



**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**

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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.

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## **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**

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

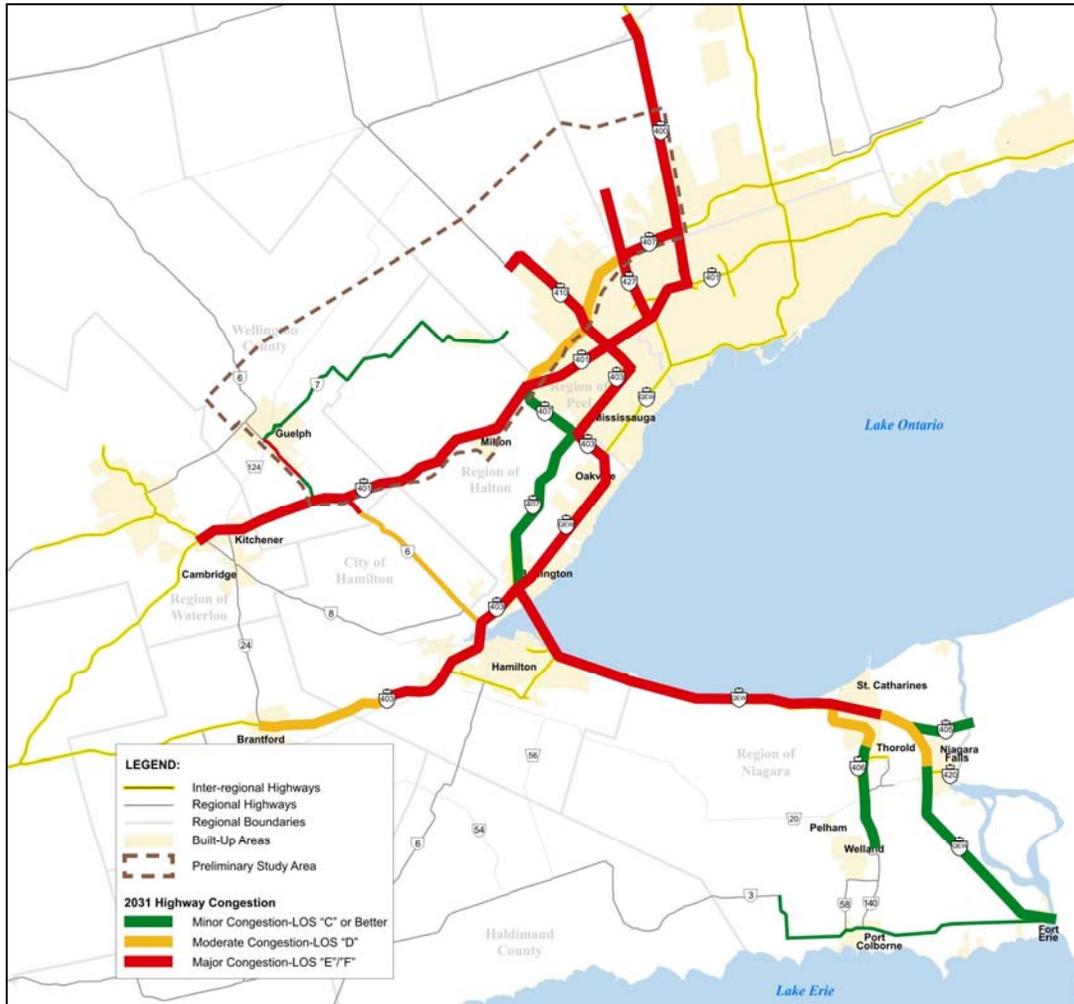
A quantitative analysis of capacity deficiencies for major highway corridors was undertaken based on the future travel demands in relation to future capacity, considering the planned improvements to the transportation network, including transit improvements as set out in the Metrolinx and GO Transit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

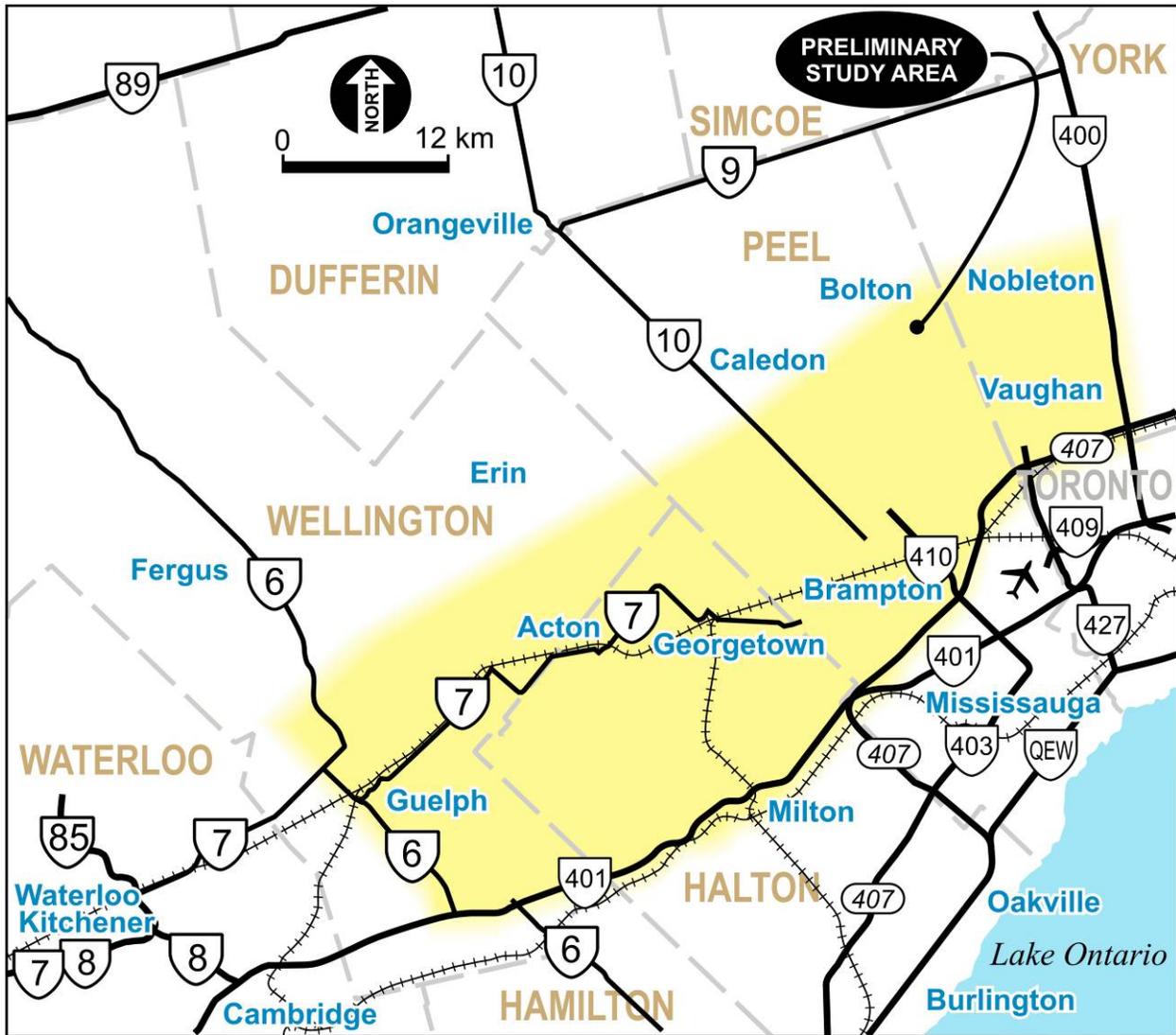
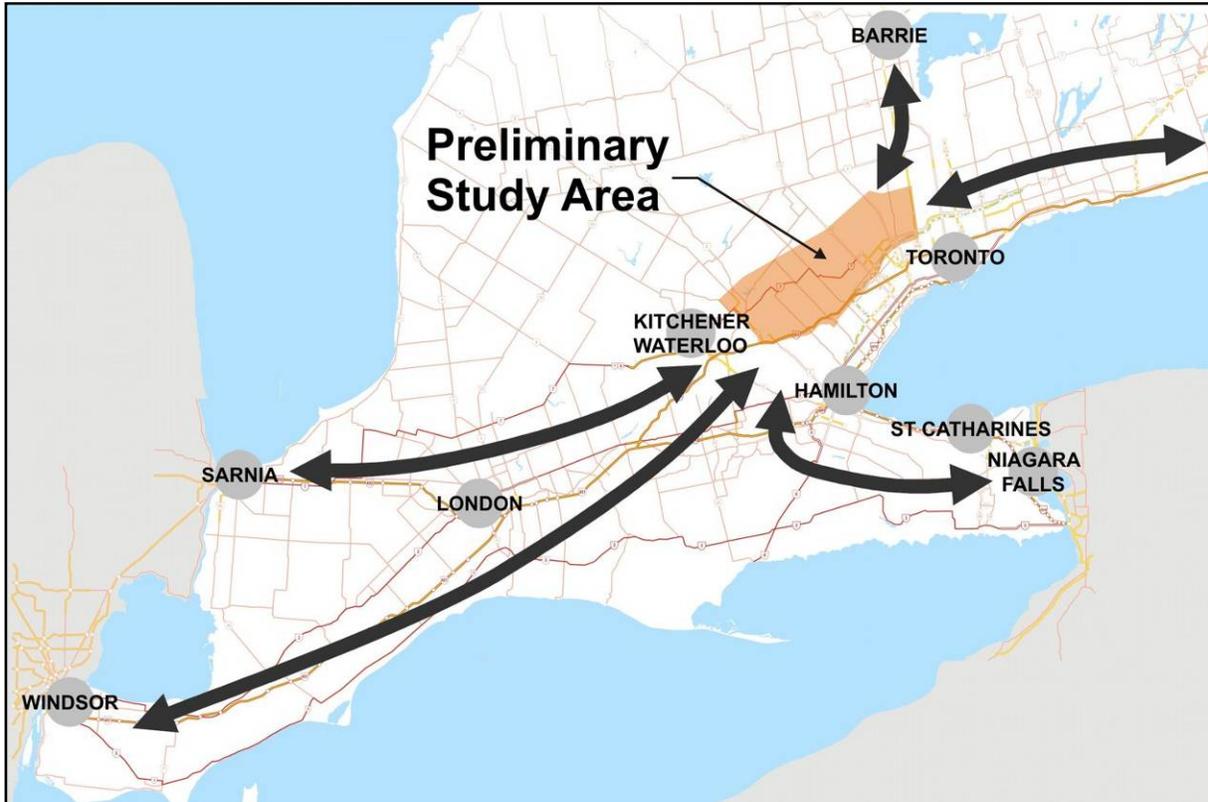


Exhibit 1-3: Area Municipalities within the Preliminary Study Area



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.

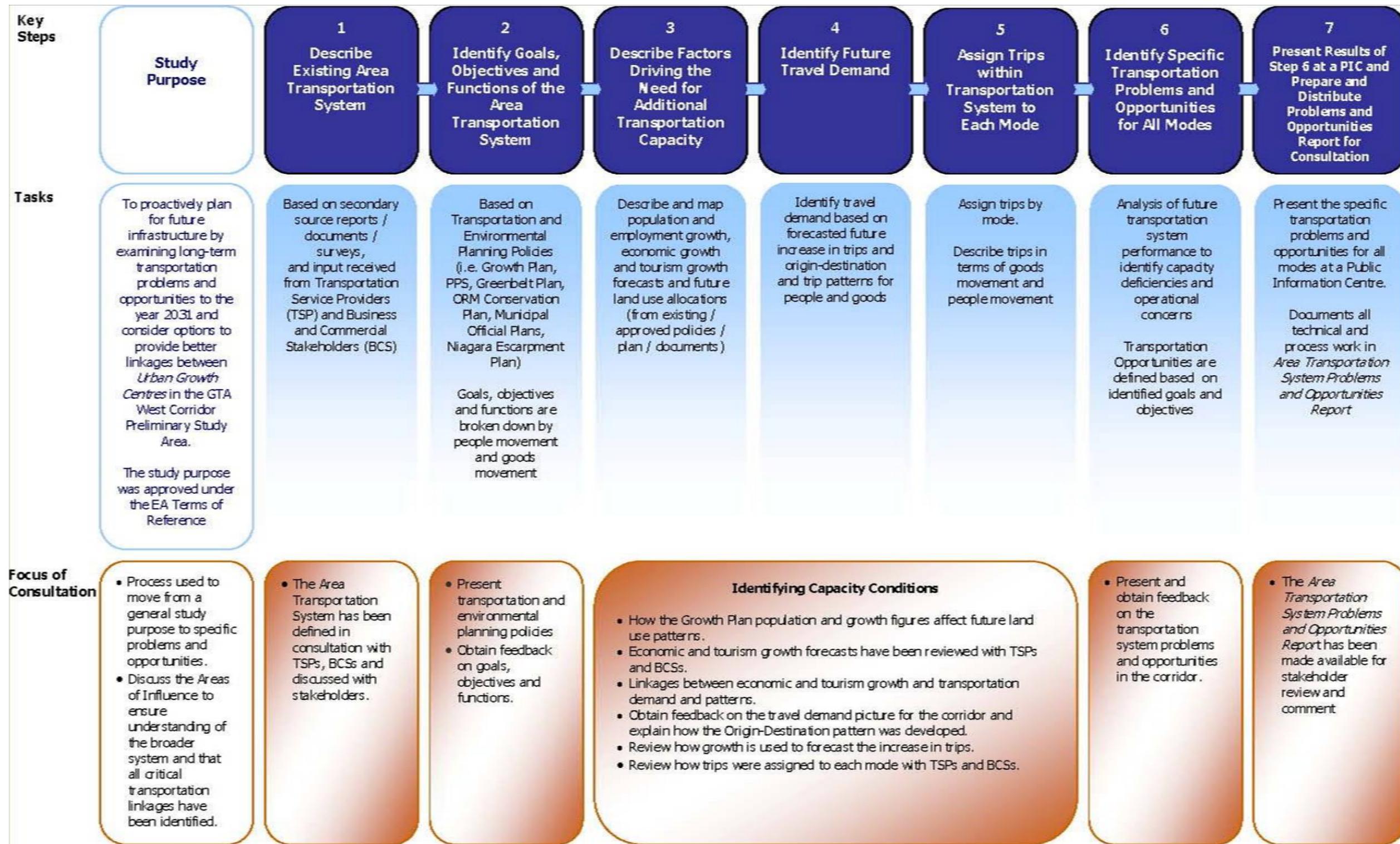
Once the total projected future traffic volumes were identified, the total number of trips were assigned and distributed to each different transportation mode such as highway, transit, freight rail, etc.

**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:

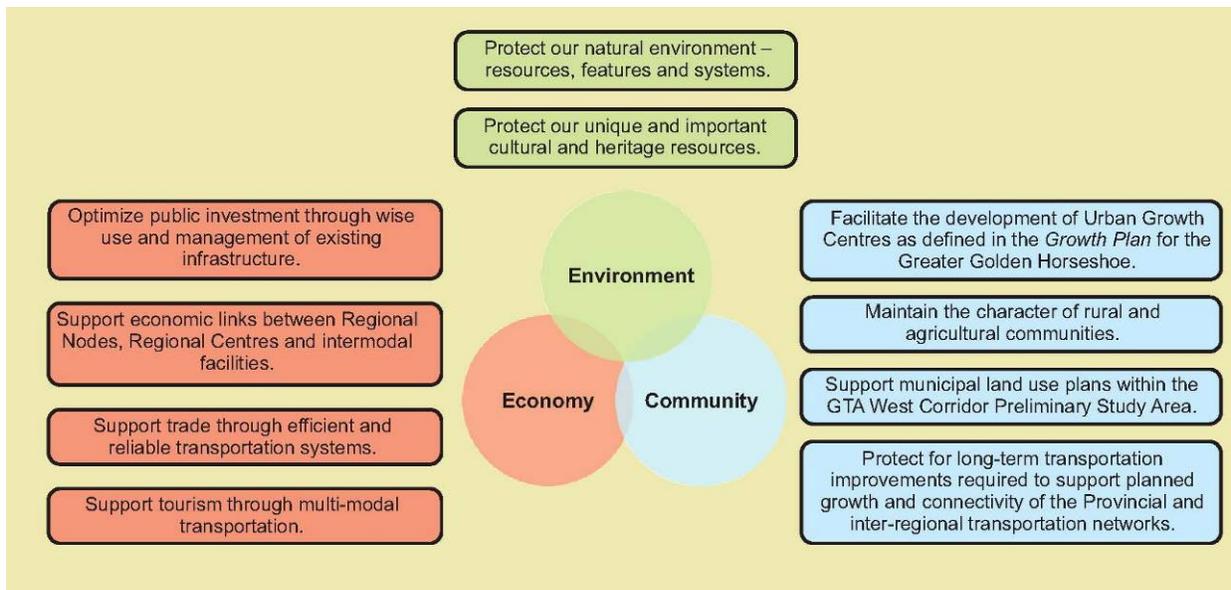
- They provide guidance to the Study Team so that the decisions made throughout every stage of the project are consistent and based on the same fundamental foundation;
- They provide stakeholders with an understanding of what the Study Team is striving to achieve; and
- They provide a basis to develop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

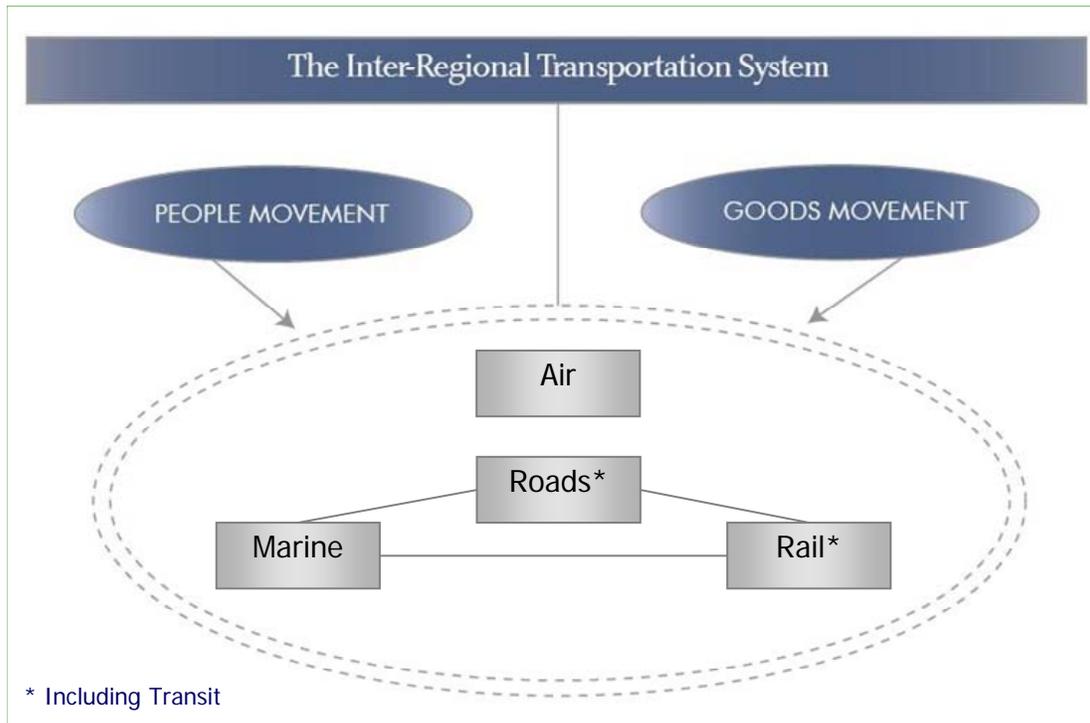
### 2.1 The Movement of People and Goods

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.

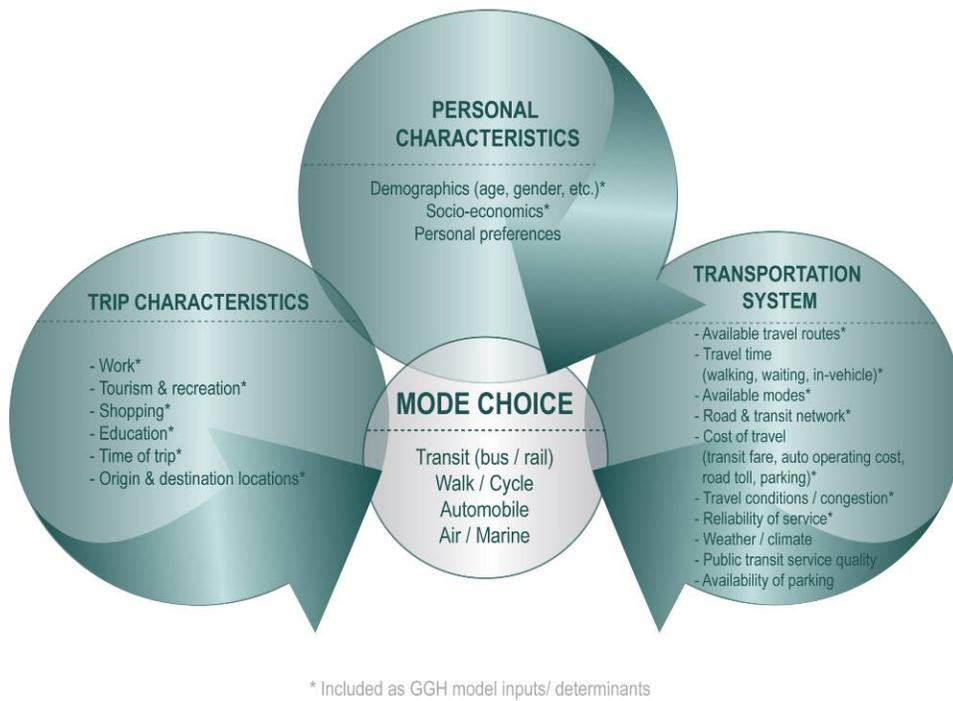
Understanding the relationship among the existing and planned transportation facilities and services is critical in understanding the transportation needs for the future. However, the relationship between these transportation facilities and services and how the trip type and travel mode choice is made 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.

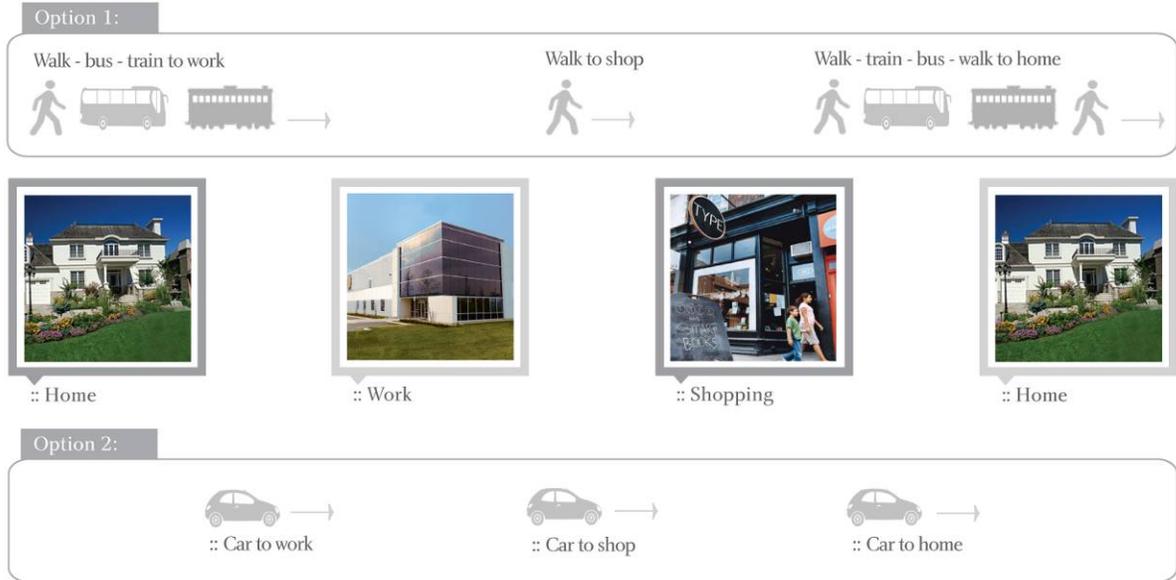
The transportation system is the third area of influence. This includes a range of components, including: available travel routes; travel time (walking, waiting and in-vehicle); cost of travel (transit fare, automobile operating cost, road toll, parking, etc); travel conditions/congestion; public transit 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)<sup>1</sup>, 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.

