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**LAUZON PARKWAY IMPROVEMENTS
ENVIRONMENTAL ASSESSMENT**

**Report TR1:
Identification of Factors Driving
'Area Transportation System' Needs**

REVISED FINAL

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Executive Summary

The Ontario Ministry of Transportation, the City of Windsor and the County of Essex have initiated a Class Environmental Assessment Study to address the future transportation needs within the study area. The study has three main components as follows:

- the environmental assessment study and preliminary design for:
 - Lauzon Parkway from E.C. Row Expressway to County Road 42;
 - Lauzon Parkway's extension to Highway 401; and
 - Lauzon Parkway's further extension to Highway 3.
- the environmental assessment study for:
 - Essex County Road 42 from Walker Road to Essex County Road 25 (East Puce Road); and
 - the future east-west arterial from Walker Road to Essex County Road 17.
- the preparation and approval of a Secondary Plan for the remainder of the lands transferred to the City of Windsor in 2003 (lands are generally bounded by the CPR mainline north of the Windsor Airport, Lauzon Road and the 8th Concession, and the City of Windsor boundary).

The purpose of Lauzon Parkway Improvement Environmental Assessment study is to identify the transportation problems and opportunities, and to develop and evaluate potential solutions. The transportation planning process for this study will:

- Identify factors driving 'Area Transportation System' needs;
- Determine 'Area Transportation System' needs to address the problems and opportunities within the study area; and
- Provide strategies to address 'Area Transportation System' problems and opportunities.

The purpose of Report TR1 is to document baseline socio-economic profile, provide an overview of the historical traffic growth and existing transportation conditions which will define the base parameters for the study. This report establishes the driving factors for the 'Area Transportation System' needs for the Preliminary Study Area.

Major Findings at this Stage

The existing transportation system within the study area serves a transportation demand at a local/inter-region/province/national level.

- The Windsor Gateway is a vital transportation artery between Canada and United States.
- The E.C. Row Expressway is the busiest corridor within the study area, the daily traffic demand on this corridor is reaching almost 50,000 vehicles.
- Highway 401 is the next busiest corridor within the study area, carries daily traffic volume of 29,000 vehicles and that includes 40% of commercial traffic.
- Highway 3 is provincial highway with a posted speed of 80 km/h. The daily traffic on Highway 3 is ranging from 15,000 to 18,000 vehicles in the study area.

Traffic volumes have grown significantly surrounding the study area.

- Traffic volume on Highway 401 at County Road 19 (Manning Road) Interchange has almost doubled from 1998 to 2006. The traffic at this interchange has grown at a rate of 3.4% per annum.
- The traffic volume on Highway 3 has grown at an average annual growth rate of 2.4%. The AADT volume at Highway 3 and County Road 19 (Manning Road) intersection was 9,900 vehicles in 1998 that almost doubled to 17,600 in 2006.
- The existing transportation network serves a growing demand within the Study Area. The major arterials around the Study Area are operating at or near capacity.

The existing traffic volume indicates that Lauzon Parkway is operating at or near its capacity north of County Road 42. Walker Road and County Road 19 (Manning Road) are also operating at volume to capacity (v/c) ratio of 0.87 and 0.81 considered 'Unstable-Flow' condition. Walker Road and County Road 19 (Manning Road) are the only two north-south links between Highway 401 and E.C. Row Expressway, this result in traffic from other road network being attracted to these two links. As these two links are already operating near capacity, indicates the need for a new Highway 401 interchange for the future traffic demand in the study area.

The proposed bridge for the Detroit River International Crossing (DRIC) and Windsor Essex Parkway will provide an additional international border crossing facility and is projected to attract additional border crossing traffic.

The population and employment forecast from the County of Essex suggests that the County of Essex population in 2031 is expected to increase approximately by 41,000 residents and employment approximately by 17,500 jobs. During the same time period, City of Windsor population is expected to increase by 30,500 residents and employment by 11,400 jobs.

The prime factors driving the 'Area Transportation System' needs are:

- the future planned growth in the region; and
- the planned improvements to infrastructure that further increase traffic through the region.

These two factors will have significant impacts on the ability of the transportation system to support the new economic development and improve access for residents and businesses in east Windsor and neighbouring municipalities.

TABLE OF CONTENTS

	Page
1. INTRODUCTION.....	1
1.1 Study Purpose	1
1.2 Study Area	2
2. OVERVIEW OF PROVINCIAL AND MUNICIPAL POLICIES.....	4
2.1 Policy Context.....	4
2.2 Provincial Policy Statement.....	4
2.3 Municipal Policy.....	5
2.3.1 City of Windsor Official Plan.....	5
2.3.2 County of Essex Official Plan.....	6
3. DEFINITION AND DESCRIPTION OF THE 'AREA TRANSPORTATION SYSTEM'	8
3.1 Provincial Highway Network	8
3.2 Municipal Road Network.....	9
3.2.1 Recent County/Municipal Network Studies/Projects	11
3.3 International Crossings	14
4. DESCRIPTION OF CURRENT 'AREA TRANSPORTATION SYSTEM' TRAVEL CONDITIONS	16
4.1 Background.....	16
4.2 Current Travel Characteristics	16
4.2.1 Existing Daily Traffic Flows	16
4.2.2 Non-Commercial Travel Characteristics	20
4.2.3 Commercial Travel Characteristics.....	23
4.3 Historical Traffic Flows.....	24
4.4 International Crossings	26
4.5 Existing Roadway Operating Conditions.....	29
4.5.1 Overview.....	29
4.5.2 Analysis Screenlines	29
4.5.3 Existing Screenline Flows.....	32
5. OVERVIEW OF SOCIO-ECONOMIC CONDITIONS AND FUTURE OUTLOOK.....	36
5.1 Population and Employment Forecast	36
5.2 Economic Overview.....	37
5.2.1 Employment Sector Overview.....	37
5.3 Existing and Future Land Use.....	38
6. SUMMARY OF EXISTING CONDITIONS AND FUTURE NEEDS	40
6.1 Policy Framework.....	40
6.2 Existing Transportation System.....	40
6.3 Historical Traffic Flows.....	41
6.4 Existing Traffic Operation and LOS.....	41
6.5 Future Trends	42
6.6 Conclusion	42

LIST OF EXHIBITS

Exhibit 1: Study Area.....	3
Exhibit 2: EWRTMP Recommended Roadway Classification System.....	10
Exhibit 3: EWRTMP Recommended Regional Roadway Capacity Enhancement Projects	12
Exhibit 4: Existing AADT on Major Roadways within the Study Area.....	18
Exhibit 5: Share of Commercial Traffic	19
Exhibit 6: Travel Characteristics for the Windsor Originated Traffic	21
Exhibit 8: Travel Characteristics for the Windsor Transferred Lands Originated Traffic	22
Exhibit 9: Travel Characteristics for the Windsor Transferred Lands Destined Traffic	22
Exhibit 10: Origin of Commercial Traffic at The Ambassador Bridge	23
Exhibit 11: Destination of Commercial Traffic at The Ambassador Bridge	23
Exhibit 12: AADT Growth on Highway 401 Interchanges (1988-2006)	25
Exhibit 13: AADT Growth on Highway 3 Intersections (1988-2006)	26
Exhibit 14: Weekday Commercial Vehicle Distribution at Ambassador Bridge	28
Exhibit 15: Screenline Locations within the Study Area.....	31
Exhibit 16: 2006 Employment Sectors in Essex-Windsor Region	38

LIST OF TABLES

Table 1: Recent Study Recommendations	14
Table 2: Highway 401 Historical Traffic Growth Trends	24
Table 3: Highway 3 Historical Traffic Growth Trends	25
Table 4: The Ambassador Bridge Traffic (2006)	27
Table 5: 2008 Tunnel Traffic Volumes	28
Table 6: Volume/Capacity Operating Conditions Guideline.....	29
Table 7: Screenline Description and Location.....	30
Table 8: Screenline Results for N/S 1 (West of Lauzon Parkway) EB Direction	32
Table 9: Screenline Results for N/S 1 (West of Lauzon Parkway) for WB Direction	33
Table 10: Screenline Results for N/S 2 (West of County Road 19) EB Direction	33
Table 11: Screenline Results for N/S 2 (West of County Road 19) WB Direction.....	34
Table 12: Screenline Results for E/W 1 (North of County Road 42) NB Direction	34
Table 13: Screenline Results for E/W 1 (North of County Road 42) SB Direction	35
Table 14: Screenline Results for E/W 2 (North of Highway 401) NB Direction.....	35
Table 15: Screenline Results for E/W 2 (North of Highway 401) SB Direction.....	35
Table 17: Regional Employment Forecast.....	37
Table 18: Employment and Population Forecast for the Windsor Annexed Area	37
Table 19: Proposed Land Use Share for the Windsor Annexed Area	39

APPENDICES

- Appendix A – Designated Truck Routes in City of Windsor
- Appendix B – Proposed Land Use from City of Windsor Official Plan
- Appendix C– Proposed Land Use from Windsor Annexed Area Master Plan Study

1. INTRODUCTION

The Ontario Ministry of Transportation, the City of Windsor and the County of Essex have initiated a Class Environmental Assessment Study to address the future transportation needs within the study area. The study has three main components as follows:

- the environmental assessment study and preliminary design for:
 - Lauzon Parkway from E.C. Row Expressway to County Road 42;
 - Lauzon Parkway's extension to Highway 401; and
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- the environmental assessment study for:
 - Essex County Road 42 from Walker Road to Essex County Road 19 (Manning Road); and
 - the future east-west arterial from Walker Road to Essex County Road 17.
- the preparation and approval of a Secondary Plan for the remainder of the lands transferred to the City of Windsor in 2003 (lands are generally bounded by the CPR mainline north of the Windsor Airport, Lauzon Road and the 8th Concession, and the City of Windsor boundary).

This study will follow the Ontario Environmental Assessment Act through the application of the *Municipal Class Environmental Assessment* (October 2000 as amended in May 2007). This study is also subject to the requirements of the *Canadian Environmental Assessment Act*. The preparation and approval of the Secondary Plan will follow the requirements of the *Ontario Planning Act*.

1.1 Study Purpose

As part of an Ontario/Canada announcement in April 2005 of the Let's Get Windsor Essex Moving Strategy a commitment was made to conduct an environmental assessment and preliminary design study to examine upgrades and the extension of Lauzon Parkway between the E.C. Row Expressway and Highway 401. In addition, partners have agreed to include planning components related to County Road 42, East-West Arterial and Secondary Plan Study:

The Essex Windsor Region Master Transportation Plan (EWRMTP) identifies the need for operational and capacity improvements to the existing section of Lauzon Parkway south of E.C. Row Expressway to County Road 42 and the protection of a new corridor further south to Highway 401. A further extension to Highway 3 was also considered in the regional master plan to provide local and regional transportation benefits. The EWRMTP identifies that a new 4 lane facility would provide sufficient traffic capacity to 2021.

This border functions as the busiest international trade corridor in North America, handling about 30% of the two-way flow of Canada-U.S. trade by value and about 25% by volume. The Government of Ontario, in partnership with the County of Essex and the City of Windsor, are working together to implement infrastructure projects that will help to relieve traffic congestion and improve traffic flows.

The purpose of Lauzon Parkway Improvement Environmental Assessment study is to identify the transportation problems and opportunities, and to develop and evaluate potential solutions. The transportation planning process for this study will:

- Identify factors driving 'Area Transportation System' needs;
- Determine 'Area Transportation System' needs to address the problems and opportunities within the study area; and
- Provide strategies to address 'Area Transportation System' problems and opportunities.

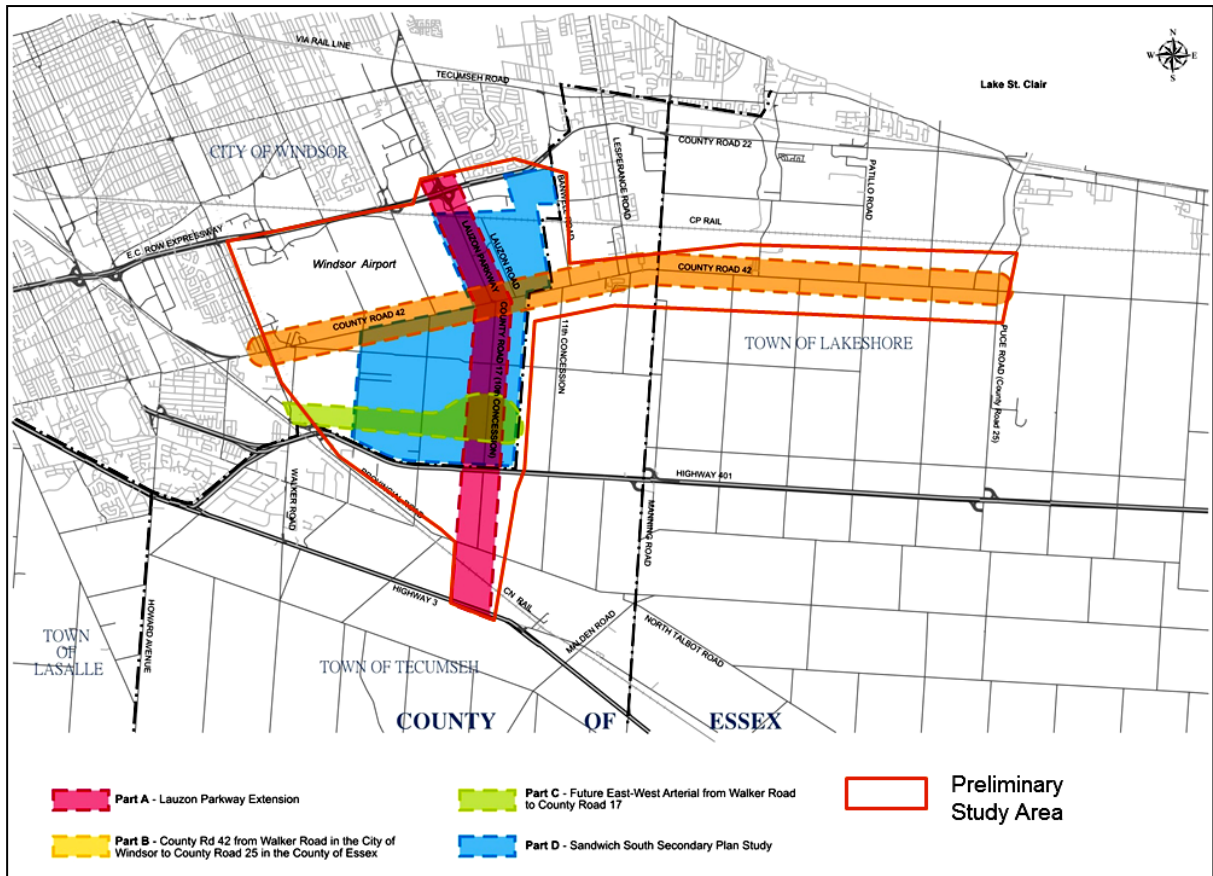
The purpose of Report TR1 is to document baseline socio-economic profile, provide an overview of the historical traffic growth and existing transportation conditions which will define the base parameters for the study. This report establishes the driving factors for the 'Area Transportation System' needs for the Preliminary Study Area.

The knowledge gained in this report will be used in the development of the Problem and Opportunity Statement.

1.2 Study Area

The study examines transportation demand/effects with the intention of identifying transportation problems and opportunities. The Study Area under consideration for the 'Area Transportation System' is illustrated in **Exhibit 1**. The study area encompasses E.C. Row Expressway in the north to Highway 3 in the south, Walker Road in the west to County Road 25 (East Puce Road) in the east. However, for a broader understanding of transportation demand, the entire Essex-Windsor Regional Transportation Master Plan (EWRTPM) Model will be used for the transportation planning analysis.

Exhibit 1: Study Area



2. OVERVIEW OF PROVINCIAL AND MUNICIPAL POLICIES

2.1 Policy Context

In reviewing and assessing the existing and future infrastructure requirements of the study area, it is essential to establish a policy context for infrastructure expansion, considering both growth and sustainability objectives. The policy framework provides guidelines for the infrastructure and land use planning and strategic investment decision to support and accommodate forecasted population and economic growth, particularly in the area of transportation planning. The guidelines are in place with the goal of sustaining and improving the quality of life of residents while considering the broader regional, provincial and national economic interest. The assessment and evaluation of the study area problems and opportunities are carried out with due consideration to the policy framework in order to ensure that the ultimate improvement plan is consistent with the policies and objectives of the various levels of government.

A discussion of specific provincial and municipal policies is summarized in the following sections with a focus on the application to transportation infrastructure in the study area.

2.2 Provincial Policy Statement

The Provincial Policy Statement (PPS) provides policy direction on matters of provincial interest related to land use planning and development, and promotes the provincial policy-led planning system.

The PPS recognizes the complex inter-relationships among economic, environmental and social factors in planning and embodies good planning principles. It includes enhanced policies on key issues that affect our communities, such as:

- The efficient use and management of land and existing infrastructure;
- Protection of the environment and resources; and
- Ensuring appropriate opportunities for employment and residential development, including support for a mix of uses.

