



**GTA
West**

GTA West Corridor
Environmental Assessment



**GTA West Corridor
Environmental Assessment**

**Area Transportation System
Problems and Opportunities Report**

Revised Draft

December 2010



McCORMICK RANKIN
CORPORATION
A member of  MMM GROUP



PREFACE

The *Area Transportation System Problems and Opportunities Report – Draft for Consultation (2009)* is one of several interim reports which depicts the study process culminating in the Transportation Development Strategy. The *Area Transportation System Problems and Opportunities Report – Draft for Consultation (2009)* was first issued in July 2009. The reports purpose was to summarize the process and methodology that was used to identify transportation problems and opportunities, and to document the key findings of this work.

In the consultation period following its release, the study team received comments relating to a range of issues, including municipal planning policy, transportation modelling, and planned transportation initiatives within the preliminary study area. The purpose of this revised draft report (December 2010) is to ensure that all comments received have been adequately addressed; where appropriate, the content of the report has been revised accordingly.

Appendix C provides a Summary of the Input Received on the draft Problems and Opportunities Report, and details each comment received, the study team’s response, and any changes incorporated into the revised draft report.

TABLE OF CONTENTS

	Page
EXECUTIVE SUMMARY.....	i
1. INTRODUCTION.....	1
1.1 Study Background.....	1
1.2 Study Purpose	3
1.3 Purpose, Relevance and Position of Report within Study Process	3
1.4 Study Area and Areas of Influence.....	4
1.5 Problems and Opportunities in the Transportation System	7
1.5.1 Process Used to Identify Problems and Opportunities	7
1.5.2 Study Goals and Objectives	12
2. FACTORS INFLUENCING TRANSPORTATION DEMAND IN THE STUDY AREA	16
2.1 The Movement of People and Goods.....	16
2.1.1 Moving People	18
2.1.2 Moving Goods	20
2.2 Government Policies and Initiatives	22
2.2.1 Provincial Policy Statement.....	23
2.2.2 Growth Plan for the Greater Golden Horseshoe.....	25
2.2.3 Greenbelt Plan.....	30
2.2.4 Niagara Escarpment Plan.....	32
2.2.5 Oak Ridges Moraine Conservation Act and Plan	34
2.2.6 Metrolinx Regional Transportation Plan	35
2.2.7 GO Transit’s Strategic Plan – GO 2020	37
2.2.8 National Policy Framework for Strategic Gateways and Trade Corridors.....	38
2.2.9 Ontario-Quebec Continental Gateway and Trade Corridor.....	39
2.2.10 Discovering Ontario – A Report on the Future of Tourism.....	40
2.2.11 Building a National Tourism Strategy - A Framework for Federal / Provincial / Territorial Collaboration.....	41
2.2.12 Go Green: Ontario’s Action Plan on Climate Change.....	43
2.2.13 Straight Ahead – A Vision for Transportation in Canada.....	44
2.2.14 Southern Ontario Highways Program, 2008 to 2012.....	45
2.2.15 Ontario’s Tourism Strategy.....	45
2.3 Land Use	46
2.3.1 Municipal Policies	46
2.3.2 Areas of Interest for Monitoring Development Activities.....	49
2.4 Economy	50
2.4.1 Historical Population and Employment Trends.....	50
2.4.2 Population and Employment Forecasts.....	52
2.4.3 Global Trade	55
2.4.4 International Trade.....	57
2.4.5 Domestic Trade.....	60
2.5 Tourism and Recreation.....	62
2.5.1 Domestic Tourism and Recreation.....	66
2.5.2 United States Visitation	67
2.5.3 Overseas Visitation	67

2.6	Area Initiatives.....	68
2.6.1	Brantford to Cambridge Transportation Corridor Environmental Assessment Study	68
2.6.2	Niagara to Greater Toronto Area West Corridor Planning and Environmental Assessment Study.....	69
2.6.3	Highway 427 Transportation Corridor Environmental Assessment.....	70
2.6.4	Halton-Peel Boundary Area Transportation Study	70
2.6.5	Other Initiatives	71
3.	FORECASTING TRAVEL DEMAND IN THE CORRIDOR	75
3.1	Methodology	75
3.2	GGH Model Structure.....	75
3.2.1	Metrolinx Transportation System Analysis	81
3.3	Strategic Demand Forecasting Approach	81
3.4	Forecast Transportation Demands	82
3.4.1	Moving People - GGH Model Travel Flows	82
3.4.2	Moving Goods – Commercial Vehicle and Rail Transportation	85
3.4.3	GGH Model Network Auto and Truck Assignment Flows	85
3.4.4	GGH Model Transit Demand.....	86
3.4.5	Summary of Key Screenline Operating Characteristics	87
3.4.6	Congestion Analysis	95
3.4.7	Summary of Key Facility Operational Characteristics	96
4.	IDENTIFICATION OF SPECIFIC TRANSPORTATION PROBLEMS WITHIN THE STUDY AREA	101
4.1	Introduction.....	101
4.2	Moving People	102
4.2.1	Commuter – Transit	102
4.2.2	Commuter – Automobile	110
4.2.3	Tourism and Recreation –Transit.....	121
4.2.4	Tourism and Recreation – Automobile.....	122
4.3	Moving Goods	125
4.3.1	Truck.....	126
4.3.2	Rail.....	132
4.3.3	Air	134
4.3.4	Marine.....	137
4.4	Community, Environment and Economic Effects	141
5.	IDENTIFICATION OF SPECIFIC TRANSPORTATION PROBLEMS OUTSIDE THE STUDY AREA	142
5.1.1	400 & 401 Interchange.....	142
5.1.2	Cambridge to Guelph Link (Regional Road 24/124).....	142
6.	IDENTIFICATION OF TRANSPORTATION OPPORTUNITIES	146
6.1	Transportation Opportunities	147
7.	DEFINITIONS	153

APPENDICES

- APPENDIX A – SUMMARY OF INPUT RECEIVED THROUGH OUTREACH AND CONSULTATION
- APPENDIX B – POLICY FRAMEWORK
- APPENDIX C – SUMMARY OF INPUT RECEIVED ON DRAFT PROBLEMS AND OPPORTUNITIES REPORT – DRAFT FOR CONSULTATION (2009)

LIST OF EXHIBITS

Exhibit 1-1: Places to Grow (2006) – Schedule 4: Urban Growth Centres	2
Exhibit 1-2: Preliminary Study Area	5
Exhibit 1-3: Area Municipalities within the Preliminary Study Area	6
Exhibit 1-4: Area of Influence	7
Exhibit 1-5: Problems & Opportunities Development Framework	10
Exhibit 1-6: Study Goals for the Transportation System in the GTA West Corridor.....	13
Exhibit 1-7: Study Objectives for the Transportation System	14
Exhibit 2-1: The Inter-Regional Transportation System	17
Exhibit 2-2: Factors Influencing How People Travel	18
Exhibit 2-3: Typical Weekday Trips and Mode Choice Options	19
Exhibit 2-4: Overseas Goods Movement.....	21
Exhibit 2-5: Trip Chain of a Manufactured Product.....	21
Exhibit 2-6: Schedule 3 - Distribution of Population & Employment for the Greater Golden Horseshoe 2001-2031	26
Exhibit 2-7: Population Growth Projections 2001 to 2031.....	27
Exhibit 2-8: Employment Growth Projections 2001 to 2031	27
Exhibit 2-9: Schedule 6 from the Growth Plan.....	29
Exhibit 2-10: Historical Population – GTA West Municipalities.....	51
Exhibit 2-11: Historical Employment – GTA West Municipalities	52
Exhibit 2-12: Population and Employment Targets.....	52
Exhibit 2-13: Population and Employment Growth Allocation in GTA West Municipalities.....	53
Exhibit 2-14: Population and Employment Forecasts	54
Exhibit 2-15: Value of Goods Traded Between Canada and the U.S., 1989-2007.....	58
Exhibit 2-16: Ontario’s Exports to Other provinces and Other Countries.....	59
Exhibit 2-17: Ontario Import/Export Projections	59
Exhibit 2-18: 2007 Canadian Trade with U.S. States	60
Exhibit 2-19: Ontario’s Inter-Provincial Trade in 2005	61
Exhibit 2-20: Overall Visitation to the GTA West Corridor	62
Exhibit 2-21: 2007 Inbound Visitors to the GTA West Corridor	63
Exhibit 2-22: Historical and Projected Visitation to the GTA West Corridor, by Visitor Origin	65
Exhibit 2-23: Historical and Projected Visitation to the GTA West Corridor, by Visitor Origin	65
Exhibit 3-1: Population and Employment based on RTP Land Use Allocation.....	77
Exhibit 3-2: Comparison of RTP and ALU Allocations within GTA West Study Area.....	78
Exhibit 3-3: GGH Model Headways and Operating Speed Assumptions	80
Exhibit 3-4: Metrolinx System Performance Indicators	81
Exhibit 3-5: PM Peak Hour Person Cross-Boundary Person Trips	83
Exhibit 3-6: PM Peak Hour Self Containment	83
Exhibit 3-7: 2006 PM Peak Hour Total Person Travel Characteristics	84

Exhibit 3-8: 2031 PM Peak Hour Total Person Travel Characteristics	84
Exhibit 3-9: Existing and Forecast Travel Characteristics	85
Exhibit 3-10: Percentage of Commercial Vehicles by Inter-Regional Facility (2006)	85
Exhibit 3-11: 2031 Peak Hour Transit Person Trips.....	87
Exhibit 3-12: Existing and 2031 PM Peak Hour Vehicle Demand at N-S Corridor Screenlines.	88
Exhibit 3-13: Existing and 2031 PM Peak Hour Conditions at N-S Corridor Screenlines	89
Exhibit 3-14: 2031 PM Peak Hour Conditions at N-S Corridor Screenlines – Based on Planned Capacity	89
Exhibit 3-15: Existing and Forecast PM Peak Hour N-S Corridor Screenline Conditions	90
Exhibit 3-16: Existing and 2031 PM Peak Hour Vehicle Demand at E-W Corridor Screenlines	92
Exhibit 3-17: Existing and 2031 PM Peak Hour Conditions at E-W Corridor Screenlines	92
Exhibit 3-18: Existing and 2031 PM Peak Hour Conditions at E-W Corridor Screenlines – Based on Planned Capacity	93
Exhibit 3-19: Existing and Forecast PM Peak Hour E-W Corridor Screenline Conditions	94
Exhibit 3-20: Highway 401 Corridor Lane Deficiencies.....	97
Exhibit 3-21: Highway 401 Traffic Volumes and Future Capacity Shortfalls	98
Exhibit 3-22: Lane Deficiencies along the Highway 400 Corridor	99
Exhibit 3-23: Highway 400 Traffic Volumes and Future Capacity Shortfalls	99
Exhibit 3-24: Highway 410 Traffic Volumes and Future Capacity Shortfalls	100
Exhibit 4-1: Existing Regional Rapid Transit and Highway Network (Metrolinx).....	104
Exhibit 4-2: Existing Inter-Regional Transit Services.....	105
Exhibit 4-3: 25-Year Plan for the Regional Rapid Transit and Highway Network (Metrolinx)	106
Exhibit 4-4: 2031 PM Peak Period Total Person Trips and Transit Mode Share	108
Exhibit 4-5: Change in PM Peak Period Transit Travel Times to 2031 between Urban Growth Centres	109
Exhibit 4-6: 2006 Weekday (AADT) Highway Congestion.....	112
Exhibit 4-7: 2006 Weekend (SADT) Highway Congestion	113
Exhibit 4-8: Future Regional PM Peak Hour Auto Flows.....	114
Exhibit 4-9: 2031 Weekday (AADT) Highway Congestion.....	115
Exhibit 4-10: 2031 Weekend (SADT) Daily Congestion	116
Exhibit 4-11: Change in PM Peak Hour Auto Travel Times to 2031 between Urban Growth Centres	117
Exhibit 4-12: Summary of Year 2031 Hour Lane Deficiency by Highway Corridor	118
Exhibit 4-13: Future Highway 401 Westbound Flows West of Milton.....	119
Exhibit 4-14: Future Highway 401 Flows East of Milton	120
Exhibit 4-15: Visitor Mode of Transportation (2007)	122
Exhibit 4-16: Major Tourist and Recreational Destinations	123
Exhibit 4-17: Goods Movement Mode Use by Value and Tonnage.....	125
Exhibit 4-18: 2006 Daily Commercial Vehicle Volumes.....	127
Exhibit 4-19: Daily Commercial Vehicle Trips to and from Simcoe County (2006).....	128
Exhibit 4-20: Commercial Vehicle Traffic Projections (Hwy 401 East of Highways 403/410)	129
Exhibit 4-21: 2031 Daily Commercial Vehicle Volumes.....	130
Exhibit 4-22: Southern Ontario Rail Lines	132
Exhibit 4-23: Volume of Goods Carried by Rail.....	133
Exhibit 4-24: Airport Locations.....	135
Exhibit 4-25: Morning Peak Congestion Indices to Toronto Pearson International Airport 2001 and 2031	136

Exhibit 4-26: Pearson International Airport Air Cargo Demand Forecast	136
Exhibit 4-27: St Lawrence Seaway Traffic by Commodity.....	138
Exhibit 4-28: Historical Marine Tonnage on the St. Lawrence Seaway.....	139
Exhibit 5-1: Summary of Year 2007 Weekday and Weekend Traffic Flows.....	143
Exhibit 5-2: RR 24 Typical Weekdays and Weekend Traffic Profiles.....	144
Exhibit 5-3: Existing (2007) PM Peak Hour Volumes and Operation LOS.....	145
Exhibit 5-4: Future (2031) PM Peak Hour Volumes and Operation LOS.....	145
Exhibit 6-1: Sustainable Halton Land Use Concepts.....	148

EXECUTIVE SUMMARY

1. OVERVIEW OF TRANSPORTATION PROBLEMS AND OPPORTUNITIES

The GTA West Corridor has been identified in the *Growth Plan for the Greater Golden Horseshoe* as a future transportation corridor, representing a strategic link between the urban areas of the northwest Greater Toronto Area (GTA) and the western Greater Golden Horseshoe (GGH).

Future population and employment growth in major urban centres will result in a significant increase in travel demand for both people and goods movement across the Greater Golden Horseshoe. Moreover, much of South-Central Ontario continues to evolve from a Toronto-based employment centre to a region with many centres of economic activity, employment, and population, and thus a more complex transportation system.

To realize the policy directions contained in the Growth Plan and the Greenbelt Plan, the Ontario Ministry of Transportation (MTO) has commenced a GTA West Environmental Assessment (EA) Study to examine long-term inter-regional transportation problems and opportunities, and to develop an integrated, multi-modal Transportation Development Strategy that offers choice for the efficient movement of people and goods.

The identification of future transportation problems and opportunities within the Study Area is a crucial stage for this phase of the study. An understanding of the shortfalls of the transportation system and opportunities to improve its future performance provides a foundation for identifying sustainable transportation solutions. These solutions will become the basis of a technically, environmentally and economically sound multi-modal Development Strategy.

These multi-modal solutions will be developed using a “building-block” approach that starts with optimizing the existing infrastructure, investing in transit as the first priority for moving people, and thorough consideration of other modes before decisions are made for new highway facilities.

Transportation in the Study Area is characterized by a high degree of reliance on the road network as the vast majority of inter-regional trips in the GTA West Corridor are made by automobile and truck. Further, as established by analysis and stakeholder consultation, the road network is of paramount importance to the operation of all travel modes in the Study Area including transit and rail, and connecting to air and marine. All of these modes rely upon and connect to the road network. Although the majority of problems identified relate to the road transportation network, all travel modes will be considered in generating alternative solutions to address the identified transportation problems.

Transportation service providers for rail, air and marine indicate that their systems have sufficient capacity to accommodate future travel growth. Enhancements to these individual modes to accommodate growth and/or changing travel markets (for example, a

further shift to containerization of goods) can generally be made within the existing lands/corridors of the railways, ports and airports. The key transportation issues identified by all of the service providers relate to the following:

- Lack of capacity on the road network to handle growth;
- Need for improved connections between the various travel modes; and,
- Roadway congestion, particularly during the weekday peak period commute, especially in the Regions of York and Peel, and limited road and transit connections to the west of the Study Area.

In addition to the transportation problems, there are also numerous transportation opportunities that can be achieved within the Study Area by providing an efficient multi-modal transportation system. These include:

- Improved multi-modal connections with the GTA and to areas east of the Corridor;
- Improved access to the west, south and U.S. border crossings for tourism and trade;
- Improved access to inter-modal facilities, such as the nearby Toronto Pearson International Airport; and,
- Improved connectivity to the area's planned employment growth lands.
- Support municipal land use planning in accordance with the Growth Plan to facilitate both local and inter-regional transportation objectives.
- Minimized impacts to the natural, social, economic and cultural environments, through measures including optimizing existing transportation infrastructure.

2. APPROACH TO DETERMINING FUTURE TRANSPORTATION PROBLEMS AND OPPORTUNITIES

A multi-step process was implemented that considers the future transportation network in the context of the current provincial policy framework, and the key factors that influence travel demand:

- **Existing and Future Area Transportation System** – A multi-modal overview of existing and planned transportation infrastructure and services (highway, transit, rail, airport and marine services) was conducted through consultation with provincial, municipal and private sector transportation service providers. A range of transportation initiatives are planned for implementation by 2031, with support from the provincial gas tax program, which provides municipalities with funding for expansion and improvement of transit services. This improved transportation system is considered the base case for analysis of future conditions. It includes:
 - The *Metrolinx Regional Transportation Plan* (Metrolinx RTP), which identified a \$50 billion transit investment in the Greater Toronto and Hamilton Area, including new express and commuter rail services, bus and light rail rapid transit services;

- *GO Transit's Strategic Plan, GO 2020* (GO Transit's Strategic Plan), which proposes increased service frequencies and new service extensions to Guelph, Kitchener/Waterloo and Bolton;
 - The Ministry of Transportation's planned highway improvement program, including highway extension and expansion plans and High Occupancy Vehicles (HOV) systems;
 - A range of municipal transportation initiatives for road, transit and active transportation programs identified through Transportation Master Plans and Official Plans of Halton, Peel, York, Wellington and Guelph; and,
 - Rail, air and marine transportation initiatives and programs planned by other service providers, including future freight rail service enhancements and a potential longer term CN rail inter-modal facility in the Milton Area.
- **Goals, Objectives and Functions** – Goals and objectives were developed, based on the government's policy framework, in particular, the *Growth Plan for the Greater Golden Horseshoe*, *Greenbelt Act* and *Plan* and *Provincial Policy Statement*, to guide the identification of problems and opportunities in support of the following three defining pillars: compact, vibrant and complete communities; a prosperous and competitive economy; and a protected environment.
 - **Future Travel Demand** – Future travel demand was identified based on forecast growth in person trips and goods movement, with a focus on travel markets for goods, commuter and tourism and recreation travel. A range of scenarios was developed for sensitivity testing based on alternative land uses and forecasting methodologies.
 - **Other Factors** – Other factors include government policies relating to the economy, trade, land use, tourism and transportation; planned population and employment growth; broader transportation initiatives such as the Ontario-Quebec Continental Gateway and Trade Corridor Study; global and local economic trends and forecasts; and tourism and recreation factors.

Transportation problems for all modes were identified based on the capacity of the future transportation system to accommodate the expected future transportation demands, and input received from public consultation.

3. FORECAST OF FUTURE TRAVEL DEMANDS

Forecasts for the GTA West Study Area show substantial growth by 2031. Population and employment levels are expected to more than double between 2001 and 2031, with growth of over 1 million people and over 450,000 jobs.

Accordingly, Study Area travel is expected to increase significantly, as shown in Table 1:

Table 1: Projected Growth in the GTA West Corridor, 2001-2031

	2001	2031	% Change
Population	862,000	1,912,000	122%
Employment	416,000	896,000	115%
Total PM* Peak Period Person Trips	404,815	1,097,322	171%
PM* Peak Period Auto Trips	318,000	766,800	140%
PM* Peak Period Transit Trips	15,700	101,400	547%
PM* Peak Period Transit Mode Share	4%	9%	125%

* refers to afternoon and evening

Source: GGH Model land use allocation and trip data, October 2008

In addition to the increase in commuting trips, the Greater Golden Horseshoe's growth in population and employment will result in increased tourism and recreation trips to/from and through the GTA West Corridor. The projected growth will also result in increased goods movement throughout the Greater Golden Horseshoe, and trucks will continue to be the dominant mode for moving goods in the Study Area.

Tourism and recreation travel to and from the Study Area occurs throughout the year, peaking in the fall. Over 60% of all tourism and recreation trips to the GTA West Study Area are made to visit friends and relatives, and this type of travel occurs during all seasons. Approximately 30% of tourism and recreation trips originating in the Study Area occur during the summer, with trips occurring in all seasons. Significant tourism and recreation travel also moves through the Study Area, especially during the summer and largely on Highways 401 and 400, contributing to an already congested roadway network.

With regard to commuter travel, the origin-destination analysis reveals significant numbers of trips made internally within the Study Area's upper tier municipalities. Approximately 77% of trips in Wellington, 71% in Peel and 70% in Halton are expected to remain within each respective region during the weekday PM peak hour. This represents a slight reduction from 2006 levels (83% in Wellington, 77% in Peel and 73% in Halton). Trips across municipal boundaries are expected to be more substantial between Peel and Toronto/York/Durham Regions, with the numbers of cross-boundary trips decreasing toward the west.

The following sections provide an overview of the anticipated growth by travel mode. In addition, an assessment of key individual facilities was undertaken to identify potential capacity shortfalls in relation to 2031 vehicle demand. This analysis is summarized in Section 5.4 and considered travel patterns for people and goods movement, including travel origins and destinations, times of travel and available modes for trips. While weekday AM and PM peak hour travel on individual facilities is substantial, volumes are expected to continue increasing such that heavy flows are experienced throughout the day.

Transit

Future area transit improvements are expected to result in significant increases in transit trips, varying widely depending on the origin and destination of trips. For example, 2031 transit mode shares for inter-regional trips originating in the Study Area's Urban Growth Centres are forecast to range from as low as 0% from Milton to Guelph, to as high as

12% from Vaughan to Brampton. Transit improvements, such as high-frequency, full-day GO rail services, are expected to result in improvements in transit travel times between the Study Area's Urban Growth Centres. Decreases in transit travel time are forecast to range from 15% (transit trips from Milton to Brampton, and Brampton to Vaughan) to 70% (transit trips from Brampton to Toronto).

Automobile

By 2031, automobile flows are expected to increase substantially. The traffic analysis indicates that weekday PM volumes are forecast to increase by 80% to 95% east of Winston Churchill Boulevard (near the central part of the Study Area), and between 70% and 130% east of Guelph. In the eastern portion of the Study Area, west of Highway 427, volumes are projected to increase by 25% by year 2031.

The analysis also shows that in the Study Area summer average daily traffic volumes (SADT) are generally greater than the annual average daily traffic volumes (AADT) that occur throughout the year. SADT is characterized by longer peak periods and more balance in the direction of travel, as commuter and tourism and recreation trips overlap.

Other Travel Modes

Canadian Pacific (CP) and Canadian National (CN) railways and VIA Rail operate in the Study Area, and rail use is anticipated to steadily increase through to 2031. This increase will be driven largely by the growth in volumes of containerized goods. There is capacity for further growth on the rail system and stakeholder consultation indicated that the existing infrastructure is anticipated to meet demand for the next 10 to 20 years.

There are no major air and marine transportation facilities directly within the Study Area, although Toronto Pearson International Airport lies in close proximity to the southeast. The Ports of Toronto and Hamilton are the closest marine transportation facilities. Expansion is planned for area air and marine transportation services to meet future demand, which will result in increased automobile and truck traffic on the Study Area road network.

4. SUMMARY OF FUTURE TRANSPORTATION PROBLEMS

The overarching problem of the inter-regional transportation system in 2031 relates to the road network. Much of the higher order road system (i.e., highways and inter-regional roads) is expected to be heavily congested during peak periods and increasingly throughout the day. Road congestion in the summer is higher due to the overlay of tourism and recreation travel. The fact that every mode connects to and relies on the road network creates significant issues for the efficient movement of people and goods in the future.

Transportation in the GTA West Study Area in 2031 can be considered in the context of two sub-areas with differing geographic, land use and transportation system characteristics:

East Study Area – Milton to Vaughan

The Study Area's highways (Highways 401, 400, 410, 427 and 407 ETR) are concentrated in the east and south of the GTA West Corridor. While a number of inter-regional road connections are in place, all highways in the Study Area (with the exception of some sections of the 407 ETR) will continue to experience major congestion throughout the day, particularly as population and employment growth intensifies to the west and north of existing built up areas. Highway 401 provides the major east-west connection across the Study Area's southern boundary and continues to be heavily congested.

Inter-regional rail transit service will be provided by GO Transit and will include rail expansion/improvements to Brampton, Bolton and Milton. The Metrolinx RTP identifies Bus Rapid Transit service along the 407 ETR and Other Rapid Transit into the southeast portion of the Study Area.

Major congestion along the area highways constrains commuter travel and trucking transport, and is a major concern for economic growth and prosperity.

West Study Area – Milton to Guelph

There are few highway and transit connections to the west and north of the Study Area. Highway 7 provides a lower capacity east-west connection to Guelph, and is expected to operate with minor congestion by 2031. Highway 6 runs north-south along the Study Area's western boundary, and is expected to operate with major congestion south of Guelph. Higher order inter-regional GO Transit service is being examined to extend to Guelph/Kitchener but there are limited inter-regional transit services between communities north and west of Toronto. There are opportunities in this portion of the Corridor for improved roadway and transit connections to Toronto and to areas farther west and south toward Hamilton, Niagara and the U.S. border in the Niagara to GTA Corridor.

5. TRANSPORTATION PROBLEMS BY TRAVEL MARKETS AND MODES

5.1 Moving People – Commuter

The movement of people in the Study Area is predominantly comprised of trips for commuting and for tourism and recreation. Although these trips have different characteristics, many of the future transportation problems are similar. In general, the limited choice of alternate travel modes in the Study Area increases reliance on the automobile.

Transit

The implementation of the Metrolinx RTP will substantially improve inter-regional transit services in the east and south of the Study Area, through new GO rail connections and Rapid Transit services. Transit provisions in some parts of the Study Area will remain limited.

- Future inter-regional transit connections, as provided in the Metrolinx RTP, will generally be oriented toward Toronto, including radial links to Vaughan, Brampton, Milton and Guelph. However, orbital inter-regional connections, such as Milton-Brampton and Milton-Guelph, are more limited and indirect, requiring transfers and indirect travel routes.

Other transit issues include the following:

- There is a lack of integration between local and inter-regional transit services, particularly beyond corridors served by GO Transit, in terms of physical connections, timetables and hours of service, fare structures and payment methods;
- Roadway congestion limits the efficiency of bus transit services, and increases unreliability and travel times; and,
- The expansion of passenger and freight rail services within existing rail corridors creates potential for conflicts, particularly during peak commuting periods, as well as issues of scheduling and integration of rail services.

Automobile

The road transportation system is the main mode used for commuting in the Study Area, especially where trips are not served by a higher order transit alternative. As traffic volumes increase throughout the day, the traditional AM and PM peak commuting periods are becoming longer, resulting in highways such as Highways 401, 400, 410 and 427 being congested throughout much of the day.

- Major congestion issues are anticipated on the main highways in the Study Area, along the lengths of Highways 401, 400, 410 and 427 within the Study Area's boundary.
- The expected capacity shortfall will increase automobile travel times between the Study Area's Urban Growth Centres. Delays that occur due to collisions, inclement weather conditions, road maintenance and construction will contribute to congested conditions.
- There is a lack of alternate higher order inter-regional routes to avoid congested conditions, particularly for travellers using the Highway 400/ Highway 401 corridors.

5.2 Moving People – Tourism and Recreation

The problems for tourism and recreation travel are somewhat similar to those for commuter travel. Summer travel, when roadway congestion is greatest, is a particular issue for tourists.

Transit

The vast majority of tourism trips to, from and through the Study Area are forecast to continue to be by automobile, as limited transit systems are in place to serve tourist destinations and travel schedules, and in many instances there is no reasonable alternative to the automobile. Further to this:

- There are inadequate transit connections between urban centres, tourist gateways such as Toronto Pearson International Airport, and tourist destinations. Limited multi-modal connections are likely to increase car use even for those who travel to the Study Area by rail or air.
- Where publicly funded transit services are in place or planned, schedules tend to cater to commuters rather than tourists, with services focused on AM and PM commuting times and limited weekend services.

Automobile

The problems for road-based tourism and recreation travel include congestion, increased travel times, limited travel routes and modal options. The automobile is the transportation mode of choice for more than 90% of visitors to the Study Area. Tourism and recreation travellers also pass through the Study Area to destinations in Toronto, Niagara Region, and elsewhere in Ontario and beyond.

- For the most part, the Study Area's tourism and recreation destinations are connected to urban centres by Highway 401 and Highway 400 that regularly experience major congestion and heavy truck volumes. These trips through the Study Area are more likely to be oriented to the summer season.
- There are inadequate connections between tourist gateways (e.g., airports) and tourism and recreation destinations.
- Congestion results in increased and unpredictable travel times for tourists, and can negatively affect the tourist trip experience.
- High volumes of trucks on the major highway corridors can be a deterrent to tourist travel, especially during the summer months.

5.3 Goods Movement

The Study Area includes road and rail facilities for goods movement. There are no major air or marine transportation facilities located directly in the GTA West Corridor; however the Study Area is adjacent to Toronto Pearson International Airport and within 50 km of the Ports of Toronto and Hamilton.

There are a number of multi-modal facilities within and in the vicinity of the Study Area. Multi-modal movement of goods and inter-modal connections are a critical element of the transportation system. Stakeholder consultation with rail, air and marine transportation operators revealed that there is capacity for future growth of goods movement by these individual modes. The collective issue for rail, air and marine sectors relates to the limitations associated with the inter-regional road network from the perspective of access and/or congestion.

Suppliers and distributors of goods generally decide how goods are shipped at the global, continental, and inter-regional scale. Certain goods are better suited to particular modes (i.e. truck – consumer goods, rail – bulk goods / containers). Goods shipment methods depend on type and character, origin and destination, travel distance, and urgency and reliability.



Generally, goods movement relies on the road system at least once during the delivery of a product.

Truck

The inter-regional road system is the primary distribution mode for goods movement in the area, shipping almost 70% of Canada-U.S. trade by value and 45% by tonnage. By 2031, commercial vehicle volumes in the Study Area will generally be concentrated on Highways 401, 400, 410 and 427. By 2031, all of these road linkages are expected to experience major congestion throughout the day. While the problems for goods movement by the inter-regional road system are largely similar to those for automobile commuters, they can result in significant economic impacts to shippers, distributors, local businesses and industries. These problems include:

- Increased congestion and travel times;
- Unpredictable travel times;
- Inadequate connections between Urban Growth Centres, commercial centres and inter-modal facilities; and,
- Diversion of trucks to regional and local roads, which results in out-of-way travel with associated community, social, noise and safety concerns.

Rail

CN and CP operate mainline freight services through the GTA West Study Area. The GTA West Corridor includes the Vaughan (CP) and Brampton (CN) inter-modal terminals, as well as the Trafalgar Road (CP) and MacMillan Yard road-rail terminals (CN). Rail services provide connections for goods movement in the Study Area, including inter-modal facilities with the road network. Much of the strong growth in rail and inter-modal goods movement has been driven by the growth in marine transport of containers.

- The key problems for rail transportation involve inter-modal connections to higher order roadways, as well as issues relating to congestion on the area road network.

Other problems include:

- Limited connectivity of inter-modal facilities, which can increase the difficulty of moving containers and other goods by rail and produce bottlenecks at the trucking interface.

- Operational constraints on the rail network, including potential conflicts between rail-based transit and freight services, especially during peak AM and PM commuting periods. As growth in both freight and passenger traffic occurs on existing shared infrastructure, these problems will increase, potentially causing track capacity constraints.

Air

Canada's busiest airport, Toronto Pearson International Airport, is located approximately 3 km to the southeast of the Study Area. Passenger and air cargo movements at this airport are expected to grow significantly over the next 25 years, which will increase runway capacity issues and pressure on the area road network.

- The key problem for air transportation as it relates to the GTA West Study Area is congestion on the inter-regional road network.

Marine

Marine port facilities are located to the south of the Study Area, in Toronto and Hamilton. Marine movement of goods can be affected by bottlenecks at inter-modal facilities and by limitations of the St. Lawrence Seaway to handle ocean vessels on a year-round basis.

- The major problem for marine transportation relates to congestion on the inter-regional roadway connections into the GTA West Study Area. Increased use of containers for shipping will also impose increased pressure on the road distribution network.

5.4 Transportation Problems on the Inter-Regional Road Network

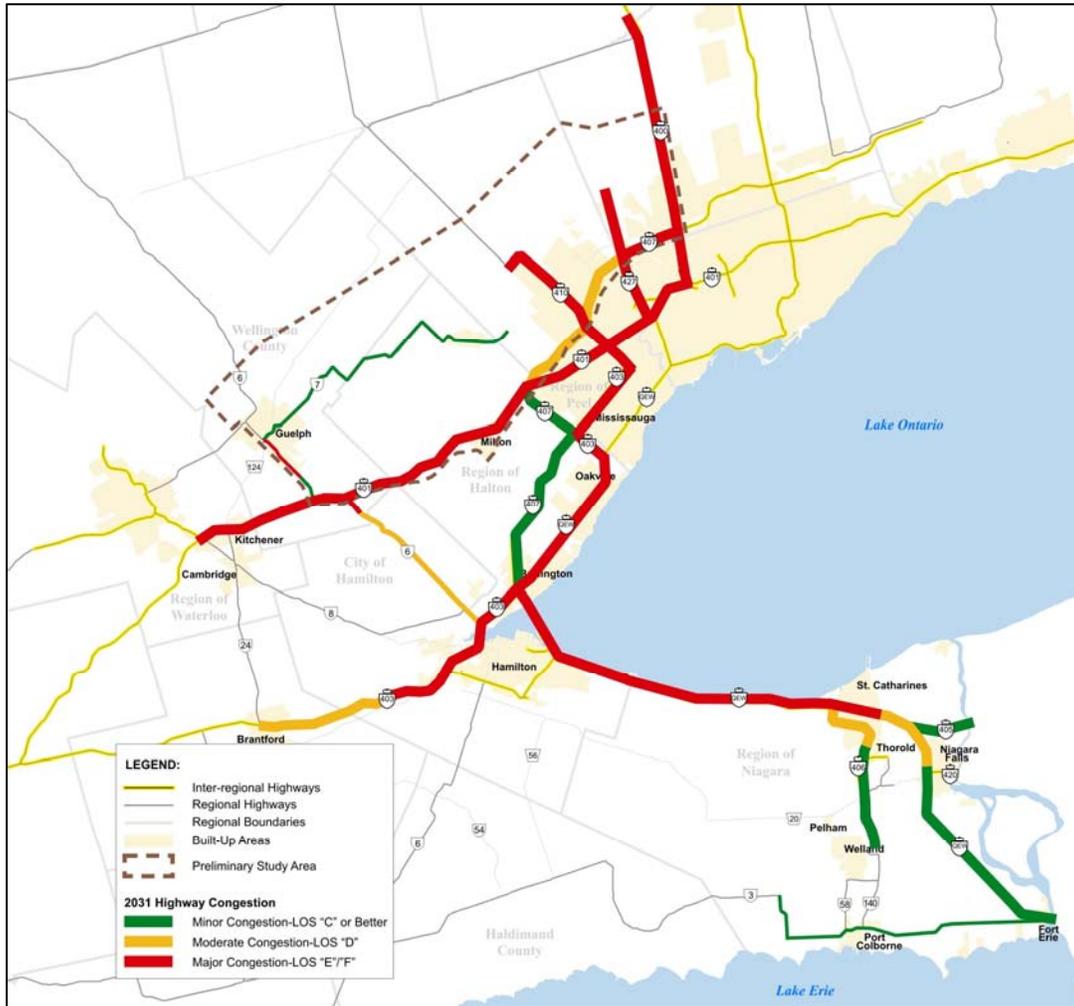
A quantitative analysis of capacity deficiencies for major highway corridors was undertaken based on the future travel demands in relation to future capacity, considering the planned improvements to the transportation network, including transit improvements as set out in the Metrolinx and GO Transit and municipal plans.

Highways 401, 400, 410 and 427 are expected to experience major congestion throughout the day by 2031. The 407 ETR is expected to experience major congestion between Highways 400 and 427, and moderate congestion between Highways 427 and 401. Other major roadways such as Regional Road 124, Highway 7 and Highway 6 are also expected to experience growing congestion.

The 2031 SADT conditions in the Study Area are anticipated to be more congested than AADT conditions, with the 407 ETR experiencing major congestion on the segment between Highways 410 and 400 during the summer season.