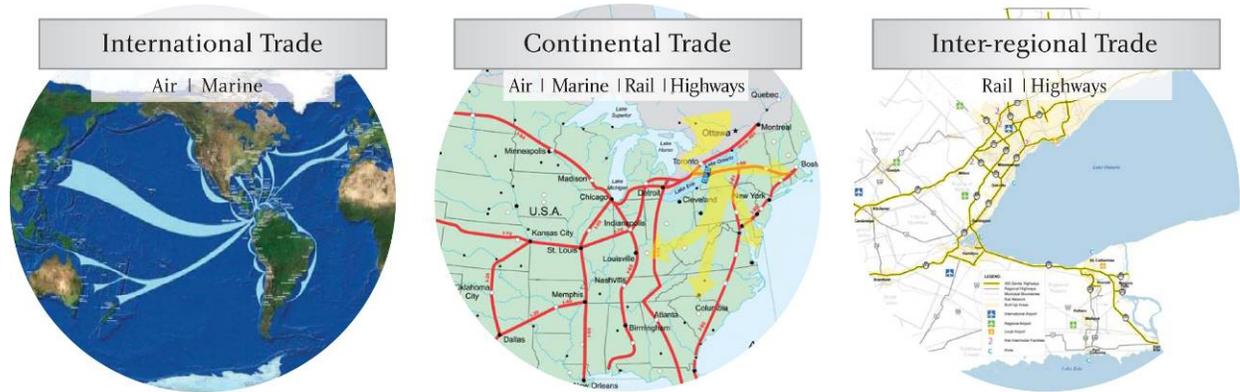
The movement of goods through and within the Study Area is primarily by truck followed by rail service, based on value of goods moved. Other modes of travel (marine and/or air) support international goods transport. Goods movement continues to rely on the road network for at least a portion of the journey,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

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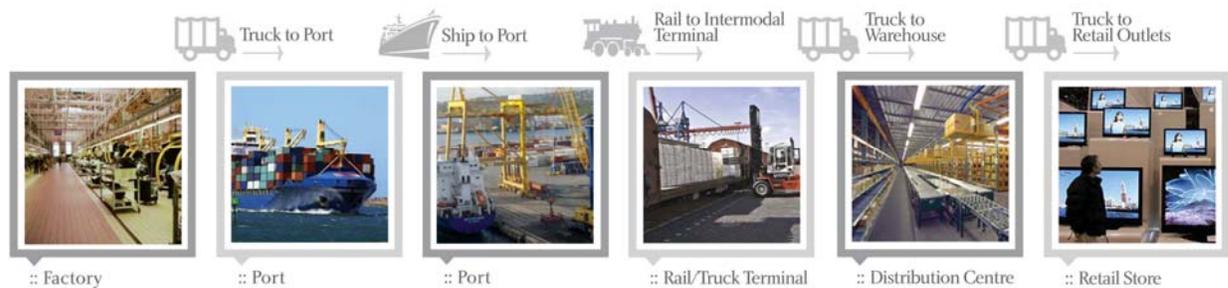
<sup>1</sup> Planning for Employment in the Greater Golden Horseshoe – Background Paper, May 2008

**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.

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

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

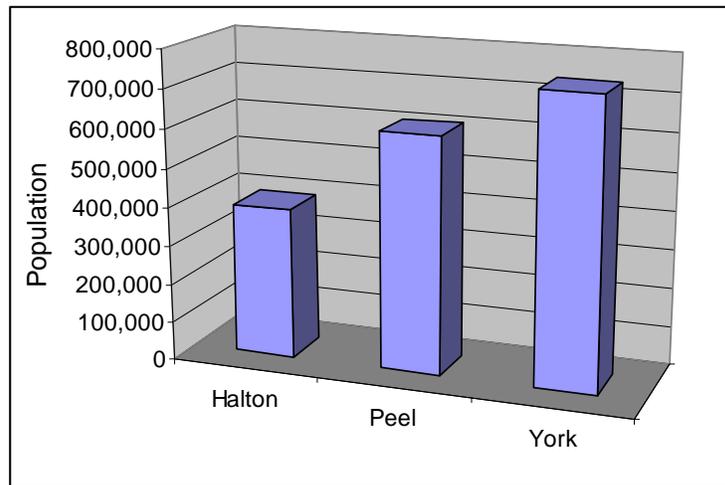
Distribution of Population and Employment for the Greater Golden Horseshoe 2001-2031 (figures in 000s)								
	POPULATION				EMPLOYMENT			
	2001	2011	2021	2031	2001	2011	2021	2031
Region of Durham	530	660	810	960	190	260	310	350
Region of York	760	1,060	1,300	1,500	390	590	700	780
City of Toronto	2,590	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
<b>GTAH TOTAL**</b>	<b>5,810</b>	<b>6,860</b>	<b>7,770</b>	<b>8,620</b>	<b>2,950</b>	<b>3,830</b>	<b>4,040</b>	<b>4,330</b>
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
<b>OUTER RING TOTAL**</b>	<b>1,980</b>	<b>2,230</b>	<b>2,560</b>	<b>2,880</b>	<b>870</b>	<b>1,010</b>	<b>1,130</b>	<b>1,240</b>
<b>TOTAL GGH**</b>	<b>7,790</b>	<b>9,090</b>	<b>10,330</b>	<b>11,500</b>	<b>3,810</b>	<b>4,640</b>	<b>5,170</b>	<b>5,560</b>

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.

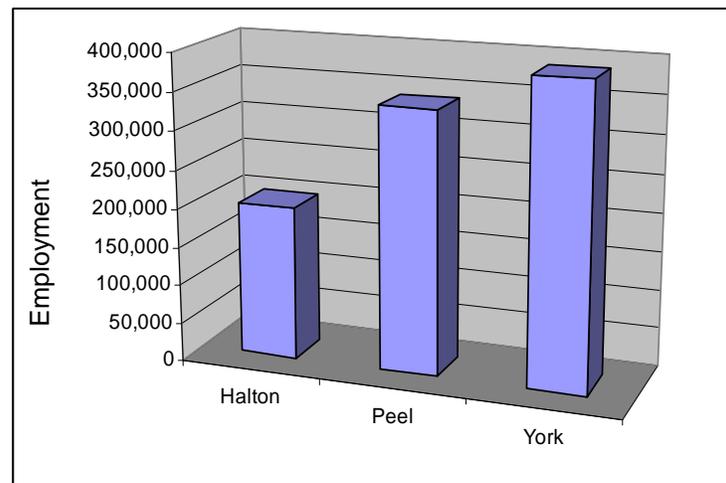
**Exhibit 2-7** and **Exhibit 2-8** illustrate the overall population and employment growth projections in the Study Area from 2001 to 2031 for the three upper tier municipalities, giving a sense of the scale of change in different portions of the corridor. The distribution reflects both current and 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

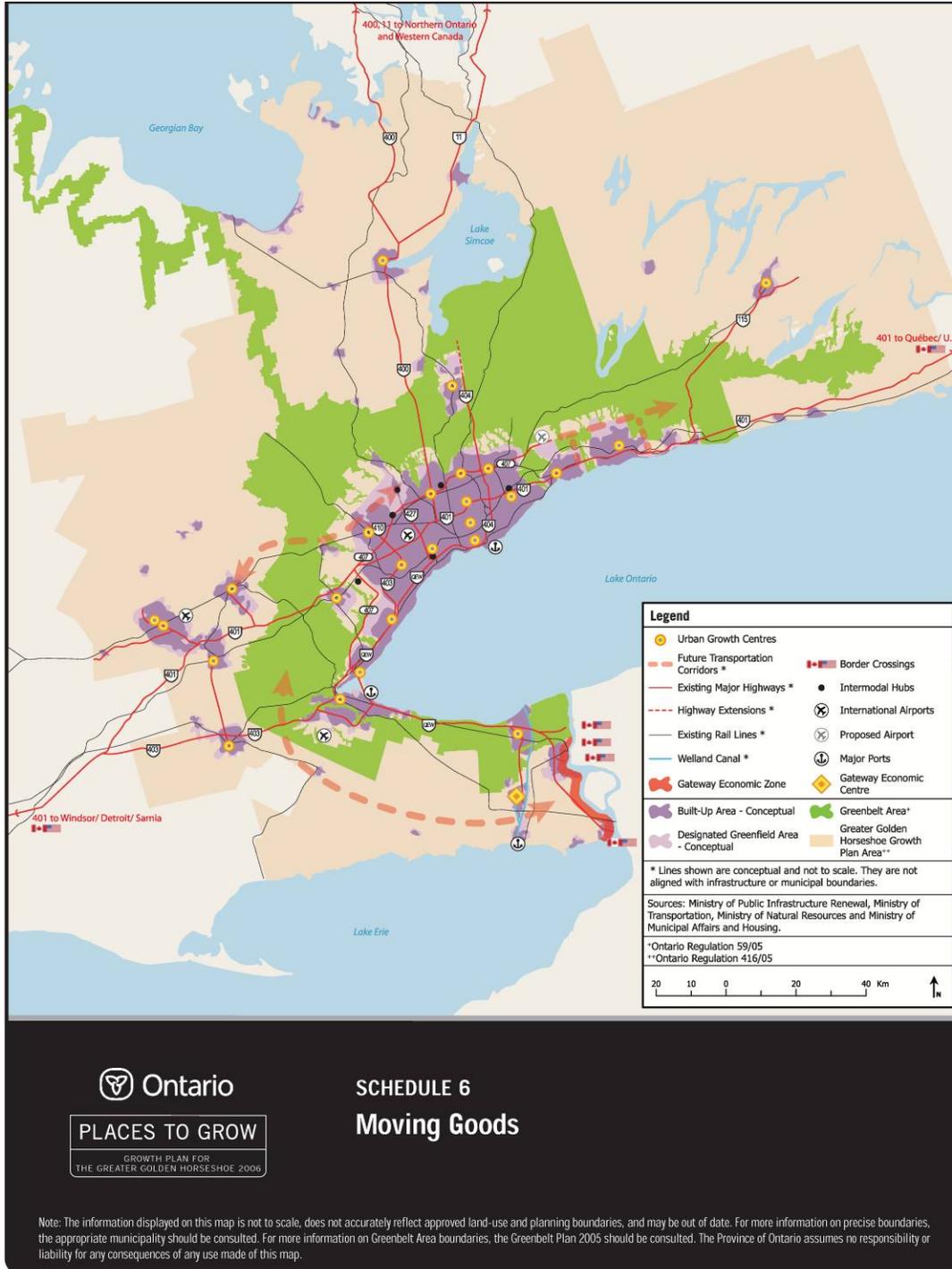
development) that will be the focus for intensification and be planned to achieve certain density targets.

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 19<sup>th</sup> Avenue; VIVA Yonge Street- 19<sup>th</sup> 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.

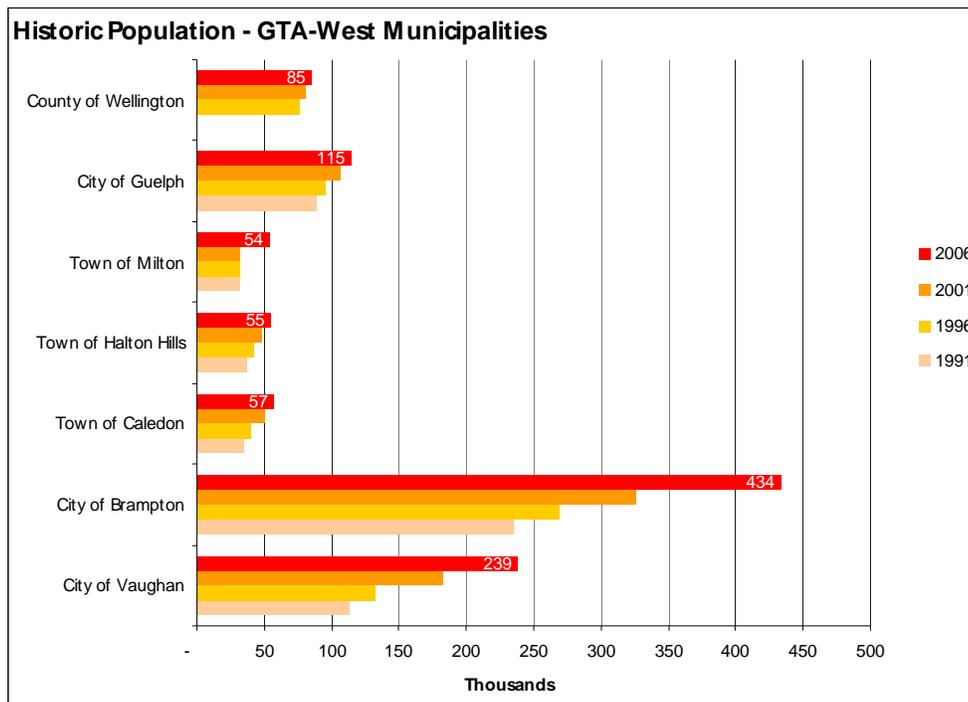
### **2.4.1 Historical Population and Employment Trends**

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.

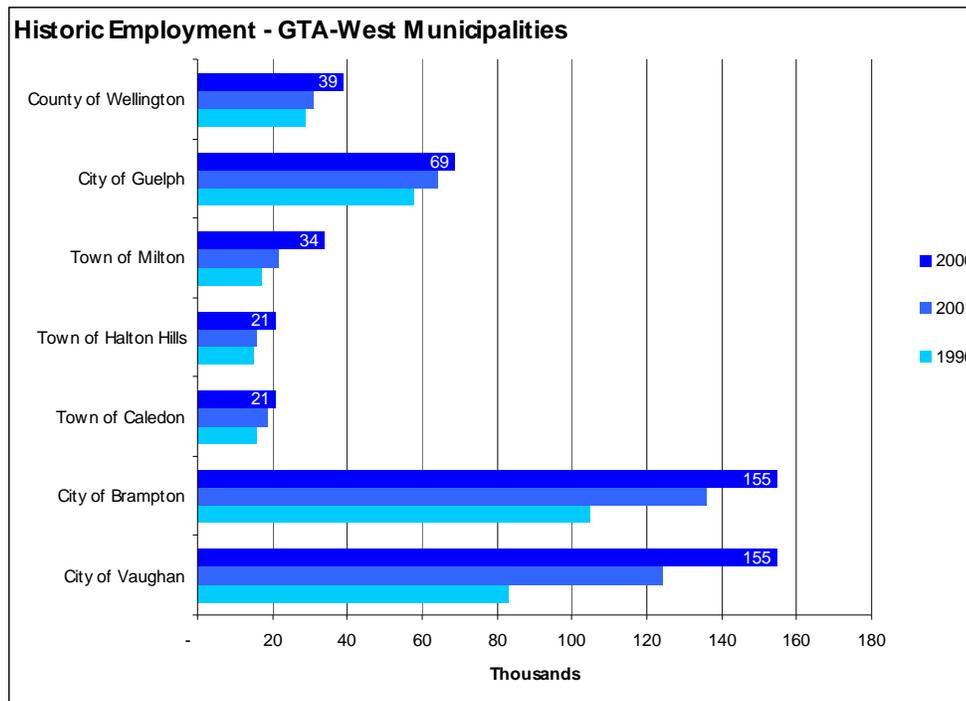
**Exhibit 2-10: Historical Population – GTA West Municipalities**



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		
<b>Total GGH</b>	<b>7,790</b>	<b>11,500</b>	<b>48%</b>	<b>3,810</b>	<b>5,560</b>	<b>46%</b>

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**).

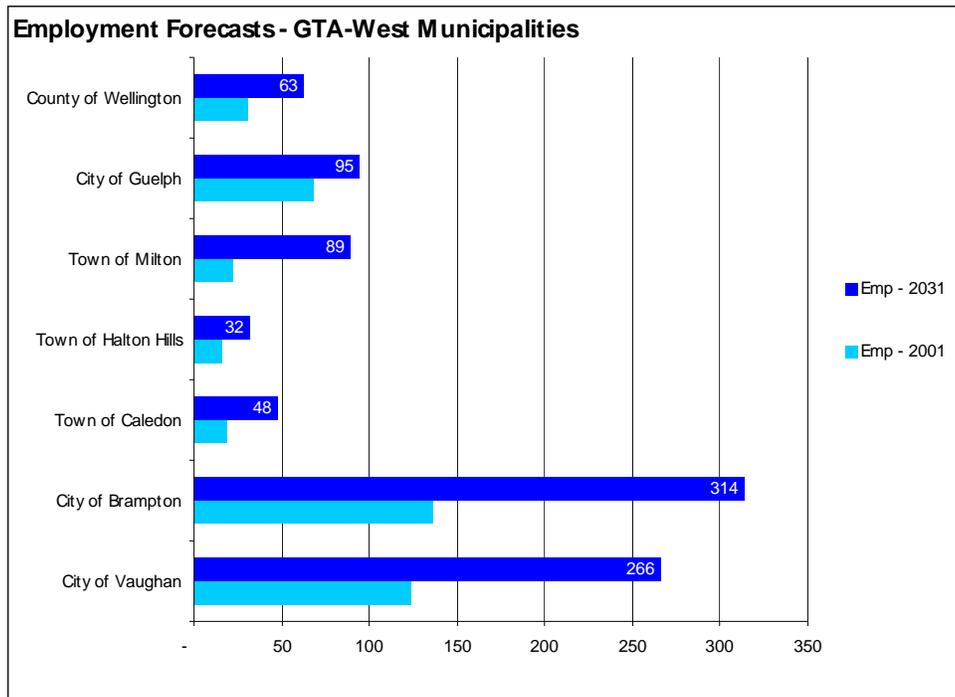
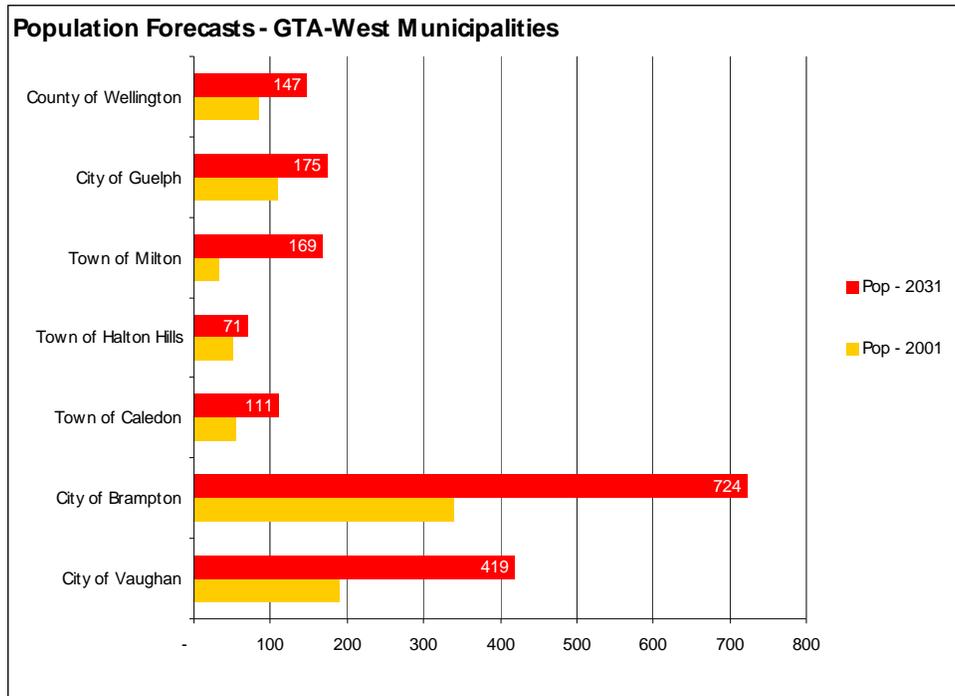
**Exhibit 2-13: Population and Employment Growth Allocation in GTA West Municipalities**

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
<b>GTAW Total</b>	<b>862</b>	<b>1,816</b>	<b>416</b>	<b>907</b>

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 GDP<sup>2</sup>. 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;

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<sup>2</sup> 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 11<sup>th</sup>, 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 11<sup>th</sup>, 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 11<sup>th</sup> 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 11<sup>th</sup> 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.”<sup>3</sup> 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.

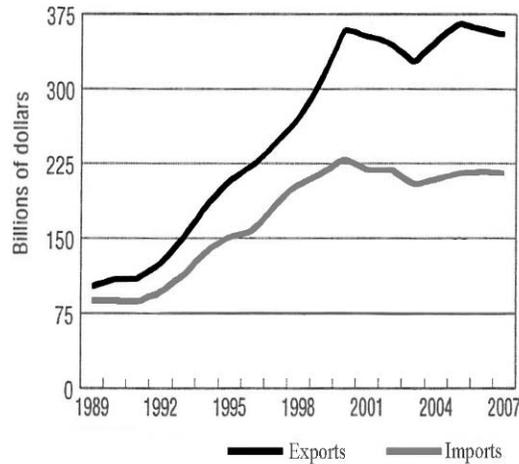
#### **2.4.4 International Trade**

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.

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<sup>3</sup> MKI, Government of Canada Key Economic Events  
([http://www.canadianeconomy.gc.ca/english/economy/1965canada\\_us\\_auto\\_pact.html](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 2007<sup>4</sup>) - 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)<sup>5</sup> 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

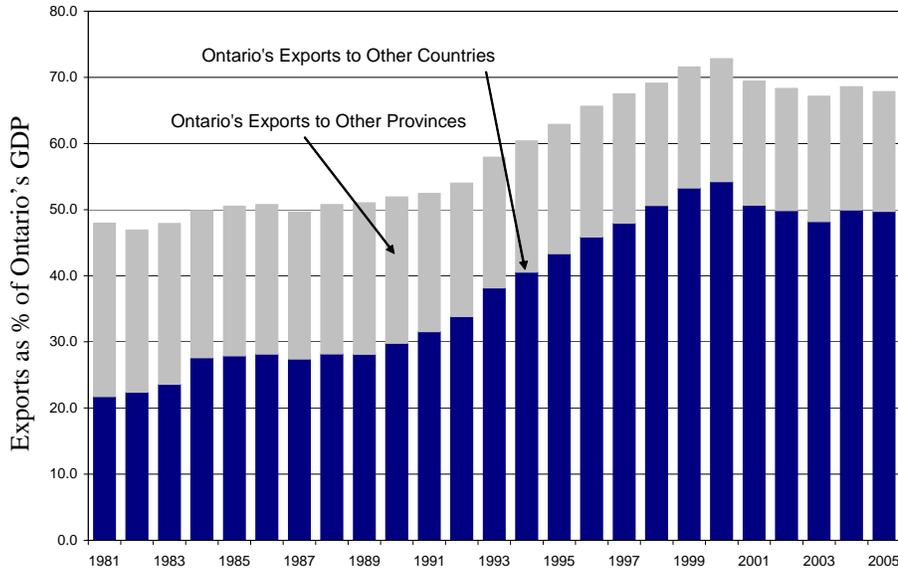
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<sup>4</sup> MKI, Ministry of Economic Development and Trade, trade statistics (<http://www.ontarioexports.com/resources/GeneralInfo.asp>)

<sup>5</sup> 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.

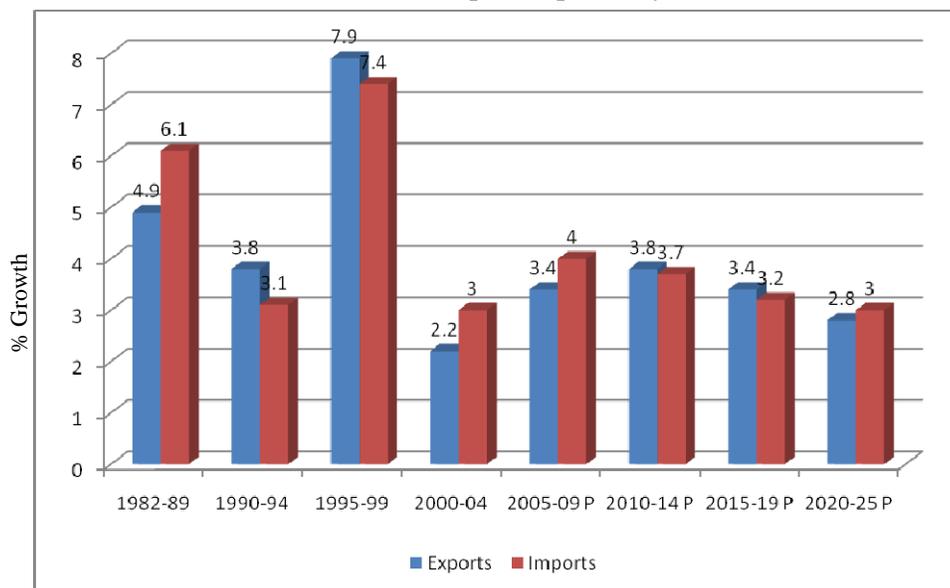
**Exhibit 2-16: Ontario's Exports to Other provinces and Other Countries**



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 2007<sup>6</sup>.

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

<b>Canada Trade with U.S. States</b>	<b>Exports to U.S. States (\$ billions)</b>	<b>Imports to Canada (\$ billions)</b>
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](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 exports<sup>7</sup>. 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

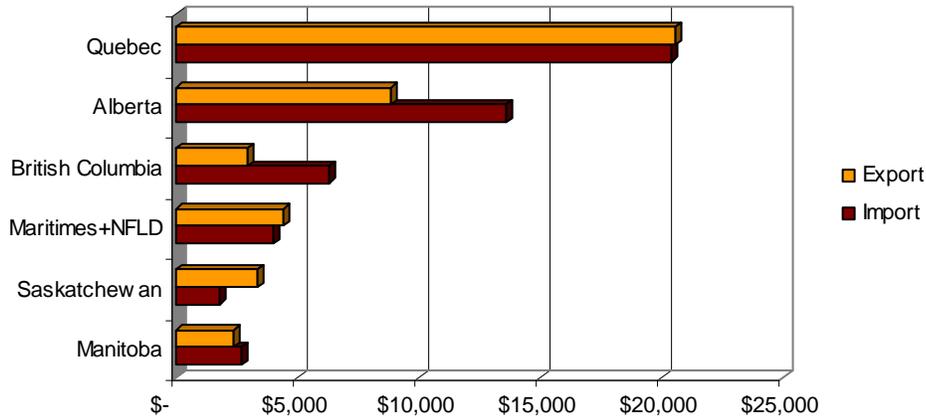
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<sup>6</sup> Foreign Affairs and International Trade Canada (<http://www.international.gc.ca/commerce/strategy-strategie/r1.aspx>)

<sup>7</sup> MKI, Statistics Canada, National Accounts System, Input-Output database

grew by 6.0% over the same time period<sup>8</sup>. 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 products<sup>9</sup>.

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%)<sup>10</sup>. 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 Saskatchewan<sup>11</sup>). However, the recent recession has impacted the province and domestic demand is currently slumping more severely than in other provinces.

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<sup>8</sup> MKI, Transport Canada, *Transportation in Canada 2007: An Overview*, May 2008

<sup>9</sup> MKI, Transport Canada, *Transportation in Canada 2007: An Overview*, May 2008

<sup>10</sup> MKI, Statistics Canada, National Accounts System, Input-Output database

<sup>11</sup> 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).

