trains. CN markets the service directly to shippers. Currently, this service is offered in the Montreal-Toronto and Toronto-Chicago corridors. The Toronto-Chicago service utilizes the Sarnia-Port Huron tunnel.

CSX and NS are the major railways operating in Michigan. Both have been active in the state for many years. They jointly purchased the assets of the former Conrail system. Some of the former Conrail lines in the Detroit area are jointly operated by the two railways and are still shown as Conrail (CR) on the exhibit. In Canada, CSX owns a line between Sarnia and Blenheim, which intersects with both CN and CP. For the remainder of its Canadian operations, CSX operates with trackage rights over CN rail lines. NS also uses trackage rights rather than its own lines in Canada.

Norfolk Southern and CPR are the host for Triple Crown, another RoadRailer service. Triple Crown trains are operated over the CPR in Ontario between Toronto and points beyond Detroit. No local service is operated between Ontario and Michigan, although service from Michigan to other parts of the United States is also available through Triple Crown.

Several years ago, CN and CP bought the Canada Southern Railway (CASO), a former Con-Rail operation, which provides a shortcut between Windsor/Detroit and Fort Erie/Buffalo. However, they have not maintained through operation on this line and use various parts of it for different types of operations. This is shown as CASO on the exhibit.

A number of shortlines also operate in the study area including the Essex Terminal Railway (ETR) in the Windsor Area, the Ann Arbor Railroad (AA), the Adrian and Blissfield Railroad (ADBF), the Indiana and Ohio Railway (IORY), and the Tuscola and Saginaw Railway (TSBY) in Michigan.

There are cost, delay and capacity issues associated with rail facilities in the Windsor-Detroit area. At present, the rail system in Windsor is very fragmented causing delays, difficult access to the rail tunnel, as well as significant delays and interruptions to traffic on local streets. There are also poor connections on the American side. Geometric constraints with the rail tunnel also preclude the use of double-stacked cars. These obstacles have limited the amount of rail traffic through Windsor-Detroit and the railways and other interests are pursuing initiatives to increase the through capacity and efficiency. Plans have been announced for building another rail tunnel parallel to the existing twin tunnels, to handle the largest and most modern rail cars.

4.3.2 Cross-Border Links

There are two cross-border railway links, the Sarnia-Port Huron tunnel, owned and operated by CN, and the Windsor-Detroit rail tunnel, operated by CPR with financial partners.

The Sarnia-Port Huron tunnel is a single track. Originally opened in 1890, it was completely rebuilt and enlarged with completion in 1995. It can accommodate railway cars and loads of essentially all sizes, including double-stack container trains.

The Detroit-Windsor tunnel was constructed as two separate tubes and sunk to the bottom of the Detroit River. Each accommodates a single track. One of these was subsequently enlarged to take larger dimension equipment, while the other one is still in its original size. The larger one still cannot handle full double-stack dimension cars, however. There are proposals for a new tunnel, which would be of the maximum size. This proposal is coordinated with a plan to convert the two existing rail tunnels to carry trucks.

CN and CPR have recently entered into an agreement whereby they each can access both tunnels, although currently CN does not make extensive use of the Detroit-Windsor tunnel.

Although all four railways offer an intensive service of freight trains, CN and CPR operate most of the through trains crossing the border, including the RoadRailer and Expressway intermodal services.

The division of value of goods (in $U.S. billion) carried by rail across the two sections of frontiers (Detroit River bridge tunnel and the St. Clair River Blue Water Bridge) is described in Table 4.3, Division Of Goods Crossing Border By Rail ($US [$CDN] Billion).

TABLE 4.3 DIVISION OF GOODS CROSSING BORDER BY RAIL ($US [$CDN] BILLION)

	1998	1999	2000	2001
St. Clair River[2] Value of Goods from U.S. to Canada	10.9 [17.4]	16.4 [26.2]	22.2 [35.5]	20.2 [32.3]
St. Clair River[2] Value of Goods from Canada to U.S.	1.9 [3.0]	2.2 [3.5]	2.5 [4.0]	2.7 [4.3]
Total Crossing at St. Clair River	12.8 [20.4]	18.6 [29.7]	24.7 [39.5]	22.9 [36.7]
Detroit River[1] Value of Goods from U.S. to Canada	5.3 [8.5]	6.5 [10.4]	6.5 [10.4]	7.7 [12.3]
Detroit River[1] Value of Goods from Canada to U.S.	1.6 [2.6]	1.9 [3.0]	2.1 [3.4]	4.2 [6.7]
Total Crossing at Detroit River	6.9 [11.1]	8.4 [13.4]	8.6 [13.8]	11.9 [19.0]
Total Crossing Border	19.7 [31.5]	27.0 [43.1]	33.3 [53.3]	34.8 [55.7]

Source: U.S.D.O.T., Bureau of Transportation Statistics

[1] Via the Windsor-Detroit rail tunnel.

[2] Via the Sarnia-Port Huron rail tunnel.

4.3.3 Passenger Services

The two passenger train operators in the area are VIA Rail Canada Inc. in Canada, and the National Railroad Passenger Corporation (Amtrak) in the United States.

VIA operates services between Toronto and both Sarnia and Windsor, with two trips per day in each direction to Sarnia, and four trains per day in each direction to Windsor. One of the Sarnia trains is a joint VIA/Amtrak through routing, which links Toronto with Chicago. On the U.S. side of the border it goes via Port Huron, Flint, East Lansing, Battle Creek and Kalamazoo. In Battle Creek, it joins the main Detroit-Chicago Amtrak routing. In addition to the daily Port Huron-Toronto train, Amtrak operates three trains per day in each direction between Chicago and Detroit. Two of these trains continue to Pontiac, Michigan.

There are proposals to reroute the Toronto-Chicago through train via Windsor and Detroit, using the CPR tunnel. In the past, through passenger trains have operated via this route.

Rail passenger traffic entering the United States from Canada at the Windsor-Detroit crossing has been growing steadily over the years increasing from 35,900 passengers in 1995 to 53,700 passengers in 2000.

4.3.4 Ports

Active ports in this study area include Windsor, Detroit, Sarnia. Port Huron, St. Clair, Marysville, and Marine City. Detroit and Windsor have organized port commissions, i.e., Detroit/Wayne County Port Authority and the Windsor Port Authority. In the most recent year for which statistics are available, Detroit handled 15.7 million metric tonnes (year 2000) and Windsor 5.8 million tonnes (1998). In both cases, almost all the cargo is North American, moving between these ports and other Great Lakes harbours. The most important commodity in Detroit is iron ore, followed by stone/aggregates, coal and cement. The major commodities handled in Windsor are stone, salt, grain and general cargo. For some portion of each year marine service is interrupted by ice on the St. Clair and Detroit Rivers.

A ferry service is operated between Windsor and Detroit for the movement of trucks carrying, among other things, hazardous materials that are not permitted in the road tunnel or on the Ambassador Bridge. The Walpole Island Ferry provides a six-minute trip between the U.S. and Canada between Algonac, Michigan and Wallaceburg, Ontario and carries autos and small commercial vehicles. The Marine City Ferry operates a seven-minute trip between Marine City, Michigan and Sombra, Ontario and carries autos and large trucks. The location of the ferry crossings are shown along with all border crossings in Exhibit 4.5, Study Area Border Crossings.

A proposal is being discussed that would be part of a long-term strategy and would add additional truck and passenger ferry service between Detroit and Windsor to serve a niche market as well as overflow at other border crossings.

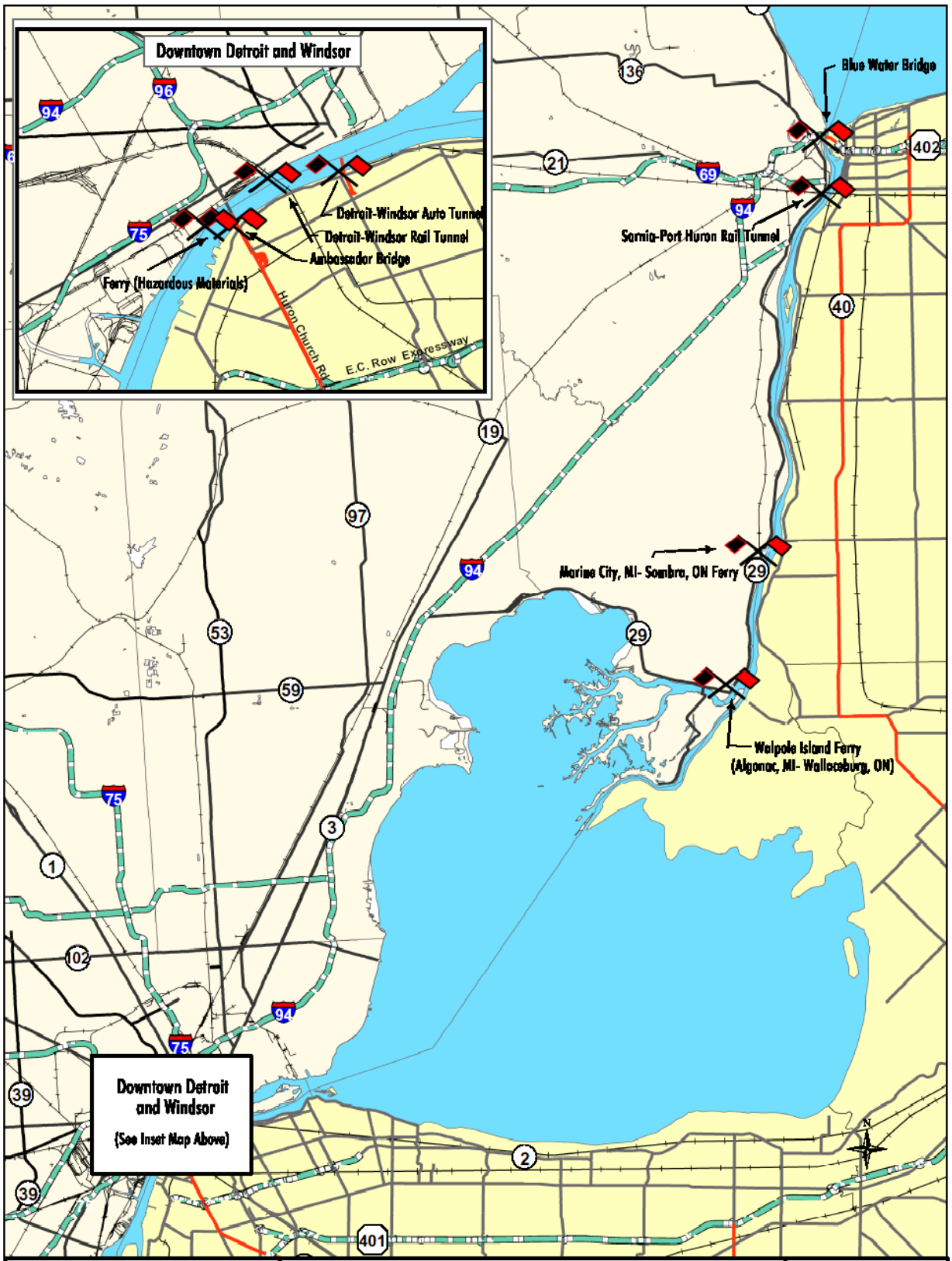
4.3.5 Airports

Airports with scheduled service in the area are located in:

- Detroit. The major airport in Detroit is Wayne County's Detroit Metropolitan Airport, operated by Wayne County. In the year 2000, over 35 million passengers were handled. Detroit Metro Airport or DTW is the eighth busiest airport in North America in terms of passengers handled, and the thirteenth in the world. Detroit also has a second airport, Detroit City Airport, but scheduled operations have been discontinued.
- Windsor. Windsor Airport is used for both scheduled and charter services. The major destination for scheduled services is Toronto.
- Sarnia. Sarnia Airport is also served by flights to and from Toronto.

London, to the east of the study area, and Lansing, to the west, also have airports with scheduled services.

Air is not being viewed as part of the solution to the easing of border crossing traffic but is included here as a matter of completeness.



AREA BORDER CROSSINGS

EXHIBIT 4.5

5. Socio-Economic Overview

In this section:

The purpose of this section is to provide a socio-economic context of the region and its importance in the context of the National economies of Canada and the United States of America. For this analysis, the area considered includes the Essex, Lambton, Kent, Middlesex and Elgin counties in Canada and the entire seven county region represented by the Southeast Michigan Council of Governments (SEMCOG) in the United States. The discussion provides the socio-economic profile of the region and its importance in broader context of both National economies.

This section is comprised of three main elements. First, the local regional economies and demography are examined from an historical and future outlook perspective. Next, the significance of the Detroit-Windsor and Port Huron-Sarnia border crossings are examined from the perspective of trade between Canada and the United States. Finally, the movement of people across the border crossings is also examined.

5.1 Socio-Economic Profile of the Areas Examined

The total geographic area has a population of approximately 5.9 million people. Eighty percent of the population of the region resides in the United States with Detroit being the largest city with a population of approximately one million. The Census metropolitan areas of London with a population of 432,000 and Windsor with a population of 307,000 are the largest centres on the Canadian side and represent approximately 68 percent of the total region's Canadian population.

The service industry and manufacturing, led by the automotive sector are the primary sources of employment in the region representing almost 60% of total employment.

5.1.1 Overview of Border Crossing Points

The section provides a brief description of the communities containing the Detroit-Windsor and Port Huron-Sarnia border crossing points and the Province / State containing them.

5.1.2 Ontario

Ontario is one of the largest provinces in Canada, representing approximately 42 percent of Canadian Gross Domestic Product and 38 percent of the Canadian population in 2000. Ontario's economy has been quite robust with an average of 4.5 percent annual growth in Real GDP since 1994. Ontario, and in particular southern Ontario, is Canada's manufacturing heartland. Ontario accounts for 60 percent of all Canadian manufactured exports. The top exports are autos and autoparts, electronics and electrical products, food processing, fabricated and metal products, chemicals and machinery. The free trade agreements between Canada, the United States and Mexico have had a profound influence on the provincial economy by providing more secure, stable access to these large markets. Ontario is the third largest trading partner of the United States (after Canada and Japan).