The PPS provides for appropriate development while protecting resources of provincial interest, public health and safety, and the quality of the natural environment. The Provincial Policy Statement supports improved land use planning and management, which contributes to a more effective and efficient land use planning system.

The PPS set clear, overall policy directions on matters of provincial interest related to land use planning and development such as the wise use and protection of natural resources. Although the Crown is not bound by the PPS, they provide a useful measure of the appropriate level of care to be exercised to avoid or mitigate impacts to the environment. The environmental factors identified in the PPS include:

- Surface Water Quality and Quantity
- Groundwater Quality and Quantity
- Wetlands
- Woodlands
- Environmentally Significant Features
- Ecologically Functional Areas

- Special Places
- Species at Risk
- Important Wildlife Areas
- Prime Agricultural Areas
- Community Features

The PPS provides the guidelines for the Infrastructure Planning, Transportation Systems, transportation and infrastructure corridor planning. The PPS recognizes a coordinated, integrated and comprehensive approach be used when dealing with planning matters within municipalities, or which cross lower, single and/or upper-tier municipal boundaries, including land use planning and infrastructure facilities. In terms of infrastructure facilities, the PPS provides the following guidelines for Transportation System:

- Transportation systems should be provided which are safe, energy efficient, facilitate the movement of people and goods, and are appropriate to address projected needs.
- Efficient use shall be made of existing and planned infrastructure.
- Connectivity within and among transportation systems and modes should be maintained and, where possible, improved including connections which cross jurisdictional boundaries.
- A land use pattern, density and mix of uses and land use intensification should be promoted that minimize the length and number of vehicle trips (ridesharing/HOV) and support the development of viable choices and plans for public transit and other alternative transportation modes, including commuter rail and bus.
- Transportation and land use considerations shall be integrated at all stages of the planning process.

2.3 Municipal Policy

2.3.1 City of Windsor Official Plan

The City of Windsor, Canada's southernmost city, is situated on the south shore of the Detroit River and Lake St. Clair. The city is strategically located at the center of the Great Lakes basin directly across from Detroit, Michigan. As the chief port of entry between Canada and the United States, Windsor is an international gateway for people and commerce. Windsor is the main employment, population and cultural center in the Windsor Essex Region and is home to approximately 220,000 people¹.

The City of Windsor Official Plan (December 31, 2007) is a policy document adopted by City Council under the province of Ontario Planning Act. The planning act provides guidance for the physical development of a municipality over a 20 year period while taking into consideration important social, economic and environmental matters. The Official Plan provides the policy framework that will guide:

- Location of new development;
- Strengthening of existing and future neighbourhoods;
- Enhancement of Windsor's environment;

¹ Statistics Canada Community Profile-2006

- Provision of Municipal services, such as roads, watermains, sewers and parks, will be provided; and
- Growth Plan for Windsor.

The City of Windsor Official Plan recommends the following principles/goals for **Infrastructure Planning**:

- Infrastructure shall be provided in a sustainable, effective and efficient manner with the optimal use of existing infrastructure;
- The provision of new infrastructure shall be coordinated;
- The transportation system shall be accessible and affordable to the community;
- The infrastructure and public service facilities shall strategically provide an environment in which all modes of transportation can play a balanced role.
- Proper physical services shall be provided in all developed areas of Windsor.

The City of Windsor Official Plan provides the following objectives for the **Transportation System**:

- To establish a safe, convenient and effective transportation system.
- To provide for the integration, coordination and extension of the transportation system within, to and from Windsor.
- To protect long-term transportation corridors and their ancillary facilities.
- To establish safe and efficient truck routes within and through Windsor.
- To provide for adequate off-street parking facilities and restrict on-street parking to appropriate areas.
- To enact transportation demand management actions suited to the needs of Windsor.
- To minimize conflicts within the transportation system.
- To establish and maintain a city-wide walking and cycling network.
- To establish and maintain a viable public transportation network.
- To establish and maintain a safe and efficient road network.
- To uphold and advance Windsor's role as Canada's foremost international gateway.
- To support the provision of freight and passenger rail service to Windsor.
- To ensure accessible and viable port facilities.
- To facilitate safe recreational boating from Windsor on the Detroit River and Lake St. Clair.
- To support an expanded role for the Windsor Airport in the provision of facilities, services and operational capabilities.
- To support the inclusion of traffic calming devices according to a municipal Traffic Calming Policy.

2.3.2 County of Essex Official Plan

The County of Essex is comprised of approximately 170,500 hectares of land and a population of approximately 183,000 people². The seven local municipalities that comprise the County of Essex include the Town of Amherstburg, the Town of Essex, the Town of Kingsville, the Town of Lakeshore, the Town of LaSalle, the Municipality of Leamington and the Town of Tecumseh. The County of Essex Official Plan (April 17,

² Statistics Canada Community Profile 2006

2002) establishes a broad policy framework for County's long term planning strategy and offers fundamental guidance and direction to the County and its municipalities on land use planning matters. The objectives for Official Plan document are to:

- Implement Provincial Policy at the County level;
- Provide a policy framework that will provide direction to the seven local municipalities in their preparation and future interpretation of updated local Official Plans and Official Plan amendments;
- Establish a policy framework for coordination and cooperation between municipalities, both internal and external to the County, on planning, development, resources and inter-municipal servicing issues that cross municipal boundaries.

The County of Essex Official Plan recommends the following principles/goals for **Infrastructure Planning**:

- To connect urban areas with each other and other communities outside this area by providing space for efficient, cost effective and safe movement of people, goods, energy and information without disrupting community integration and function.
- To provide cost effective and environmentally sound municipal services which should have minimum adverse impacts on agricultural and natural heritage features and should be phased in accordance with the availability of appropriate types and levels of services.

The County of Essex Official Plan provides the following objectives for the **Transportation System**:

- Designated Provincial Highway, County Arterial and County Collector Road system.
- Consider need to improve regional traffic flow in the vicinity of the City;
- Minimize conflict between local and non-local traffic by protecting County arterial system;
- Consider availability of resources;
- Encourage integration of transportation facilities provided by local municipalities, adjacent municipalities and the Province;
- Review road corridors to determine necessary changes in classification.
- Encourage safe, convenient and visually appealing pedestrian facilities where appropriate along arterial and collector road systems;
- Minimize direct access and limit access to arterial roads where local road access is available;
- Ensure traffic impact studies for development proposals likely to generate significant traffic;
- Address the matter of cross boundary traffic with adjacent municipalities;
- Encourage use of public transit.

3. DEFINITION AND DESCRIPTION OF THE 'AREA TRANSPORTATION SYSTEM'

The 'Area Transportation System' is comprised of transportation facilities which have the primary function of providing transportation linkages for the safe, reliable and sustainable movement of people and goods, by all modes and all jurisdictions, between multiple regions of the province and/or between cities and other major centres of population or which function to complete such primary transportation linkages, with an emphasis on connections to:

- Cities and other major centres of population that contain designated urban growth centres;
- Cities and other major centres of population that contain designated major transit service/station areas; and
- Major regional facilities for primary goods movement, such as inter-modal facilities and international gateways.

The regional transportation system around the study area comprises automobile, truck, transit, pedestrian and cycling modes. Major freight transportation modes include truck and rail. Automobile traffic is by far the predominant mode of travel, accounting for approximately 95% of travel. The remaining transportation modes (bus, rail, air, cycling, and walking) account for only 5%.

Growth in the transportation corridor is dependent on a number of socio-economic factors, such as: population and employment, demographic characteristics, and regional, provincial and national trends. Each of these factors acts upon the characteristics of travel demand with different and varying effects. In order to assess the needs of the Area Transportation System, the first step is to establish the factors that define the environments in the study area. These factors become the framework for the quantification of role and function of the transportation system.

The following subsections provide a profile of the existing transportation services in the Study Area. The profile of each mode describes current service levels and the role and function within the context of the provincial transportation system.

3.1 Provincial Highway Network

Provincial, Regional and Municipal roads in the study area serve a growing demand for transportation services on an international network of links used for the transport of goods and people. The automobile continues to be the preferred mode of passenger travel and trucks are the principal means of transporting goods as the existing provincial highway system links to all major manufacturing centres and international border crossings. The demand for truck transport remains a competitive mode of goods distribution for the majority of shippers. Trucking provides inter-modal goods transport connectivity between rail and marine transport facilities using provincial freeways and arterial road networks.

The transportation network includes the following sections of the Provincial Highways:

- Highway 401; and
- Highway 3.

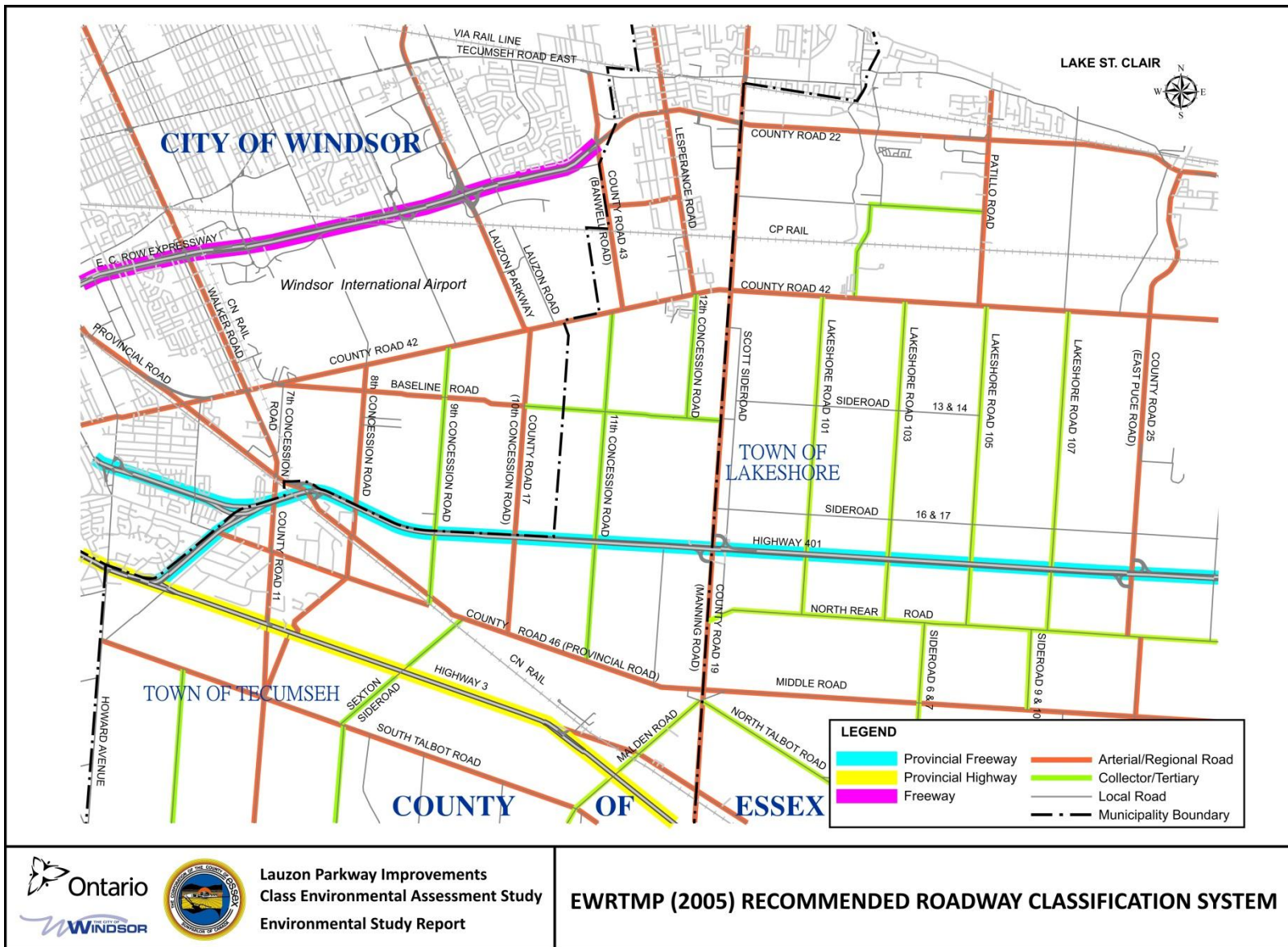
Highway 401 is the major provincial freeway and is the most critical of all highways in Eastern Canada, extending from the U.S. border in Windsor (from Highway 3/Talbot Road west of the study area) to the Quebec border and provides significant goods movement, tourism and connections across the Province. As part of the recent widening program by the MTO, Highway 401 is being widened from four (4) to six (6) lanes within Essex County with an addition of General Purpose Lane (GPL) in each direction. Highway 401 has a very high proportion of truck traffic reflecting both the key provincial trade corridor and the commercial activities between Canada and the US. The MTO traffic data for Highway 401 at County Road 19 (Manning Road) indicates AADT volume of 29,000 vehicles (for year 2006- before construction) with approximately a 40% share of commercial traffic.

Highway 3 is a provincial highway with a posted speed of 80 km/h. Currently a section of Highway 3 within the study area (from Highway 401 to County Road 8) is being widened from 2 lanes to 4 lanes. The ministry data for Highway 3 at County Road 19 (Manning Road) indicates that Highway 3 experiences traffic of 18,600 AADT with an 8.5% share of commercial traffic (for year 2006- before construction).

3.2 Municipal Road Network

There is a well-established municipal road network within the study area, with a number of parallel east-west and north-south routes; as illustrated in **Exhibit 2**.

Exhibit 2: EWRTMP Recommended Roadway Classification System



Lauzon Parkway Improvements
 Class Environmental Assessment Study
 Environmental Study Report

EWRTMP (2005) RECOMMENDED ROADWAY CLASSIFICATION SYSTEM

At the outset of this study, roadway planning capacities adopted for uses in the transportation demand modelling analysis collected directly from the Essex-Windsor Regional Transportation Master Plan (EWRTMP); categorized into Arterial, Collector and Local Roads. Many of the municipal roads east of County Road 19 (Manning Road) are currently serving agricultural lands and are un-paved, and therefore not considered for transportation operational analysis. Based on the EWRTMP Report, the classification roadways within the Study Area are as follows:

Freeway:

E.C. Row Expressway is a four-lane rural freeway in the City of Windsor with a posted speed of 100 km/h. This is the busiest route in the study area, where AADT volume reaches over 50,000 in some sections. This expressway operates at or over capacity along specific sections.

Arterial Road:

- County Road 42 (Division Road);
- Baseline Road;
- County Road 46 (North Talbot Road);
- County Road 11 (Walker Road);
- Lauzon Parkway;
- County Road 17 (10th Concession Road);
- County Road 19 (Manning Road) – posted speed of 80 km/h;
- County Road 43 (Banwell Road);
- Lesperance Road;
- 8th Concession Road;
- County Road 43 (11th Concession Road).

Collector Roads:

- 9th Concession Road

Local Roads:

- 7th Concession Road; and
- 12th Concession Road.

3.2.1 Recent County/Municipal Network Studies/Projects

The following summaries provide a brief description of the major studies that are located within the Study Area. The description of the reported studies/projects reflects the information and status at the time of investigation for this report.

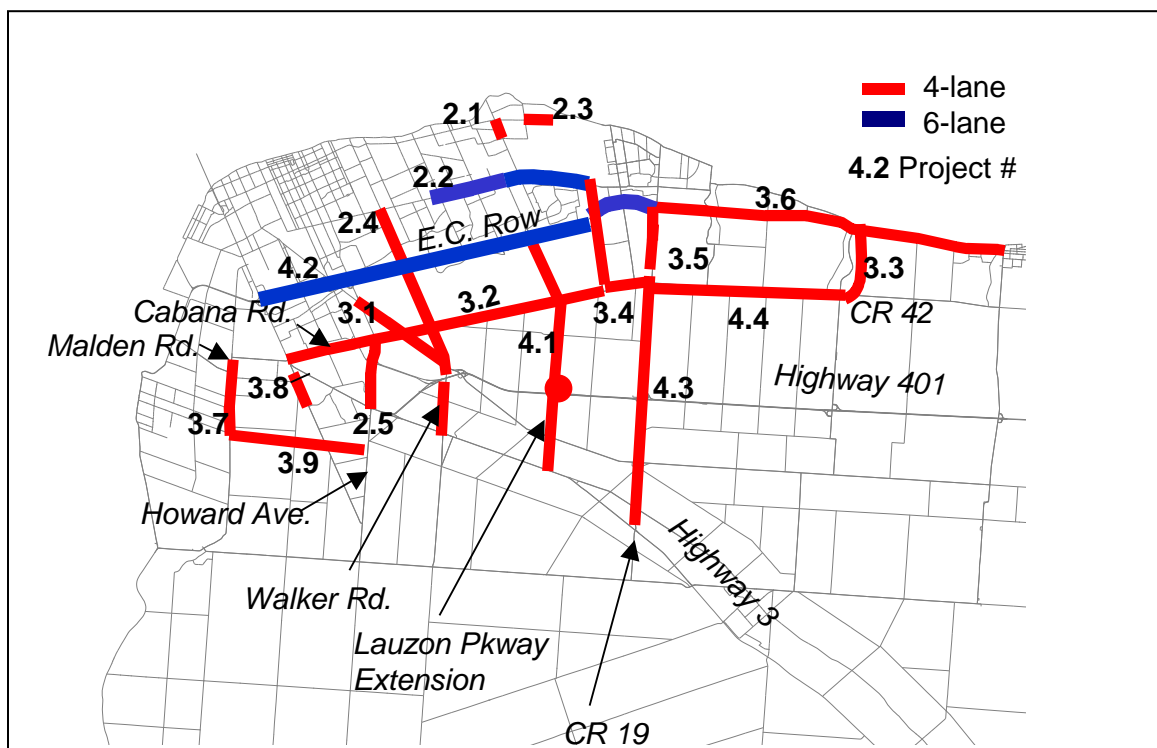
Essex-Windsor Regional Transportation Master Plan (EWRTMP)

This study established future regional road classifications and related policies, provided direction on addressing regional transportation needs for the planning horizon 2021. The EWRTMP recommended regional roadway capacity enhancement projects are presented in **Exhibit 3**. The EWRTMP identified a 4-lane arterial cross-section for the Lauzon Parkway Extension.