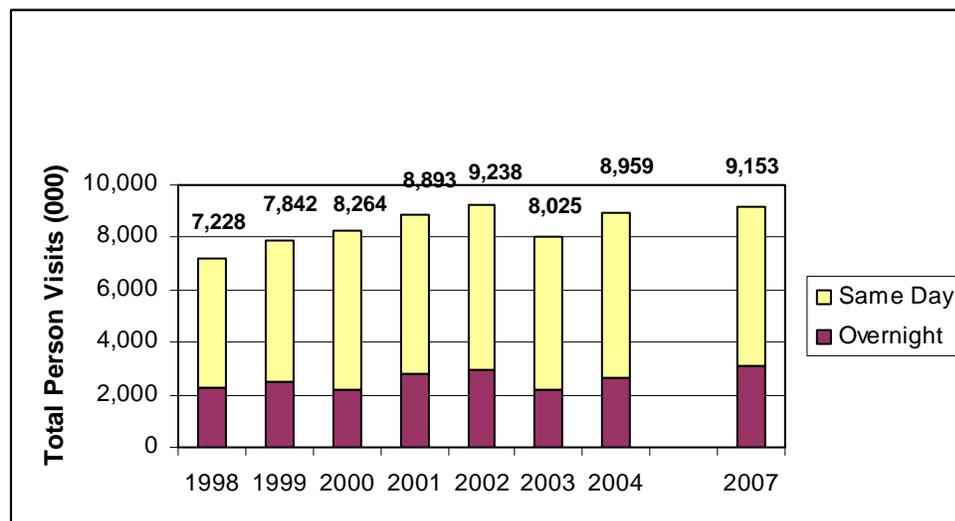
The following sections provide an overview of tourism in the GTA West Study Area. Analysis by PKF Consulting is based on available information from the Statistics Canada's Travel Survey of Residents in Canada (TSRC) and the International Travel Surveys (ITS). This analysis uses the following Statistics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

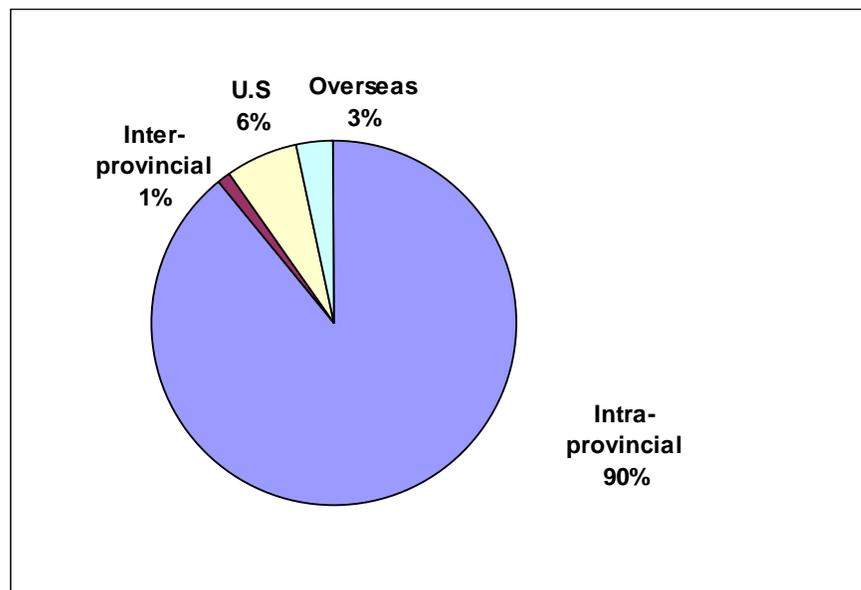


Source: PKF Consulting, CTS/ITS 1998-2004 TSRC/ITS 2007

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

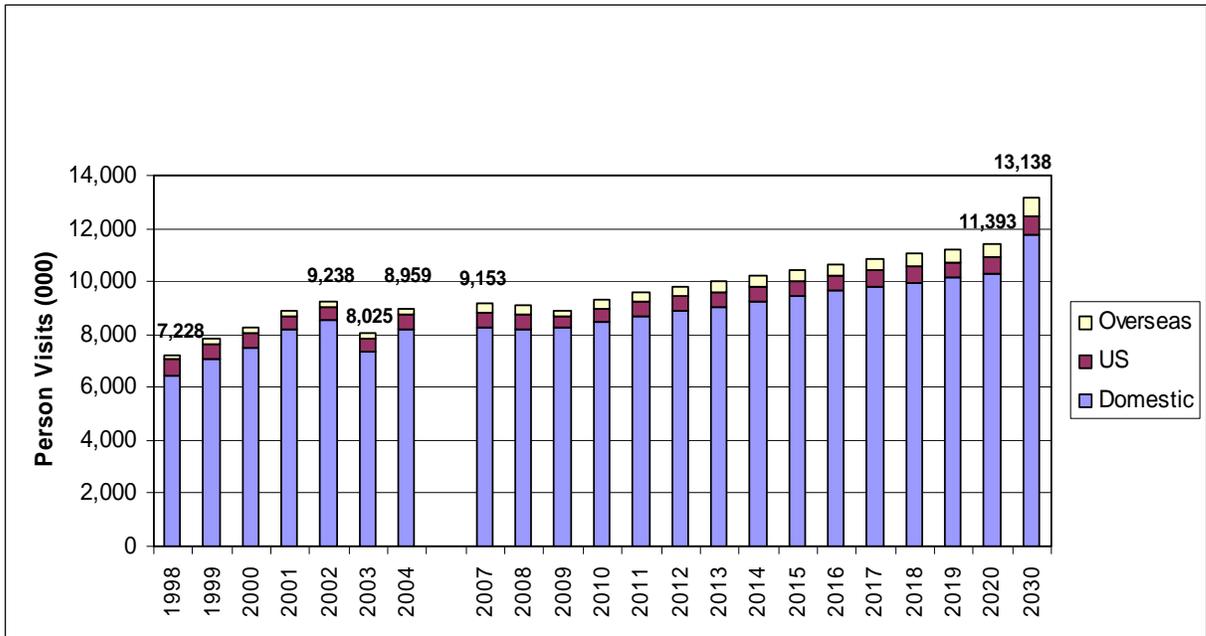
million square feet of destination retail and foodservice, 400-room hotel and a 6,500-seat venue, is expected to be completed by 2015. The Woodbine Entertainment Group is also seeking a joint venture partner for a resort hotel and golf course to be located on-site at the existing Mohawk Racetrack at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

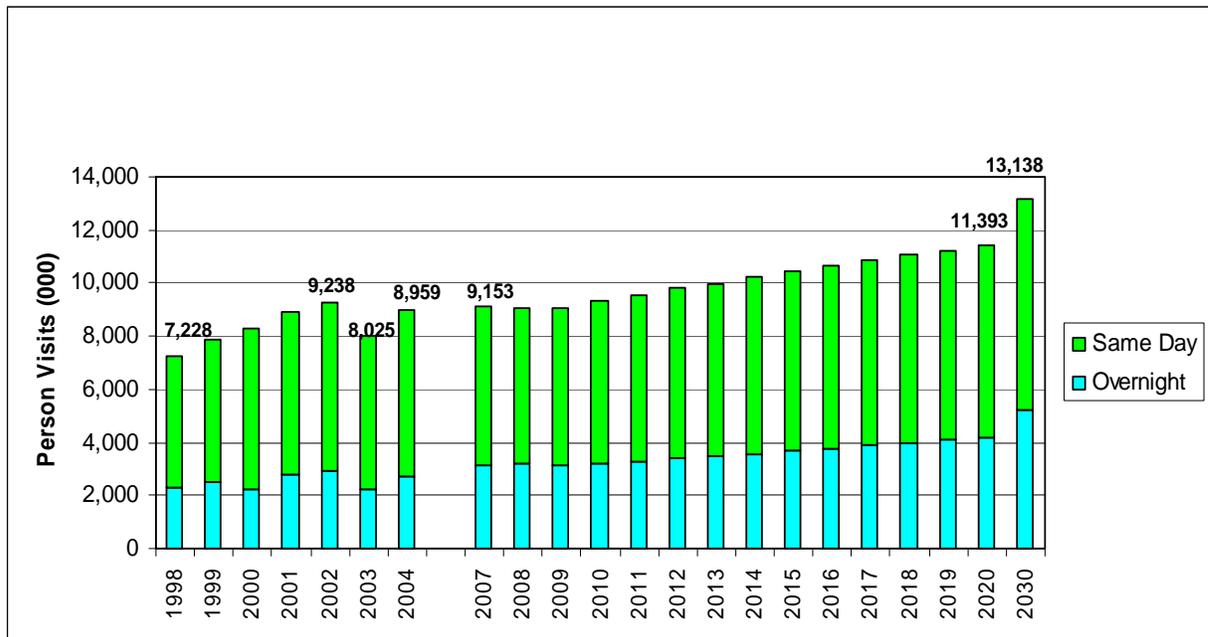
Overall, tourism and recreation trips made by intra-provincial, inter-provincial, U.S. and overseas travellers to the Study Area are expected to increase over the long term by a compound growth rate of 1.5% per year between 2007 and 2030, reaching 13.1 million visitors in 2030. This projected growth 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
<b>GTA West Total</b>	<b>862</b>	<b>1,912</b>	<b>122%</b>	<b>416</b>	<b>896</b>	<b>115%</b>

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
<b>GTA West Total</b>	<b>1,912</b>	<b>1,942</b>	<b>+30</b>	<b>896</b>	<b>943</b>	<b>+47</b>

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**

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

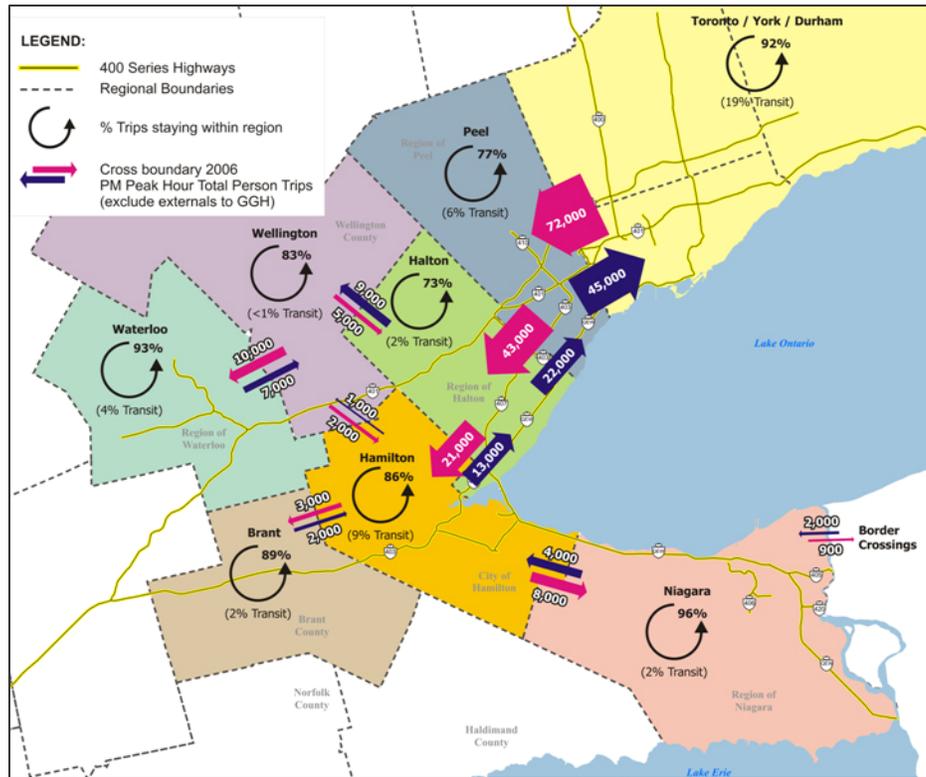
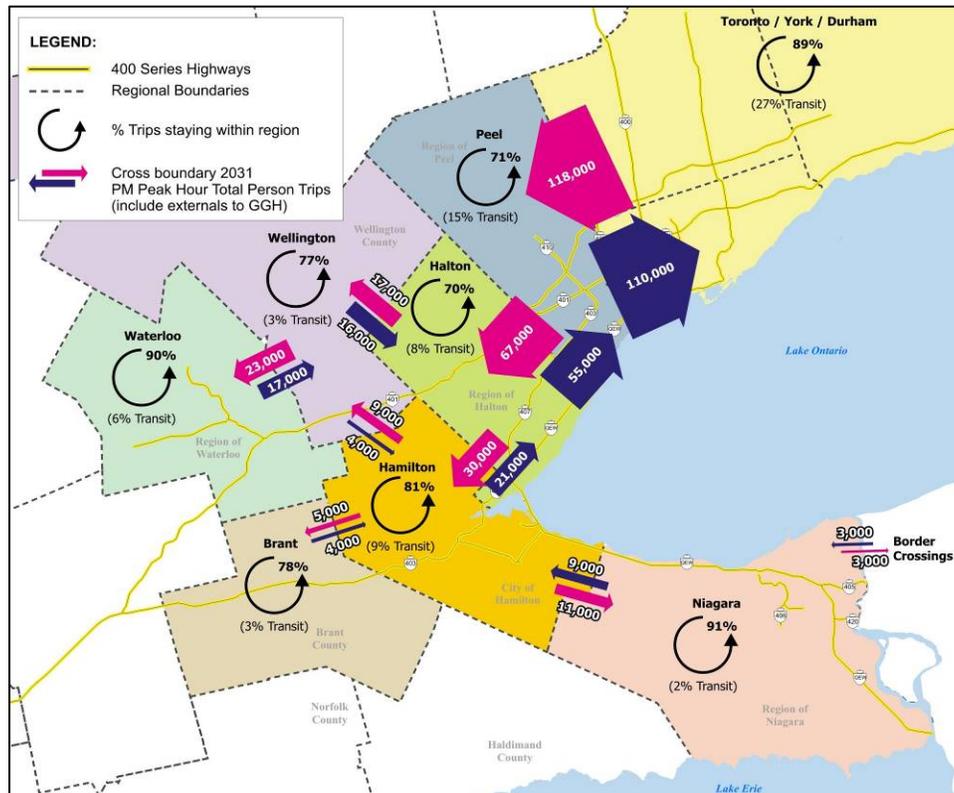


Exhibit 3-8: 2031 PM Peak Hour Total Person Travel Characteristics



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
<b>Highway 401</b>		<b>Highway 403</b>	
- 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%	<b>QEW</b>	
- West of Highway 400	10%	- West of Highway 403	15%
<b>Highway 410</b>		- 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%
<b>Highway 427</b>		- 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
<b>Waterloo to</b>			<b>Toronto PD1 to</b>		
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			
<b>Guelph to</b>			<b>Rest of Toronto to</b>		
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
<b>Milton to</b>			<b>Mississauga to</b>		
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
<b>Halton Hills to</b>			<b>Brampton to</b>		
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
<b>Brampton to</b>			<b>Halton Hills to</b>		
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			
<b>Mississauga to</b>			<b>Milton to</b>		
Brampton	347	2,774	Guelph	0	1
Toronto PD1	6,734	8,275	Waterloo	0	0
Rest of Toronto	2,064	6,596	<b>Guelph to</b>		
			Waterloo	0	38
			<b>Vaughan to</b>		
			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**

<b>Screenline Location</b>	<b>Existing Vehicle Capacity</b>	<b>Existing Vehicle Demand</b>	<b>2031 RTP Vehicle Demand</b>	<b>2031 ALU Vehicle Demand</b>	<b>2031 BAU Vehicle Demand</b>
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**.

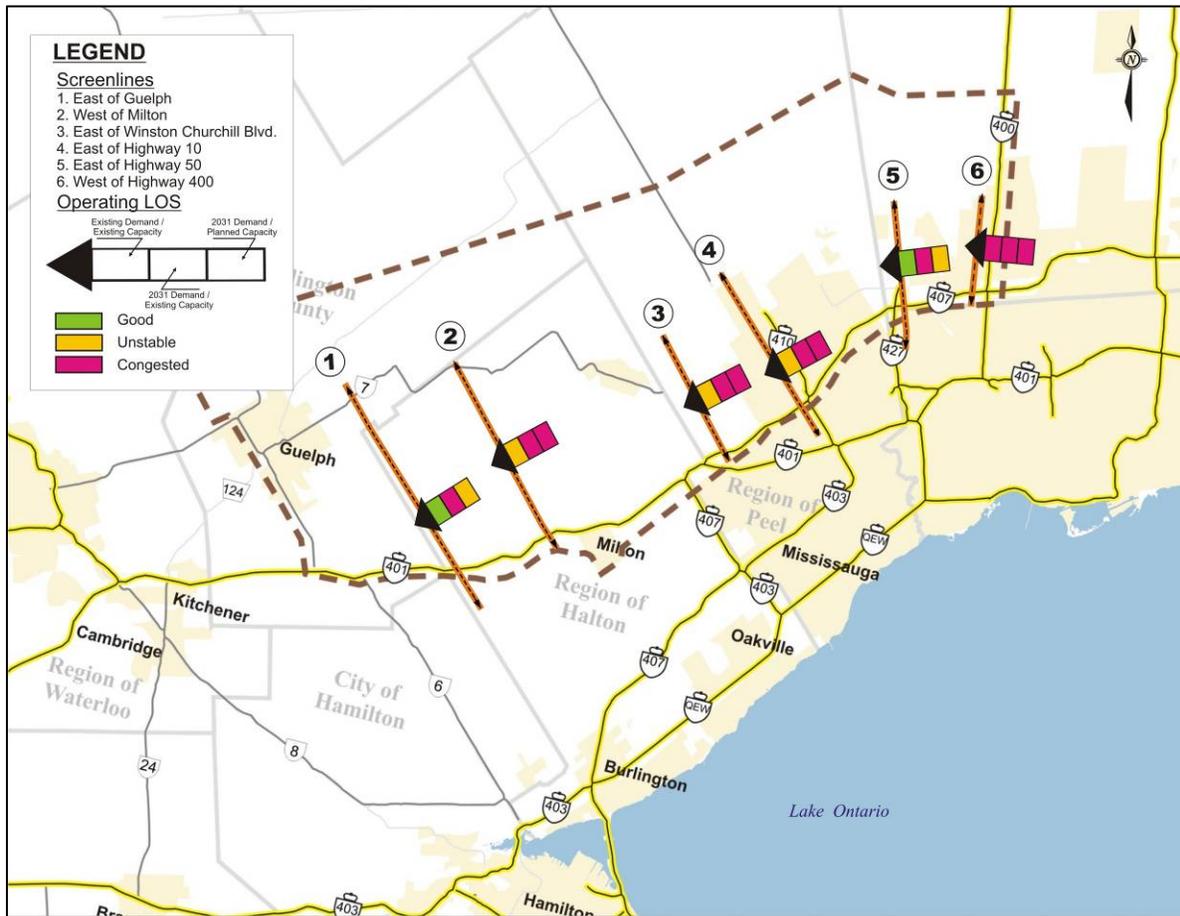
**Exhibit 3-14: 2031 PM Peak Hour Conditions at N-S Corridor Screenlines – Based on Planned Capacity**

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 <sup>th</sup> 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 <sup>th</sup> 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**.

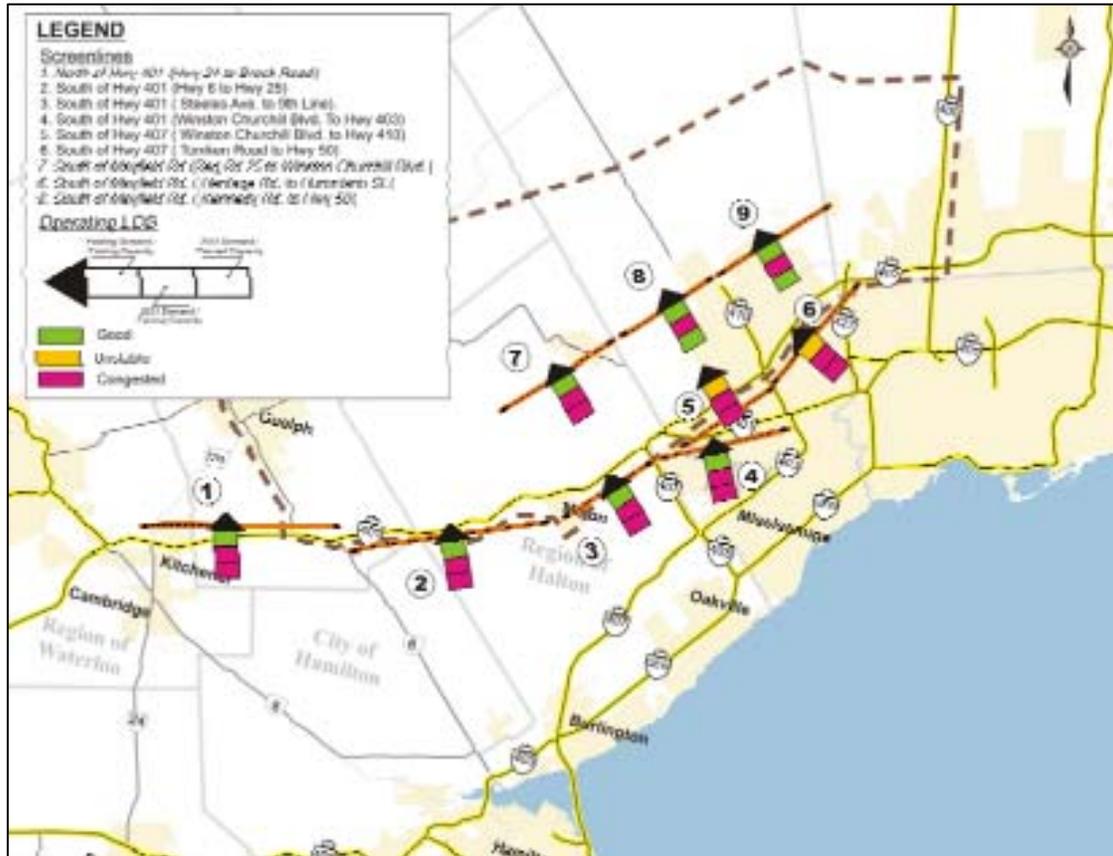
**Exhibit 3-18: Existing and 2031 PM Peak Hour Conditions at E-W Corridor Screenlines – Based on Planned Capacity**

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 <sup>th</sup> 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 exiting 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 9<sup>th</sup> 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.

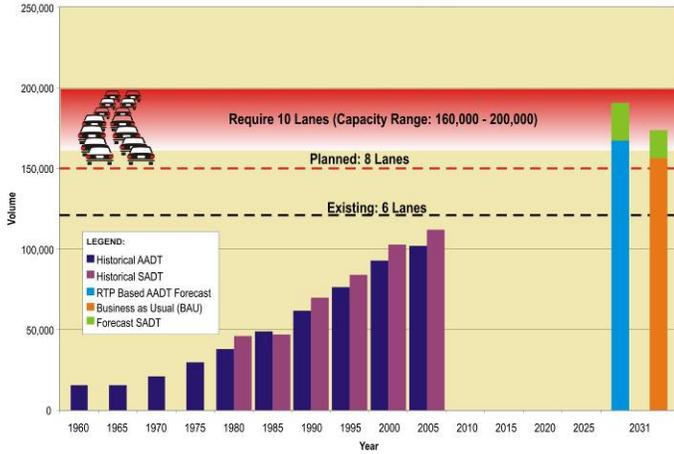
**Exhibit 3-20: Highway 401 Corridor Lane Deficiencies**

<b>Highway</b>	<b>Location</b>	<b>Existing Lanes</b>	<b>Planned Lanes</b>	<b>2031 Demand in Equivalent Number of Lanes</b>	<b>Equivalent Lane Deficiency</b>
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

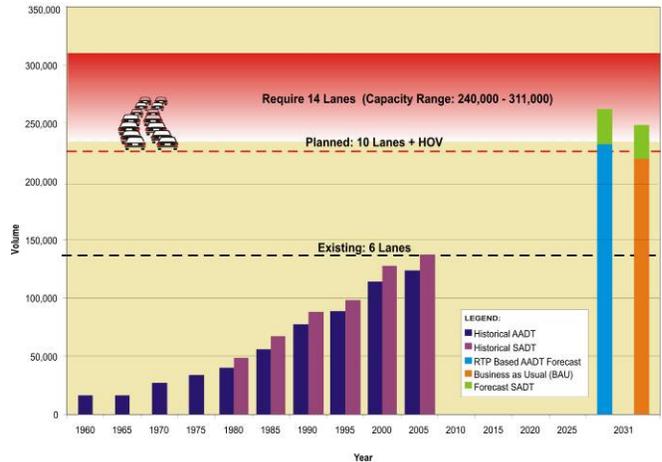
**Exhibit 3-21** illustrates historical and future travel demand along the Highway 401 corridor. Traffic demand along Highway 401 between the City of Guelph and Highway 410 is currently either approaching capacity or operating at capacity. Highway 401 west of Highway 410 currently experiences major delays 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

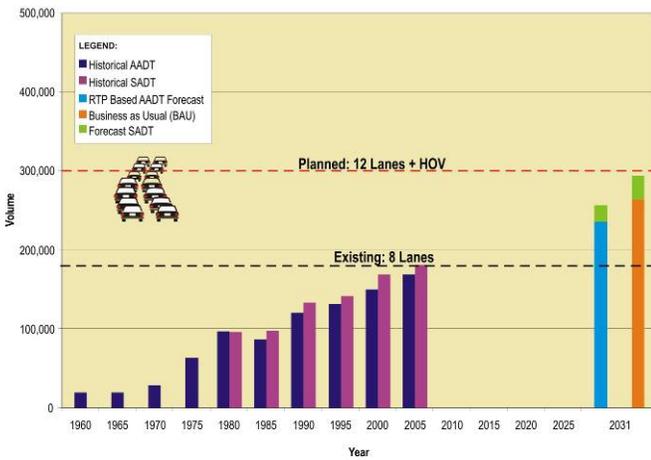
**Highway 401, Guelph to Hwy 25**



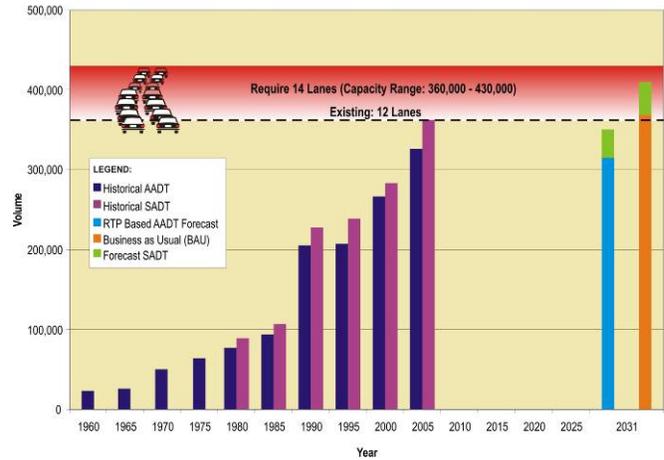
**Highway 401, Hwy 25 to Hwy 407 ETR**



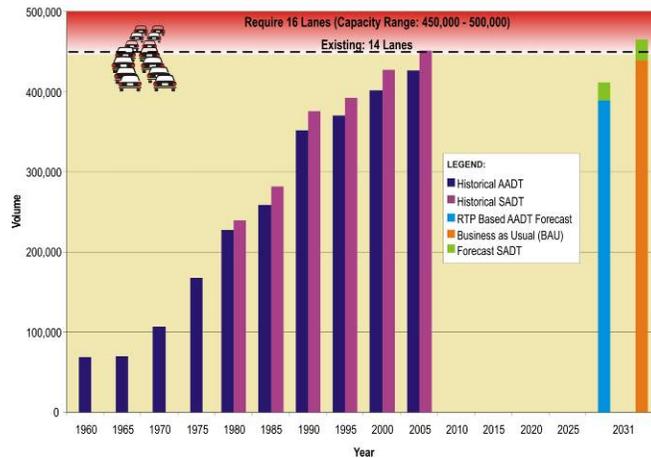
**Highway 401, Hwy 407 ETR to Hwy 410**



**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**.

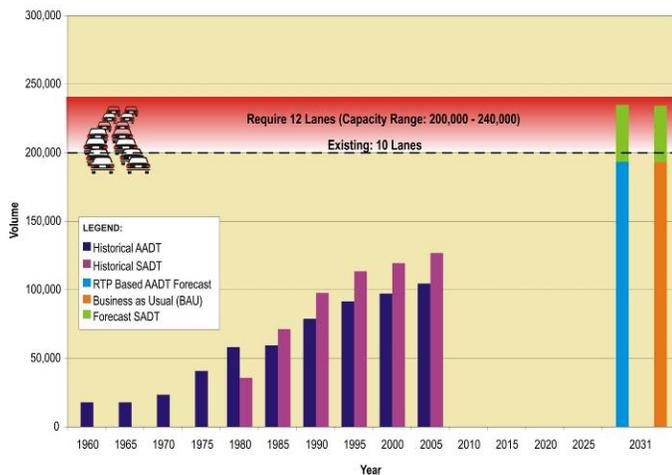
**Exhibit 3-22: Lane Deficiencies along the Highway 400 Corridor**