Exhibit 1 highlights the substantial AADT daily congestion forecast for 2031, even with the planned provincial and municipal road network and transit improvements and the planned improvements included in the Metrolinx RTP and GO Transit's Strategic Plan.

2031 Weekday (AADT) Inter-Regional Congestion Levels



Source: GGH Model, October 2008

5.5 Community, Environment and Economic Effects

The transportation problems associated with inter-regional movement of people and goods in the GTA West Study Area have broader implications for the implementation of provincial policies relating to the community, environment and economy.

Community

- Road congestion results in increased costs (i.e. travel time, fuel costs) for goods movement which is passed on to consumers.
- Congested roadways increase potential for traffic collisions.
- Trucks using secondary routes impact communities, increase deterioration of infrastructure and increase conflicts with cyclists and pedestrians.

- Reduced quality of life from time lost to commuting.
- Lack of transit services and large volumes of heavy trucks on the inter-regional road system may deter tourists/recreation travellers.
- Potential for job losses with reduced tourism.

Environment

- Congestion increases fuel consumption and increases air and noise emissions

Economic

- Congestion and travel time uncertainty reduces economic competitiveness of local businesses and industries and results in excessive wear on vehicles.
- Businesses are less likely to expand or be attracted to areas with major congestion.
- Congestion negatively impacts the shipping industry and the effectiveness of all inter-modal travel.
- Reduced tourism negatively affects the economies of the GTA and surrounding areas.

6. FUTURE TRANSPORTATION OPPORTUNITIES

In addition to identifying the transportation problems, an equally important aspect of this study is the identification of transportation opportunities. The ability of this study to address the transportation problems and to capitalize on the significant opportunities to provide an efficient and reliable transportation system will be a key measure of success.

In the context of this study, “transportation opportunities” refers to the “big picture” strategic benefits of an efficient transportation system. These opportunities within the GTA West Study Area are summarized as follows:

1. Support Future Municipal Land Use Planning in Accordance with the Growth Plan

The opportunity exists to co-ordinate multi-modal transportation and land use planning with municipal land use planning to support and conform to the requirements of the Growth Plan, while at the same time accommodating both the local and inter-regional future travel demands. This would include:

- Co-ordinating with municipal land use planning by developing a corridor protection strategy that calls on both the province and municipalities to work collaboratively to keep all reasonable options open while the EA is underway;
- Co-ordinating with the Region of Halton during the development of the transportation alternatives as the Region identifies a recommended land use option;
- Co-ordinating with and improve developing land use scenarios to be compatible with potential inter-modal facilities. Co-location of warehouse/ distribution centres in proximity to a potential inter-modal facility would support industrial/employment development in the municipality and optimize function of the inter-modal facility, improving the efficiency of goods movement; and,

- Considering improved connections to the Study Area's designated Urban Growth Centres (Vaughan Corporate Centre, Downtown Brampton, Downtown Milton and Downtown Guelph) and co-ordinating with municipal transportation initiatives.

2. Maintain the Character and Integrity of Rural and Agricultural Lands

There is an opportunity to avoid or minimize potential impacts to rural, agricultural and archaeological/heritage areas. This would include:

- Co-ordinating with municipal land use planning throughout the Growth Plan conformity exercise that will focus population and employment growth in Urban Growth Centres, Built Up Areas, and Designated Greenfield Areas, thereby serving to preserve key agricultural lands; and,
- Having due regard for the preservation principles embedded in various policy documents, including the *Greenbelt Act* and *Plan, Niagara Escarpment Act* and *Plan*, and the *Oak Ridges Moraine Conservation Act* and *Plan*.

3. Provide Transportation Choice, Improved Connections and Increased Reliability for Commuters

The opportunity exists to build upon the Metrolinx RTP and GO Transit's Strategic Plan to provide a robust transportation system that offers commuters real alternatives to automobile travel throughout the GTA West Study Area. This would include:

- Providing expanded transit services, as well as improved connections between inter-regional transit services and local transit services;
- Enabling commuter choice, convenience and flexibility in making travel decisions during weekday morning and afternoon peak periods, especially between the Study Area's urban centres and to Toronto; and,
- Facilitating healthier lifestyles by incorporating active transportation considerations into the development of the transportation alternatives (e.g., bicycle storage facilities at transit terminals, and aboard transit vehicles).

4. Provide Transportation Choice, Improved Connections and Increased Reliability for Goods Movement

While trucks will continue to play an integral role in moving goods throughout and beyond the Study Area, there is an opportunity to encourage increased utilization of other modes of travel for goods movement, including rail, marine and air, as well as to provide better connections between these modes. This would include:

- Improving transportation system performance and connections between Toronto Pearson International Airport, CN and CP railway hubs, inter-modal terminals, area ports, international gateways and related clusters of logistics uses, industries and urban centres in and in the vicinity of the Study Area;
- Improving access to inter-modal transportation yards located in the Vaughan, Milton, and Brampton areas to increase transportation efficiency throughout the Study Area;
- Improving highway and rail system connections between border crossings and the GTA to foster economic growth, including the availability of choice and reliability; and,

- Co-ordinating with other area initiatives, including the Ontario-Quebec Continental Gateway and Trade Corridor.

In summary, a more balanced utilization of available transportation modes, coupled with better interconnection between the modes and international gateways, will serve to enhance the level of trade within the GTA West Study Area, and by extension, the economic competitiveness of the province of Ontario.

5. Provide Improved Transportation Service for Tourists

There is an opportunity to enhance the growth of tourism and recreation trips and the overall travel experience to the Study Area. This would include:

- Providing improved connections between tourist gateways (e.g., Toronto Pearson International Airport), urban centres and tourism and recreation destinations, including connections to local transportation services;
- Facilitating active transportation through provision of bicycle storage and promotion of other forms of active transportation in these services; and,
- Improving transportation system operations to enhance tourism and recreation trip experience.

6. Optimize Existing Transportation Infrastructure

There are opportunities to use Transportation Demand Management (TDM) and Transportation Systems Management (TSM) strategies to reduce/shift trip making and automobile usage while optimizing use of the existing system. This would include:

- Considering TDM strategies, such as HOV lanes and carpool lots on provincial highways to encourage increased vehicle occupancy;
- Considering TSM strategies to achieve greater reliability and enable improved decision making and distribution of travel (e.g., Intelligent Transportation Systems (ITS) use of changeable message signs, highway cameras, and “real time” adaptive transportation systems to provide “real time” information on traffic conditions);
- Considering other strategies, including speed harmonization, high occupancy toll lanes (HOT) and road pricing, to optimize the existing transportation infrastructure; and,
- Considering upgrades to at-grade rail-to-rail and road-to-rail crossings, which can serve as operational constraints within the transportation system, to improve travel flows and safety.

7. Minimize Impacts to the Natural, Social, Economic and Cultural Environments to the Extent Possible

There is an opportunity to minimize, and potentially avoid, impacts to important natural, social, economic and cultural features at the earliest planning stages. This can be done through planning that optimizes the use of existing infrastructure, and gives due regard to the requirements of approved provincial environmental protection policies, other relevant policies such as those contained within the Conservation Authorities Act, heritage resources and First Nations lands when developing, assessing and evaluating all reasonable transportation alternatives.

7. NEXT STEPS

The purpose of this report is to summarize the process and methodology that was used to identify transportation problems and opportunities, and to document the key findings of this work. The identified transportation problems and opportunities will serve as the basis for generating and evaluating transportation alternatives in the next stage of this study.

1. INTRODUCTION

1.1 Study Background

Over the last several decades south-central Ontario has evolved from a Toronto based employment centre to a large geographic region with many centres of economic activity, employment, and population. Travel demand is now more dispersed, with travel occurring between many employment and residential areas within and outside the Greater Toronto Area (GTA). Future population and employment growth in major urban centres will result in an increase in travel demand for both people and goods movement between the centres that are spread across the Greater Golden Horseshoe (GGH).

One of the province of Ontario's (the province) efforts to deliver a long-term sustainable plan for transportation and better transit in the GTA-Hamilton area is through Metrolinx, which has been established to create a seamless, integrated transportation network.

In June 2006, the Minister of Public Infrastructure Renewal (now the Ministry of Energy and Infrastructure) released the *Growth Plan for the Greater Golden Horseshoe* (the Growth Plan). The Growth Plan outlines a set of policies for managing growth and development and guiding planning decisions in the GGH. This plan represents a planning "vision" for the province. It is accompanied by the *Places to Grow Act* (2005) which requires that planning decisions made by the province, municipalities and other authorities conform to the policies contained in the Growth Plan.

The province also established the *Greenbelt Plan* (2005) through the *Greenbelt Act 2005*. Together, the Greenbelt Plan and the Growth Plan provide clarity and certainty about urban structure, where and how future growth should be accommodated, and what must be protected for current and future generations in the GGH area.

To realize the province's policy directions, the Ontario Ministry of Transportation (MTO) has commenced an Environmental Assessment (EA) Study to examine long-term multi-modal transportation problems and opportunities, and to develop an integrated, multi-modal Transportation Development Strategy that offers choice for the efficient movement of people and goods. MTO is co-ordinating with Metrolinx, other ministries and municipalities as the EA study moves forward. Similarly, MTO has limited ability to make changes involving some transportation modes (rail, air and marine), and will work with service providers as the study progresses.

The first phase of the GTA West Corridor Planning and EA Study was the preparation of an EA Terms of Reference (TOR). The *GTA West Corridor EA TOR* outlines the framework for completing this EA study. The EA TOR document was submitted to the Ontario Ministry of the Environment (MOE) under Section 6 (2)(a) of the Ontario *Environmental Assessment Act* (OEAA) on July 15, 2007, and approved on March 4, 2008. The relevance of the TOR to this document is that it sets out the level of detail to be used in determining and documenting the transportation problems and opportunities within the Study Area.

Prior to approval of the province's Growth Plan a number of studies, including MTO's *Central Ontario Strategic Transportation Directions* (Draft 2002) indicated that MTO should examine long-term transportation needs to address a number of areas including

future growth in the GTA from Highway 400 westerly to the Guelph area. The GTA West Corridor, identified in the Growth Plan as a “Future Transportation Corridor”, represents a strategic link between the Urban Growth Centres in the west of the GTA including Downtown Milton, Downtown Brampton, Vaughan Corporate Centre and Downtown Guelph. The Urban Growth Centres identified in the Growth Plan are presented in **Exhibit 1-1**.

Exhibit 1-1: Places to Grow (2006) – Schedule 4: Urban Growth Centres



1.2 Study Purpose

As economic activities in the GGH evolve from a Toronto-based platform to an economy of multiple centres, the Guelph-Kitchener/Waterloo-Cambridge triangle is becoming an important economic area in addition to Toronto's downtown (and the several economic centres that surround it).

The concentration of population and employment in the Guelph-Kitchener/Waterloo-Cambridge triangle introduces new transportation challenges in the western portion of the GGH since it is important that these economic centres be adequately linked. This is true not only for the continuing needs of commuter travel which provide the economic workforces, but also for the increasing needs of goods movement between these centres.

In meeting the challenges described above, MTO is committed to taking a comprehensive and long-term approach in planning for future transportation infrastructure. The GTA West Corridor Planning and EA Study will reflect the government policy objectives as outlined in the Growth Plan, Greenbelt Plan and Provincial Policy Statement. These policy objectives include a transportation network that links Urban Growth Centres through an integrated system of transportation modes characterized by efficient public transit, a highway system for moving people and goods with improved access to inter-modal facilities, international gateways (e.g., border crossings), airports, and transit hubs.

The purpose of the GTA West Study is to address existing and future inter-regional transportation capacity deficiencies within the corridor by providing additional capacity through to 2031 and beyond. This need has been identified in anticipation of growth in transportation demand for moving people and goods as a result of population and employment growth and to support growth in tourism and trade. Provincial policies also identify transportation as a foundation element in support of land use and economic growth.

As the study progresses, recommendations will be made with respect to transportation improvements required throughout the Study Area. All of the recommendations that fall within the jurisdiction of the MTO (e.g. provincial highways and transitways) will be reviewed, and MTO will decide whether to proceed to Phase 2 of the study. Phase 2 of the study would involve the development, assessment, and evaluation of alternative methods corresponding to the Area Transportation System Alternatives. Alternative methods are different ways of carrying out the selected Area Transportation System Alternative(s). As some transportation modes lie outside of MTO's jurisdiction, such recommendations will be forwarded to the relevant agencies/authorities for further review and action.

The multi-modal alternatives identified to address the transportation problems and opportunities will be developed using a "building-block" approach that starts with optimizing the existing infrastructure, investing in transit as the first priority for moving people, and thorough consideration of other modes before decisions are made for new highway facilities.

1.3 Purpose, Relevance and Position of Report within Study Process

Interim reports to date included the preparation and circulation of draft existing condition reports, including:

- *Overview of Transportation & Economic Conditions* – Draft July 2008; and,
- *Overview of Environmental Conditions and Constraints* – Draft July 2008.

The purpose of this report is to summarize the process and methodology that was used to identify transportation problems and opportunities, and to document the key findings of this work. The *Area Transportation System Problems and Opportunities Report* will serve as a critical stage in the study, providing a foundation for the generation and evaluation of transportation alternatives.

An overview of the key transportation problems and opportunities stage of the project was presented at the second round of Public Information Centres (PICs), which were held in March 2009. The *Area Transportation System Problems and Opportunities Report* provides further detail and background to the information presented at the PICs.

1.4 Study Area and Areas of Influence

The GTA West Study Area is illustrated in **Exhibit 1-2** and will continue to be refined as the Environmental Assessment process evolves. As such, the area boundaries are approximate and subject to refinement as the issues, problems and opportunities are identified. The Study Area was modified slightly during the consultation undertaken to prepare the EA Terms of Reference (TOR) to address comments related to potential constraints in the northwest and northeast sections. **Exhibit 1-3** presents the Study Area in the context of the regional and local municipalities in which it is located.

Exhibit 1-2: Preliminary Study Area

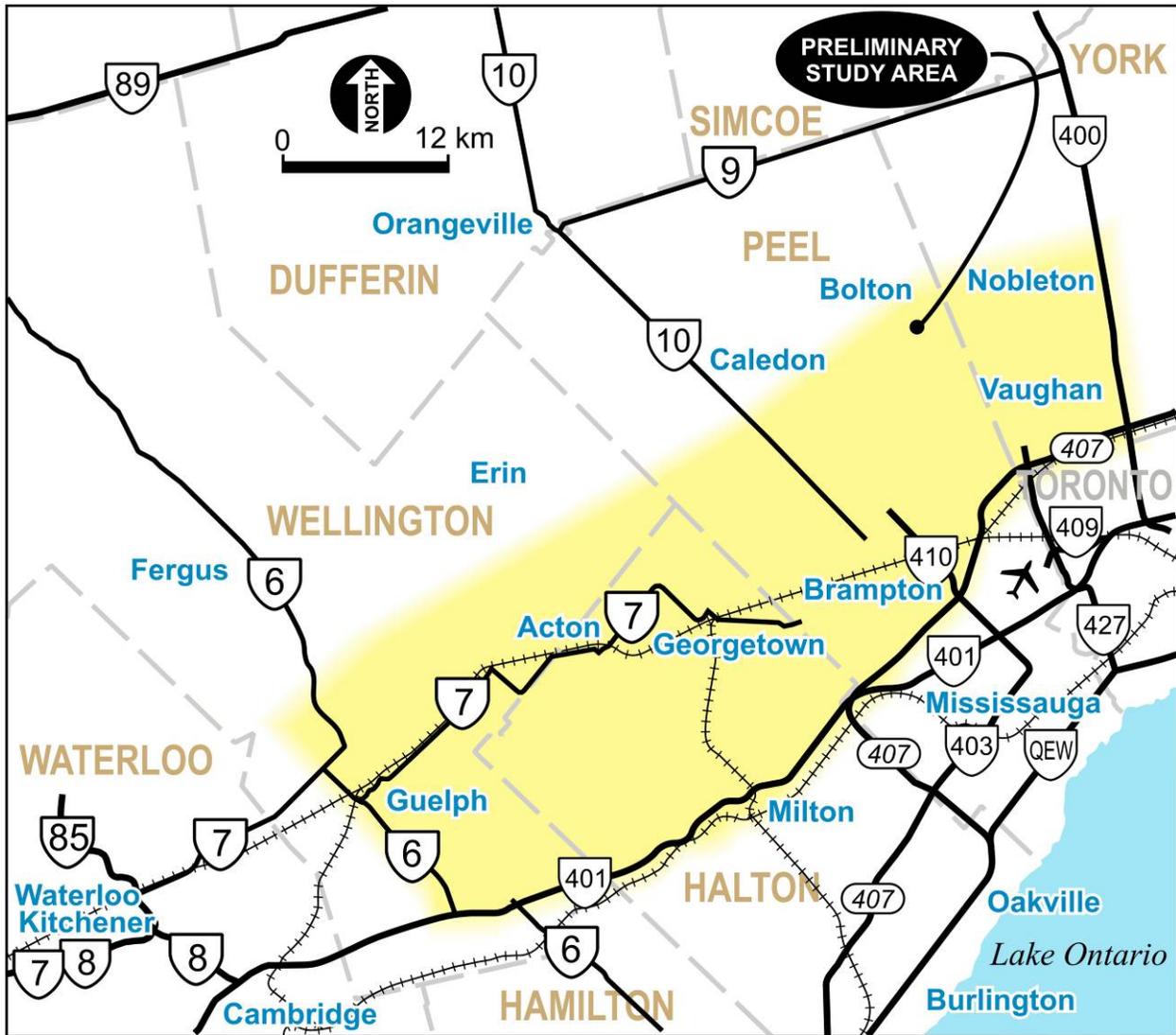
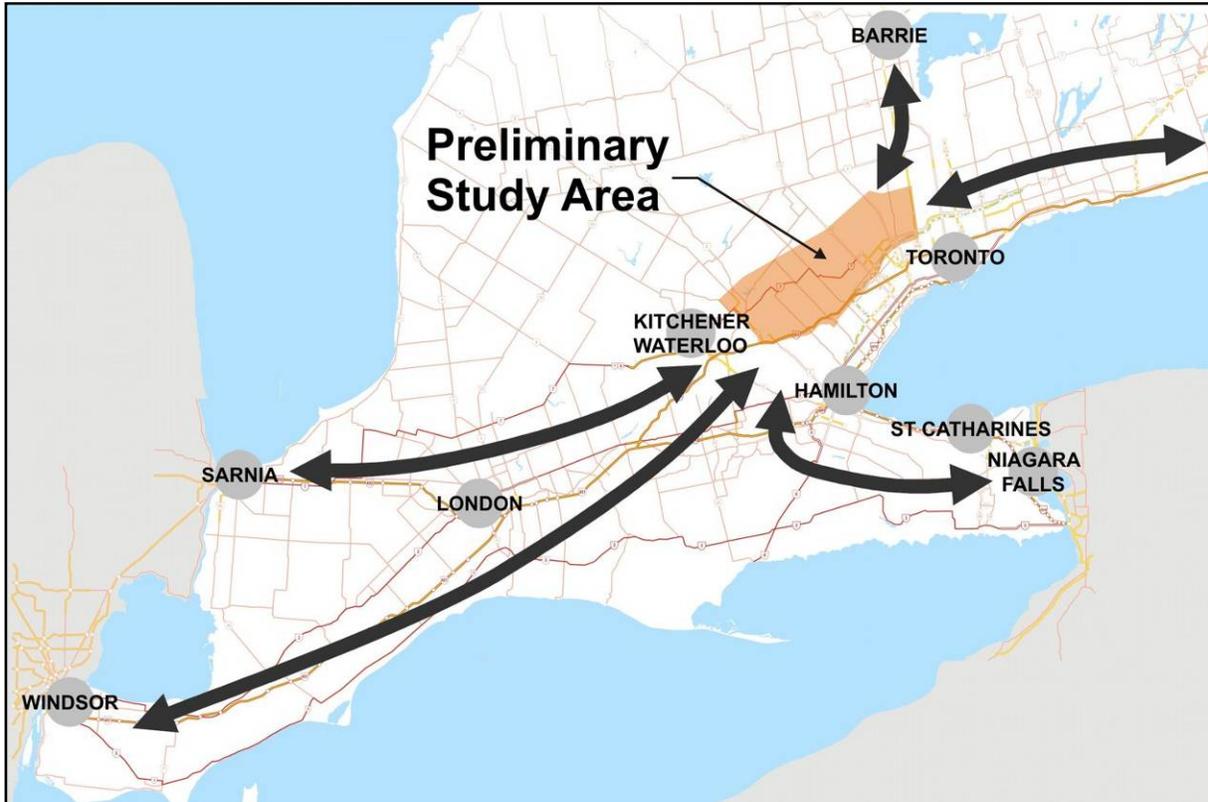


Exhibit 1-3: Area Municipalities within the Preliminary Study Area



It is recognized that transportation issues in the Study Area are related to and influenced by a much broader area. Therefore, inter-regional travel demand analysis has been carried out in a much broader context including the consideration of major transportation infrastructure in proximity to the Study Area and linkages to/from other regional transportation services, hubs and gateways. **Exhibit 1-4** highlights this relationship.

Exhibit 1-4: Area of Influence



1.5 Problems and Opportunities in the Transportation System

1.5.1 Process Used to Identify Problems and Opportunities

The identification of future transportation problems and opportunities within the Study Area is a crucial stage for this phase of the study. An understanding of the shortfalls of the transportation system and opportunities to improve its future performance provides a foundation for identifying sustainable transportation solutions. These solutions will become the basis for a technically, environmentally and economically sound, multi-modal Transportation Development Strategy.

Consideration of the problems and opportunities for a transportation project requires an understanding of the existing and future land use and transportation needs within the area of analysis and within the planning horizon timeframe. The identification of transportation problems and opportunities was based on the most recent planning policies, population and employment growth, economic and travel data.

Transportation problems were identified through the following three general steps and are explained further below:

1. Understanding the existing transportation system conditions;
2. Projecting the future transportation conditions in 2031 as the GGH population and employment increase; and
3. Identifying the likely transportation problems by overlaying the projected future conditions on the existing and planned transportation system.

1. Understanding the existing multi-modal transportation system conditions within the GTA West Study Area

Transportation System conditions were analyzed including:

- Travel volume/ridership by mode – highway (car, truck, bus), rail, marine, air;
- Purpose of travel – commuter, business/commercial, recreation/tourism; and
- Peak travel time – seasonal, weekday (AM/PM), weekend.

The Study Team began this process by understanding the existing inter-regional multi-modal transportation system. To accomplish this, data on all transportation services and infrastructure within the GTA West Corridor were reviewed.

Additional traffic studies were undertaken to supplement the data on hand, thus helping to identify existing travel conditions. Discussions with Transportation Service Providers (e.g. CN/CP Rail, GO Transit, York Region Transit, Brampton Transit, Guelph Transit, Milton Transit, etc.) in the GTA West Corridor were also undertaken to gain insights into current conditions.

2. Projecting the future transportation conditions, as the GGH population increases to over 11 million by 2031

This requires an understanding of the following:

- Degree to which traffic volumes for each mode will increase (i.e., number of daily trips); and
- Changes in trip characteristics (i.e., where travellers are coming from; going to and why).

The future transportation needs were predicted in order to understand the nature and extent of likely transportation problems. The work undertaken to ‘predict’ future conditions is called “forecasting”, which involves projecting future transportation conditions based on factors such as current and future transportation services, population and employment growth, land use patterns and economic conditions. It includes future numbers of trips as well as where they begin and end.

Forecasting involves origin-destination surveys, calculations, various types of modelling software (i.e., for passenger, commercial, recreational travel) and analysis. It relies upon information obtained on past trends, and projected future needs (i.e., based on population and employment numbers) as outlined in the Growth Plan.

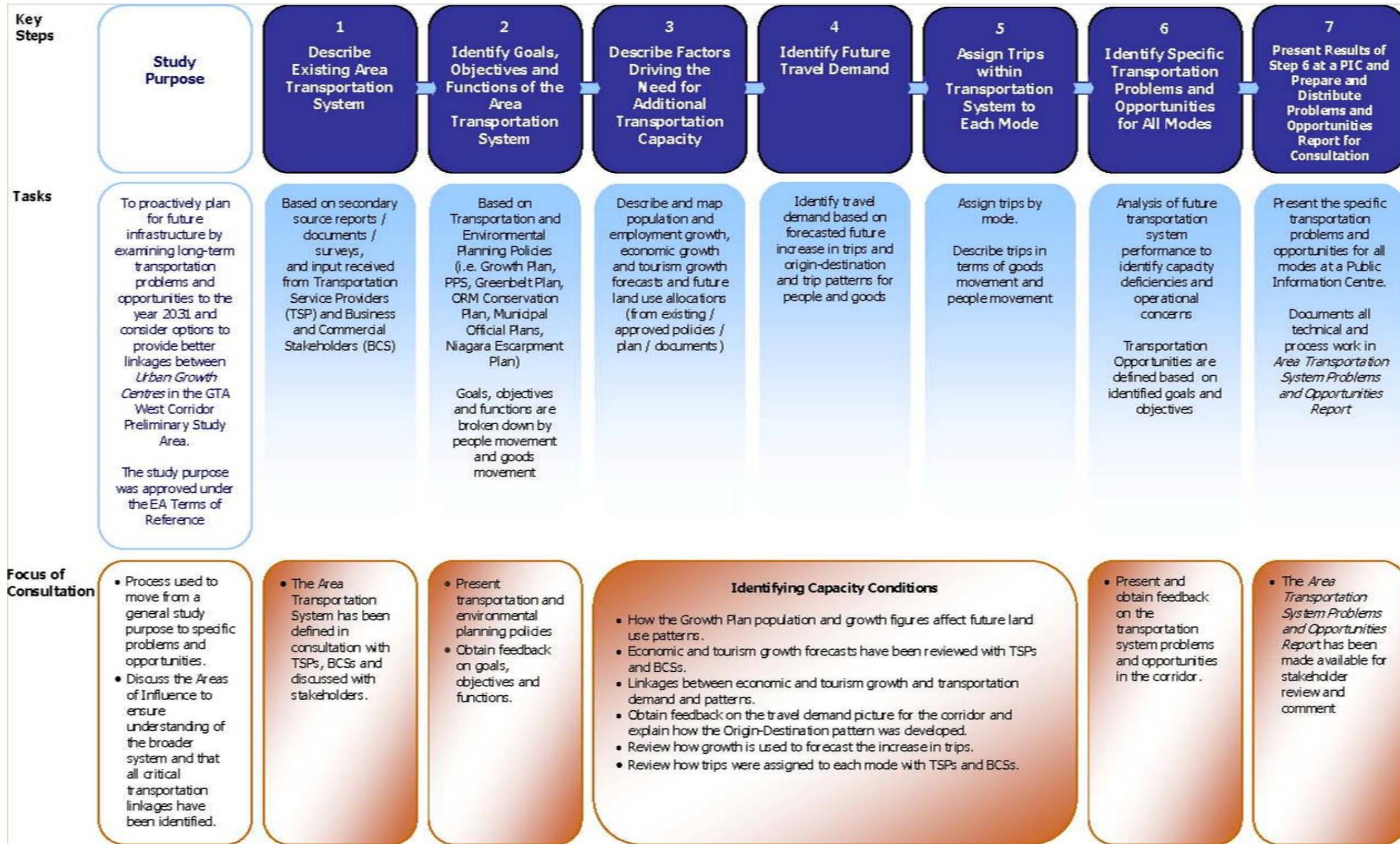
Once the total projected future traffic volumes were identified, the total number of trips were assigned and distributed to each different transportation mode such as highway, transit, freight rail, etc.

3. Identifying the likely transportation problems by overlaying the projected future conditions on the existing and planned system

Transportation problems were identified by overlaying the future needs for moving people and goods on the existing and planned multi-modal transportation system; then determining where, when and to what degree the system is deficient (i.e., the movement of people and goods does not continuously flow). This assessment helped to understand how significant those shortfalls will be and sets the basis for developing transportation solutions.

The detailed framework for identifying transportation problems and opportunities, including key steps, tasks and consultation, is shown in **Exhibit 1-5** and further described in the following sections.

Exhibit 1-5: Transportation Problems & Opportunities Development Framework



Step 1: Describe Existing Area Transportation System

The Study Team conducted a mode-by-mode overview of existing and planned infrastructure and services: provincial highway network; municipal road and transit network; inter-regional transit network; rail network; marine ports and airports.

This overview was based on secondary source reports/documents/surveys and input received from stakeholders including Transportation Service Providers (TSPs), and Business and Commercial Stakeholders (BCSs).

The *Overview of Transportation and Economic Conditions Draft Overview* report (July 2008) provided a description of the capacity of existing transportation system infrastructure for all modes of travel (road, rail, transit, marine and air). **Section 2.6** of this report provides an overview of other transportation-related initiatives underway that have the potential to affect both transportation supply and demand in the Study Area. These programs and projects discussed in **Section 2.6** may influence travel patterns and provide additional transportation choice and transit and roadway capacity.

Step 2: Identify Goals, Objectives and Functions of the Area Multi-Modal Transportation System

Goals, objectives and functions of the area transportation system relating to land use, the environment, economic development and transportation were identified based on transportation and environmental planning policies, including the Provincial Policy Statement, March 2005; Growth Plan for the Greater Golden Horseshoe, June 2006; Ontario Environmental Assessment Act, 2006; Greenbelt Act and Greenbelt Plan, February 2005; Niagara Escarpment Plan, 2005; Oak Ridges Moraine Conservation Act and Plan, April 2002; Building a National Tourism Strategy – A Framework for Federal/Provincial Territorial Collaboration, 2006; Ontario Tourism Strategy, 2004; Go Green, Ontario's Action Plan on Climate Change, August 2007; Metrolinx Regional Transportation Plan, November 2008, GO Transit's Strategic Plan - GO 2020, December 2008; MTO Southern Ontario Highways Plan 2008-2012, August 2008; and municipal Official Plans.

Section 1.5.2 discusses these goals and objectives and **Section 2.2** provides a discussion of each policy document.

Step 3: Describe Factors Influencing Transportation Demand

Section 2 of this report discusses the factors that influence transportation demand in the corridor including the movement of people and goods, approved policy, land use, economic trends and forecasts, and tourism and recreation trends and forecasts. All of these factors have the potential to influence future transportation demand in the Study Area and provide the impetus for changing travel patterns, modes and volumes within it.

During Step 3, using existing and approved policies/plans/documents, the Study Team described and mapped population and employment growth, economic growth (including international trade), tourism growth forecasts, and future land use allocations.

Steps 4 and 5: Identify Future Travel Demand and Assign Trips within the Transportation System to Each Mode

As part of Step 4, the Study Team identified future travel demand based on the following:

- Forecasted future increase in trips (for both people and goods); and
- Origin-destination and trip patterns (for both people and goods):
 - Freight/goods movement;
 - Tourism travel;
 - AM/PM weekday peak;
 - Weekend travel; and
 - Different planning horizons.

Step 5 involved dividing total trips (people and goods) into different transportation modes.

To complete Steps 4-5, two modelling/forecasting approaches were used:

1. The GGH Model – a comprehensive travel demand model for major studies such as the Metrolinx Regional Transportation Plan (RTP), which considers commuter trips (transit and automobile) and freight trips (trucks); and
2. Strategic Demand Forecasting (SDF) Model – a sketch planning approach, based on an extension of historical growth trends to address trips not included in the GGH Model, including freight trips (rail, marine, air) and tourist trips (automobile, rail, marine, air).

Future forecasts were developed for the 2031 planning horizon year, and the SDF Model was also used to confirm the GGH Model results. The GGH Model process follows four stages, whereas the SDF Model component for freight and tourism follows a trend-based model forecast approach. The modelling/forecasting approaches are described and discussed in **Section 3** of this report, which also provides a travel demand analysis focusing on the inter-regional transportation system and longer distance commuting, goods movement and tourism and recreation travel.

Step 6: Identify Specific Transportation Problems and Opportunities for All Modes

As part of Step 6, the Study Team analyzed the future transportation system performance to identify capacity deficiencies. In addition, the analysis of the future transportation system helped to identify transportation opportunities.

Section 4 provides an analysis of the transportation system deficiencies and specific inter-regional transportation problems in terms of moving people and goods within and through the Study Area. **Section 6** provides an overview of the transportation opportunities.

Step 7: Prepare and Distribute Problems and Opportunities Report for Consultation

Step 7 involved documenting all of the technical and process work completed to date in this *Area Transportation System Problems and Opportunities Report*. This report was made available for stakeholder review and comment.

1.5.2 Study Goals and Objectives

The identification of an appropriate and applicable set of goals and objectives at an early stage of the process for identifying the transportation problems and opportunities in the

GTA West Corridor was critical to the success of this process. Goals and objectives serve three main roles:

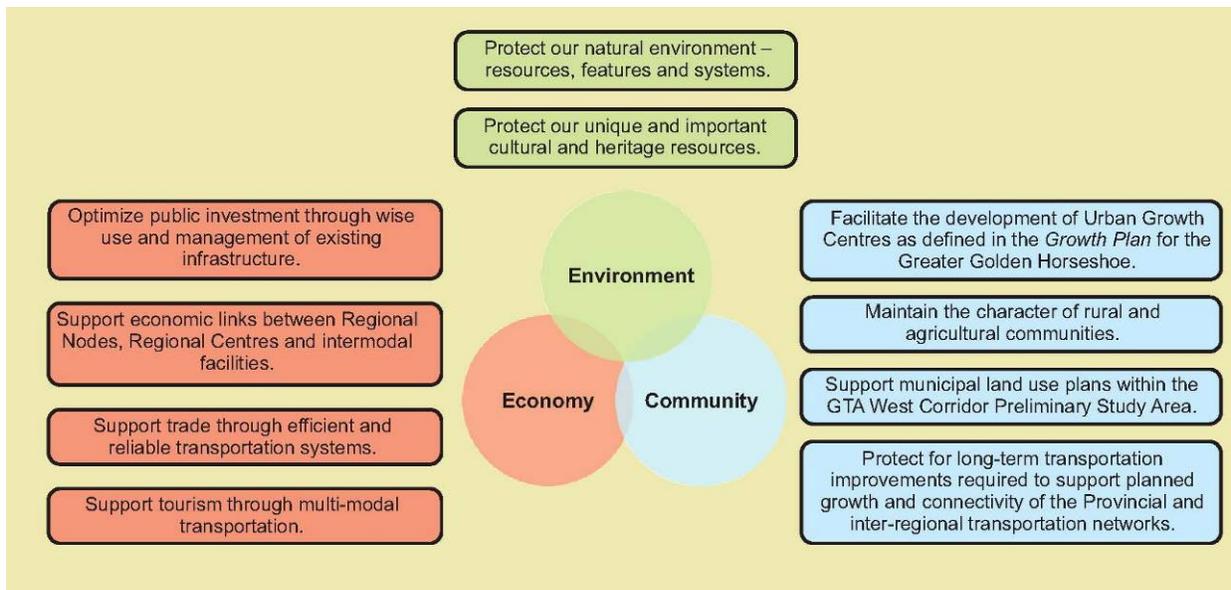
- They provide guidance to the Study Team so that the decisions made throughout every stage of the project are consistent and based on the same fundamental foundation;
- They provide stakeholders with an understanding of what the Study Team is striving to achieve; and
- They provide a basis to develop and evaluate potential transportation solutions.

In keeping with the overarching policy framework, goals and objectives were developed in support of the following three policy themes:

- Compact, vibrant and complete communities;
- A prosperous and competitive economy; and
- A protected environment.

As noted in **Section 1.5.1** (Step 2), the study is proceeding within a policy framework that includes all relevant approved planning policies and, as such, the goals and objectives for this study must be consistent with the key principles, themes, and directions embodied within these policies. A summary of the vision, purpose, goals and objectives within each of these policies can be found in **Appendix B**. On the basis of the policy inventory, the Study Team developed a set of goals for this study (refer to **Exhibit 1-6**).

Exhibit 1-6: Study Goals for the Transportation System in the GTA West Corridor



The goals provided the basis for developing a series of related study objectives which are listed in **Exhibit 1-7**. This exhibit also illustrates how each objective relates to the various study goals.