Windsor Annexed Lands Master Planning Study

This study involved the determination of land needs requirements in the annexed lands for future development and re-designation of current agricultural lands. This master plan study followed the principles and policies of the City of Windsor Official Plan and made accommodations for existing land use in the area. It provided a structure for all future development to occur while protecting, maintaining and integrating the existing natural heritage features. This study has been approved by council and is the basis for development in the study area.

Exhibit 3: EWRTMP Recommended Regional Roadway Capacity Enhancement Projects



Source: EWRTMP Technical Report

County Road 19 (Manning Road) EA

The Environmental Assessment and Preliminary Design for improvements include County Road 19 (Manning Road) and County Road 22. The area of study for County Road 19 was from Highway 3 to Tecumseh Road. The improvements recommended for County Road 19 includes:

- Widening of County Road 19 from two to four lanes—section south of County Road 42 to County Road 22 will be changed from a rural to an urban roadway;
- Improving intersection at County Road 19 and County Road 34 with provision of double lane roundabout;
- Highway 401 interchange improvements including construction of a new underpass structure and reconstruction of the interchange ramps;
- Grade separation of the C.P. Rail crossing;
- Intersection improvements on County Road 19 and side streets;

- A single point urban interchange at County Road 19 and County Road 22.

The capacity improvements identified for County Road 19 (Manning Road) from Tecumseh Road to the CPR tracks have an estimated time of completion for 2016. All other County Road 19 improvements are expected in the long term (10-20 years).

County Road 22 EA

In 2008, the County of Essex completed the Municipal Class Environmental Assessment (EA) Study for County Road 22 from City of Windsor boundary to 350m east of Lakeshore Boulevard. The recommended improvements include:

- Widening of County Road 22 from four lanes to six lanes, this section will be changed from a limited access to a control access roadway;
- Widening of Pike Creek Bridge from two lanes to four lanes; and
- Partial interchange at County Road 22 and Lesperance Road.

It is estimated that all County Road 22 improvements west of County Road 25 (East Puce Road) will be completed by 2016. All improvements east of County Road 25 (East Puce Road) are expected to be completed in 10-20 years.

County Road 43 (Banwell Road) EA

This study investigated traffic conditions and identified needed improvements for County Road 43 (Banwell Road). The purpose of the improvements was to serve the growth needs of the City of Windsor and its surrounding area. The report recommended that significant capacity improvements were needed to relieve future daily congestion. It was determined that a basic 4-lane cross-section for County Road 43 would be necessary. The capacity improvements on County Road 43 are expected to be completed by the year 2031.

County of Essex Transit Assessment Report (2010)

County of Essex recently completed the *County of Essex Transit Assessment Report* (2010). The key objectives of this study was to define transportation needs and provide guidelines and tools for identifying and implementing specific, cost-effective, and innovative public transportation services for residents in the County of Essex.

As part of the study, the County identified a service concept to provide local service, rural service, service within the County (County connectors) and service to Windsor (Urban connectors). The County of Essex is currently developing a comprehensive implementation strategy and plan for the provision of transit services for the County of Essex as per the key strategies identified in the County of Essex Transit Assessment Report.

Bicycle Use Master Plan (BUMP)

The City has developed a *Bicycle Use Master Plan* (BUMP) (2001). BUMP is the City's commitment to develop a visible and connected cycling network that is easily accessible, safe and actively used by all types of cyclists. The Plan calls for a cycling network of bike lanes, multi-use trails and signed bike routes, and provides design guidelines along with specific strategies for improving cycling awareness, the cycling-transit link and end-of-trip facilities. These facilities are being implemented when possible.

County Wide Active Transportation (CWATS) Master Plan

The County of Essex has developed a *County Wide Active Transportation Study* (CWATS). This study will support active transportation plans of local municipalities. This study has developed a comprehensive Active Transportation (walking and cycling) Master Plan to guide the County and local area municipalities in implementing a County-wide network of cycling and pedestrian facilities for next 25 years.

Table 1 summaries a brief description of the major studies/projects that are located within the Study Area. The description of the reported studies/projects reflects the information and status at the time of investigation for this report.

Table 1: Recent Study Recommendations

MTO	City of Windsor	County of Essex
<ul style="list-style-type: none"> • Highway 401 widening to 6 lanes • Highway 3 upgrading and widening to 4 through lanes from Highway 401 to County Road 8 	<ul style="list-style-type: none"> • Tecumseh Road EA - Banwell intersection • Dougall-6th Concession half diamond interchange • Walker Road widening to 4 through lanes from Legacy Park to City limits • Banwell Road – widening to 4 lanes and multi-use trail • Tecumseh Road East widening, Lauzon Parkway to Jefferson, and Jefferson to Rose • Bicycle Use Master Plan • Canadian Plaza Improvement of the Windsor-Detroit Tunnel • East Pelton Secondary Study • Banwell EA – Banwell / E.C. Row Interchange & grade separation protection at C.P. Rail 	<ul style="list-style-type: none"> • County Road 11 (Walker Road) from Highway 3 to Black Acre-Phase 4 – widening to 4- lanes • County Road 19 (Manning Road) widening to 4- lanes from Highway 3 to Tecumseh Road • County Road 19 (Manning Road) and County Road 34 intersection improvement with double lane roundabout • County Road 19 (Manning Road) and Highway 401 – interchange improvements • Grade separation of C.P. Rail crossing at County Road 19 (Manning Road) • Urban interchange at County Road 19 (Manning Road) and County Road 22 • County Road 22 widening to 6 lanes from County Road 43 (Banwell Road) to Lakeshore Boulevard • Partial interchange at County Road 22 and Lesperance Road

3.3 International Crossings

The Windsor-Detroit Gateway consists of two high-volume international border crossings – The Ambassador Bridge and The Windsor-Detroit Tunnel. These two existing international border crossings between the United States (Detroit, Michigan) and Canada (Windsor, Ontario) represent a major component of the Area Transportation System.

The Ambassador Bridge is a 4-lane bridge crossing the Detroit River connecting Huron Church Road in the City of Windsor to I-75 in Detroit, Michigan. The four lane bridge is approximately 2.8 km in length and is currently operated with one designated lane for commercial vehicles in each direction and with no lane restrictions for automobile traffic. In 2009, there were 3.59 million vehicle crossings, including 2.25 million trucks. Due in part to the restriction on commercial vehicles at the tunnel, the Ambassador Bridge services over 95% of the commercial traffic crossing the border in the Windsor-Detroit area and was also ranked as the busiest Canada-U.S. border crossings for commercial traffic in 2009³.

The Windsor-Detroit Tunnel, which opened in 1930, is a single tunnel tube under the Detroit River and carries one lane of traffic in each direction. The Tunnel is 1.6 km long, 6.7 m wide and has a 4 m height clearance. The maximum Tunnel depth beneath the Detroit River surface is 23 m. The Tunnel crossing consists of the Tunnel tube itself as well as toll and inspection plazas on both sides of the border. The Tunnel serves passenger vehicles, commercial vehicles and buses. The crossing was ranked as the fourth busiest Canada-U.S. border crossing for car traffic in 2009.⁴ In year 2009, there were 3.37 million vehicles crossings. The Windsor-Detroit Tunnel Plaza Master Plan and Environmental Assessment study has identified improvements to the existing plaza in order to accommodate future travel demand and reduce delay. The recommended improvements includes new auto access routes, new plaza buildings, reconfiguring additional auto primary inspection lanes (PIL) and landscaping.

Detroit River International Crossing (DRIC) Study

This Canada-U.S. Ontario-Michigan study is a bi-national planning study. A broad range of alternatives were identified and evaluated. Through this process, the locations for a new bridge crossing and associated border inspection facilities were identified, as well as freeway connections in both countries. The DRIC study was conducted in accordance with the requirements of the Ontario Environmental Assessment Act and the Canadian Environmental Assessment Act in Canada and the U.S. National Environmental Policy Act in the U.S.

The DRIC study recommended an end-to-end transportation system to link Highway 401 to the U.S. interstate system with inspection plazas and a new river crossing in between. The proposed bridge will be located southwest of the existing Ambassador Bridge, and its highway approaches have received the respective environmental approvals from both countries. The proposed bridge will be approximately 2.9 km long and cross section of six-lanes. The bridge will connect to the Rt. Hon. Herb Gray Parkway (formerly the Windsor-Essex Parkway), now under construction. The proposed international border crossing facility is projected to attract additional border crossing traffic.

3. Transport Canada, *Transportation in Canada 2009 Annual Report – Addendum*.

4. Transport Canada, *Transportation in Canada 2009 Annual Report – Addendum*.

4. DESCRIPTION OF CURRENT 'AREA TRANSPORTATION SYSTEM' TRAVEL CONDITIONS

4.1 Background

Earlier sections of this report have described the transportation network that serves the Study Area. Physically there are several existing and proposed infrastructure components that provide accessibility within and through the area.

The historical use of the transportation network was determined through review and analysis of readily available data, most of which is based on surveys and traffic counts. Both the Province and the municipal agencies have detailed traffic count databases reflecting both vehicular and person travel. From a goods movement perspective, the MTO has a historical database at select locations (border crossings and truck inspection stations) providing information regarding volume and origin-destination characteristics.

The following discussion provides an overview of available traffic and travel characteristics information assembled to date, focusing on existing conditions.

4.2 Current Travel Characteristics

4.2.1 Existing Daily Traffic Flows

Extensive traffic counts were conducted in the study area, which includes peak period turning movement counts and 7-day ATR (Automatic Traffic Recorder) counts on major corridors. The counts were conducted during March 2011.

The counts for Highway 401, Highway 3 and border crossings were collected from MTO, the counts were provided for year 2006-2011. The City of Windsor had provided turning movement counts for Lauzon Parkway/E.C. Row Interchange, Lauzon Parkway/County Road 42 intersections, Walker Road intersections and ATR counts at various locations on Baseline Road, County Road 42, Walker Road, which were conducted in year 2010. The County of Essex provided ATR Counts for County Road 22, County Road 42 and County Road 46 for year 2005 to 2009; the 2008 and 2009 counts were used for this analysis. The AADT volumes for the missing corridors were collected from the previous studies. The daily traffic flows on major roadways within and adjacent to the study area were assembled.

The summary of Annual Average Daily Traffic (AADT) flows presented in **Exhibit 4** indicates that E.C. Row Expressway carries the most significant daily traffic volumes (some section carries about 50,000 vehicles), followed by Highway 401 (with very high percentage of commercial traffic). Highway 3 is a four-lane highway with a two-way-left-turn-lane, with at-grade intersections; and County Road 42 is a basic two-lane highway, with at-grade intersections. The daily traffic on Highway 3 is ranging from 15,000 to 18,000 vehicles in the study area. County Road 42 carries daily traffic ranging from 10,000 to 15,000 vehicles. A section of Lauzon Parkway from E.C. Row Expressway to County Road 42 is a two-lane corridor and has daily traffic demands ranging from 15,000 to 20,000 vehicles.

The percentage of commercial traffic on the road system is based on the total daily traffic as presented in **Exhibit 5**.

The City of Windsor has established the truck route system to minimize the intrusion of trucks into sensitive areas while providing acceptable access to businesses and industries. The City of Windsor truck route map is presented in **Appendix A**. For the transportation modelling analysis for commercial trips, the truck route system in City of Windsor was taken into considerations and the commercial trucks were assumed to travel on the designated truck routes for the transportation modelling analysis. For the County of Essex, the trucks were assumed to be travelling on Highway 401, Highway 3 and the major arterial roads designated as County Roads.

Exhibit 4: Existing AADT on Major Roadways within the Study Area

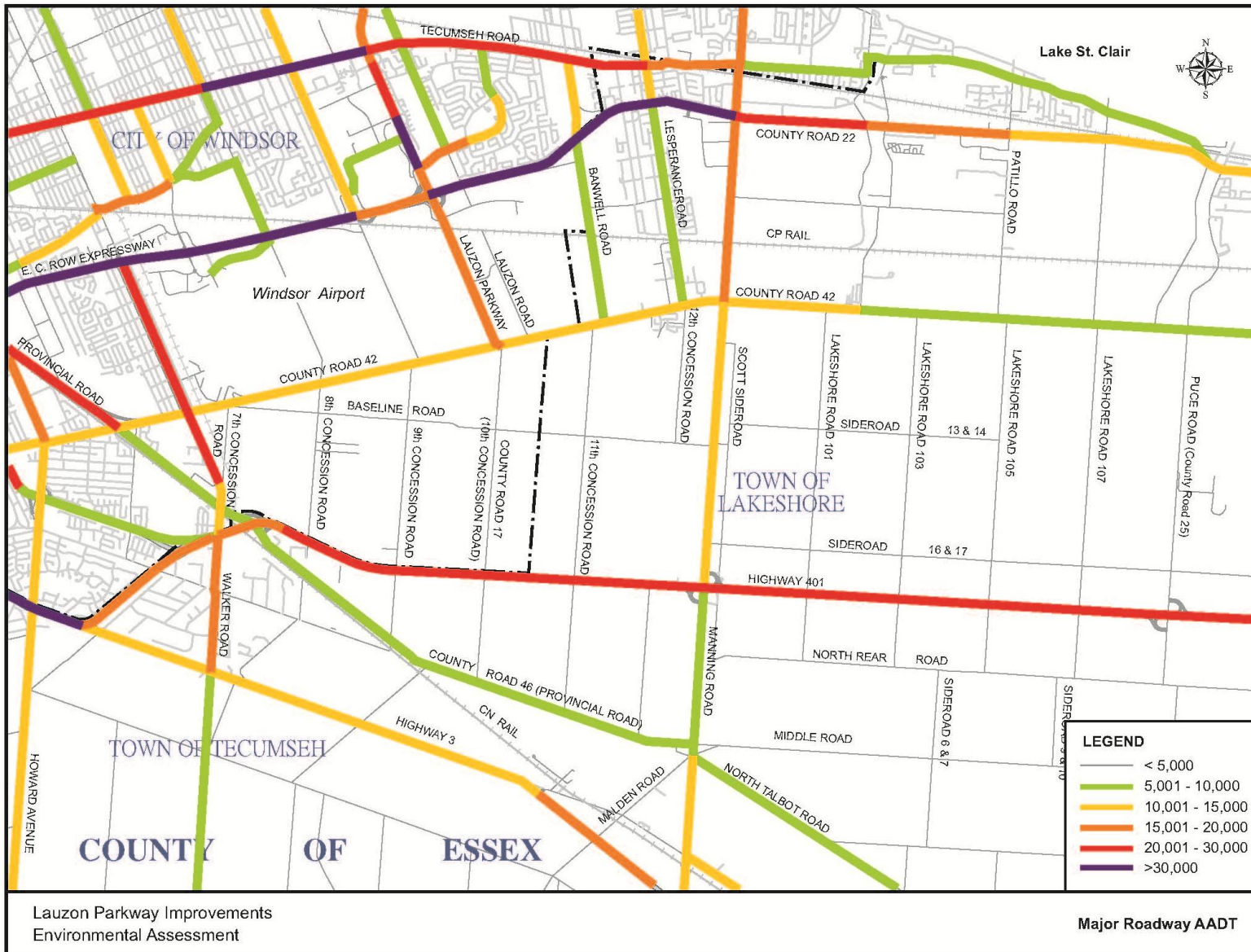
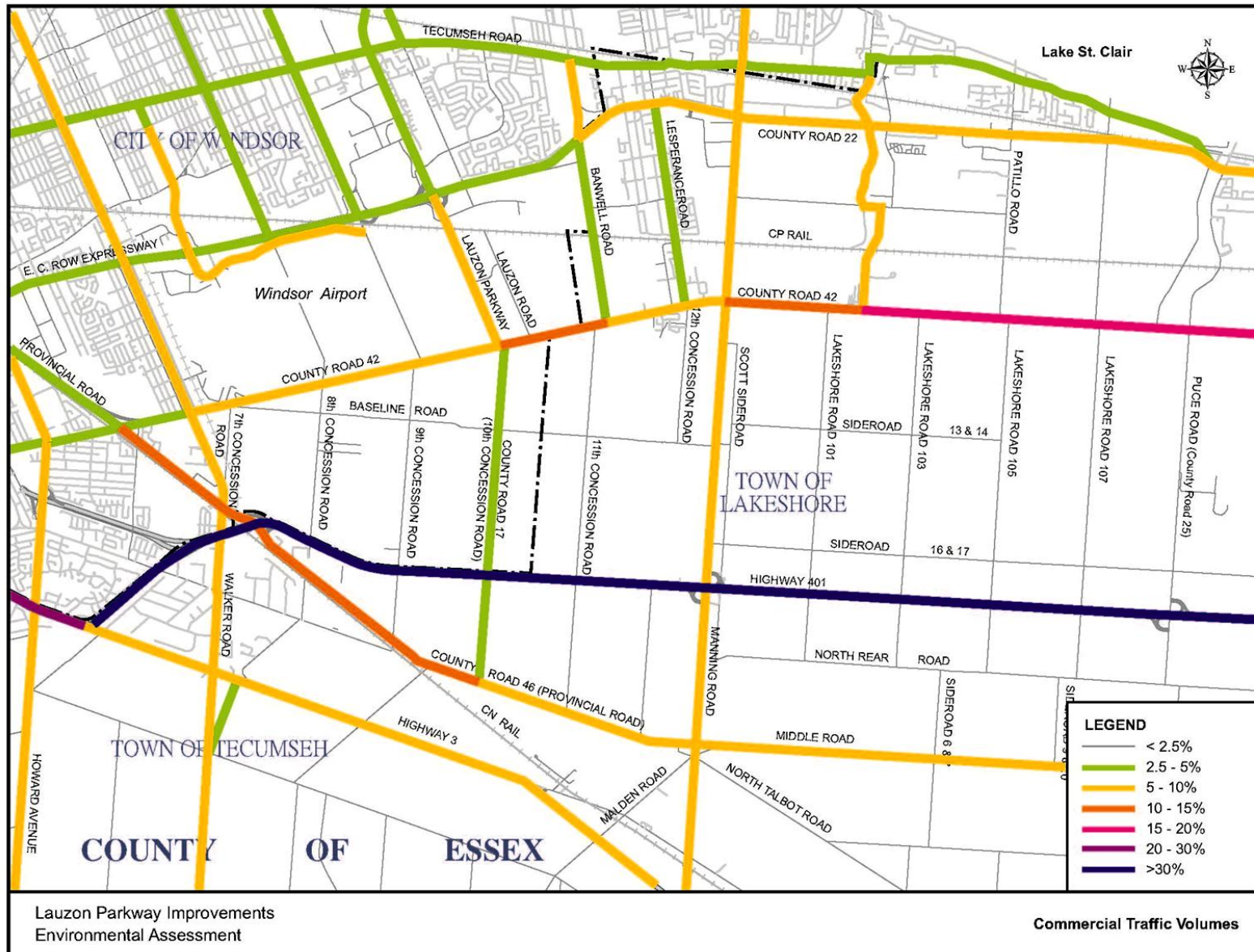