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

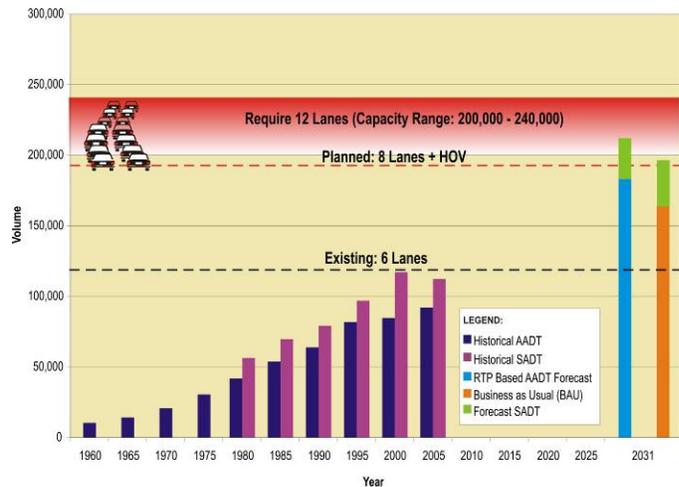
**Exhibit 3-23** illustrates the historical and future travel demand along the Highway 400 corridor. Analysis of the traffic volumes reveal 21% higher demand during the summer travel period compared to the AADT, which is in part reflective of higher tourism and recreation travel to northern Ontario.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

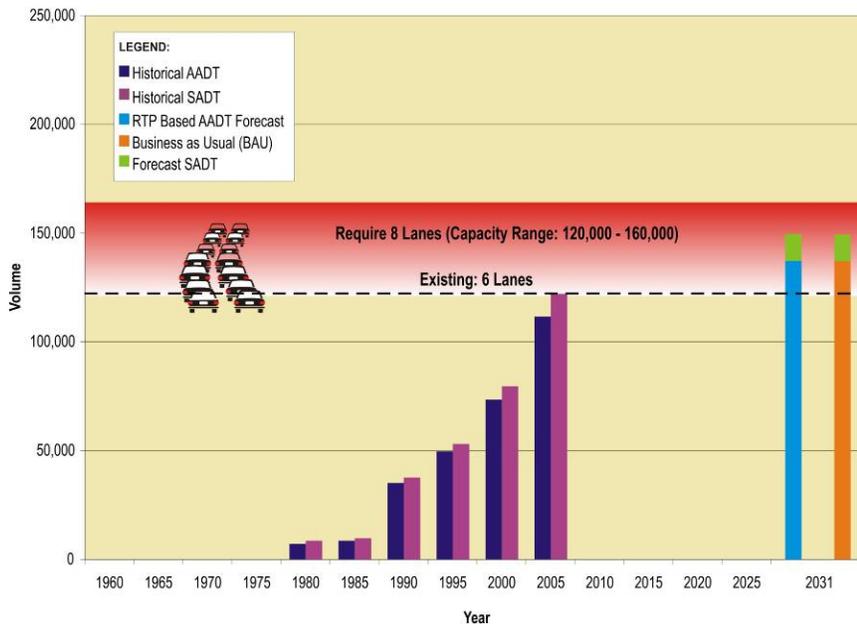
Analysis of traffic volumes on Highway 410 was undertaken south of Bovaird Drive. Historical AADT indicate that the traffic volumes at this location are growing by approximately 2% per year, due in part to substantial population and employment growth within the Region of Peel. Summer traffic volumes 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**



## **4. IDENTIFICATION OF SPECIFIC TRANSPORTATION PROBLEMS WITHIN THE STUDY AREA**

### **4.1 Introduction**

The primary function of the inter-regional transportation system is to facilitate the movement of people and goods within and through the Study Area by all modes. At a baseline level, the road network connects all modes of the transportation system for moving people and goods by private automobiles, commercial vehicles, transit, air, marine and rail services. From earlier sections of this report, it is understood that the transportation system and the movement of people and goods are influenced by policy, land use, economy and tourism and recreation.

Forecasts for the GTA West Study Area show substantial growth to 2031: population and employment are expected to more than double between 2001 and 2031, including growth of more than 1 million people and more than 450,000 jobs.

Accordingly, Study Area travel is expected to increase significantly: PM peak period person trips are forecast to increase by over 170% between 2001 and 2031 (by approximately 700,000 trips), based on Greater Golden Horseshoe (GGH) Model outputs. In addition to the increase in commuting trips, the GGH'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 GGH. Trucks will continue to be the dominant mode for shipping in the Study Area.

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 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 planned inter-regional transit services between communities north and west of Toronto. There are opportunities in this portion of the GTA West 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.

## **4.2 Moving People**

The movement of people in the GTA West Study Area is predominantly comprised of trips for commuting and for tourism and recreation. Although these types of travel have different characteristics and service requirements, 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.

In order to better identify transportation problems and opportunities, the Study Team adopted a two-pronged approach. Firstly, a range of background reports and secondary sources was reviewed to understand the views of others studying this area and the transportation problems and opportunities identified. These include area municipalities' Official Plans, Transportation and Transit Master Plans, and Metrolinx reports. Subsequently, the Study Team initiated a thorough consultation with Business and Commercial Stakeholders (BCS) and Transportation Service Providers (TSP), through face-to-face interviews, phone interviews and mail-back questionnaires. These stakeholders represent a range of large corporations, business associations, logistics specialists as well as rail, marine and transit operators. In general, these stakeholders confirmed that a number of transportation problems do currently exist and are likely to continue through the foreseeable future. Further details of stakeholder consultation are provided in **Appendix A**.

### **4.2.1 Commuter – Transit**

The Study Area's planned increase in population and employment, as per the Growth Plan, alongside the significant transit improvements contained in the Metrolinx RTP and GO Transit's Strategic Plan, are expected to result in a substantial number of additional transit trips in 2031. While the automobile is expected to remain the dominant mode of travel, PM peak period transit trips in the GTA West Corridor are forecast to increase by more than 540%, increasing the PM peak period transit mode share from 4% of total trips in 2001 to 9% in 2031.

Inter-regional transit services are generally focused on connecting urban centres and major gateways that are integrated with local transit service or integrated with park-and-ride facilities. A number of bus and rail services operate throughout the GTA West Study Area, including GO Rail, VIA Rail, GO Bus, Greyhound Bus and Coach Canada Bus. The inter-regional buses generally follow the main Study Area highways discussed in Section 4.2.2, and rail services generally operate radially into Toronto's Central Business District (CBD). **Exhibit 4-1** shows the existing regional rapid transit and highway network, including peak and full-day rail services, subways, and bus and light rail rapid transit. Inter-regional transit services within the context of the Study Area are shown in **Exhibit 4-2**, including inter-regional bus services.

The following constraints have been identified relating to the GTA West Study Area transit system: there is limited community-to-community inter-regional transit, with some services such as VIA Rail passing through without serving any communities within the Study Area; municipal transit operators may not provide for convenient transfers between different services; and there is no overarching mechanism to make inter-regional travel seamless. Increased roadway congestion limits the efficiency of bus transit services, and increases travel times and unpredictability.

A substantial effort is being made toward improvements in transit in the GTHA. Initiatives such as MoveOntario 2020, GO Transit's Strategic Plan and Metrolinx's RTP will increase transit provisions and improve existing services. Both GO Transit and Metrolinx are committed to work actively with public and private sector transportation providers to provide co-ordinated, convenient, integrated transit services in the GO Transit service area.

The provincial gas tax program supports such transit improvements through its provision of funding to municipalities for expansion and improvement of transit services. Since 2004, the province has committed over \$1.3 billion in gas tax funding to Ontario municipalities, including more than \$183 million to transit systems in the Regions of York, Peel and Halton, County of Wellington, and City of Guelph. The 2008/2009 program year includes up to \$321 million for transit systems across the province.

The Metrolinx 25-year plan for the regional rapid transit and highway network is presented in **Exhibit 4-3**; it includes plans to more than double the length of rapid transit service within the region, provide increased transit capacity and introduce new bus and rail services. Although these initiatives will improve the transit system, issues such as limits of transit frequency and service areas outside of urban centres, and impacts of road congestion on bus services will still affect its efficiency and ability in providing inter-regional transportation services to commuters. The inter-regional transit market could also be potentially limited due to the Growth Plan objective toward more self-contained urban centres.

Exhibit 4-1: Existing Regional Rapid Transit and Highway Network (Metrolinx)

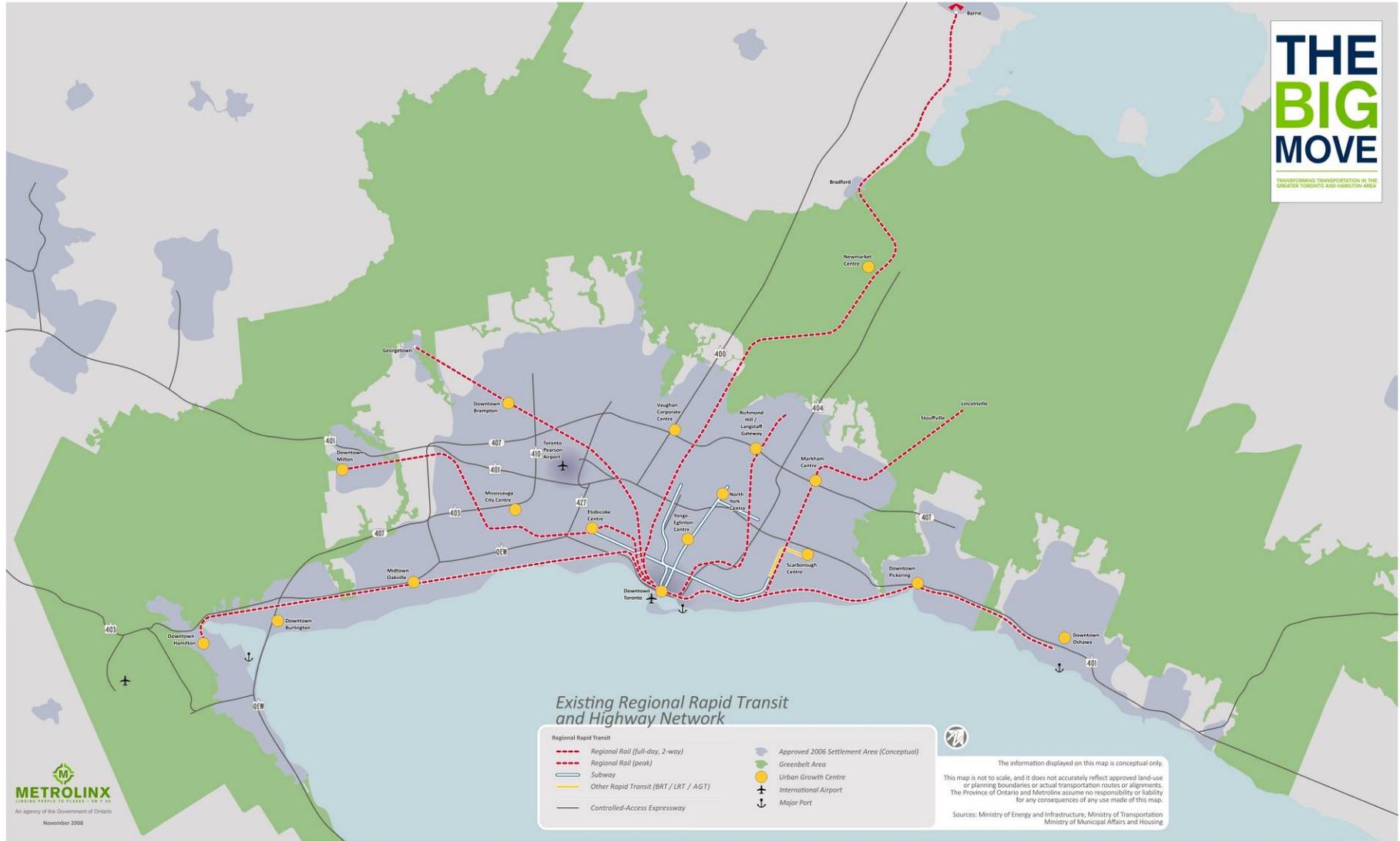


Exhibit 4-2: Existing Inter-Regional Transit Services

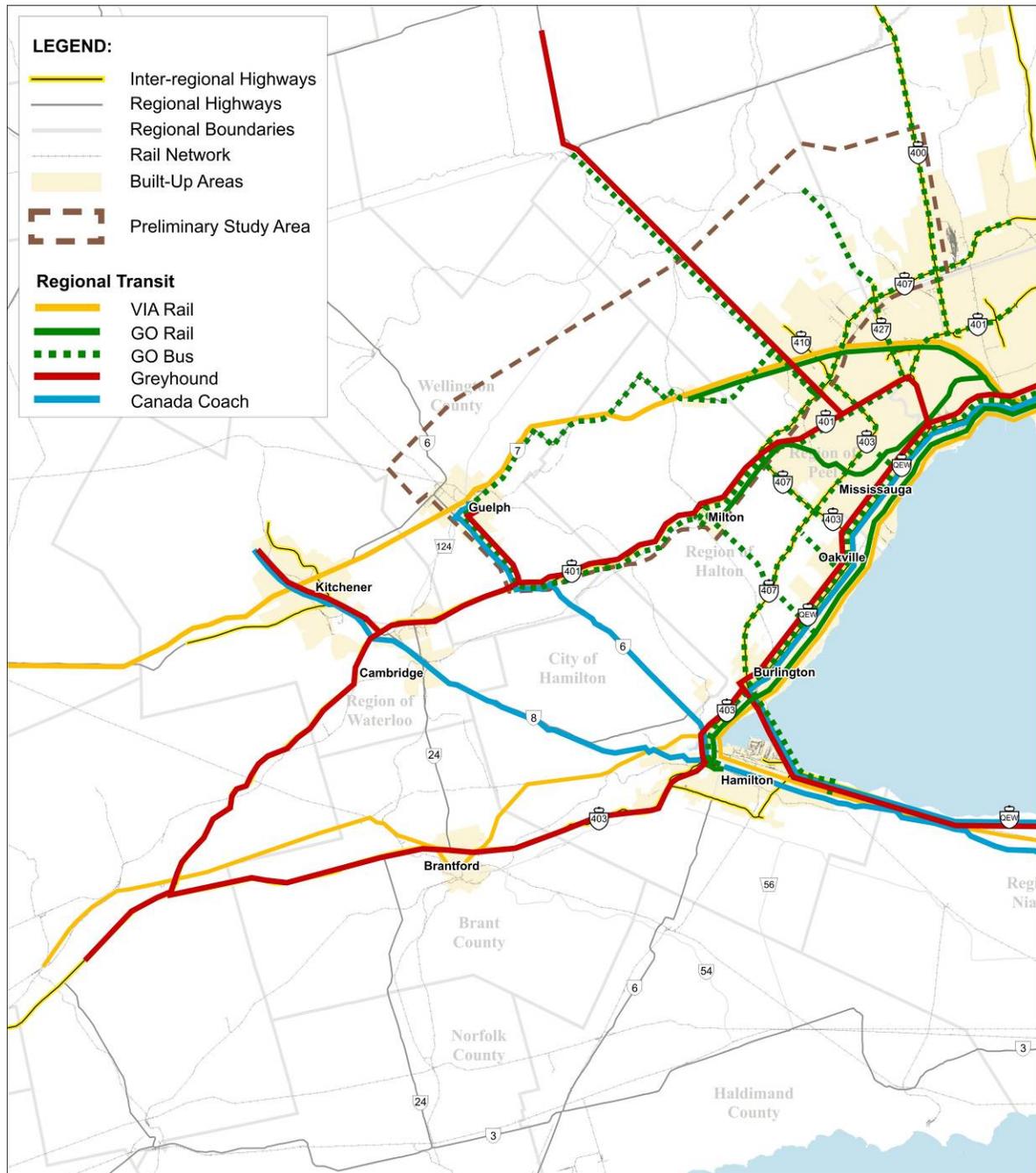
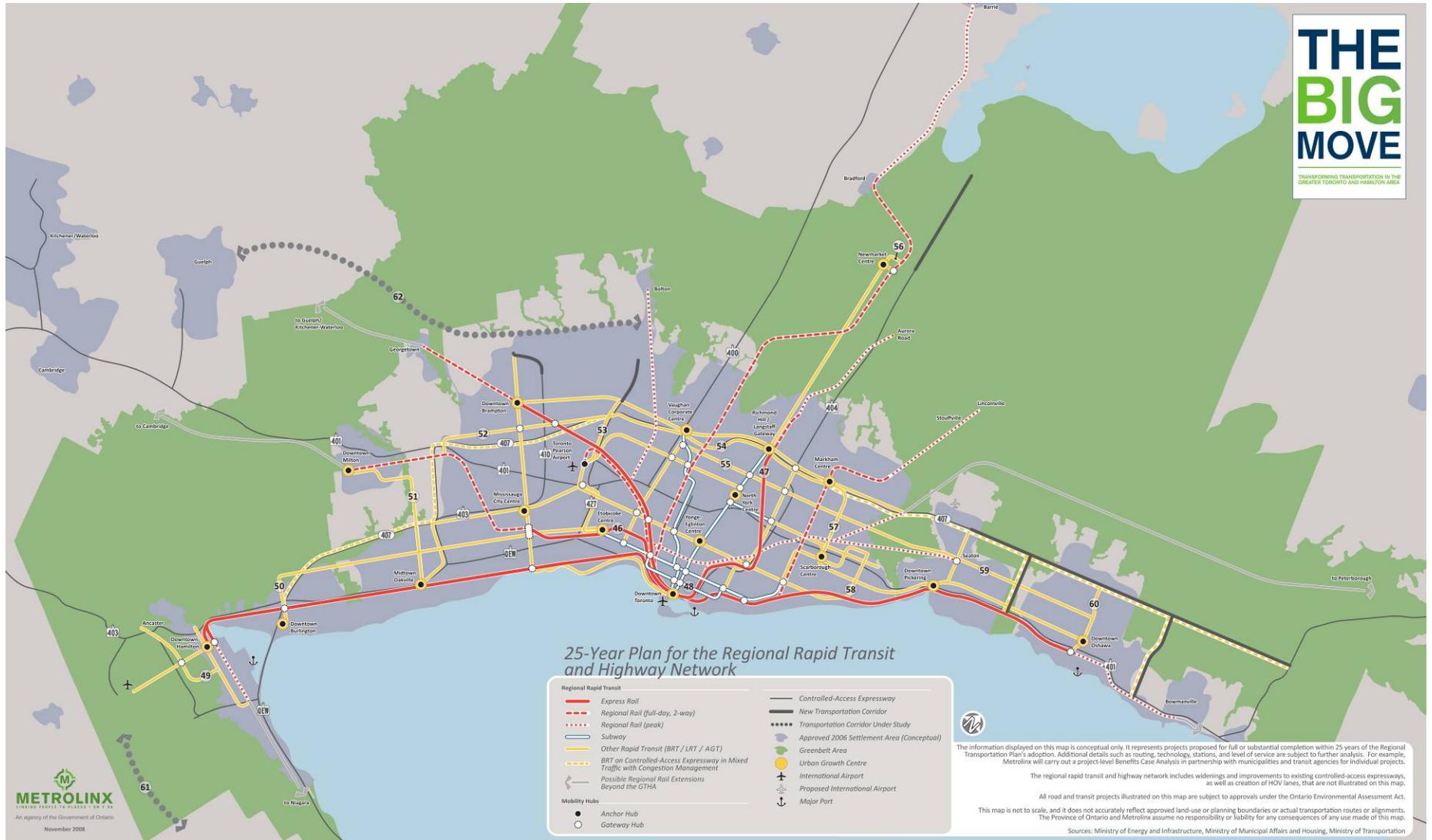


Exhibit 4-3: 25-Year Plan for the Regional Rapid Transit and Highway Network (Metrolinx)



As discussed in **Section 2.2.7** and **Section 2.6.5**, there are a number of GO Transit plans in various stages of planning and development and with varying degrees of committed funding. The initiatives within the GTA West Study Area include the following:

- 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
- GO Rail frequent all day service between Meadowvale and Union Station
- Brampton Acceleride (enhanced bus rapid transit along five arterial corridors)
- Main Street/Hurontario Rapid Transit
- GO Transit BRT linking Oakville, Square One in Mississauga, and Vaughan City Centre
- GO Bus to Kitchener-Waterloo

As discussed, the automobile is currently the predominant mode for commuting travel in the GTA West corridor. It is intended that future transit improvement initiatives will increase the competitiveness of transit compared to the automobile and thereby increase transit's mode share for commuter travel. **Exhibit 4-4** presents the 2031 PM peak period person trips and transit mode shares anticipated to the Study Area's Urban Growth Centres (Guelph, Milton, Brampton and Vaughan). PM peak transit mode shares from Downtown Toronto to these Urban Growth Centres are expected to be significant, upwards of 50%.

Outside of Toronto (Downtown and other areas), there is greater variability in PM peak period inter-regional transit mode shares. Transit mode shares for trips to Guelph range from 0% from Milton and Cambridge to 7% from Brampton. Trips to Milton range from 0% transit use from Guelph and Cambridge to 14% from Markham. To Brampton, transit mode shares are as low as 0% from Cambridge and as high as 12% from Vaughan and Oakville and 15% from Mississauga. Finally, PM peak period transit mode shares to Vaughan are 1% from Cambridge and up to 16% and 23% from Mississauga and Oakville, respectively. Generally speaking, experience in Ontario suggests that the inter-regional transit mode share between communities at the fringe of urban areas will range between 5% and 15%.

Exhibit 4-4: 2031 PM Peak Period Total Person Trips and Transit Mode Share

Origin	2031 P.M. Peak Period Total Person Trips				Modelled 2031 Transit Mode Shares			
	Guelph	Milton	Brampton	Vaughan	Guelph	Milton	Brampton	Vaughan
Guelph	84,800	1,490	920	200	6%	0%	7%	2%
Milton	1,270	43,480	4,080	260	0%	10%	2%	4%
Brampton	1,070	6,270	210,080	11,430	7%	3%	11%	12%
Vaughan	130	420	17,040	90,770	4%	7%	12%	9%
Toronto (Downtown)	520	2,440	16,090	12,480	50%	78%	91%	78%
Toronto (Other)	1,770	5,630	47,920	64,590	7%	9%	34%	19%
Kitchener-Waterloo	4,600	1,010	590	30	2%	1%	13%	5%
Cambridge	3,390	1,290	290	10	0%	0%	0%	1%
Mississauga	1,700	13,510	103,990	8,100	3%	5%	15%	16%
Markham	100	130	1,720	27,520	3%	14%	25%	8%
Oakville	570	16,310	3,300	730	1%	1%	12%	23%

Transit travel times between many Urban Growth Centres should decrease between now and 2031 with the implementation of the 25-year RTP. PM peak period transit travel times from the GTA West corridor's four Urban Growth Centres were assessed for 2001 and 2031. As shown in **Exhibit 4-5**, transit travel times from these Urban Growth Centres are expected to decrease considerably. These model results are a reflection of the significant growth in automobile travel on an increasingly congested road network, and the planned transportation measures throughout the GGH.

The anticipated decrease in transit times assumes the significant infrastructure and service improvements for transit that are included in the RTP. Presently, these linkages and high frequencies are not in place and the measures that will be required to improve transit services and therefore increase transit mode shares are substantial. The province has charged Metrolinx with the responsibility of moving forward with the implementation of the RTP, in consultation with all municipalities in the GTHA.