5.1.3 Windsor

Windsor with its city population of over 200,000 and census metropolitan area population of over 300,000 is the 15th largest metropolitan area in Canada. Approximately 27 percent of employment in Windsor is related to manufacturing with a heavy emphasis towards the automotive industry from light vehicle manufacturing to automotive machine, tool, die and mold industry. Its location, adjacent to Detroit, gives it unique access to the Big Three original equipment manufacturers.[2] Approximately, 37,000 jobs in Windsor are in the automotive manufacturing sector. The DaimlerChrysler Canada auto assembly plant, Ford Motor company auto parts plant and the Windsor Casino are the three largest employers providing over 20,000 jobs to the city. The opening of the Windsor Casino in 1995 also gave the economy a boost by increasing tourism from the United States.

5.1.4 Sarnia

The City of Sarnia with its population of over 70,000 is Lake Huron's largest city. Its location about an hour's drive from London, Ontario, and Detroit, Michigan gives it important strategic advantages. Approximately 17 percent of employment in Sarnia is related to manufacturing and another 17 percent to trade. Another important contributor to the local economy is agriculture. This sector is fast emerging as one of the most technologically progressive, export-oriented industries in the area. With its vast network of petrochemical and refining complexes, Sarnia-Lambton is internationally known as a significant industrial chemical centre. Within North America, the industrial community is a significant producer of chemicals, plastics, synthetic rubber and a variety of oil-based products for both North American and offshore markets.

5.1.5 Michigan

The seven SEMCOG counties of this region contain 4.6 million residents with Wayne County (2.0 million) and Oakland County (1.2 million) being the largest. Michigan, and the Detroit region have for decades been closely associated with, and in fact synonymous with, the automobile industry. The state economy is dominated by the manufacturing sector, of which approximately 40 percent is represented by the Transportation Equipment category. Michigan shows the same trend as elsewhere in the United States and other developed countries: relatively slow growth in employment in the manufacturing sector contrasted to the rapid growth of the services sectors. The state's manufacturing sector was able to increase its output by 37 percent in nominal terms with an employment increase of only 8.6 percent. Large increases in productivity are evident from automation of assembly processes and reduction in inventory carrying costs from just-in-time techniques both in the automotive industry and the manufacturing sector in general.

[2] The Big Three original equipment manufacturers are DaimlerChrysler, General Motors and Ford.

5.1.6 Detroit

Detroit's population of slightly less than one million make it the largest city in the study area and its economic and business hub. The pattern of growth and development in the Detroit area mirrors that of many U.S. cities. At the inner core of the region, Detroit itself has been losing population to its suburbs for many years. The same is true for jobs. Wayne County, which contains Detroit, has also lost population and jobs over the period 1990 – 2000 but to a lesser extent.[3] The SEMCOG region as whole has continued to grow in both population and employment. SEMCOG is the federally-designated transportation planning agency for the Detroit region. The U.S. Census Consolidated Metropolitan Statistical Area (CMSA) covers the Flint area in addition to the counties belonging to SEMCOG.

The City of Detroit is notably poorer than the average of the Detroit-Ann Arbor-Flint CMSA or the state of Michigan as a whole. Census 2000 figures for median household income are $30,383, $47,769, and $43,448 respectively.[4] However, non-residential development in the City of Detroit as well as the region continued its significant expansion into the year 2000 with a total of 54 million square feet of floor space completed or under construction.[5]

5.1.7 Port Huron

St. Clair County's convenient location and outstanding transportation network make the area especially attractive to manufacturers. "Just-in-Time" delivery is an important component in the industrial makeup of the area. NAFTA has focused attention on the area as a particularly desirable location situated midway between Chicago and Toronto on the fastest growing industrial corridor in North America. It is also important to note that Port Huron is within one hour's driving time of the world's largest concentration of automotive assembly plants. Some of the largest employers include Daimler Chrysler, Domtar Eddy Specialty Papers, and ADM Technologies.

5.1.8 Population

Table 5.1 provides the population of the Canadian and U.S. segments of the study area over the past 20 Years. Population for the period 1981-1991 declined marginally due to an exodus of people from the Detroit area. In the latest ten-year period, population grew by 5.8 percent. In general, population growth was much stronger on the Canadian side.

[3] Southeast Michigan Council of Governments, 2030 regional Development Forecast for Southeast Michigan
[4] U.S. Census 2000 Supplementary Survey
[5] SEMCOG, Non-residential Development Activity in Southeast Michigan 2000, October 2001

TABLE 5.1: HISTORICAL POPULATION OF STUDY AREA (000)

				10 Year Growth Rate		
	Canada	U.S.	Total	Canada	U.S.	Total
2000	1,086	4,834	5,920	8.0%	5.3%	5.8%
1990	1,006	4,590	5,596	9.0%	-2.0%	-0.2%
1980	923	4,683	5,605	N/A	N/A	N/A

Source: Statistics Canada and SEMCOG

In Canada, from 1980-2000, approximately 90 percent of the growth in population came from the counties of Essex and Middlesex. In the U.S. over the same period, the population of Wayne County declined by almost 12 percent while the population of the surrounding counties grew by 20 percent. Table 5.2 and 5.3 provide the population counts for all counties.

TABLE 5.2: HISTORICAL POPULATION BY ONTARIO COUNTY (000)

	Essex	Lambton	Chatham-Kent	Middlesex	Elgin	Total	10 Year Growth
2000	370	127	108	400	81	1,086	8.0%
1990	323	129	110	369	75	1,006	9.0%
1980	309	123	107	314	69	923	N/A

Source: Statistics Canada, HLB

TABLE 5.3: HISTORIC POPULATION BY MICHIGAN COUNTY (000)

	Wayne	St. Claire	Livingston	Macomb	Monroe	Oakland	Washtenaw	Total	10 Year Growth
2000	2,061	164	157	788	146	1,194	323	4,834	5.3%
1990	2,112	146	116	717	134	1,084	283	4,590	-2.0%
1980	2,338	139	100	695	135	1,012	265	4,683	N/A

Source: SEMCOG

Employment

Table 5.4 provides the employment figures for the Canadian and U.S. segments of the study area for 1990-1996. Overall employment grew in the region by 7 percent over that period. Some 70 percent of this employment growth came from the Oakland County. Since 1990, private-sector employment in Oakland County has grown 34 percent faster than it has in the nation. Tables 5.5 and 5.6 provide the breakdown for all counties.

TABLE 5.4: EMPLOYMENT IN STUDY AREA (000)

				Growth		
	Canada	U.S.	Total	Canada	U.S.	Total
1996	536	2,544	3,080	1.3%	8.2%	7.0%
1990	529	2,350	2,879	N/A	N/A	N/A

Source: Statistics Canada, SEMCOG and HLB.

TABLE 5.5: EMPLOYMENT BY ONTARIO COUNTY (000)

	Essex	Lambton	Chatham-Kent	Middlesex	Elgin	Total	Growth
1996	179	64	55	199	39	536	1.3%
1990	161	66	57	206	39	529	N/A

Source: Statistics Canada.

TABLE 5.6: EMPLOYMENT BY MICHIGAN COUNTY (000)

	Wayne	St. Claire	Livingston	Macomb	Monroe	Oakland	Washtenaw	Total	Growth
2000	971	65	59	383	54	910	230	2,673	13.7%
1990	976	56	39	334	50	681	214	2,350	N/A

Source: SEMCOG.

The primary source of employment is the service industry, representing approximately 39 percent of all jobs. Manufacturing, led by the automotive industry is the next largest class contributing to 18 percent of total jobs in Canada and the U.S., respectively. Figure 5.1 provides the distribution of employment by industrial sector.

Household Composition

The demographic make-up in terms of household structure is similar on both sides of the border with average household size being 2.6 persons per household and approximately 79 percent of the population older than 15 years. Tables 5.7 and 5.8 provide a summary of household characteristics by county.

FIGURE 5.1: DISTRIBUTION OF EMPLOYMENT - STUDY AREA

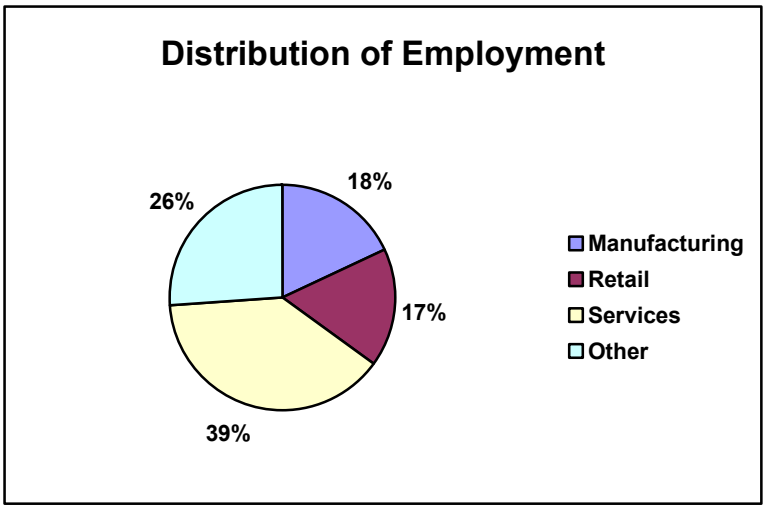


TABLE 5.7: OTHER VARIABLES: ONTARIO STUDY AREA BY COUNTY, 1996

	Essex	Lambton	Kent	Middlesex	Elgin	Total
Population	350	129	110	390	79	1,058
Households	131	49	41	151	29	401
Household Size	2.7	2.6	2.7	2.6	2.8	2.6
% of Population over 15	79%	78%	79%	79%	78%	79%
Average Income*	19.9 [27.1]	19.7 [26.8]	18.2 [19.7]	19.7 [26.8]	17.7 [24.1]	19.4 [26.5]

* average income of individuals reporting income.
Source: Statistics Canada.

TABLE 5.8: OTHER VARIABLES: MICHIGAN STUDY AREA BY COUNTY, 2000

	Wayne	St. Claire	Livingston	Macomb	Monroe	Oakland	Washtenaw	Total
Population (000)	2,061	164	157	788	146	1,194	323	4,834
Households (000)	768	62	55	309	54	471	125	1,845
Household Size	2.7	2.6	2.8	2.5	2.7	2.5	2.6	2.6
% of Population over 15	72%	73%	71%	76%	73%	75%	78%	79%
Average Income	27.4 [40.5]	26.2 [38.9]	34.1 [50.6]	30.4 [45.1]	29.0 [43.0]	45.9 [68.1]	38.7 [57.5]	27.5 [40.8]

Source: SEMCOG, Bureau of Economic Analysis, U.S. Department of Commerce.

Future Outlook

The total population of the study area is forecast to grow by 13 percent over the next 30 years. Growth is forecast in all counties except for Wayne County that is expected to have its population decline marginally over this forecast horizon. In all other counties, population is forecast to grow by a composite rate of 21 percent. As the baby boomers age, the distribution of the population by age group also changes. The proportion of the population 18 years and older is expected to increase to 81 percent in 2030 from 79

percent in 2000. Over that time period, the total population in the 18 years and older age cohort increases by 18 percent, well in excess of total population growth. Table 5.9 provides a summary of the demographic forecast for the period 2000 to 2030.

In the U.S. part of the study area, employment is forecast to grow by 16 percent from 2000 to 2030 as job growth slows due to a growing shortage of potential workers. In fact, the total working age population is expected to decrease over that time period. While employment projections are not available for the Canadian counties, the potential labor force as proxied by the population aged 20-64 is expected to grow by approximately 11 percent so a constrained labor supply is not as large a factor.

Households in the U.S. part of the study area are expected to grow by 22 percent and the average household size is expected to decrease from 2.6 to 2.3 over the next 30 years. This forecast reflects the aging population and a slowing in the growth by households with children and a large increase in the proportion of households with a person over 65. While forecasts are not available for the Canadian part of the study area, one would expect similar trends over the next 30 years: household growth to exceed population growth and average household size to decrease.

TABLE 5.9: FORECAST SUMMARY TO 2030

	Canada		U.S.		Total		% Change		
	2000	2030	2000	2030	2000	2030	Canada	U.S.	Total
Population (000)	1,094	1,278	4,834	5,401	5,928	6,679	17%	12%	13%
Employment (000)	N/A	N/A	2,673	3,110	N/A	N/A	N/A	16%	N/A
Households (000)	N/A	N/A	1,845	2,248	N/A	N/A	N/A	22%	N/A
Household Size	N/A	N/A	2.5	2.3	N/A	N/A	N/A	-8%	N/A
% of Population over 18	76%	82%	74%	76%	79%	81%	7%	4%	3%

N/A: Forecasts of employment and households in Canadian counties are not available.
Source: SEMCOG, Ontario Ministry of Finance and HLB.

5.2 Border Crossing Movements

5.2.1 Trade

Canada and the United States are the largest bilateral trade partners in the world. The North American Free Trade Agreement has had significant impact on trade between the two nations, solidifying/reinforcing access to bilateral trade for both markets. In 2001, 87 percent of the value of Canadian exports was destined for the United States. Approximately 40 percent of these exports entered the United States via either the Detroit-Windsor or Port Huron-Sarnia corridors, signifying the importance of these border crossings to both National economies of both the United States and Canada. Canada is also the largest importer of U.S. products, with 22 percent of total United States exports destined for Canada and more than two-thirds of these exports are headed for Ontario.

The Government of Canada's 2001 Budget Plan noted that: "A well functioning Canada-U.S. border is critical to the Canadian economy, and to the manufacturing sector in particular. In fact two-way merchandise trade between the two economies rose from about $100 billion in 1980 to over $600 billion in 2000, while its share of Canadian GDP almost doubled to close to 60 percent during the same time period. Including trade in services,

two-way trade between Canada and the U.S. now totals close to $2 billion per day – by far the largest two-way trade between any two countries.

Uncertainty regarding (border) delays translates into real costs for Canadian and U.S. producers, particularly in the manufacturing sector, where just-in-time inventory systems mean that a significant share of inputs and final products are in transit at any one time."

The most significant component of this bilateral trade is related to the automotive industry. The Autopact, the 1965 agreement between Canada and the U.S. that opened the way for Canadian auto plants to produce automobiles for sale in the U.S., followed by the North American Free Trade Act (NAFTA), has propelled Canada into an ongoing trade surplus situation with the United States. Exports to the United States were negligible prior to the pact but now cars and trucks are Canada's largest items of export. With the "Big Three" original automakers located next door in Detroit, Ontario has become a leader in automotive manufacturing exports to the United States. Similarly, Michigan has become a major importer of Canadian products. In fact, 16 percent of all Canadian worldwide exports are destined for Michigan.