Exhibit 1-7: Study Objectives for the Transportation System

STUDY OBJECTIVES	STUDY GOALS*									
	COMPACT, VIBRANT AND COMPLETE COMMUNITIES				PROSPEROUS AND COMPETITIVE ECONOMY				PROTECTED ENVIRONMENT	
	A	B	C	D	E	F	G	H	I	J
1. Support transit-supportive development in settlement areas including Urban Growth Centres.	✓		✓	✓	✓				✓	
2. Use public transit to direct and shape growth.	✓	✓	✓	✓					✓	
3. Provide transportation choices.	✓		✓	✓		✓	✓	✓		
4. Provide improved travel time reliability.				✓			✓			
5. Ensure the safe and efficient movement of people and goods.				✓		✓	✓	✓		
6. Protect against and minimize the loss and fragmentation of the agricultural land base, operations and specialty crops.		✓	✓						✓	✓
7. Promote travel demand management and transportation system management strategies.	✓	✓			✓				✓	
8. Support multi-modal systems and services and inter-modal connections for people and goods movement.	✓				✓	✓	✓	✓		
9. Provide improved connections between urban growth centres and other economic nodes within the settlement areas.	✓			✓	✓	✓	✓	✓		
10. Promote and better integrate multi-modal goods movement and land use and transportation system planning.	✓		✓	✓	✓	✓	✓	✓		

STUDY OBJECTIVES	STUDY GOALS*									
	COMPACT, VIBRANT AND COMPLETE COMMUNITIES				PROSPEROUS AND COMPETITIVE ECONOMY				PROTECTED ENVIRONMENT	
	A	B	C	D	E	F	G	H	I	J
11. Avoid or minimize impacts to the fisheries, aquatic and terrestrial features and systems.	✓	✓	✓	✓	✓				✓	
12. Minimize the increase in transportation related greenhouse gas and toxic air emissions.	✓	✓	✓	✓	✓				✓	
13. Minimize the increase in transportation related noise increases in Noise Sensitive Areas.	✓	✓	✓	✓	✓				✓	
14. Avoid or minimize impacts to sensitive groundwater resources.	✓	✓	✓	✓	✓				✓	
15. Optimize existing infrastructure in developing transportation solutions to minimize environmental impacts.	✓	✓	✓	✓	✓				✓	
16. Avoid or minimize impacts to cultural and heritage resources.	✓	✓	✓	✓	✓				✓	✓
17. Minimize impacts to areas of cultural and historical significance to First Nations including treaty rights, land claims, reserves and sacred grounds.			✓		✓					✓

* A-J refer to specific Community, Economy and Environment Goals outlined in **Exhibit 1-6**

2. FACTORS INFLUENCING TRANSPORTATION DEMAND IN THE STUDY AREA

The need for additional capacity has been identified in anticipation of increased transportation demand for moving people and goods as a result of population and employment growth and to support growth in tourism and trade. Provincial policies, including the approved Growth Plan, also identify transportation as a foundation element in support of land use and economic growth.

A number of elements have a bearing on the potential future transportation capacity deficiencies within the Study Area. These elements must be well understood in order to appreciate the scope and nature of the transportation problems and opportunities that must be addressed. They include both transportation supply and demand characteristics.

Supply side characteristics include the capacity of existing and planned transportation system infrastructure for all modes of travel – road, transit, rail, marine and air, for the movement of both people and goods. Supply side characteristics have been described in the *Transportation and Economic Conditions Draft Overview* report (July 2008).

Demand side characteristics include the potential future growth in person trips and goods movements and the alternative ways that those trips may be assigned to the transportation system. The following section discusses the factors that influence future transportation conditions within the Study Area, namely the planned multi-modal inter-regional transportation system (supply), the movement of people and goods, policy, land use, economy, trade and tourism.

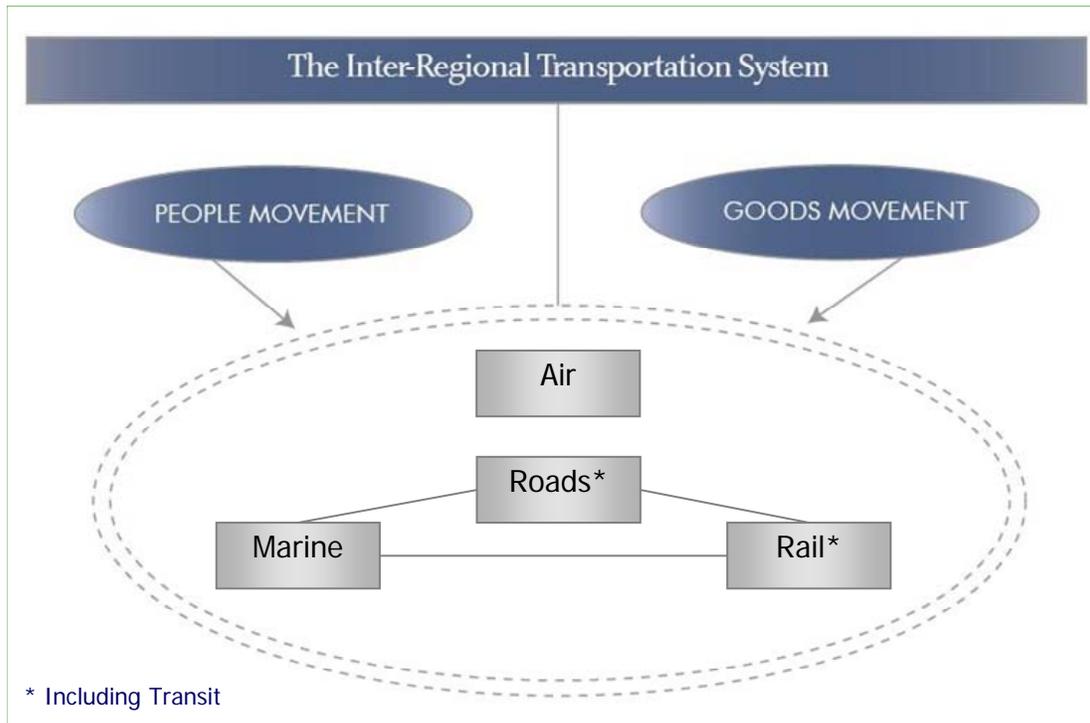
2.1 The Movement of People and Goods

The primary function of the inter-regional transportation system is to facilitate the movement of people and goods within and through the Study Area. This is accomplished by using all available transportation modes travelling across all jurisdictions with an emphasis on connections to:

- population centres, in particular, designated Urban Growth Centres;
- inter-modal facilities including international airports, major marine ports and railways;
- major transit station terminals; and
- economic zones and international gateways.

A schematic flow diagram reflecting the function of the inter-regional transportation system is presented in **Exhibit 2-1**.

Exhibit 2-1: The Inter-Regional Transportation System



The inter-regional transportation system consists of transportation facilities and services that allow people and goods movement trips to occur. The *Transportation and Economic Conditions Draft Overview* report (July 2008) provides a description of the capacity of existing transportation system infrastructure for all modes of travel (road, rail, marine, transit and air) within and through the Study Area for the movement of both people and goods. The inter-regional transportation system was described in terms of the existing networks of highways, municipal roads, transit, rail, marine ports and airports. An understanding of historical and current road traffic flows was established as well as service characteristics and flows for transit, rail, inter-modal facilities and air.

Given historical development, roads continue to play a fundamental role in the inter-regional transportation system. Roads provide connection to bus and rail transit facilities serviced by local municipal transit, VIA Rail, GO Transit and the inter-city bus industry. They also provide connections to inter-modal freight rail facilities, airports and marine ports. Roads link directly to places of employment, manufacturing plants, distribution centres and retail outlets within communities. The road network is therefore an essential element of the multi-modal transportation system that provides for the movement of people and goods. Without having a network of connecting roads, other modal choices cannot provide complete trip making.

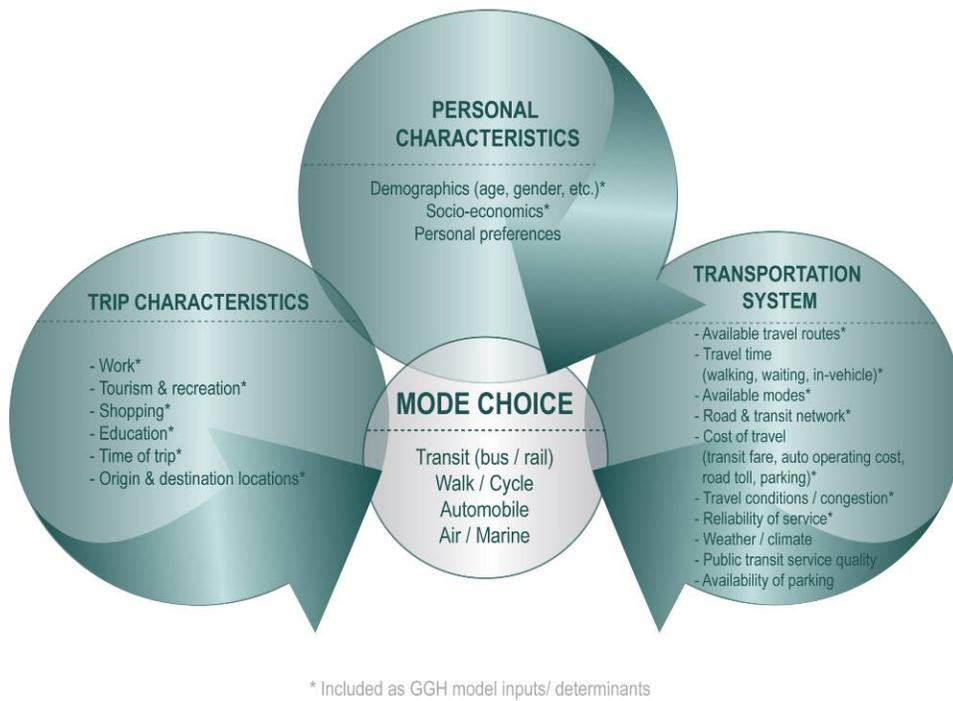
Understanding the relationship among the existing and planned transportation facilities and services is critical in understanding the transportation needs for the future. However, the relationship between these transportation facilities and services and how the trip type and travel mode choice is made for moving people and goods also shapes and influences the future demand on the area transportation system. The following sections discuss

factors other than the transportation facilities and services that influence people and goods movement within and through the Study Area.

2.1.1 Moving People

People travel for a variety of reasons at different times throughout the day and week. Travel mode choices are influenced by a number of factors grouped into three categories: personal characteristics, trip characteristics and the multi-modal transportation system, as shown in **Exhibit 2-2**:

Exhibit 2-2: Factors Influencing How People Travel



The personal characteristics of travellers influence their mode choice: demographic and socio-economic characteristics (age, gender, mobility, income, etc.) as well as personal preferences such as the importance of convenience, desire for active transportation, time constraints and concern about the environmental impacts of travel. Trip characteristics are another area of influence on mode choice; mode choice for travel to work may differ from that for travel for education, shopping, or tourism and recreational purposes. Time of trip and the origin and destination locations will also affect mode choice.

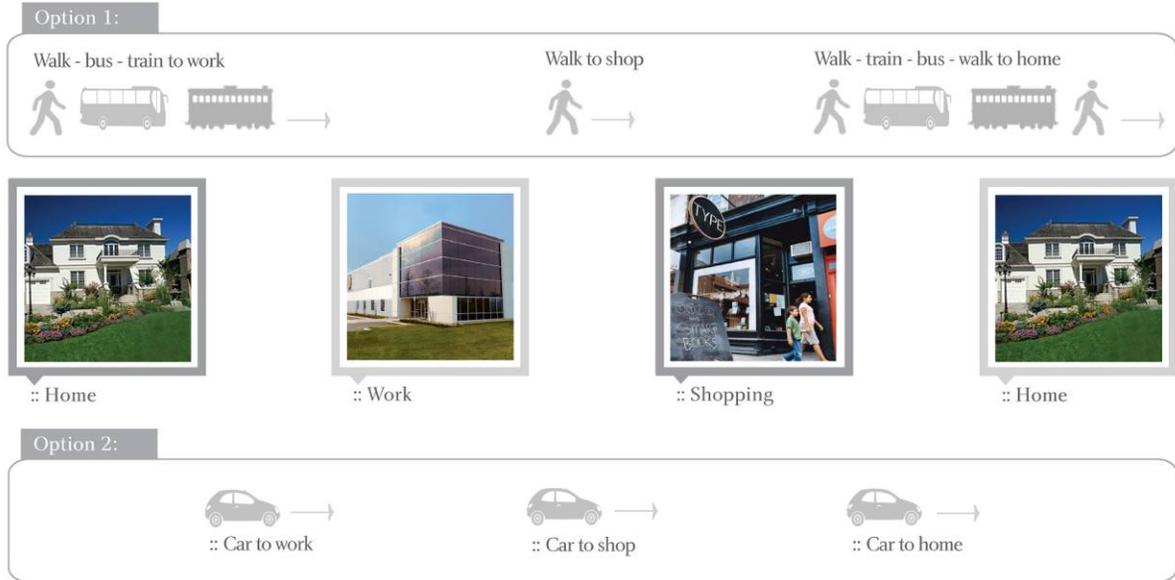
The transportation system is the third area of influence. This includes a range of components, including: available travel routes; travel time (walking, waiting and in-vehicle); cost of travel (transit fare, automobile operating cost, road toll, parking, etc); travel conditions/congestion; public transit service quality, including increased service speed, frequency, service reliability, convenience, comfort, user information, affordability and ease of access, and weather conditions.

The combination of these, often related, factors leads people to choose the most appropriate mode for their trip, with options including bus and rail transit, walking and

cycling, automobile, and air/marine travel. The GGH Model uses the most important and measurable of these personal characteristics, trip characteristics and transportation system factors as inputs to determine the resulting automobile and transit person assignments.

Typically, a person makes at least one two-way trip each day. For example, a typical weekday's travel might include the following trips: home-work; work-shopping; shopping-home. **Exhibit 2-3** illustrates the modes that might be used for trips taken throughout a typical weekday, based on those factors influencing mode choice.

Exhibit 2-3: Typical Weekday Trips and Mode Choice Options



el makes up a significant part of total person travel throughout the Study Area. The current movement of people through and within the Study Area is primarily by personal automobile. In many instances automobile is the only option, as many origin and destination locations are connected by roads, with limited or no transit services. Automobile travel offers flexibility in terms of time of travel and does not require any transfers. Multiple trips can be easily linked by automobile travel (e.g., dropping off children at school on the way to work). Cost of operation, road tolls and parking can influence the choice of the automobile mode, as well as personal characteristics such as ability to drive, car ownership and income. Road congestion, at weekday AM and PM peak periods and increasingly throughout the day, can be a problem for automobile travel. Environmental impacts and the inefficient use of the roadway, particularly by single occupant vehicles (SOVs), are also concerns.

Transit can be a convenient option where services are available. Transit uses road and rail space more efficiently and generally has fewer environmental impacts than automobile travel, particularly SOVs. Transit fares influence its use as well as personal characteristics such as mobility and age and public transit service quality, including increased service speed, frequency, convenience, comfort, user information, affordability and ease of access. Transit is limited by areas/corridors of service and service frequency. As with automobile travel, road congestion is a problem for bus transit as this affects travel times and reliability. Rail transit can conflict with freight and compete for access on rail infrastructure owned and controlled by freight rail operators.

Walking and cycling are active modes of transportation that are convenient for relatively short trips. Both are beneficial in terms of their environmental and public health impacts. Choice of walking/cycling modes is influenced by demographics and personal characteristics, including age, ability, income, concern for the environment and recreational preferences. These “active transportation” modes are also constrained by weather and distance of travel, access to alternative transportation services for longer trips, as well as the availability of infrastructure such as cycle lanes, pedestrian pathways/sidewalks and bicycle parking areas immediately adjacent to longer-distance transportation facilities.

Air/marine travel is generally used less frequently, for work trips and tourism and recreation purposes, and is convenient for long-distance trips. A limitation of these modes is the availability of connections from the airport/port to tourist destinations and city centres. While air travel is an important travel mode for both international and out-of-province visitors to/through the Study Area, most person trips are currently made on the road network using either the automobile or transit services (public and private).

2.1.2 Moving Goods

According to research from the Ministry of Energy and Infrastructure (for the Growth Plan)¹, significant changes in Ontario’s economy have occurred over the past twenty years:

- Ontario’s economy is becoming increasingly export-based;
- The service sector has experienced the greatest rates of output growth over the past two decades; and
- Manufacturing and primary resource industries have stable or declining employment levels despite the growth in terms of economic output.

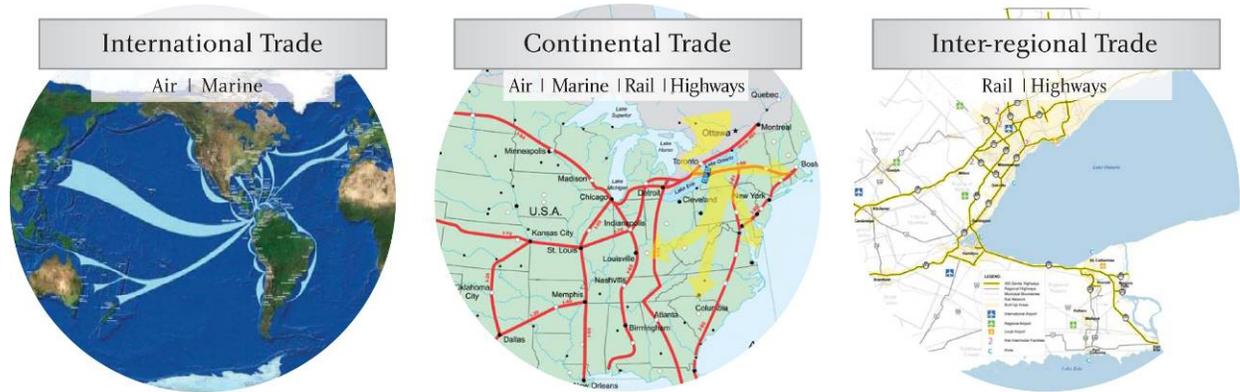
This economic shift influences the distribution of goods throughout the GGH and the regional transportation network must be able to accommodate shifting patterns in goods movement.

The movement of goods through and within the Study Area is primarily by truck followed by rail service, based on value of goods moved. Other modes of travel (marine and/or air) support international goods transport. Goods movement continues to rely on the road network for at least a portion of the journey, with truck transport either collecting or distributing goods to transportation terminals, manufacturing facilities, warehouses or retail outlets.

As illustrated in **Exhibit 2-4**, international trade flows and how goods are shipped varies at the international, continental and inter-regional trade scales. International trade is reliant on air and marine. Continental trade is reliant on all modes including air, marine, rail and highways. Inter-regional trade in the GGH is dominated primarily by rail and highways.

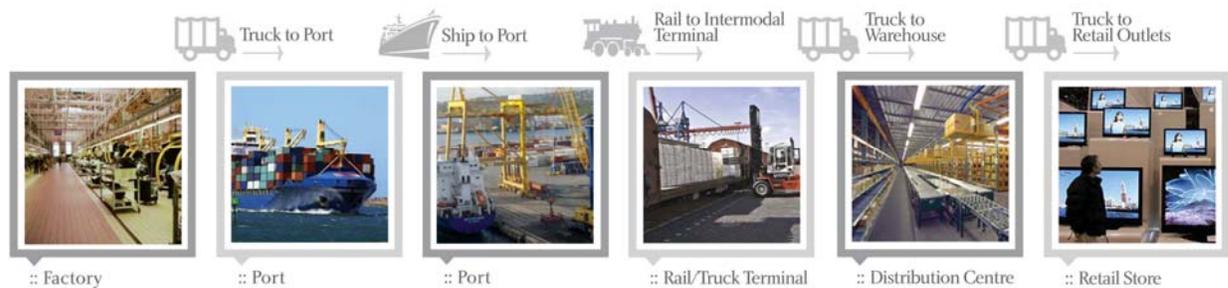
¹ Planning for Employment in the Greater Golden Horseshoe – Background Paper, May 2008

Exhibit 2-4: Overseas Goods Movement



Each shipper decides how (by which mode) goods are shipped at the global, continental and inter-regional scales. **Exhibit 2-5** illustrates the path of a typical manufactured product from overseas to the GGH, from the manufacturing stage to delivery to the consumer. Typically, goods are shipped from overseas in large containers that arrive at foreign marine ports via truck and travel from the foreign marine port to a North American marine port. Once the shipment arrives at the North American marine port, the container is generally put on the rail system for longer distance shipping. The container will reach an inter-modal facility where it is moved from the rail system to a truck which then takes the container to a warehouse/distribution centre. From the distribution centre, trucks take the various products to retail outlets for sale to the consumer.

Exhibit 2-5: Trip Chain of a Manufactured Product



In today’s global economy, a manufactured product typically utilizes the truck mode for three of the five transportation movements described above. Trucking accounts for over 60% of the total value of trade between Canada and the United States.

The mode selected to ship goods is a decision made by the shipper and is dependent on:

- Type and character of goods (e.g. bulk, weight, value);
- Cost of moving freight;
- Origin and destination of goods and available transportation connections;
- Travel distance (e.g. trans-ocean, continental, inter-regional);

- Urgency and reliability of delivery; and
- Convenience/ efficiency of travel, including inter-modal transfers.

The following provides an overview of why certain products are shipped by each mode.

Mode	Type of Goods Typically Shipped	Why are certain products shipped by each mode?
Truck	<ul style="list-style-type: none"> • Consumer Goods – household products, 	<ul style="list-style-type: none"> • <500 km for journey length • Increasing reliance on “just in time ” delivery • Multiple destinations of goods and without alternative linkages to the transportation system • Relatively smaller quantities of goods shipped at one time
Rail	<ul style="list-style-type: none"> • Bulk Goods/Containers – forest products, chemicals, automotive, ore/minerals 	<ul style="list-style-type: none"> • >500 km for journey length • Rail system connected efficiently to the origin of bulk goods • Higher relative weight of products • Large quantities of bulk goods shipped at one time
Marine	<ul style="list-style-type: none"> • Bulk Goods/Containers – grain, iron ore, coal, general cargo/consumer goods 	<ul style="list-style-type: none"> • >500 km for journey length • Efficient and cost effective mode for transport of goods overseas when compared to air • Large quantities of goods shipped at one time
Air	<ul style="list-style-type: none"> • Machinery/Manufactured Goods – perishable foods, medical supplies/equipment 	<ul style="list-style-type: none"> • >500 km for journey length • High value products • High degree of time sensitivity • Lower relative weight and quantity of goods shipped

As indicated in the table above, trucks are used primarily for moving over products shorter distances and with multiple destinations. This is of significance to the Study Area as the existing inter-regional transportation system is primarily road-based and heavily reliant on commercial vehicle transport for goods.

2.2 Government Policies and Initiatives

Policy documents provide direction on land use, growth, infrastructure planning, trade, tourism and recreation and environmental protection. These policies have strong potential to influence future transportation demand in the Study Area by shaping population and employment growth, stimulating economic and tourism growth and establishing a vision for the transportation system. The policies provide the impetus for changing travel patterns, modes and volumes in the Study Area.

This study is being carried out within a policy framework that includes all relevant approved provincial planning policies, including the key principles, themes and directions embodied within these policies, as well as approved municipal official plans and transportation master plans of the Study Area upper tier municipalities, with the intent of accommodating the future transportation and land use visions embodied in these documents.

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.

The Study Team reviewed numerous policies and documents that form the policy framework for this study, including:

- 1) *Provincial Policy Statement*, Ministry of Municipal Affairs and Housing, March 2005
- 2) *Growth Plan for the Greater Golden Horseshoe*, Ministry of Public Infrastructure Renewal, June 2006
- 3) *Greenbelt Act and Greenbelt Plan*, Ministry of Municipal Affairs and Housing, February 2005
- 4) *Niagara Escarpment Plan*, June 2005
- 5) *Oak Ridges Moraine Conservation Act (2001) and Plan (April 2002)*
- 6) *Metrolinx Regional Transportation Plan*, November 2008
- 7) *GO Transit's Strategic Plan – GO 2020*, December 2008
- 8) *National Policy Framework for Strategic Gateways and Trade Corridors*, July 2007
- 9) *Ontario-Quebec Continental Gateway and Truck Corridor*, July 2007
- 10) *Discovering Ontario – A Report on the Future of Tourism*, February 2009
- 11) *Building a National Tourism Strategy – A Framework for Federal/ Provincial/ Territorial Collaboration*, 2006
- 12) *Go Green, Ontario's Action Plan on Climate Change*, August 2007
- 13) *Straight Ahead – Vision for Transportation in Canada*, Transport Canada, February 2003
- 14) *Southern Ontario Highways Program 2008 to 2012*, August 2008
- 15) *Ontario Tourism Strategy*, June 2004
- 16) Municipal Policies from the Region of Halton, Region of Peel, Region of York, City of Guelph and County of Wellington.

The *Provincial Policy Statement*, *Growth Plan* and *Greenbelt Plan* provide the specific policy direction that must be incorporated in all MTO planning and decision-making processes affecting the Study Area. A copy of the policy framework is available in **Appendix B**.

2.2.1 Provincial Policy Statement

The *Provincial Policy Statement, 2005* (PPS) recognizes the complex inter-relationships among economic, environmental and social factors in planning and embodies good planning principles. It includes policies on key issues that affect our communities, such as: the efficient use and management of land and infrastructure; protection of the environment and resources; and ensuring appropriate opportunities for employment and residential development, including support for a mix of uses.

PPS policies influence transportation demand primarily through municipal planning policy as the Planning Act, R.S.O. 1990 requires that official plans have regard for matters of provincial interest, and are consistent with the PPS. Specifically, municipalities shall include policies that integrate transportation and land use considerations at all stages of the planning process and provide the necessary infrastructure to support current and projected needs in a co-ordinated, efficient and cost-effective manner.

Several policies are salient for planning purposes for the Study Area. Section 1 of the PPS is entitled “Building Strong Communities” and includes a series of policies generally designed to support intensification and compact forms of development. It puts limits on the expansion of settlement areas, tying such expansions to the achievement of provincial density targets, and requiring incremental expansion of urban areas. For example, Policy 1.1.3.7 states that “New development taking place in designated growth areas should occur adjacent to the existing built-up area and shall have a compact form, mix of uses and densities that allow for the efficient use of land, infrastructure and public service facilities.”

Section 1.3 of the PPS provides policy on Employment Areas, as follows:

1.3.1 Planning authorities shall promote economic development and competitiveness by:

1. providing for an appropriate mix and range of employment (including industrial, commercial and institutional uses) to meet long-term needs;
2. providing opportunities for a diversified economic base, including maintaining a range and choice of suitable sites for employment uses which support a wide range of economic activities and ancillary uses, and take into account the needs of existing and future businesses;
3. planning for, protecting and preserving employment areas for current and future uses; and
4. ensuring the necessary infrastructure is provided to support current and projected needs.

1.3.2 Planning authorities may permit conversion of lands within employment areas to non-employment uses through a comprehensive review, only where it has been demonstrated that the land is not required for employment purposes over the long term and that there is a need for the conversion.

These policies highlight the need for growth to occur in support of economic expansion and diversification, including protecting employment areas from encroachment by other land uses. The need for infrastructure to support these areas is explicit in Policy 1.3.1.4, above, which is particularly relevant to the Study Area as it relates to provision of transportation capacity to support employment areas in the regions of Halton, Peel and York.

In general, the growth-related policies in the PPS reflect a stronger focus on intensification and compact development in the PPS than in previous provincial policy.

Sections 1.6.1 and 1.6.2 of the PPS also urges co-ordination between growth planning and infrastructure planning, emphasizing efficient use of existing infrastructure as follows:

1.6.1 Infrastructure and public service facilities shall be provided in a co-ordinated, efficient and cost-effective manner to accommodate projected needs.

Planning for infrastructure and public service facilities shall be integrated with planning for growth so that these are available to meet current and projected needs.

1.6.2 The use of existing infrastructure and public service facilities should be optimized, wherever feasible, before consideration is given to developing new infrastructure and public service facilities.

Application to the GTA West Study Area

For the purpose of this project, the PPS requires close examination of existing infrastructure to establish the potential to expand capacity before considering the development of new infrastructure. The PPS contains various policies in Section 2 that provide protection for natural and prime agricultural areas and are vital when considering potential new infrastructure. These policies will be key factors in the future identification and evaluation of transportation alternatives to address the problems and opportunities discussed in **Section 4**.

2.2.2 Growth Plan for the Greater Golden Horseshoe

The Growth Plan outlines a set of policies for managing growth and development and guiding planning decisions in the GGH over the next 25 years (2031). This broad based plan represents a planning “vision” for Ontario. As a part of this vision, the plan outlines a strategy for “Where and How to Grow”, “Infrastructure to Support Growth”, “Protecting What is Valuable” and “Implementation”.

Similar to the PPS, Growth Plan policies influence transportation demand primarily through municipal planning policy as the Planning Act requires that official plans have regard for matters of provincial interest. Specifically, municipal official plans must conform to the Growth Plan’s population and employment intensification and density targets and growth forecasts. Key among these policies are the growth forecasts included in the plan, which set population and employment targets for each upper tier municipality in the GGH, through 2031. Schedule 3 forecasts for the GTA West upper tier municipalities are shown on **Exhibit 2-6**. At this time, upper tier municipalities are in the process of allocating population and employment to local municipalities.

Exhibit 2-6: Schedule 3 - Distribution of Population & Employment for the Greater Golden Horseshoe 2001-2031

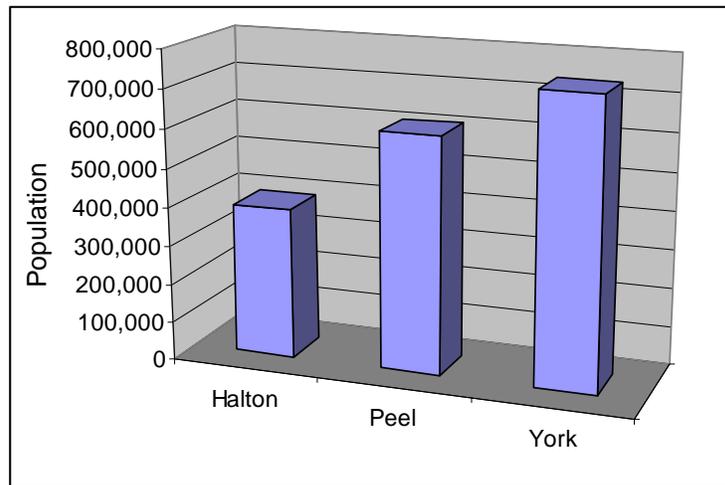
Distribution of Population and Employment for the Greater Golden Horseshoe 2001-2031 (figures in 000s)								
	POPULATION				EMPLOYMENT			
	2001	2011	2021	2031	2001	2011	2021	2031
Region of Durham	530	660	810	960	190	260	310	350
Region of York	760	1,060	1,300	1,500	390	590	700	780
City of Toronto	2,590	2,760	2,930	3,080	1,440	1,540	1,600	1,640
Region of Peel	1,030	1,320	1,490	1,640	530	730	820	870
Region of Halton	390	520	650	780	190	280	340	390
City of Hamilton	510	540	590	660	210	230	270	300
GTAH TOTAL**	5,810	6,860	7,770	8,620	2,950	3,830	4,040	4,330
County of Northumberland	80	87	93	96	29	32	33	33
County of Peterborough*	56	58	144	149	16	17	60	60
City of Peterborough*	74	79			37	41		
City of Kawartha Lakes	72	80	91	100	20	23	25	27
County of Simcoe*	254	294			85	102		
City of Barrie*	108	157	583	667	53	77	230	254
City of Orillia*	30	33			16	17		
County of Dufferin	53	62	71	80	19	22	25	27
County of Wellington*	85	91	269	321	36	41	137	158
City of Guelph*	110	132			63	76		
Region of Waterloo	456	526	623	729	236	282	324	366
County of Brant*	35	39	157	173	16	17	67	71
City of Brantford*	94	102			39	45		
County of Haldimand	46	49	53	56	17	19	19	20
Region of Niagara	427	442	474	511	186	201	209	218
OUTER RING TOTAL**	1,980	2,230	2,560	2,880	870	1,010	1,130	1,240
TOTAL GGH**	7,790	9,090	10,330	11,500	3,810	4,640	5,170	5,560

Source: Hemson Consulting Ltd., "The Growth Outlook for the Greater Golden Horseshoe", January 2005
 Note: Numbers rounded off to nearest 10,000 for GTAH municipalities, GTAH Total and Outer Ring Total, and to nearest 1,000 for outer ring municipalities.
 * Separate forecasts for these municipalities for 2021 and 2031 will be determined.
 ** Totals may not add up due to rounding.

Halton Region is forecast to receive growth in both population and employment, roughly doubling the current number of jobs and people in the Region. York Region will increase in population by 740,000 people and 390,000 jobs. Peel Region is forecast to increase in population by 610,000 people and 340,000 jobs by 2031. The County of Wellington and City of Guelph have combined growth figures for 2031, with population and employment increases of more than 210,000 and 95,000, respectively.

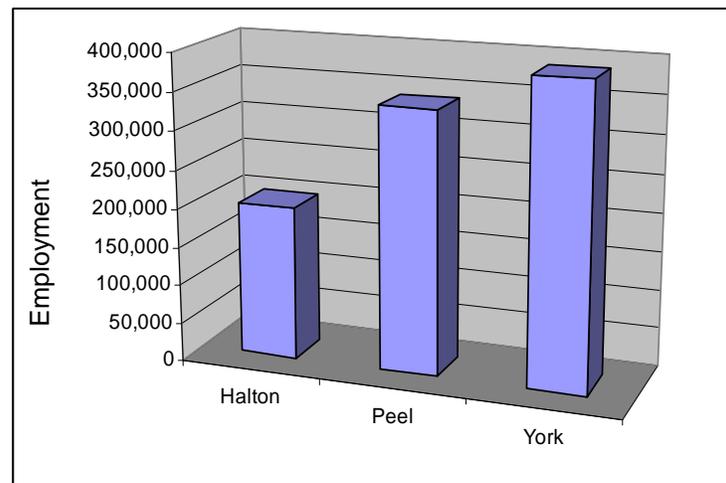
Exhibit 2-7 and **Exhibit 2-8** illustrate the overall population and employment growth projections in the Study Area from 2001 to 2031 for the three upper tier municipalities, giving a sense of the scale of change in different portions of the corridor. The distribution reflects both current and likely future trends. Increases in population and employment will result in growth in person trips for work, school, shopping and recreation as well as goods movement trips related to manufacturing, trade, distribution services and retail.

Exhibit 2-7: Population Growth Projections 2001 to 2031



Source: The Growth Plan, Schedule 3

Exhibit 2-8: Employment Growth Projections 2001 to 2031



Source: The Growth Plan, Schedule 3

The Growth Plan is characterized by a series of specific policies and targets designed to encourage population and employment growth within existing urban areas, and discourage urban sprawl. Among other policies, the Growth Plan directs that 40% of new residential development occur within existing urban areas, and requires that new development in greenfield areas occur at a minimum density of 50 jobs or persons per hectare. The Growth Plan also designates Urban Growth Centres, which are areas within certain municipalities (typically downtowns or other major nodes of higher density

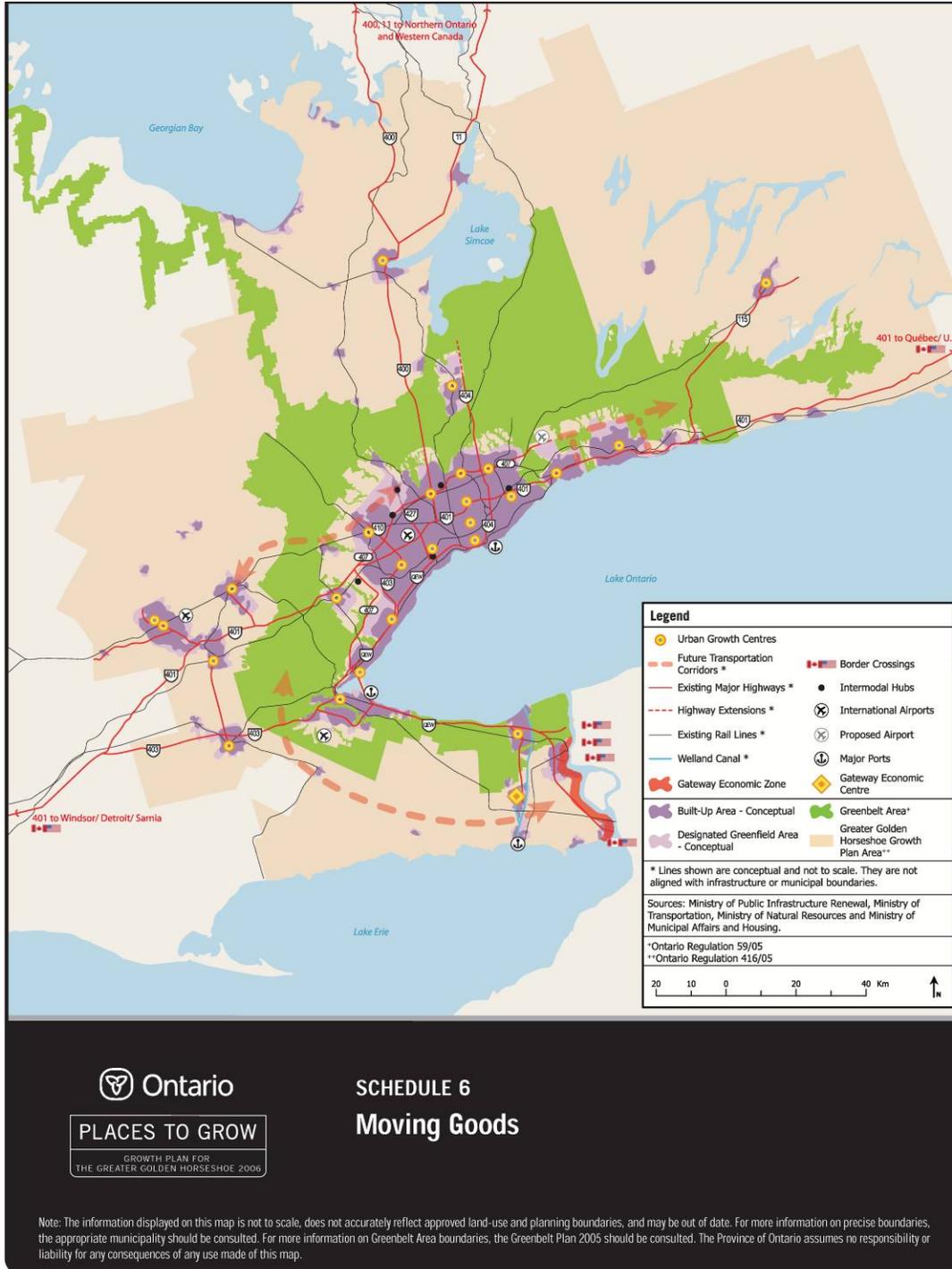
development) that will be the focus for intensification and be planned to achieve certain density targets.