Exhibit 4-5: Change in PM Peak Period Transit Travel Times to 2031 between Urban Growth Centres

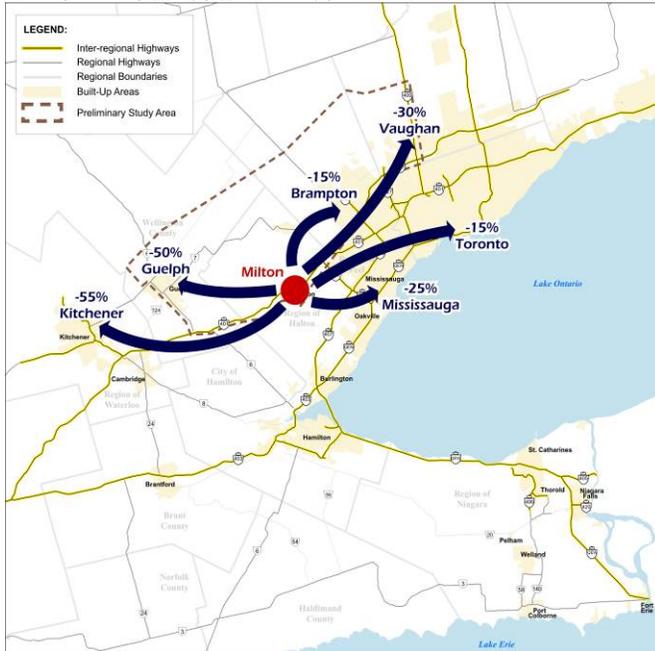
**From Vaughan Corporate Centre**



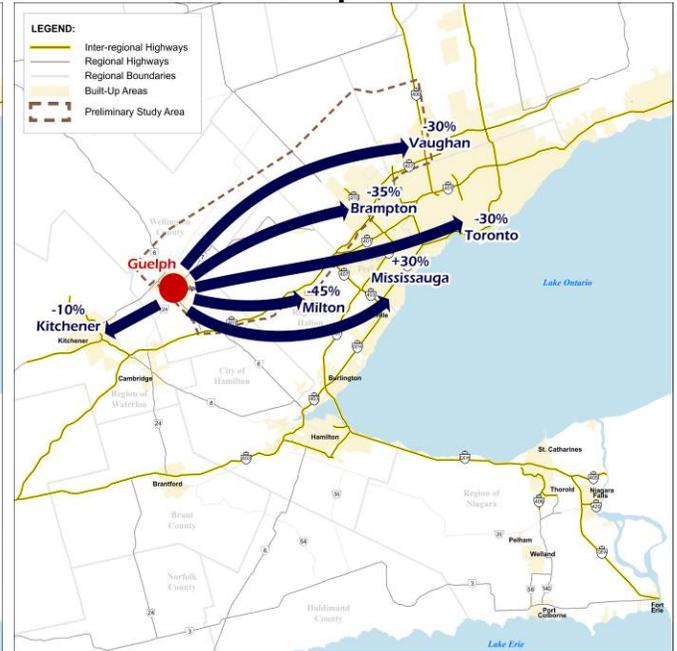
**From Downtown Brampton**



**From Downtown Milton**



**From Downtown Guelph**



<p>Analysis conducted for the current study, supported by background reports and findings from stakeholder consultation, identifies future problems on the inter-regional commuter transit network. There are four main future problems associated with commuting by the inter-regional transit system:</p>	
<p><b>Limited integration</b> between local and inter-regional transit, particularly beyond corridors served by GO Transit, reduces transit's attractiveness to commuters and its competitiveness compared to the automobile</p>	<ul style="list-style-type: none"> <li>• The lack of integration results from:                             <ul style="list-style-type: none"> <li>• Limited connections between local transit and inter-regional transit</li> <li>• Incompatible fare structure and payment systems</li> <li>• Differing timetables and hours of operation</li> <li>• Inadequate waiting/transfer areas and amenities</li> </ul> </li> </ul>
<p><b>Limited community to community transit service</b> can result in extra transfers between services, decreasing convenience and increasing travel times</p>	<ul style="list-style-type: none"> <li>• Transit services are generally radially oriented, providing connections to Toronto</li> <li>• Even with the planned connections, transit between UGCs such as Milton-Brampton and Milton-Guelph is more limited and indirect, requiring transfers and circuitous routes</li> <li>• 2031 PM transit mode shares indicate the low usage expected for inter-regional trips between UGCs:                             <ul style="list-style-type: none"> <li>• Guelph-Milton – 0%</li> <li>• Guelph-Brampton – 7%</li> <li>• Guelph-Vaughan – 2-4%</li> <li>• Milton-Brampton – 2-3%</li> <li>• Milton-Vaughan – 4-7%</li> <li>• Brampton-Vaughan – 11-12%</li> </ul> </li> </ul>
<p><b>Passenger rail services can conflict with freight</b> for use of rail capacity</p>	<ul style="list-style-type: none"> <li>• 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</li> </ul>
<p><b>Buses are impacted by road congestion</b>, increasing unreliability and travel times</p>	<ul style="list-style-type: none"> <li>• Issues of congestion, increasing travel time, and unreliability due to non-recurring incidents limit the efficiency and attractiveness of bus services operating in mixed traffic</li> </ul>

#### 4.2.2 Commuter – Automobile

The substantial growth in population and employment in the Study Area, as per the Growth Plan, is expected to result in an increase in PM peak period automobile trips of

approximately 140% between 2001 and 2031. While the automobile is expected to remain the transportation mode of choice in the GTA West Corridor, its PM peak period mode share is anticipated to decrease from approximately 79% in 2001 to 70% in 2031, largely due to the substantial transit improvements planned for the Greater Golden Horseshoe (GGH).

Mode choice for commuter travel depends on a number of factors, including trip purpose, origins and destinations of trips and available network connections, as discussed in **Section 2.1**. 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.

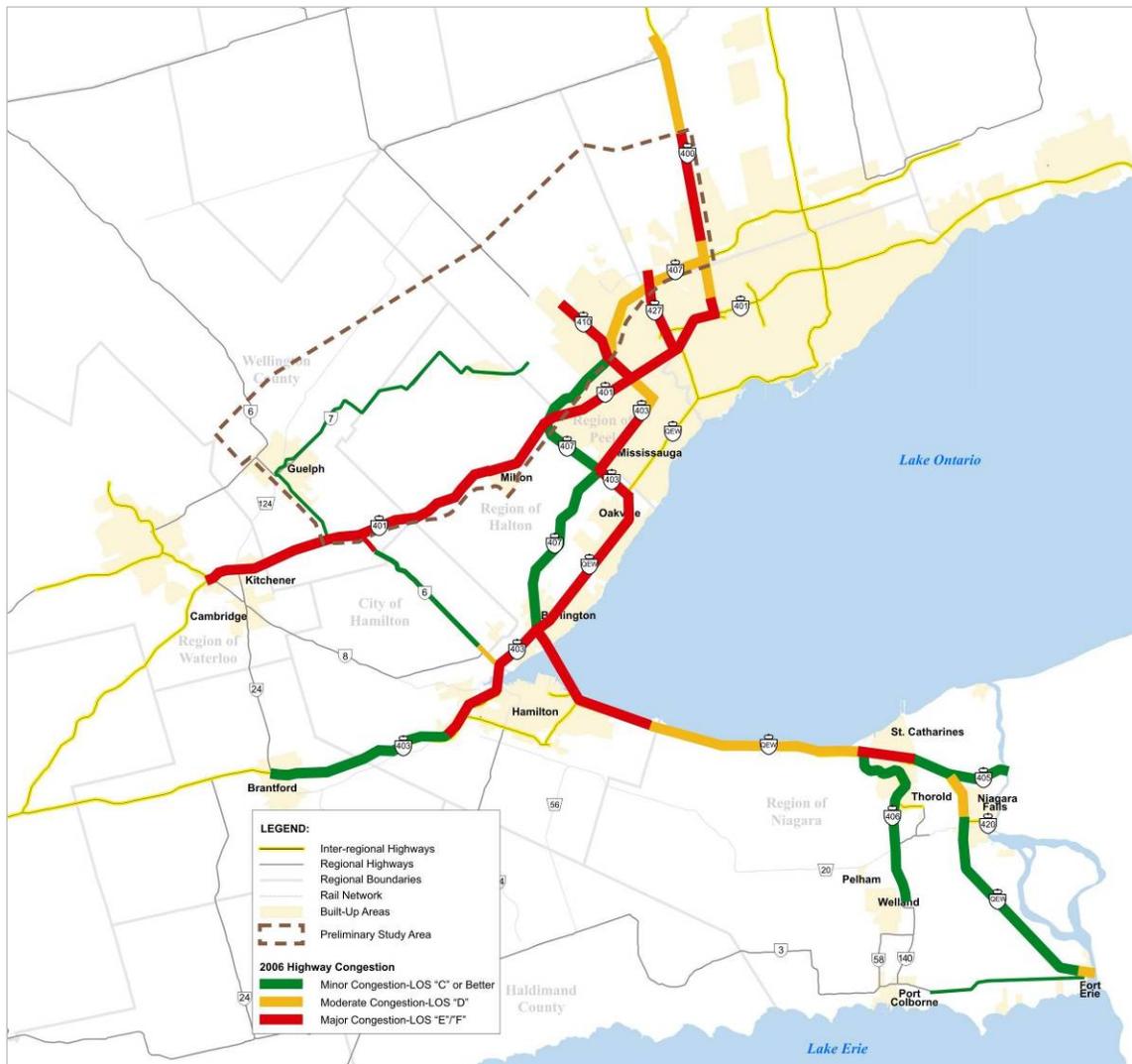
The road transportation system is the main mode used for commuting in the Study Area, especially where trips are not served by a higher order transit alternative. Although transit mode shares are expected to remain low, transit does play an important role in commuter travel, where connections are available. Travel for commuting generally occurs in the AM and PM peak periods and this has an impact on the overall operation of the transportation network. As traffic volumes increase throughout the day, the traditional AM and PM peak periods are becoming longer, resulting in major roadways, such as Highway 401, being congested throughout much of the day. Significant growth is expected in commuter travel demand through to 2031, resulting in significant capacity deficiencies on the road and transit networks.

Highway 401 is the main highway corridor through the Study Area, with Highways 400, 427 and 410 providing key highway links for automobile commuters. There are a number of heavily congested links on the major highways. **Exhibit 4-6** illustrates PM peak hour congestion in 2006. Significant congestion is experienced along much of Highway 401 in the GTA West Study Area, as well as on Highways 400, 427 and 410. All of these major routes experience Levels of Service of E or F, indicating that the volume/capacity ratio is over 0.9 and Congested, “Stop-and-Go” conditions are experienced, as described in the table below. Traffic volumes are increasing throughout the day such that congestion is spreading beyond the traditional AM and PM peak periods.

<b>Congestion Type</b>	<b>Approximate V/C</b>	<b>Description</b>
Minor	Less than 0.80	Non-recurring Congestion*
Moderate	0.80 to 0.90	Unstable Conditions
Major	0.90 and above	Congested Conditions (Stop-and-Go)

\* Traffic conditions may be adversely affected by incidents, accidents, weather, and construction / maintenance activities

Exhibit 4-6: 2006 Weekday (AADT) Highway Congestion



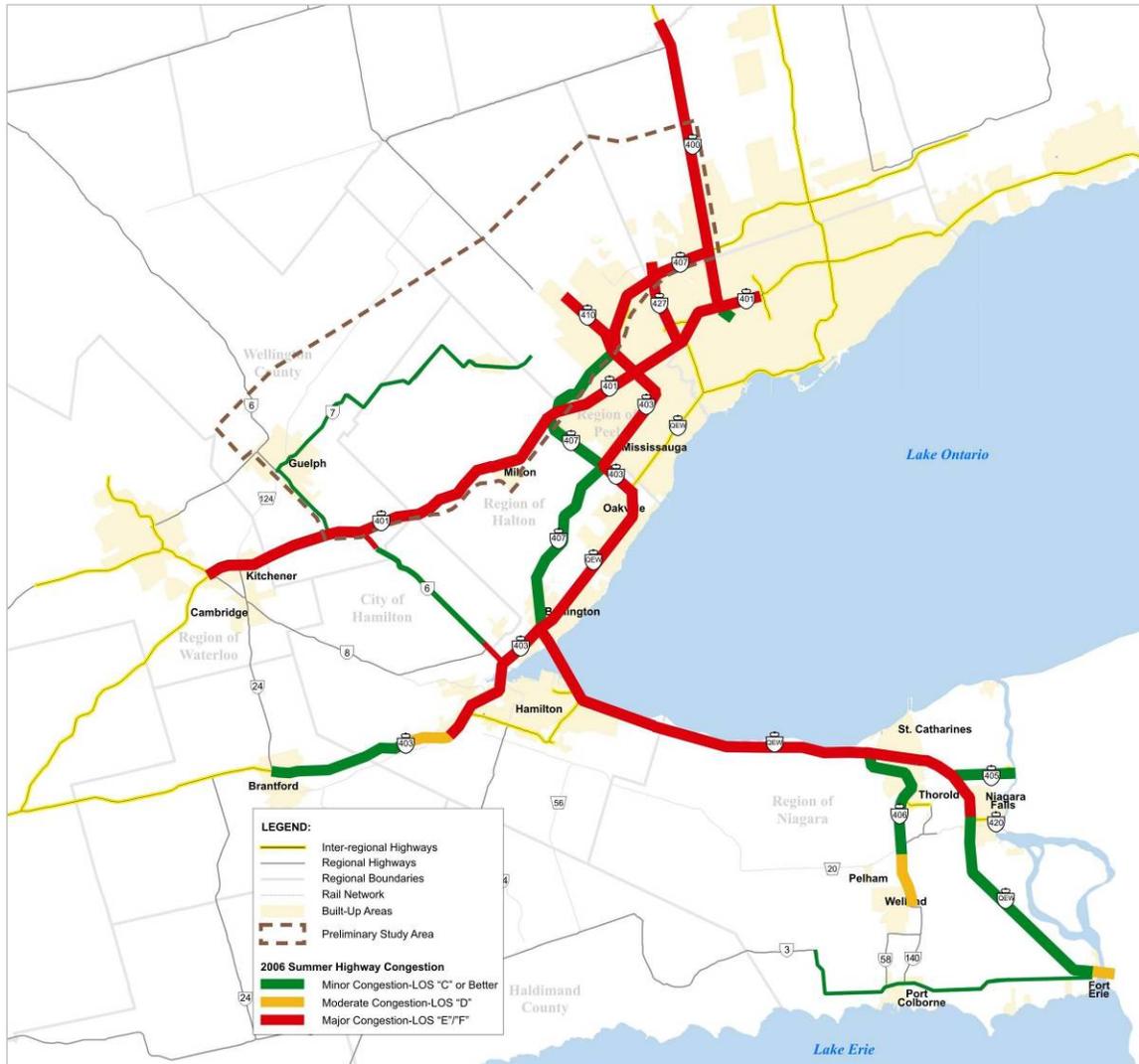
The highways within the Study Area currently operate with considerable peak hour congestion, with the following major automobile commuter transportation system constraints:

- Highway 401 along its entire length in the Study Area, with the most severe constraints in the Region of Peel and City of Toronto
- Highway 400 south of Major Mackenzie Drive, north of the 407 Electronic Toll Route (ETR)
- Highway 427 between Highway 401 and Highway 7
- Highway 410 north of the 407 ETR

Summer average daily traffic (SADT) is generally greater than the AADT that occurs throughout the year. SADT is characterized by longer peak periods and more balanced traffic volumes by direction as commuter and tourism and recreation trips overlap. As discussed in **Section 4.2.4**, tourism and recreation traffic contributes to summer roadway

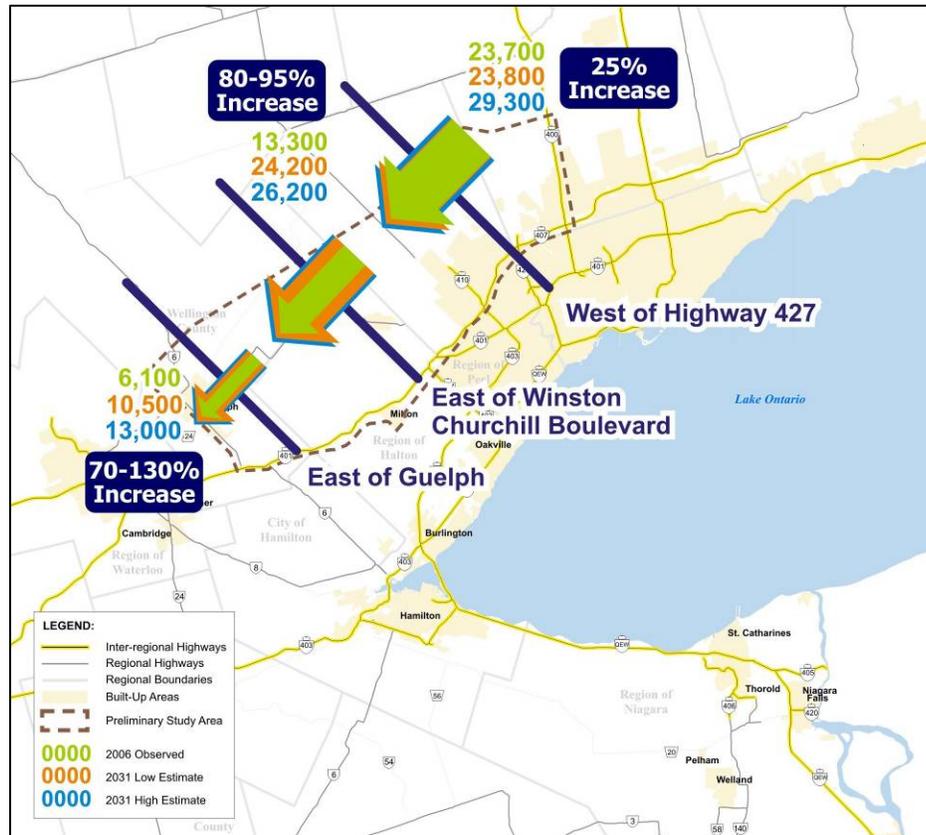
congestion, with trips to, from and through the Study Area. As shown in **Exhibit 4-7**, 2006 SADT conditions are more congested than AADT conditions, with additional congestion on Highway 400 south to Highway 401, and on the 407 ETR between Highways 400 and 410.

**Exhibit 4-7: 2006 Weekend (SADT) Highway Congestion**



**Exhibit 4-8** illustrates the substantial growth forecast for westbound PM peak period travel by automobile, at specific GTA West screenlines (a boundary that defines a broad corridor across which traffic flows). In the eastern part of the Corridor, west of Highway 427, westbound PM peak hour flows are expected to increase by as much as 25%. Traffic volumes farther west, east of Winston Churchill Boulevard, are to increase significantly, by 80% to 95%. In the western-most part of the GTA West Study Area, east of Guelph, PM peak hour traffic flows are expected to increase by 70 to 130% by 2031. The large range of percentage growth by screenline is reflective of large differences in existing traffic volumes as well as future growth volumes to 2031.

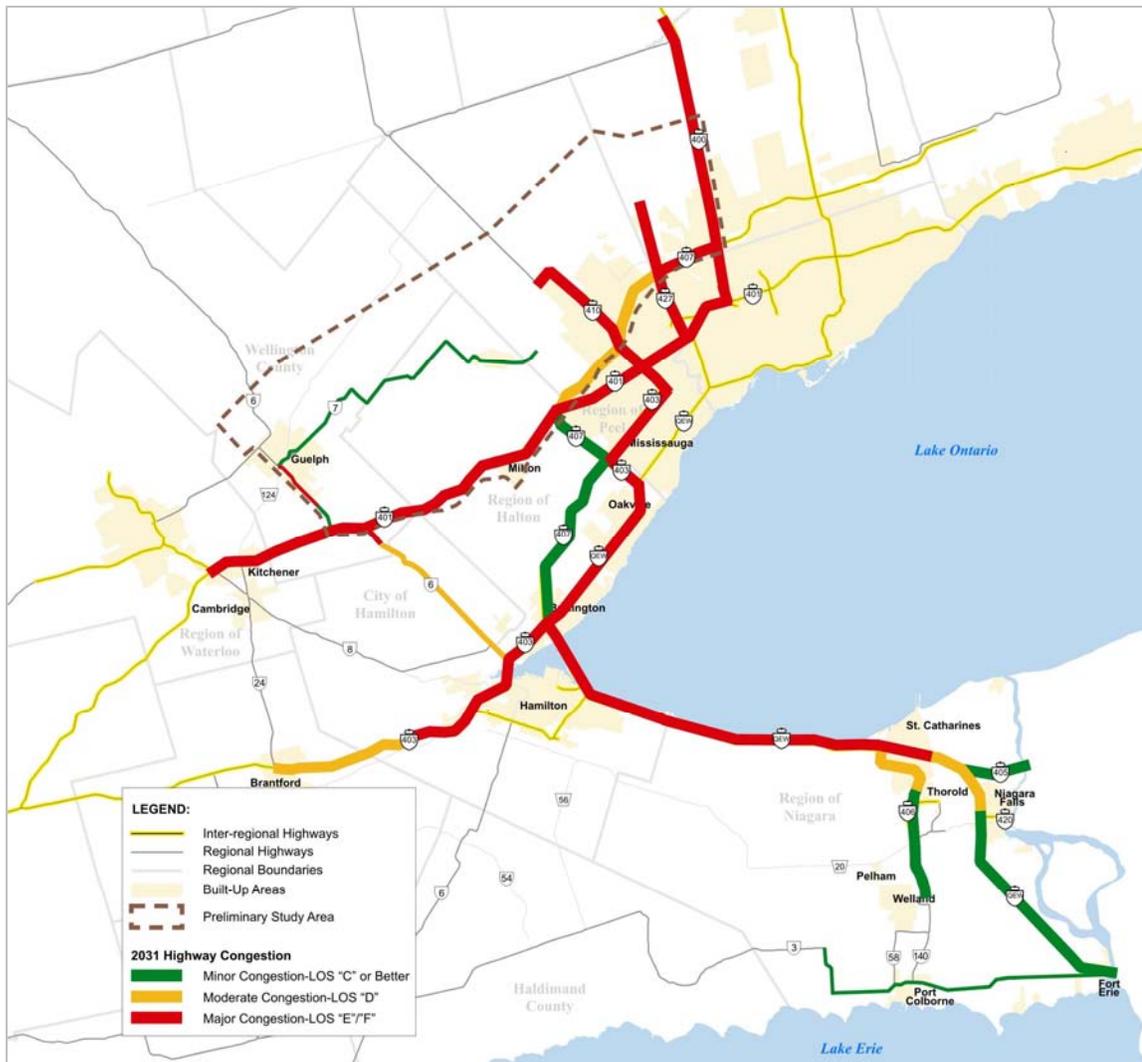
Exhibit 4-8: Future Regional PM Peak Hour Auto Flows



With the additional population and employment projected for the Study Area and its surroundings, 2031 highway volumes and associated congestion are expected to increase. This projected rise in traffic volumes is anticipated to be accompanied by worsening congestion and travel conditions during peak periods and throughout the day. Much of the highway network is expected to operate at capacity throughout the Study Area in 2031 (particularly Highways 401, 400, 427 and 410), as shown in **Exhibit 4-9**. The 407 ETR is anticipated to operate with major congestion between Highways 400 and 427, and minor congestion between Highways 427 and 401.

Future roadway congestion is expected even with the highway improvements planned by MTO and area municipalities, and the transit improvements planned by the Metrolinx RTP.

Exhibit 4-9: 2031 Weekday (AADT) Highway Congestion

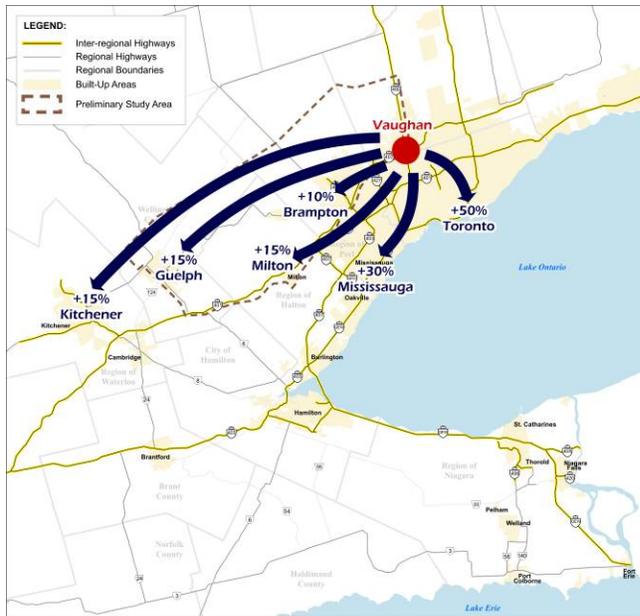


In 2031, SADT volumes are expected to continue to be higher than AADT volumes, with corresponding worsening of highway congestion. Travel conditions on the main highways used for tourism and recreation (Highways 401 and 400) will continue to deteriorate. **Exhibit 4-10** presents 2031 daily summer highway congestion, showing worsening conditions on the 407 ETR, which will experience major congestion on the segments between Highways 400 and 410. These summer conditions represent the greatest pressure on the highway network.

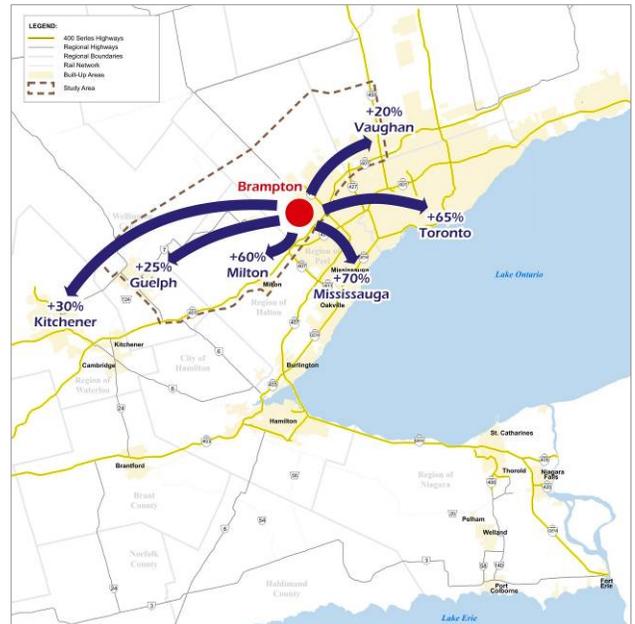


Exhibit 4-11: Change in PM Peak Hour Auto Travel Times to 2031 between Urban Growth Centres

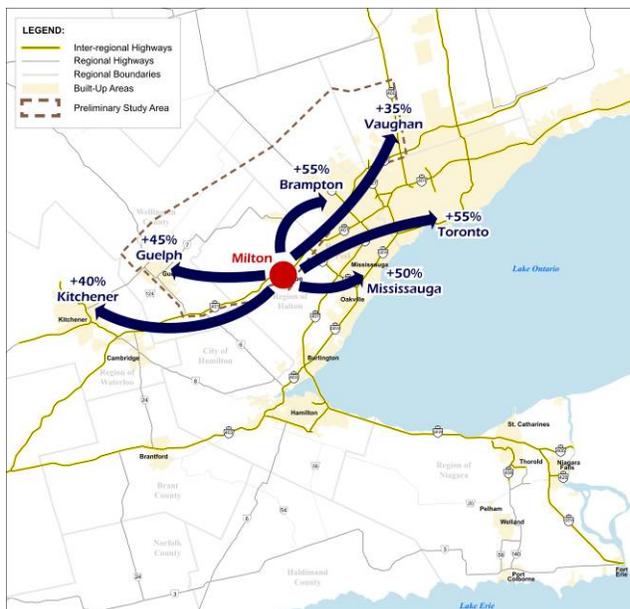
From Vaughan Corporate Centre



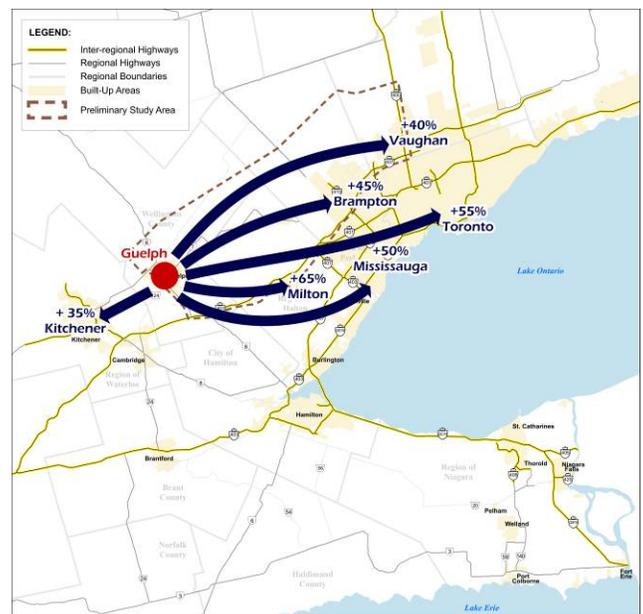
From Downtown Brampton



From Downtown Milton



From Downtown Guelph



As presented in **Section 3.4.5**, screenline analyses (across a boundary that defines a broad corridor across which traffic flows) were undertaken to identify roadway capacity problems at specific locations throughout the GTA West Corridor. The analysis included a review of the existing (2006) and future (2031) roadway capacity at each screenline and

assessment of existing and future vehicle demand. In 2031, congested conditions are expected at each of the Study Area’s north-south screenlines (assessing east-west travel) in the absence of roadway capacity improvements. The addition of future planned capacity is expected to result in Unstable and Congested conditions at a number of locations. Similarly, congested 2031 conditions are expected at each of the Study Area’s east-west screenlines (assessing north-south travel) in the absence of additional roadway capacity. The addition of the planned roadway capacity is expected to relieve congestion at some locations, but the majority are expected to operate in a Congested state. These screenline analyses indicate that capacity shortfalls are anticipated at a number of locations on the planned future roadway network.