These increased trade flows have resulted in a robust increase in truck and railcar crossings at Detroit-Windsor and Port Huron-Sarnia. Since 1995, truck and railcar crossings have grown at average annual rates of 5.2 percent and 6.6 percent, respectively. Trucks now represent one-fifth of all vehicle crossings at Detroit-Windsor and Port Huron-Sarnia.

5.2.2 Canadian and Ontario Exports and Imports with the United States and Michigan

Influenced by strong economic growth and trade liberalization agreements, such as NAFTA and the Autopact, Canada-U.S. trade has grown significantly and has been one of the key contributors to the vibrant economies on both sides of the border. In particular, since NAFTA, Canada's reliance on the U.S. as its primary trading partner, has increased significantly. Tables 5.10 and 5.11 summarize the value of trade flows between Ontario/Canada and Michigan/United States over the past ten years.

TABLE 5.10 CANADIAN AND ONTARIO EXPORTS TO THE UNITED STATES AND MICHIGAN BILLIONS OF $US [$CDN]

	1992	2001	AVERAGE ANNUAL GROWTH
Ontario Exports to Michigan	23.7 [28.7]	41.2 [63.8]	6.3% (9.3%)
Ontario Exports to the US	60.0 [72.5]	121.3 [187.7]	8.1% (11.1%)
Michigan as a % of Total Ontario Exports	35%	32%	N/A
Michigan as a % of Total Ontario Exports to U.S.	58%	53%	N/A
Canadian Exports to Michigan	25.3 [30.5]	45.8 [70.7]	6.8% (9.8%)
Canadian Exports to the US	104.0 [125.7]	227.0 [351.4]	9.1% (12.1%)
Canada Exports to World	134.8 [162.8]	259.9 [402.2]	7.6% (10.6)
Michigan as a % of Total Canadian Exports	19%	18%	N/A
U.S. as a % of Total Canadian Exports	77%	87%	N/A

Source: Industry Canada

TABLE 5.11: CANADIAN AND ONTARIO IMPORTS FROM THE U.S. AND MICHIGAN IN BILLIONS OF $US [$CDN]

Trade Flow	1992	2001	AVERAGE ANNUAL GROWTH
Ontario Imports from Michigan	12.3 [14.8]	18.1 [28.0]	4.4% [7.3%]
Ontario Imports from the U.S.	56.3 [68.0]	101.3 [156.8]	6.7% [9.7%]
Michigan as a % of Total Ontario Imports	17%	13%	N/A
Michigan as a % of Total Ontario Imports from U.S.	22%	18%	N/A
Canadian Imports from Michigan	12.8 [15.4]	18.7 [29.0]	4.3% [7.3%]
Canadian Imports from the US	79.8 [96.5]	141.1 [218.4]	6.5% [9.5%]
Canadian Imports from the World	122.5 [148.0]	221.5 [343.1]	6.8% [9.8%]
Michigan as a % of Total Canadian Imports	10%	8%	N/A
U.S. as a % of Total Canadian Imports	65%	64%	N/A

Source: Industry Canada

Canadian exports to, and imports from, the United States grew rapidly over the past ten years. The value of Canadian exports to the U.S. more than doubled over this period from $104 billion in 1992 to $227 in year 2001 for an average annual growth rate of approximately 9 percent. This robust growth was more than ten times greater than the growth in Canadian exports to the rest of the world.

The value of U.S. exports to Canada increased over the same time frame from $US 80 billion per year in 1992 to $US 141 billion in 2001, for an average annual growth rate of approximately 7 percent. U.S. trade with Canada over this time period has kept pace with U.S. trade to the rest of the world. Canada remains the largest trading partner of the U.S. and represents approximately 20% of total U.S. international trade.

The United States is Canada's largest trading partner by far. In 2001, trade with the U.S. represented 88 percent of total Canadian exports and 64 percent of total Canadian imports. The reliance of Canadian exports on the U.S. market has increased significantly. In 1992, the U.S. represented 77 percent of Canadian exports while in 2001 it represented 88 percent. The impact of the North America Free Trade Agreement on Canada cannot be understated. Canada is also the United States' largest trading partner with 22 percent of all exports destined for Canada.

Ontario is Canada's largest exporting and importing province. In 2001, Ontario foreign trade represented approximately one-half of total Canadian foreign trade both with the U.S. and worldwide.

From a state perspective, Michigan is also the largest trading partner of both Canada and Ontario. In particular, Michigan trade accounts for approximately 18 percent of total Canadian worldwide exports and 8 percent of total Canadian worldwide imports. In fact, almost one-half of total Michigan worldwide exports are to Canada. The significance of the Ontario market to Michigan is, perhaps, even larger. Over the past ten years, Ontario has accounted for approximately 97 percent of total Michigan exports to Canada and 90 percent of total Michigan imports from Canada.

5.2.3 Michigan Trade by Metropolitan Area

Exports from the Detroit area to Canada represented 63 percent of total Michigan exports to Canada. In fact, exports from Detroit to Canada represent 34 percent of total Michigan exports worldwide indicating the significance of Canada as that state's trading partner. This concentration of trade from the Detroit area is driven by the automotive sector.

5.2.4 Canadian and US Trade Patterns by Point of Entry and Mode

Detroit-Windsor and Port Huron-Sarnia are very important border crossing points in the context of Canada – U.S. bilateral trade and thus the national economies. Trade traversing these ports of entry represented approximately 41 percent of the value of total Canadian exports in 2000. Growth in both the value and volume of trade, and the number of vehicles – trucks and rail cars carrying that trade remains robust.

In terms of value of shipments, Detroit was the largest point of entry for Canadian exports to the US and Port Huron was the second largest indicating the significance of these trade corridors not just to the local economies or provincial/state economies, but also to Canada and the United States in general. Approximately one-fifth of the value of total Canadian exports to the U.S. pass through each of these ports. Table 5.12 provides a list of the top 10 ports of entry for Canadian exports to the U.S. as measured by value.

TABLE 5.12: VOLUME OF INCOMING TRADE THROUGH THE 10 U.S. LARGEST PORTS OF ENTRY IN TERMS OF COMMODITY VALUE, 2000 $US [$CDN]

RANK	*US PORT OF ENTRY*	VALUE (BILLIONS OF $US)	WEIGHT (MILLIONS OF TONNES[6])	PERCENT OF TOTAL VALUE
1	Detroit, Michigan	44.8 [66.5]	17.8	21.3%
2	Port Huron, Michigan	40.9 [60.7]	25.3	19.4%
3	Buffalo-Niagara Falls, NY	33.8 [50.2]	19.4	16.1%
4	Champlain-Rouses Pt., NY	11.2 [16.6]	5.7	5.3%
5	Alexandria Bay, NY	7.4 [11.0]	3.8	3.5%
6	Blaine, Washington	6.7 [10.0]	7.6	3.2%
7	Pembina, North Dakota	5.2 [7.7]	4.0	2.5%
8	Highgate Springs-Alburg, Vermont	4.6 [6.8]	2.5	2.2%
9	Sweetgrass, Montana	4.4 [6.5]	7.9	2.1%
10	Portal, North Dakota	3.9 [5.8]	8.1	1.8%
	Total (all ports)	**210.3 [312.3]**	**194.7**	**100.0%**

Source: Bureau of Transportation Statistics

[6] Weight is represented in metric tonnes.

In terms of the weight of commodity flows, Port Huron ranks first and Detroit third, reflecting the significance of trade carried by rail through Port Huron. Together, the two ports accounted for 22 percent of tonnage of Canadian exports. This relatively low figure (compared to the value of the commodity flows) indicates that Detroit/Windsor and Port Huron/Sarnia crossings deal primarily with high-value-added manufactured commodities such as automobiles.

The vast majority of the trade through the Detroit-Windsor port of entry is by truck while the majority of the trade through the Port Huron-Sarnia is by rail. In fact, 59 percent of the value of total Canadian exports via rail and 43 percent of the total value of Canadian truck exports cross at these border points.

Similarly, approximately half of the value of US exports to Canada (Table 5.14) via truck and rail cross at these two border points. Table 5.13 shows value of Canadian exports using these two ports of entry by mode of transportation.

TABLE 5.13: VALUE OF CANADIAN EXPORTS TO THE U.S. THROUGH WINDSOR/DETROIT AND SARNIA/PORT HURON BY MODE OF TRANSPORTATION, BILLIONS OF $US[$CDN]*

	1995	2001	Annual Growth
Total Canada to US Surface Trade			
Total Surface Trade	143.7 [197.1]	200.9 [311.1]	6% (8%)
Via Truck	89.0 [122.1]	117.1 [181.4]	5% (7%)
Via Rail	40.0 [54.9]	47.2 [73.1]	3% (5%)
Via Other	14.7 [20.2]	36.5 [56.6]	16% (19%)
Canada to US Surface Trade through Windsor/Detroit			
Total Surface Trade	39.6 [54.4]	42.7 [66.1]	1% (3%)
Via Truck	26.7 [36.6]	34.9 [54.0]	5% (7%)
Via Rail	12.7 [17.5]	7.7 [11.9]	-8% (-6%)
Via Other	0.2 [0.3]	0.1 [0.2]	-6% (-5%)
Canada to US Surface Trade through Sarnia/Port Huron			
Total Surface Trade	18.9 [26.0]	38.3 [59.3]	12% (15%)
Via Truck	11.3 [15.5]	15.4 [23.8]	5% (7%)
Via Rail	6.9 [9.4]	20.2 [31.3]	20% (22%)
Via Other	0.8 [1.1]	2.7 [4.1]	22% (25%)
Canada to US Surface Trade through Windsor/Detroit and Sarnia/Port Huron			
Total Surface Trade	58.5 [80.3]	81.0 1[25.4]	6% (8%)
Via Truck	37.9 [52.0]	50.2 [77.8]	5% (7%)
Via Rail	19.6 [26.9]	27.9 [43.2]	6% (8%)
Via Other	1.0 [1.4]	2.8 [4.3]	19% (21%)
% of Total Canada to US Surface Trade through Windsor/Detroit & Sarnia/Port Huron			
Total Surface Trade	41%	40%	N/A
Via Truck	43%	43%	N/A
Via Rail	49%	59%	N/A
Via Other	7%	8%	N/A

*Other includes mail, pipeline, aircraft, and vessels.
Source: Bureau of Transportation Statistics

TABLE 5.14: VALUE OF U.S. EXPORTS TO CANADA THROUGH WINDSOR/DETROIT AND SARNIA/PORT HURON BY MODE OF TRANSPORTATION, BILLIONS OF $US[$CDN]*

	1995	2001	Annual Growth
Total US to Canada Surface Trade			
Total Surface Trade	129.9 [178.2]	145.7 [225.6]	2% (4%)
Via Truck	97.4 [133.3]	117.1 [181.4]	3% (5%)
Via Rail	15.3 [21.0]	13.0 [20.1]	-3% (-1%)
Via Other	17.2 [23.6]	15.6 [24.1]	-2% (0%)
US to Canada Surface Trade through Windsor/Detroit			
Total Surface Trade	41.2 [56.6]	49.2 [76.2]	3% (5%)
Via Truck	34.5 [47.3]	44.8 [69.4]	4% (7%)
Via Rail	6.2 [8.5]	4.2 [6.5]	-6% (-4%)
Via Other	0.6 [0.8]	0.2 [0.3]	-19% (-17%)
US to Canada Surface Trade through Sarnia/Port Huron			
Total Surface Trade	11.0 [15.1]	17.3 [26.8]	8% (10%)
Via Truck	9.0 [12.3]	14.5 [22.4]	8% (10%)
Via Rail	1.9 [2.6]	2.7 [4.2]	6% (8%)
Via Other	0.1 [0.2]	0.1 [0.2]	-3% (-1%)
US to Canada Surface Trade through Windsor/Detroit and Sarnia/Port Huron			
Total Surface Trade	52.3 [71.7]	66.5 [103.3]	4% (6%)
Via Truck	43.5 [59.6]	59.3 [91.8]	5% (7%)
Via Rail	8.1 [11.1]	6.9 [10.7]	-3% (-1%)
Via Other	0.7 [1.0]	0.3 [0.4]	-14% (-13%)
% of Total US to Canada Surface Trade through Windsor/Detroit & Sarnia/Port Huron			
Total Surface Trade	40%	46%	N/A
Via Truck	45%	51%	N/A
Via Rail	53%	53%	N/A
Via Other	4%	2%	N/A

*Other includes mail, pipeline, aircraft, and vessels.
Source: Bureau of Transportation Statistics

On the basis of weight, 22 percent of Canadian exports[7] (Table 5.15) traverse these two border crossings. Over the period examined, the weight of shipments passing through these ports of entry grew at an average rate of approximately 6 percent, approximately 50% higher than trade flowing through all other ports of entry.

The two ports of entry differ significantly in terms of mode of transportation. Windsor - Detroit is primarily a border crossing for trucks and the volume of trade carried by other modes is decreasing both in relative and in absolute terms. Trade via trucks accounted for almost 87 percent of the value of total trade going through this port in year 2000. Sarnia / Port Huron deals with more diversified trade in terms of mode of transportation. Trade via truck, rail, and other modes accounted for 54 percent, 41 percent, and 5 percent of total trade, respectively.

[7] Similar data for U.S. to Canada trade is not available.