There are four designated Urban Growth Centres within the Study Area:

- Downtown Brampton (Region of Peel)
- Downtown Milton (Region of Halton)
- Vaughan Corporate Centre (Region of York)
- Downtown Guelph (City of Guelph)

Downtown Brampton, Downtown Milton and the Vaughan Corporate Centre have been assigned a density target of 200 people plus jobs per hectare, while Downtown Guelph has been assigned a target of 150 people plus jobs per hectare. These four centres are intended to be the location of substantial growth and will act as “Development Nodes” within the Study Area. The Growth Plan also establishes “Designated Greenfield Areas”, as shown in light purple on Schedule 6 of the Plan provided below (**Exhibit 2-9**). This schedule and other maps in the Plan show the GTA West Corridor conceptually, describing it as a future transportation corridor.

Exhibit 2-9: Schedule 6 from the Growth Plan



The growth related policies affect the location and density of development, the availability of land, the mixture of uses and timing of development. The Growth Plan's focus on intensification in built up areas, Urban Growth Centres, major transit corridors and stations, brownfield and greyfield sites, recognizes the need to evolve our reliance away from the automobile as the primary travel mode for commuting and other trips. It promotes transit infrastructure investment needed to support sustainable growth.

The Growth Plan also includes transportation policies to support growth. Section 3.2.2 makes specific references to the role of the transportation system within the GGH. It states that the GGH transportation system will be planned and managed to do the following (3.2.2.1):

- a. provide connectivity among transportation modes for moving people and for moving goods
- b. offer a balance of transportation choices that reduce reliance upon and single mode and promotes transit, cycling and walking
- c. be sustainable, by encouraging the most financially and environmentally appropriate mode for trip-making
- d. offer multi-modal access to jobs, housing, schools, cultural and recreational opportunities, and goods and services
- e. provide for the safety of system users

Under Moving People, the Growth Plan states that “Public transit will be the first priority for transportation infrastructure planning and major transportation investments (3.2.3.1). Similarly, for Moving Goods in Section 3.2.4: “The first priority of highway investment is to facilitate efficient goods movement by linking inter-modal facilities, international gateways, and communities within the GGH”.

Application to the GTA West Study Area

Consistent with the anticipated growth and policies for managing this growth, one can expect significant challenges on the transportation network through the Study Area, with increased goods movement, commuter, tourism and recreational travel. The future transportation problems and opportunities identified in the Study Area reflect the Growth Plan’s substantial increase in population and employment throughout the GGH. The Growth Plan also sets priorities for transportation investments in the GGH, beginning with transit for moving people and inter-modal linkages for moving goods.

2.2.3 Greenbelt Plan

The Greenbelt Plan includes plans and policies to: protect against loss and fragmentation of agricultural lands; provide permanent protection to natural heritage and water resource systems; and to provide for a range of economic and social activities associated with rural communities. The goals of the Infrastructure and Natural Resources policies of the Plan are to support infrastructure that is consistent with the aim of the Greenbelt Plan and Growth Plan, while seeking to minimize the impact on the environment.

Similar to the PPS and the Growth Plan, the Greenbelt Plan policies influence transportation demand primarily through municipal planning policy as the Planning Act requires that official plans have regard for matters of provincial interest. The Greenbelt Plan has strict policies that address how transportation infrastructure will be constructed in specific areas and mandates the needs and justification that the provincial and municipal government must provide in proposing improvements to existing facilities or new facilities through the Greenbelt planning area. The Greenbelt Plan influences where development can occur, and how transportation infrastructure may be planned, designed

and constructed in accordance to the Greenbelt Plan policies. This will influence trip making with respect to how and where trips are made between communities and Urban Growth Centres.

Section 4.2 of the Greenbelt Plan provides the policies that apply to infrastructure.

4.2.1 General Infrastructure Policies

1. *All existing, expanded or new infrastructure subject to and approved under the Canadian Environmental Assessment Act, the Environmental Assessment Act, the Planning Act, the Aggregate Resources Act, the Telecommunications Act or by the National or Ontario Energy Boards, or which receives a similar environmental approval, is permitted within the Protected Countryside, subject to the policies of this section and provided it meets one of the following two objectives:*
 - a. *It supports agriculture, recreation and tourism, rural settlement areas, resource use or the rural economic activity that exists and is permitted within the Greenbelt; or*
 - b. *It serves the significant growth and economic development expected in southern Ontario beyond the Greenbelt by providing for the appropriate infrastructure connections among urban growth centres and between these centres and Ontario's borders.*
2. *The location and construction of infrastructure and expansions, extensions, operations and maintenance of infrastructure in the Protected Countryside, are subject to the following:*
 - a. *Planning, design and construction practices shall minimize, wherever possible, the amount of the Greenbelt, and particularly the Natural Heritage System, traversed and/or occupied by such infrastructure;*
 - b. *Planning, design and construction practices shall minimize, wherever possible, the negative impacts and disturbance of the existing landscape, including, but not limited to, impacts caused by light intrusion, noise and road salt;*
 - c. *Where practical, existing capacity and co-ordination with different infrastructure services is optimized so that the rural and existing character of the Protected Countryside and the overall urban structure for southern Ontario established by Greenbelt and any provincial growth management initiatives are supported and reinforced;*
 - d. *New or expanding infrastructure shall avoid key natural heritage features or key hydrologic features unless need has been demonstrated and it has been established that there is no reasonable alternative; and*
 - e. *Where infrastructure does cross the Natural Heritage System or intrude into or result in the loss of a key natural heritage feature or key hydrologic feature, including related landform features, planning, design and construction practices shall minimize negative impacts and disturbance on the features or their related functions, and where reasonable, maintain or improve connectivity.*

Application to the GTA West Study Area

The location of the Greenbelt will be a significant factor in the identification and evaluation of transportation alternatives to address the transportation problems discussed in **Section 4** and transportation opportunities discussed in **Section 6**. The Study Area includes a large portion of Greenbelt Planning Area, primarily extending through the Regions of Peel and Halton. The Study will fully integrate the goals, objectives and policy requirements of the Greenbelt Plan into the GTA West Corridor Planning and EA Study process through problem definition, alternative evaluation, impact assessment and mitigation in accordance to the infrastructure policies set out in Section 4.2 of the Plan.

2.2.4 Niagara Escarpment Plan

Stretching 725 km in length from Niagara to Tobermory, the Niagara Escarpment encompasses a range of habitats, physiographic regions and land-uses. It is the most distinctive landform in the Study Area, running parallel to the southern and western shores of Lake Ontario and ranging in distance from one to several kilometres south of the lake. Originating in Queenston Heights, near Niagara Falls, and extending through the City of Hamilton and north through Halton Region, its size and environmental significance make the escarpment a significant natural heritage feature throughout the Study Area.

The Niagara Escarpment is classified as a UNESCO World Biosphere Reserve. A biosphere reserve is an international designation of recognition from UNESCO (the United Nations Educational, Scientific, and Cultural Organization) for an area in the world which is deemed to demonstrate a "balanced relationship between humans and the biosphere." It means that collaborative efforts among people in the designated area serve to promote the sustainability of local economies and communities, as well as the conservation of the terrestrial or coastal ecosystems they are in. This designation gives an area international recognition for the important ecological and cultural values in an area. Ontario's Escarpment was named a biosphere reserve in February, 1990. It is one of only 15 biosphere reserves in Canada, and part of a network of 531 reserves in 105 countries.

The 194,340 ha of Escarpment land is managed/ governed by the Niagara Escarpment Commission (NEC) and the *Niagara Escarpment Plan* (NEP). The purpose of this Plan is "to provide for the maintenance of the Niagara Escarpment and land in the vicinity substantially as a continuous natural environment, and to ensure only such development occurs as is compatible with that natural environment" (NEP, 2005).

The Escarpment passes through some of the most heavily developed regions of Canada, although the population living on the Niagara Escarpment lands is relatively low (approximately 120,000). It is also part of the rich agricultural lands known as the tender fruitlands, which are renowned for producing fine wines.

Important attributes of the Niagara Escarpment are listed below:

- Escarpment sites in the Study Area include: geological formations (exposed rock faces, waterfalls, gorges, quarries), Areas of Natural and Scientific Interest (ANSIs) and Environmentally Sensitive Areas (ESAs), conservation areas and

parks, wooded areas, aquatic systems, rare species and habitat for significant species;

- The Escarpment forms an important natural barrier/physical division between the Lake Ontario Plain below (to the north) and the Haldimand Clay Plain above the Escarpment (to the south);
- The Escarpment provides tourism and outdoor recreation opportunities in the region (e.g. Bruce Trail, scenic viewpoints, wildlife viewing opportunities);
- The Niagara Escarpment is also a key hydrological feature in the Study Area. The headwaters of regional watersheds lay in the Escarpment; and
- The Niagara Escarpment provides a more or less continuous corridor of natural habitats from the U.S. border to beyond the City of Hamilton, along which migrating birds move at the appropriate seasons.

The NEP guides land use within an area defined by the Niagara Escarpment, from the Bruce Peninsula in the north to the Niagara River. The NEP limits development within the NEP area through limitations on new lot creation and limitations on permitted uses. Its intent is to balance development, preservation, and public use. Official plans are required to conform to the NEP. The NEP establishes land use designations, policies and criteria for the protection of the lands within its policy area. Land use within the NEP areas is divided into seven designations, the first three of which are afforded the most protection:

- Escarpment Natural Area
- Escarpment Protection Area
- Escarpment Rural Area
- Minor Urban Centre
- Urban Area
- Escarpment Recreation Area
- Mineral Resource Extraction Area

Escarpment Natural Areas include wetlands, wildlife habitat, woodlands, steep slopes and ravines, and provincially and regionally significant ANSIs. These are relatively undisturbed areas that contain important natural and cultural heritage features.

Escarpment Protection Areas include areas that have been modified by land use activities that often form as a buffer for Escarpment Natural Areas (i.e. agriculture, residential). Escarpment Rural Areas also provide a buffer to the more ecologically sensitive parts of the Escarpment and encourage compatible rural land uses.

Although the NEP permits essential transportation facilities in the Escarpment Natural Area (where essential is defined as “*that which is deemed necessary to the public interest after all alternatives have been considered*”), it must be demonstrated that any new and/or expanded facility has the least possible impact on the natural environment and be consistent with the objectives of the Plan.

Application to the GTA West Study Area

The objective of the NEP is to design and locate new and expanded transportation and utility facilities so the least possible change occurs in the environment and the natural and cultural landscape. The NEP policies will impact where and how new transportation facilities are built to meet the increase in transportation demand in the Study Area. Similar to the Greenbelt Plan, the NEP influences where development, and to some degree infrastructure to serve development, can occur. This will influence trip making with respect to how and where trips are made between communities. The Niagara Escarpment extends through the central region of the Study Area, to the west of the Towns of Halton Hills and Milton.

2.2.5 Oak Ridges Moraine Conservation Act and Plan

The Oak Ridges Moraine (ORM) is one of Ontario's most significant landforms – an irregular ridge stretching 160 km from the Trent River in the east to the Niagara Escarpment in the west. Together with the Escarpment, the ORM forms the foundation of south-central Ontario's natural heritage and Greenspace systems.

The ORM is a unique concentration of environmental, geological and hydrological features, vital to the ecosystem integrity/health of south-central Ontario that includes:

- Clean and abundant water resources.
- Healthy and diverse plant and animal habitats.
- Attractive and distinct landscapes.
- Prime agricultural areas, and
- Sand and gravel resources.

The ORM divides watershed draining south into western Lake Ontario from those draining north into Georgian Bay, Lake Simcoe and the Trent River system. It shapes the present and future form and structure of the Greater Toronto Area crossing thirty-two municipalities in three regions (Peel, York and Durham), four counties (Dufferin, Simcoe, Peterborough and Northumberland) and the City of Kawartha Lakes.

The ORM Conservation Plan supports the *ORM Protection Act* (introduced in May 2001), and clarifies the long-term protection and management of the 190,000 ha within the Moraine. The plan divides the ORM into four land use designations: Natural Core Areas, Natural Linkage Areas, Countryside Areas and Settlement Areas.

Natural Core Areas are lands with the greatest concentration of key natural heritage features, which are critical to maintaining the integrity of the Moraine as a whole. Only existing uses and very restricted new resource management, agricultural, low-intensity recreational, home business, transportation and utilities are allowed.

Natural Linkage Areas are critical natural and open space linkages between Natural Core Areas and along rivers and streams. Permitted uses include those in Natural Core Areas plus some aggregate resource operations.

Countryside Areas are agricultural and rural transitions/buffers between the Natural Core Areas/Linkage Areas and the urbanized Settlement Areas. Prime agricultural areas as

well as natural features are protected. Uses permitted in agricultural and rural areas are permitted in Countryside Areas.

Settlement Areas are a range of existing communities planned by municipalities to reflect community needs and values. Urban uses and development as set out in municipal official plans are permitted in Settlement Areas.

Application to the GTA West Study Area

Provincial policies for the ORM influences where development, and to some degree infrastructure to serve development, can occur. This will influence trip making with respect to how and where trips are made between communities. The southern limit of the ORM forms the approximate northern boundary of the GTA West Corridor Study Area through the regions of York and Peel.

MTO is required to comply with the ORM Protection Act and Conservation Plan in the planning, design, construction, operation and maintenance of all highways located in ORM Conservation Plan areas.

2.2.6 Metrolinx Regional Transportation Plan

Metrolinx is a provincial crown agency established by the Government of Ontario in 2006. This agency was tasked to develop and implement an integrated multi-modal transportation plan for the Greater Toronto and Hamilton Area (GTHA) – the metropolitan region encompassing the City of Toronto, the four surrounding regional municipalities (Durham, Halton, Peel and York) and the City of Hamilton. Its mandate includes providing seamless, co-ordinated transportation throughout the region. In November 2008, Metrolinx published its Regional Transportation Plan (RTP): The Big Move. The RTP is the third piece in the province’s approach to prepare the GTHA for growth and sustainability, building upon the Greenbelt Plan and the Growth Plan. It reaches 25 years into the future toward a transportation system that provides connectivity among modes, encourages the most financially and environmentally appropriate modes, offers multi-modal access and shapes growth by supporting intensification. The RTP’s vision is of an integrated transportation system that enhances quality of life, environment and prosperity.

Thirteen goals and 37 objectives were developed to guide progress toward the vision. The RTP contains ten strategies needed to achieve the vision, goals and objectives, each including priority actions and supporting policies. Nine of the actions and policies were identified as Big Moves, those measures that will have the largest and most transformational impacts on the GTHA’s transportation system:

- 1) A fast, frequent and expanded regional rapid transit network.
- 2) High-order transit connectivity to the Pearson Airport district from all directions.
- 3) An expanded Union Station – the heart of the GTHA’s transportation system.
- 4) Complete walking and cycling networks with bike-sharing programs.
- 5) An information system for travellers, where and when they need it.
- 6) A region-wide integrated transit fare system.

- 7) A system of connected mobility hubs.
- 8) A comprehensive strategy for goods movement.
- 9) An Investment Strategy to provide immediate, stable and predictable funding.

The RTP also identifies three sets of priorities for the RTP: for the first 15 years; years 15 to 25; and longer term. A substantial investment will be required to implement the RTP, with a total 25-year capital cost of \$50 billion (\$2 billion per year). The RTP proposes a broad range of actions and policies that may include legislative changes, the creation of new programs and/or establishment in the policy framework guiding decision making. Work is now underway toward the first transit construction projects in York Region and Toronto.

On May 14, 2009, the *Greater Toronto and Hamilton Area Transit Implementation Act (Metrolinx Act)* received Royal Assent, merging Metrolinx and GO Transit. The Metrolinx Act created a single transit agency with powers to move quickly to implement the RTP and confirmed that the RTP must continue to conform to the Growth Plans. It also gives Metrolinx the power to plan, own and operate GO Transit as well as other high-order transit projects included in the RTP. It requires Metrolinx to consult with all municipalities in the GTHA on any changes to the plan, thus ensuring that municipalities will continue to play a key role in the implementation of the RTP. The Act also requires Metrolinx to report to the province on an Investment Strategy to fund the balance of the RTP by 2013.

In order to assess the travel demand in the GGH and the impacts of the RTP policies and programs, Metrolinx used a comprehensive four stage travel demand model developed by MTO. This Greater Golden Horseshoe Model (GGH Model) was given to the Study Team for use in the GTA West Corridor Planning and EA Study. **Section 3** provides further detail on this model.

Application to the GTA West Study Area

Much of the GTA West Study Area lies within the area covered by the RTP. The principles, priorities and planned system improvements in the RTP have been included in the GTA West Corridor Planning and EA Study and in the GGH Model's Base Case and will be carried through as the study progresses. The RTP transit initiatives within the GTA West Study Area are described in **Section 3** and **Section 4.2.1**. As part of the MoveOntario 2020 Quick-Win Funding in the 2008 Provincial Budget, the following provincial funding was committed:

- Peel Region: \$66.1 million for Dundas and Hurontario Higher-Order Transit Corridor Development; Mississauga Transit Way Hub; Airport-Renforth Gateway; and Bolton GO Transit Improvements
- Halton Region: \$57.6 million for Dundas Street Bus Rapid Transit
- York Region: \$105.6 million for VIVA Highway 7 – Pine Valley Drive to Kennedy Road; VIVA Yonge Street-Richmond Hill Centre to 19th Avenue; VIVA Yonge Street- 19th Avenue to Newmarket; and Cornell Transit Terminal

2.2.7 GO Transit's Strategic Plan – GO 2020

As a result of the *Greater Toronto and Hamilton Area Transit Implementation Act*, merging GO Transit and Metrolinx, GO Transit is now the province's operating arm of the Metrolinx provincial crown agency overseeing inter-regional public transportation services provided by trains and buses in the GTHA. In May 2009, GO Transit's service area was expanded to include the upper tier municipalities of Dufferin, Durham, Halton, Niagara, Peel, Peterborough, Simcoe, Waterloo, Wellington and York and the single tier municipalities of Barrie, Guelph, Hamilton, Kawartha Lakes, Peterborough and Toronto.

GO Transit's Strategic Plan, published in December 2008, presents GO Transit's direction to 2020 including its vision, objectives and goals, and service strategy. Alongside the RTP, this document provides the basis for GO Transit's capital, operating and annual business plans. The vision of GO Transit is to be the preferred choice for inter-regional travel in the GGH. To achieve this vision, six objectives and corresponding goals were identified:

- 1) Deliver a high-quality inter-regional transit service throughout the Greater Golden Horseshoe
- 2) Be a leader in customer service
- 3) Continue to enhance quality through organizational excellence
- 4) Be a model for sustainability, and be seen as a leader in "green" development and operations
- 5) GO Transit's strong partnerships with stakeholders will maximize the benefit of GO services in the region
- 6) GO Transit's operations will be economically sustainable

GO Transit's Strategic Plan, in accordance with the RTP, represents a pro-active approach to service development that will provide intensive services within the Core Service Area (corresponding to the central Built-Up Area where a significant portion of growth and development will be directed in accordance with the Growth Plan). Outlying Urban Growth Centres will be linked by appropriate inter-regional transit services. Peak-period train service will serve diverse travel needs, including contra-peak direction and between outlying activity centres. Peak period service in the Core Service Area will provide a train at least every 15 minutes in the peak direction and off-peak services will also be increased. High-speed GO Bus services and Bus Rapid Transit (BRT) services will increase, connecting Urban Growth Centres and other concentrations of activity. The GO Transit bus network will expand to provide frequent trips and more than twice the current amount of service, and appropriate transit services will link Urban Growth Centres that are outside of the GTHA.

The Plan also commits GO Transit to collaborate actively with public and private sector transportation partners to provide co-ordinated, convenient, integrated transit services. Connections between major services, well-designed "hub" passenger facilities, co-ordinated schedules, fare payment using a common fare card and comprehensive multi-agency service information will encourage travellers to choose GO Transit and complementary local transit services from one end of their journey to the other.

A new program of capital investment to support GO Transit's service development will enhance every aspect of its facilities, including: corridor infrastructure; Toronto Union Station; passenger facilities; vehicles; and maintenance, storage and support facilities.

The GO Transit Strategic Plan is compatible with the RTP in that both plans reference similar transportation initiatives. The main difference is that while the RTP focuses on major municipal and higher order transit initiatives in the GTHA over 15 and 25 years (for 2024 and 2029 respectively), the GO Transit Strategic Plan addresses GO Transit improvements to 2020 for the GO Transit service area.

Application to the GTA West Study Area

The GO Strategic Plan's focus on inter-regional travel is particularly relevant to the purpose of the GTA West Corridor Planning and EA Study and those measures that lie within the Study Area have been included in the GGH Model.

A number of GO service extensions have recently been implemented/ are planned for the GTA West Study Area. In July 2009, the Environmental Study Report for the Georgetown to Kitchener rail expansion was placed on the public record for 45 days. This study recommends implementing GO Train service as early as 2011, with four two-way services per day and potential station sites in Acton, Downtown Guelph, Breslau and Downtown Kitchener. A GO Bus service extension to Kitchener is expected to begin in Fall 2009, operating between Mississauga City Centre, Milton GO Station, Cambridge and Kitchener. Additionally, \$2.5 million was committed by the federal and provincial governments to develop four park and ride lots along the Highway 401 corridor.

Other GO Transit initiatives in the Study Area include the following: current feasibility study on commuter rail service between Union Station and Bolton, with results expected in Fall 2009 and a related EA beginning in summer 2011; feasibility study completion on phased two-way all day rail service between Union Station and Milton, with an EA expected to begin in Summer 2009; anticipated commencement of feasibility study for Milton to Cambridge rail service in 2011; long range plans for all-day two-way service on the Georgetown corridor; and Metrolinx is the proponent of an EA to expand service on the GO Transit Georgetown South corridor and new rail service between Union Station and Toronto Pearson International Airport. Additional details of GO Transit initiatives in the Study Area are provided in **Section 2.6.5**.

2.2.8 National Policy Framework for Strategic Gateways and Trade Corridors

This policy framework, launched in July 2007 by Transport Canada, has been developed to advance the competitiveness of the Canadian economy in the rapidly changing area of global commerce. It will do so by providing focus and direction for strategies that foster further development and exploitation of the transportation systems that are key to Canada's most important opportunities and challenges in international trade. Three strategic gateways/trade corridors were identified for this approach: the Asia-Pacific Gateway and Corridor; the Ontario-Quebec Continental Gateway and Trade Corridor; and the Atlantic Gateway.

The strategies advanced under this framework will enhance multi-modal integration of transportation systems, as well as their efficiency, safety, security and sustainability. The framework and the strategies it will support are instruments of national policy

tailored to geographic, trade and transportation opportunities in different regions of Canada. This national approach emphasizes rigorous analysis and long-term planning in partnerships among governments and between public and private sectors. The framework will also help to guide investment decisions for the new \$2.1 billion fund for gateways and border crossings established by Budget 2007 as part of Building Canada, the federal government's long-term infrastructure plan.

The framework calls for a new emphasis on the transportation system to maximize the contribution of Canadian transportation to global supply chains. The key will be an integrated approach to physical and policy infrastructure, placing transportation infrastructure at its core while going further to encompass other inter-connected issues of public policy, regulation and operational practice that directly impact how well the infrastructure works and how well Canada takes advantage of it. This system-based perspective helps to address considerations such as the roles of technology, environmental stewardship and security, which require more than traditional mode-specific approaches.

Gateway and corridor strategies are integrated packages of long-term investment and policy measures that advance the development and exploitation of gateways and corridors for national benefit. Future gateway and corridor strategies will be based on analysis through five "policy lenses":

1. International commerce strategy
2. Volumes and values of national significance
3. Future patterns in global trade and transportation
4. Potential scope of capacity and policy measures
5. Federal role and effective partnerships

Using this framework, the federal government will work with its private and public sector partners to fully seize Canada's commerce, transportation and geographic opportunities.

Application to the GTA West Study Area

The gateway corridor strategies coming out of this framework will influence the movement of people and goods within and through the Study Area. The GTA West Corridor Planning and EA Study will progress in the context of this framework, incorporating its integrated approach to infrastructure, policy, regulation and operational practice. The Study Area lies within the Ontario-Quebec Continental Gateway and Trade Corridor; it is discussed in detail in **Section 2.2.9**.

2.2.9 Ontario-Quebec Continental Gateway and Trade Corridor

The Ontario-Quebec Continental Gateway and Trade Corridor is one of the three Strategic Gateways and Trade Corridors identified in the National Policy Framework. In July 2007, the governments of Canada, Ontario and Quebec signed a Memorandum of Understanding (MOU) on the development of an Ontario-Quebec Continental Gateway and Trade Corridor. The goal of this partnership is to maintain and build upon Ontario and Quebec's world-class transportation system so that it remains a driver of international trade and economic growth for the future.

This gateway is a key component of Canada's multimodal transportation system. Its central location facilitates international trade and the domestic inputs toward foreign trade with the U.S. and other partners. The Continental Gateway includes strategic ports, airports, inter-modal facilities and border crossings, as well as essential road, rail and marine infrastructure that ensure this transportation system's connection to and seamless integration with Canada's Asia-Pacific and Atlantic gateways.

The Continental Gateway initiative is focused on developing a sustainable, secure and efficient multimodal transportation system that keeps Canada's economic heartland competitive, attractive for investment and essential for trade.

Through the summer of 2009, Ontario, Quebec and the federal government will work with the private sector and other key public sector stakeholders to develop a comprehensive infrastructure, policy, and regulatory strategy with recommendations for the short (less than five years), medium (six-ten years) and longer term (eleven-fifteen years) to support international trade through this gateway.

The MOU will include the following:

- Economic factors and geographic parameters – geographic scope; economic indicators and trends; international trade patterns; and current trade agreements
- Inventory and diagnosis – analysis of current multi-modal transportation system; transportation demand forecast; and evaluation of performance of current and planned infrastructures
- Identification of challenges and opportunities – current and future components of the gateway; congestion issues; environmental issues; policy and regulatory aspects; skills development, and technology deficiencies
- Scenarios and action proposals – research and data requirements; potential changes to regulatory, institutional, labour and technology aspects; and infrastructure priorities
- Implementation plan – actions for short, medium and long term; and strategic communications plan

Application to the GTA West Study Area

Major transportation facilities in the GTA West Corridor such as Highway 401, CP/CN railways and inter-modal facilities form strategic and integral part of the Ontario-Quebec Continental Gateway. Planning for improvements to the transportation system in the Study Area requires close co-ordination between the two initiatives. As planning for the Ontario-Quebec Continental Gateway and Truck Corridor progresses, its findings regarding infrastructure, policy and regulatory strategy will be incorporated into the current study.

2.2.10 Discovering Ontario – A Report on the Future of Tourism

This report, commissioned by the province of Ontario, was prepared by the Ontario Tourism Competitiveness Study and released in February 2009. Its mandate was to develop a plan, including specific steps for public and private sectors, to support the

growth and long-term viability of tourism in Ontario. The Study consisted of a wide variety of research studies and a broad-based consultation process.

The overarching goal is that Ontario becomes one of the world's preferred places to visit, with an aim to double tourism receipts by 2020. The report focuses on some key elements: the importance of tourism's economic contribution to Ontario, including its generation of significant employment; definition of tourism regions; recognition and standardization of Destination Marketing Fees (DMFs); encouraging markets; providing a better tourism product; strategic marketing; developing critical tools, such as way finding; building a renowned workforce; and developing pride of place.

Four strategies were identified to achieve the overarching goal:

1. Work Together – Change how government and industry work together to develop tourism and foster economic growth
2. Set Standards for Success – Become more internationally competitive
3. Invest Wisely – Maximize the impact of private and public tourism investments on new and revitalized product across Ontario
4. Reach out – Welcome consumers before they arrive, when they get here and during their visit to Ontario

A set of milestones was developed from 2010 through 2020 to reach the goal of doubling Ontario's tourist receipts to \$44 billion, with the initial steps including naming and finalizing tourism regions, taking initial steps toward creating Destination Marketing and Management Organizations (DMMOs) and holding the G8 summit in Huntsville.

Twenty specific recommendations were developed to support these four goals, including investment in transportation infrastructure, which acknowledges the importance of efficient, effective and safe transportation to tourism in Ontario. Steps under this recommendation include: supporting expansion of provincial transit, active transportation facilities and environmentally friendly alternatives; supporting negotiations regarding port infrastructure and marine border crossings; and working with municipal leaders in key tourism gateways to prioritize transportation infrastructure requirements that would support tourism.

Application to the GTA West Study Area

The importance of transportation in supporting Ontario's tourism industry is highlighted in the Discovering Ontario Report and the GTA West Corridor Planning and EA Study will progress in this context.

2.2.11 Building a National Tourism Strategy - A Framework for Federal / Provincial / Territorial Collaboration

The National Tourism Strategy (2006) relates specifically to the factors influencing the tourism industry, identifying challenges and setting priorities for strengthening tourism competitiveness developed by the Federal/Provincial/Territorial (FPT) governments in consultation with industry.

The strategy's vision is to "make Canada a sustainable and top-of-mind tourist destination, renowned worldwide for its exceptional and unique year-round, quality travel experiences".

Key challenges raised during industry consultations include:

- Comprehensive research to better understand the expectations of travellers (including impacts of an aging population and changing travel patterns);
- More cohesive marketing and promotional campaigns while reflecting provincial/territorial realities and diversity in Canada;
- Further development of Aboriginal tourism;
- Human resource strategies to attract and retain employees in the industry;
- Investments in tourism infrastructure;
- Efficient and integrated transportation systems (addressing the challenge of Canada's vast territory and diverse geography); and
- Broadening and adopting sustainable tourism and best practices.

Under the transportation heading, the document discusses a number of difficulties, including: the high cost of air travel in remote areas and limited transportation options; the need to better integrate the national transportation system to allow passengers to connect easily between modes of transportation, including cross-border travel.

The Strategy identifies six key priorities for immediate action and collaboration, reflecting input obtained from the tourism industry through consultation.

1. Accessible Destination – Border Crossing: ensure the efficient flow of tourists to and from Canada.
2. Accessible Destination – Transportation: emphasize the need to implement transportation policies and programs that take into consideration national, provincial/territorial and regional tourism economic benefits; emphasize the importance of ensuring transportation policies enhance the ability of tourists to travel to and within Canada.
3. Exceptional Experiences – Product Development: ensure that existing products are enhanced and new products developed to take advantage of new and emerging opportunities.
4. Exceptional Hosts – Human Resources: ensure that the supply of the tourism/hospitality labour is consistent with the demand.
5. Exceptional Reputation – Tourism Information and Statistics: improve access by governments, business, and stakeholders to relevant information and analysis for decision making; improve measurement of tourism's performance and impact on the economy.
6. Exceptional Reputation – Tourism Marketing: better harmonize and co-ordinate marketing activities between the CTC and provinces/territories (P/T) to better position Canadian destinations; optimize existing resources through increased government collaboration.

Application to the GTA West Study Area

This tourism strategy has the potential to influence transportation demand in and through the Study Area by promoting areas of Canada such as Toronto and Niagara as world class tourist destinations. It emphasizes the importance of providing an efficient, integrated and secure transportation system and travel choice options to facilitate tourist travel, and recognizes the importance of transportation policies, programs and infrastructure as enablers to building a strong and sustainable tourism industry.

2.2.12 Go Green: Ontario's Action Plan on Climate Change

Go Green: Ontario's Action Plan on Climate Change (August 2007) includes some of the most comprehensive, forward-looking steps on the environment that Ontario has ever contemplated. Go Green sets firm targets and goals towards making better, greener choices that will save money, help the economy and help the environment.

Go Green is a five-point action plan:

1. **Green Targets:** Short, medium and long-term targets for reducing Ontario's greenhouse gas emissions, starting now and continuing through mid-century. Measures to achieve these targets include new regulations, conservation, a phase-out of coal-fired power plants, much more renewable energy and new programs and incentives for Ontario consumers, businesses, and municipalities to get green;
2. **MoveOntario 2020:** The largest transit investment in Canadian history – a \$17.5 billion plan that includes 52 rapid transit projects in the GTA and Hamilton. It calls for 902 km of new or improved rapid transit, creating 175,000 jobs during construction;
3. **Creating Jobs by Going Green:** The Next Generation Jobs Fund, a new \$650 million program, will secure the next generation of high-paying jobs for Ontarians by supporting businesses' commercial development, use and sale of clean and green technologies and businesses in Ontario;
4. **Green Power:** A \$150 million investment will help Ontario homeowners fight climate change, conserve energy and adopt green technologies, including:
 - Long-term targets to double the amount of electricity from renewable sources by 2025;
 - Increase from 10 to nearly 700 windmills, in place or planned;
 - Standard offer for clean energy to enable power users to improve their efficiency through cogeneration (combined heat and power electricity production); and
 - Removing other barriers that prevent more widespread use of cogeneration.
5. **Grow Green:** In addition to the Greenbelt Act, which ensures there will always be nature and open spaces around Ontario's most populated areas, 50 million new trees will be planted in southern Ontario by 2020. Growing Green also includes growing more sustainable, energy-efficient, transit-friendly communities under the Places to

Grow Act, setting strong targets and bringing in new programs to promote locally grown Ontario food.

Application to the GTA West Study Area

Go Green's MoveOntario 2020 transit projects will influence travel patterns in the areas within and through the Study Area. Any new infrastructure considered to address the problems and opportunities identified in this document will need to be evaluated in the context of the Go Green's vision and targets to reduce greenhouse gas emissions.

2.2.13 Straight Ahead – A Vision for Transportation in Canada

Straight Ahead - A Vision for Transportation in Canada is a federal government policy paper prepared by Transport Canada which covers the full spectrum of long-term transportation issues in Canada, ranging from airline and railway competition issues to critical infrastructure needs, environmental pressures and safety and security imperatives. The document provides the vision, the policy framework and principles that will guide the Government of Canada's decisions in the years ahead in key areas such as marketplace policies, strategic infrastructure investments and initiatives in support of the broader government agenda on competitive cities and healthy communities, climate change and innovation and skills.

Straight Ahead provides specific directions and calls for action in many areas, including:

- Concrete steps to preserve and improve the benefits of competition, including improved recourse for rail shippers against the market power of railways;
- Confirming its made-in-Canada policy on airline competition, with gradual and reciprocal liberalization of our international air markets;
- New measures to improve transparency in advertising airfares;
- Maintaining safety and security as the cornerstones of Canada's transportation policy, with a clear focus on the need to continually improve safety and security for Canadians;
- A comprehensive review process for transportation merger proposals, for example between Canadian and American railways;
- An emphasis on infrastructure investments aimed at reducing congestion in Canada's cities and bottlenecks at the Canada-U.S. border and in our trade corridors;
- A clear focus on environmental issues, with specific measures - such as promoting vehicles and fuels that produce fewer emissions, increased use of alternative modes of transportation for passenger travel, and more efficient transportation of goods - to support the government's Climate Change Plan;
- New legislation for VIA Rail and legislative amendments to strengthen publicly funded passenger rail services; and
- support for partnerships to address skills shortages and innovation challenges in the transportation sector.

Application to the GTA West Study Area

This document sets the overall context for transportation planning for all modes of travel in the Study Area. Marketplace/competition issues, infrastructure, environmental protection, security and innovation will be important elements to consider as potential alternatives to address the transportation problems and opportunities are identified.