Exhibit 5: Share of Commercial Traffic



4.2.2 Non-Commercial Travel Characteristics

The origin and destination travel patterns were generated from the traffic model. Using trip production and attraction rates between traffic analysis zones (TAZ's), origin and destination trips were produced and were aggregated into super analysis zones (zones consisting of multiple TAZ's representing a wider area) to determine origin-destination trip patterns. This is essential for determining the trip characteristics of individuals originating from and travelling to the study area.

The aggregated origin and destination trip patterns show that the majority of travel destined for and attracted to the City of Windsor is internal. The patterns also show connectivity of the City and Study Area with the surrounding 'suburban' areas of LaSalle, Tecumseh and Lakeshore.

Exhibit 6 and **Exhibit 7** show the origin and destination patterns respectively for vehicles travelling to and from the City of Windsor (including internal trips). For both origins and destinations, the majority of the trips are internal (within City of Windsor). These internal trips account for approximately 80% of all trips. Consequently, all the remaining trips to and from other areas of Essex County account for a relatively low amount of the total trips. The three largest producers/attractors of trips for outside of Windsor are the areas of LaSalle, Tecumseh and Lakeshore (approximately 3-4% origin and destination traffic each).

Exhibit 8 and **Exhibit 9** show the origin and destination patterns for vehicles travelling to and from the Windsor Transferred Lands (inside which the study area is located). Again, the City of Windsor itself accounts for the largest number of trip productions and attractions (approximately 60% of existing trips). The next two highest areas for trip generation are Tecumseh and Lakeshore (approximately 7-9% origin and destination traffic each). Since Windsor has the highest population and employment in the region, it is logical that the majority of this population live and work in the City of Windsor.

Exhibit 6: Travel Characteristics for the Windsor Originated Traffic

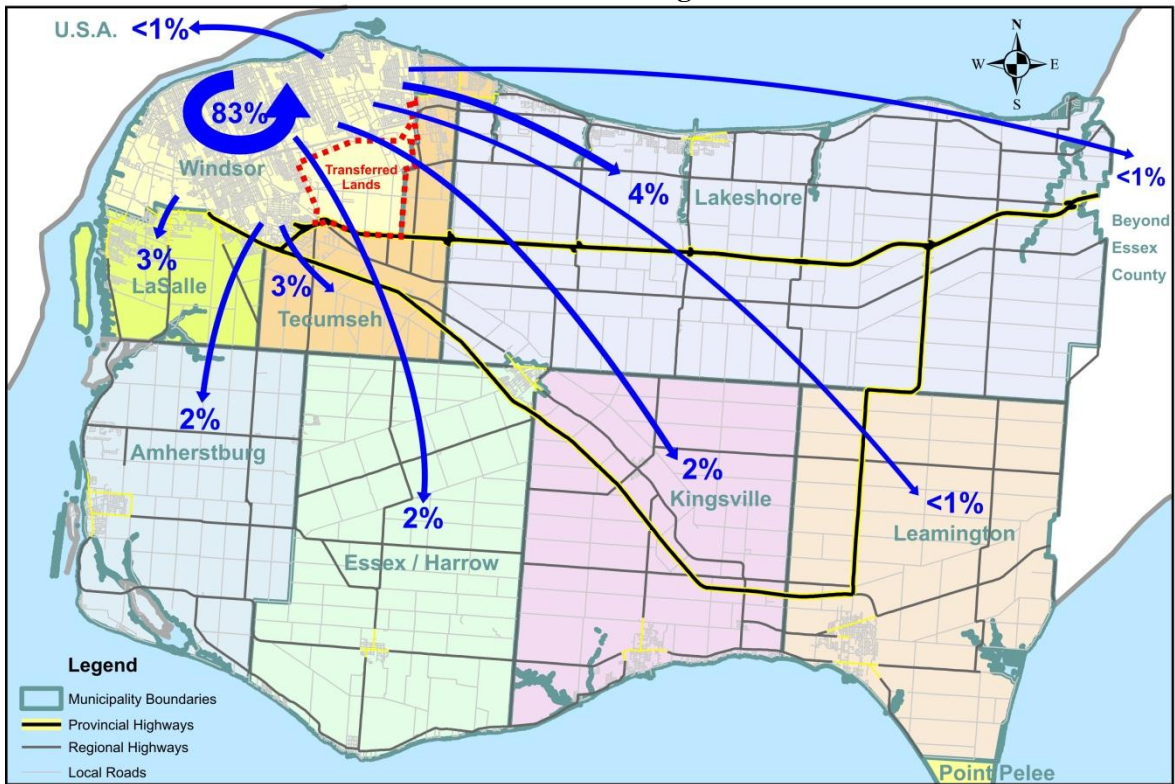


Exhibit 7: Travel Characteristics for the Windsor Destined Traffic

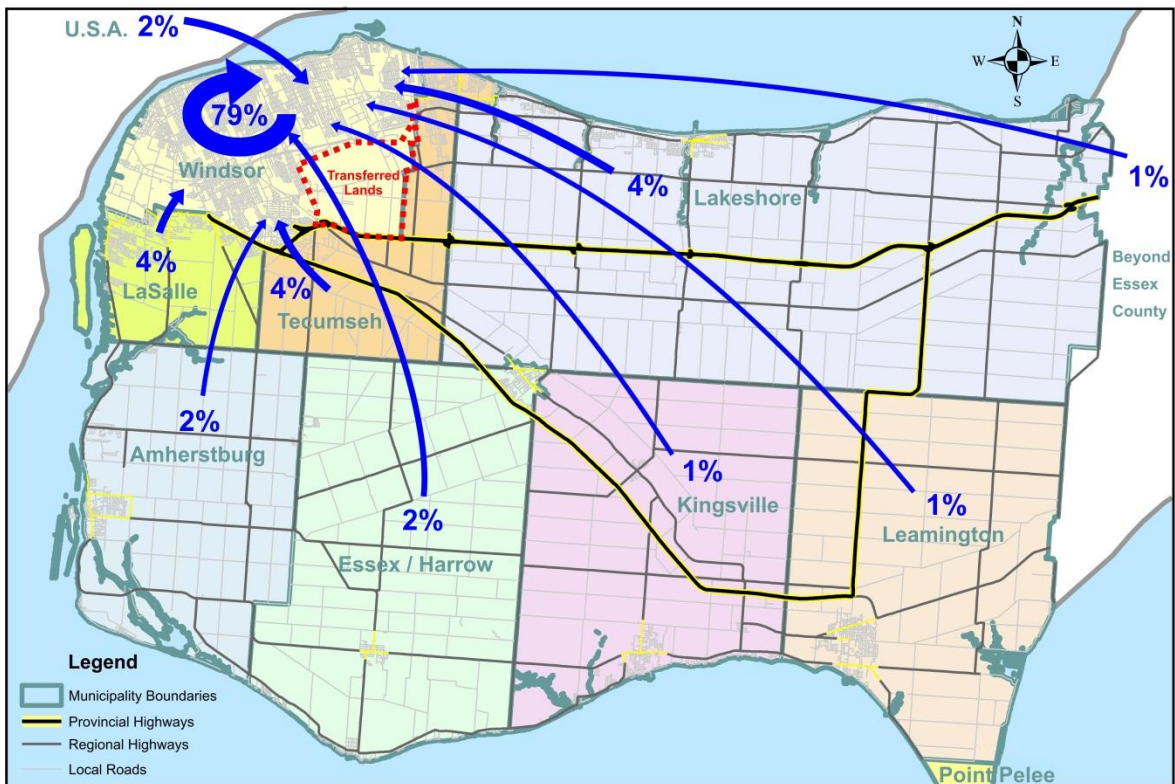


Exhibit 8: Travel Characteristics for the Windsor Transferred Lands Originated Traffic

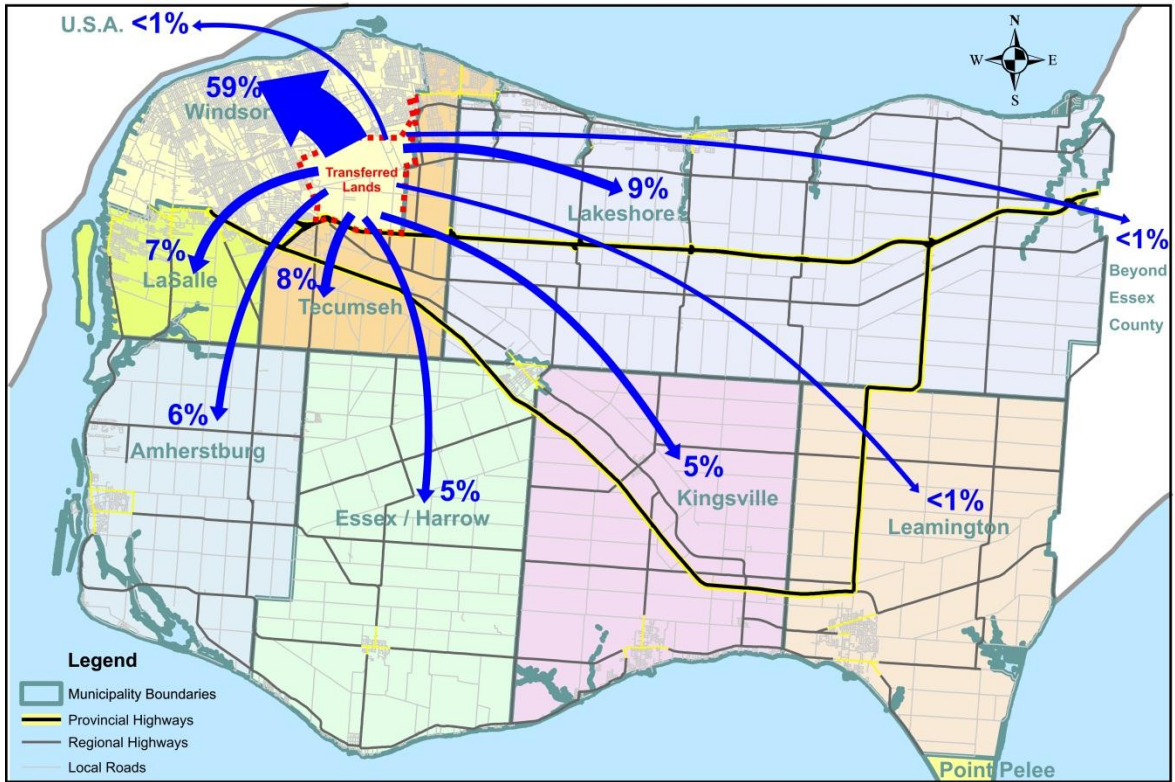
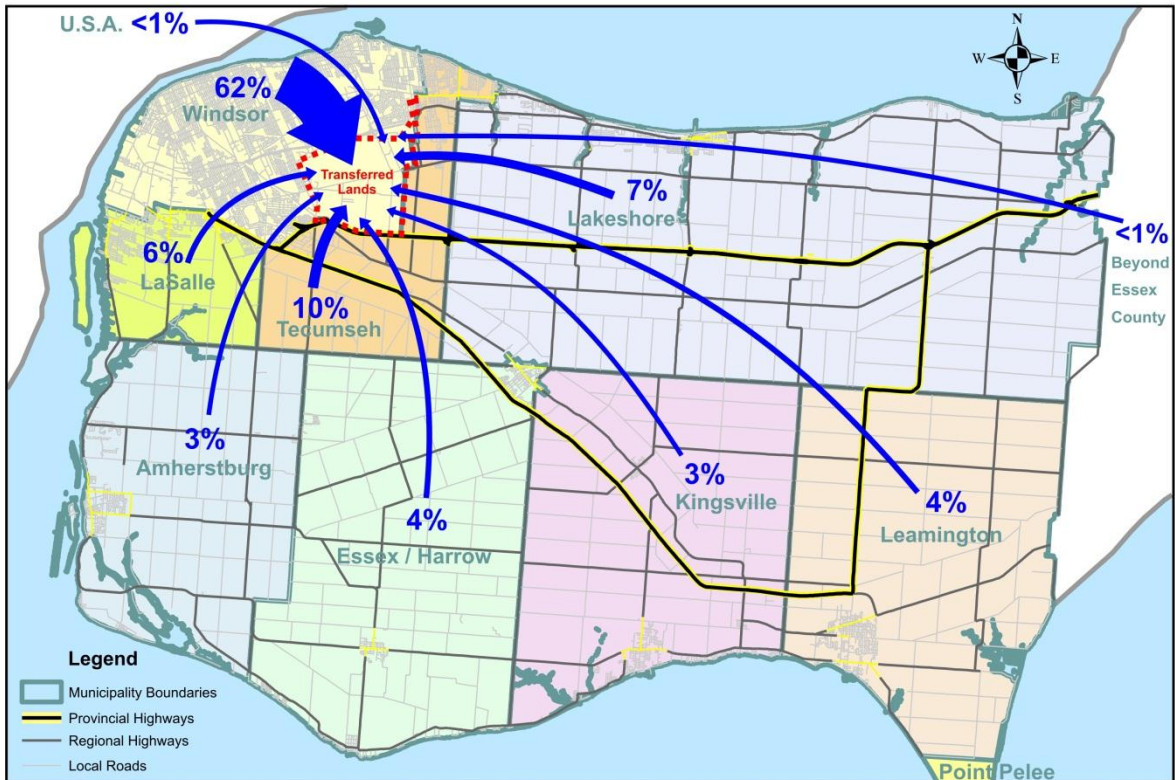


Exhibit 9: Travel Characteristics for the Windsor Transferred Lands Destined Traffic



4.2.3 Commercial Travel Characteristics

To assess the current travel characteristics of commercial vehicle travel characteristics, the commercial vehicle survey data was collected from the MTO. The MTO conducted a comprehensive commercial vehicle survey (CVS) in 2006 at the Ambassador Bridge (includes both directions) capturing border crossing traffic and at Highway 401 near County Road 19 (Manning Road) Interchange (only for the EB direction). This data quantifies truck volumes and trip origin and destination. **Exhibit 10** presents the origin and **Exhibit 11** presents the destination locations for commercial traffic at the Ambassador Bridge.