TABLE 5.15: WEIGHT OF CANADIAN EXPORTS TO THE US THROUGH WINDSOR/DETROIT AND SARNIA/ PORT HURON BY MODE OF TRANSPORTATION (BILLIONS OF METRIC TONNES)

	1995	2000	Annual Growth
Canada to US Surface Trade			
Total Surface Trade	161.3	194.7	4%
Via Truck	53.6	65.7	4%
Via Rail	46.3	60.0	5%
Via Other	61.4	69.0	2%
Canada to US Surface Trade through Detroit			
Total Surface Trade	14.9	17.8	4%
Via Truck	11.0	13.7	4%
Via Rail	3.6	3.6	0%
Via Other	0.3	0.5	13%
Canada to US Surface Trade through Port Huron			
Total Surface Trade	17.7	25.3	7%
Via Truck	6.3	7.7	4%
Via Rail	5.2	10.6	15%
Via Other	6.2	7.0	3%
Canada to US Surface Trade through Detroit and Port Huron			
Total Surface Trade	32.6	43.1	6%
Via Truck	17.3	21.4	4%
Via Rail	8.8	14.2	10%
Via Other	6.4	7.5	3%
% of Total Canada to US Surface Trade through Detroit & Port Huron			
Total Surface Trade	20%	22%	N/A
Via Truck	32%	33%	N/A
Via Rail	19%	24%	N/A
Via Other	11%	11%	N/A

*Other includes mail, pipeline, aircraft, and vessels.
Source: Bureau of Transportation Statistics

Total border crossings by trucks at these two ports of entry have grown at an average annual rate of 5.2% since 1995. The largest source of growth has been on the Ambassador Bridge where truck traffic has grown at an average rate of 6.5% since 1995. Truck traffic using the Detroit-Windsor Tunnel has declined since 1998 due to the migration of the business of a large tunnel customer from Canada to the U.S. Table 5.16 summarizes the border crossings by trucks via the three access means at Detroit-Windsor and Port Huron-Sarnia. Overall, trucks as a proportion of vehicle crossings have increased from 16 percent in 1995 to 20 percent in 2001.

Total border crossings by trucks at these two ports of entry have grown at an average annual rate of 5.2 percent since 1995. The largest source of growth has been on the Ambassador Bridge as truck traffic has migrated from the Detroit-Windsor tunnel. Table 5.16 summarizes the border crossings by trucks via the three access means at Detroit-

Windsor and Port Huron-Sarnia. Overall, trucks as a proportion of vehicle crossings have increased from 16 percent in 1995 to 20 percent in 2001.

TABLE 5.16: NUMBER OF BORDER CROSSINGS BY TRUCKS IN WINDSOR/DETROIT AND SARNIA/PORT HURON (000)

	Ambassador Bridge	Blue Water Bridge	Detroit Windsor Tunnel	Total
1995	2,219	1,179	267	3,665
1996	2,476	1,185	269	3,931
1997	2,697	1,270	258	4,224
1998	2,993	1,351	241	4,585
1999	3,428	1,495	205	5,128
2000	3,486	1,577	182	5,245
2001	3,238	1,556	170	4,965
Annual Growth	6.5%	4.7%	-7.3%	5.2%

Source: SEMCOG.

The number of rail car border crossings at these two ports of entry in the focus area has increased by an average annual rate of 6.6 percent since 1995. Over this timeframe, rail crossings have migrated from Detroit -Windsor to Port Huron-Sarnia with the opening of the new rail tunnel at Sarnia in May 1995. Table 5.17 summarizes the border crossings via rail.

TABLE 5.17: NUMBER OF RAIL CAR CROSSINGS IN WINDSOR/DETROIT AND SARNIA/PORT HURON

Year	Detroit-Windsor	Port Huron-Sarnia	Total
1995	444	172	616
1996	402	286	688
1997	378	352	730
1998	380	339	719
1999	385	342	727
2000	400	450	850
Annual Growth	-2.1%	21.2%	6.6%

Source: SEMCOG.

Future Outlook

The outlook for trade crossing the Canada – U.S. border at Detroit-Windsor and Port Huron-Sarnia remains bright in the medium and long terms. The Bank of Montreal projects that the motor vehicle parts sector is expected to grow faster than the overall

economy in the medium term to 2006 with an average rate of growth of 4.5%[8]. The motor vehicle sector is expected top keep pace with overall annual economic growth with 3.4%.

Over the longer term, the prospects for continued bilateral trade growth between Canada and the U.S. remain strong. As has been evidenced over the past thirty years, bilateral trade in goods and services has grown faster than GDP, increasing at an annual rate of approximately 11 percent. Moreover, in recent years, trade between Border States and provinces has grown significantly faster than national bilateral trade. The conclusion of a report commissioned by Industry Canada on North American Integration[9] is that over the next 25 years, the economic integration between Canada and the U.S. will advance markedly, two-way trade flows will continue to expand sharply and that trade will play an even greater role in both economies. This report cites that "free trade forces will continue to prevail over protectionist sentiments within the United States and that economic progress in North America will bring about a further increase in Canada-U.S. 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".

5.2.5 People Movement

Overall people movement between Canada and the United States has declined over the past ten years. Significant declines in the value of the Canadian dollar relative to the U.S. dollar, has significantly reduced trips by Canadians to the U.S., especially for vacation and shopping. While the same phenomenon has also impacted people movement at Detroit-Windsor and Port Huron-Sarnia, the introduction of Casinos in Windsor and Sarnia produced a large increase in U.S. visitors to these cities that has since lessened in Windsor due to three new downtown casinos in Detroit. In fact, from 1995-2000 passenger vehicle crossings grew at an average annual rate of 2.0 percent at these two ports of entry. During this same period many jobs were exported from the U.S. to Southwest Ontario and these served to keep Canadian workers at home who were previously employed in the U.S.

Table 5.18 shows the number of Canadian and US residents crossing the Canada - US border over the period from 1992 to 1999. U.S. person trips to Canada increased by 38 percent over this time frame while trips by Canadian residents to the U.S. have declined by 45 percent in total, due mostly to the reduction in same-day trips. This decline in travel to the U.S. by Canadian residents is, in part, due to the decline in the value of the Canadian dollar against the US dollar. The 27 percent depreciation in the dollar from 1991 to 2001 made shopping and travel in the U.S. less attractive for Canadians. Combined, total cross-border trips fell by approximately 3 per cent.

Table 5.19 provides further evidence of the change in purpose of Canada-U.S. travel. The primary purpose of overnight trips by Canadian residents to the U.S. was vacation although its share dropped from 68 percent in 1997 to 52 percent in 1999. The main purpose of overnight trips by US residents to Canada was also vacation and its share

[8] Prospects for Canadian Industries to 2006, Bank of Montreal Sectoral Outlook, March 2002.
[9] North American Integration: 25 Years Backward and Forward, by Gary C. Hufbauer and Jeffrey J. Schott, Institute for International Economics, 1998.

increased from 47 percent in 1997 to 57 percent in 1999. This is consistent with the effect of the depreciation in value of the Canadian dollar.

TABLE 5.18: TOTAL* BORDER CROSSINGS BY CANADIAN AND US RESIDENTS BY TRIP CATEGORY (IN MILLIONS)

CATEGORY OF TRIPS	1992	1999	AVERAGE ANNUAL GROWTH
Person-Trips by US Residents			
Same day	20.6	29.5	6.1%
Overnight	11.8	15.2	4.1%
Total	32.4	44.6	5.4%
Person-Trips by Canadian Residents			
Same day	58.1	28.1	-7.4%
Overnight	18.6	14.1	-3.4%
Total	76.7	42.2	-6.4%
Total Movement of People Between Canada and US			
Total same day	78.7	57.5	-3.9%
Total overnight	30.4	29.3	-0.5%
Grand Total	109.2	86.8	-2.9%

* Includes all border crossings
Source: Statistics Canada

TABLE 5.19: PURPOSE OF OVERNIGHT* TRIPS ACROSS THE BORDER (IN PERCENT OF TOTAL)

PURPOSE OF TRIP	1997	1999
Canadian Overnight Travel to the US		
Vacation	68%	52%
Visiting Friends or Relatives	18%	20%
Other Non-Business	9%	9%
Business	16%	19%
US Overnight Travel To Canada		
Vacation	47%	57%
Visiting Friends or Relatives	18%	18%
Other Non-Business	19%	9%
Business	16%	15%

* Includes all border crossings; similar data for same day trips were not available.
Source: Statistics Canada

5.2.6 People Movement by Port of Entry

Over the period 1995-2000, passengers in cars entering the U.S. through Port Huron increased at an average annual rate of 5.0 percent. Passengers in cars entering through Detroit remained relatively unchanged. In comparison, total passenger flows through all points of entry decreased by an average annual rate of minus 1.4 percent over the same period. In 2000, almost one-third of all car passengers that entered the U.S. from Canada

did so at Port Huron or Detroit, up significantly from 1995. Table 5.20 shows the number of border crossings by people coming into the US by port of entry.

TABLE 5.20: PASSENGERS IN CARS ENTERING THE U.S. (MILLIONS)

PORT OF ENTRY	1995	1996	1997	1998	1999	2000	Annual Growth
Detroit	21.6	24.2	16.8	19.5	19.4	21.7	0.1%
Port Huron	5.4	5.4	5.4	5.4	4.3	6.9	5.0%
Sub-Total	27.1	29.5	22.3	24.9	23.7	28.6	1.1%
All points of entry	96.8	101.1	92.7	88.3	89.4	90.1	-1.4%
Detroit & Port Huron as a % of Total	28%	29%	24%	28%	27%	32%	N/A
Exchange Rate: $U.S./$Cdn[1]	$0.73	$0.73	$0.72	$0.68	$0.67	$0.65	-2.4%

[1] Exchange rates reflect average daily closing prices (Source: Bank of Canada).
Source: Bureau of Transportation Statistics, Bank of Canada

5.2.7 Vehicle Movement by Point of Entry

Total passenger vehicle crossings at Detroit-Windsor and Port Huron-Sarnia for the period 1995 to 2001 remained virtually unchanged. However, the initial change in cross-border travel post-September 11, 2001 contributed to an overall decrease in cross-border vehicle movement of approximately 10 percent. Prior to 2001, overall passenger vehicle growth averaged 2.0 percent per annum. Again, this trend runs counter to the trends in all other ports of entry where passenger vehicle crossings decreased by 2.2 annually. Table 5.21 provides the number of total border crossing by passenger vehicles.

TABLE 5.21: TOTAL PASSENGER VEHICLE CROSSINGS (000)

	Ambassador Bridge	Blue Water Bridge	Detroit Windsor Tunnel	Total
1995	7,498	3,797	8,148	19,442
1996	7,824	3,850	8,754	20,429
1997	8,123	3,875	8,660	20,658
1998	8,609	3,840	9,136	21,585
1999	8,925	4,043	9,337	22,304
2000	8,734	4,390	8,368	21,491
2001	7,813	4,122	7,512	19,447
Annual Growth				
1995-2000	3.1%	2.9%	0.5%	2.0%
1995-2001	0.7%	1.4%	-1.3%	0.0%

Source: SEMCOG.

Table 5.22 illustrates a similar trend for bus border crossings, with average annual growth of 2.0 percent.

TABLE 5.22: TOTAL BUS CROSSINGS (000)

	Ambassador Bridge	Blue Water Bridge	Detroit Windsor Tunnel	Total
1995	66.6	4.5	74.0	145.1
1996	59.1	5.3	73.6	138.0
1997	59.2	6.2	68.8	134.3
1998	77.8	7.0	68.6	153.4
1999	87.3	7.5	66.5	161.3
2000	81.3	9.7	69.8	160.8
2001	79.0	9.0	66.0	153.9
Annual Growth				
1995-2000	4.1%	16.6%	-1.2%	2.1%
1995-2001	2.9%	12.1%	-1.9%	1.0%

Source: SEMCOG.

5.3 Land Uses

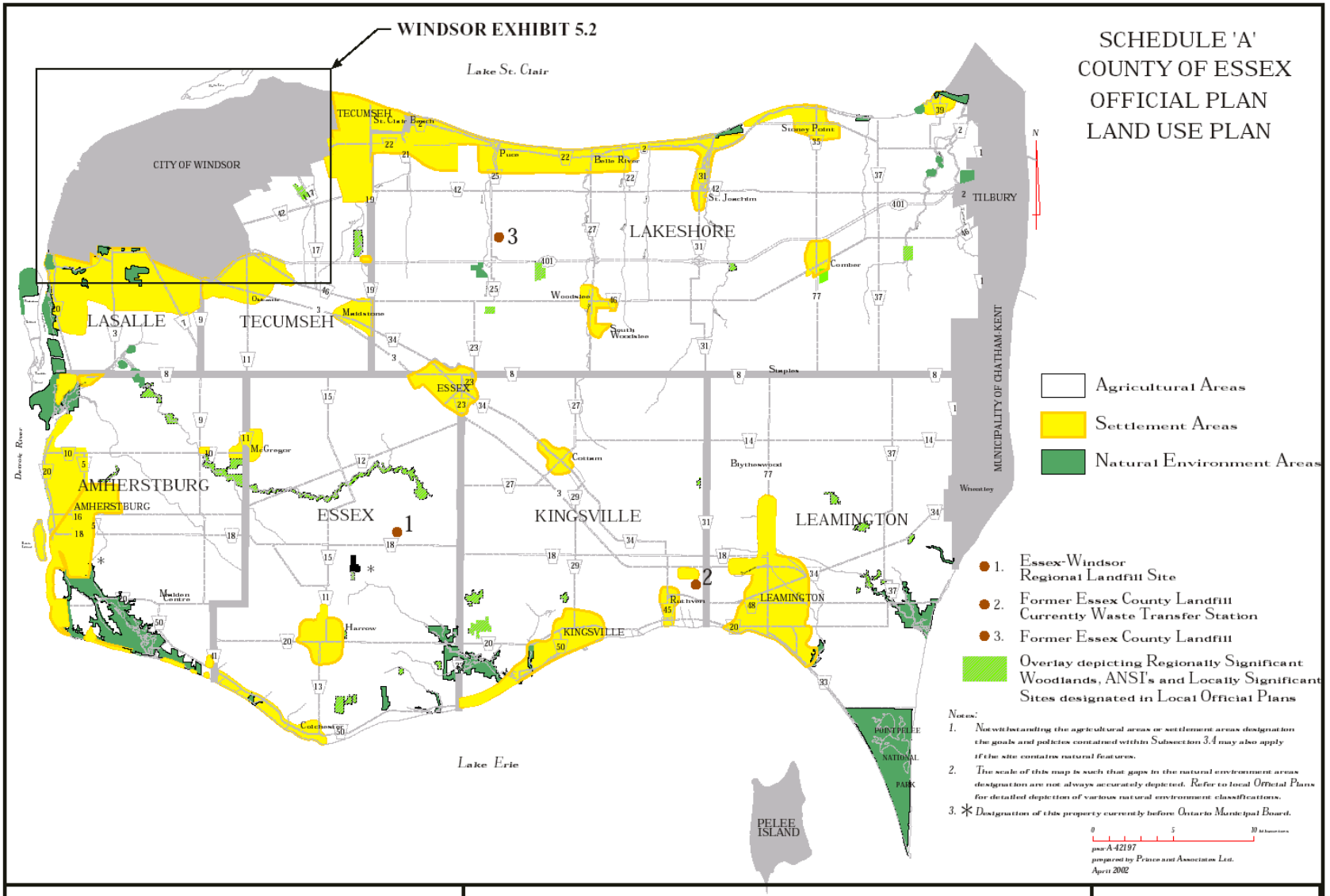
In the Detroit-Windsor area there are areas of industrial and rail yards on the U.S.-side that will be difficult to move and any encroachment on residential areas will encounter communities that have become well organized and galvanized against any governmental infrastructure intrusions. Along the St. Clair River there is agricultural land and vacation home development with supportive retail south of Port Huron. On the Canadian-side the land uses range from agricultural in southern Essex County and southern Lambton County to commercial and industrial north of Windsor and in Sarnia.