2.2.14 Southern Ontario Highways Program, 2008 to 2012

This document, published in August 2008, presents an annual update of the five-year construction program for Southern Ontario highways. It begins with highlights of a number of 2007 accomplishments: building 53 km of new highways; building 6 new bridges; repairing 192 km of highways; and repairing 74 bridges. In 2008, the Ontario government invested a record amount of more than \$2 billion to repair and expand highways, roads and bridges across the province, with \$192 million designated for Southern Ontario highway construction.

The Program lists all major highway projects already under construction or starting in 2008, as well as a five year outlook to 2012. Projects are listed under the headings of Expansion and Rehabilitation. Major highway projects are generally greater than \$1 million; several hundred smaller valued projects were also completed in 2008.

The document also recognizes the importance of long term planning to ensure first-class transportation infrastructure for the future. Potential future directions beyond 2012 include the following:

- Optimizing, expanding or extending existing highways
- Developing new highway corridors
- Identifying and implementing transportation solutions on strategic transportation corridors
- Evaluating options for transit and other modes of transportation

Application to the GTA West Study Area

The program includes current and future highway improvements in the GTA West Study Area, including an extension of Highway 410 and Highway 400 HOV lanes, which will be included in the study's assessment of 2031 transportation conditions. The GTA West Corridor Study is included in the Program as a Future Southern Ontario Project.

2.2.15 Ontario's Tourism Strategy

This 2004 document provides a strategy for long-term sustainable growth of Ontario's tourism industry, including a framework identifying the areas for action through to 2010. It is to serve as a tool to bring the tourism industry and different levels of government together to focus efforts and take advantage of the assets available for tourism in Ontario.

The strategy includes four goals for the future of Ontario's tourism industry:

- Ontario is an internationally recognized travel destination, renowned for the superior quality of its tourism experiences, attractions and services.

- Ontario is a top competitor in global tourism, with an increased share of the domestic, U.S. and international tourism markets.
- Tourism contributes to economic prosperity and a higher quality of life in communities across Ontario.
- The Government is actively engaged with industry stakeholders, providing coordinated and strategic leadership to ensure the continued growth and vitality of tourism in Ontario.

Five key enabling mechanisms are also identified to provide a solid foundation and support implementation of the Strategy: Infrastructure; Market Intelligence; Tourism Investment; Information Technology; and Business Skills Development. The next step is for industry and government to work together to develop the implementation plan, including roles and responsibilities and priorities and timelines.

In 2007, an update report was published, highlighting the progress and achievements to date, including specific efforts related to the priorities outlined in the Strategy.

Application to the GTA West Study Area

The importance of Toronto and Niagara as tourist destinations is highlighted as is the point that greater collaboration between Toronto and the Niagara Region will strengthen them as destinations and major gateways for tourism in the province.

The document also recognizes the transportation issues across the province that can act as barriers to smooth travel for tourists and the point that the ability of visitors to move around easily makes for more pleasant visits. All modes of transportation are recognized (road, train, air, water, transit) and require attention from a tourism perspective. It states that transportation links between Toronto and Niagara need to be enhanced. Under the Strategy's Infrastructure heading, ongoing investment in highways, connecting roads and public transport is promoted to support the tourism industry.

2.3 Land Use

The relationship between land use and the inter-regional transportation system is fundamental. Trip making, travel patterns and modal distributions are largely a function of how land is organized and used. The pattern of land use is influenced by the level of accessibility provided by the transportation system.

In the GTA West Study Area, there are several natural environmental features that influence the provision of transportation services and mobility. These include the Niagara Escarpment and the designated Greenbelt Area. Currently, there are a limited number of road and rail corridors that cross these existing natural constraints. The influences of sensitive natural habitats or specific geographic conditions, such as wide river valleys, have a significant bearing on the provision of transportation facilities. Historically, infrastructure has only been located in areas where construction was uncomplicated unless, as in the case of railways, large structures were required regardless of location.

2.3.1 Municipal Policies

In addition to provincial policies, local area policy documents exist, or are currently being developed, that are being considered in the context of the GTAW Corridor

Planning and EA Study. At the municipal level, official plans provide the context and boundaries within which a municipality operates with regards to land use, development and growth and helps to ensure that future planning and development will meet the specific needs of the community. The Planning Act requires that an official plan conform to, or does not conflict with provincial plans, has regard for matters of provincial interest, and is consistent with the Provincial Policy Statement.

The official plan contains policies governing various land use designations, such as residential, commercial, industrial, agricultural, open space and recreation. These designations are broadly established on a land use map. Other policies relate to environmental management, economic development, transportation and community improvement.

Municipal policies have the potential to influence transportation demand in the Study Area by shaping the patterns of demand and in turn impacting the modes of travel that demand will use. Transportation demand can be influenced by:

- Land use patterns - directing growth to specific locations in a municipality (e.g. while the magnitude of travel demand is dependent on the various types of land uses, the distribution of travel in a region is affected by the location and density of the corresponding land use);
- Service requirements and location – policies outlining what services such as roads, water mains, sewers, parks and schools will be needed and where they are to be located impacts the timing, location and type of transportation infrastructure required;
- Order and location where development will occur – dictates timing of transportation development;
- Development related policies - in-fill housing, mixed-use development and brownfield redevelopment strategies influence where new residential, industrial and commercial developments locate;
- Economic development policies – attract investment into a community in terms of new employment opportunities and are a catalyst for development of special nodes (i.e. industrial parks, energy parks);
- Transportation Master Plans - integration of land use and transportation growth management policies to identify long-term infrastructure needs to meet future transportation demands and provide a context and framework for future transportation decisions;
- Transit Strategies - developing neighbourhood communities to mix commercial, residential, services, amenities, reducing the need to drive (transit oriented development). Effective transit depends upon density and the number of people that can be served within a close proximity of a transit route; and
- Co-ordination of planning policies between regions - willingness of municipalities to create planning policy that transcends to a more regional view, not only expanding to other areas but facilitating transportation planning between regions.

Region of Peel

The Regional Municipality of Peel (also known as Peel Region) consists of three municipalities to the west and northwest of Toronto: Brampton, Mississauga, and the Town of Caledon. The entire region is part of the GTA and the inner ring of GGH. Mississauga occupies the southernmost portion of the region with approximately 668,549 residents. Brampton is a smaller city of approximately 433,806, and the Town of Caledon is home to approximately 57,050 residents.

Peel's Regional Official Plan (November 2008) incorporates policies that address goals and objectives by dividing the geographic area into the Natural Environment, Resources, Population and Employment, Regional Structure, Regional Services, and Implementation.

The Official Plan also includes the long-term regional strategic policy framework for guiding growth and development in Peel while having regard for protecting the environment, managing the renewable and non-renewable resources, and outlining a regional structure that manages this growth within Peel in the most effective and efficient manner. It also provides the long-term strategic policy framework for the more specific objectives and land use policies contained in the area municipal official plans which must conform to this plan.

Region of Halton

The Region of Halton is located on the western edge of the GTA – in the inner ring of the GGH, encompassing a land area of approximately 967 square kilometres with a 25-kilometre frontage along Lake Ontario. The Region is comprised of four local municipalities including: the City of Burlington, the Town of Oakville, the Town of Halton Hills, and the Town of Milton.

Halton's Regional Official Plan (updated August 17, 2006) incorporates policies that address goals and objectives by dividing the geographic area into the Urban System, the Rural System and the Greenlands System.

The Official Plan provides detailed policies on environmental quality, human services, heritage resources, urban services (water supply and wastewater treatment), economic development, transportation, energy and utilities. The Plan also includes the strategy for implementation to achieve the goals and objectives as well as on-going monitoring of the effectiveness of plan policies.

Region of York

The Regional Municipality of York is located in south-central Ontario between Lake Simcoe and Toronto. The entire region is part of the GTA and the inner ring of GGH. York Region covers approximately 1,776 square kilometres from Lake Simcoe to Toronto in the south, and shares borders with Durham Region, Peel Region, and Simcoe County.

The York Region Official Plan was adopted in December 2009 and contains a set of policies to guide the economic, environmental and community building decisions which will impact upon the growth of the Region. Sustainability is a guiding principle of the Official Plan and is central to its triple bottom line objectives: Sustainable Natural Environment, Healthy Communities and Economic Vitality. Working towards these key

objectives through the policies contained in the Official Plan is the basis for achieving managed and balanced growth in York Region.

Wellington County

Wellington County is comprised of small towns and rural countryside located to the west of the GTA and east of the Kitchener Waterloo area, and the separated City of Guelph lies within southern Wellington. The County covers approximately 1,000 square miles and borders on nine other Counties and Regions. It is also part of six Conservation Authority watersheds.

Wellington County's Official Plan was last updated in January 2009 and includes a commitment to pursue planning policies to achieve a number of objectives, including accommodating future population and employment growth; maintaining the small town and rural character of the County; providing infrastructure required to accommodate growth; developing a safe and efficient transportation system; and promoting energy efficient land use and servicing.

City of Guelph

The City of Guelph is a single tier municipality located within Wellington County. Guelph's Official Plan was approved by the provincial government in December 1995. It is a statement of goals, objectives and policies intended to guide future land use, physical development, growth and change within the corporate limits of the City of Guelph. A version of the Plan consolidating all amendments since 1994 was published in November 2006.

The Official Plan is based upon a number of goals that provide the broad framework for the development and planning of the City, including the following: to maintain the quality of life, safety and stability of the community; promote opportunities for employment in the emerging high-tech "knowledge based" sectors; develop a safe, efficient and convenient transportation system that provides for all modes of travel and supports the land use patterns of the City; and utilize an interdisciplinary approach to planning whereby decisions are made with an understanding of the ecological, social, cultural and economic implications for any particular course of action.

Appendix B contains details on each of the upper tier municipal official plans and policies.

2.3.2 Areas of Interest for Monitoring Development Activities

Fast-paced land development in certain areas, particularly in Peel and York Regions, has the potential to significantly reduce opportunities for new transportation corridors. MTO is working with the Ministry of Municipal Affairs and Housing, the Ministry of Energy and Infrastructure and municipalities to explore strategies to retain corridor opportunities and to identify strategic, critical locations that are under development pressure – "Areas of Interest". The purpose of this proactive dialogue with various stakeholders is to ensure that land developments will not preclude or jeopardize the selection of alternatives for critical inter-regional transportation facilities (rail, highway, transitway, etc.).

Through review of the land use information and with a view to the PPS and other policies regarding protection of potential transportation corridor lands, "Areas of Interest" have

been identified. The identification of these areas has been based on a number of factors that follow:

- a. Lands are within a potential linear corridor inside the Study Area linking Urban Growth Centres and/or linking with other inter-regional transportation corridors;
- b. Lands are adjacent to a potential passenger rail corridor and considered potential station sites by GO Transit on the basis of offset to other potential or existing station locations;
- c. Lands are of suitable offset to other highway infrastructure such as interchanges, that would accommodate highway-to-highway interchanges, given limited distances permitted between such facilities;
- d. Lands are within areas of active development activity, either inside or outside of designated urban areas as defined by the upper tier municipality or the lower tier municipality;
- e. Lands are in the vicinity of a narrow “gap” that is anticipated to offer opportunity for a potential new transportation corridor with little impact to adjacent existing or approved future community or designated natural feature; and
- f. Lands that are outside of designated Greenbelt, Oak Ridges Moraine, Niagara Escarpment, Provincially Significant Wetlands lands that already are protected from development.

These areas have been identified by the Study Team through discussions with municipal staff and are based on a review of the status and pace of development applications in the Study Area in relation to existing built-up boundaries and designated urban boundaries.

The review was undertaken through the current understanding of official plan designations, current official plan information, and on-going discussions with municipal staff.

These discussions and reviews have led to the development of a corridor protection strategy that calls on both the province and municipalities to work collaboratively to keep all reasonable options open while the EA is underway. This strategy and the consultation process in its development are documented in the *GTA West Working Paper – “Corridor Protection and Development Issues”*.

2.4 Economy

There are several factors that influence the economy and trade, including approved population and employment growth, broader effects of global economic conditions, globalization, consumption increases in emerging markets, the value of the Canadian dollar, fluctuating fuel costs and the changing U.S. economic conditions.

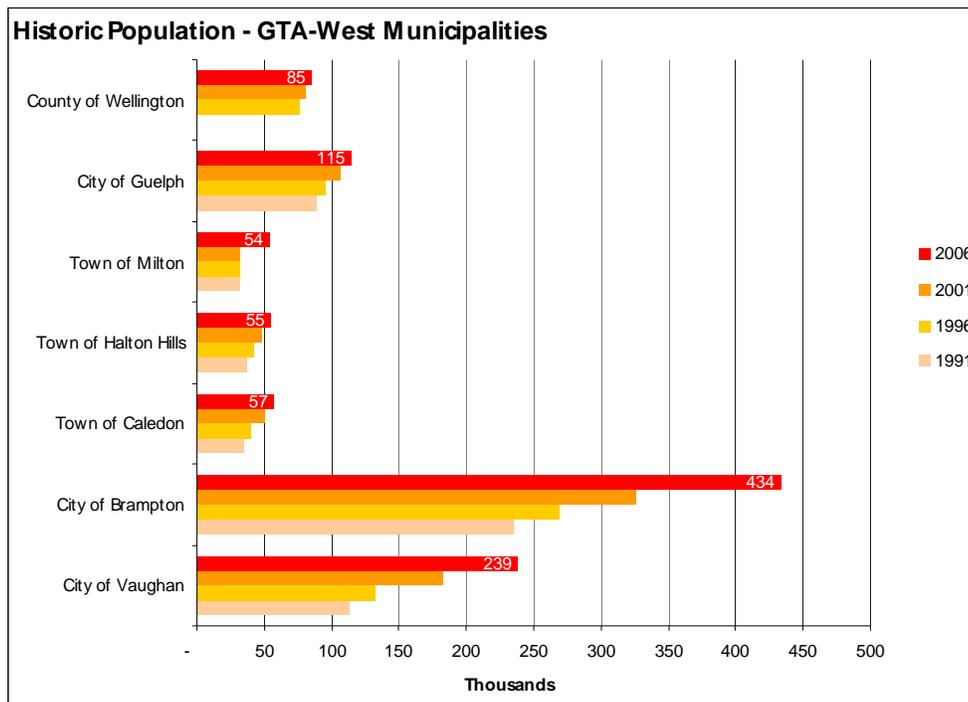
2.4.1 Historical Population and Employment Trends

The GTA West corridor lies within one of the fastest growing areas in Canada. For decades, the direction of growth in the GTA has been to the northwest. In the second half of the twentieth century, rapid growth has occurred north of the City of Toronto (in York Region) and to the west (in Peel Region). Over the past ten to twenty years, growth has

continued to move west, with rapid growth in the northern areas of Halton Region in particular since the turn of the millennium.

Exhibit 2-10 illustrates population growth since 1991 in each of the GTA West Study Area municipalities. The most rapid growth, in both absolute and relative terms, has been in the cities of Brampton and Vaughan, in the southwest portion of the Study Area. The Towns of Milton and Halton Hills saw virtually no population growth until 2001, but have since experienced more rapid growth. Caledon, Guelph, and the largely rural County of Wellington have experienced more gradual population growth.

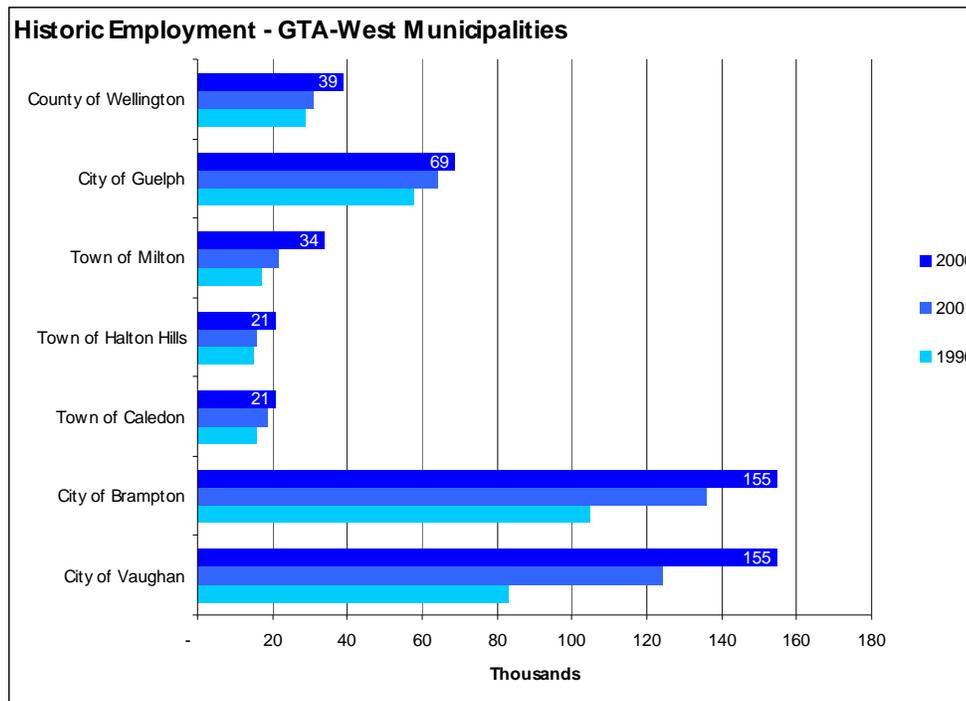
Exhibit 2-10: Historical Population – GTA West Municipalities



Source: MKI, Halton Hills and Milton - Hemson Consulting, Sustainable Halton Report 3.07, April 2, 2009; Brampton and Caledon - Peel Region, ROPA 24, June 2009; Vaughan - Region of York Draft Official Plan, June 2009; Guelph - Guelph Planning Staff, Fall 2008; Wellington - County of Wellington Planning Staff, Fall 2008.

Employment growth has followed a similar pattern, as shown in **Exhibit 2-11**. While Brampton and Vaughan have added substantial employment, growth has been gradual in the other Study Area municipalities. However, virtually all of the Study Area municipalities grew faster than other areas of the GTA. Vaughan and Brampton are two of the fastest growing cities in all of Canada in terms of employment growth. More new jobs were located in Vaughan and Brampton between 1996 and 2006 than were located in the City of Toronto. Milton’s employment growth since 2001 has also been rapid, due to the servicing and rapid development of new business parks along Highway 401.

Exhibit 2-11: Historical Employment – GTA West Municipalities



Source: MKI, Halton Hills and Milton - Hemson Consulting, Sustainable Halton Report 3.07, April 2, 2009; Brampton and Caledon - Peel Region, ROPA 24, June 2009; Vaughan - Region of York Draft Official Plan, June 2009; Guelph - Guelph Planning Staff, Fall 2008; Wellington - County of Wellington Planning Staff, Fall 2008.

2.4.2 Population and Employment Forecasts

Forecasts for population and employment growth in the GTA West Study Area municipalities have been developed by the province of Ontario, the Study Area municipalities, and by the Study Team itself.

Provincial forecasts for population and employment growth are presented in the Growth Plan. These forecasts, which appear as Schedule 3 of the Plan, are at the upper tier municipal level, as shown in **Exhibit 2-12**.

Exhibit 2-12: Population and Employment Targets

Region / County / City	Population (000's)			Employment (000's)		
	2001	2031	% Growth	2001	2031	% Growth
Region of York	760	1,500	97%	390	780	100%
Region of Peel	1,030	1,640	59%	530	870	64%
Region of Halton	390	780	100%	190	390	105%
County of Wellington	85	321	65%	36	158	60%
City of Guelph	110			63		
Total GGH	7,790	11,500	48%	3,810	5,560	46%

Source: MKI, The Growth Plan, Schedule 3

Within these upper tier forecasts, the allocation of population and employment growth to lower tier municipalities is the responsibility of the upper tier municipalities. The allocation of population and employment to lower tier municipalities is currently in progress as part of various conformity exercises related to Growth Plan population and employment targets being conducted by the upper tier municipalities.

Using the most current municipal work as of late 2008, the Study Team undertook an allocation exercise for the GTA West area municipalities. **Exhibit 2-13** indicates the forecast population and employment growth by municipality (shown graphically on **Exhibit 2-14**).

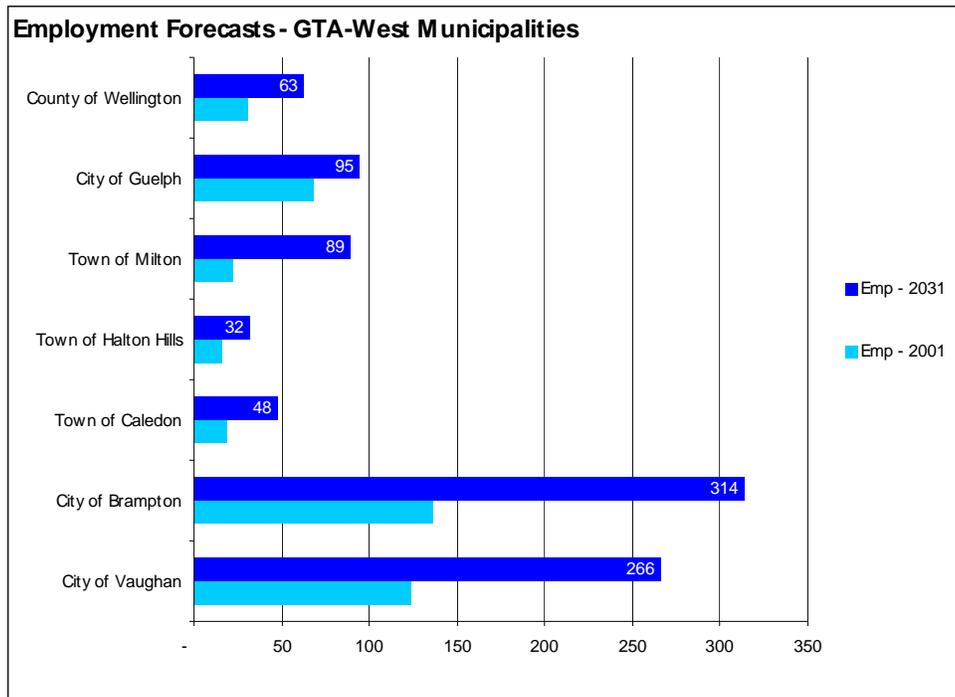
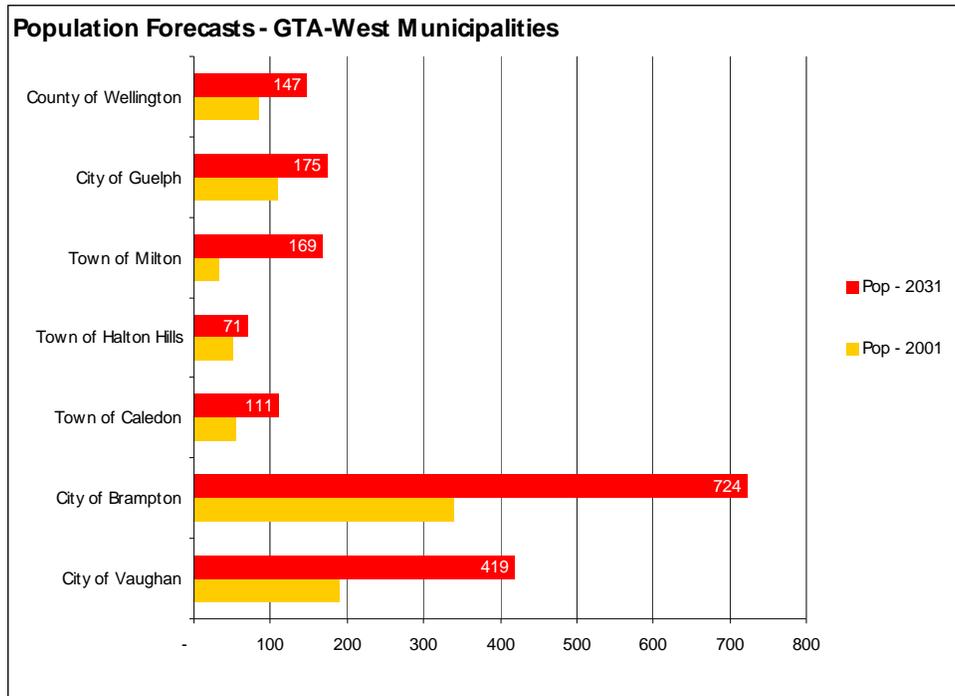
Exhibit 2-13: Population and Employment Growth Allocation in GTA West Municipalities

Region / County / City	Population		Employment	
	2001	2031	2001	2031
City of Vaughan	190	419	124	266
City of Brampton	340	724	136	314
Town of Caledon	54	111	19	48
Town of Halton Hills	50	71	16	32
Town of Milton	33	169	22	89
City of Guelph	110	175	68	95
County of Wellington	85	147	31	63
GTAW Total	862	1,816	416	907

Source: MKI, Halton Hills and Milton - Hemson Consulting, Sustainable Halton Report 3.07, April 2, 2009; Brampton and Caledon - Peel Region, ROPA 24, June 2009; Vaughan - Region of York Draft Official Plan, June 2009; Guelph - Guelph Planning Staff, Fall 2008; Wellington - County of Wellington Planning Staff, Fall 2008.

Overall, it is difficult to overstate the pace at which growth is anticipated in the GTA West corridor. While current economic conditions are difficult, population and employment in the Study Area municipalities are forecast to more than double by 2031. The distribution of jobs and population is weighted toward the central and eastern portions of the corridor; if considering only Milton, Caledon, Brampton, and Vaughan, population and employment is forecast to almost triple between 2001 and 2031.

Exhibit 2-14: Population and Employment Forecasts



Source: MKI, Halton Hills and Milton - Hemson Consulting, Sustainable Halton Report 3.07, April 2, 2009; Brampton and Caledon - Peel Region, ROPA 24, June 2009; Vaughan - Region of York Draft Official Plan, June 2009; Guelph - Guelph Planning Staff, Fall 2008; Wellington - County of Wellington Planning Staff, Fall 2008.

The Pearson “Supernode” – the concentration of industrial and office uses surrounding Toronto Pearson International Airport in Peel Region – is now the largest concentration of employment anywhere in the GGH. Due to the availability of extensive road, air, and rail infrastructure in the area, including two major rail inter-modal facilities, the east end of the GTA West corridor could be considered the distribution and logistics hub of Ontario.

In recent years, the economy of the GTA West Study Area has been heavily dominated by service sector employment growth (both serving local population growth and exported to larger markets), as well the wholesale trade and distribution cluster in Mississauga/Brampton/Vaughan. Most employment forecasts see this trend continuing. Both Halton Region and Peel Region are forecasting significant growth in the wholesale trade/transportation/logistics sectors. The growth of the “distribution economy” in this area is a central economic driver for the GTA West Study Area. International trade and containerization have played an important role in the growth of goods movements via long-distance rail trips to inter-modal yards, onto trucks to major distribution/warehouses in the GTA West Study Area.

2.4.3 Global Trade

Although the economic downturn being experienced in the Study Area in late 2008/early 2009 is relatively recent, the economic fundamentals of the area have been changing for some time. New global dynamics have been reshaping the economy. The remarkable surge of the Canadian dollar over the past several years, most significantly in 2007, is causing ongoing negative impacts on manufacturing and related sectors. The traditional strength of the province as a manufacturing and trading economy is facing new challenges. Finally, further tightening of the Canadian labour market has started to affect the economy in meaningful ways, as international immigration increasingly supplies Ontario with growth in its workforce - the ability to fulfill the needs of various economic sectors for skilled and unskilled workers will be dependent on a continued influx of immigrants to Ontario. Although the current recessionary conditions have eased labour market shortages to some extent, the structure of Ontario’s population makes this a long-term trend, as declining birthrates and an aging domestic population will increasingly make immigration the lifeblood of the labour market

Over the past several decades, Ontario’s economy has become heavily export-based, but export growth is slowing down as a proportion of economic expansion. As of 2006, export to other provinces or other countries represented about 70% of Ontario’s GDP². Half of the province’s GDP is exported to other countries, nearly all of which is to the U.S. Ontario’s high level of International trade makes its economy particularly sensitive to external factors.

In the Study Area, several International factors have particular impact. These include the following:

- Globalization and corresponding efficiency pressures on Canadian producers;
- Border policy and security policy in the U.S., especially as these affect tourism and goods movement across the border;

² MKI, Statistics Canada, Trade Statistics, 2006

- Demand for goods produced in the area, such as steel and transportation equipment (automobile industry); and
- Specific trade-related factors such as the end of the Auto Pact and World Trade Organization (WTO) policy.

Globalization

The increasing integration of the global economy is not a new phenomenon – it has been occurring for more than 50 years. However, the past two decades have seen a relatively rapid reduction in trade barriers and the establishment of economic relationships across national boundaries. As an example, Canada (and not the U.S.) is now negotiating a bilateral trade agreement with the European Union (EU). The EU collectively is a much larger economy than the U.S. and Ontario may benefit from this agreement resulting in new competitive pressures on goods production in North America. The advent of containerized freight, the relatively low cost of marine shipping and the lower cost of manufacturing in other world markets have caused stresses on the manufacturing sectors in Canada and specifically in the GGH, as companies are forced to compete by cutting costs. These pressures were also generated / exacerbated by the signing of the Free Trade Agreement (FTA) with the U.S. and the North American Free Trade Agreement (NAFTA), which brought Mexico into the Canada-U.S. trade bloc.

Weakness in Canadian manufacturing may be exacerbated if protectionism becomes a global response to the current economic crisis. Although some firms have been unable to compete in this climate, and have closed or relocated out of the GGH, many other manufacturers have streamlined their production processes to become more efficient producers. New technologies have also resulted in opportunities to automate production, with the unfortunate by-product of job losses.

The full impact of globalization remains to be seen, but has generally been both a negative (job losses) and a positive (increased efficiency) for the GGH economy. In the future, it can be anticipated that this structural change in the GGH economy will continue to affect businesses in the Study Area, with increased competitive pressures affecting goods producing sectors most strongly; thus emphasizing the need for an efficient transportation system to address the competitive pressures.

Border Policy and Security

The U.S. and Canada's bilateral trade relationship is the world's largest. The scale of this relationship has depended on the continuous and reliable flow of goods across the Canada-U.S. border.

Since the events of September 11th, 2001 various measures have been taken to tighten up U.S. border security. Both the Government of Canada and the Government of Ontario have worked with the U.S. government to ensure these measures have minimal impact on the trade relationship, efforts which are widely considered to have been successful in limiting the impact of increased security measures. Although trade was certainly disrupted by September 11th, long-term impacts have been moderate (tourism from the U.S. has been more seriously impacted by related factors, as discussed in **Section 2.5**).

Procedures at the U.S. border crossings are a critical factor affecting this study. A significant tightening of security policy, or new trade barriers, could restrict demand for goods movement. These issues are being resolved with various programs including FAST (Free And Secure Trade: use of bar-code documents for fast border clearance of approved drivers, carriers and importers) and NEXUS (expedited border clearance program for approved Canadian and American citizens).

In a more general economic sense, the major lingering impact of September 11th and other unexpected events such as the 2003 SARS crisis may be the sense of uncertainty created for firms with a strong International trade orientation. Both SARS and September 11th were reminders of the constant risk that an unforeseen event may close down trade channels or significantly impact relations with various trading partners. In part, this fact may be the reason for domestic (inter-provincial) trade becoming an increased focus for firms in the Study Area – a trend which has been identified both in our interviews with economic development professionals and in economic statistics.

Auto Pact

Established in the early 1960's, the Canada-U.S. Auto Pact created a special bilateral trade relationship for the automobile industry. The Auto Pact “eliminated trade tariffs between the two countries and created a single North American manufacturing market. Tariffs between the two countries were eliminated on cars, trucks, buses, tires and automotive parts.”³ In the late 1990s, a complaint was filed by the European Union and Japan to the World Trade Organization (WTO) that the Auto Pact violated International trade laws. The WTO Dispute Panel ruled in favour of the complainants in 2001 and the Auto Pact was abolished.

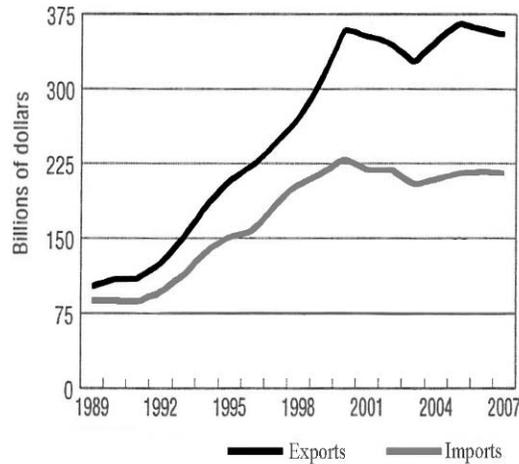
The Canada-U.S. automobile industry relationship is inter-connected and inter-dependent; however, the recent rise of the Canadian dollar to near-parity is causing heavy cost pressures on parts producers, in particular, and may represent an ongoing threat to this bilateral industry. More significantly, recent months have seen the serious impact of the global economic downturn, and associated financial difficulties for the major automakers. Although it is impossible to determine the shape and scale of Ontario's automobile industry once it emerges from this time of restructuring, a scenario that sees a leaner, smaller automobile sector seems more likely than not at this point.

2.4.4 International Trade

As discussed above, Canada and the U.S. enjoy the largest bi-national trading relationship in the world. As seen in **Exhibit 2-15**, the value of goods traded between the two nations has been steadily increasing since 1989, emphasizing the importance of a long range infrastructure improvement strategy to support long term goals.

³ MKI, Government of Canada Key Economic Events
(http://www.canadianeconomy.gc.ca/english/economy/1965canada_us_auto_pact.html)

Exhibit 2-15: Value of Goods Traded Between Canada and the U.S., 1989-2007



Source: MKI, Transport Canada, adapted from Statistics Canada International Trade database

Ontario's trade with the U.S. is dominated by the motor vehicle industry (42% of exports and 30% of imports by value in 2007⁴) - automotive manufacturing, parts, transport vehicles and engines. Throughout the Study Area, the dominant mode of transportation for goods has been trucking and it is expected that trucking will continue. This is discussed further in **Section 4.3**.

All transportation modes are reflecting the growth in trade industry. The total value of rail trade has increased from approximately \$34 billion in 1998 to approximately \$53 billion in 2007 and it has been predicted that container volumes in Continental U.S. and Canada could increase by over 75% which would further increase the volume of rail trade. Marine shipping accounts for 19% of the total value of goods shipped by Canada to world trading partners. The total value of international goods shipped by air increased by 68% between 1997 (\$57 million) and 2007 (\$96 million)⁵ and is expected to continue to increase.

International trade is a critical component of the Canadian, Ontario, and GTA West economy. Given the location of the Study Area, trade with the U.S. is of significant concern in terms of identifying trends in international trade that are drivers for transportation demand.

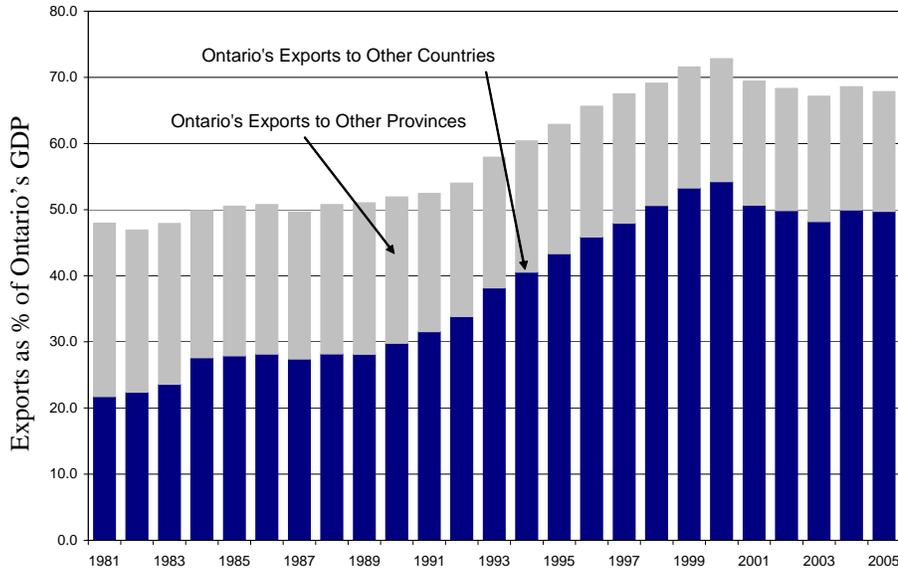
The dramatic growth in trade with the U.S. is evident in **Exhibit 2-16**, showing the percentage of the Ontario economy (GDP) that consists of exports. While the percentage of the Ontario economy that consisted of exports rose steadily through the 1990s, exports reached a plateau since 2000 in percentage terms slowing to grow at the same pace as the rest of the economy. However, since mid-2005, exports have stagnated with the total dollar values of exports from Canada as a whole as reported in late 2007 actually below

⁴ MKI, Ministry of Economic Development and Trade, trade statistics (<http://www.ontarioexports.com/resources/GeneralInfo.asp>)

⁵ MKI, Transport Canada, Transportation in Canada 2007: An Overview, May 2008

those in late 2005. The appreciation of the Canadian dollar, the automobile industry restructuring and slower economic cycles in North America have played a significant role in this slowdown.