Exhibit 10: Origin of Commercial Traffic at The Ambassador Bridge

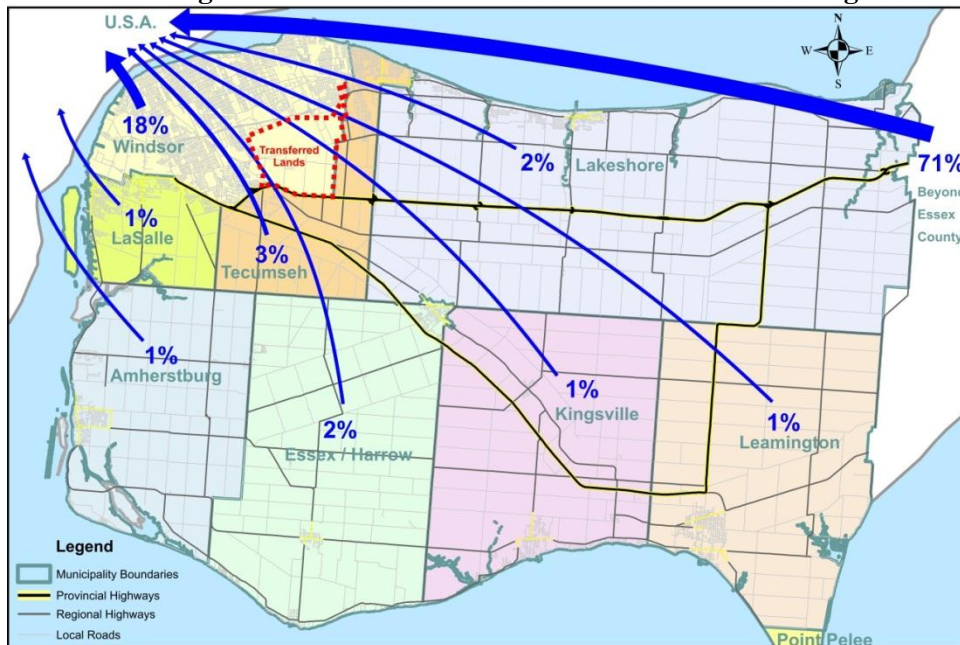
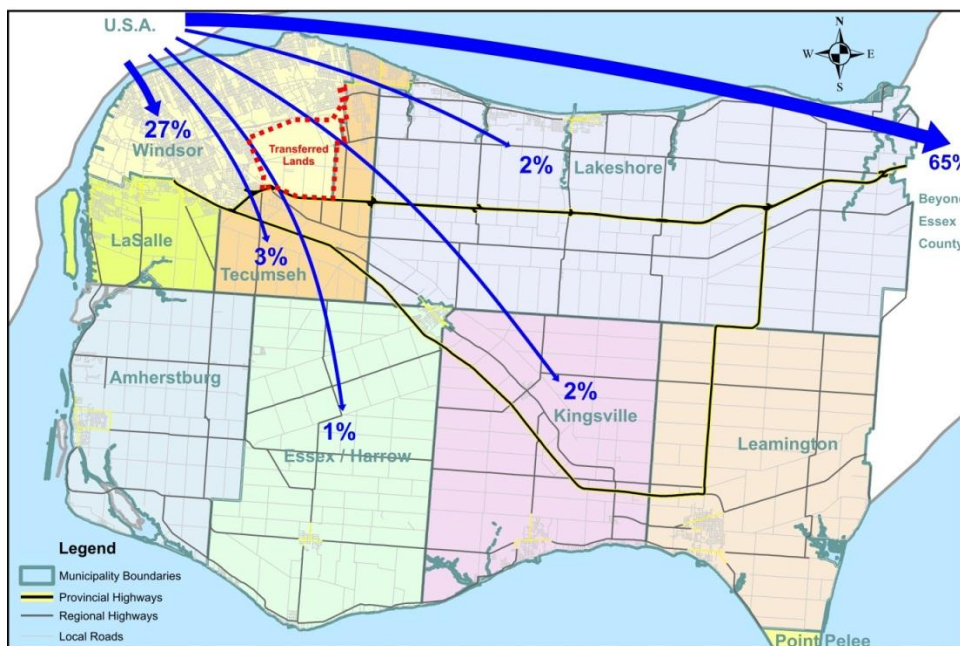


Exhibit 11: Destination of Commercial Traffic at The Ambassador Bridge



4.3 Historical Traffic Flows

Historical Annual Average Daily Traffic (AADT) volumes for Highway 401 and Highway 3 within and adjacent to the Study Area were assembled from MTO traffic count data. AADT volumes for Highway 401 were assembled from counts at the County Road 19 (Manning Road), County Road 46 (Provincial Road) and Dougall Parkway interchanges. AADT volumes for Highway 3 were assembled from counts at the County Road 19 (Manning Road), County Road 34 and Walker Road intersections.

Highway 401

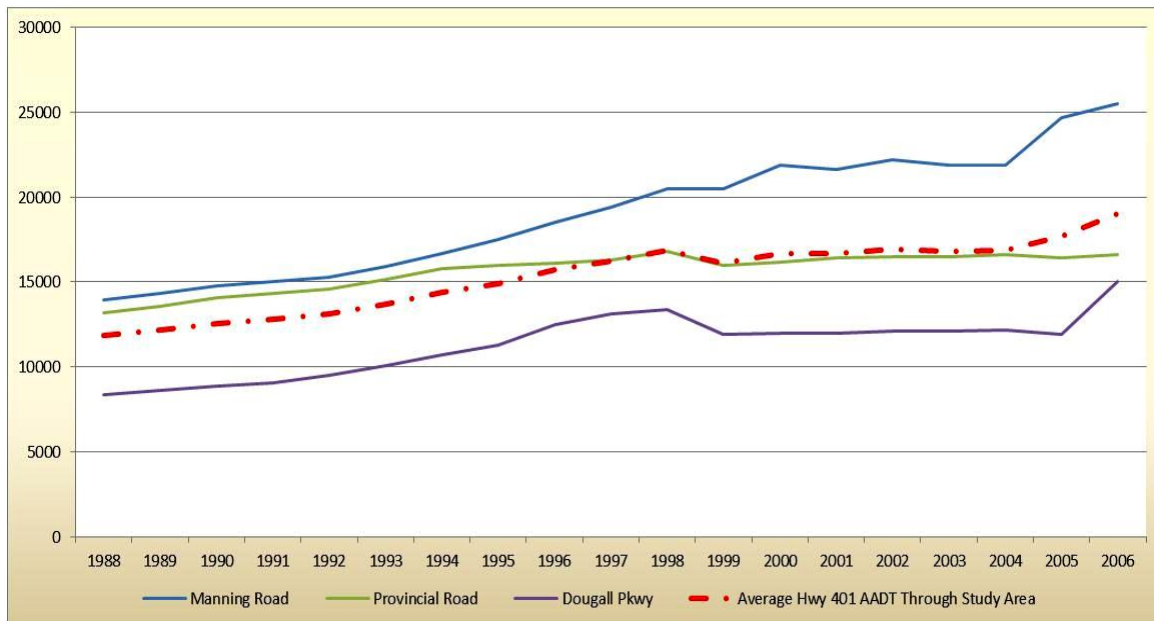
The AADT on Highway 401 in the study area (County Road 19 (Manning Road), County Road 46 (Provincial Road) and Dougall Parkway) shows the steady increase from 1988 to 2006. **Table 2** illustrates the AADT and Summer Average Daily Traffic (SADT) volumes reported by the MTO. The AADT is almost doubled at County Road 19 (Manning Road) Interchange from 1998 to 2006 with growth of 3.4% per annum. The AADT growth at the County Road 46 (Provincial Road) Interchange shows the lowest growth in this time period at 1.28% per annum.

Table 2: Highway 401 Historical Traffic Growth Trends

Highway 401						
Year	County Road 19 (Manning Road)		County Road 46 (Provincial Road)		Dougall Parkway	
	AADT	SADT	AADT	SADT	AADT	SADT
1988	13,950	16,600	13,200	15,700	8,400	9,900
1989	14,350	18,200	13,600	15,000	8,600	9,500
1990	14,750	18,400	14,050	15,500	8,850	9,800
1991	15,050	18,900	14,350	15,700	9,050	9,900
1992	15,300	18,800	14,600	15,700	9,500	10,200
1993	15,900	20,000	15,150	16,300	10,100	10,900
1994	16,700	17,400	15,800	17,200	10,700	13,700
1995	17,500	18,400	16,000	17,300	11,300	14,500
1996	18,500	19,700	16,100	18,100	12,500	16,000
1997	19,400	21,600	16,300	18,300	13,100	14,600
1998	20,500	22,900	16,800	18,900	13,400	14,900
1999	20,500	22,900	16,000	18,100	11,900	13,300
2000	21,900	23,300	16,200	18,200	12,000	13,400
2001	21,600	23,100	16,400	18,500	12,000	13,400
2002	22,200	23,600	16,500	18,500	12,100	13,500
2003	21,900	24,500	16,500	18,500	12,100	13,400
2004	21,900	24,500	16,600	18,500	12,200	13,600
2005	24,700	27,500	16,400	18,300	11,900	13,200
2006	25,500	28,300	16,600	18,400	15,000	16,700
Annual Average Growth Rate	3.41%	3.01%	1.28%	0.89%	3.27%	2.95%

Exhibit 12 shows the AADT Trend on Highway 401 from 1998 to 2006 at the County Road 19 (Manning Road) Interchange, Dougall Parkway Interchange and County Road 46 (Provincial Road) Interchange.

Exhibit 12: AADT Growth on Highway 401 Interchanges (1988-2006)



Highway 3

The AADT and SADT on Highway 3 (at the County Road 19 (Manning Road), County Road 34 and Walker Road intersections) are shown in **Table 3**. Over this period of time, traffic has grown at an average annual rate of 2.4%. Similar to Highway 401, AADT at County Road 19 (Manning Road) intersection shows the highest growth rate of 3.2% per annum, the AADT volume at this location in 1988 was 9,900 and that increased to 17,600 in 2006.

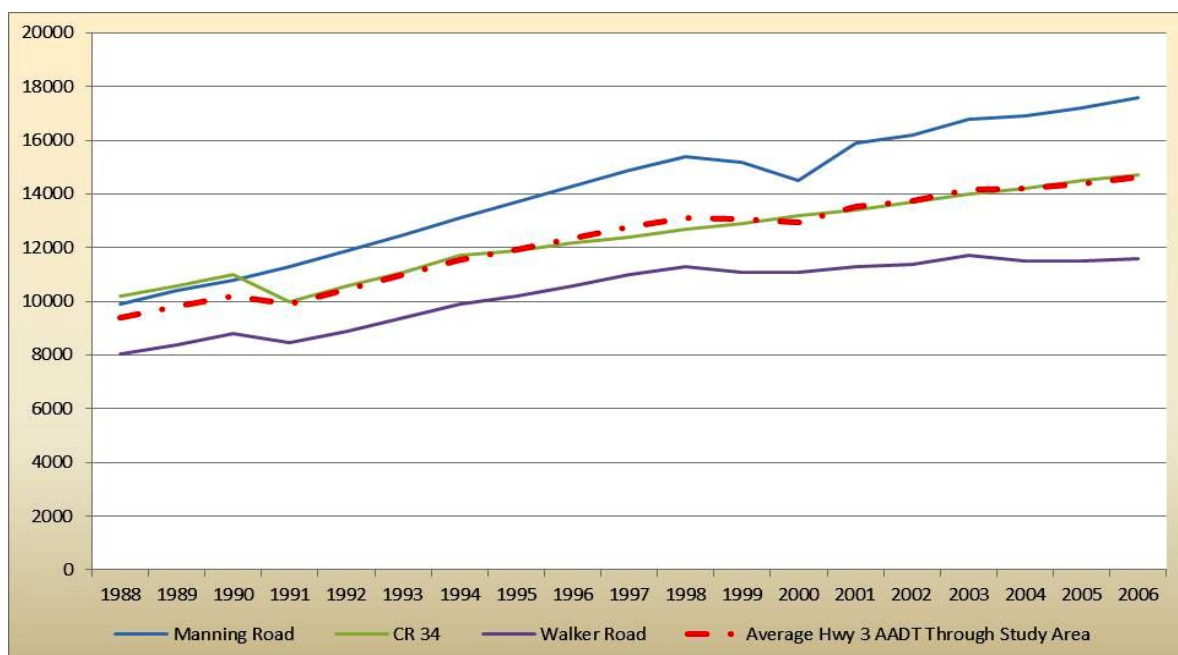
Table 3: Highway 3 Historical Traffic Growth Trends

Highway 3						
Year	County Road 19 (Manning Road)		County Road 34		Walker Road	
	AADT	SADT	AADT	SADT	AADT	SADT
1988	9,900	10,900	10,200	11,300	8,050	8,900
1989	10,400	11,500	10,600	11,700	8,400	9,300
1990	10,800	12,000	11,000	12,200	8,800	9,700
1991	11,300	12,400	10,000	11,000	8,450	9,200
1992	11,900	12,900	10,600	11,400	8,900	9,600
1993	12,500	13,500	11,100	12,000	9,400	10,200
1994	13,100	13,900	11,700	12,400	9,900	10,500
1995	13,700	14,200	11,900	12,400	10,200	10,600
1996	14,300	15,200	12,200	13,000	10,600	11,300
1997	14,900	15,600	12,400	13,000	11,000	11,600
1998	15,400	16,400	12,700	13,500	11,300	12,000

Highway 3						
Year	County Road 19 (Manning Road)		County Road 34		Walker Road	
	AADT	SADT	AADT	SADT	AADT	SADT
1999	15,200	16,200	12,900	13,700	11,100	11,800
2000	14,500	15,400	13,200	14,000	11,100	11,800
2001	15,900	17,000	13,400	14,300	11,300	12,100
2002	16,200	17,300	13,700	14,600	11,400	12,100
2003	16,800	17,800	14,000	14,800	11,700	12,400
2004	16,900	17,900	14,200	15,000	11,500	12,200
2005	17,200	18,200	14,500	15,300	11,500	12,200
2006	17,600	18,600	14,700	15,500	11,600	12,300
Annual Average Growth Rate	3.25%	3.01%	2.05%	1.77%	2.05%	1.81%

Exhibit 13 shows the AADT Trend on Highway 3 from 1998 to 2006 at County Road 19 (Manning Road), County Road 34 and Walker Road intersections.

Exhibit 13: AADT Growth on Highway 3 Intersections (1988-2006)



4.4 International Crossings

Canada and the United States have developed the largest bilateral trade relationship in the world. In 2009, it was estimated that trade between the two countries was over \$410 billion (\$1.1 billion per day) and the 'Windsor Gateway' is the most significant link for this trade route. The importance of the Ambassador Bridge and Windsor-Detroit Tunnel are as follows:

The Ambassador Bridge

- 3rd in Total Traffic
- 1st in Commercial Traffic;

The Windsor-Detroit Tunnel:

- 4th in Total Traffic;
- 20th in Commercial Traffic.

The Ambassador Bridge

The Ambassador Bridge traffic volume is presented in **Table 4**. As seen in **Table 4**, the average weekday traffic volume was approximately 28,000 vehicles. The typical peak direction during the a.m. peak hour was from Canada to the U.S. (from 7.00 a.m. to 8.00 a.m.) and during the p.m. peak hour was from the U.S. to Canada (from 5.00 p.m. to 6.00 p.m.).

Table 4: The Ambassador Bridge Traffic (2006)⁵

Vehicle Type	Average Weekday Two-Way Traffic	Peak Hour Peak Direction Traffic	
		AM	PM
Passenger	16,479	901	956
Commercial	11,498	243	305
Total	27,977	1,144	1,261

Passenger Vehicles

The Ambassador Bridge serves both local and long distance traffic. The 2008 origin-destination survey at the Ambassador Bridge⁶ indicates that the Canada to US bound traffic includes 50% of traffic originated from the City of Windsor, 36% originated from the rest of the County of Essex and 14% from other parts of Ontario and Canada. In the opposite direction, from U.S. to Canada includes 46% destined to Windsor, 32% destined to the rest of the County of Essex and 22% destined to other parts of Ontario and Canada.