A suggested need for additional Customs inspection space will require extensive planning and, if secondary inspection is to remain adjacent to the crossing, will create special demands on the U.S. side.

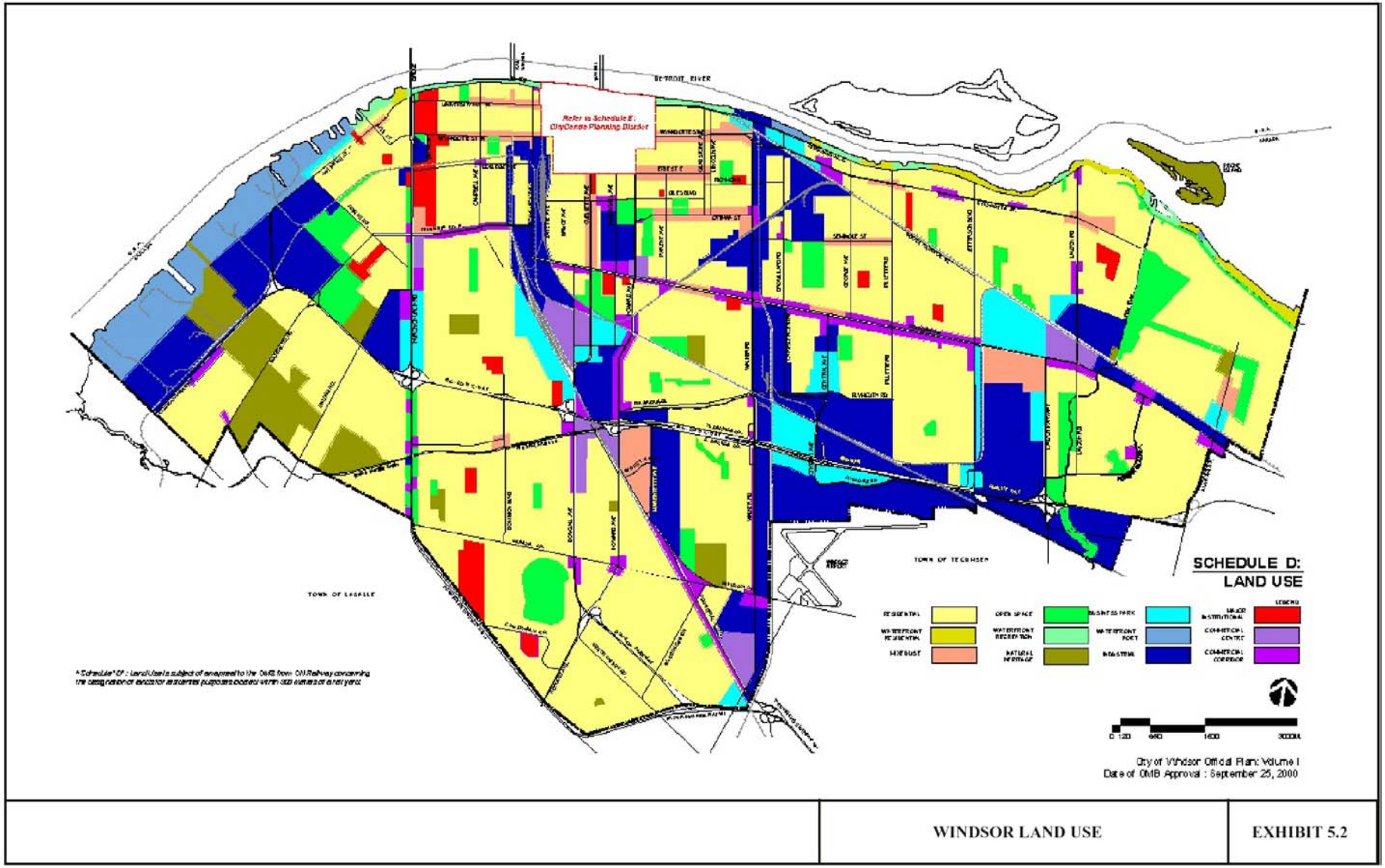
It is likely that there are some significant historical and archaeological sites in the path of many of the most obvious potential border crossing sites. The planned land uses in Essex County and in the cities of Windsor and Sarnia are displayed in Exhibits 5.1 – 5.3. The future land use maps for St. Clair and Wayne Counties in Michigan are displayed in Exhibits 5.4 and 5.5.

5.4 Socio-Economic Summary

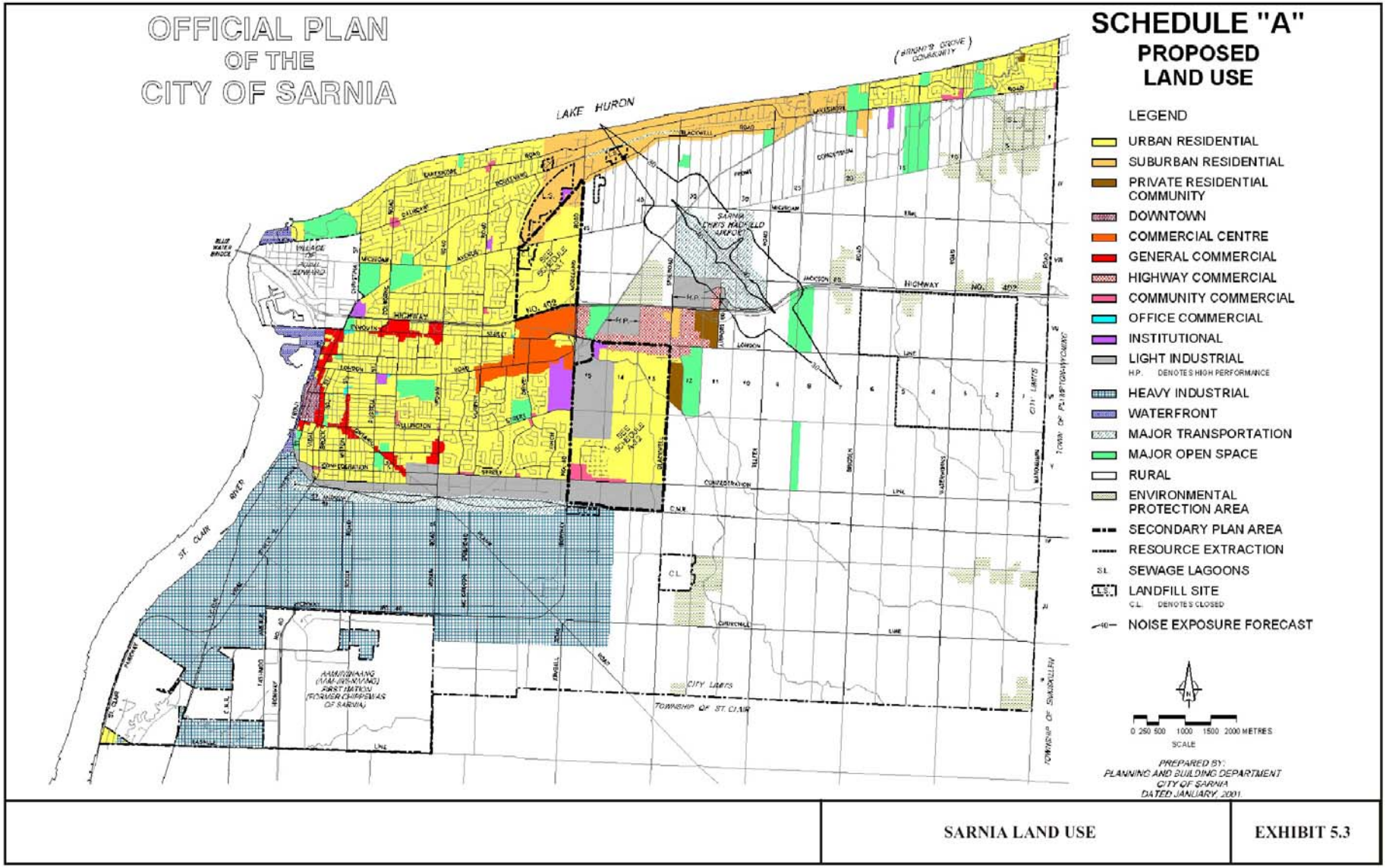
The border crossings at Detroit-Windsor and Port-Huron Sarnia are integral to the overall economic success of Canada and the United States, the world's largest bilateral trade partners. Trade liberalization between these two countries in the form of NAFTA and the Canada-U.S. Autopact, has resulted in exports leading economic growth and becoming an increasingly more significant component of the Canadian economy. Eighty-seven percent of the value of total Canadian worldwide exports is to the U.S., and forty-one percent of this trade, as measured by value, crosses these two border points. The majority of this trade is automotive related.