Additionally, individual facility analysis concluded that capacity shortfalls and corresponding major congestion are expected on the main highways in the Study Area. Within the extent of the Study Area’s screenlines, analysis of locations along Highways 401, 400 and 410 was conducted to determine these expected future capacity shortfalls. **Section 3.4.7** provides details of this analysis, illustrating that AADT and SADT volumes are expected to increase significantly. SADT volumes are generally greater than AADT volumes, and are projected to remain greater through to 2031.

Forecast 2031 AADT and SADT volumes were used to identify the capacity shortfall in equivalent number of highway-lanes. The order of magnitude of the anticipated 2031 capacity problem, in relation to existing and planned facility capacity, is presented in equivalent lane deficiencies for specific highway corridors, beyond future planned roadway capacity, within the Study Area. A summary of the analysis is presented in **Exhibit 4-12**, based on AADT and SADT volumes and the future planned roadway capacity. Analysis indicates that two additional lanes of capacity are expected to be required on Highways 401, 410 and 400 (except for Highway 401, between the 407 ETR and Highway 410). Some of the identified capacity deficiencies could be addressed through transportation strategies, potentially including optimization of the existing network and improvements to other modes. Such options will be examined as part of the generation and evaluation of alternatives in the next stage of this study.

**Exhibit 4-12: Summary of Year 2031 Hour Lane Deficiency by Highway Corridor**

<b>Highway Corridor</b>	<b>Existing Number of Lanes</b>	<b>Planned Number of Lanes</b>	<b>2031 Demand in Equivalent Number of Lanes</b>	<b>Equivalent Lane Deficiency</b>
<b>Highway 401</b>				
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
<b>Highway 410</b>				
South of Bovaird Drive	6	6	8	2
<b>Highway 400</b>				
North of Highway 407	10	10	12	2
North of Major Mackenzie Drive	6	8+HOV	12	2

The 2031 travel characteristics and flows on Highway 401 to the west and east of Milton (in the central portion of the Study Area) are illustrated in **Exhibit 4-13** and **Exhibit 4-14**, respectively. On Highway 401 west of Milton, the concentration of westbound flows is expected to generally originate to the southeast, in Toronto (29%) and Mississauga (26%), and 7% of trips to originate in Milton. Trip destinations are generally expected to be toward the north and west: to the Region of Waterloo (28%), Guelph (25%) and beyond the Region of Waterloo (24%).

East of Milton, westbound flows on Highway 401 are anticipated to have similar but slightly different characteristics. Similar to the link west of Milton, the main origins of travel are expected to be Mississauga (37%) and Toronto (31%). Milton is projected to be the destination of 44% of the westbound trips, followed by the Region of Waterloo (16%), beyond the Region of Waterloo (15%) and Guelph (14%).

**Exhibit 4-13: Future Highway 401 Westbound Flows West of Milton**

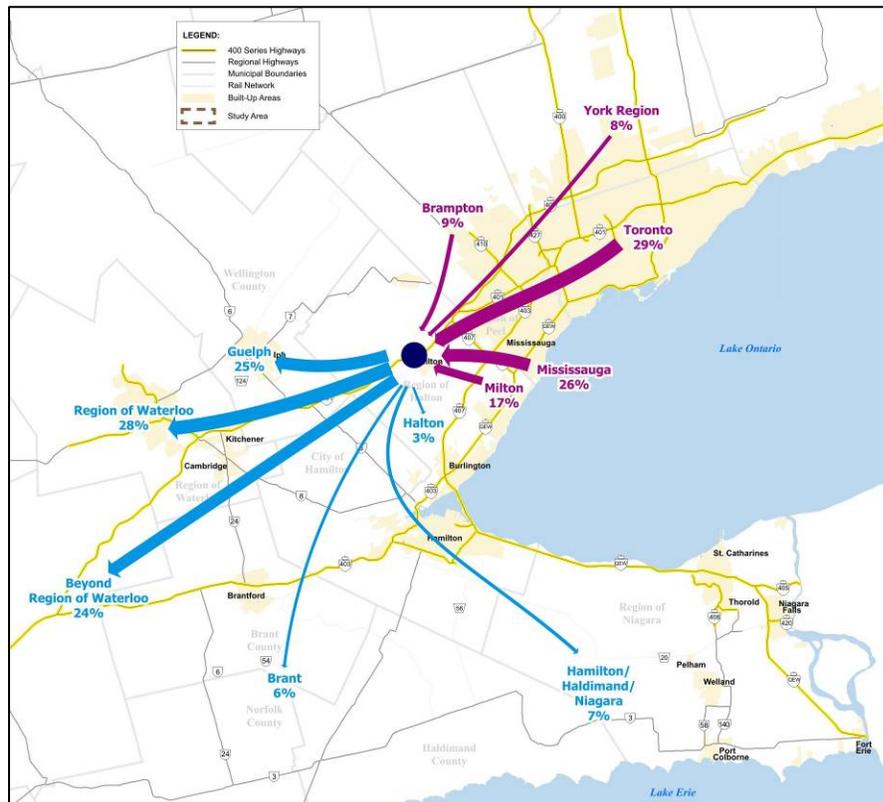
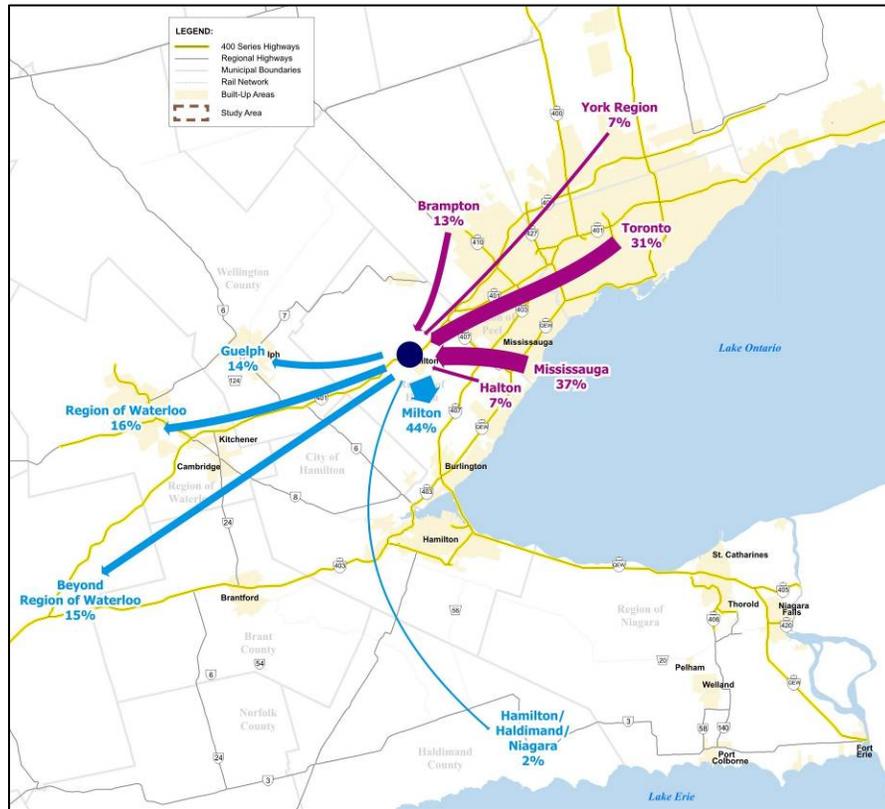


Exhibit 4-14: Future Highway 401 Flows East of Milton



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. The three key commuter problems associated with the future inter-regional road transportation system are as follows:

**Congestion** will increase during weekday commuting periods, particularly on the provincial highway network during AM and PM peak periods and increasingly throughout the day

- Major congestion is forecast for the length of Highways 401, 400, 410 and 427, and on parts of the 407 ETR
- Demand is anticipated to exceed capacity with substantial capacity shortfalls (in equivalent lane deficiencies):
  - Highway 401 – 2 lanes between Guelph and Hwy 400 (except between Hwy 407 ETR and Hwy 410)
  - Highway 410 – 2 lanes south of Bovaird Dr.
  - Highway 400 – 2 lanes between 407 and Major Mackenzie Dr.

<p><b>Travel times</b> for commuter trips will increase and become less predictable as a result of increasing congestion, on highways as well as on regional and local roadways</p>	<ul style="list-style-type: none"> <li>• The projected capacity shortfall will increase travel times between the Study Area’s Urban Growth Centres, with 2031 travel time increases ranging as high as 30% to 40% for some commuter trips</li> </ul>
<p><b>Variability and duration</b> of travel times on the area road system will be affected by non-recurring incidents</p>	<ul style="list-style-type: none"> <li>• Delays that occur due to such non-recurring incidents (collisions, inclement weather, maintenance, construction) will contribute to future congestion</li> <li>• 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</li> </ul>

**4.2.3 Tourism and Recreation –Transit**

Tourism to the GTA West Study Area includes trips made by Ontarians, other Canadians, Americans and overseas tourists. In 2007, a total of 9.2 million trips were made to the region, and 15.7 million trips were made by residents of the GTA West Corridor (13.8 travelled out of the Study Area and 1.9 million remained within it). As discussed in **Section 2.5**, intra-provincial trips make up the vast majority of tourism and recreational travel to the Study Area.

The vast majority of tourism and recreation trips within the GTA West Study Area are made by automobile. Although there are area bus and rail transit services, they are generally not designed to provide linkages to tourist and recreational centres. Much of the above discussion about the inter-regional transit-based commuter transportation system (**Section 4.2.1**) is relevant to tourism and recreation travel by transit, including the constraints of limited community-to-community inter-regional transit, lack of provision for convenient transfers between services, and the impacts of road congestion on bus transit.

<p>The Study Team’s analysis, background reports and stakeholder consultation point toward three major future problems for tourism and recreation travel on the inter-regional transit-based transportation system:</p>	
<p><b>Inadequate transit connections</b> between urban centres, tourist gateways (airports, rail stations), and tourist destinations</p>	<ul style="list-style-type: none"> <li>• Where connections are available, there is a lack of direct services</li> <li>• Increased travel times and decreased convenience makes transit less competitive compared to the automobile for tourist travel</li> </ul>
<p><b>Public transit schedules</b> cater to commuters rather than tourists</p>	<ul style="list-style-type: none"> <li>• Where publicly funded transit services are in place or planned, schedules tend to cater to commuters rather than tourists, with services</li> </ul>

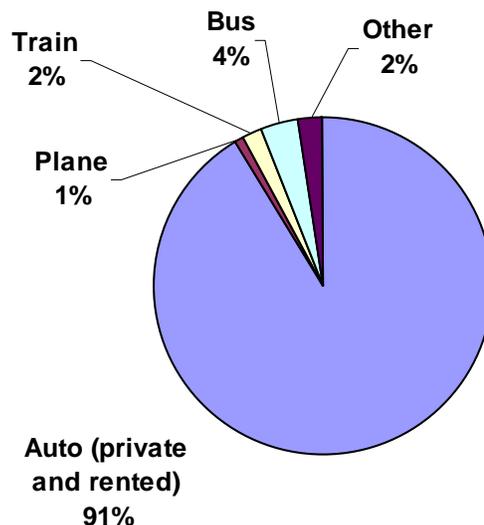
	<p>focused on AM and PM commuting times and limited during weekends</p> <ul style="list-style-type: none"> <li>• There is limited availability of transit for tourism and recreation purposes, especially to tourist destinations that are outside of urban centres</li> </ul>
<p><b>Limited multi-modal connections</b> (e.g., train stations, airports) to key destinations (i.e., a <b>lack of choice</b> using transit)</p>	<ul style="list-style-type: none"> <li>• Limited connections between tourist gateways, urban centres and tourist destinations result in the automobile being the only viable option for some tourism and recreation trips</li> <li>• Lack of modal options can increase car use even for those who travel to the Study Area by rail or air</li> </ul>

#### 4.2.4 Tourism and Recreation – Automobile

The area’s tourism and recreation travel is served by the major 400 series highways (401, 400, 427 and 410) and a number of bus and rail lines. The Toronto Pearson International Airport and the Hamilton International Airport (HIA) are in close proximity, as well as smaller, regional airports such as Buttonville Municipal Airport, Guelph Aerodrome, the Toronto City Centre Airport and the Region of Waterloo International Airport. However, almost all tourists to the GTA West Study Area use the highway network to reach their destinations. As there is currently no rail link to Toronto Pearson International Airport or to other area airports, even those travelling by plane must use Highway 401 for local travel. Domestic visitors are the most likely to use the automobile as their mode of transportation, followed by visitors from the U.S. and overseas.

Of all 2007 inbound trips, approximately 91% travelled by automobile, almost 4% of trips were made by bus and about 2% by train, as shown in **Exhibit 4-15**. This predominance of automobile use by tourists is expected to continue into the future.

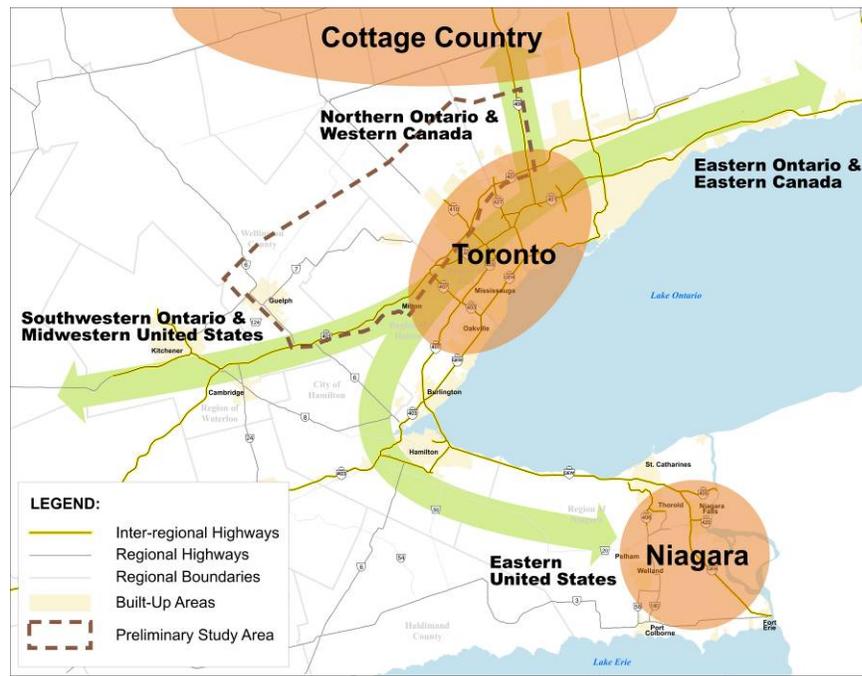
**Exhibit 4-15: Visitor Mode of Transportation (2007)**



Source: PKF Consulting, TSRC/ITS 2007

Continued growth in tourism and recreation trips to the Study Area through to 2031 will be affected by the anticipated capacity deficiencies on the road and transit networks. **Exhibit 4-16** shows the linkages between the major tourist centres of Toronto, northern Ontario (“Cottage Country”) and the Niagara region, all connected by highways and with limited accessibility by other modes. In addition to travel to and from the GTA West Study Area, trips through this area are another important aspect of tourism and recreation travel. Highways 401 and 400 are heavily used to reach tourism and recreation destinations in Toronto and northern Ontario, and some travellers from origins outside of the Study Area need to use these corridors to reach their tourism and recreation destinations.

**Exhibit 4-16: Major Tourist and Recreational Destinations**



As discussed in **Section 4.2.2**, SADT volumes are greater in the Study Area than the AADT volumes that occur throughout the year. SADT volumes are typically used in the assessment of the tourism and recreation road transportation network, to correspond with the peak tourist and recreational travel periods. Note that, unlike typical tourist travel, which peaks during the summer months, visits to the GTA West Study Area peak during the fall and are relatively well distributed throughout the year, due to the high proportion of trips to visit friends and relatives. Tourism and recreation trips originating in the Study Area peak during the summer but are also well distributed throughout all seasons. Trips through the Study Area, to destinations in Toronto, Niagara and especially northern Ontario/Cottage Country via Highway 400, are more likely to be oriented to the summer season.

All of the highways used for reaching tourist and recreational destinations will continue to experience heavy AADT and SADT congestion, as illustrated in **Exhibit 4-7** (2001 SADT) and **Exhibit 4-10** (2031 SADT). As shown, Highways 401, 400, 427 and 410 are

anticipated to be heavily congested, which will increase travel times. Such conditions can negatively impact the experience of tourism and recreation travel.

<p>The analysis conducted for the current study, supported by background reports and stakeholder consultation, indicates that four key future problems are expected for tourism and recreation travel on the inter-regional road transportation system:</p>	
<p><b>Travel delays</b> result from recurring congestion during peak tourism and recreation travel times</p>	<ul style="list-style-type: none"> <li>• Major congestion is forecast for the length of Highways 401, 400, 410 and 427, and on parts of the 407 ETR</li> <li>• Summer traffic volumes – and therefore congestion – are higher than the average throughout the year, negatively affecting the tourism and recreation trip experience</li> <li>• Demand is anticipated to exceed capacity with substantial capacity shortfalls (in equivalent lane deficiencies):             <ul style="list-style-type: none"> <li>• Highway 401 – 2 lanes between Guelph and Hwy 400 (except between Hwy 407 ETR and Hwy 410)</li> <li>• Highway 410 – 2 lanes south of Bovaird Dr.</li> <li>• Highway 400 – 2 lanes between 407 and Major Mackenzie Dr.</li> </ul> </li> </ul>
<p><b>Unpredictable travel times</b> on inter-regional roads result when incidents occur on an already congested road system</p>	<ul style="list-style-type: none"> <li>• Unreliable travel times due to non-recurring incidents (collisions, inclement weather conditions, maintenance, construction) contribute to high levels of congestion</li> <li>• There is a lack of alternate higher order inter-regional routes to avoid delays</li> <li>• A lack of higher order route options can divert inter-regional travellers to regional and local roadways and circuitous routes</li> </ul>
<p><b>Inadequate road connections</b> between tourist gateways (airports, rail stations), urban centres and tourist destinations</p>	<ul style="list-style-type: none"> <li>• Inadequate connections can place increased demand on the highway system and increase traffic on roadways that were not intended as inter-regional routes</li> <li>• Hwy 400 is the primary highway to northern Ontario for tourism and recreation activities, and Hwy 401 is the major highway for visitors to Toronto</li> <li>• There is no equivalent recourse if there are major delays or highway closures</li> </ul>
<p><b>Truck traffic</b> on inter-regional roads can conflict with tourism</p>	<ul style="list-style-type: none"> <li>• Goods and people movement compete for limited road space</li> </ul>

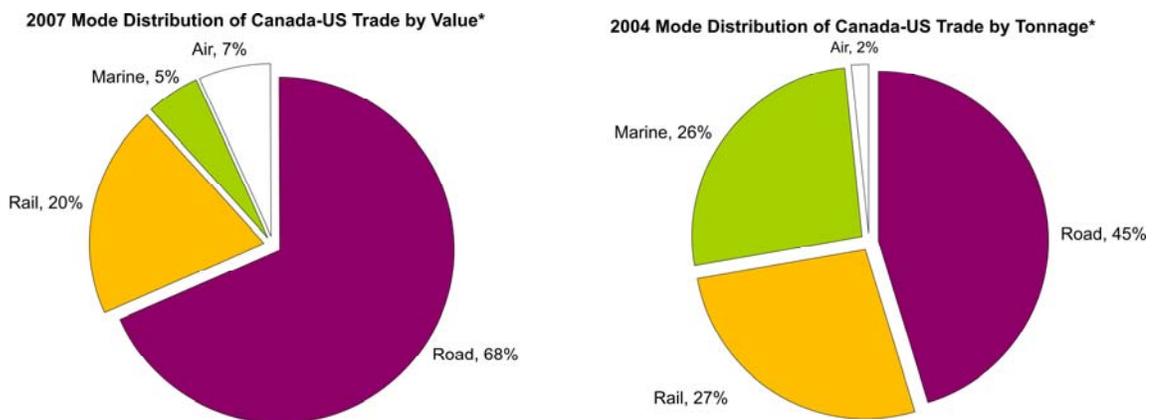
and recreation travel	<ul style="list-style-type: none"> <li>• High volumes of truck traffic on major corridors can be a deterrent to tourism and recreation travel, especially during the summer months</li> </ul>
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### 4.3 Moving Goods

Goods movement is a vital part of transportation demand within the GTA West Study Area. A range of information sources were consulted and referenced to identify and assess the future problems associated with goods movement, including a review of background information, interviews with Transportation Service Providers (TSPs) and Business and Commercial Stakeholders (BCS) and modelling and forecasting analysis conducted by the Study Team. These sources of information indicate future problems in the Study Area relating to the movement of goods by the truck, rail, air and marine transportation systems.

Although most goods experience a multi-modal journey, trucking accounts for almost 70% of the trade value between Canada and the U.S. in terms of mode distribution and 45% of all tonnage (refer to **Exhibit 4-17**). These values indicate the importance of trucks and the road system to the movement of goods through and within the Study Area. Marine and rail transport play a very important role in terms of tonnage, capturing more than half of all tonnage of trade between Canada and the U.S. Air transport plays an important role in moving goods; however, the mode distribution by value and tonnage is much lower at 7% and 2%, respectively.

**Exhibit 4-17: Goods Movement Mode Use by Value and Tonnage**



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

The population and employment growth identified in the Growth Plan (discussed in previous sections of this report) will result in the increased movement of goods within and through the Study Area. The historical trends indicate a general increase in goods movement by road, rail, air and marine. Although discussions with TSPs indicate that

rail, marine and air have the capacity to absorb increased goods movement, trucking will continue to play a major role in the transportation of goods.

The following sections discuss each mode individually in terms of existing conditions, constraints, future conditions and specific problems identified.

### **4.3.1 Truck**

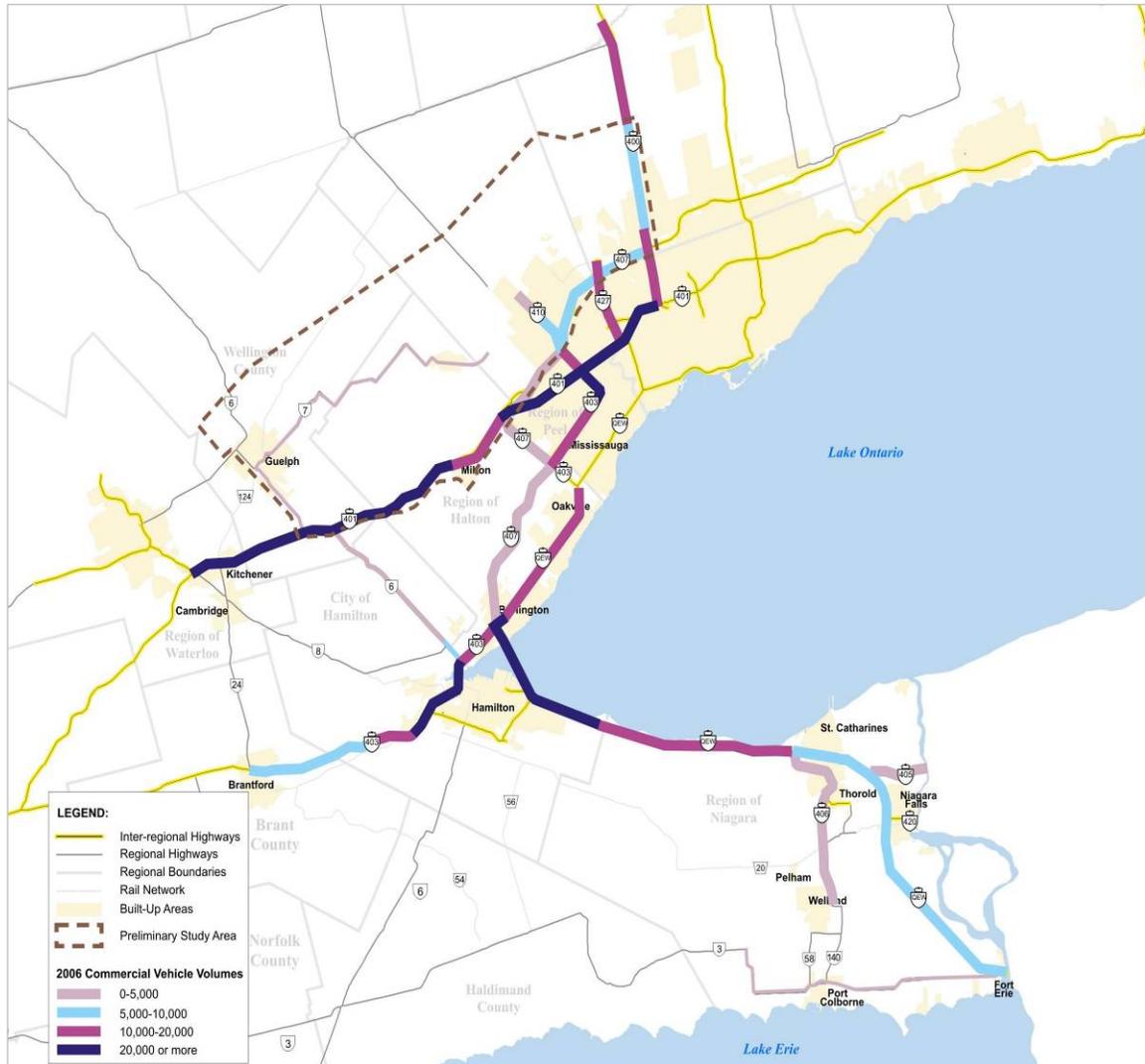
The inter-regional road system is the primary mode for goods movement in the area. A Commercial Vehicle Survey (1999, recorded at Putnam) indicates that over half (57%) of all commercial vehicle trips are 500 km or less in length. Additionally, almost half (46%) of all truck trips are within Ontario with an annual commodity value of over \$200 million; 52% of all commercial vehicle trips are international in nature with an annual commodity value of over \$400 million and a mean travelling distance of more than 1,000 km.