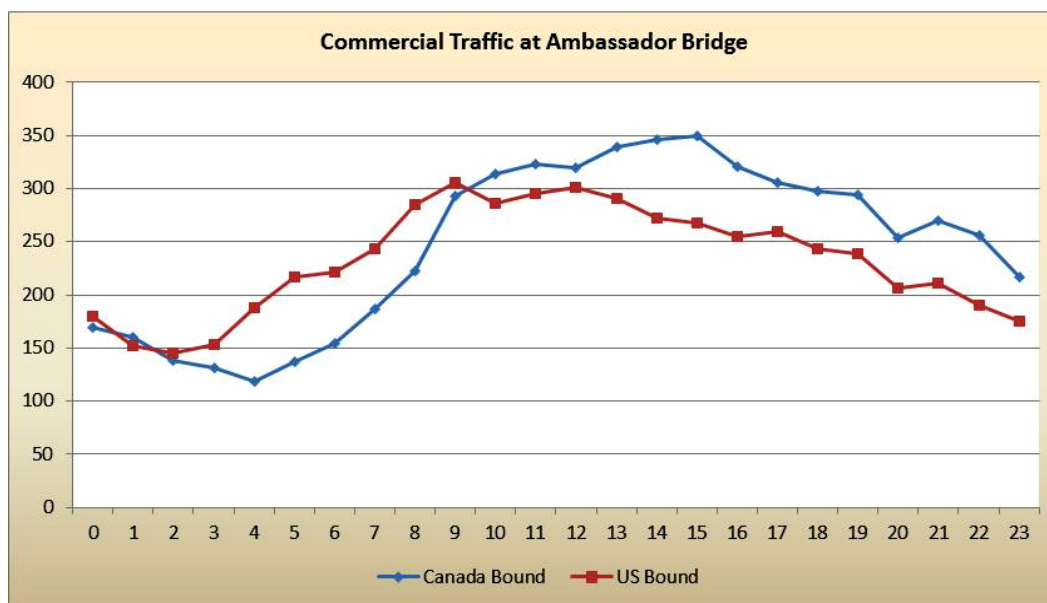
Commercial Vehicles

The Ambassador Bridge is the busiest international crossing for the commercial traffic in Canada. The hourly average weekday commercial traffic at Ambassador Bridge is presented in **Exhibit 14**.

⁵ Source: MTO CVS Traffic Survey Data

⁶ Preliminary Results of The Comprehensive Traffic and Toll Revenue Study for the Detroit-Windsor Crossing Project, Wilbur Smith Associates, February 2010, Table 3-15, p. 3-36

Exhibit 14: Weekday Commercial Vehicle Distribution at Ambassador Bridge



Windsor-Detroit Tunnel

Traffic at the Windsor-Detroit Tunnel for 2008 is presented in **Table 5**.

Table 5: 2008 Tunnel Traffic Volumes⁷

2008 Traffic Volumes	Annual Vehicle Volumes (2-way)	Average Daily Volumes (2-way)	Peak Hour Peak Direction Volumes
Passenger Vehicles	4,616,730	12,649	849
Commercial Vehicles	90,241	247	11
Buses	55,751	153	4
Total Vehicles	4,762,722	13,049	864

The typical weekday U.S.-bound peak period is 6 a.m. to 9 a.m. with a high proportion of cross-border commuter traffic. Canada-bound weekday peak period is between 4 p.m. and 6 p.m. Weekend peaks are usually late Friday and Saturday nights.

Passenger Vehicles

The Windsor-Detroit Tunnel is used more by local traffic rather than long-distance traffic. Based on 2004 data, some 88% of trips (15,000) are entirely local, while less than 1% are entirely long distance. Discretionary trips (recreation, entertainment, shopping and casino) traditionally made up just over half of all weekday Tunnel passenger car trips. The Tunnel also serves a high volume of cross-border work trips (8,300) since it provides direct access to/from the city centres of Windsor and Detroit.⁸ Recently,

⁷ Environmental Study Report, Improvements to the Canadian Plaza of the Windsor-Detroit Windsor Tunnel Master Plan and Environmental Assessment Study

⁸ IBI Group, *Canada-United States-Ontario-Michigan Border Transportation Partnership - Detroit River International Crossing Study - Travel Demand Forecasts*, September 2005, Exhibit 3.13, p. 29.

discretionary trips have been reduced throughout the day while commuter trips remain relatively steady during commuter peak periods.

Commercial Vehicles

Due to limited dimensions and the geometric configuration of the tunnel, the tunnel has restrictions on both the size and the contents of commercial vehicles that are allowed to traverse this facility, which results in low commercial vehicle traffic.

4.5 Existing Roadway Operating Conditions

4.5.1 Overview

The historic and existing traffic flows discussed in the previous sections of this report provide an overview of the current total and commercial vehicle travel demand in the Study Area as well as an indication of the traffic growth trends in specific corridors. In order to assess how well the transportation system is operating during peak travel periods, four screenlines were established within the Study Area (refer **Exhibit 15**).

A screenline is a linear feature such as a road, a river, a rail line or a municipal boundary that is used for the purpose of evaluating the cumulative travel demand on the roadways crossing this feature. The cumulative travel demand is compared to the available screenline capacity in order to establish volume-to-capacity ratios, which provide an indication of how well a specific corridor/screenline is operating. A Level of Service/Operating Condition guideline is defined by six levels or grades of generalized traffic conditions, characteristics and commonly used measurement of overall transportation system operations for links and intersections. The volume-to-capacity ratios (V/C) and respective LOS and operating conditions is presented in **Table 6**.

Table 6: Volume/Capacity Operating Conditions Guideline

Volume-to-Capacity Ratio	Level of Service (LOS)	Facility Operating Condition	Screenline Operating Condition
< .70	A + B	Free Flow	Good
.71 to .80	C	Stable Flow	Good
.81 to .90	D	Unstable Flow	Unstable
.91 to 1.0	E	Congested	Congested
> 1.0	F	Very Congested	Very Congested

4.5.2 Analysis Screenlines

Screenline Description and Location

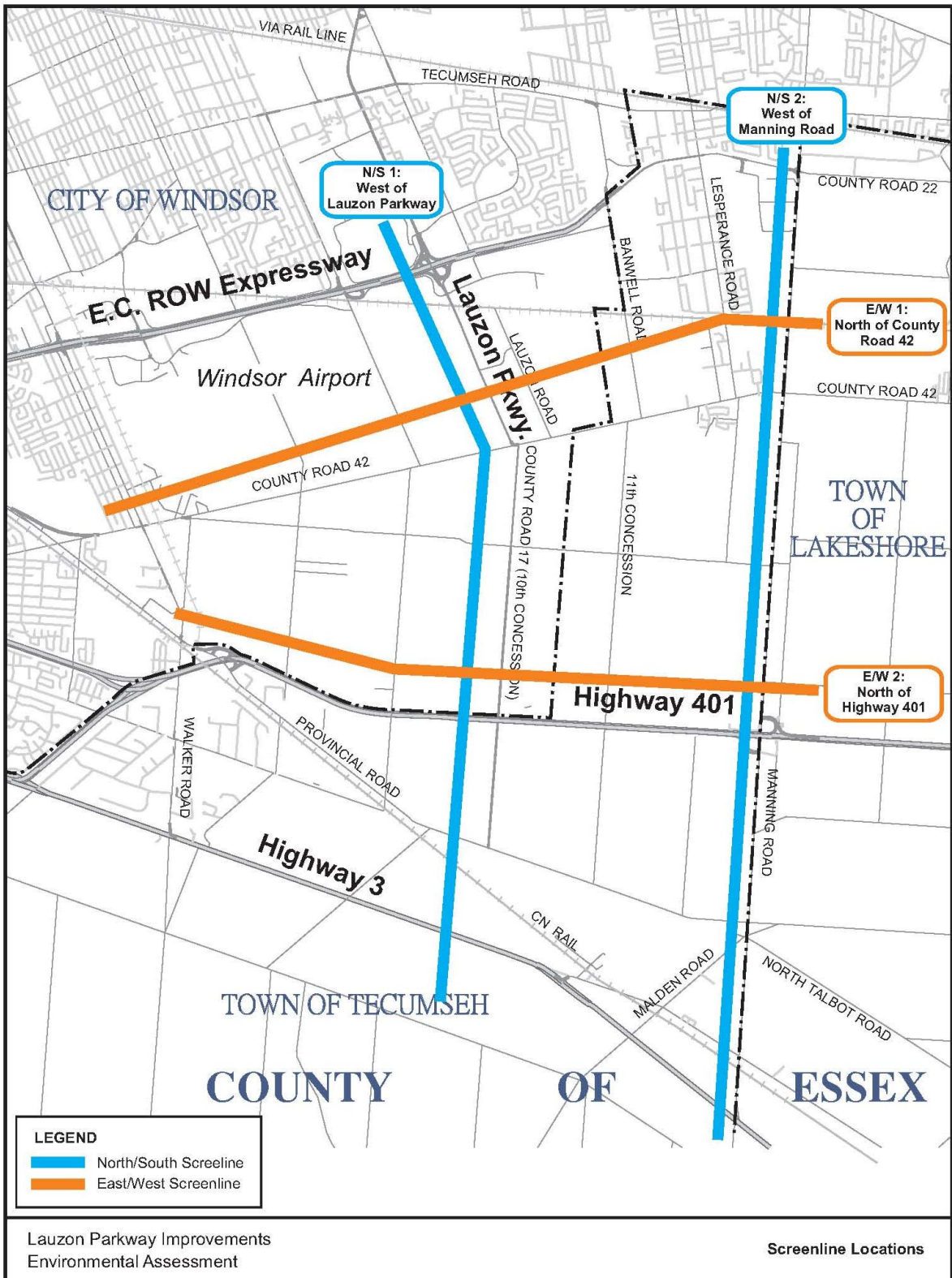
A series of analysis screenlines within the study area were identified to capture the east-west and north-south traffic flows within and adjacent to the study area, illustrated in **Exhibit 15**. Current (2010/2011) traffic data conducted by MRC was used for the analysis. A description of the analysis screenlines is presented in **Table 7**.

Currently, most of the roads east of County Road 19 (Manning Road) are not paved and serve agricultural lands, which carry very low traffic. Hence, the East-West Screenlines do not extend beyond County Road 19 (Manning Road).

Table 7: Screenline Description and Location

Screenline	Description	Limits
North-South Screenlines (East-West Travel)		
N/S 1	West of Lauzon Parkway	E.C. Row Avenue to Highway 3
N/S 2	West of County Road 19 (Manning Road)	County Road 22 to Highway 3
East-West Screenlines (North-South Travel)		
E/W 1	North of County Road 42	Walker Road to County Road 19 (Manning Road)
E/W 2	North of Highway 401	Walker Road to County Road 19 (Manning Road)

Exhibit 15: Screenline Locations within the Study Area



4.5.3 Existing Screenline Flows

Based on the recent traffic counts conducted by MRC and additional traffic data provided, the operating characteristics at the screenline level as well as at individual facilities level were assessed. Based on the traffic counts, the afternoon peak hour was identified as more critical; generally traffic volume in the afternoon peak hour was nearly 10% higher in the east-west direction and 15% higher in the north-south direction than the corresponding morning peak hour. Therefore, the afternoon peak hour traffic volume was used for the operational analysis. The roadway capacities reflect the current lane geometry and capacities assigned by the EWRTMP travel demand model, except for Highway 401. The EWRTMP model assigns the Provincial Freeway (Highway 401) a capacity of 1,500 vehicles per lane as EWRTMP model does not consider commercial traffic. However, for the screenline analysis, the capacity for Highway 401 considered 1,800 vehicles per lane. This revised capacity for the Highway 401 should be appropriate considering the MTO standards for Freeways.

The north-south screenlines capture the east-west roadway traffic. The afternoon peak hour analysis results for the N/S 1 (West of Lauzon Parkway) screenline are presented in **Table 8** and **Table 9** for the eastbound and westbound directions respectively. The eastbound is the peak direction for this screenline.

As presented in **Table 8**, the volume to capacity ratio at the screenline level shows that there is an additional capacity available for the future traffic. However, at the specific facility level, the E.C. Row Expressway and County Road 42 are operating at saturated levels and additional future traffic may result in congestion on these facilities. Additional traffic is likely to be generated by the new development in the study area.

Table 8: Screenline Results for N/S 1 (West of Lauzon Parkway) EB Direction

Facility Name	Lanes (#)	Type	Roadway Capacity/Lane	Total Capacity	Existing Count (PM)				Operating Condition
				(Vehicles)	Auto	Trucks	Total Vehicles	v/c	
E.C. Row Ave	1	Collector	650	650	169	3	172	0.26	Good
E.C. Row Expressway	2	Freeway	1,800	3,600	2,861	79	2,940	0.82	Unstable
South Service Road	1	Collector	650	650	260	20	280	0.43	Good
County Road 42	1	Arterial	900	900	750	18	768	0.85	Unstable
Baseline Road	1	Arterial	800	800	44	0	44	0.06	Good
Highway 401	2 ⁹	Freeway	1,800	3,600	864	220	1,084	0.30	Good
County Road 46 (Provincial Road)	1	Regional Road	900	900	476	21	497	0.55	Good
Highway 3	2	Highway	1,250	2,500	821	50	871	0.35	Good
Total	11		8,750	13,600	6,245	411	6,656	0.49	Good

⁹ At the time of traffic data collected on Highway 401, it was operating with four -lanes, which is being widened to six-lanes.

Table 9: Screenline Results for N/S 1 (West of Lauzon Parkway) for WB Direction

Facility Name	Lanes (#)	Type	Roadway Capacity/ Lane	Total Capacity (Vehicles)	Existing Count (PM)				Operating Condition
					Auto	Trucks	Total Vehicles	v/c	
E.C. Row Ave	1	Collector	650	650	154	3	157	0.24	Good
E.C. Row Expressway	2	Freeway	1,800	3,600	1,969	85	2,054	0.57	Good
South Service Road	1	Collector	650	650	155	20	175	0.27	Good
County Road 42	1	Arterial	900	900	496	20	516	0.57	Good
Baseline Road	1	Arterial	800	800	11	0	11	0.01	Good
Highway 401	2	Freeway	1,800	3,600	820	209	1,029	0.29	Good
County Road 46 (Provincial Road)	1	Regional Road	900	900	177	9	186	0.21	Good
Highway 3	2	Highway	1,250	2,500	451	28	479	0.19	Good
Total	11		8,750	13,600	4,233	374	4,607	0.34	Good

The analysis results for the N/S 2 (West of County Road 19 (Manning Road)) screenline are presented in **Table 10** and **Table 11**.

Table 10: Screenline Results for N/S 2 (West of County Road 19) EB Direction

Facility Name	Lanes (#)	Type	Roadway Capacity/ Lane	Total Capacity (Vehicles)	Existing Count (PM)				Operating Condition
					Auto	Trucks	Total Vehicles	v/c	
County Road 22	2	Arterial	900	1,800	1,504	41	1,545	0.86	Unstable
County Road 42	1	Arterial	900	900	537	55	592	0.66	Good
Baseline Road	1	Tertiary	700	700	146	4	150	0.21	Good
Highway 401	2	Freeway	1,800	3,600	864	220	1,084	0.30	Good
County Road 46	1	Regional Road	1,000	1,000	564	23	587	0.59	Good
Malden Road	1	Tertiary	900	900	29	1	30	0.03	Good
Talbot Road	1	Secondary	900	900	65	4	69	0.08	Good
Highway 3	2	Highway	1,250	2,500	784	68	852	0.34	Good
Total	11		8,350	12,300	4,493	416	4,909	0.40	Good

Table 11: Screenline Results for N/S 2 (West of County Road 19) WB Direction

Facility Name	Lanes (#)	Type	Roadway Capacity/Lane	Total Capacity	Existing Count (PM)				Operating Condition
				(Vehicles)	Auto	Trucks	Total Vehicles	v/c	
County Road 22	2	Arterial	900	1,800	1,157	50	1,207	0.67	Good
County Road 42	1	Arterial	900	900	479	29	508	0.56	Good
Baseline Road	1	Tertiary	700	700	63	1	64	0.09	Good
Highway 401	2	Freeway	1,800	3,600	820	209	1,029	0.29	Good
County Road 46	1	Regional Road	1,000	1,000	203	7	210	0.21	Good
Malden Road	1	Tertiary	900	900	48	2	50	0.06	Good
Talbot Road	1	Secondary	900	900	58	4	62	0.07	Good
Highway 3	2	Highway	1,250	2,500	317	28	345	0.14	Good
Total	11		8,350	12,300	3,145	330	3,475	0.28	Good

As presented in **Table 8** to **Table 11**, the share of commercial traffic on Highway 401 is very high during the afternoon peak hour, which was observed to be more than 200 trucks, accounting for approximately 20% of the total traffic during the afternoon peak hour.

The east-west screenlines capture the traffic travelling in the north-south directions. The analysis results for the E/W 1 (North of County Road 42) screenline are presented in **Table 12** and **Table 13** for the northbound and southbound directions respectively for the afternoon peak hour. The volume to capacity ratio at the screenline level shows that there is additional capacity available for the future traffic at the screenline level. However, at the facility level, the Lauzon Parkway is a congested corridor and operating at saturated level. For screenline E/W 1, northbound is the peak direction. The analysis results for the E/W 2 (North of Highway 401) screenline are presented in **Table 14** and **Table 15**. The traffic data for the 11th Concession Road is not available and hence this was not included in this screenline analysis.