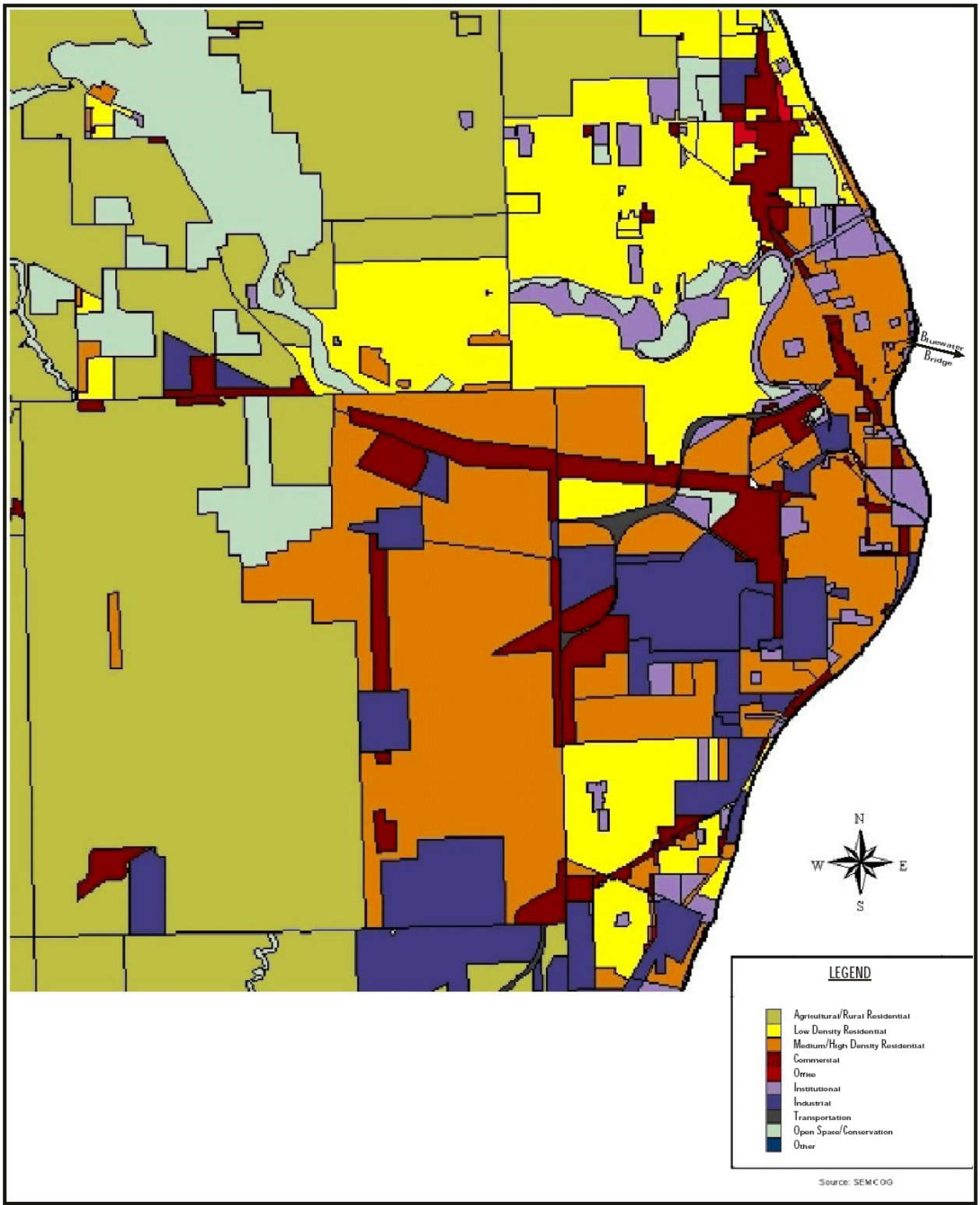
	ESSEX COUNTY LAND USE	EXHIBIT 5.1



	WINDSOR LAND USE	EXHIBIT 5.2

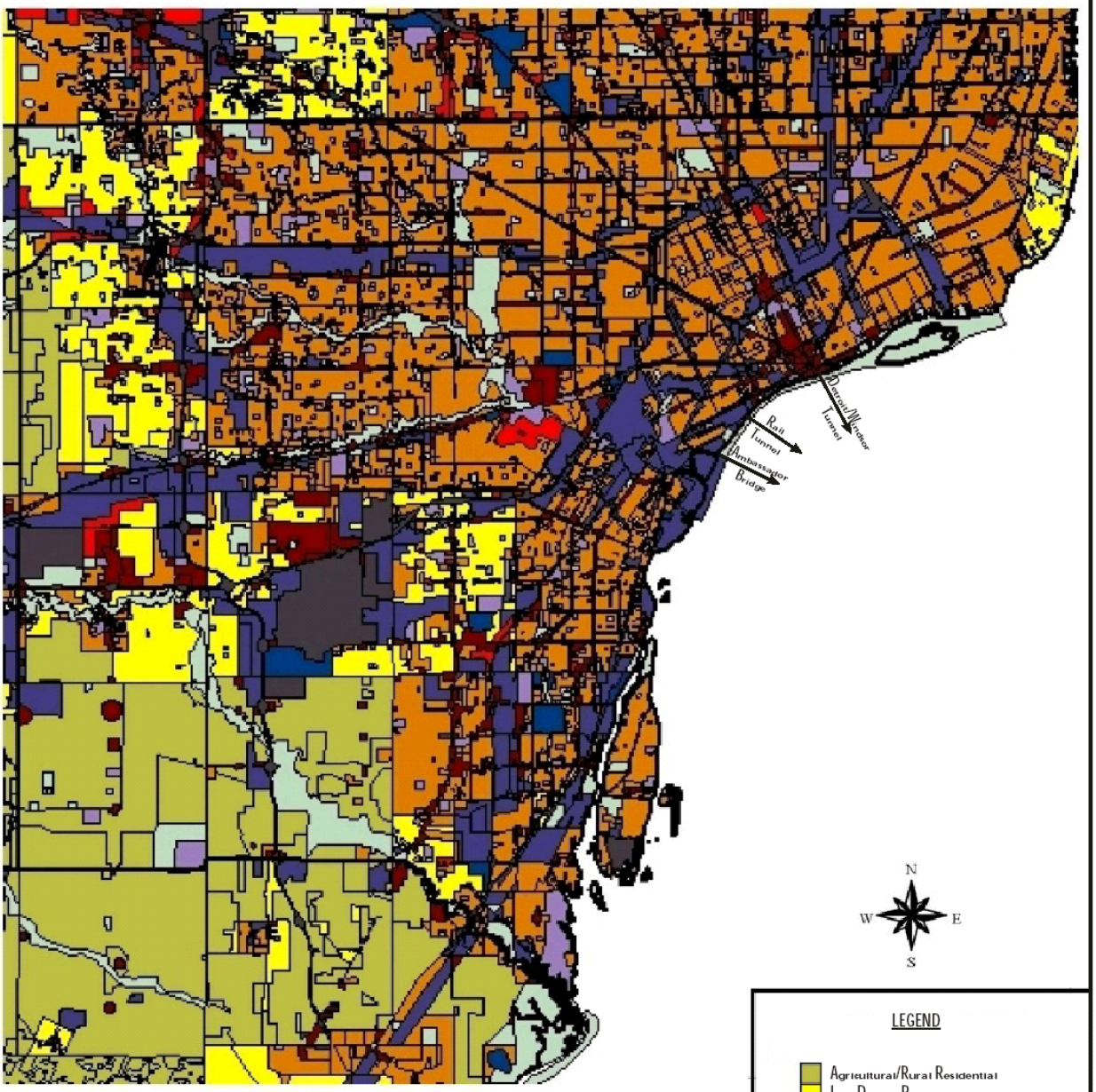


	SARNIA LAND USE	EXHIBIT 5.3



EASTERN ST. CLAIR COUNTY
FUTURE LAND USE

EXHIBIT 5.4



WAYNE COUNTY FUTURE LAND USE | **EXHIBIT 5.5**

The increased trade flows between the two Nations through these two ports has lead to a significant increase in truck and railcar crossings. From 1995 to 2001, cross-border truck crossings and railcar crossings averaged 5.2 percent and 6.6 percent annual growth, respectively. The proportion of trucks to total vehicle crossings at these ports is increasing steadily and now represents approximately 20 percent of total traffic.

The outlook for trade crossing the Canada – U.S. border at Detroit-Windsor and Port Huron-Sarnia remains bright. The motor vehicle parts sector automotive is expected to grow faster than the overall Canadian economy in the medium term to 2006 with an average rate of growth of 4.5 percent.[10] In general, a strengthening U.S. economy that is expected to grow in excess of 3 percent in real terms to 2006 will boost Canadian export growth.

Over the longer term, the prospects for continued bilateral trade growth between Canada and the U.S. remain strong. As has been evidenced over the past thirty years, bilateral trade in goods and services has grown faster than GDP, increasing at an annual rate of approximately 11 percent. Moreover, in recent years, trade between Border States and provinces has grown significantly faster than national bilateral trade.

The total population of the focus area is forecast to grow by 14 percent over the next 30 years. Growth is forecast in all counties except for Wayne County that is expected to have its population decline marginally over this forecast horizon. In all other counties, population is forecast to grow by a composite rate of 22 percent.

The decline in the value of the Canadian dollar relative to the U.S. dollar has resulted in a reduction in the total number of border crossings by residents across all border-crossing points. Crossings at Detroit-Windsor and Port Huron-Sarnia have not experienced this same trend.

While all BGA border crossings are very active and critically important, it is clear from the data that the Detroit-Windsor crossings (3.4 million trucks; 15.3 million cars) serve the vast majority of border crossing demand. The Blue Water Bridge in 2001 carried 1.5 million trucks and 4.1 million passenger cars.

[10] Prospects for Canadian Industries to 2006, Bank of Montreal Sectoral Outlook, March 2002.

6. Summary

In this section:

6.1 Summary

This Strategic and Geographic Overview Report has documented that the Broad Geographic Area of this study shows north and south alternative routes that each serve a different as well as a similar purpose. The major roadways serving the international trade corridors are relatively few and, consequently, they permit effective analysis. The infrastructure factors that can impact border-crossing movements have been identified in Section 4, Roadway Network, and they range from potential congestion on the federal highway systems to local community plans that might be impacted by a new or modified crossing. This overview also identifies the potential for laws, policies, and procedures to have a major impact on border crossing delays with future potential that could either significantly improve or critically hamper plans to reduce crossing delays. Section 5, Socioeconomic Overview, shows those factors in each nation that create the demand for cross border movements and shows the trends that can create greater demand. This overview also documents that the plethora of studies that have been produced in recent years that bear directly, or indirectly, on border crossing movements have been collected and reviewed.

With this Strategic and Geographic Overview Report, the study team is prepared to begin the detailed investigation that will lead to a clear understanding of the factors that will argue for, or against, investment in a new or modified border crossing infrastructure in the foreseeable future.

6.2 Objectives

Based upon the present review of the literature, and an analysis of the projected growth in population and employment within the study area, several issues have emerged as being critical to understanding the need for a new border crossing in the study area.

6.2.1 Access/Egress Issues

Access/egress issues both near to the crossings and further removed have been cited as being major contributors to costly delays. These are important considerations and the possibility that a new crossing would reduce such delays and offer a more direct route to the destinations of major border crossing traffic makes the search for such an alternative imperative.

While the border crossing between Southwest Ontario and Southeast Michigan can be viewed in terms of larger regional and even national traffic movements, it is clear that the potential sites for a new border crossing are relatively few. An initial view of the more long-distance traffic movements will be conducted using London, Ontario, the point where Highway 401 and Highway 402 split as the eastern limit and the point near Battle Creek, Michigan where Interstate 69 (extension of Highway 402) and Interstate 94 (one of the extensions of Highway 401) rejoin as the western border. It will be important to understand the relative volumes of local traffic, i.e., that which does not have a border

crossing in its trip, versus the international traffic, that which does cross the border. A further subdivision in the macro view will be between traffic that has a trip end within a short distance (to be defined in an early task) of the border and that which does not have such a near-border trip end.

6.2.2 Border Processing

There are challenges today in moving people and goods across the border between Southwest Ontario and Southeast Michigan that relate to issues other than the roadway capacities of the crossing infrastructure. Customs and immigration inspections consistently contribute to the congestion and delays experienced at each crossing. While severe delays were reported in the weeks immediately following September 11, 2001, those delays have now diminished and throughput at the border is approaching the conditions that occurred pre-9/11. In the U.S. additional inspection agents have been authorized and will be assigned following a training period. Improved Intelligent Transportation Systems (ITS) technology promises some additional benefits. The signing of the Manley-Ridge Agreement (Canada-U. S. Smart Border Declaration–Appendix B) has opened the door to consideration of improved policies and procedures that could further reduce delays. The impact of each of these potential improvements must be assessed in determining the need for a new crossing.

6.2.3 All Modes of Travel

Clearly, there is more than one mode of travel between Ontario and Michigan and a variety of factors ranging from direct cost, to delays, to Customs issues will play a part in determining if a particular movement uses road, rail, or water. Factors that could affect a shift from one mode to another will be reviewed and the assumptions that are made in this regard will be articulated. Some change in rail technology, for example, that might warrant a shift of significant volumes from road to rail could reduce the pressure on roadway crossings but might tax the available rail crossings. This will receive careful attention.

6.2.4 Origins and Destinations

It will be important to understand the origins and destinations of cross border traffic because this information will direct the attention of this study to potential crossing sites that can best address these traffic demand needs. The entry into Canada from Southeast Michigan, whether across the St. Clair River or the Detroit River, accesses all portions of Eastern Canada equally well. However, traffic on the U.S. side, whether bound to or from Canada, might be limited in its choice of trade corridors depending upon its U.S. trip end. This could range from those accessing the Southeast United States to the Far West U.S. The quality of this information will be crucial to the validity of the decisions reached during this study. Local border crossing traffic, that with a trip end within twenty miles of the border will also be limited in a choice of crossing site.

6.2.5 Economic Impacts

As alternative crossing sites become identified as viable options it will be important to evaluate their economic impacts on users, - commercial and non-commercial. Not only will there be direct benefits to the users of any new facility but there will be corresponding secondary benefits to the users of other facilities and to the users of other regional streets and highways as traffic is redistributed. Some areas will object to increased traffic flow and some areas will experience any increased traffic as an economic opportunity. It is from the aggregation of these benefits and costs that the economic viability of a new border crossing will be determined.

6.2.6 The Crossing As Part of A Larger System

Because of the far-reaching effects of any new border crossing on local, regional, and national traffic movements, it is incumbent upon this study to be able to demonstrate the value of a new crossing as part of both a regional and a national transportation system – all modes and all directions. It will be necessary to show that the implementation of a new crossing will be equally, or even more, beneficial in thirty years than it will upon its completion.

6.3 September 11, 2001

The events of September 11, 2001 changed the context of U.S. / Canada border security. With the twin and competing pressures of elevating the level of security and ensuring the free flow of people and trade, the two nations began creating a new template for border management. On December 12, 2001 the two nations issued "The Canada-U.S. Smart Border Declaration: Building A Smart Border For The 21st Century On The Foundation Of A North American Zone Of Confidence." (Appendix B)

It states that:

> "The terrorist actions of September 11 were an attack on our common commitment to democracy, the rule of law and a free and open economy. ..public security and economic security are mutually reinforcing. By working together to develop a zone of confidence against terrorist activity, we create a unique opportunity to build a smart border for the 21st century; a border that securely facilitates the free flow of people and commerce; a border that reflects the largest trading relationship in the world. "

Among its "four pillars is the commitment that,

> "***We will relieve congestion at key crossing points by investing reciprocally in border infrastructure and identifying technological solutions that will help to speed movement across the border. "[bold, italics added]***

In its "Action Plan" this document declared the intention to

> "Develop an integrated approach to improve security and facilitate trade through ***away-from-the-border processing for truck/rail cargo [bold, italics added]*** (and crews), including inland preclearance/post-clearance, international zones

and pre-processing centers at the border, and maritime port intransit preclearance.

16) Joint Facilities

Establish criteria, under current legislation and regulations, for the ***creation of small, remote joint border facilities***. Examine the legal and operational issues associated with the establishment of international zones and joint facilities, ***including armed protection or the arming of law enforcement officers in such zones and facilities. [bold, italics added]***

This document, as evidenced by the statements above, suggests an intention to address some of the issues most critical to the ability of border crossings to effectively handle the projected traffic volumes of the next thirty years.

The events of September 11 may also require a new analysis of traffic patterns as they have been both temporarily and permanently affected. Revised traffic projections should be considered in all future analyses of border traffic.

6.3.1 New U. S. Customs and Immigration Officers

In February 2002 the announcement was made that the U. S. Customs service would hire 285 additional officers for five Northern state border crossings. It is estimated that 78 of these new officers will be deployed to Detroit and 16 to Port Huron by the end of 2002. This could ameliorate what some believe to be the most significant problem in improving traffic flow across the U. S. / Canada border.

In addition, the U.S. Immigration and Naturalization Service is in the process of hiring 6,000 new officers including border patrol agents and immigration inspectors, by September 2002. The specific assignment of these new officers has not bee announced, although

6.3.2 The Canadian Auto Workers New Policy Vision

In May, 2002, the Canadian Auto Workers (CAW/TCA) issued, "GETTING BACK IN GEAR: *A New Policy Vision For Canada's Auto Industry."*

In this document the CAW states that:

"… most U.S.-bound auto shipments spend substantially more time traversing the 15 traffic lights which are encountered between the end of Highway 401 and the Ambassador Bridge in Windsor, than they do waiting for border inspection."

It was proposed that the federal government establish a fund to:

"… target existing road transportation bottlenecks in the Oshawa-Windsor corridor … widening Highway 401 to the Detroit River, and the construction of a new bridge crossing between Windsor and Detroit."

The document suggests that

> "… measures like these would reduce shipment times for Canadian auto exports by substantially more than even the complete elimination of waiting times at the U.S. border."

The observations of those who regularly use the border crossings are of merit. These observations and recommendations will be evaluated in the course of this study.

APPENDIX A

Literature Review

Southwestern Ontario Frontier International Gateway Study Technical Report - December 1998

This is a Long-Range Planning Study to the Year to the Year 2021 to assess the adequacy of potential highway connections to the Southwestern Ontario Frontier International Gateway. McCormick Rankin Corporation was the prime consultant.