<b>Route Type</b>	<b>Percent of Trips</b>	<b>Annual Commodity Value (M\$)</b>	<b>Mean Distance (km)</b>
Intra-Ontario	46%	209	255
Inter-Provincial	2%	11	1,095
International	52%	414	1,150
<b>All Trips</b>	<b>100%</b>	<b>634</b>	<b>2,500</b>

Highway 401 is the largest and busiest highway in the GTA West Study Area. As shown in **Exhibit 4-18**, all of the 400 series highways are heavily used for goods movement throughout the day. In 2006, commercial vehicle volumes in the Study Area were highest on Highway 401, which carries more than 20,000 trucks per day along the majority of its length in the Study Area, with the exception of the section at Milton that carries 10,000-20,000 trucks per day. The Kitchener-Waterloo area is an emerging trucking hub, as industries and logistic firms are relocating from the Toronto Pearson International Airport area to the west along the Highway 401 corridor.

Daily truck volumes are also relatively high (between 10,000 and 20,000) on Highway 427 and stretches of Highway 400 (from Highway 401 to north of Highway 407 and again at the Study Area's northern boundary). The shift in trucking logistics firms is expected to result in higher truck volumes on Highway 401 west of Mississauga than would be anticipated with historical trend growth.

Exhibit 4-18: 2006 Daily Commercial Vehicle Volumes



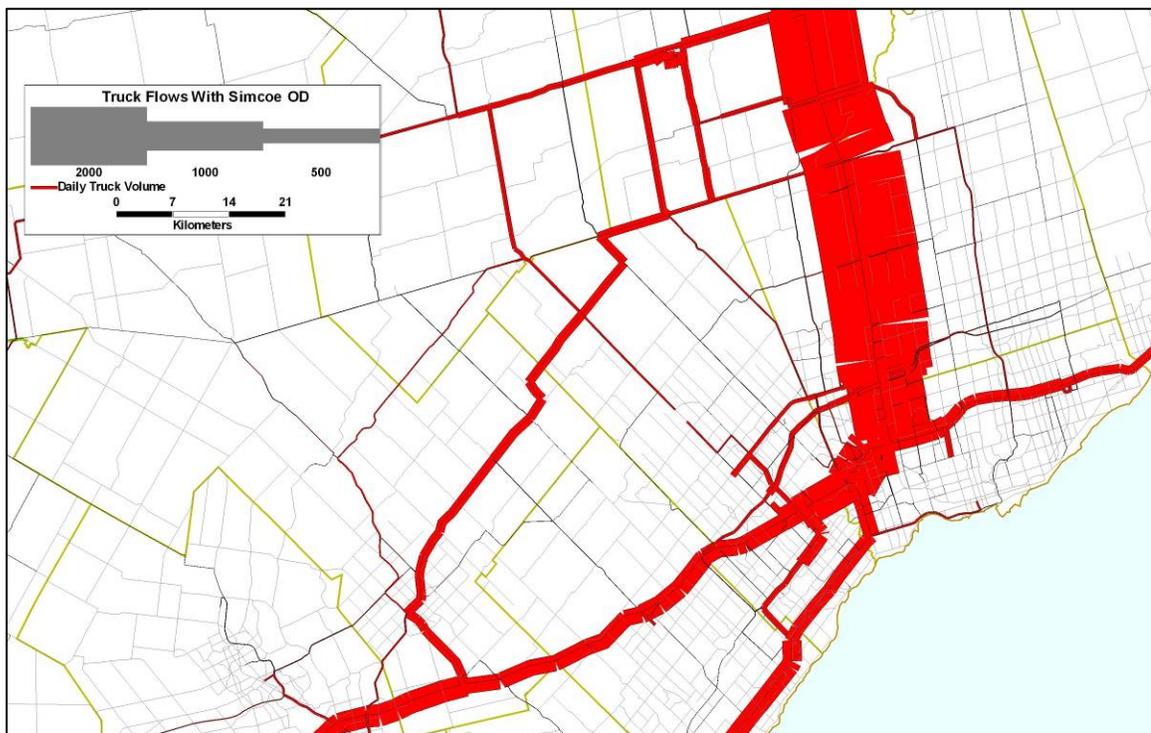
As illustrated in **Exhibit 4-6** (Annual Average Daily Traffic - AADT) and **Exhibit 4-7** (Summer Average Daily Traffic – SADT) in **Section 4.2.2**, all of the Study Area’s 400 series highways experience major congestion in 2006 (with the exception of some sections of the 407 ETR, which is not heavily used for truck movements). This congestion is an issue for goods movement, as trucks are the principal means of transporting goods in south-central Ontario, and the existing provincial highway system links to all major manufacturing centres and international border crossings. Further, trucking provides connectivity between rail and marine transport facilities using provincial highways and arterial road networks. The problems associated with commercial vehicle goods movement are therefore of significant concern.

It is evident that the major congestion on highway facilities impacts the efficient movement of goods, as Highways 400 and 401 are the primary roads used for the movement of goods within and through the Study Area.

Although the majority of the commercial vehicle trips uses the 400 series highways, the extensive road congestion within the GTA West Study Area can result in commercial vehicles shifting to regional and local roads. The extent of the commercial vehicle

diversion that can occur is presented in **Exhibit 4-19**, a “snapshot” of daily commercial vehicle trips to and from Simcoe County located to the north of the Study Area. This area includes the Honda manufacturing plant and several automobile parts manufacturers. Data from the MTO Commercial Vehicle survey indicates that the congestion and unreliability of the Highway 400/Highway 401 interchange complex results in longer distance truck travel using the secondary road network to travel from Simcoe/Highway 400 to Guelph/Highway 401. The secondary roads being used include Highway 89, Highway 9, Highway 50, RR 124 and Hanlon Expressway. This “cut-through” practice of commercial vehicles using the secondary road system to avoid severely congested areas on the provincial 400 series highways is currently commonplace and will continue to increase as traffic flows increase, thereby increasing associated community, social, noise and safety concerns.

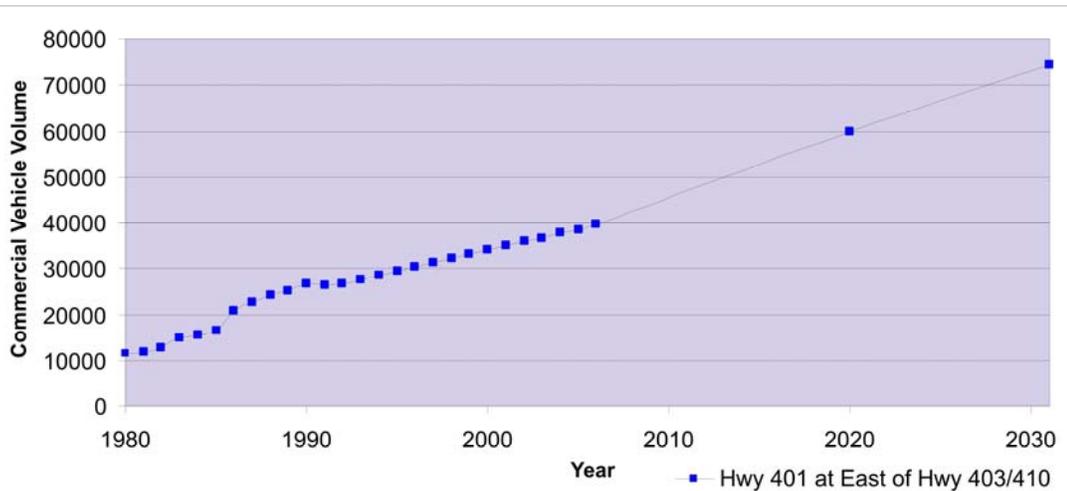
**Exhibit 4-19: Daily Commercial Vehicle Trips to and from Simcoe County (2006)**



As the automobile manufacturing industry is one of the major drivers of the trucking industry, reduced activity of the automobile plants will impact trucking activities, especially in the Windsor, Oakville, Oshawa and Alliston areas. However, with the substantial population and employment growth forecast for the GGH in the next 25 years, along with the continued desire of Canada and Ontario to build upon a world class transportation system that will drive international trade and economic growth, the forecast of commercial vehicle volumes increasing by approximately 90% over the next 25 years is considered reasonable.

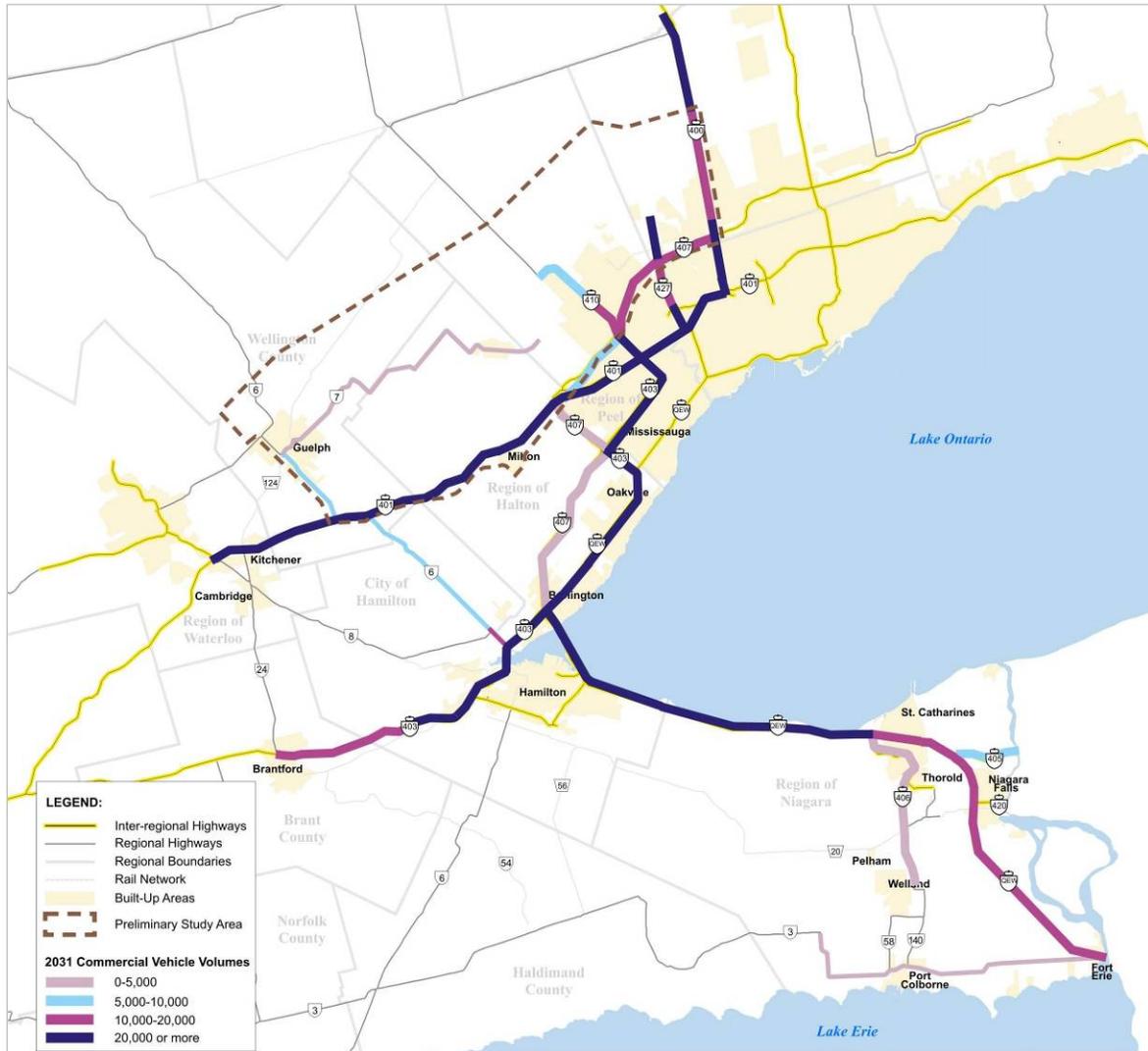
Goods movement in the GTA by commercial vehicles is expected to continue to increase through to 2031. **Exhibit 4-20** shows the steady increase in commercial vehicle volumes on Highway 401 since 1980.

**Exhibit 4-20: Commercial Vehicle Traffic Projections (Hwy 401 East of Highways 403/410)**



By 2031, truck volumes are expected to increase substantially on all major highways in the Study Area, resulting in increased congestion and delays, particularly on Highways 401, 400, 410 and 427. It is apparent that this major congestion will impact the efficient movement of goods within and through the Study Area. **Exhibit 4-21** illustrates the forecast increases in commercial vehicle volumes to 2031. The heavy congestion projected on these trucking routes is shown in **Exhibit 4-9** (AADT) and **Exhibit 4-10** (SADT) in **Section 4.2.2**.

**Exhibit 4-21: 2031 Daily Commercial Vehicle Volumes**

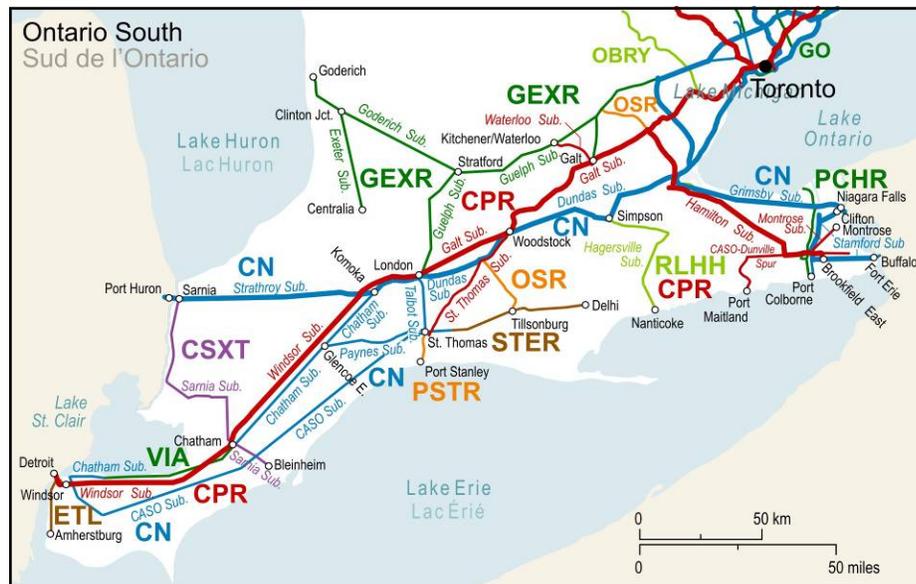


<p>The problems for commercial vehicles travelling in the Study Area are similar to those for commuter and tourism/recreation travel by road. Four key problems emerged from research, consultation and analysis for goods movement by the inter-regional commercial vehicle system:</p>	
<p><b>Travel delays</b> result from recurring congestion during peak periods and increasingly throughout the day</p>	<ul style="list-style-type: none"> <li>• Major congestion is forecast for the length of Highways 401, 400, 410 and 427, and on parts of the 407 ETR, resulting in increased travel times</li> <li>• Demand is anticipated to exceed capacity with substantial capacity shortfalls (in equivalent lane deficiencies):                         <ul style="list-style-type: none"> <li>• Highway 401 – 2 lanes between Guelph and Hwy 400 (except between Hwy 407 ETR and Hwy 410)</li> <li>• Highway 410 – 2 lanes south of Bovaird Dr.</li> <li>• Highway 400 – 2 lanes between 407 and Major Mackenzie Dr.</li> </ul> </li> </ul>
<p><b>Unpredictable travel times</b> on inter-regional roads are a result of incidents on an already congested road system</p>	<ul style="list-style-type: none"> <li>• 2031 travel times are expected to increase, in some cases substantially, between Urban Growth Centres</li> <li>• Unreliable travel times due to non-recurring incidents (e.g., collisions, inclement weather, maintenance, construction) contribute to high levels of congestion</li> </ul>
<p><b>Inadequate road connections</b> between Urban Growth Centres, commercial centres and inter-modal facilities</p>	<ul style="list-style-type: none"> <li>• Inadequate connections result from a lack of infrastructure and from congestion on existing facilities, and can result in the use of regional and local roads and circuitous routes</li> <li>• Lack of connections impacts the efficiency of goods movement and can create a disincentive to the use of inter-modal facilities</li> </ul>
<p><b>Diversion of inter-regional trucks</b> to regional and local roads</p>	<ul style="list-style-type: none"> <li>• Diversion can occur due to a lack of equivalent parallel routes, to avoid congested routes or to avoid unexpected delays</li> <li>• A lack of alternate routes suitable for trucks can result in use of regional and local roads, causing community, social, noise and safety concerns</li> </ul>

### 4.3.2 Rail

A number of rail lines provide services for goods movement within and through the GTA West Study Area, including Canadian Pacific (CP), Canadian National (CN) and a number of shortline railways including the Goderich - Exeter Railway (GEXR). CP and CN provide Class I rail service in south-central Ontario (i.e., they are the largest area freight railways, as classified based on operating revenue) and Class II service is provided by the smaller railroad companies. Inter-modal facilities accommodate the movement of freight between transportation modes. Such facilities within the Study Area include the CP Vaughan Terminal, the CP Trafalgar Road-Rail Terminal, the CN Brampton (Toronto) Terminal and the CN MacMillan Yard Road-Rail Terminal. Typically, rail and inter-modal transportation is used to move bulk goods and containers, including forest products, chemicals, automotive commodities and ores/minerals. **Exhibit 4-22** provides an overview of the area rail connections.

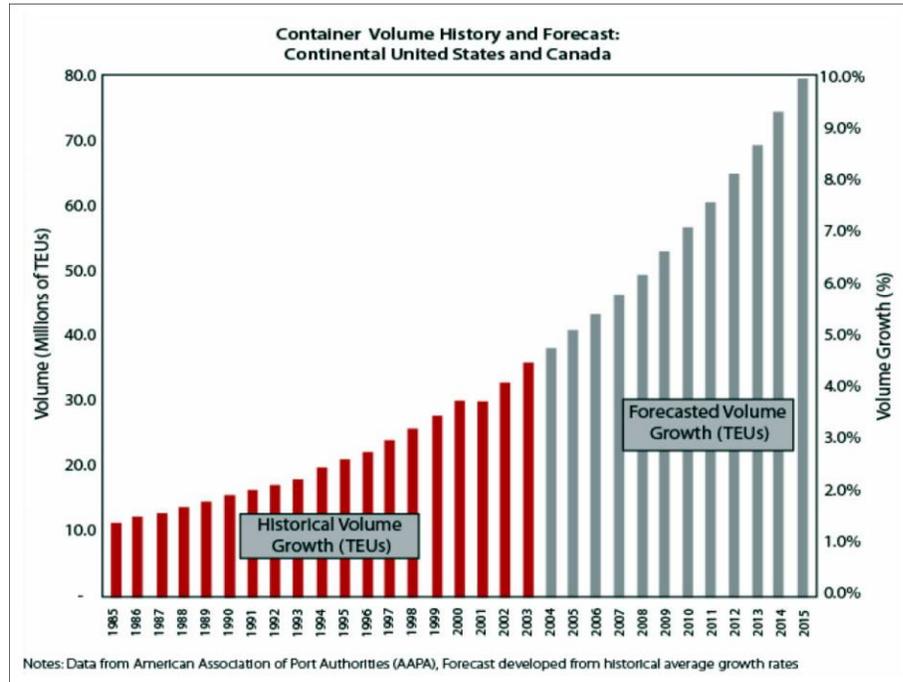
**Exhibit 4-22: Southern Ontario Rail Lines**



Source: Railway Association of Canada – Railway Atlas, November 2004

Rail traffic has experienced strong growth, with a steady increase between 1995 and 2003. Much of this growth was driven by marine imports by container. Moving forward, the volume of goods carried by rail is anticipated to increase, as shown in **Exhibit 4-23**. This growth in volume is expected to be driven largely by continued growth in the movement of containerized units.

Exhibit 4-23: Volume of Goods Carried by Rail



Source: Trends in Containerization and Capacity at Canadian Ports, Economics Division, January 2006

Rail connections between Urban Growth Centres in the GTA West Corridor are limited in some areas, requiring transfers and circuitous routes:

- Guelph to Milton – no direct connection, circuitous and exchange of traffic required from GEXR to CN to CP
- Guelph to Brampton – connection in place, terminus needed at Brampton
- Guelph to Vaughan – no direct connection, possible exchange of traffic from GEXR to CN to CP
- Milton to Brampton – connection in place
- Milton to Vaughan – no direct connection, exchange of traffic required from CP to CN
- Brampton to Vaughan – no direct connection, exchange of traffic from CN to CP

<p>Analysis conducted for the current study, supported by background reports and the findings from stakeholder consultation, indicates that three future problems are expected for inter-regional rail goods movement:</p>	
<p><b>Limited connectivity of inter-modal facilities and growth centres</b> poses constraints to non-road travel and can produce bottlenecks at the trucking interface</p>	<ul style="list-style-type: none"> <li>• Limited rail and road connections reduce efficiency and viability of rail options and increase travel times for deliveries</li> <li>• Road congestion at rail inter-modal facilities increases travel times and can affect scheduling to/from local customers</li> <li>• Road congestion is affecting the CN Brampton inter-modal terminal and MacMillan yard (Vaughan)</li> <li>• Road access at CP Vaughan inter-modal terminal is an issue; improvement is expected from Hwy 427 extension</li> </ul>
<p><b>Operational constraints</b> in some areas limit rail options for goods movement</p>	<ul style="list-style-type: none"> <li>• Potential constraints: introduction/ expansion of passenger services on CP MacTier (Toronto) and Guelph corridors, and CN Halton corridor may require new infrastructure</li> <li>• Rail expansion may be constrained by road grade and rail to rail grade separations</li> </ul>
<p><b>Conflicts with transit</b> for the use of rail capacity</p>	<ul style="list-style-type: none"> <li>• Progression toward sustainable choices for moving people is occurring in an environment of limited rail capacity and expansion</li> <li>• Potential CN passenger-freight conflicts:                         <ul style="list-style-type: none"> <li>• Bramalea-Georgetown: GO Transit is planning service expansions in primary CN corridor just outside of major freight terminals</li> </ul> </li> <li>• Potential CP passenger-freight conflicts:                         <ul style="list-style-type: none"> <li>• currently no passenger services in the Study Area</li> <li>• potential GO service from Toronto-Bolton could conflict with freight, particularly at Vaughan inter-modal terminal</li> <li>• additional GO service from Toronto-Milton could conflict with Toronto-Chicago corridor</li> </ul> </li> </ul>

### 4.3.3 Air

Although no air transportation facilities are located within the GTA West Corridor, there are several air transportation services in close proximity to the Study Area, as shown in **Exhibit 4-24**. The Toronto Pearson International Airport, approximately 3 km to the southeast of the Study Area, is Canada’s largest international airport for moving people and goods. Pearson International Airport served over 30 million passengers in 2006 and is ranked 29<sup>th</sup> globally for total passenger movements; it is projected to accommodate 66

million passengers per year by 2030. Also in 2006, 517,000 metric tons of cargo were moved through the airport, positioning the airport as the 28<sup>th</sup> busiest in the world for air cargo. Cargo volumes are projected to reach 1.27 million tons by 2030<sup>12</sup>. Other airports in the vicinity include Waterloo International, Hamilton International, Buttonville Municipal, Guelph Aerodrome and Toronto City Centre.

Air transportation is typically used to ship high value, time-sensitive goods over long distances. Products travelling by air generally include light machinery/electrical goods, manufactured goods, perishable foods, transportation equipment, medical supplies and plastic/chemical products.

**Exhibit 4-24: Airport Locations**

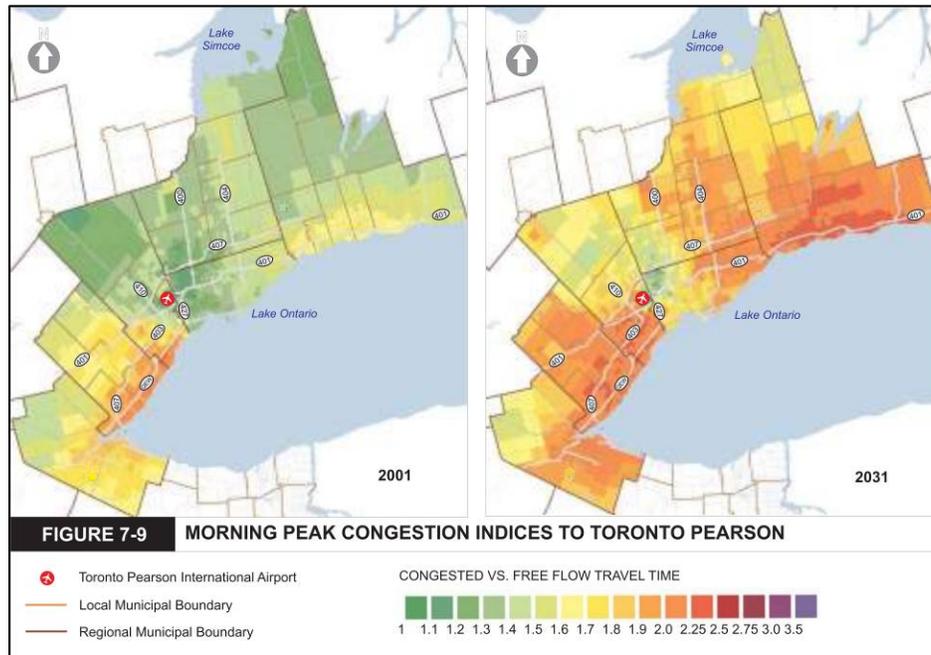


Goods movement by air relies on trucking for some portion(s) of the journey to/from the Study Area. Therefore, the problems associated with goods movement by commercial vehicles, discussed in **Section 4.3.1**, also apply here. Anticipated increased road congestion in the vicinity of Pearson International Airport will increase future travel times to and from the airport in the vicinity of the Study Area, in peak periods and throughout the day, as shown in **Exhibit 4-25**.