Table 12: Screenline Results for E/W 1 (North of County Road 42) NB Direction

Facility Name	Lanes (#)	Type	Roadway Capacity/Lane	Total Capacity	Existing Count (PM)				Operating Condition
				(Vehicles)	Auto	Trucks	Total Vehicles	v/c	
Walker Road	2	Arterial	800	1,600	1,072	38	1,110	0.69	Good
Lauzon Parkway	1	Arterial	900	900	719	29	748	0.83	Unstable
County Road 43 (Banwell Road)	1	Arterial	800	800	184	3	187	0.23	Good
Lesperance Road	1	Arterial	800	800	150	2	152	0.19	Good
County Road 19 (Manning Road)	1	Arterial	900	900	494	11	505	0.56	Good
Total	6		4,200	5,000	2,619	83	2,702	0.54	Good

Table 13: Screenline Results for E/W 1 (North of County Road 42) SB Direction

Facility Name	Lanes (#)	Type	Roadway Capacity/ Lane	Total Capacity	Existing Count (PM)				Operating Condition
				(Vehicles)	Auto	Trucks	Total Vehicles	v/c	
Walker Road	2	Arterial	800	1,600	1,214	37	1,251	0.78	Good
Lauzon Parkway	1	Arterial	900	900	663	61	724	0.80	Good
County Road 43 (Banwell Road)	1	Arterial	800	800	161	4	165	0.21	Good
Lesperance Road	1	Arterial	800	800	92	1	93	0.12	Good
County Road 19 (Manning Road)	1	Arterial	900	900	387	20	407	0.45	Good
Total	6		4,200	5,000	2,517	123	2,640	0.53	Good

Table 14: Screenline Results for E/W 2 (North of Highway 401) NB Direction

Facility Name	Lanes (#)	Type	Roadway Capacity/ Lane	Total Capacity	Existing Count (PM)				Operating Condition
				(Vehicles)	Auto	Trucks	Total Vehicles	v/c	
Walker Road	2	Arterial	800	1,600	1,222	40	1,262	0.79	Good
8 th Concession Road	1	Arterial	800	800	96	4	100	0.13	Good
9 th Concession Road	1	Collector	650	650	187	8	195	0.30	Good
County Road 17	1	Arterial	900	900	115	4	119	0.13	Good
County Road 19 (Manning Road)	1	Regional Road	900	900	643	67	710	0.79	Good
Total	6		4,050	4,850	2,263	123	2,386	0.49	Good

As presented in **Table 15**, Walker Road and County Road 19 (Manning Road) are operating at 'Unstable' operating condition under existing conditions. Currently, these are the only two north-south links which provide connection between Highway 401 and E.C. Row Expressway, this result in traffic from other road network being attracted to these two links. As these two roadway corridors are operating near capacity; indicates a need for a new Highway 401 interchange to accommodate future traffic demand.

Table 15: Screenline Results for E/W 2 (North of Highway 401) SB Direction

Facility Name	Lanes (#)	Type	Roadway Capacity/ Lane	Total Capacity	Existing Count (PM)				Operating Condition
				(Vehicles)	Auto	Trucks	Total Vehicles	v/c	
Walker Road	2	Arterial	800	1,600	1,344	41	1,385	0.87	Unstable
8 th Concession Road	1	Arterial	800	800	42	1	43	0.05	Good
9 th Concession Road	1	Collector	650	650	134	3	137	0.21	Good
County Road 17	1	Arterial	900	900	181	4	185	0.21	Good
County Road 19 (Manning Road)	1	Regional Road	900	900	690	39	729	0.81	Unstable
Total	6		4,050	4,850	2,391	88	2,479	0.51	Good

5. OVERVIEW OF SOCIO-ECONOMIC CONDITIONS AND FUTURE OUTLOOK

5.1 Population and Employment Forecast

The County of Essex Official Plan was developed in 2002; and at the time of preparation of this report, the County of Essex Official Plan is in the process of being updated. The County of Essex provided the provisional population and employment forecasts for the Essex County. These projections will be revisited once the County of Essex's Official Plan is published and approved by the County.

The population and employment forecasts for the City of Windsor were obtained from the City of Windsor and are based on the low projections that have been outlined as part of the City's Official Plan Review process. As part of the Official Plan Review process the City of Windsor has also undertaken employment projections.

The Population and Employment forecasts are presented in and respectively.

Table 16: Regional Population Forecast

Municipality	2011	2016	2021	2031	Growth 2011-31	Annual Growth Rate
City of Windsor	219,698 ¹¹	226,631	235,521	250,206	30,508	0.65%
County of Essex	182,890	191,890	203,490	223,760	40,870	1.01%
LaSalle	28,900	30,920	33,620	38,160	9,260	1.40%
Tecumseh	24,440	25,400	27,460	31,920	7,480	1.34%
Lakeshore	34,980	37,230	39,580	43,040	8,060	1.04%
Amherstburg	22,670	23,820	25,120	27,310	4,640	0.94%
Essex	20,570	21,240	21,940	23,230	2,660	0.61%
Kingsville	21,720	22,800	24,030	26,020	4,300	0.91%
Leamington	29,310	30,180	31,440	33,780	4,470	0.71%
Pelee Township	300	300	300	300	0	0.00%
Windsor-Essex Region	402,588	418,521	439,011	473,966	71,378	0.82%

The Windsor-Essex Region population is expected to increase by 71,400 and City of Windsor population by 30,500 persons in 2031. As presented in , the population for Windsor-Essex Region is expected to grow by 0.82% per annum and City of Windsor is expected to grow by 0.65% per annum.

¹¹ Population based on projections available at the onset of this study, in March 2011, and used for the preparation of the Traffic Demand Model to identify future transportation needs. The actual 2011 population was 210,891. The difference between the projected and actual population may impact the timing of when the recommended changes should be implemented but not the overall need for the project.

The employment in Windsor- Essex Region is expected to grow by 0.75% per annum; where the employment in City of Windsor is expected to grow by 0.47% per annum from 2011 to 2031.

Table 17: Regional Employment Forecast

Municipality	2011	2016	2021	2031	Growth 2011-31	CAGR
City of Windsor	116,200	119,100	122,100	127,605	11,405	0.47%
County of Essex	63,128	67,486	71,844	80,560	17,432	1.23%
LaSalle	5,512	6,204	6,896	8,280	2,768	2.06%
Tecumseh	14,558	15,546	16,534	18,510	3,952	1.21%
Lakeshore	11,678	12,826	13,974	16,270	4,592	1.67%
Amherstburg	4,808	5,126	5,444	6,080	1,272	1.18%
Essex	6,514	6,808	7,102	7,690	1,176	0.83%
Kingsville	6,852	7,184	7,516	8,180	1,328	0.89%
Leamington	13,046	13,632	14,218	15,390	2,344	0.83%
Peele Township	160	160	160	160	-	0.00%
Windsor-Essex Region	179,328	186,586	193,944	208,165	28,837	0.75%

The PPS and Official Plans encourage intensification in the existing built-up areas; therefore not all of the projected growth in the City of Windsor should be directed to the Study Area.

The '*Windsor Annexed Lands Master Planning Study*' identified the need for the additional land requirements and proposed population and employment allocation in the Windsor Annexed Area. The population and employment suggested allocations for the Windsor Annexed Lands Master Planning Study is presented in . The population increase in the *Windsor Annexed Area* is expected to increase approximately to 14,000 persons and approximately 10,000 employment.

Table 18: Employment and Population Forecast for the Windsor Annexed Area

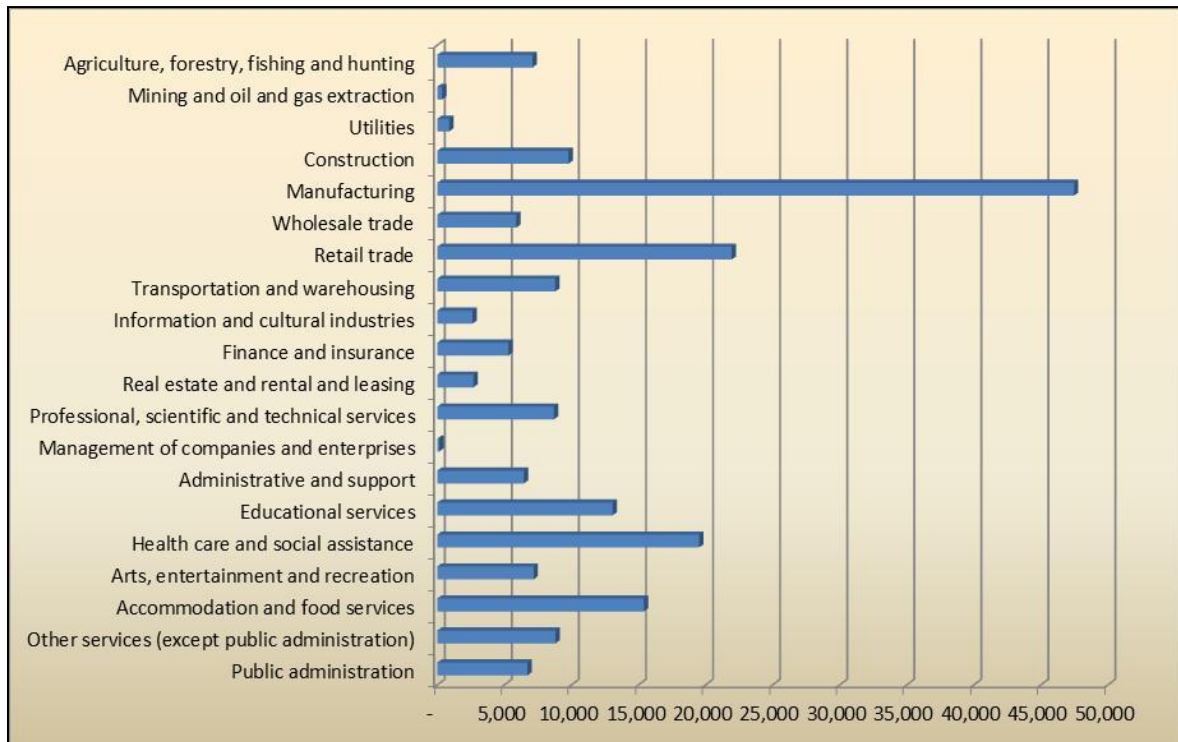
	2016	2021	2031
Dwellings Units	-	-	6,127
Population	-	-	13,908
Employment	1,139	3,987	9,682

5.2 Economic Overview

5.2.1 Employment Sector Overview

Based on the 2006 Statistics Canada Census data for the Essex-Windsor Region, the employment sector distribution is presented in **Exhibit 16**. In 2006, the manufacturing industry was providing 24% of the total employment.

Exhibit 16: 2006 Employment Sectors in Essex-Windsor Region



In the last 5 years, the manufacturing industry in this region was largely affected by the downturn in the economy in Canada and the U.S. However, the large infrastructure projects and the recovery of the auto manufacturing sector are expecting to stimulate economic growth in the region. The County of Essex has updated their earlier employment forecast and recent employment estimates (presented in) are reasonable on long term outlook.

5.3 Existing and Future Land Use

The Windsor Official Plan provides the guidelines for the land use. The Official Plan suggests a healthy and liveable city where people can enjoy a vibrant economy and a sustainable healthy environment in safe, caring and diverse neighbourhoods. The proposed land use plan from the Official Plan is presented in **Appendix B**.

Following the Windsor Official Plan guidelines, the 'Windsor Annexed Area Master Plan Study' identified the land needs requirements in the Windsor Annexed Area. The proposed land use distribution for the Windsor Annexed Area is presented in **Table 19** and the proposed land use plan is presented in **Appendix C**.

Table 19: Proposed Land Use Share for the Windsor Annexed Area

Proposed Land Use	Approximate Area (ha)	%	Required Area
Industrial	742	29.5%	810
Business Park	167	6.6%	
Residential	696	27.6%	597
Mixed Use	100	4.0%	153
Commercial	55	2.2%	
Natural Heritage / Open Space / Other	338	13.4%	234
Airport	420	16.7%	420
Contingency	Included in above figures		90
Existing Land Uses	Included in above figures		170
Total	2,518	100%	2,474

The preparation and approval of secondary plan for the remainder of the lands transferred to the City of Windsor in 2003 (the lands are bounded by the CPR mainline north of the Windsor Airport, Lauzon Road and 8th Concession Road, and the City of Windsor boundary) is under process as part of this study.

6. SUMMARY OF EXISTING CONDITIONS AND FUTURE NEEDS

A number of key factors that influence the 'Area Transportation System' needs have been identified through this preliminary assessment. The summary of key factors driving 'Area Transportation System' needs have been summarized into following themes:

- Policy Framework;
- Existing Transportation System;
- Existing Travel Characteristics;
- Historical Traffic
- Existing Traffic Operation and LOS
- Future Trend

6.1 Policy Framework

The policies developed by various levels of government are consistent with respect to the direction on land-use planning and transportation to promote strong communities, a clean and healthy environment, and a strong economy. The policies recognize the complex inter-relationships among economic, environmental and social factors in planning.

From a provincial perspective, a transportation system should be provided which are safe, energy efficient, facilitate the movement of people and goods, and are appropriate to address the needs, with the efficient use of existing and planned infrastructure.

The County of Essex Official Plan recommends that the provision of infrastructure should be cost effective and environmentally sound, which should have minimum adverse impacts on agricultural and natural heritage features and should be phased in accordance with the availability of appropriate types and levels of services.

The City of Windsor Official Plan recommends that the infrastructure shall be provided in sustainable, effective and efficient manner with the optimal use of existing infrastructure. The provision of new infrastructure shall be coordinated, shall be accessible and affordable to the community and has to be multi-modal.

The provincial policy and official plans envisages increasing intensification of existing built-up areas, with a focus on urban growth centres, intensification corridors. The intensification in the area will provide a focus for transit and infrastructure investment to support growth.

A land use pattern, density and mix of uses should be promoted that minimize the length and number of vehicle trips and support the development of viable choices and plans for public transit. Additional auto trip should be addressed by increased transit use, use of alternative travel modes, particularly ridesharing (by promoting HOV lanes, providing park and ride facilities), telecommuting, walking and cycling.

6.2 Existing Transportation System

The existing transportation system within the study area serves a transportation demand for inter-region/province/national level. The automobile continues to be the preferred mode of travel within the study area. Trucks are principal means of goods transportation in Ontario with highway linking to all major manufacturing centres and international border crossings.

The Windsor Gateway is a vital transportation artery between Canada and United States. This border functions as the busiest international trade corridor in North America, handling about 30% of the two-way flow of Canada-U.S. trade by value and about 25% by volume. The Ambassador Bridge and the Windsor-Detroit Tunnel are one of the busiest international crossings adjacent to the study area. The proposed bridge for the Detroit River International Crossing (DRIC) and Windsor Essex Parkway will provide an additional international border crossing facility and is projected to attract additional border crossing traffic.

The E.C. Row Expressway is the busiest corridor around the study area, the daily traffic demand on this corridor is reaching almost 50,000 vehicles. Highway 401 is the next busiest corridor within the study area, carries daily traffic volume of 29,000 vehicles and that includes 40% of commercial traffic. Highway 3 is provincial highway with a posted speed of 80 km/h. The daily traffic on Highway 3 is ranging from 15,000 to 18,000 vehicles in the study area.

6.3 Historical Traffic Flows

Traffic volumes have grown significantly around the study area. Traffic volume on Highway 401 at County Road 19 (Manning Road) Interchange is almost doubled from 1998 to 2006. The traffic at this interchange has grown at a rate of 3.4% per annum. The traffic at the County Road 46 (Provincial Road) Interchange has grown at a rate of 1.3% per annum.

The traffic volume on Highway 3 has grown at an average annual growth rate of 2.4%. The AADT volume at Highway 3 and County Road 19 (Manning Road) intersection was 9,900 vehicles in 1998 that increased to 17,600 in 2006.

6.4 Existing Traffic Operation and LOS

A Screenline Analysis was conducted to assess the existing traffic operations. The north-south screenline analysis for the N/S1 (West of Lauzon Parkway) for eastbound direction indicates that the overall volume/capacity ratio for this screenline is 0.49; represents the 'Good' operating condition. However, the volume to capacity (v/c) ratio for the E.C. Row Expressway was 0.82 and for the County Road 42 was 0.85 during p.m. peak hour. On this screenline, Highway 401 is the next major facility which could provide a connection to a longer distance similar to the CR 42. However, Highway 401 is about 3.3 km south of CR 42 and this distance would prevent the traffic divert from CR 42 to Highway 401; specifically if these trips are originating/destined from the City of Windsor, Town of Lakeshore and Town of Tecumseh.

The east-west screenline analysis results for the E/W 1 (North of County Road 42) implies that Lauzon Parkway is operating at v/c ratio of 0.83 for northbound direction and 0.80 for southbound direction. The E/W 2 (North of Highway 401) screenline analysis results for southbound direction identifies that Walker Road and County Road 19 (Manning Road) are operating at v/c ratio of 0.87 and 0.81 at 'Unstable Flow' condition. The Walker Road and County Road 19 (Manning Road) are the only two north-south links which provide connection between Highway 401 and E.C. Row Expressway; this results in attracting traffic from other road network to these two links. As these two links are already operating near capacity, indicates the need for a new Highway 401 interchange for future traffic demand in the study area.