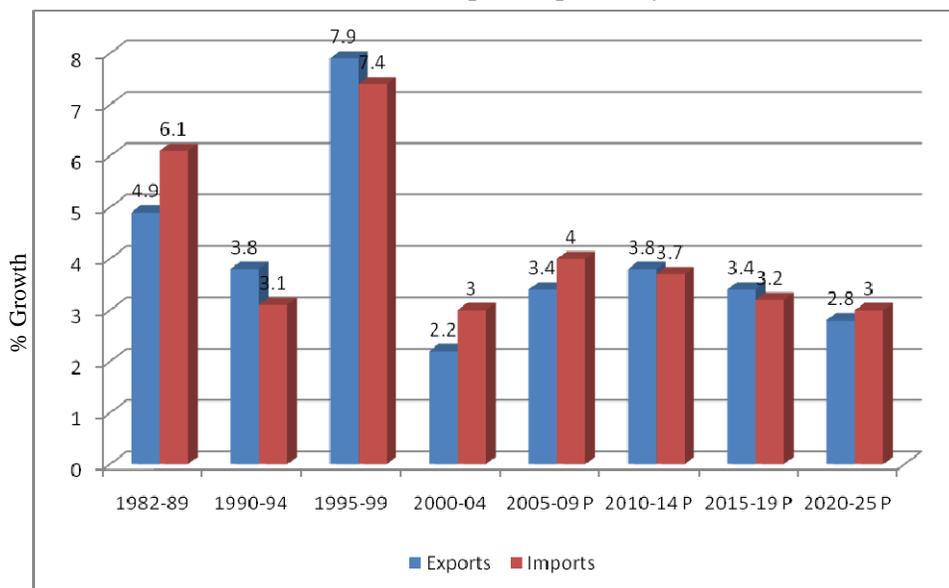
Exhibit 2-16: Ontario's Exports to Other provinces and Other Countries



Source: MKI, Statistics Canada and the Centre for Spatial Economics

Exhibit 2-17 shows the Ontario Ministry of Finance's forecasts for growth in exports and imports to the year 2025. The forecast is for a slight increase over current levels, but lower than the rates of increase in the 1980s and late 1990s. Trade growth is likely to continue to outpace the overall growth in the economy. Clearly, as trade is a major driver of goods movement, there will be increased demand for transportation system capacity and inter-modal integration in support of international trade in coming years.

Exhibit 2-17: Ontario Import/Export Projections



Source: MKI, Ontario Ministry of Finance

The statistics in **Exhibit 2-18** help give a sense of the goods moving through the Canada-U.S. border in the vicinity of the Study Area. Trade between Canada and the three states of New York, Pennsylvania and Michigan totaled approximately \$138 billion, about 24% of the \$576.4 billion total Canada-U.S. trade in 2007⁶.

Exhibit 2-18: 2007 Canadian Trade with U.S. States

Canada Trade with U.S. States	Exports to U.S. States (\$ billions)	Imports to Canada (\$ billions)
New York	26.1	13.1
Pennsylvania	12.5	8.0
Michigan	53.0	25.0

Source: Consulate General of Canada in Buffalo,
http://www.canadainternational.gc.ca/buffalo/commerce_can/2008/index.aspx?lang=eng&menu_id=366&menu=L

Canadian trade with other countries including China has also increased dramatically since 2000, although the vast majority of trade consists of imports. In practice, the influx of Chinese goods has had two impacts on the GGH economy: it has provided further competition to domestic manufacturers in certain sub-sectors; and it has helped drive the expansion of the logistics/warehouse sectors of the GGH economy.

The ongoing economic shift from manufacturing toward service sector employment creates an opportunity to align provincial land use policy and transportation investment in order to support the major employment areas and related growth sectors in the Study Area. It provides an opportunity to support the manufacturing and distribution/logistics sectors and international trade. Transportation facilities can also be identified to support road and transit infrastructure for personal travel at employment nodes characterized by the service sector, as well as population growth areas. Finally, given the strategic and structural challenges likely to face the manufacturing sector in the Study Area over the coming years, investment in transportation infrastructure may provide a needed boost to a sector currently experiencing a difficult competitive climate.

2.4.5 Domestic Trade

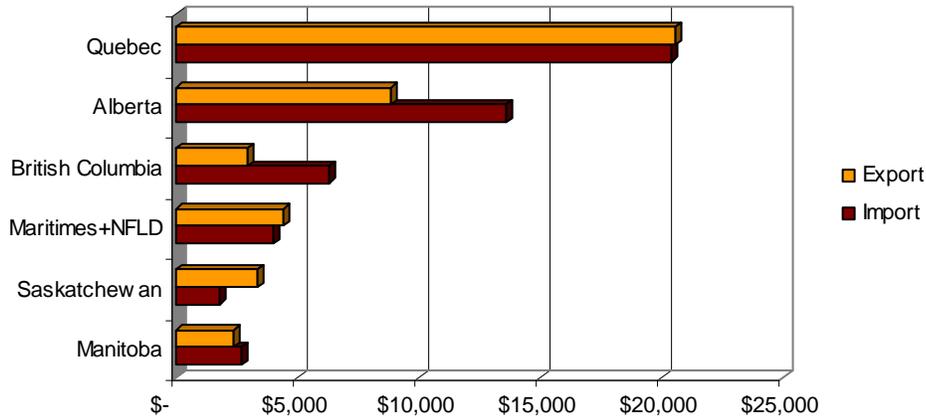
Ontario's trade patterns within Canada have historically reflected both geography and the economic structure of the province. Throughout the 1990s and early part of this decade, roughly half of Ontario's inter-provincial imports came from Quebec, and Quebec was the destination for about 40% of Ontario's inter-provincial exports⁷. One-third of Ontario's exports were to Alberta and British Columbia, with the balance spread among the Maritime provinces, Newfoundland, Manitoba, and Saskatchewan. These patterns are shown in **Exhibit 2-19**. More recently, the value of Ontario's imports from Alberta has risen, likely as part of the oil and gas boom. The total amount of inter-provincial trade continues to expand slightly faster on an annualized pace than the economy as a whole, and grew at an average of rate of 5.4% between 1997 and 2006. Intra-provincial trade

⁶ Foreign Affairs and International Trade Canada (<http://www.international.gc.ca/commerce/strategy-strategie/r1.aspx>)

⁷ MKI, Statistics Canada, National Accounts System, Input-Output database

grew by 6.0% over the same time period⁸. Even when adjusted for inflation, the value of goods traded increased faster than most measures of broader economic growth. In terms of geographic patterns, however, Ontario's inter-provincial trade patterns remain relatively constant.

Exhibit 2-19: Ontario's Inter-Provincial Trade in 2005



Source: MKI, Transport Canada, *Transportation in Canada 2007: An Overview*, May 2008

The content of import and exports has shifted, to some degree. Ontario's inter-provincial exports are dominated by services, which comprise roughly half of inter-provincial exports by value, followed by manufactured goods, and food and tobacco products. Ontario's imports from other provinces are more heavily weighted to goods, with about one-third of inter-provincial imports being services, and the balance including manufactured goods, food products, and commodities such as oil and gas, lumber, and mining products⁹.

Intra-provincial trade in Canada is dominated by construction, which by definition is almost entirely domestically consumed. Roughly one-third of domestic trade by value in 2005 within provinces was construction, followed by agricultural products (13.3%), energy (10.0%), and other utilities (8.5%)¹⁰. Domestic demand within the province can be measured through a variety of indicators, including retail trade, housing starts (the number of residential building construction projects begun during a specific period of time), and consumer spending. Most of these indicators as of late 2008/early 2009 were showing the impacts of the current economic recession. As the largest province and one of the most rapidly growing, until 2008 Ontario has by far the largest domestic retail market (although 2005-2007 saw the fastest growth rates in Alberta and Saskatchewan¹¹). However, the recent recession has impacted the province and domestic demand is currently slumping more severely than in other provinces.

⁸ MKI, Transport Canada, *Transportation in Canada 2007: An Overview*, May 2008

⁹ MKI, Transport Canada, *Transportation in Canada 2007: An Overview*, May 2008

¹⁰ MKI, Statistics Canada, National Accounts System, Input-Output database

¹¹ MKI, Statistics Canada, CANSIM (Canada's Socioeconomic Database), table 080-0014

2.5 Tourism and Recreation

The GTA West Study Area's tourism and recreation industry is comprised of visitors from within Ontario (intra-provincial), from elsewhere in Canada (inter-provincial), from the U.S. and from overseas. A number of factors affect tourism and recreation within the Study Area including the strength of the Canadian dollar, global economic conditions, gas prices and measures such as the U.S.'s Western Hemisphere Travel Initiative (WHTI).

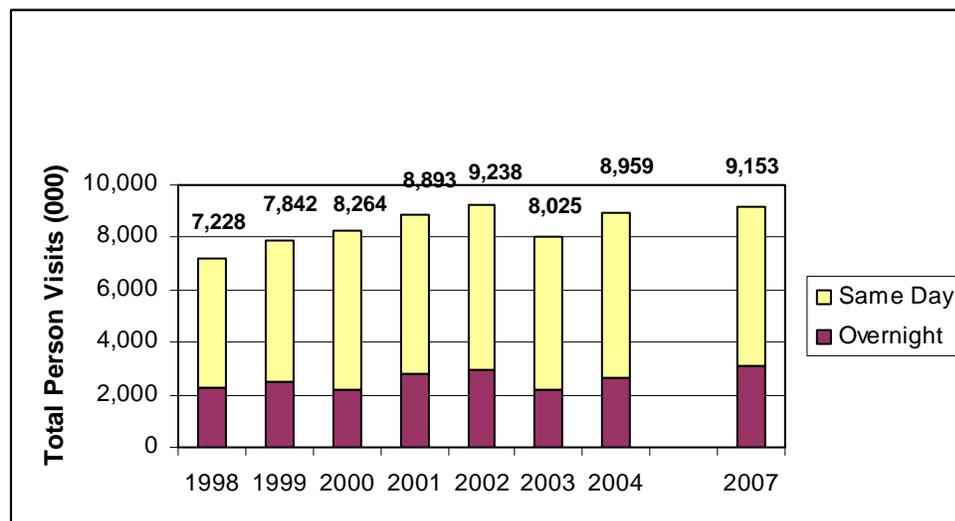
The following sections provide an overview of tourism in the GTA West Study Area. Analysis by PKF Consulting is based on available information from the Statistics Canada's Travel Survey of Residents in Canada (TSRC) and the International Travel Surveys (ITS). This analysis uses the following Statistics Canada definition of a tourist/person trip:

- Any overnight visitor staying at least one night away from their usual place of residence;
- Any same-day visitor travelling 40 km or more one-way from home, inclusive of all provinces, without staying overnight.

This is a change from pre-2006 data collection. Although the TSRC began in reference year 2005, the study underwent considerable revision over the course of the year. Data capture and weighting platforms were not finalized until reference year 2006. Consequently, the new domestic tourism volume and value time-series commences with reference year 2006.

According to Statistics Canada's Travel Survey of Residents in Canada (TSRC) and International Travel Surveys (ITS), in 2007 there were a total of 9.2 million visitors to the GTA West corridor. These 9.2 million person visits travelled with an average size of 1.4 people per household. The overall visitation trend between 1998 and 2007 shows an increase in visitation by an annual compound growth rate of 2.4%, as shown in **Exhibit 2-20**. Same day trips continually make up a greater proportion than overnight trips.

Exhibit 2-20: Overall Visitation to the GTA West Corridor

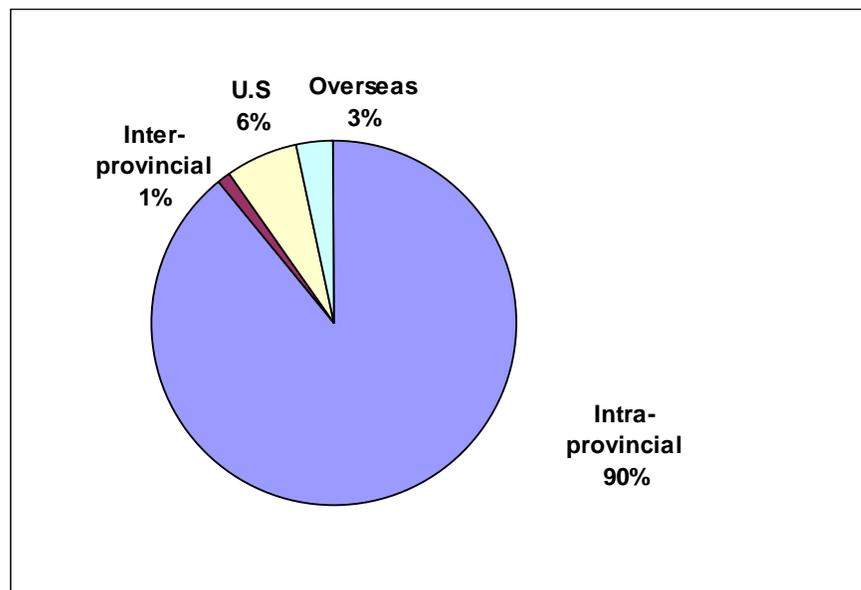


Source: PKF Consulting, CTS/ITS 1998-2004 TSRC/ITS 2007

There was an estimated \$952.7 million in total visitor spending in the GTA West Study Area in 2007, averaging about \$104 per person. The major spending categories were transportation, accommodation, food and beverage, entertainment and recreation, and retail and other items. Almost 64% of all 2007 visitors to the Study Area were travelling to visit friends and relatives. This was followed by pleasure, business, and travel for personal/other reasons. Seasonality plays a role in the travel patterns of visitors to the area, particularly for U.S. and overseas travel, with 34% and 40%, respectively, of 2007 U.S. and overseas visits occurring in the summer months (July, August, September). However, the main purpose for travel, visiting friends and relatives, was relatively insensitive to seasonality, with an overall 2007 peak in travel during the fall (28% of visits). Pleasure trips were the most seasonal, with 32% of all 2007 pleasure trips occurring in the summer.

Domestic travellers made up over 91% of the total 2004 visits to the GTA West corridor, with 90% intra-provincial travel and about 1% from the rest of Canada. This distribution is shown in **Exhibit 2-21**. The U.S. accounted for over 6% of total Study Area visits in 2004, and about 3% were from overseas.

Exhibit 2-21: 2007 Inbound Visitors to the GTA West Corridor



Source: PKF Consulting, CTS/ITS 1998-2004 TSRC/ITS 2007

There are a number of transportation options available for visitors to the GTA West Study Area including highways, buses and rail transit, as well as international and regional airports. Automobile is the main mode of transportation used by visitors, used by about 91% of visitors to the Study Area in 2007. Approximately 4% of trips were made by bus, 2% by train and almost 1% by plane.

There are two significant tourism developments proposed for the GTA West Study Area: Woodbine LIVE!, a proposed lifestyle retail and entertainment complex to be developed adjacent to the Woodbine Racetrack and Slots in North Etobicoke. Phase I, including 1.5

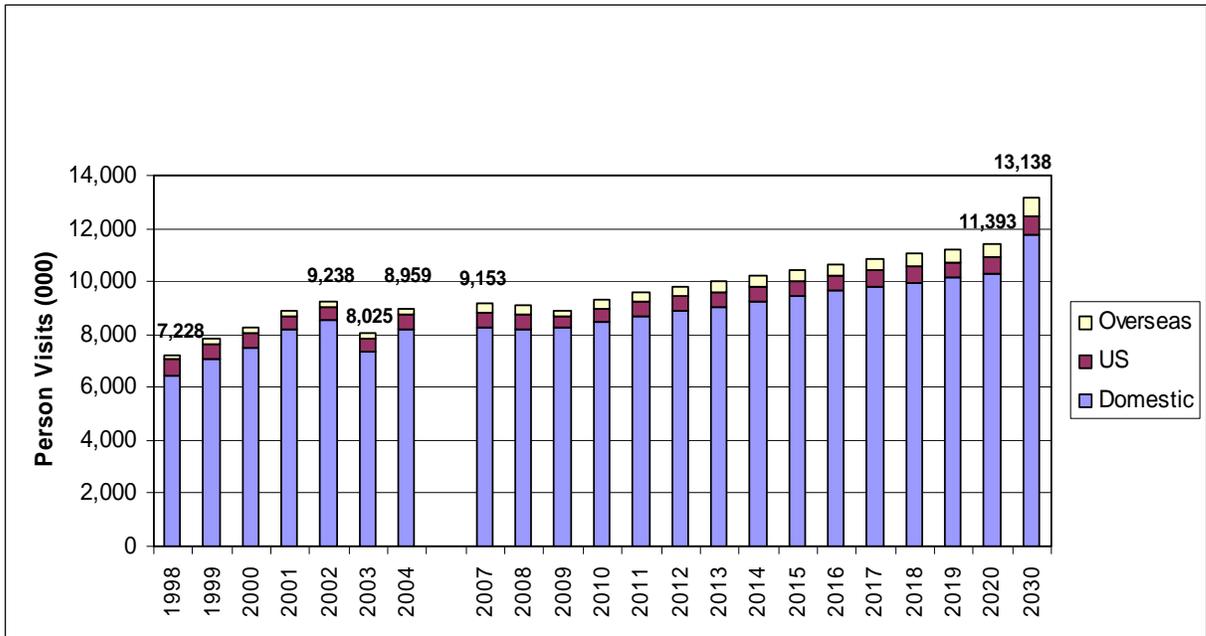
million square feet of destination retail and foodservice, 400-room hotel and a 6,500-seat venue, is expected to be completed by 2015. The Woodbine Entertainment Group is also seeking a joint venture partner for a resort hotel and golf course to be located on-site at the existing Mohawk Racetrack at Highway 401 and Guelph Line.

A range of factors affect tourism and recreation travel to the GTA West Study Area, including Ontario and global GDP, disposable income and consumer spending, fuel prices, exchange rates, particularly the recently strong Canadian dollar; new U.S travel rules and highway congestion levels.

According to the most recent Provincial Outlook published by the Conference Board of Canada (Winter 2009), the near term will be challenging for Ontario's economy, primarily due to the recession in the U.S. and the downsizing of the automobile industry. Another factor affecting tourism is the American Western Hemisphere Travel Initiative (WHTI) regulations, requiring all travellers to present a valid passport or other approved secure document when entering the U.S. from within the western hemisphere. The first phase of the WHTI regulations went into effect at airports in January 2007 and generated record-high demand for passports. The second phase was implemented at all land and sea border crossings in June 2009 and may result in reduced cross-border tourist/pleasure travel.

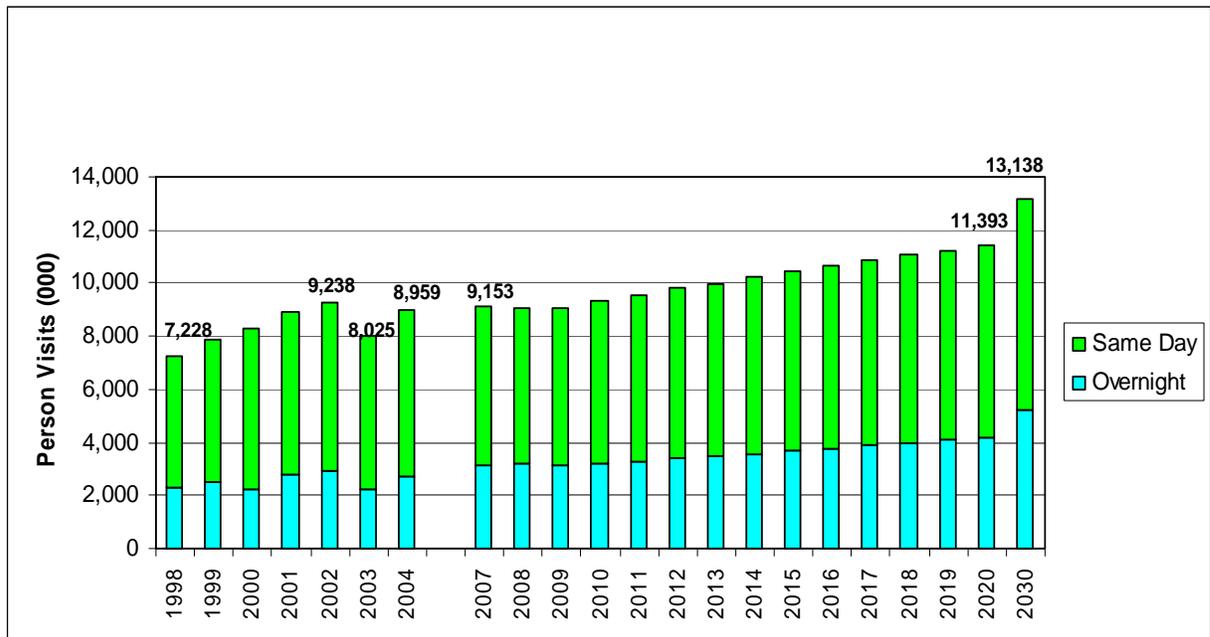
Overall, tourism and recreation trips made by intra-provincial, inter-provincial, U.S. and overseas travellers to the Study Area are expected to increase over the long term by a compound growth rate of 1.5% per year between 2007 and 2030, reaching 13.1 million visitors in 2030. This projected growth is shown in **Exhibit 2-22**, indicating that domestic travel will continue to make up the vast majority of trips. **Exhibit 2-23** shows that both same day and overnight trips are expected to increase over this period, with overnight trips increasing its proportion of overall travel.

Exhibit 2-22: Historical and Projected Visitation to the GTA West Corridor, by Visitor Origin



Source: PKF, Custom Analysis of 2004 CTS and ITS and 2007 TSRC and ITS and PKF Projections

Exhibit 2-23: Historical and Projected Visitation to the GTA West Corridor, by Visitor Origin



Source: PKF, Custom Analysis of 2004 CTS and ITS and 2007 TSRC and ITS and PKF Projections

2.5.1 Domestic Tourism and Recreation

Based on available information from the Statistics Canada's Travel Survey of Residents in Canada (TSRC) and International Travel Surveys (ITS), total domestic visitation accounts for approximately 91% of the 2007 total person visits to the GTA West Study Area. There were approximately 8.3 million Canadian person visits, corresponding to 6.1 million households with an average household size of 1.7 people. Domestic visitors contributed approximately \$603.9 million to 2007 visitor spending in the GTA West corridor (63% of total visitor spending), with Canadians spending an average of \$73 per visit. Over the past ten years, total domestic tourism to the Study Area has increased at an annual compound growth rate of 2.5% per year.

Most often, domestic visitors travel to the Study Area to visit friends and relatives, with almost 66% citing this trip purpose in 2007. Almost 25% travelled for pleasure as their primary purpose; followed by travel for business and personal/ other reasons at between 5% and 4%, respectively.

Unlike tourism and recreation from the U.S. or overseas, visits to the Study Area from within Canada occur throughout the year. Approximately 29% of 2007 visits occurred during the fall months, with around 24% in the summer and fall and 23% in the winter. This is likely in part due to the high proportion of travel to visit friends and relatives, which is relatively insensitive to the seasons.

2.5.1.1 Intra-Provincial Tourism and Recreation

Intra-provincial travel (within the province of Ontario) is the largest market for the GTA West corridor, with about 90% of trips originating in Ontario in 2007. This segment of tourism and recreation travel in Ontario and in the GTA West Study Area is expected to grow over the coming years. Such growth is and is likely to continue to be partly due to the implementation of the WHTI.

In addition to travel from Ontario outside of the GTA West Study Area, residents of the Study Area travel both outside of and within the area for tourism and recreation purposes. In 2007, approximately 15.7 million outbound trips were by GTA West residents, with about 12% of these trips remaining in the Study Area. About 57% of trips were same day, and 43% overnight.

Pleasure and visiting friends and relatives accounted for the majority of 2007 resident travel, at 45% and 44%, respectively. Business made up 7% of trips and personal/other reasons accounted for 4%. Travel was relatively well spread throughout 2007: 30% of trips in summer; 25% in spring; 23% in fall and 22% in winter; likely due to the high number of people visiting friends and relatives. Automobile was the mode for 88% of trips, followed by 8% plane, 2% bus and over 1% train. Highway congestion levels impact same day intra-provincial travel, with other influences including disposable income and new passport rules for travel to the U.S.

2.5.1.2 Inter-Provincial Tourism

Inter-provincial travel to the GTA West Study Area accounted for 1% of the trips made in 2007. Of these, Quebec represents the majority of out-of-province travel, accounting for about 37% of the inter-provincial trips and Alberta provided the second largest

number of 2007 inter-provincial visits, accounting for 29%. The relative weakness of such travel in recent years can partly be attributed to the strength of the Canadian dollar, favouring Canadians to travel to the U.S. and overseas destinations. However, similar to intra-provincial travel, the implementation of the second phase of the WHTI may encourage some Canadians to travel within Canada, and potentially to the Study Area, as opposed to travelling to the U.S. Key drivers for inter-provincial travel include disposable income, tourism prices in Ontario, new passport rules and highway congestion for same day travel.

2.5.2 United States Visitation

In 2007, U.S. visitors made up about 6% of total person visits to the GTA West Study Area. U.S. households travelling to the Study Area had an average size of 1.6 people. The bordering states of New York and Michigan contributed the largest numbers of GTA West visits, each contributing about 17% of total U.S. visits. U.S. visitors contributed approximately \$183.5 million to total visitor spending within the GTA West Study Area in 2007 (19% of total spending), with an average of \$318 per person. On average, there has been little change in U.S. visitation over the past ten years, with a declining growth rate of -0.1% per year.

Approximately 34% of 2007 U.S. visits to the Study Area were for business purposes. Visiting friends and relatives also accounted for 34% of trips, while pleasure made up 22% and personal/other reasons 10%. Over 34% of these trips occurred in the summer, with 265% in spring, 23% in fall and 17% in winter.

Approximately 83% of trips made from the U.S. to the GTA West Study Area in 2007 were by automobile, followed by almost 4% bus, then boat, train and plane.

2.5.3 Overseas Visitation

Overseas visits accounted for about 3% of total travel to the GTA West corridor in 2007, and the average size of the households visiting the area was 1.7 people. Total spending by overseas visitors was \$165.3 million in 2007 (17% of total spending), with an average of \$522 per person visit. The two largest overseas markets were the United Kingdom and India, contributing about 26% and 8%, respectively, to total overseas visits.

In recent years the GTA West corridor has seen a continual increase in overseas visitation: from 1998 to 2007, total overseas visitation volumes increased by an annual compound growth rate of 5.7% per year.

Well over half of the 2007 overseas visitors to the GTA West Study Area travelled to visit friends and family (63%). Pleasure trips made up about 19% of overseas trips, while almost 11% travelled for business. The remaining 7% visited for personal/other reasons. Overseas travel shows the greatest seasonality: about 40% of 2007 trips occurred in the summer. Approximately 25% travelled in the spring, 22% in the fall and 13% in the winter.

Like other visitors to the GTA West Study Area in 2007, overseas travellers relied heavily on the automobile: 62% of trips used this mode. Bus was used by 9%, then 6% train, then plane and boat.

2.6 Area Initiatives

There are several long term planning initiatives that may directly or indirectly influence transportation demand in terms of magnitude and distribution in the Study Area. These focus on moving people and goods and include initiatives to increase transportation choices and improve transit and road capacity. These initiatives have been undertaken by a variety of organizations, including the Canadian federal and provincial governments, transportation service providers and U.S. government bodies.

Each of the following initiatives has the potential to affect both transportation supply and demand in the Study Area and broader areas of influence. These policies, programs and projects may influence travel patterns and provide additional transportation choices and transit and roadway capacity. Policy directions toward increased transit and active transportation influence travel patterns and mode choices. The information gathered from these initiatives has been fed into the modelling exercise and assessment of current and future conditions.

Many of these initiatives support the objectives of the Growth Plan (see **Section 2.2.2**), as this document provides a framework for implementing the Government of Ontario's overall vision and managing growth through to 2031. Transportation planning in Ontario aims to support the planned growth contained in the Growth Plan and do so in accordance with the Plan's policies.

The following initiatives may result in increased options and transportation capacity and greater choice in some areas. The purpose of the GTA West Corridor Planning and EA Study is to examine long-term transportation problems and opportunities to the year 2031 and consider alternative solutions to provide better inter-regional linkages within and to the Study Area.

2.6.1 Brantford to Cambridge Transportation Corridor Environmental Assessment Study

In June 2008, MTO initiated this Individual Environmental Assessment (EA) Study to address the problems and opportunities relative to the inter-regional movement of people and goods in the Brantford and Cambridge area to 2031. The area of study includes portions of the County of Brant, County of Wellington, Region of Waterloo, the Cities of Brantford and Cambridge, including the Downtown Cambridge and Downtown Brantford Urban Growth Centres (as identified in the Growth Plan), and a portion of the City of Hamilton. This study will progress earlier work and improve consultation, align transportation opportunities with the Growth Plan, and expand the area of analysis. A draft EA Terms of Reference was released for comment in September 2008 and MTO is currently reviewing input and preparing proposed Terms of Reference for submission to the Minister of the Environment with the request for a decision on approval.

This study will address the needs of the GGH due to its evolution into a large geographic region with many centres of economic activity, employment, and population, and therefore dispersed travel demand for goods and people. A transportation network is needed linking the Brantford and Cambridge Urban Growth Centres through an integrated system of transportation modes. The EA process will identify and validate the area transportation system problems and opportunities and evaluate a variety of alternatives to address them. MTO will co-ordinate with other Ministries and

municipalities as the EA moves forward. The study will address issues including the lack of inter-regional transit linking the Urban Growth Centres, limited highway capacity, the lack of a comprehensive highway access management plan, and the limited co-ordination of inter-regional transportation and local land use planning.

The Brantford to Cambridge corridor lies to the southwest of the GTA West Study Area and proposed transportation options in this corridor may directly or indirectly affect transportation demand and patterns in the GTA West Study Area. The Brantford to Cambridge Transportation Corridor EA Study is being co-ordinated with the GTA West Corridor Planning and EA Study.

2.6.2 Niagara to Greater Toronto Area West Corridor Planning and Environmental Assessment Study

Previous planning work indicated that the existing transportation system lacks sufficient capacity to support the long term planned population and economic growth of the area from the Niagara Peninsula to the Greater Toronto Area (NGTA). In accordance with the Growth Plan, this MTO led study was initiated to address these needs. The EA Terms of Reference was approved in June 2006.

The area under consideration includes portions of the Region of Niagara, City of Hamilton, Region of Halton, the west end of the Greater Toronto Area and the Niagara Frontier international border crossings. The existing transportation network is being impacted by several factors including population and employment growth, trade growth, tourism growth, and local land use policies.

The purpose of the EA study is to address existing and future anticipated transportation capacity deficiencies (problems and opportunities) within the corridor by providing additional capacity for a 30 year planning horizon and beyond. The specific need for any proposed undertaking(s) and a description of the proposed undertaking(s) will be determined during the initial phases of the EA study and will be based on the approved government policies and planning objectives that are in place at that time.

In general terms, the study includes: assessing the need for additional transportation capacity in the NGTA corridor; identifying the specific transportation problems and opportunities within the Study Area; developing, assessing, and evaluating a range of transportation alternatives to address the identified transportation problems and opportunities; and preparing a multi-modal Transportation Development Strategy (TDS).

As population and employment grow in the NGTA area and surrounding municipalities, levels of traffic congestion on existing highways will continue to increase. Several sections of the provincial highway network, such as the QEW and Highway 403 through Hamilton, presently operate under high levels of congestion during peak periods and increasingly throughout the day. This is particularly problematic as the QEW and Highway 403 are the only major highways through the Hamilton area. In addition, there are limited inter-regional transit services (GO Bus and Via Rail) servicing the NGTA Corridor. Within the 30-year planning horizon, it is projected that the demand for travel will exceed the capacity of the existing inter-regional transportation system. This will result in increased travel time, congestion, increased potential for collisions and excess fuel consumption.

The Highway 401 is a common boundary between the Study Areas of the NGTA Corridor Planning and EA Study and the GTA West Corridor Planning and EA Study. Future transportation facilities within these Study Areas could potentially connect directly. Although these studies are separate, with distinct purposes to address different transportation issues, they share the overarching goals and policy framework for transportation within the GGH. The two studies follow the same planning and EA process as well as similar timelines.

2.6.3 Highway 427 Transportation Corridor Environmental Assessment

In another study in support of the Growth Plan, MTO has initiated an Environmental Assessment (EA) for the 427 Transportation Corridor. This corridor lies within the City of Vaughan in the Region of York and within the City of Brampton and Town of Caledon in the Region of Peel. This study is being undertaken in accordance with the Growth Plan's support for improving access to inter-modal facilities to enhance goods movement and provide access to major employment areas. The existing transportation network is being impacted by several factors including population and employment growth, goods movement growth, local land use policies and development pressures.

The purpose of the EA Study is the following:

- Address existing and short-term (10-15 year planning horizon) transportation problems related to the current Highway 427 terminus at Regional Road 7, truck traffic accessibility to and from the CPR Vaughan Inter-modal Facility, and the impact of inter-regional traffic in the Peel-York boundary area on Highways 7, 27 and 50
- Identify and protect required property for any proposed transportation corridor and allow planned development to occur outside of the transportation corridor
- Ensure that alternatives / preferred solutions will not preclude or predetermine planning for other transportation corridors

The specific need for any proposed undertaking(s) and a description of the proposed undertaking(s) will be developed during the initial phases of the EA Study. The Terms of Reference (TOR) for the EA was approved by the Ontario Minister of the Environment in November 2005. A technically preferred terminus of the Highway 427 Extension has been identified at Major Mackenzie Drive in Vaughan.

The EA TOR recognizes that there are longer-term planning initiatives that may be undertaken to achieve the planning vision outlined in the Growth Plan. Given that this project is intended to address the shorter-term issues, a stated purpose of the EA is to not preclude or predetermine planning for the other future transportation initiatives. The 427 transportation corridor study area lies within the GTA West corridor and the 427 transportation corridor TOR recognized the importance of ensuring that this project did not preclude the location or planning for any GTA West initiatives. The Highway 427 EA is being co-ordinated with the GTA West Corridor Planning and EA Study.

2.6.4 Halton-Peel Boundary Area Transportation Study

The Halton-Peel Boundary Area Transportation Study (H-P BATS) is a joint study between the Region of Peel, Halton Region, City of Brampton, Town of Caledon, and the

Town of Halton Hills. It has been initiated to identify the long-term (2021 and 2031) transportation network required to support provincial and inter-municipal planning goals, and to serve future transportation demands. The study area encompasses the east part of Halton Hills, the west part of Brampton, the northeast corner of Milton, the northwest corner of Mississauga and the southwest corner of Caledon.

The H-P BATS took a two-phase approach: Phase 1 involves technical analysis based on a Sustainable Halton land use option with the most conservatively low travel forecasts. Phase 2 will be a public process occurring after Halton Region approves a final Sustainable Halton land use option.

High level assessment as part of Phase 1 indicates a significant increase in population and employment uses outpacing planned road and transit infrastructure. Phase 1 concludes that there should be a provision for a high capacity roadway capable of serving inter-regional traffic in the Study Area, Brampton and Halton Hills with linkage to major east-west corridors of the GTA.

Three basic transportation network options were identified: a Brampton Arterial; Brampton Freeway; and a Halton-Peel Freeway. The performance and impact of the network options were evaluated based on quantitative network performance as well as by assessing their conformity and relevance to goals and objectives of the H-P BATS and Regional, City, Town and provincial growth objectives. Major observations coming out of this evaluation involved north-south corridor flow and capacity constraints, the impact of the GTA West corridor, and freeway-arterial comparisons. Phase 2 of the study will carry forward the analysis. The H-P BATS study area is located within the GTA West Study Area and there is on-going effort to coordinate the two studies.

2.6.5 Other Initiatives

Some additional initiatives that may influence the GTA West Study Area include the following:

- **Western Vaughan Transportation Improvements Individual Environmental Assessment (IEA)** – This project stems from the approved Pine Valley Drive EA Terms of Reference (as amended). York Region is undertaking this EA study to examine transportation improvements in Western Vaughan. This study will examine east-west connections to the Highway 427 Transportation Corridor from the east. A short list of alternatives have been identified and presented to the public in Public Information Centre (PIC) #2 (March 2009). The basis for the short list of alternatives is derived from the York Region Transportation Master Plan and includes regional road projects currently under construction; widenings of Highways 400 and 407; extension of Highway 427 to Major Mackenzie Drive; and a new commuter rail service to Bolton operated by GO Transit with study area stations at Highway 7, Rutherford Road and Nashville Road. The short list of alternatives includes combinations of the above and also road-only improvements, non-road improvements and all improvements.
- **Highway 6 (Hanlon Expressway) Improvements EA Study** –MTO has initiated the EA process for the upgrading of the Hanlon Expressway from 0.5 kilometres south of Maltby Road to the Speed River. The study area is in the City of Guelph, the Township of Puslinch, and Wellington County. PIC #4 took place in October

2008 to present the preferred plan from Maltby Road to Speed River. The plan includes closure of several intersections; a Parclo A4 interchange at Laird Rd; a grade separated crossing and partial interchange at Kortright Rd/Downey Rd (ramps oriented only to the south); and a grade-separated crossing at College Ave. The 60-day public review and commenting period for the study started on June 5, 2009.