- The study area extended from just outside the greater Toronto area (GTA) including Cambridge and Woodstock to the U.S. border.
- Highway 401 is a four-lane controlled access freeway except for a six-lane section between Woodstock and London.
- Highway 402 is a four-lane controlled access freeway that connects Highway 401 at London to Sarnia.
- In 1995, southwestern Ontario gateways accounted for 42 percent ($151 B) of Canada/U.S. trade. The Niagara gateway accounted for 16 percent ($58 B) and the rest of Canada's gateways accounted for 42 percent ($151 B).
- Exports to the U.S. through the southwestern Ontario gateway increased by 75 percent between 1988 and 1995 – imports increased by 50 percent over the same time frame.
- About 50 percent of southwestern Ontario gateway trade is Transport Equipment.
- Trucks account for 75 percent of total trade with rail transport moving 23 percent.
- Data from the MTO – 1995 Commercial Vehicle Survey - annual cargo on 401 east of London equals 440 million.
- About 40 million has O/D at either southwestern or Niagara gateways.
- About 20 million is "in-transit" using 401 as a land bridge.
- Highway 401 east of London has about 11,000 trucks per day which is 29 percent of the total vehicles. Highway 402 has 3,700 daily trucks which is 16 percent of total vehicles.
- For clarification, Exhibit 3 shows 400 million on 401 east of London, west of London 150 million to Port Huron, and 290 million to Detroit. The additional 40 million is land bridge activity.
- Statistics Canada shows 50 percent of Canada/U.S. tourism expenditures is Ontario-based and about 30 percent of that crosses southwestern Ontario gateways. About 70 percent of this tourism value uses auto or bus modes.
- This study shows levels of service and traffic characteristics of provincial gateways.
- It also shows Windsor-Detroit crossings, Sonya-Port Huron crossings with dollar value and number of vehicles, and has time series that to Blue Water each year from 1984 through 1995 for traffic volumes and the same for the Ambassador Bridge and the tunnel.
- Trade projection outlooks taken from Statistics Canada and a 1997 EBTC report entitled "Trade and Traffic Across the Eastern U.S.-Canada Border" produced by Parsons Brinckerhoff provided the basis for trade projections.
- This produced two percent average annual growth for truck movements and two percent was also used for passenger vehicles.
- 2011 and 2021 forecast daily traffic flows on the provincial freeway network are provided, including level of service.

- Conclusions: International trade carried by trucks projected to increase at average annual rate of four to five percent.
  - ✓ Trade and truck traffic will double by 2021 increasing delays.
  - ✓ Blue Water Bridge will provide adequate capacity; however, truck processing on the Michigan side needs to be improved.
  - ✓ Detroit-Windsor Tunnel is close to capacity.
  - ✓ Ambassador Bridge will reach capacity of a four-lane bridge between 2011 and 2021.
  - ✓ Highway 403 projected to have adequate capacity.
  - ✓ Highway 402 projected to have adequate capacity but some pavement condition deficiencies.
  - ✓ The four-lane section of 401 between 402 and Wellington Road is expected to exceed LOS D by 2011.
  - ✓ The four-lane section of 401 from 403 to Kitchener will exceed LOS D by 2011.
  - ✓ The four-lane section of 401 between Windsor and London will exceed LOS D between 2011 and 2021.
  - ✓ The six-lane section of 401 from London to 403 will exceed LOS D between 2011 and 2021.
  - ✓ Six-lane Huron Church Road and four-lane section of Highway 3 from the Ambassador Bridge to Highway 401 will exceed LOS D by 2011.
  - ✓ ITS can alleviate constraints for about five years.
- Future traffic deficiencies on Huron Church Road/Highway 3 and the Ambassador Bridge represent a major discontinuity for trade and traffic across the Detroit River. It will be important to undertake a more detailed investigation with stakeholders to help determine the best solution to this problem. Three long-range options are illustrated.
  - ✓ Improving Huron Church/Highway 3 to the bridge.
  - ✓ Identifying new alignment to the existing bridge.
  - ✓ New route connecting to a new crossing of the Detroit River.
- There is a need to
  - ✓ Continue to address deficiencies on 401 and 402 including access control, operational solutions, and capacity improvements.
  - ✓ Address Huron Church/Highway 3/Ambassador Bridge problem with a binational study of corridor options.
  - ✓ Undertake a review of the preferred corridor including environmental impacts, social and economic considerations, and capital costs.
- The appendices include Highway 401, 402, and 403 background information for all segments including section length, lanes, DHV percent, and directional split. Also includes 1997 passenger vehicles, commercial vehicles, AADT, percent commercial, DHV, SVC, SVD, and LOS.
- Service volume is calculated as capacity times lane times the V/C ratio times FW which is lane width and lateral clearance factor times FHV which defined as one divided by one plus the percent of trucks times two times the percent of passengers car units minus one, and that whole thing times population factor.
- Appendix B covers existing and future gateway volumes.
- Forecasts based on annual average passenger vehicle growth of two percent and annual commercial vehicle growth of five percent.

- Commercial vehicle growth for a tunnel is primarily local in nature and forecast to be two percent annually, reflective of population growth anticipated for Windsor and Detroit.
- Ambassador Bridge is anticipated to approach capacity near 2014.
- Combined analysis of Ambassador Bridge and Windsor Tunnel indicates deficiency in 2012.
- By combining all three crossings, demand is approaching capacity by 2021.
- Appendix D includes economic statistics with a time series from 1968 to 1996 on Canadian imports and exports from the U.S. in current Canadian dollars and constant Canadian dollars.

St. Clair and Detroit Rivers International Crossings Study - 1990

The importance of the efficient flow of people and goods across the Ontario-Michigan border to the local, regional and national economies on both sides of the border has long been recognized. In 1989, the St. Clair and Detroit Rivers International Crossings Study was initiated in response to concerns at the time over the adverse economic impacts of present border crossing delays and congestion, with the prospect of increased cross border traffic associated with then impending United States/Canada Free Trade Agreement (1993) and the reduction and elimination of duties on many goods. The study was undertaken by the Ontario Ministry of Transportation, Michigan Department of Transportation and Transport Canada, following a formal agreement and signing of a memorandum of understanding (MOU) between the Province of Ontario and the State of Michigan, calling for joint activities and cooperation in border crossing, maritime commerce, the environment and other fields.

The study is particularly noteworthy in that it provides an extensive analysis of congestion and delays at the three border crossings on the Detroit and St. Clair Rivers, including documenting the causes of the delays and their economic impact, current and future traffic levels and recommending feasible operational and infrastructure problems to resolve existing and future needs. The study approach included extensive interviews with customs and immigration and other affected parties, with extensive analysis of bridge/tunnel operator logs and processing time surveys undertaken for the study.

It was found that significant delays were incurred, notably at the Ambassador Bridge crossing, with the principle cause being inspection delay at each border crossing facility due to inadequate staffing at the primary inspection booths by the customs and immigration agencies. Secondary delays were also found to be substantial, also largely due to insufficient staffing. During peak volume periods, inspection infrastructure was found to be insufficient. The capacity of the roadbed on the bridges and tunnels was found to be sufficient to accommodate the then peak demands at each crossing.

At the time of the study, the very large growth in cross border traffic was driven by an unusually strong economy, and the 5-year forecast (1994 horizon) prepared for the study assumed growth rates at a lower rate, but in keeping with longer term historical trends. The most likely bi-directional total traffic volumes projected for 1994 were 7.4 million vehicles for the Ambassador Bridge (9 M actual), 5.3 million for the Blue Water Bridge (5.1 M actual) and 6.4 million for the Detroit-Windsor Tunnel (7.4 M actual). It was concluded that roadway capacity would likely be exceeded for the tunnel, with the Blue Water Bridge approaching capacity for the then three-lane roadway (now expanded to six lanes, with the twinning of the bridge).

The study made several recommendations to reduce delay, including the following:

- Increased staffing and improved staff scheduling with the assistance of a border crossing information system of historic and real-time traffic flow data;
- Infrastructure and policies and procedures to increase inspection processing levels above those already planned;
- Increase in automated processing and expedited auto lanes for pre-approved travellers.
- Improved signage and communications for motorists, including dynamic signage and radio information.

Each of the above improvements has been implemented to some extent, most notably in terms of toll infrastructure on each side of the border and automated processing.

Trade and Traffic Flows Across the Eastern US-Canada Border

The Eastern Border Transportation Coalition (EBTC) was formed in 1993 to provide a bi-national coalition to focus on issues affecting the movement of people and goods across the US-Canada border. The formation of this coalition and the undertaking of the study Trade and Traffic Flows Across the Eastern US-Canada Border was a follow up to the ISTEA Section 6015 Study and funded by the Federal Highways Administration (FHWA). The purpose of the study was to provide a comprehensive picture of historic and current trade and traffic flows across the eastern border, describe border crossing operations, infrastructure and institutions, develop projections of future demand, and to identify and short and long term infrastructure needs.

The study provides detailed traffic and trade information by state/province and for each of four border crossing regions, including the Ontario-Michigan Region. The study described the level and importance of trade and traffic across the border, noting the importance of automotive industry in driving US-Canada trade and the importance of the Michigan/Ontario crossings, which accounts for a high proportion of total US Canada trade. The report notes the Michigan/Ontario Region has the highest traffic levels of any of the regions or States on the border, with the Ambassador Bridge and Windsor-Detroit being the top two busiest border crossing locations on the US/Canada border. It was noted that crossing delays had not been an issue in recent years, with the growth in traffic largely due to demand to the Windsor Casino, but occurring during off-peak periods.

The study developed future traffic estimates for the eastern border, which included a projected auto growth rate range of 2.0 to 2.5 percent and truck growth rate range and 4.1 to 7.5 percent per annum for the Michigan/Ontario Region. Traffic projections for individual crossings were not developed. In terms of general infrastructure needs, it was concluded that there was presently no infrastructure crises at border crossing points and on facilities to them, but the projected continued growth would like result in major deficiencies in the near term as auto volumes return to earlier rates of increase (decreases occurred 1992-94 due to the recession, changes in tariffs, reduced value of the Canadian dollar, reduced cross border shopping, etc.), with a potential economic crisis over the next 20 years due to the potential for very major delays to truck traffic.

Given the planning horizons of major infrastructure projects, immediate actions were noted as “imperative” so that necessary projects could be planned and under construction to meet future needs. Other major recommendations from the report included:

- Perform an objective study of crossing delay at relevant crossings;
- Undertake various data gathering initiatives to improve goods movement origin-destination information by mode;
- Accelerate the implementation of ITS at major crossing locations;
- Develop a strategy to achieve an open United States-Canada border, with a 2012 target date.

Since the completion of the Study, the EBTC has also been instrumental in several data collection initiatives have also transpired since the 1997 study, recognizing the need at the time to improve the quality of cross-border data. The EBTC provided funding and assistance with 2000 Canadian National Roadside Survey (NRS), an intercept survey of truck operators conducted approximately every 5-years, to include additional survey sites and increase sampling at locations near or across the US-Canada border.

The findings of the report also helped establish the need to acquire a comprehensive database of cross border traffic between Ontario-Michigan, which was carried out in 2000, as part of the Ontario-Michigan Border Crossing Traffic Study and funded by the Partnership members.

Southwestern Ontario Frontier International Gateway Study

Building on the data and findings from the EBTC report, the Ministry of Transportation of Ontario initiated the Southwestern Ontario International Gateway Study to provide a long range (2021) assessment of the economic importance of the gateway and adequacy of the provincial highway system to accommodate mid to long term travel needs, given future cross border traffic levels. Consistent with the previous Ontario-Michigan studies, the international gateway crossings in the study area included the Ambassador Bridge, Detroit-Windsor Tunnel and the Blue Water Bridge and the two railway tunnels.

The traffic forecasts were based on the EBTC report and subsequent analysis of trade issues that focused on Ontario's international gateways. It was projected that passenger vehicles would increase at an average annual growth rate of 2 percent and international truck traffic would increase at 5 percent. The supply/demand analysis indicated the following:

- the Ambassador Bridge would meet or exceed existing bridge capacity by the year 2014;
- the Detroit-Windsor Tunnel was approaching capacity in 1997, with limited opportunities for increasing capacity. It was expected that capacity limitations of the tunnel would divert traffic to the Ambassador Bridge, moving up the need for capacity improvements at the bridge to 2012;
- the Blue Water Bridge, in the process of being expanded from three to six lanes at the time, was expected to provide adequate capacity beyond the year 2021.

For the highway facilities, the 2021 level-of-service (LOS) analysis indicated that Highway 401 between Windsor and London would operate at LOS E at several sections and Highway 402 within Sarnia and immediately east of Sarnia would experience LOS D. Huron Church Road in Windsor leading to the Ambassador Bridge was forecast to operate at LOS D by 2011 and LOS E by 2021.

Based on the supply demand analysis, the study recommended the expansion or implementation of Intelligent Transportation Systems (ITS) along highway corridors and bridge crossings to provide short term (5-year) operational improvements. Over the long term, the need for major cross border capacity improvements to better connect Highway 401 to I-75 across the Detroit River was identified. Three long range conceptual options were described in the study, which included improvements to the present Huron Church/Ambassador Bridge connection, a new alignment to the existing Ambassador Bridge, and a new route to a new crossing of the Detroit River.

The study recommended a binational study of corridor options to examine the need and feasibility for a new international crossing in the Windsor-Detroit area, which, with the EBTC Study, provided the major impetus for this present study.

Ontario-Michigan Border Crossing Traffic Study - August 2001

- Funded jointly by MTO, Transport Canada, MDOT, FHWA.
- 22,300 travel interviews conducted during August, 2000 at the four Michigan border crossings, in both directions. Represents 7.87 percent of all vehicles. Truck volumes represent Ambassador Bridge equals 32 percent; Blue Water Bridge equals 29 percent; International Bridge equals 6 percent; tunnel equals 3 percent.
- At Windsor, trips to/from Casino Windsor total 12,200 per day and 16,100 on weekends.
- Nearly 90 percent of weekday tunnel traffic is local. Ambassador Bridge has 70 percent local traffic and the International Bridge 75 percent local traffic on weekdays. Blue Water Bridge local traffic is about 50 percent on weekdays.
- GTA is primary OD for 6.8 percent of Ambassador Bridge patrons, 1.4 percent of tunnel patrons, and 8 percent of BWB patrons on a typical weekday.
- Weekday traffic on AB and tunnel are heaviest in AM into the U.S. and PM into Canada.
- Vehicle occupancy averaged 1.98 persons for all crossings but was lower at tunnel and AB and higher at BWB.
- At AB and tunnel on weekdays, trips to U.S. were destined for work while trips to Canada were destined to casino as primary destination.
- On weekends, AB and tunnel trips to Canada destined primarily to casino and recreation/entertainment.
- At AB, 72 percent of all trips into Canada, 68 percent of all trips into the U.S. started and ended within the SEMCOG/Essex area.
- At the tunnel, 90 percent of all trips into Canada and 86 percent of all trips into the U.S. started and ended within the SEMCOG/Essex area.
- At the Blue Water Bridge, 44 percent of all trips into Canada, 49 percent of all trips into the U.S. started and ended within the SEMCOG/Lambton County area.
- At the IB, 75 percent of trips to Canada, 76 percent of trips to the U.S. started and ended within the Algoma district/Chippewa County area.
- Trip origins and destinations located outside SEMCOG and WALTS areas were geocoded to a place name (municipality) level.
- Trip O-D within the SEMCOG and WALTS area were also coded to a block face level.
- A set of super analysis zones (SAZ) were defined and each trip O-D was assigned to an SAZ. These zones were smaller, in close proximity to the border crossings, and larger as the distance increased. Approximately 50 SAZ's were used for the overview of O-D characteristics at each border crossing.
- North American components of SAZ for example included about 10 areas in southeast Michigan with about 5 other areas covering all of lower Michigan. The states of Wisconsin, Illinois, Indiana, and Ohio each were separate SAZ's and the United States was broken into northeast, southeast, southern plains, northern plains, and western. Mexico, eastern, northern and western Canada were also SAZ's plus the Essex, Lambton and Chippewa Counties are the outgoing by districts of Ontario.