6.5 Future Trends

The population and employment forecast from the County of Essex suggests that the County of Essex population in 2031 is expected to increase approximately by 41,000 residents and employment by 17,500 jobs. During the same period of time, the City of Windsor population is expected to increase by 30,500 residents and employment by 11,400 jobs. The Windsor Annexed Area Master plan study has estimated to accommodate about 14,000 residents and 10,000 employments in the Annexed Area.

6.6 Conclusion

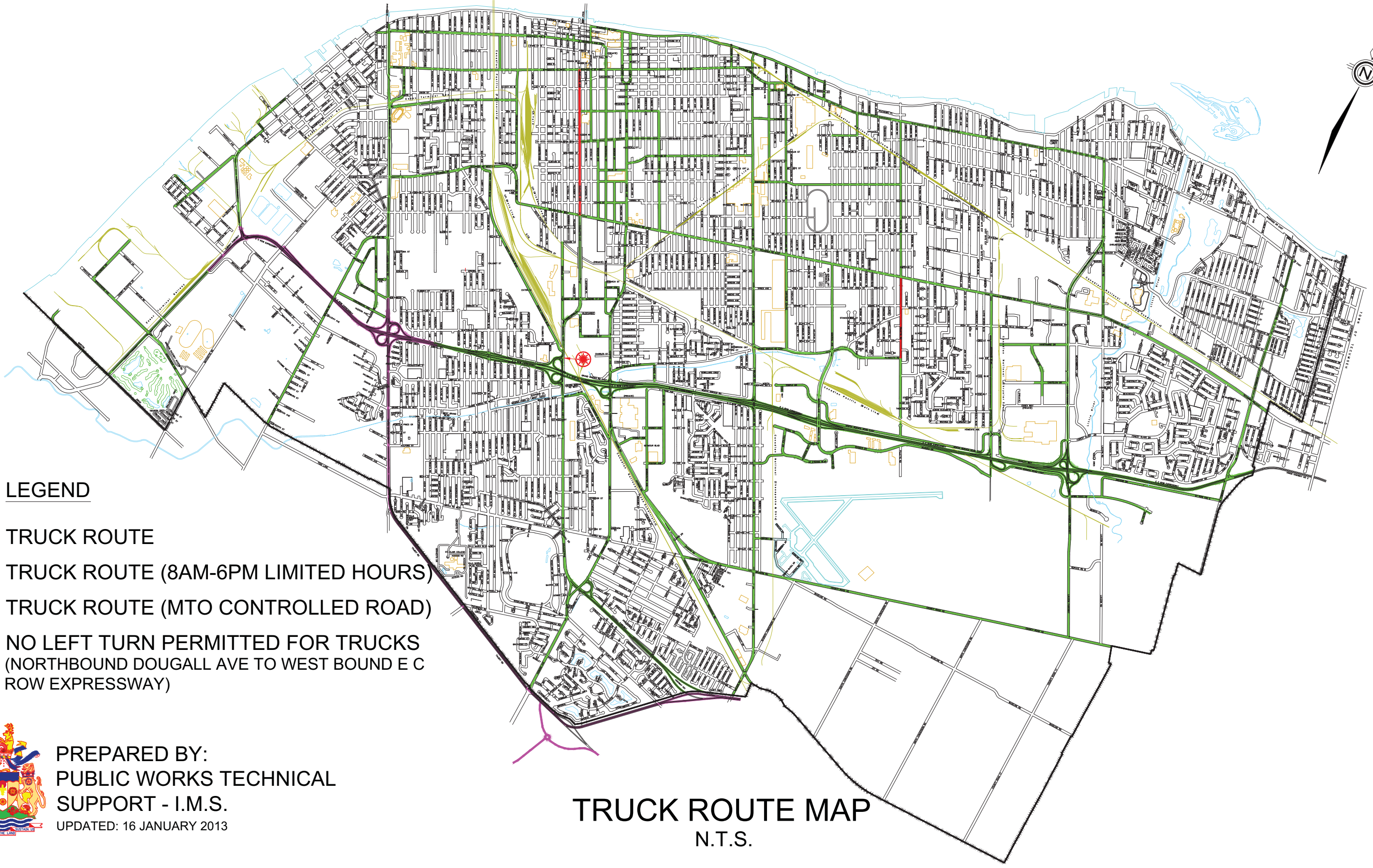
The existing transportation network serves a growing demand within the Study Area. The major arterials around the study area are operating at or near capacity. To provide the transportation network needed for the anticipated future growth, additional north-south linkage between Highway 401 and E.C. Row Expressway including a new interchange connection at Highway 401 is required.

In order to serve the proposed industrial, commercial and residential area in secondary plan, a new arterial road will require in east-west direction that could provide potential connection to Highway 401 and E. C. Row Expressway via the Lauzon Parkway.





The future planned growth in the region and the improvements to infrastructure (i.e. proposed DRIC connection and Windsor-Essex Parkway) that further increase traffic through the region are the prime driving factors for the 'Area Transportation System' needs. They will have significant impacts on the ability of the transportation system to support the new economic development and improve access for residents and businesses in the east Windsor and neighbouring municipalities.

Appendix A

Designated Truck Routes in City of Windsor



LEGEND

-  TRUCK ROUTE
-  TRUCK ROUTE (8AM-6PM LIMITED HOURS)
-  TRUCK ROUTE (MTO CONTROLLED ROAD)
-  NO LEFT TURN PERMITTED FOR TRUCKS
(NORTHBOUND DOUGALL AVE TO WEST BOUND E C ROW EXPRESSWAY)

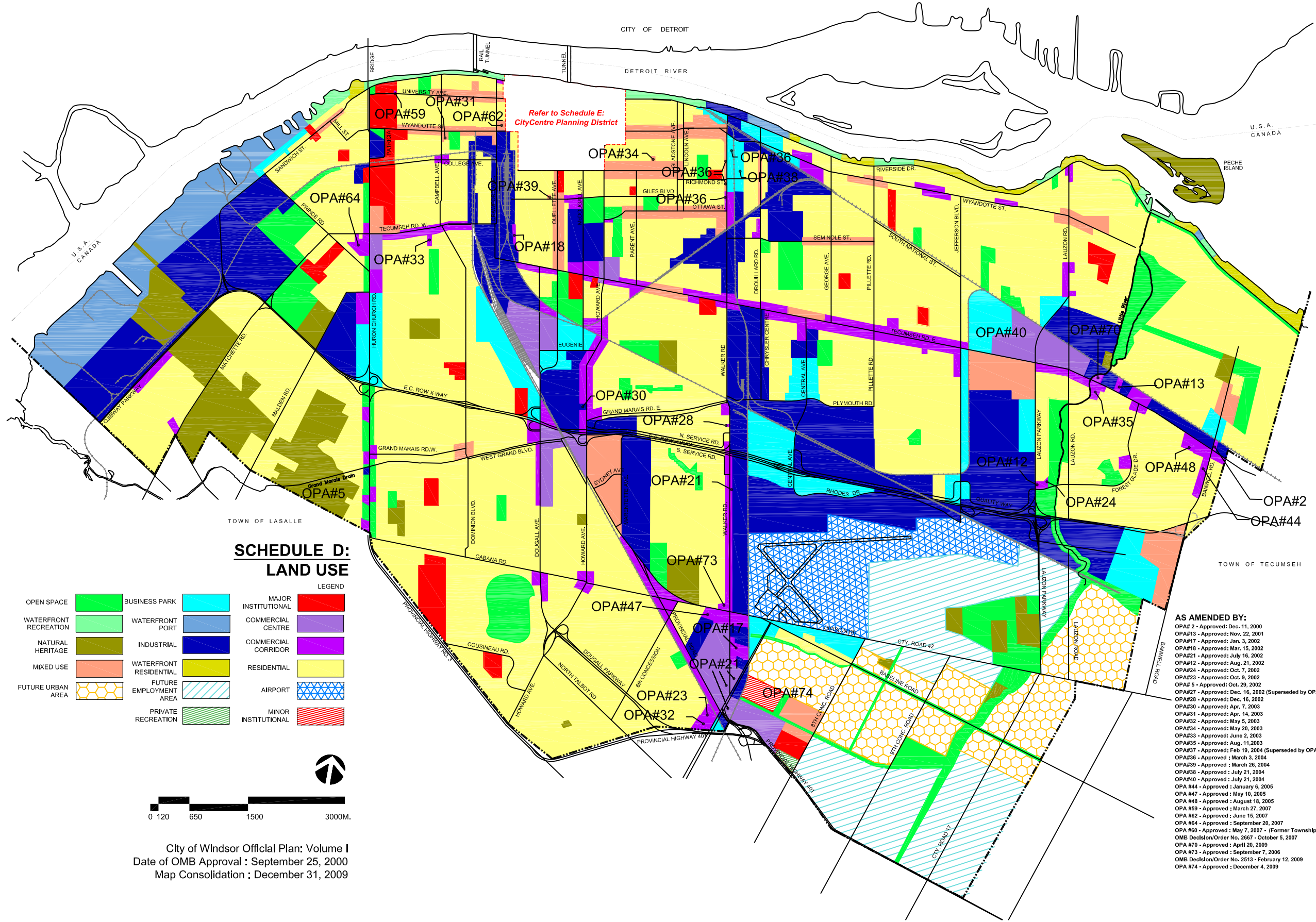


PREPARED BY:
PUBLIC WORKS TECHNICAL
SUPPORT - I.M.S.
UPDATED: 16 JANUARY 2013

TRUCK ROUTE MAP
N.T.S.

Appendix B

Proposed Land Use from City of Windsor Official Plan



**SCHEDULE D:
LAND USE**

LEGEND			
OPEN SPACE	BUSINESS PARK	MAJOR INSTITUTIONAL	COMMERCIAL CENTRE
WATERFRONT RECREATION	WATERFRONT PORT	COMMERCIAL CORRIDOR	RESIDENTIAL
NATURAL HERITAGE	INDUSTRIAL	RESIDENTIAL	AIRPORT
MIXED USE	WATERFRONT RESIDENTIAL	RESIDENTIAL	MINOR INSTITUTIONAL
FUTURE URBAN AREA	FUTURE EMPLOYMENT AREA	RESIDENTIAL	MINOR INSTITUTIONAL
	PRIVATE RECREATION	RESIDENTIAL	MINOR INSTITUTIONAL



City of Windsor Official Plan: Volume I
Date of OMB Approval : September 25, 2000
Map Consolidation : December 31, 2009

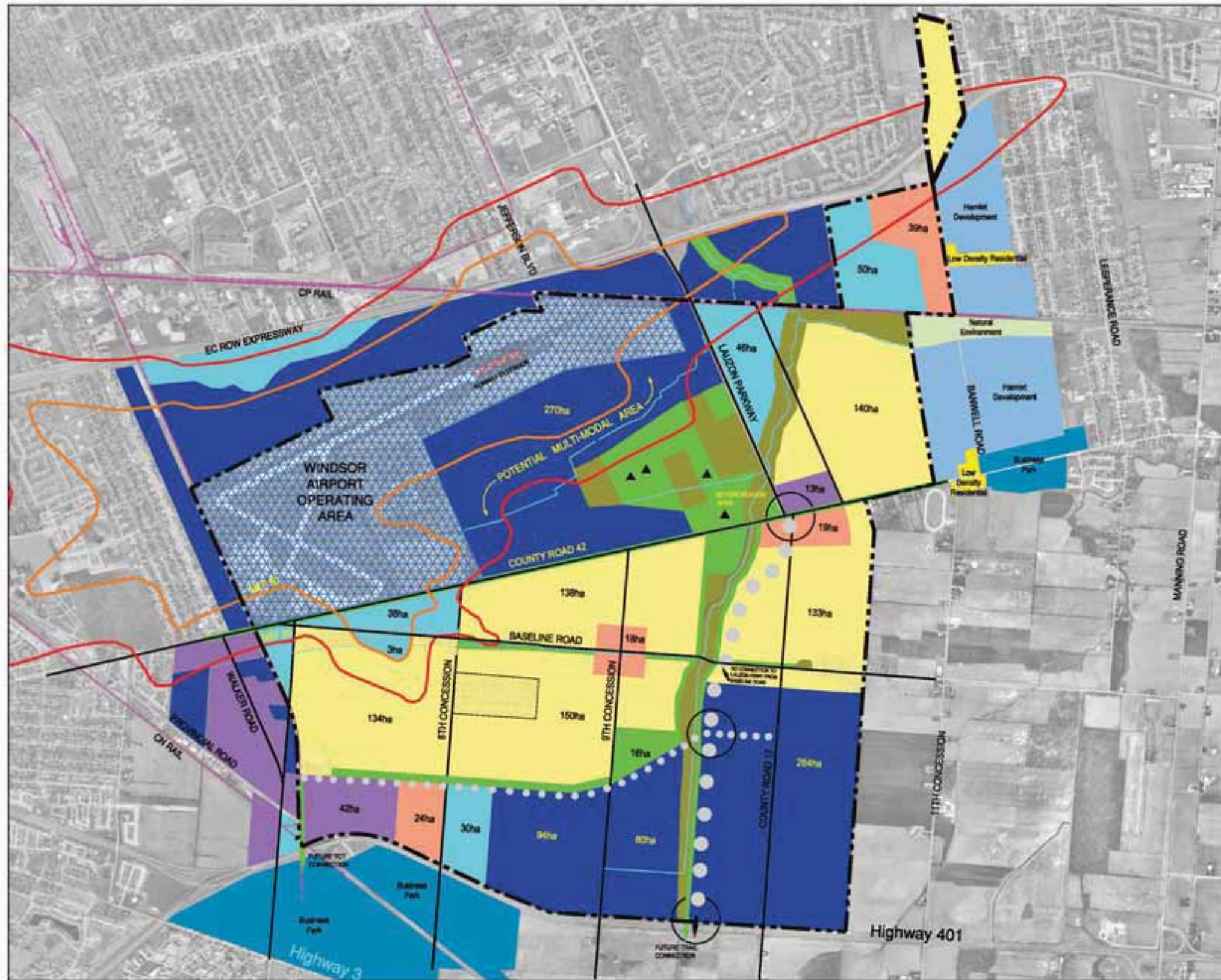
Refer to Schedule E:
CityCentre Planning District

AS AMENDED BY:

- OPA# 2 - Approved: Dec. 11, 2000
- OPA#13 - Approved: Nov. 22, 2001
- OPA#17 - Approved: Jan. 3, 2002
- OPA#18 - Approved: Mar. 15, 2002
- OPA#21 - Approved: July 16, 2002
- OPA#12 - Approved: Aug. 21, 2002
- OPA#24 - Approved: Oct. 7, 2002
- OPA#23 - Approved: Oct. 9, 2002
- OPA# 5 - Approved: Oct. 29, 2002
- OPA#27 - Approved: Dec. 16, 2002 (Superseded by OPA #40)
- OPA#28 - Approved: Dec. 16, 2002
- OPA#30 - Approved: Apr. 7, 2003
- OPA#31 - Approved: Apr. 14, 2003
- OPA#32 - Approved: May 5, 2003
- OPA#34 - Approved: May 20, 2003
- OPA#33 - Approved: June 2, 2003
- OPA#35 - Approved: Aug. 11, 2003
- OPA#37 - Approved: Feb. 19, 2004 (Superseded by OPA #40)
- OPA#36 - Approved: March 3, 2004
- OPA#39 - Approved: March 26, 2004
- OPA#38 - Approved: July 21, 2004
- OPA#40 - Approved: July 21, 2004
- OPA #44 - Approved: January 6, 2005
- OPA #47 - Approved: May 10, 2005
- OPA #48 - Approved: August 18, 2005
- OPA #59 - Approved: March 27, 2007
- OPA #62 - Approved: June 15, 2007
- OPA #64 - Approved: September 20, 2007
- OPA #60 - Approved: May 7, 2007 - (Former Township of Sandwich South)
- OMB Declon/Order No. 2667 - October 5, 2007
- OPA #70 - Approved: April 20, 2009
- OPA #73 - Approved: September 7, 2006
- OMB Declon/Order No. 2513 - February 12, 2009
- OPA #74 - Approved: December 4, 2009

Appendix C

Proposed Land Use from Windsor Annexed Lands Master Planning Study



LEGEND:

- Residential
- Commercial
- Mixed Use
- Industrial
- Business Park
- Natural Heritage
- Open Space
- Airport Lands
- Future Roads (potential location*)
- Potential Interchange
- Natural Corridor Linkage Opportunities

* Final location to be determined through the Class EA process.



Stantec Consulting Limited

CITY OF WINDSOR

**WINDSOR ANNEXED AREA
MASTER PLAN STUDY**

Council Adopted Concept

October 2006 | 614-01073Pre/CP-1.dwg

N.T.S.