- **Transitway Corridor Protection Study Highway 407/Parkway Belt West Corridor from Highway 403 to Markham Road** – the Highway 407 Transitway Corridor Protection Study was undertaken by MTO to determine the property requirements for the transit facility including the line haul alignment, station locations, parking access connections and associated facilities. Land protection was assessed for bus technology while maintaining flexibility for converting to light rail rapid transit (LRT) technology in the future. The 68 km transitway corridor is designed as a grade-separated facility and its 30 stations were planned so that a high quality bus service could be provided while minimizing the impact on properties outside of the Parkway Belt West Corridor. The project is currently in preliminary design.
- **Georgetown to Kitchener Rail Expansion EA** - GO Transit is undertaking an EA for the possible extension of rail service from Georgetown to Kitchener. This study will determine the demand for rail travel and identify station locations, train layover facilities and track improvements between Georgetown and Kitchener over a planning horizon of 2011 to 2031. The Environmental Study Report (ESR) has been completed and was placed on the public record for review on July 23, 2009.
- **Georgetown South Service Expansion/Union-Pearson Rail Link (GSSE/UPRL) EA** - On April 2 2009, Metrolinx issued a Notice of Commencement for the Georgetown South Service Expansion, including a Union-Pearson Rail Link (GSSE/UPRL), under the province of Ontario's Transit Project Assessment Process. This project is one of the first big moves to be implemented from the Metrolinx RTP. The purpose of the project is to determine the planned infrastructure improvements required to accommodate forecasted GO ridership growth in the corridor fifteen years from now and beyond; and to facilitate the rail connection between Union Station and Pearson Airport, as identified in The Big Move #2.
- **GO Transit Bus Service Extension to Kitchener-Waterloo.** In Spring 2009, the Governments of Ontario and Canada announced that GO Transit bus service would run to Kitchener-Waterloo. The service is expected to begin Fall 2009. \$2.5M was committed to develop four park-and-ride lots along the Highway 401 corridor. The first GO Transit park-and-ride facility will be constructed at Highway 25 and Highway 401. At the time of writing this report, GO Transit was developing an implementation plan for the extended bus service.
- **All Day GO Service to Milton** - Further to a provincial commitment in June 2008, GO Transit is currently carrying out an engineering feasibility study as to the alignment and number of tracks required to expand service on the Milton Rail

Corridor, in accordance with GO's Strategic Plan. It is anticipated that this work will be completed mid 2009, with a six-month EA to follow.

- **Bolton Corridor Feasibility Study** – the project consists of the introduction of a commuter rail service on the Bolton corridor and the expansion of rail services on the Milton corridor. Service to Bolton is projected to commence in 2015 with AM and PM peak period service (3 trains in morning and evening), with future expansion of service to meet demand. Currently, a feasibility study is being completed as a pre-screening prior to initiation of a 6-month Transit Environmental Assessment.
- **Highway 401 from Hespeler Road to Halton Region Boundary Preliminary Design and EA Study** – this EA study involves major highway widening and reconstruction of interchanges along Highway 401 from Hespeler Road to Halton Region Boundary; consideration to widen up to 10 lanes and incorporate HOV lanes and transit initiatives. The study has been initiated.
- **Highway 401 from Trafalgar Road to Regional Road 25 Preliminary Design and EA Study** – this EA study involves major highway widening and reconstruction of interchanges along Highway 401 from Trafalgar Road to Regional Road 25, consideration to widen up to 10 lanes and incorporate HOV lanes and transit initiatives. MTO has sent out a request for proposal (RFP).
- **High Speed Rail (HSR) – Quebec City to Windsor Corridor** – the Governments of Québec, Ontario and Canada announced that a contract has been awarded to the EcoTrain Consortium to update the feasibility studies for high-speed rail (HSR) in the Québec City–Windsor corridor. The \$3-million study will be funded equally by each government. The study will focus on the following areas: HSR technology and route options; transportation demand forecasts; development and operating costs; environmental and social impacts; financial and economic analyses; institutional framework of foreign HSR experiences; implementation scenarios; impacts on other transportation modes; and recommendations on the future action plan.
- **New Highway 7 between Guelph and Kitchener** – The new Highway 7 will be located north of and parallel to existing Highway 7 between the cities of Kitchener and Guelph. In response to concerns raised by local municipalities and environment groups on the project in 1998, MTO completed additional studies and submitted an amendment to the EA, including additional consultation with First Nations. The EA was approved in March 2007. This project is included in MTO's Southern Ontario Highways Program 2008-2012 as project for completion beyond 2012.
- **Electrification of GO Rail Lines** – On May 26, 2009, Metrolinx announced that a study of electrification of the GO Transit rail system as a future alternative to the diesel trains currently in service. The RTP recommends future Express Rail service through out the GTHA, for which electrification is an important element. The study could commence as early as Summer 2009 and be completed by winter 2010.

- Other GO Transit Initiatives - In Spring 2009, a number of joint Ontario / federal government announcements were made committing funding for the following GO Transit related projects within the Study Area:
 - Extension of GO Bus Service to Kitchener, starting Fall 2009.
 - Construction of the first of four park-and-ride facilities supporting the new service extension. The first facility will be constructed at the Highway 25/Highway 401 interchange, with construction scheduled to begin in 2009.
 - Construction of a new covered bus storage facility at Brock Road South and McLean Road in Aberfoyle.
 - Expansion of the Bridge over the Credit River to expand capacity on this crossing and improve the efficiency of trains.

3. FORECASTING TRAVEL DEMAND IN THE CORRIDOR

Travel demand forecasting was undertaken to assess future travel demands and to identify existing and future system congestion within the Study Area. A key component of the GTA West Corridor Planning and Environmental Assessment Study is assessment of the inter-regional travel demands utilizing the transportation system within the Study Area as well as in adjacent areas of influence. Thus the focus of the GTA West travel demand analysis is on how well the inter-regional transportation system accommodates longer distance commuting, goods movement and tourism and recreational travel.

3.1 Methodology

Two modelling / forecasting approaches were used to obtain a range of travel demands by specific markets; the Greater Golden Horseshoe (GGH) Model and the Strategic Demand Forecasting (SDF) Model as follows:

- Inter-regional commuting demand utilizes the GGH Model to assess both automobile and transit ridership demand for two land use allocations
- Goods Movement travel utilizes a SDF Model approach that builds on historical trends and future goods movement market forecasts for truck, rail, marine and air
- Tourism and Recreation travel utilizes a SDF Model approach that builds on historical trends and future tourist market outlooks

In addition to the GGH and SDF Model approaches, the travel demand analysis incorporates transportation demand and travel characteristics obtained from consultation with the following groups (see **Appendix A** for consultation details):

- Transportation Service Providers
 - Examples include: GO Transit, inter-city bus operators represented by the Ontario Motor Coach Association, Ontario Trucking Association, Canadian National (CN) Railway, Canadian Pacific (CP) Railway, Railway Association of Canada
- Business and Commercial Stakeholders
 - Examples include: Home Depot, the Bay and the Canadian Automobile Club
- Municipal Agencies Group – upper and lower tier municipalities, based on the geographic context of the Study Area
- Community Advisory Group – members of the communities and organizations interested in or potentially affected by the study

3.2 GGH Model Structure

In 2006, MTO initiated development of a comprehensive four stage travel demand model to assess travel demand within the Greater Golden Horseshoe (GGH). The intent was to provide a consistent modelling tool for major planning studies within the GGH. The GGH Model as developed and validated has been used by Metrolinx in the development

of the Metrolinx RTP and is also being used by MTO in major planning studies in the GGH.

The GGH Model includes four stages that incorporate separate trip generation, trip distribution, mode choice, and trip assignment model components. The GGH Model estimates the travel by trip purpose, start time, origin-destination location, travel routes and travel modes resulting in automobile and transit person assignments to existing and future transportation networks.

This model simulates travel demand that reflects the impacts of costs (e.g. transit fares, automobile operating costs, road tolls, parking charges) and travel times (e.g. walking, waiting, in-vehicle) via available modes (e.g. automobile, transit or walk/cycle) on travel characteristics. The travel simulation utilizes a detailed transportation network providing information related to distance, travel speeds, lane capacity and access times and upwards of 3,000 traffic zones, which incorporate existing and future population and employment data, land use densities, socio-economic and demographic information.

It also includes a commercial vehicle module that generates, distributes and assigns commercial vehicle trips by truck type for the 12.5 hour daytime period and distributes trips to the AM peak period using time of day factors from available traffic counts data. It is noted that the current GGH Model Commercial Vehicle Model represents Phase One of the model development that provides inter-city, intra-urban and external gateway truck travel estimates.

The GGHM (Metrolinx) – Modelling Methodology and Results for the Draft Regional Transportation Plan – Background (October 2008) (GGH Model Background) provides an overview of the GGH Model limitations, model input assumptions, network assumptions, cost assumptions and model adjustments. A summary of key limitations and assumptions that affect the GTA West Corridor Planning and EA Study includes the following:

Land Use Assumptions

2031 population and employment projections are consistent with the Growth Plan projections for municipalities at the single and upper tier level. The allocation of future population and employment forecasts at a municipal level was based on best information at the time and is subject to change pending completion of the Growth Plan conformity exercise.

A summary of the 2001 and 2031 population and employment forecasts for the GTA West municipalities is provided in **Section 2.4.2**. The alternative land use scenario developed for this study's demand forecasting is described below.

Alternative Land Use Scenario

The existing and future (2031) land use allocation utilized in the GGH Model is documented in the report *Land Use Projections for the Golden Horseshoe* (February 2008). The land use allocation procedure uses the population and employment guidelines identified in the Growth Plan, indicating the following:

- Population in the GGH is forecast to increase by 48% between 2001 and 2031 with the forecast population growth representing approximately 3.7 million new

inhabitants. Employment in the GGH is forecast to increase by 46% between 2001 and 2031 with the forecast employment growth representing approximately 1.75 million new jobs.

- Within the GTHA the population is forecast to increase from 5.81 million persons in 2001 to 8.62 persons by 2031. This represents a growth of approximately 50%. Employment in the GTHA is forecast to increase from 2.95 million in 2001 to 4.33 million in 2031 representing 48% growth.
- Population and employment in the GGH Outer Ring (municipalities beyond the GTHA) is forecast to grow by 45% and 42%, respectively. The population in the Outer Ring is forecast to increase from 1.98 million in 2001 to 2.88 million by 2031. Employment is forecast to grow from 0.87 million in 2001 to 1.24 million by 2031.

The GGH Model land use allocation to the municipalities within the GTA West Study Area is presented in **Exhibit 3-1**. The land use allocation indicates that the population is anticipated to increase by 122% whereas the employment is anticipated to increase by 115%.

Exhibit 3-1: Population and Employment based on RTP Land Use Allocation

Region / County / City	Population (thousands)			Employment (thousands)		
	2001	2031	% Growth	2001	2031	% Growth
City of Vaughan	190	431	127	124	261	110
City of Brampton	340	740	118	136	317	133
Town of Caledon	54	117	117	19	48	153
Town of Halton Hills	50	99	98	16	34	113
Town of Milton	33	204	518	22	78	255
City of Guelph	110	187	70	68	109	60
County of Wellington	85	134	58	31	49	58
GTA West Total	862	1,912	122%	416	896	115%

Source: Source: Regional Transportation Plan Land Use Allocation and 2001 TTS Data

An Alternate Land Use Allocation (ALU) scenario was developed by the Study Team to reflect the current (2008) land use planning information from the municipalities within the Study Area. Meetings were held with municipal staff to obtain the most current data from growth management exercises being undertaken by municipalities. A detailed land use allocation analysis was undertaken to allocate population and employment to the Growth Plan designations defined as:

- Urban Growth Centre (UGC) – core areas designated for high density
- Built Boundary – the built up urban area
- Designated Growth Area – areas identified for future development but not built
- Whitebelt – areas currently outside the urban envelope

The Growth Plan population and employment allocation for each upper tier municipality was maintained throughout the ALU allocation procedure. The ALU allocation procedure

reallocates population and employment to local municipalities. The results of this reallocation procedure are presented in **Exhibit 3-2**.

Exhibit 3-2: Comparison of RTP and ALU Allocations within GTA West Study Area

Region / County / City	Population (Thousands)			Employment (Thousands)		
	2031 RTP	2031 ALU	Absolute Difference	2031 RTP	2031 ALU	Absolute Difference
City of Vaughan	431	419	-12	261	276	+15
City of Brampton	740	758	+18	317	320	+3
Town of Caledon	117	113	-4	48	49	+1
Town of Halton Hills	99	70	-29	34	40	+6
Town of Milton	204	260	+56	78	100	+22
City of Guelph	187	175	-12	109	95	-14
County of Wellington	134	147	+13	49	63	+14
GTA West Total	1,912	1,942	+30	896	943	+47

The ALU for 2031 provides for 30,000 in additional population and 47,000 in additional employment within the Study Area. The ALU allocation also reflects a lower allocation to the UGCs with increased allocation to Built Boundary and Whitebelt areas. It must be emphasized that this allocation plan is based on current municipal planning and is subject to change as the conformity exercise proceeds. This study will revisit the post conformity land use allocations to check whether or not changes to current assumptions would affect travel demand forecasting results.

Road Network Assumptions

The future road network includes the province’s five year capital program and high occupancy vehicle (HOV) network and road improvements identified in the upper and single tier Transportation Master Plans. These improvements reflect an additional 4,600 lane-km of major arterial road widenings and extensions by 2031. Key road improvements identified include:

- QEW HOV lanes from Trafalgar Road to Guelph Line
- Highway 6 widening from Highway 403 to Highway 5
- Highway 410 extension from Mayfield Road to Highway 10
- Highway 427 extension from Highway 7 to Major Mackenzie Drive
- Highway 400 widening (6 to 8 lanes) from Major Mackenzie Drive to Teston Road
- Highway 401 westbound express and collector additional lanes from Jane Street to Kipling Avenue
- Highway 401 eastbound collector and additional lanes from Avenue Road to Leslie Street
- Highway 401 widening from Brock Road to Highway 12
- Highway 401 widening from Weston Road to Salem Road

- Highway 407 East from west of Brock Road to Highway 115 and north-south links in Ajax and Oshawa
- Highway 404 extension from Green Lane to Ravenshoe Road
- Highway 404 northbound HOV lane from Sheppard Avenue to Beaver Creek
- Highway 7 widening from Brock Road to Highway 12

Transit Network Assumptions

The future transit network includes the proposed Metrolinx Big Move 25 year transit plan that reflects the 52 projects identified in the MoveOntario 2020 plan plus:

- **Express Rail** – Electrified Lakeshore Regional Express service between Hamilton and Oshawa;
- **Commuter Rail** – Commuter rail service linkages outside the GTHA to Niagara Falls, Cambridge, Kitchener-Waterloo, Guelph, and Peterborough;
- **Metro** – Extension of the Scarborough Rapid Transit (SRT) to Malvern Town Centre;
- **Metrolinx RTP/GO Transit** – within the GTA West Study Area
 - GO Rail expansion to Guelph/Kitchener
 - GO Transit service extension from Milton to Cambridge
 - GO Transit service extension from Hamilton to Brantford
 - GO Rail expansion to Bolton
 - GO Rail frequent all day service between Mount Pleasant, Brampton, and Union Station
 - Brampton Acceleride (Zum) with BRT service on a number of arterial corridors
 - Main Street/Hurontario High Order Transit corridor (LRT)
 - GO Transit BRT linking Oakville, Square One in Mississauga, Vaughan City Centre
 - GO Bus to Kitchener-Waterloo
- **Other Rapid Transit (BRT or LRT)** – within/adjacent to the GTA West Study Area, including:
 - Extension of a line on Hurontario Street north to Mayfield Road
 - New line on Dundas Street in Halton Region and Mississauga
 - New east-west line in York Region north of Highway 7
 - New line in the Highway 407 East / 401 East corridor from Halton Region to Durham Region

- New line joining north Pickering with Downtown Pickering
- Trafalgar Road from QEW to Highway 407

Other Assumptions

Auto Operating Costs

The GGH Model includes as part of the trip making and mode choice models, assumptions for increased automobile operating costs to reflect increased gas prices and general automobile operating costs. Auto operating costs were assumed to double in real terms from 2008 levels to the year 2031.

Similarly the impact of currency exchange and economic conditions are taken into account with respect to lower growth rates for both tourism and commercial vehicle travel than has been observed in the last decade. Notwithstanding the influence that rising costs, fluctuating exchange rates and changing economic conditions have on trip making, increased trip making is expected and is directly related to the increase and location of population and employment.

Non-Residential Parking Costs

Cost of non-residential parking was assumed to increase by 50% in real terms over the 2006 levels in mature urban areas with existing paid parking. Areas subject to paid parking were assumed to expand by 2031 to include Urban Growth Centres, nodes/corridors and major employment areas in urbanized areas with high densities.

Transit Fares

Transit fares reflect current fares, in real terms, with fare integration between local transit operators (this assumption was intended to encourage the high transit mode share that is envisioned by Metrolinx).

Transit Headways and Speeds

Headways (the time between buses or trains on the same service line) and operating speeds of various transit modes as identified in the GGH Model Backgrounder are presented in **Exhibit 3-3**.

Exhibit 3-3: GGH Model Headways and Operating Speed Assumptions

Mode	Peak Period Headway (minutes)	Nominal Operating Speed (km/hr)
Regional Express	5	80
Commuter Rail (GO Rail)	10	50 - 60 *
Urban RT (LRT, BRT, Transitway)	2 – 3	30 - 80 **
Metro (Subway/SRT)	2	40

*50 km/hr on all-stop services and 60 km/h on express services
 ** 30 km/hr on surface LRT / BRT; 80 km/hr on grade separated Transitway

3.2.1 Metrolinx Transportation System Analysis

In the development of the RTP, the GGH Model was used to assess system performance measures that allowed Metrolinx staff to assess the impacts and sensitivities of various network alternatives. Specific details from the alternative network analysis are documented in the GGH Model Backgrounder. Specific system performance indicators that are of interest to the GTA West Corridor and Planning EA Study are presented in **Exhibit 3-4**.

Exhibit 3-4: Metrolinx System Performance Indicators

Indicator	2006	2031 Current Trends	2031 Metrolinx RTP Forecast
Transit Mode Split	16.5%	16.9%	26.2%
Average length of Home Based Work Trips	15.2 km	14.9 km	15.6 km
AM peak period automobile trips in GTHA	2,068,000	3,106,930	2,609,942
AM peak hour average vehicle kilometres travelled	12.5 km	16.8 km	14.4 km
Vehicle kilometres of travel per capita	2.1 km	2.0 km	1.7 km

Source: Modelling Methodology and Results for the Draft Regional Transportation Plan

3.3 Strategic Demand Forecasting Approach

A Strategic Demand Forecasting (SDF) Model analysis approach was developed to compare and validate the GGH Model approach, and address freight trips (truck, rail, marine, air) and tourist / recreation trips (automobile, rail, marine, air) not included in the GGH Model forecasts. The SDF Model builds on available data sources, historical data, trend forecasting and factors that influence transportation demand to identify possible trends and anticipated 2031 travel demands in assessing the associated transportation problems.

The available data sources used as part of the SDF Model include the Transportation Tomorrow Survey, Census data, Statistics Canada data, MTO Commercial Vehicle Surveys, municipal goods movement studies, and economic and tourism analysis. These data sources provide the basis of reviewing past trends and developing forecast estimates by each market segment. Similarly, the factors that influence transportation demand provide the basis to assess impacts of future travel demand associated with each market segment.

In the assessment of existing and future conditions related to goods movement it is important to note that the mode choice for shipping goods is at the discretion of the shipper in order to maximize the shipping efficiency, schedule and costs. Shipping mode choice by type of good shipped and reasons for selecting specific modes to ship goods is discussed further in **Section 2.1.2**. Similarly, in the assessment of existing and future conditions related to tourism and recreation travel it is important to understand the tourism and recreation travel market. This is discussed further in **Section 2.5**.

Freight forecasting for rail, marine and air relied heavily on input from Transportation Service Providers (such as CN and CP), and Business and Commercial Stakeholders (such as Ford, Honda, Magna, the Hudson's Bay Company, Home Depot). Forecasts

were based on existing utilization of each mode, historical trends, and future aspirations/trends.

Tourism trends were used to predict future weekend travel volumes. Key transportation issues that were considered included decreasing U.S. inbound visits, increasing Canadian outbound visits, traffic congestion, border crossings, and the existing highway and rail systems (conflicts with freight movement).

An economic assessment of the Study Area was undertaken, including the effect of transportation improvements on the regional economies and the barriers to growth by industry. This aided the understanding of the economic potential within the Study Area, and the role of transportation in achieving this potential.

3.4 Forecast Transportation Demands

3.4.1 Moving People - GGH Model Travel Flows

Regarding the travel demands associated with moving commuters, tourists and recreational travellers, the Study Area has a mix of travel components:

- Internal trips – those trips that originate and end within the Study Area;
- Internal to external trips – those trips that originate within the Study Area but are destined elsewhere;
- External to internal trips – those trips that originate outside of the Study Area but are destined to the Study Area; and
- Through trips – those trips that neither originate nor end within the Study Area but pass through as part of the journey.

Thus, the inter-regional commuting patterns and issues must be viewed from a broader system base that extends beyond the limits of the Study Area.

The GGH Model calculates 2031 AM and PM peak period Total Person, Transit Person and Auto Trip tables at a detailed traffic zone level. A trip table is a matrix that displays the number of trips going from each origin to each destination. Traffic zones can be aggregated to regional and municipal planning districts in order to assess:

- Self Containment (trips staying within the municipality or region)
- Inter-regional travel across municipal boundaries
- Transit Mode Share (% of trips using transit)

A summary of the peak hour total person movement crossing major municipal boundaries is presented in **Exhibit 3-5**, showing the substantial growth anticipated for evening peak hour inter-regional travel. Additional details of the GGH Model and travel characteristics are provided in a technical document *Overview of Forecasting Travel Demand Analysis* (July 2009).

Exhibit 3-5: PM Peak Hour Person Cross-Boundary Person Trips

Municipal Boundaries	2006		2031	
	EB / NB	WB / SB	EB / NB	WB / SB
Niagara Gateway	883	1,875	2,609	3,349
Niagara / Hamilton	8,422	4,472	11,344	8,704
Brant / Hamilton	2,362	3,445	3,772	5,394
Hamilton / Halton	12,598	21,236	21,027	29,889
Peel / Halton	21,664	42,659	55,330	67,052
Toronto+York+Durham / Peel	45,180	72,140	110,024	118,083
Halton / Wellington	4,893	9,057	16,190	16,824
Hamilton / Wellington	1,604	1,449	3,842	8,969
Wellington / Waterloo	7,220	10,361	16,639	23,192

Corresponding to this anticipated increase in inter-regional travel, a summary of the numbers of person trips that stay within each upper tier municipality during the 2006 and 2031 PM peak hour is presented in **Exhibit 3-6**. As shown, all of the upper tier municipalities reflect significant self containment, ranging from 90% in Waterloo to 71% in Peel in 2031. Self containment in the Study Area's upper tier municipalities is expected to decrease between 2006 and 2031. These patterns are illustrated in **Exhibit 3-7** and **Exhibit 3-8**.

Exhibit 3-6: PM Peak Hour Self Containment

Upper Tier Municipality	2006 (thousands)			2031 (thousands)		
	Total Person	Trips Remaining Within	% Self Containment	Total Person	Trips Remaining Within	% Self Containment
Niagara	103.5	99.0	96%	112.6	102.8	91%
Brant	29.0	25.9	89%	38.1	29.9	78%
Waterloo	119.0	110.2	93%	181.6	163.5	90%
Wellington	42.0	34.9	83%	78.5	60.1	77%
Hamilton	104.7	90.4	86%	156.3	125.8	81%
Halton	101.0	73.7	73%	193.9	135.9	70%
Peel	242.3	185.6	77%	401.1	284.4	71%
Toronto/York/Durham.	934.1	862.0	92%	1,325.40	1,185.8	89%

Exhibit 3-7: 2006 PM Peak Hour Total Person Travel Characteristics

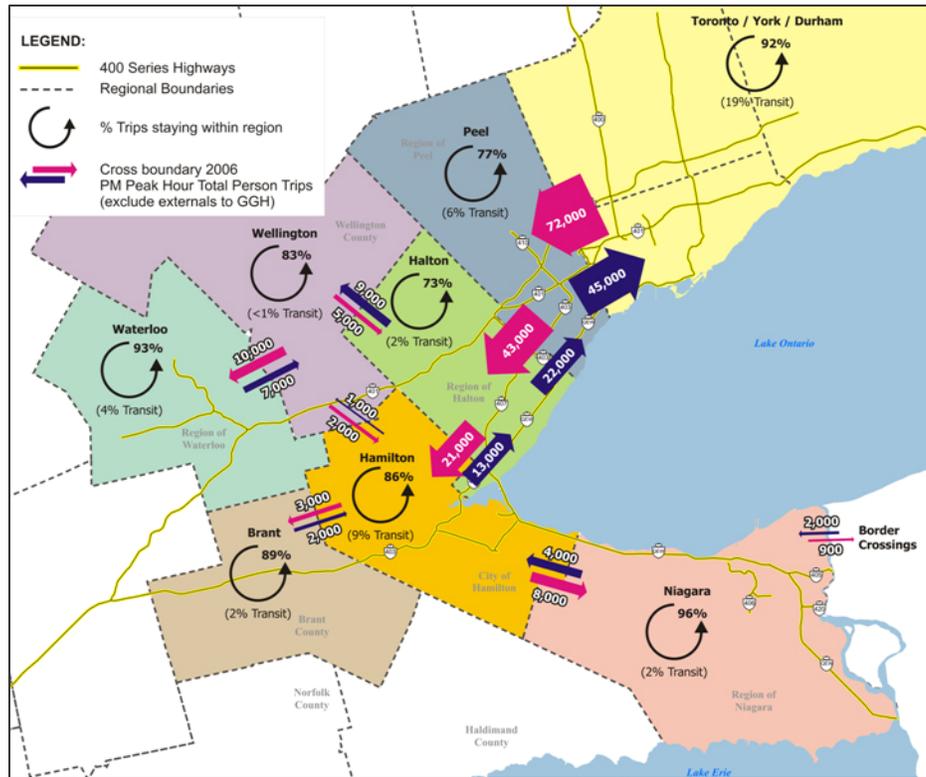
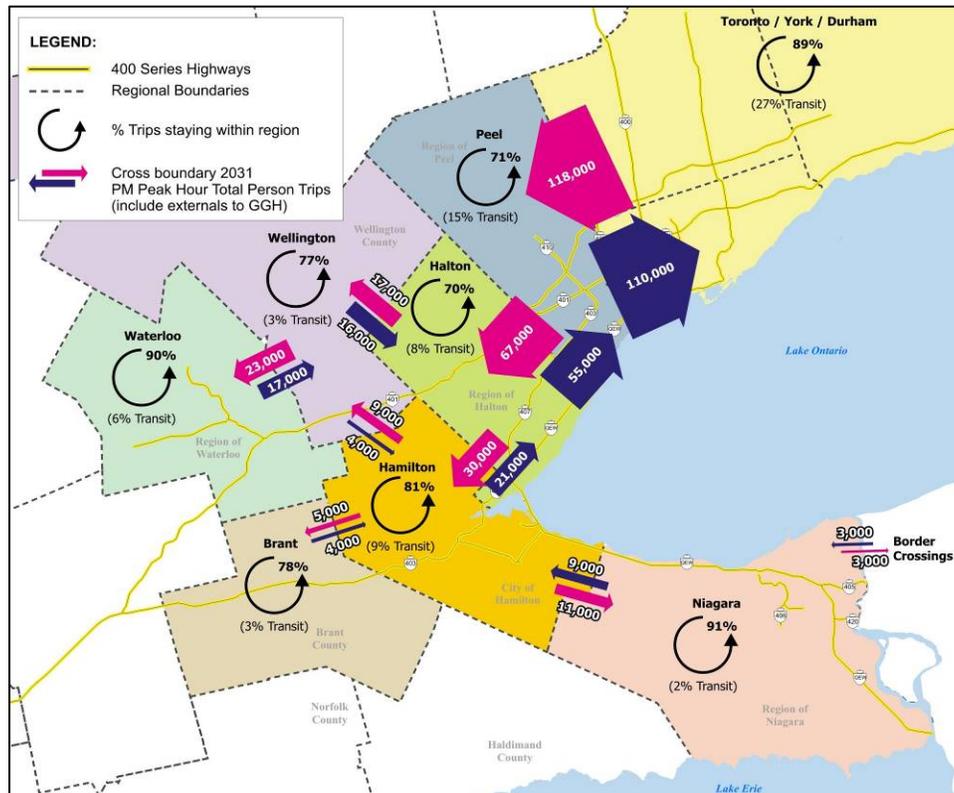


Exhibit 3-8: 2031 PM Peak Hour Total Person Travel Characteristics



A comparison of forecast 2031 travel characteristics in relation to observed 2006 travel characteristics by upper tier municipality is summarized in **Exhibit 3-9**.

Exhibit 3-9: Existing and Forecast Travel Characteristics

Regional Municipality	Self Containment		Auto %*		Transit %*		Transit from PD 1	
	2006	2031	2006	2031	2006	2031	2006	2031
Niagara	96%	91%	98%	98%	2%	2%	100	105
Hamilton	86%	81%	91%	88%	9%	9%	605	1,245
Brant	89%	78%	98%	97%	2%	3%	30	35
Waterloo	93%	90%	96%	93%	4%	6%	45	130
Wellington	83%	77%	100%	96%	0%	3%	185	180
Halton	73%	70%	98%	88%	2%	8%	3,560	5,840
Peel	77%	71%	94%	82%	6%	15%	8,400	14,170

*Due to the use of different data sources for 2006 and 2031 travel characteristics, Auto% and Transit% do not always add to 100%

3.4.2 Moving Goods – Commercial Vehicle and Rail Transportation

Goods movement is heavily reliant on the road network and on the use of commercial vehicles for all or part of most trips (rail/marine/air to truck). Within the GTA West Study Area, commercial vehicles represent a significant proportion of total existing traffic as summarized in **Exhibit 3-10**.

Exhibit 3-10: Percentage of Commercial Vehicles by Inter-Regional Facility (2006)

Highway Section	% Commercial Vehicles	Highway Section	% Commercial Vehicles
Highway 401		Highway 403	
- West of Highway 25	19%	- West of Hurontario St.	10%
- West of Highway 407	18%	- West of Winston Churchill	15%
- West of Highway 410	14%	- West of Highway 6	20%
- West of Highway 427	9%	QEW	
- West of Highway 400	10%	- West of Highway 403	15%
Highway 410		- West of RR 25 (Bronte Rd.)	15%
- North of Highway 401	10%	- Skyway Bridge	16%
- North of Steeles Ave.	9%	- West of Casablanca Blvd	14%
- North of Queen St.	4%	- West of Highway 406	13%
Highway 427		- Garden City Skyway	12%
- North of Highway 401	9%	- North of Highway 420	10%
- North of Highway 407	9%	- South of Highway 420	17%

3.4.3 GGH Model Network Auto and Truck Assignment Flows

The AM and PM peak hour automobile trip tables developed for both the 2031 RTP and the ALU allocation were assigned to the 2031 road network. The road assignment process utilizes an equilibrium assignment technique that is an iterative process in which trips are assigned to the road network based on initial travel times followed by travel times that are then recalculated based on the assigned volumes (and congestion). This process is repeated until no trip between any given origin-destination pair can be rerouted to a faster path.

The 2031 AM and PM peak hour truck trip tables, developed for the RTP, were also assigned to the 2031 road network. The peak hour truck volumes were added to the automobile assignments on a screenline basis to establish AM and PM peak hour vehicle flows along selected corridors and across selected screenlines.

A screenline is an imaginary or real boundary that defines a broad corridor across which traffic flows. A screenline typically includes multiple road links. Each roadway link has the ability to accommodate a maximum number of vehicles, referred to as its capacity. As volume increases on each link, the speed on the link deteriorates and the volume flow becomes unstable; an indicator of congested traffic conditions.

In this analysis, the focus is the inter-regional network as opposed to the local and regional network that is neither designed nor appropriate for large volumes of inter-regional traffic.

In order to establish an appropriate range of 2031 peak hour vehicle demand forecasts along corridors and screenlines, a Business As Usual (BAU Trend) forecast of automobile flows was established by extrapolating the 2001 Transportation Tomorrow Survey (TTS) peak hour automobile trip tables, based on the proposed increase of population and employment forecast for the RTP. This growth factor process is technically referred to as a Furness or Fratar method. These BAU trip tables were assigned to the 2031 Metrolinx RTP road and transit networks.

As indicated, the GGH Model simulates both short and long distance truck volumes for the 2031 AM peak hour. The 2031 PM peak hour truck flows were derived by transposing the AM peak hour truck volumes and adjusting based on observed truck volume characteristics in the Study Area. The resulting truck volumes are added to the 2031 peak hour automobile assignment to determine 2031 AM and PM peak hour total vehicle flows across each screenline.

The RTP and ALU scenarios included with the GGH Model result in a lower range of automobile and total vehicle flows forecast for 2031 relative to the BAU as these alternatives reflect significantly increased transit use, higher automobile operating costs, higher parking charges in the Urban Growth Centres and optimized transit service and fare systems.

The BAU scenario that includes the RTP 2031 land use but maintains the existing (2001 TTS) travel characteristics and mode choice generally reflects the potential upper limit of automobile and vehicle flows crossing the selected screenlines. Considerations of these scenarios allowed the Study Team to identify a range of future travel demands to be used in identifying future transportation problems and opportunities.

3.4.4 GGH Model Transit Demand

A comparison of the 2001-2031 growth in transit travel flows for selected GTA West inter-regional interchanges is presented in **Exhibit 3-11**, indicating that the number of transit trips is anticipated to increase substantially between 2001 and 2031. Typically, as distance increases from Toronto and its substantial transit infrastructure, the number of transit trips between urban centres decreases.

It is anticipated that the future transit travel times between many urban growth centres will decrease with the implementation of the Metrolinx 25-Year Plan. Experience in

Ontario suggests that the inter-regional transit mode shares between communities at the fringe of the urban areas will range between 5% and 15% of the total person trips.

Exhibit 3-11: 2031 Peak Hour Transit Person Trips

	Toronto Bound		Waterloo Bound		
	AM Peak Hour			PM Peak Hour	
	2001	2031		2001	2031
Waterloo to			Toronto PD1 to		
Guelph	0	41	Mississauga	5,379	7,711
Milton	0	0	Brampton	1,662	5,811
Halton Hills	0	4	Halton Hills	277	651
Brampton	0	36	Milton	145	751
Mississauga	0	29	Guelph	59	103
Toronto PD1	34	147	Waterloo	43	128
Rest of Toronto	17	47			
Guelph to			Rest of Toronto to		
Milton	0	1	Mississauga	2,035	7,283
Halton Hills	0	13	Brampton	598	6,521
Brampton	0	33	Halton Hills	39	286
Mississauga	0	23	Milton	13	209
Toronto PD1	67	112	Guelph	0	48
Rest of Toronto	0	42	Waterloo	15	43
Milton to			Mississauga to		
Halton Hills	0	31	Brampton	574	6,133
Brampton	0	82	Halton Hills	8	179
Mississauga	7	323	Milton	20	282
Toronto PD1	181	883	Guelph	10	20
Rest of Toronto	13	234	Waterloo	25	25
Halton Hills to			Brampton to		
Brampton	0	275	Mississauga	308	3,740
Mississauga	8	200	Halton Hills	0	249
Toronto PD1	342	732	Milton	0	72
Rest of Toronto	47	252	Guelph	0	31
			Waterloo	0	33
Brampton to			Halton Hills to		
Mississauga	588	5,239	Milton	0	29
Vaughan	48	904	Guelph	9	13
Toronto PD1	1,852	6,698	Waterloo	0	5
Rest of Toronto	603	5,495			
Mississauga to			Milton to		
Brampton	347	2,774	Guelph	0	1
Toronto PD1	6,734	8,275	Waterloo	0	0
Rest of Toronto	2,064	6,596	Guelph to		
			Waterloo	0	38
			Vaughan to		
			Brampton	7	542

3.4.5 Summary of Key Screenline Operating Characteristics

The analysis of the future transportation conditions in the Study Area was undertaken assessing the existing (2006) and forecast (2031) vehicle demands crossing corridor-

specific screenlines, as discussed in detail in the technical document *Transportation and Economic Conditions Draft Overview* report (July 2008).