Windsor Area Long Range Transportation Plan – 1998-98

This 1997/98 Study was undertaken to provide involved municipalities with a transportation master plan to guide the future development of transportation services in the Windsor area. Given the impact of cross-border traffic on local facilities, the study included a cross-border survey of auto and commercial vehicles to gather origin-destination patterns and trip purpose data for travel between Canada and the United States. The majority of cross border trips were found to be local, with about 40 percent of auto trips for work trip purposes, with over 90 percent of trips either originating or terminating in the SEMCOG /WALTS area and 76 percent with both ends in the local area.

Future travel demands were projected for a 2016 horizon year, including multiple growth scenarios for cross-border traffic and several capacity improvement options for the Ambassador Bridge and Detroit-Windsor Tunnel. In all cases, improvements and the need for further study was identified for connecting links options to the bridge plaza, with Huron-Church and other road improvements.

Preliminary Engineering and Design of IVHS/AVI New Technology Applications – Michigan-Ontario-New York Highway Border Crossings – MTO/TC/Revenue Canada/MDOT/NYDOT/FHWA/Customs – Marshall Macklin Monaghan; JHK and Associates – January 1977

- Dedicated Commuter Lanes (DCL) in operation at Detroit as PORTPASS and, for passenger vehicles, AUTOPASS.
- At all primary inspection lanes, Canada Customs operates Primary Automated Lookout System (PALS).
- North American Trade Automation Prototype (NATAP).
- Immigration pre-clearance program is necessary element of an automated border crossing system.
- U.S. Immigration began AUTOPASS in 1982 as the first express lane on U.S.-Canada border. It is located on the Peace Bridge. For commercial vehicles, the Detroit crossings use PORTPASS and Canadian immigration and customs use CANPASS.
- This study says that AUTOPASS, PORTPASS and CANPASS are limited to automobiles in January 1997. Ontario, Michigan and New York were at this date reviewing plans for Advanced Traveler Information Systems (ATIS) and advanced Traffic Management Systems (ATMS). These systems provide information to drivers about traffic conditions. MDOT has deployed ITS Variable Message Signs on major freeway corridors leading up to the bridges.
- USDOT has developed a commercial vehicle safety and regulation (CVSR) program.
- This study recommends the use of IVHS/AVI technologies based on the following factors:
  - ✓ Increased traffic demand coupled with budgetary pressure.
  - ✓ Attempt to streamline the flow of low-risk travelers to focus attention on others.
  - ✓ Reduce operating costs and delays and maximize throughput.
  - ✓ Shippers, carriers and brokers to expedite border movements and reduce/eliminate paperwork.
  - ✓ Crossing users who are prepared and registered to pay for expedited crossing.
  - ✓ Operators who are prepared to offer users a common toll account which can be used on multiple facilities.
  - ✓ Growing population of commercial and private vehicles which will be AVI equipped.
  - ✓ This document has a graphic called Figure 2.4 that shows the concept layouts for Michigan-Ontario border crossings and their automated border crossing systems.
  - ✓ This study estimates benefits of reductions of delay at the border crossings.
  - ✓ This study also identifies the benefits for customs and immigration, for customs brokers, for toll operators, and for shippers. This study shows schematics of the border crossings and their toll booth and customs and inspection systems and seems especially accurate for the Ambassador Bridge on the Canadian side. On the American side, may have to be checked, but it probably is not accurate as of today. It has the Detroit-

Windsor tunnel and that does appear to be accurate on the U.S. side and it also appears to be accurate on the Canadian side, so those probably are useful, but the Blue Water Bridge would have to be reviewed because it didn't have both spans open at this time, although it does purport to have an existing and future bridge system.

Trade Issues at Ontario's National Gateways – MTO – McCormick Rankin Corporation/Parsons Brinckershoff – June 1998

- Contains a time series of Canadian imports and exports to/from the U.S. in billions of dollars from 1988 to 1995 for southwest Ontario as a group.
- On Table 3, there is a 1995 import-export table showing the import and export of commodities by commodity by billions of 1995 Canadian dollars.
- This paper identifies the lack of definition of trade corridors being a major limitation in developing policy.
- Reference the U.S. Illegal Immigration Reform and Immigrant Responsibility Act of 1996, Section 110 which removed the exemption for Canadian citizens and was later defeated by the U.S. Congress.
- "Although there is not an immediate anticipated crisis in infrastructure capacity at crossings at each gateway (given planned or on-going improvements), there are several infrastructure needs and highway networks leading to/from these crossings, particularly on the U.S. side of the border" – page 15.

"Major economic shocks will not occur during the forecasting horizon." An assumption of this study is that auto traffic at the Ambassador Bridge will increase 74 percent from 1984 to 1995 and 16 percent since 1992. Truck growth at the Ambassador Bridge has increased by 79 percent since 1984. Between 1992 and 1995, truck traffic grew at its fastest rate, increasing 38 percent.

APPENDIX B

The Canada-U.S. Smart Border Declaration

The Canada-U.S. Smart Border Declaration

BUILDING A SMART BORDER FOR THE 21st CENTURY ON THE FOUNDATION OF A NORTH AMERICAN ZONE OF CONFIDENCE

The terrorist actions of September 11 were an attack on our common commitment to democracy, the rule of law and a free and open economy. They highlighted a threat to our public and economic security. They require our governments to develop new approaches to meet these challenges. This declaration commits our governments to work together to address these threats to our people, our institutions and our prosperity.

Public security and economic security are mutually reinforcing. By working together to develop a zone of confidence against terrorist activity, we create a unique opportunity to build a smart border for the 21st century; a border that securely facilitates the free flow of people and commerce; a border that reflects the largest trading relationship in the world.

Our countries have a long history of cooperative border management. This tradition facilitated both countries' immediate responses to the attacks of September 11. It is the foundation on which we continue to base our cooperation, recognizing that our current and future prosperity and security depend on a border that operates efficiently and effectively under all circumstances.

Action Plan

The attached *Action Plan for Creating a Secure and Smart Border* includes the measures already identified by our colleagues as well as new initiatives. Four pillars support the action plan:

(1) *The Secure Flow of People*

- We will implement systems to collaborate in identifying security risks while expediting the flow of low risk travelers.
- We will identify security threats before they arrive in North America through collaborative approaches to reviewing crew and passenger manifests, managing refugees, and visa policy coordination.
- We will establish a secure system to allow low risk frequent travelers between our countries to move efficiently across the border.

(2)*The Secure Flow of Goods*

- We will implement a system to collaborate in identifying high risk goods while expediting the flow of low risk goods.
- We will identify security threats arriving from abroad by developing common standards for screening cargo before it arrives in North America, while working to clear goods at the first port of entry.
- We will adopt compatible security standards at production and distribution facilities to minimize security threats. We will expedite the flow of low risk traffic between our countries by establishing compatible commercial processes at the border.

- We will expedite the flow of low risk goods between our countries by establishing secure procedures to clear goods away from the border, including at rail yards and at marine ports.

(3)*Secure Infrastructure*

- We will relieve congestion at key crossing points by investing reciprocally in border infrastructure and identifying technological solutions that will help to speed movement across the border.
- We will identify and minimize threats to our critical infrastructure including the airports, ports, bridges, tunnels, pipelines and powerlines that link our countries.

(4)*Coordination and Information Sharing in the Enforcement of these Objectives*

- We will put the necessary tools and legislative framework in place to ensure that information and intelligence is shared in a timely and coherent way within our respective countries as well as between them.
- We will strengthen coordination between our enforcement agencies for addressing common threats.

Next Steps

- We will meet again early in the new year to review the critical paths that we have asked our officials to develop for realizing each of the objectives set out in the action plan. We will consult regularly to ensure continued progress on this plan to achieve the goals outlined as quickly as possible.
- This joint action plan is an important step. Our governments are committed to building on this plan to continually identify and implement measures that can be taken to secure a smart border.
- These measures are regarded by both governments as matters of the highest priority.

Ottawa, Canada
December 12, 2001

Action Plan for Creating a Secure and Smart Border

THE SECURE FLOW OF PEOPLE

1) Biometric Identifiers

Jointly develop on an urgent basis common biometric identifiers in documentation such as permanent resident cards, NEXUS, and other travel documents to ensure greater security.

2) Permanent Resident Cards

Develop and deploy a secure card for permanent residents which includes a biometric identifier.

3) Single Alternative Inspection System

Resume NEXUS pilot project, with appropriate security measures, for two-way movement of pre-approved travelers at Sarnia-Port Huron, complete pilot project evaluation and expand a single program to other areas along the land border. Discuss expansion to air travel.

4) Refugee/Asylum Processing

Review refugee/asylum practices and procedures to ensure that applicants are thoroughly screened for security risks and take necessary steps to share information on refugee and asylum claimants.

5) Managing of Refugee/Asylum Claims

Negotiate a safe third-country agreement to enhance the managing of refugee claims.

6) Visa Policy Coordination

Initiate joint review of respective visa waiver lists and share look-out lists at visa issuing offices.

7) Air Preclearance

Finalize plans/authority necessary to implement the Preclearance Agreement signed in January 2001. Resume intransit preclearance at Vancouver and expand to other airports per Annex I of the Agreement.

8) Advance Passenger Information / Passenger Name Record

Share Advance Passenger Information and agreed-to Passenger Name Records on flights between Canada and the United States, including in-transit flights. Explore means to identify risks posed by passengers on international flights arriving in each other's territory.

9) Joint Passenger Analysis Units

Establish joint units at key international airports in Canada and the United States.

10) Ferry Terminals

Review customs and immigration presence and practices at international ferry terminals.

11) Compatible Immigration Databases

Develop jointly an automated database, such as Canada's Support System for Intelligence, as a platform for information exchange, and enhance sharing of intelligence and trend analysis.

12) Immigration Officers Overseas

Increase number of Canadian and US immigration officers at airports overseas and enhance joint training of airline personnel.

13) International Cooperation

Undertake technical assistance to source and transit countries.

THE SECURE FLOW OF GOODS

14) Harmonized Commercial Processing

Establish complementary systems for commercial processing, including audit-based programs and partnerships with industry to increase security. Explore the merits of a common program.

15) Clearance Away from the Border

Develop an integrated approach to improve security and facilitate trade through away-from-the-border processing for truck/rail cargo (and crews), including inland preclearance/post-clearance, international zones and pre-processing centers at the border, and maritime port intransit preclearance.

16) Joint Facilities

Establish criteria, under current legislation and regulations, for the creation of small, remote joint border facilities. Examine the legal and operational issues associated with the establishment of international zones and joint facilities, including armed protection or the arming of law enforcement officers in such zones and facilities.

17) Customs Data

Sign the Agreement on Sharing Data Related to Customs Fraud, exchange agreed upon customs data pursuant to NAFTA, and discuss what additional commercial and trade data should be shared for national security purposes.

18) Intransit Container Targeting at Seaports

Jointly target marine intransit containers arriving in Canada and the United States by exchanging information and analysts. Work in partnership with the industry to develop advance electronic commercial manifest data for marine containers arriving from overseas.

SECURE INFRASTRUCTURE

19) Infrastructure Improvements

Work to secure resources for joint and coordinated physical and technological improvements to key border points and trade corridors aimed at overcoming traffic management and growth challenges, including dedicated lanes and border modeling exercises.

20) Intelligent Transportation Systems

Deploy interoperable technologies in support of other initiatives to facilitate the secure movement of goods and people, such as transponder applications and electronic container seals.

21) Critical Infrastructure Protection

Conduct binational threat assessments on trans-border infrastructure and identify necessary additional protection measures, and initiate assessments for transportation networks and other critical infrastructure.

22) Aviation Security

Finalize Federal Aviation Administration-Transport Canada agreement on comparability/equivalence of security and training standards.

COORDINATION AND INFORMATION SHARING IN THE ENFORCEMENT OF THESE OBJECTIVES

23) Integrated Border and Marine Enforcement Teams

Expand IBET/IMET to other areas of the border and enhance communication and coordination.

24) Joint Enforcement Coordination

Works toward ensuring comprehensive and permanent coordination of law enforcement, anti-terrorism efforts and information sharing, such as by strengthening the Cross-Border Crime Forum and reinvigorating Project Northstar.

25) Integrated Intelligence

Establish joint teams to analyze and disseminate information and intelligence, and produce threat and intelligence assessments. Initiate discussions regarding a Canadian presence on the U.S. Foreign Terrorist Tracking Task Force.

26) Fingerprints

Implement the Memorandum of Understanding to supply equipment and training that will enable the RCMP to access FBI fingerprint data directly via real-time electronic link.

27) Removal of Deportees

Address legal and operational challenges to joint removals, and coordinate initiatives to encourage uncooperative countries to accept their nationals.

28) Counter-Terrorism Legislation

Bring into force legislation on terrorism, including measures for the designation of terrorist organizations.

29) Freezing of Terrorist Assets

Exchange advance information on designated individuals and organizations in a timely manner.

30) Joint Training and Exercises

Increase dialogue and commitment for the training and exercise programs needed to implement the joint response to terrorism guidelines. Joint counter-terrorism training and exercises are essential to building and sustaining effective efforts to combat terrorism and to build public confidence.