The screenline operating condition analysis process includes a review of the existing (2006) roadway supply (capacity) and future planned (2031) roadway capacity that crosses each corridor screenline, and an assessment of the existing (2006) and future (2031) vehicle demand (volume). Screenline volume/capacity (V/C) ratios were calculated for the following planning scenarios:

- 2006 – existing conditions
- 2031 – Metrolinx RTP
- 2031 – Alternative Land Use – (ALU)
- 2031 - Business As Usual Trend – (BAU)

The operating conditions for each of the corridor screenlines were identified using the following V/C to operating condition relationship:

- V/C less than 0.80 – Stable operating condition with possible non-recurring congestion
- V/C 0.80 to 0.90 – Unstable operations reflecting moderate congestion
- V/C greater than 0.90 – Stop and Go operations reflecting major congestion.

A summary of existing and 2031 PM peak hour vehicle volumes and existing vehicle capacity crossing each of the major north-south screenlines (measuring east-west travel) is presented in **Exhibit 3-12**, and a summary of the V/C and operating conditions is presented in **Exhibit 3-13**. The 2031 PM peak hour vehicle forecasts are obtained from the GGH Model – October 2008 model run.

Exhibit 3-12: Existing and 2031 PM Peak Hour Vehicle Demand at N-S Corridor Screenlines

Screenline Location	Existing Vehicle Capacity	Existing Vehicle Demand	2031 RTP Vehicle Demand	2031 ALU Vehicle Demand	2031 BAU Vehicle Demand
East of Guelph (WB) (Highway 7 to Highway 401)	7,900	5,300	9,500	10,100	8,900
West of Milton (WB) (Highway 7 to Highway 401)	7,900	7,000	10,200	10,600	10,200
East of WC Blvd (WB) (Highway 7 to Highway 401)	14,600	12,300	21,700	22,200	21,800
East of Highway 10 (WB) (Mayfield Rd. to Highway 401)	35,100	29,700	39,200	40,200	44,700
East of Highway 50 (WB) (Mayfield Rd. to Highway 401)	16,400	12,400	19,800	18,700	22,200
West of Highway 400 (WB) (Teston Rd. to Steeles Ave.)	16,900	17,700	26,800	23,300	28,500

Exhibit 3-13: Existing and 2031 PM Peak Hour Conditions at N-S Corridor Screenlines

Screenline Location	Volume/Capacity and Operating Conditions			
	Existing	2031 RTP	2031 ALU	2031 BAU
East of Guelph (WB) (Highway 7 to Highway 401)	V/C – 0.67 Stable	V/C – 1.20 Congested	V/C – 1.28 Congested	V/C – 1.13 Congested
West of Milton (WB) (Highway 7 to Highway 401)	V/C – 0.89 Unstable	V/C – 1.30 Congested	V/C – 1.34 Congested	V/C – 1.30 Congested
East of WC Blvd (WB) (Highway 7 to Highway 401)	V/C – 0.84 Unstable	V/C – 1.49 Congested	V/C – 1.52 Congested	V/C – 1.49 Congested
East of Highway 10 (WB) (Mayfield Rd. to Highway 401)	V/C – 0.85 Unstable	V/C – 1.12 Congested	V/C – 1.15 Congested	V/C – 1.27 Congested
East of Highway 50 (WB) (Mayfield Rd. to Highway 401)	V/C – 0.76 Stable	V/C – 1.21 Congested	V/C – 1.14 Congested	V/C – 1.35 Congested
West of Highway 400 (WB) (Teston Rd. to Steeles Ave.)	V/C – 1.05 Congested	V/C – 1.59 Congested	V/C – 1.38 Congested	V/C – 1.69 Congested

As noted, the road network in the GGH Model includes planned road improvements identified by the Ministry of Transportation (MTO) Highways Program, and Transportation Master Plans prepared by the municipalities within the GGH area. In order to present the expected impact of the planned roadway improvements on the operation of the transportation system at selected screenlines, an overview of the 2031 planned capacity and the 2031 PM peak hour V/C and operating conditions at the screenlines based on the planned capacity is provided in **Exhibit 3-14**.

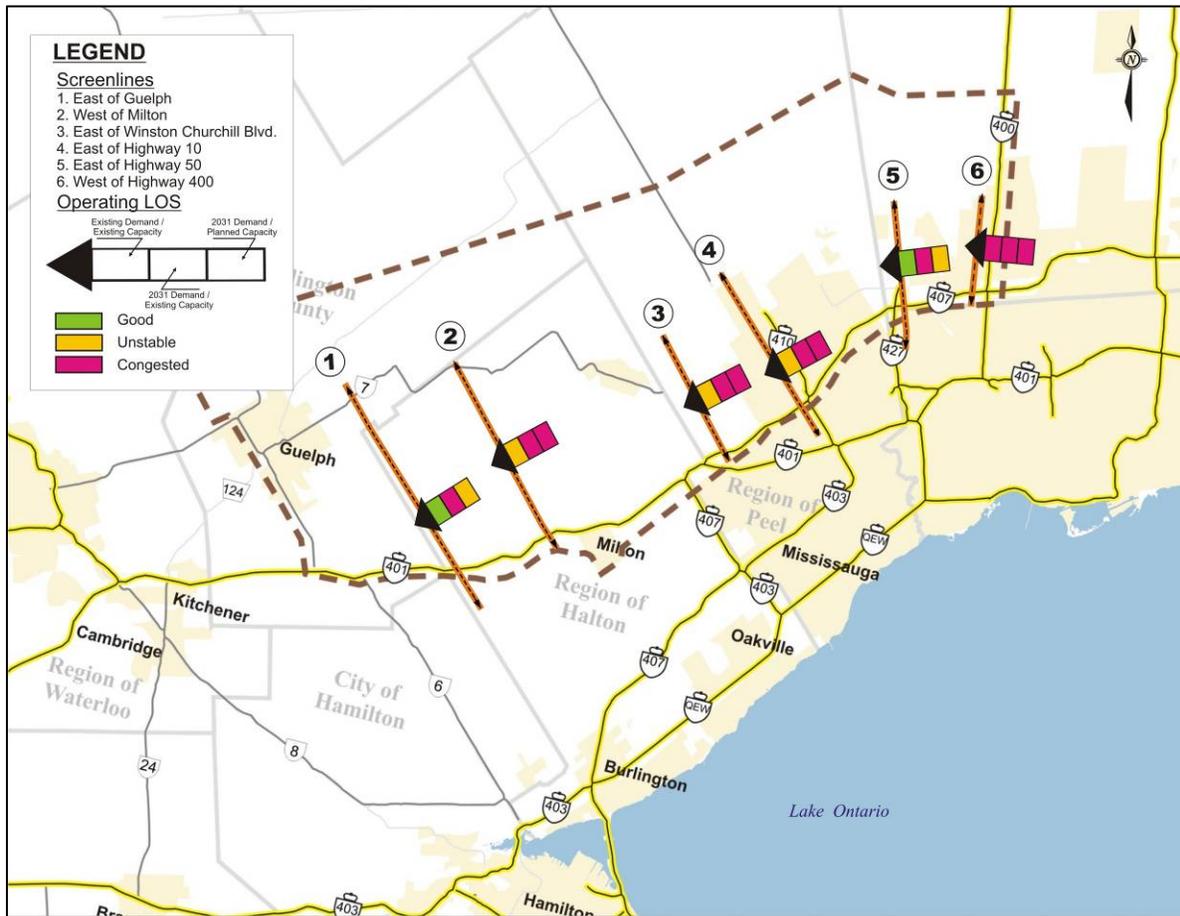
Exhibit 3-14: 2031 PM Peak Hour Conditions at N-S Corridor Screenlines – Based on Planned Capacity

Screenline Location	Planned Vehicle Capacity	V/C and Operating Conditions		
		2031 RTP	2031 ALU	2031 BAU
East of Guelph (WB) (Highway 7 to Highway 401)	11,000	V/C – 0.86 Unstable	V/C – 0.92 Congested	V/C – 0.81 Unstable
West of Milton (WB) (Highway 7 to Highway 401)	9,900	V/C – 1.03 Congested	V/C – 1.07 Congested	V/C – 1.03 Congested
East of WC Blvd (WB) (Highway 7 to Highway 401)	24,050	V/C – 0.90 Congested	V/C – 0.92 Congested	V/C – 0.91 Congested
East of Highway 10 (WB) (Mayfield Rd. to Highway 401)	40,000	V/C – 0.98 Congested	V/C – 1.01 Congested	V/C – 1.12 Congested
East of Highway 50 (WB) (Mayfield Rd. to Highway 401)	22,300	V/C – 0.89 Unstable	V/C – 0.84 Unstable	V/C – 1.00 Congested
West of Highway 400 (WB) (Teston Rd. to Steeles Ave.)	21,300	V/C – 1.26 Congested	V/C – 1.10 Congested	V/C – 1.34 Congested

A summary of the operating conditions for the N-S Corridor Screenlines is presented on **Exhibit 3-15** for the following conditions:

- Existing PM peak hour vehicles and existing vehicle capacity
- 2031 PM peak hour vehicles and existing vehicle capacity
- 2031 PM peak hour vehicles and planned vehicle capacity

Exhibit 3-15: Existing and Forecast PM Peak Hour N-S Corridor Screenline Conditions



A brief discussion of the existing and future operating conditions at each of the corridor screenlines is provided as follows:

East of Guelph between Highway 7 and Highway 401

- Currently this screenline operates at a Stable operating condition, with a PM peak hour V/C ratio of 0.67. However, by 2031 it is anticipated that demand will increase by approximately 50%, which will result in this screenline operating in a Congested state if no additional road infrastructure capacity is provided. The addition of the planned capacity results in an Unstable operating condition.

West of Milton between Highway 7 and Highway 401

- In 2006, approximately 7,000 westbound vehicles crossed this screenline in the PM peak hour resulting in a V/C ratio of 0.89, which reflects an Unstable operating condition. By 2031, it is anticipated that the PM peak hour westbound traffic flows will increase by approximately 50%, resulting in a significant capacity shortfall if no additional road infrastructure capacity is provided. The addition of planned capacity also results in a Congested operating condition.

East of Winston Churchill Boulevard between Mayfield Road and Highway 401

- In 2006, this screenline experienced a PM peak hour Unstable operating condition, with a V/C ratio of 0.84. The PM peak hour westbound vehicle traffic flows are forecast to almost double to 2031, suggesting significant congestion levels unless additional road infrastructure capacity is provided. Addition of the planned roadway capacity at this screenline results in an expected Congested operating condition by 2031.

East of Highway 10 between Mayfield Road and Highway 401

- Westbound traffic flows crossing this screenline in the PM peak hour currently experience Unstable operating conditions and are expected to experience Congested operating conditions without future roadway capacity improvements. To address the increased traffic flows across this screenline of approximately 40%, additional road capacity has been identified in the City of Brampton Transportation Master Plan as well as widening of Highway 401 in Mississauga. It is anticipated that notwithstanding these road improvements, along with increased transit service identified in the Metrolinx RTP, this screenline will operate at a Congested level in 2031.

East of Highway 50 between Nashville Road and Steeles Avenue

- This screenline currently operates at a Stable level. It is anticipated that by 2031 the westbound PM. peak hour traffic volumes will increase by approximately 60%, resulting in this corridor operating in a Congested state with existing roadway capacity, and a Unstable state with the 2031 planned roadway capacity.

West of Highway 400 between Teston Road and Steeles Avenue

- This screenline operates in a Congested state under existing conditions. The 2031 traffic volume forecasts are expected to result in Congested operating levels with existing capacity and with 2031 planned capacity.

Screenline analyses were also conducted for north-south travel on east-west screenlines throughout the Study Area. A summary of the existing and 2031 PM peak hour vehicle volumes and existing vehicle capacity crossing each of the major east-west corridor screenlines is presented in **Exhibit 3-16**, with a summary of each screenline's V/C and operating conditions is presented in **Exhibit 3-17**.

Exhibit 3-16: Existing and 2031 PM Peak Hour Vehicle Demand at E-W Corridor Screenlines

Screenline Location	Existing Vehicle Capacity	Existing Vehicle Demand	2031 RTP Vehicle Demand	2031 ALU Vehicle Demand	2031 BAU Vehicle Demand
North of Highway 401 (NB) (Highway 24 to Brock Road)	8,850	6,300	8,800	8,900	7,100
South of Highway 401 (NB) (Highway 6 to Highway 25)	5,400	3,500	5,200	6,400	5,600
South of Highway 401 (NB) (Steeles Avenue to 9 th Line)	10,700	5,100	12,900	12,000	12,100
South of Highway 401 (NB) (WC Blvd to Highway 403)	28,300	21,500	29,300	29,700	27,800
South of Highway 407 (NB) (WC Blvd to Highway 410)	19,100	16,300	22,900	24,000	23,000
South of Highway 407 (NB) (Tomken Road – Highway 50)	15,300	12,900	16,200	16,900	17,900
South of Mayfield Road (NB) (RR 25 to WC Blvd)	6,300	4,700	6,500	7,200	6,400
South of Mayfield Road (NB) (Heritage Rd. to Hurontario St.)	5,600	2,200	5,400	5,600	5,100
South of Mayfield Road (NB) (Kennedy Rd. to Highway 50)	10,100	7,000	15,700	17,000	16,400

Exhibit 3-17: Existing and 2031 PM Peak Hour Conditions at E-W Corridor Screenlines

Screenline Location	V/C and Operating Conditions			
	Existing	2031 RTP	2031 ALU	2031 BAU
North of Highway 401 (NB) (Highway 24 to Brock Road)	V/C – 0.72 Stable	V/C – 0.99 Congested	V/C – 1.01 Congested	V/C – 0.80 Unstable
South of Highway 401 (NB) (Highway 6 to Highway 25)	V/C – 0.65 Stable	V/C – 0.97 Congested	V/C – 1.19 Congested	V/C – 1.05 Congested
South of Highway 401 (NB) (Steeles Avenue to 9 th Line)	V/C – 0.47 Stable	V/C – 1.21 Congested	V/C – 1.12 Congested	V/C – 1.13 Congested
South of Highway 401 (NB) (WC Blvd to Highway 403)	V/C – 0.76 Stable	V/C – 1.03 Congested	V/C – 1.05 Congested	V/C – 0.98 Congested
South of Highway 407 (NB) (WC Blvd to Highway 410)	V/C – 0.85 Unstable	V/C – 1.20 Congested	V/C – 1.26 Congested	V/C – 1.20 Congested
South of Highway 407 (NB) (Tomken Road – Highway 50)	V/C – 0.84 Unstable	V/C – 1.06 Congested	V/C – 1.10 Congested	V/C – 1.17 Congested
South of Mayfield Road (NB) (RR 25 to WC Blvd)	V/C – 0.75 Stable	V/C – 1.04 Congested	V/C – 1.15 Congested	V/C – 1.02 Congested
South of Mayfield Road (NB) (Heritage Rd. to Hurontario St.)	V/C – 0.39 Stable	V/C – 0.96 Congested	V/C – 0.99 Congested	V/C – 0.92 Congested
South of Mayfield Road (NB) (Kennedy Rd. to Highway 50)	V/C – 0.69 Stable	V/C – 1.55 Congested	V/C – 1.68 Congested	V/C – 1.62 Congested

As noted, the road network in the GGH Model includes planned road improvements identified by the MTO Highways Program, and Transportation Master Plans prepared by the municipalities within the GGH area. In order to present the expected impact of the

planned roadway improvements on the operation of the transportation system at selected screenlines, an overview of the 2031 planned capacity and the 2031 PM peak hour V/C and operating conditions at the screenlines, based on the planned capacity, is provided in **Exhibit 3-18**.

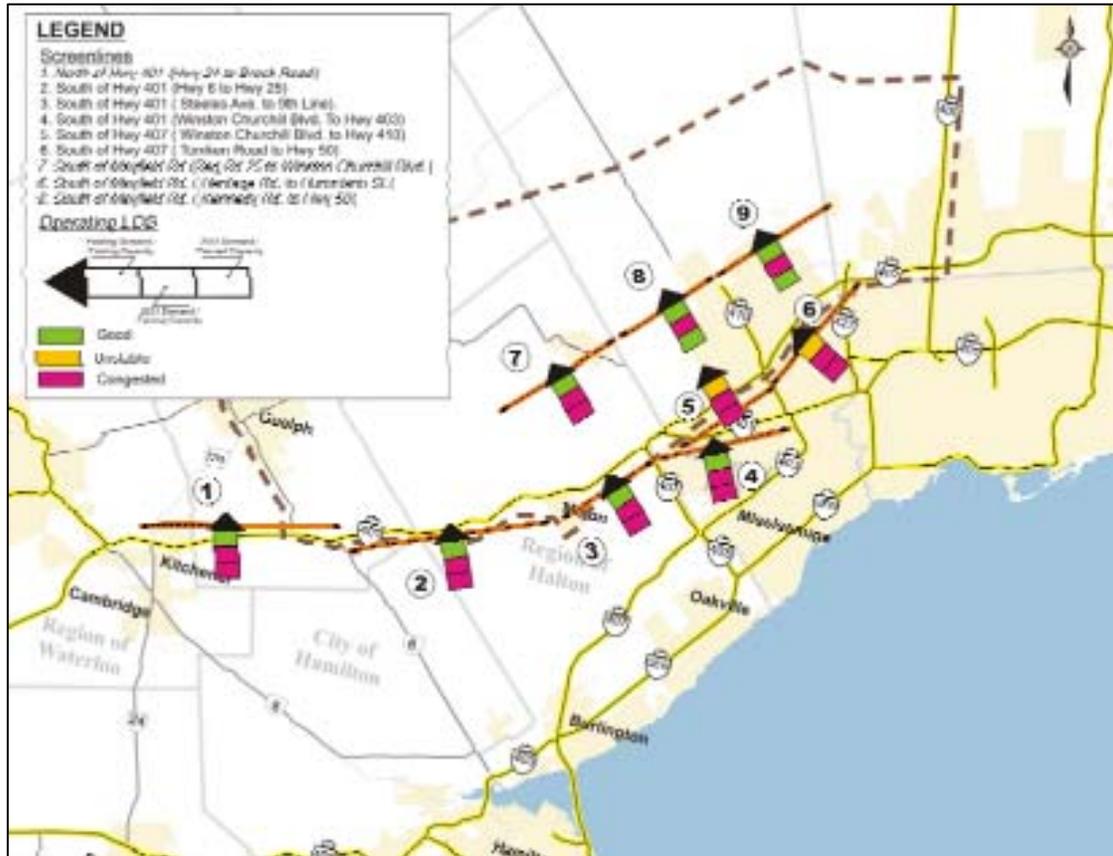
Exhibit 3-18: Existing and 2031 PM Peak Hour Conditions at E-W Corridor Screenlines – Based on Planned Capacity

Screenline Location	Planned Vehicle Capacity	V/C and Operating Conditions		
		2031 RTP	2031 ALU	2031 BAU
North of Highway 401 (NB) (Highway 24 to Brock Road)	8,850	V/C – 0.99 Congested	V/C – 1.01 Congested	V/C – 0.80 Unstable
South of Highway 401 (NB) (Highway 6 to Highway 25)	5,700	V/C – 0.91 Congested	V/C – 1.13 Congested	V/C – 0.99 Congested
South of Highway 401 (NB) (Steeles Avenue to 9 th Line)	10,250	V/C – 1.26 Congested	V/C – 1.17 Congested	V/C – 1.18 Congested
South of Highway 401 (NB) (WC Blvd to Highway 403)	29,800	V/C – 0.98 Congested	V/C – 1.00 Congested	V/C – 0.93 Congested
South of Highway 407 (NB) (WC Blvd to Highway 410)	19,900	V/C – 1.15 Congested	V/C – 1.21 Congested	V/C – 1.16 Congested
South of Highway 407 (NB) (Tomken Road – Highway 50)	14,800	V/C – 1.10 Congested	V/C – 1.14 Congested	V/C – 1.21 Congested
South of Mayfield Road (NB) (RR 25 to WC Blvd)	5,950	V/C – 1.10 Congested	V/C – 1.21 Congested	V/C – 1.08 Congested
South of Mayfield Road (NB) (Heritage Rd. to Hurontario St.)	7,500	V/C – 0.71 Stable	V/C – 0.74 Stable	V/C – 0.69 Stable
South of Mayfield Road (NB) (Kennedy Rd. to Highway 50)	21,950	V/C – 0.71 Stable	V/C – 0.77 Stable	V/C – 0.74 Stable

A summary of the operating conditions for the E-W Corridor Screenlines is presented in **Exhibit 3-19** for the following conditions:

- Existing PM peak hour vehicles and existing vehicle capacity
- 2031 PM peak hour vehicles and existing vehicle capacity
- 2031 PM peak hour vehicles and planned vehicle capacity

Exhibit 3-19: Existing and Forecast PM Peak Hour E-W Corridor Screenline Conditions



A brief discussion of the existing and future operating conditions at each of the corridor screenlines follows:

North of Highway 401 (Highway 24 to Brock Road)

- Currently this screenline operates in a Stable condition; however it is anticipated to operate in a Congested state in 2031, both when considering 2031 traffic flows in relation to existing capacity and planned capacity.

South of Highway 401 (Highway 6 to Highway 25)

- This screenline currently operates in a Stable condition. It is anticipated to operate in a Congested state in 2031 both when considering 2031 traffic flows in relation to existing capacity and planned capacity.

South of Highway 401 (Steeles Avenue to 9th Line)

- Currently this screenline operates in a Stable condition; however, it is anticipated to operate in a Congested state in 2031 when considering 2031 traffic flows in relation to both existing capacity and planned capacity.

South of Highway 401 (Winston Churchill Blvd to Highway 403)

- This screenline operates at a Stable condition. It is anticipated to experience a Congested operating condition in 2031 when considering 2031 traffic flows in relation to both existing capacity and planned capacity.

South of Highway 407 (Winston Churchill Blvd to Highway 410)

- This screenline currently operates in an Unstable condition. It is anticipated to operate in a Congested state in 2031, both when considering 2031 traffic flows in relation to existing capacity and planned capacity.

South of Highway 407 (Tomken Road to Highway 50)

- Currently this screenline operates in an Unstable condition, and it is anticipated to operate in a Congested state in 2031 when considering 2031 traffic flows in relation to existing capacity and planned capacity.

South of Mayfield Road (RR 25 to Winston Churchill Blvd)

- Currently this screenline operates in a Stable condition; however, it is anticipated to operate in a Congested state in 2031 when considering 2031 traffic flows in relation to both existing capacity and planned capacity.

South of Mayfield Road (Heritage Road to Hurontario Street)

- This screenline currently operates in a Stable condition. In 2031, it is anticipated to operate in a Congested when considering 2031 traffic flows in relation to existing capacity, and a Stable operating condition when considering 2031 traffic flows in relation to planned roadway capacity.

South of Mayfield Road (Kennedy Road to Highway 50)

- Currently this screenline operates in a Stable condition. It is anticipated to operate in a Congested state in 2031 when considering 2031 traffic flows in relation to existing capacity, and a Stable operating condition when considering 2031 traffic flows in relation to planned roadway capacity.

3.4.6 Congestion Analysis

A key component of the GTA West Corridor Planning and EA Study is assessment of the inter-regional travel demands utilizing the transportation system in the Study Area and the adjacent impact areas. Presently, inter-regional commuter travel, goods movement and recreational/tourist travel within the GTHA experience congested networks on a regular basis. It is noted that significant highway congestion occurs throughout the day on several major highway corridors and is no longer limited to peak periods. To capture the problem of highway congestion throughout the day, analysis of peak hour congestion was conducted as well as daily congestion.

Daily roadway capacity estimates for the various highway cross-sections were prepared based on hourly capacity and roadway assumptions. In the context of this analysis, “capacity” represents the practical upper limit of service volumes on a particular facility, based on actual experience and observation. This will vary depending on the type of facility and its location and is based on expected conditions in 2031.

To address existing and forecast highway congestion for both a typical day and for weekend travel, a congestion analysis procedure was developed that utilized the existing (2006) Annual Average Daily Traffic (AADT) and Summer Average Daily Traffic (SADT) databases. Forecast (2031) corridor AADT and SADT traffic flows for each highway corridor were calculated based on a number of factors and assumptions discussed in the *Overview of Forecasting Travel Demand Analysis report* (July 2009).

Analysis of highway congestion was also conducted on a peak hour basis, which is consistent with the GGH Model's estimation of peak hour travel conditions. This analysis addressed peak hour roadway facility conditions and was used to confirm the location and degree of congestion as determined by the daily congestion analysis.

The 2006 and 2031 peak hour volume/capacity (V/C) ratios and Level of Service (LOS) were compared with the AADT and SADT V/C ratios. For both analysis years, this comparison indicated that there is a high degree of correlation between the peak hour and AADT/SADT V/C ratios, confirming that "peak hour"-type congestion is and will be experienced throughout the day on many of the roadways within the Study Area. The results of the network congestion analysis are presented in **Section 4**.

3.4.7 Summary of Key Facility Operational Characteristics

Individual facility analysis was also conducted to assess the anticipated future highway capacity shortfalls, as expressed in equivalent lane deficiencies. This analysis was undertaken along the 400 series highways within the GTA West Study Area based on the following information:

- Summary of historical (1960 to 2006) Annual Average Daily Traffic (AADT) and Summer Average Daily Traffic (SADT) data
- Forecast 2031 daily and summer traffic volumes

The assessment provides a range of traffic forecasts, in relation to existing and planned facility capacity. These facility assessments are discussed below in and presented graphically in terms of each highway corridor.

Highway 401 Corridor

Analysis of historical and forecast traffic demand was undertaken along Highway 401 between Guelph and Highway 400. Historically, traffic along this corridor has been increasing by approximately 2% per year. The forecast 2031 AADT and SADT traffic volumes are substantially higher than current volumes, indicating capacity shortfalls. Results of the analysis are presented in **Exhibit 3-20**, indicating that capacity shortfalls of two lanes (with the exception of the corridor between the 407 ETR and Highway 410) are anticipated on Highway 401 in the Study Area.

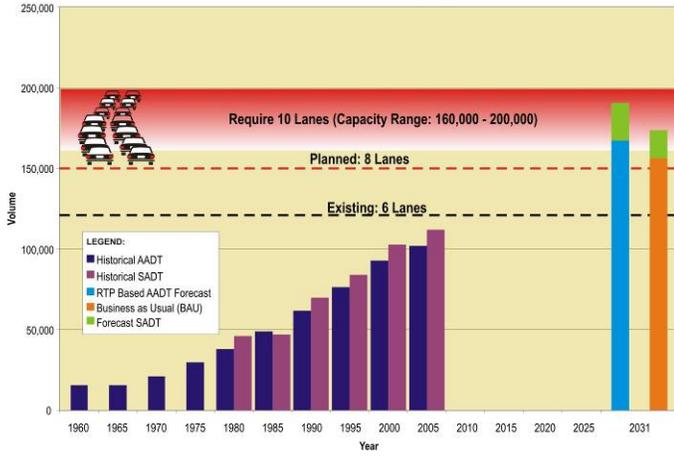
Exhibit 3-20: Highway 401 Corridor Lane Deficiencies

Highway	Location	Existing Lanes	Planned Lanes	2031 Demand in Equivalent Number of Lanes	Equivalent Lane Deficiency
401	Guelph to Highway 25	6	8	10	2
	Highway 25 to Highway 407	6	10+HOV	14	2
	Highway 407 to Highway 410	8	12+HOV	14	-
	West of Highway 427	12	12	14	2
	West of Highway 400	14	14	16	2

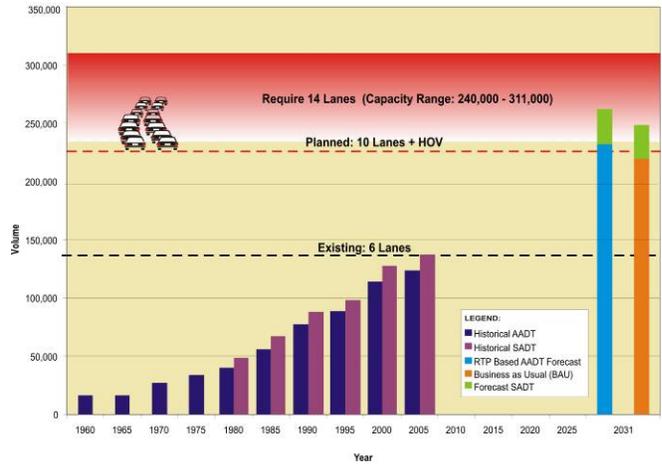
Exhibit 3-21 illustrates historical and future travel demand along the Highway 401 corridor. Traffic demand along Highway 401 between the City of Guelph and Highway 410 is currently either approaching capacity or operating at capacity. Highway 401 west of Highway 410 currently experiences major delays due to congestion during peak travel periods. Projected future traffic volumes along Highway 401 between Highways 410 and 400 also indicate major congestion problems.

Exhibit 3-21: Highway 401 Traffic Volumes and Future Capacity Shortfalls

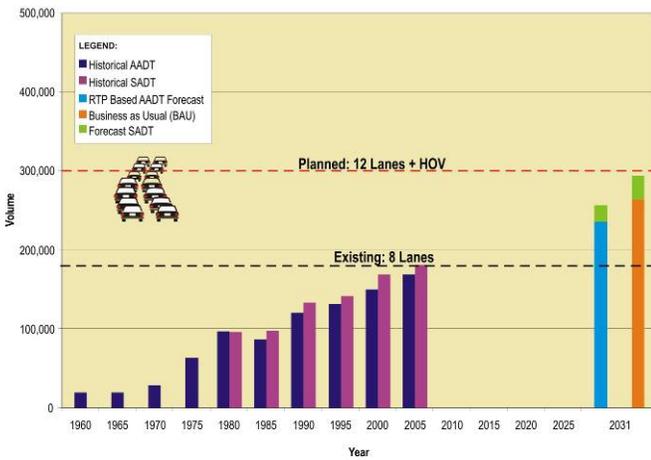
Highway 401, Guelph to Hwy 25



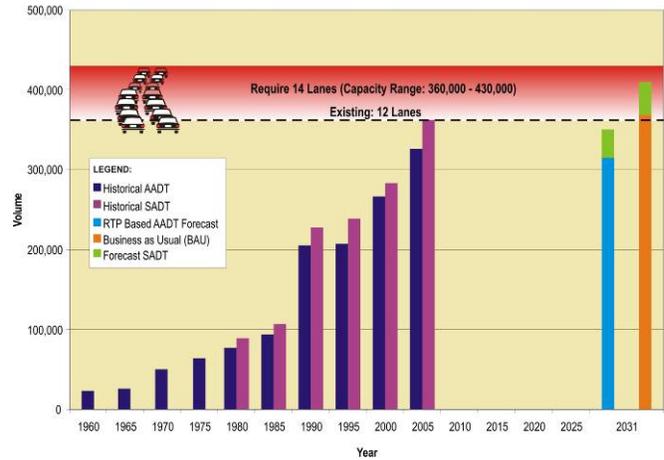
Highway 401, Hwy 25 to Hwy 407 ETR



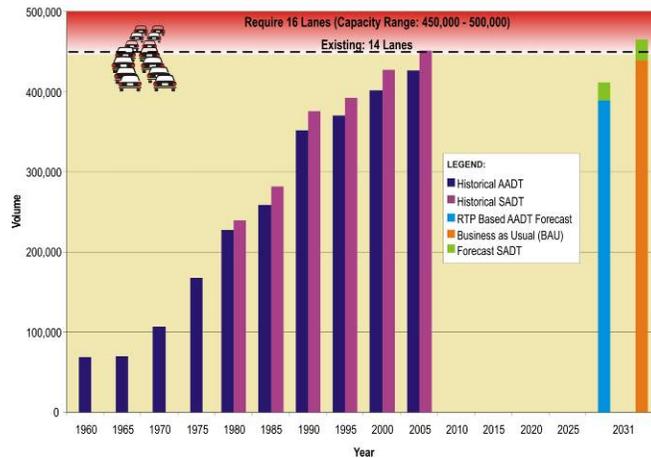
Highway 401, Hwy 407 ETR to Hwy 410



Highway 401, West of Hwy 427



Highway 401, West of Hwy 400



Highway 400 Corridor

Analysis of historical and forecast travel demand was undertaken along Highway 400 north of Highway 407 and north of Major Mackenzie Drive. Traffic volumes along this highway corridor have been increasing by approximately 3% per year. Future 2031 AADT and SADT volumes are expected to be approximately 75% to 95% higher than existing volumes. This indicates future capacity deficiencies equivalent to two lanes, with the planned roadway capacity improvements, as presented in **Exhibit 3-22**.

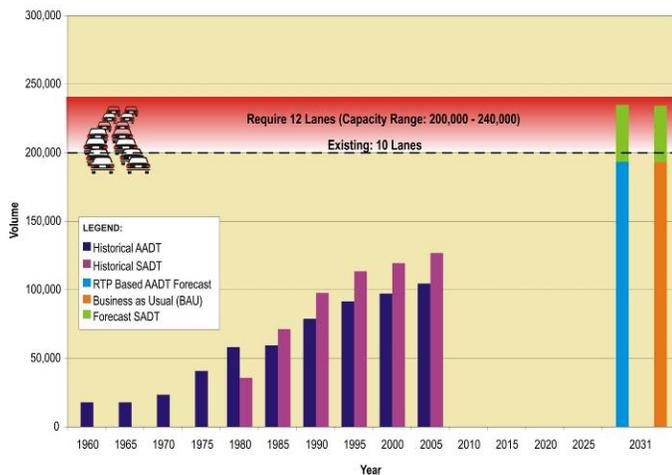
Exhibit 3-22: Lane Deficiencies along the Highway 400 Corridor

Highway	Location	Existing Lanes	Planned Lanes	2031 Demand in Equivalent Number of Lanes	Equivalent Lane Deficiency
400	North of Highway 407	10	10	12	2
	North of Major Mackenzie Drive	6	8+HOV	12	2

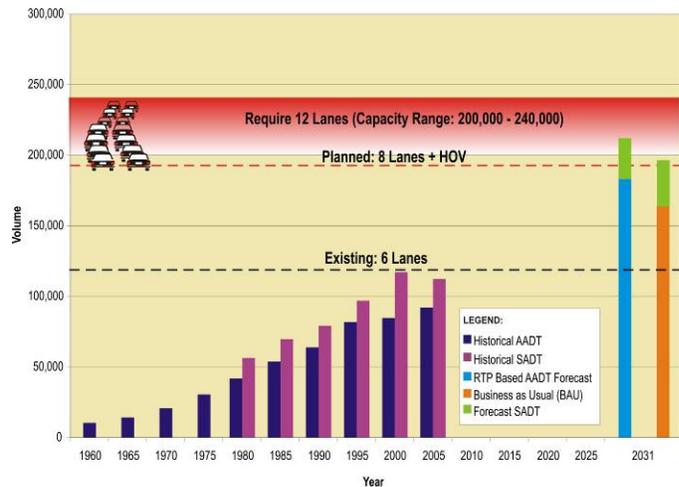
Exhibit 3-23 illustrates the historical and future travel demand along the Highway 400 corridor. Analysis of the traffic volumes reveal 21% higher demand during the summer travel period compared to the AADT, which is in part reflective of higher tourism and recreation travel to northern Ontario. To accommodate future travel demand, two additional lanes of capacity would be required.

Exhibit 3-23: Highway 400 Traffic Volumes and Future Capacity Shortfalls

Highway 400, North of Hwy 407 ETR



Highway 400, North of Major Mackenzie Dr



Highway 410 Corridor

Analysis of traffic volumes on Highway 410 was undertaken south of Bovaird Drive. Historical AADT indicate that the traffic volumes at this location are growing by approximately 2% per year, due in part to substantial population and employment growth within the Region of Peel. Summer traffic volumes are generally 11% higher than the AADT. **Exhibit 3-24** outlines the anticipated 2031 capacity shortfalls and provides an

illustration of daily traffic volumes at Highway 410 south of Bovaird Drive. During the summer travel period this highway corridor currently operates at capacity. The existing daily traffic volume is expected to increase by upwards of 14% by 2031. As shown, the existing lane capacity will not be sufficient to accommodate the future traffic growth and a shortfall of two lanes is anticipated.

Exhibit 3-24: Highway 410 Traffic Volumes and Future Capacity Shortfalls

Highway	Location	Existing Lanes	Planned Lanes	2031 Demand in Equivalent Number of Lanes	Equivalent Lane Deficiency
410	South of Bovaird Drive	6	6	8	2

Highway 410, South of Bovaird Drive