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<sup>12</sup> Taking Flight: The Airport Master Plan 2008-2030, GTAA December 2007, Chapter 3

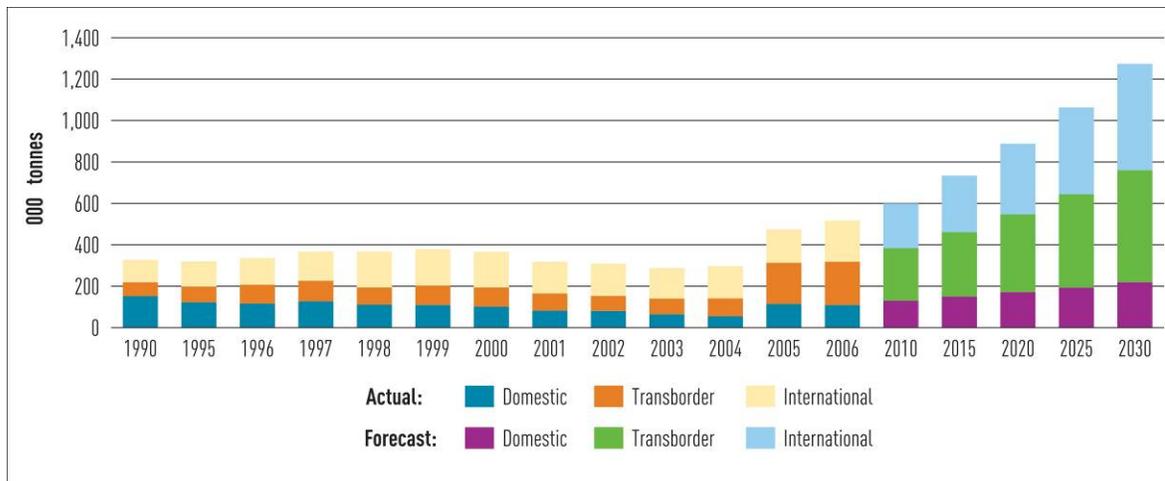
**Exhibit 4-25: Morning Peak Congestion Indices to Toronto Pearson International Airport 2001 and 2031**



Source: Taking Flight: The Airport Master Plan 2008-2030, GTAA December 2007.

Global air cargo is anticipated to grow significantly through to 2031. **Exhibit 4-26** shows the expected increase in air cargo demand at Pearson International, particularly trans-border and international air cargo, over the next 25 years. Goods movement by air is also becoming increasingly important at HIA, and Waterloo International Airport also provides some air cargo services.

**Exhibit 4-26: Pearson International Airport Air Cargo Demand Forecast**



Source: Taking Flight: The Airport Master Plan 2008 – 2030, GTAA December 2007

As air cargo movements increase into the future, ground transportation requirements will also become greater. Expected increases in road congestion will ultimately affect goods shipped by air, within and through the Study Area. **Exhibit 4-25** shows the decrease in morning peak period road accessibility to Pearson International Airport in 2031. Runway

capacity for goods movement is another issue as passenger and air cargo demand at the airport are forecast to increase significantly. Based on Transport Canada forecasts, airside congestion could begin to develop in 2013-2019, with maximum capacity reached by 2019<sup>13</sup>. Environmental approval has already been obtained for an additional runway at Toronto Pearson but no definite plans for construction are in place. Plans for a potential airport in Pickering, currently on hold, could relieve some of the capacity constraints at Pearson International Airport but would not be likely to considerably alter the movement of people and goods to, from and through the GTA West Study Area.

Future problems associated with goods movement by air have been determined by the Study Team’s analysis as well as information gathered from background reports and stakeholder consultation. Again, as trucking is required for the final connection to suppliers and markets, the problems associated with the commercial vehicle transportation system affect air transportation of goods.

Two major future problems associated with goods movement by the air transportation system have been identified as follows:	
<p><b>Limited multi-modal connections</b> to airports can result in increased dependence on the (often congested) road network</p>	<ul style="list-style-type: none"> <li>Existing area roadways are already congested and the forecast is for congestion to worsen</li> <li>A lack of connectivity limit options for goods movement to market/suppliers, which can result in increased travel times and further increased roadway congestion as air cargo movements increase</li> </ul>
<p><b>Limited runway capacity</b> at Toronto Pearson International Airport will influence the future growth of goods movement by air</p>	<ul style="list-style-type: none"> <li>Passenger and goods movements will be restricted by runway capacity constraints in the 2013-2019 period and, although environmental approval has been obtained, no firm plans for construction of an additional runway are currently in place</li> </ul>

**4.3.4 Marine**

Although there are no major marine transportation facilities within the GTA West Study Area, the Port of Hamilton and the Port of Toronto are two major facilities in relatively close proximity to the south and east, along the Great Lakes St. Lawrence Seaway. Other marine facilities in the vicinity of the Study Area include the Welland Canal, Port Dalhousie, Port Colborne and Petro Canada-Oakville.

Marine transportation is generally used to carry bulk goods and containers, including grain, coal, iron ore and steel, as well as general cargo and consumer goods. Typically, this mode is used for long distance shipments of large quantities of goods, and is cost-effective for long distance shipments compared to other transportation options.

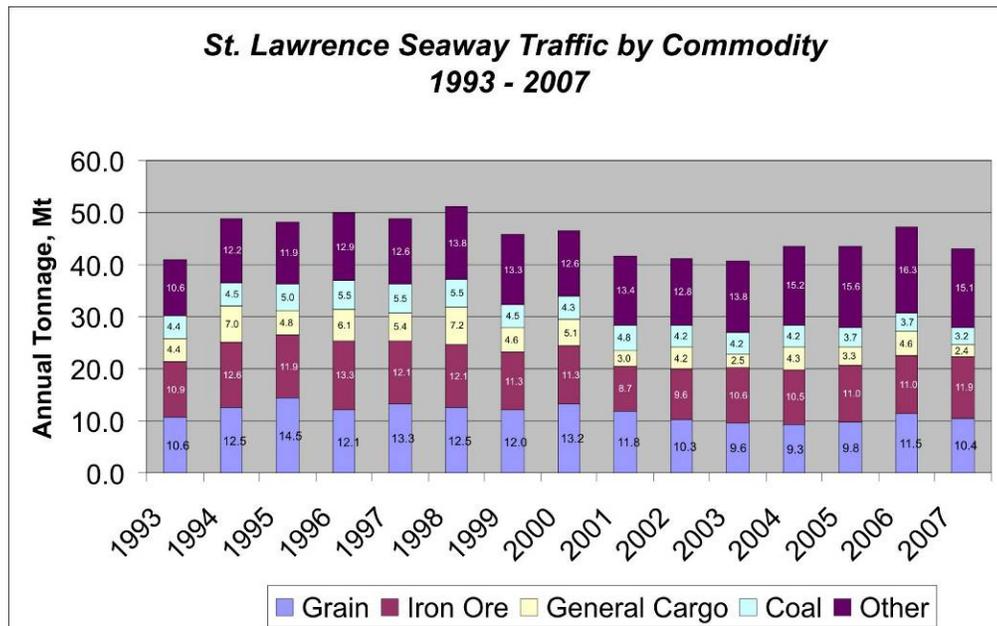
<sup>13</sup> Source: Taking Flight: The Airport Master Plan 2008 – 2030, GTAA December 2007

There are a number of major marine facilities in the vicinity of the Study Area, including the following:

- The St. Lawrence Seaway – the Seaway is a deep waterway connecting the Atlantic Ocean to the Great Lakes, extending from Montreal to Lake Erie, and the Welland Canal is a component of it connecting Lake Ontario and Lake Erie. The Seaway can accommodate vessels with a maximum length of 225.5 m<sup>14</sup> (a number of large container ships are over 300 m in length<sup>15</sup>). Area marine transportation facilities have a limited operating period as the St. Lawrence Seaway closes during the winter season.
- Port of Hamilton – in 2007 the Port of Hamilton handled approximately 11.8 million tons of cargo and was visited by 750 vessels<sup>16</sup>.
- Port of Toronto – the Port of Toronto (located outside of the Study Area) is one of the largest city and inland ports in Canada, moving 2.1 million tonnes of cargo in 2007<sup>17</sup>.

Marine transportation is generally used more for overseas trade than for trade between Canada and the U.S.<sup>18</sup>. Trends in marine cargo traffic indicate a relatively consistent movement of goods by this mode over the past fifteen years. As shown in **Exhibit 4-27**, the main commodities transported by the St. Lawrence Seaway in 2007 were iron ore and grain.

**Exhibit 4-27: St Lawrence Seaway Traffic by Commodity**



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

<sup>14</sup> St Lawrence Seaway web site (<http://www.greatlakes-seaway.com/en/seaway/facts/index.html>)

<sup>15</sup> Container ship database (<http://containerinfo.comohost.de/>)

<sup>16</sup> Hamilton Port Authority web site (<http://www.hamiltonport.ca/commercial/cargostats.aspx>)

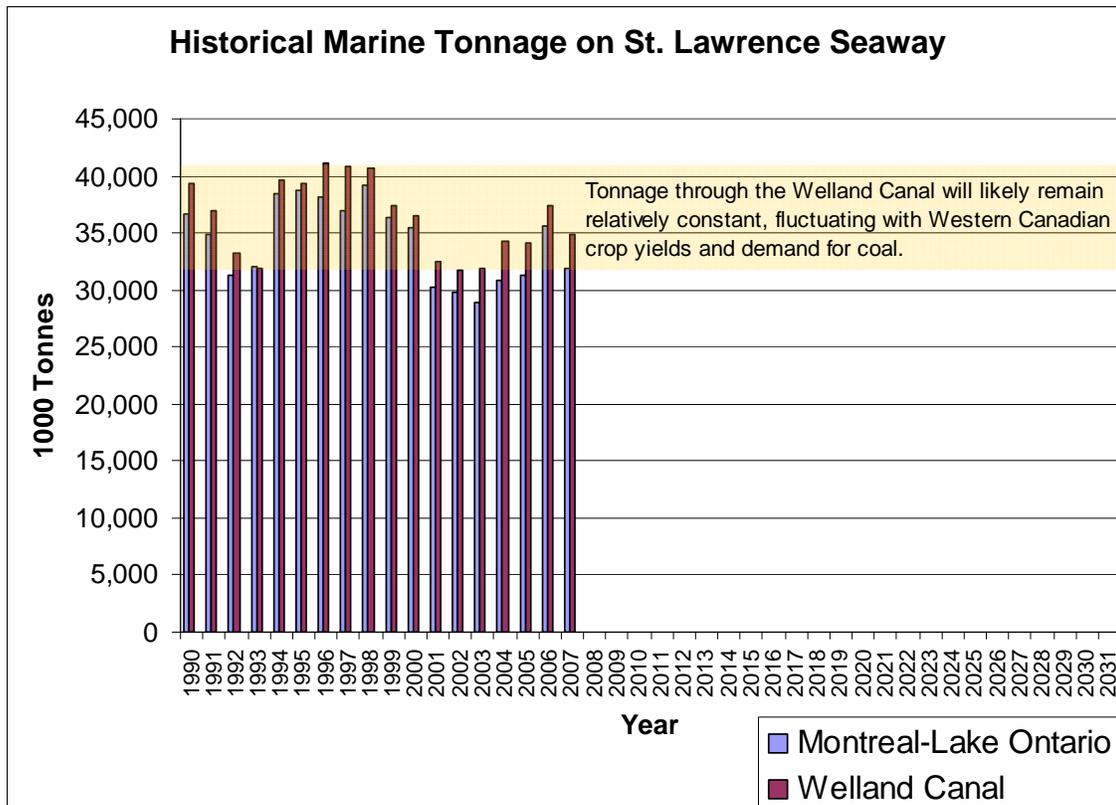
<sup>17</sup> Toronto Port Authority web site ([http://www.torontoport.com/PortAuthority/port\\_information.asp?id=95](http://www.torontoport.com/PortAuthority/port_information.asp?id=95))

<sup>18</sup> Transport Canada, Transportation in Canada 2007: An Overview, May 2008

Goods movement by marine transportation can be limited by bottlenecks at locations that interface with rail/trucking. From the Great Lakes/St. Lawrence Seaway ports, a multi-modal transportation network extends across the province and beyond. As marine transportation eventually relies on trucking to connect with suppliers and markets, the problems associated with goods movement by commercial vehicles also apply to it.

Due to the global nature of marine shipping, conditions around the world impact the future potential of marine transportation within the Study Area. As seen in **Exhibit 4-28**, trends on the St. Lawrence Seaway indicate that cargo tonnage is expected to remain relatively consistent, fluctuating with western Canadian crop yields and demands for coal.

**Exhibit 4-28: Historical Marine Tonnage on the St. Lawrence Seaway**



Source: Transport Canada, Transportation in Canada 2007: An Overview, May 2008 (historical data only)  
 \* Trends based on extrapolation from reported past St. Lawrence Seaway shipments

There is potential for this flat growth trend to change by improved infrastructure and policy measures for short-sea shipping (movement of cargo by inland waterways, within the same continent). Such services could provide environmental benefits and relieve highway congestion, and have been actively promoted in Europe by the European Commission since the early 1990s. Transport Canada and the U.S. Maritime Administration are investigating the feasibility of short-sea shipping across the Great Lakes.

<p>Analysis, background reports and stakeholder consultation indicate that future problems associated with goods movement by marine transportation are anticipated. Future problems associated with goods movement by the marine transportation system are as follows:</p>	
<p><b>Inadequate connections</b> between inland ports and the inter-regional road system, and limited capacity of the road system pose constraints on the effectiveness and efficiency of marine transportation of goods</p>	<ul style="list-style-type: none"> <li>• Congestion can result in increased travel times for shipments and further increased roadway congestion where rail-marine connections are unavailable</li> <li>• Insufficient connections to the higher order roadway network can result in the use of local and regional roads</li> </ul>
<p><b>Large ocean vessels being unable to enter the St. Lawrence Seaway</b> results in goods being transferred to rail or truck</p>	<ul style="list-style-type: none"> <li>• Early transfer from marine to rail and truck can reduce the effectiveness of marine transportation for goods movement to south-central Ontario</li> <li>• The Seaway's limitations increase the importance of multi-modal connections with trucking/rail routes into the Study Area</li> <li>• The result can be additional trucks shipping goods for longer distances than would be required where vessels can reach ports farther inland</li> </ul>
<p><b>Winter Seaway closure</b> limits the shipping season, which reduces potential year-round customers and can result in increased dependence on other modes</p>	<ul style="list-style-type: none"> <li>• The Seaway's winter limitations increase dependence on rail and truck transportation into south-central Ontario</li> </ul>

#### 4.4 Community, Environment and Economic Effects

The transportation problems associated with the inter-regional movement of people and goods have wider implications for the implementation of provincial policies relating to the community, environment and economy.

As outlined in **Section 1.5.2**, goals and objectives for this study were developed based on relevant approved planning policies and in support of the “triple bottom line” philosophy comprised of the following three factors:

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

The effects on these key factors are outlined below.

<b>Community</b>	<ul style="list-style-type: none"><li>• Road congestion results in increased costs (i.e. travel time, fuel costs) for goods movement which is passed on to consumers</li><li>• Congested roadways increase potential for traffic collisions</li><li>• Trucks using secondary routes impact communities, increase deterioration of infrastructure and increase conflicts with cyclists and pedestrians</li><li>• Reduced quality of life from time lost to commuting</li><li>• Lack of transit services and large volumes of heavy trucks on the inter-regional road system may deter tourists/recreational travellers</li><li>• Potential for job losses with reduced tourism</li></ul>
<b>Environment</b>	<ul style="list-style-type: none"><li>• Congestion increases fuel consumption and increases air and noise emissions</li></ul>
<b>Economic</b>	<ul style="list-style-type: none"><li>• Congestion and travel time uncertainty reduces economic competitiveness of local businesses and industries and results in excessive wear on vehicles</li><li>• Businesses are less likely to expand or be attracted to areas with major congestion</li><li>• Congestion negatively impacts the shipping industry and the effectiveness of all inter-modal travel</li><li>• Reduced tourism negatively affects the economies of GTA</li></ul>

## 5. IDENTIFICATION OF SPECIFIC TRANSPORTATION PROBLEMS OUTSIDE THE STUDY AREA

The transportation system problems and opportunities discussed in the previous sections focused on the specific problems and opportunities within the Study Area as well as the broader transportation system issues adjacent to the Study Area.

Within the area of influence shown in **Exhibit 1-4**, there are specific areas where existing transportation problems indirectly impact the GTA West transportation network. The following discussion provides an overview of these issues.

### 5.1.1 400 & 401 Interchange

The Highway 401 and Highway 400 interchange complex currently accommodates weekday daily traffic volumes in the order of 600,000 vehicles and upwards of 650,000 vehicles on a typical summer weekday. The significant traffic volume in conjunction with current ramp configurations and a high percentage (10%) of commercial vehicles results in this interchange complex operating in a congested state for several hours every day of the week. These factors contribute to major collision occurrences on the ramps. It is not uncommon to have an overturned tractor-trailer that effectively prevents traffic flows at specific ramps for a long period of time until the debris has been collected and the vehicle towed off site.

The extremely high traffic flows in a congested environment at the interchange complex result in a certain degree of travel unreliability (operating Level of Service, travel time, etc.) that motivates the travelling public to alter their travel routes by using the secondary road system (highways, arterial roads, etc.). At the GTA West Public Information Centres (PICs) held in March 2009, several members of the public noted that residents of Wellington County and North Halton (Milton, Georgetown) areas prefer to utilize the secondary roads to travel to the tourist/recreation areas of Muskoka and Haliburton due to the travel reliability of these roads over the unreliability of the Highway 400/Highway 401 interchange complex.

The trucking industry also changes travel patterns to avoid the unreliable travel characteristics. Public comments from both PIC #1 and PIC #2 indicated that over the last decade, there has been a noticeable increase in the amount of truck traffic that uses the secondary road system to travel between the Highway 400 corridor and the Guelph/Highway 6/Highway 401 area. An example of the recorded truck diversion using the secondary road system is shown in **Exhibit 4-19**.

The transportation system congestion and unreliability of travel associated with the Highway 400 and Highway 401 interchange complex is an important element of the transportation system that has a bearing on traffic operations in the GTA West Study Area.

### 5.1.2 Cambridge to Guelph Link (Regional Road 24/124)

Originally, Highway 24 provided a major north-south transportation link in the province of Ontario extending from Lake Erie northerly some 250 km to Collingwood on the shores of Georgian Bay. In 1998, the Ministry of Transportation (MTO) transferred jurisdiction for the 64 km section of Highway 24 from Highway 401 at Cambridge to

Highway 9 to municipalities that it passed through (Waterloo Region, Wellington County and Peel Region).

Specific to the 11 km section of Former Highway 24 (RR 24 / CR 124) between the City of Cambridge (Highway 401) and the City of Guelph (Highway 6), MTO undertook an Environmental Study Report in 1996 that indicated that there was justification for this section of road to be widened to a four-lane facility.

The County of Wellington Report, *Role and Function of Former Highway 24 from Highway 401 at Cambridge to Highway 10 at Caledon* (2007), indicated that this section of road functions as an integral part of a significant longer economic corridor, and that this corridor serves as a bypass for the congested GTA highway system for travel between Highway 401 west of Waterloo Region and locations north of the GTA.

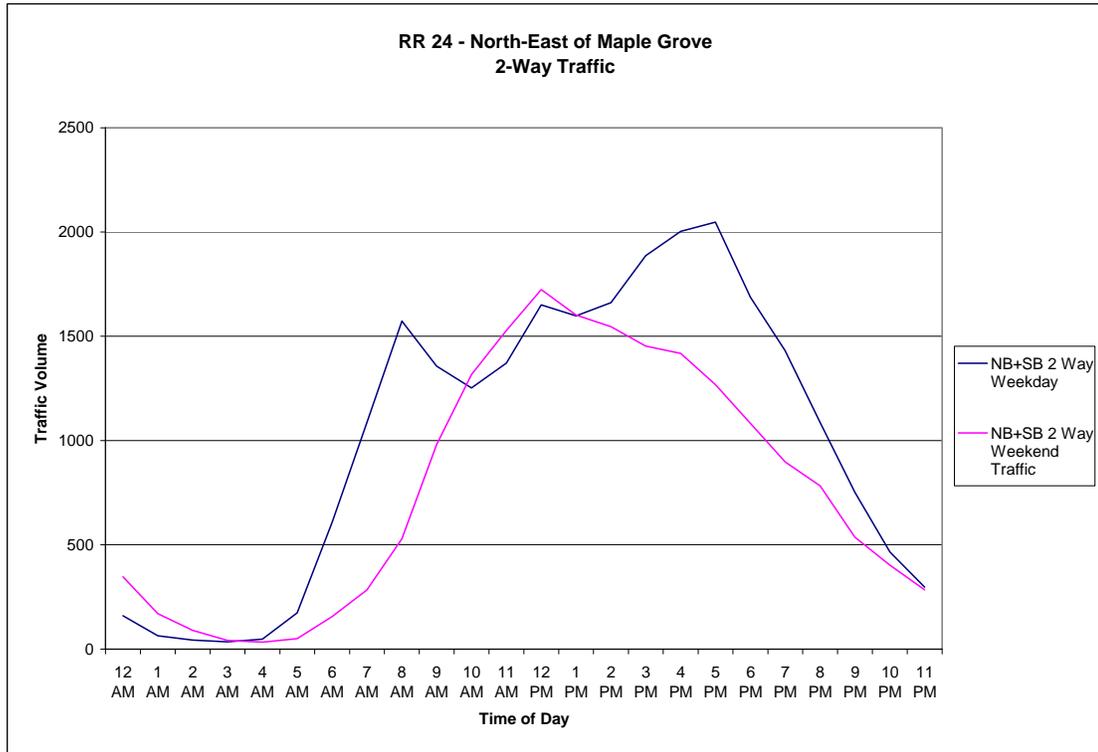
Traffic counts undertaken in 2007 indicate that the section of Former Highway 24 (RR 24/CR 124) between Highway 401 and Highway 6 accommodates upwards of 24,000 vehicles per day on the existing two-lane cross-section with upwards of 1,000 vehicles observed in the peak direction in the afternoon peak hour. A summary of the typical weekday and weekend daily traffic flows are presented in **Exhibit 5-1**. Generally, the weekend traffic flows are approximately 25% to 30% lower than the weekday traffic flows.

**Exhibit 5-1: Summary of Year 2007 Weekday and Weekend Traffic Flows**

RR 24 / CR 124 Traffic Count Locations	Weekday Daily Vehicles			Weekend Daily Vehicles		
	NB	SB	Total	NB	SB	Total
North of Wellington Road 32	7,130	7,250	14,380	5,070	5,180	10,250
Wellington Road 32 to Township Road 1	9,140	9,090	18,230	6,080	5,970	12,050
Township Road 1 to Maple Grove Road	11,710	12,630	24,340	8,800	9,720	18,520
South of Maple Grove Road to Highway 401	11,830	11,740	23,570	7,780	7,620	15,400

A typical weekday and weekend traffic profile for RR 24 northeast of Maple Grove Road is presented in **Exhibit 5-2**. The weekday traffic profiles indicate that the morning commuter travel peak occurs between 7:00 AM and 8:00 AM on a typical weekday, whereas the afternoon commuter travel peak occurs between 5:00 PM and 6:00 PM. The weekend traffic profile indicates that traffic peaks during the midday (10:00 AM to 5:00 PM).

Exhibit 5-2: RR 24 Typical Weekdays and Weekend Traffic Profiles



To assess existing and future operating conditions, roadway Levels of Service (LOS) calculations were performed for both existing and forecast PM peak hour volumes at specific road sections along RR 24/CR 124. The ‘HCS-2000 Two Lane Capacity Analysis Process’ was applied to assess LOS for the two-lane highway segments and the ‘HCS- 2000 Multilane Capacity Analysis Process’ was used to assess LOS for the four-lane segment. The existing (2007) peak hour volumes and resulting LOS analysis for the existing lane geometry are presented in **Exhibit 5-3**.

The LOS analysis indicates that CR 124 north of Wellington Road 32 is currently operating at LOS D which reflects an Unstable condition (see **Section 3.4.5** for operating condition descriptions). The roadway segment from Wellington Road 32 to Maple Grove Road is currently operating at LOS E, which reflects a Congested condition. RR 24 from south of Maple Grove Road to Highway 401 is a 4-lane highway facility. The LOS analysis for this segment indicates that it is currently operating at LOS B.

**Exhibit 5-3: Existing (2007) PM Peak Hour Volumes and Operation LOS**

RR 24 / CR 124 Traffic Count Locations	Existing PM Peak Hour Vehicles			Operating Level of Service and V/C Ratio
	NB	SB	Total	LOS
North of Wellington Road 32	624	618	1242	D
Wellington Road 32 to Township Road 1	734	1,044	1,778	E
Township Road 1 to Maple Grove Road	1,174	892	2,066	E
South of Maple Grove Road to Highway 401 (4-lane Highway)	1,033	1,044	2,077	B

The forecast (2031) total vehicles were calculated by using assigned automobile volumes from the GGH Model and assuming that trucks and buses represent 10% of total vehicles. The forecast 2031 PM peak hour traffic volume and associated LOS by road segment are presented in **Exhibit 5-4**.

The LOS analysis indicates that the road section of CR 124 from north of Township Road 1 is anticipated to operate at LOS E, reflecting a congested operating condition. The CR 124 / RR 24 road segments from Township Road 1 to Maple Grove Road are forecast to operate at a Congested state.

The four-lane segment of RR 24 from south of Maple Grove Road to Highway 401 is anticipated to operate at LOS D, which reflects Unstable operating condition.

The LOS analysis in relation to the existing lane geometry indicates that RR 24 north of Maple Grove Road is expected to operate in a Congested state if no additional road capacity is provided.

**Exhibit 5-4: Future (2031) PM Peak Hour Volumes and Operation LOS**

RR 24 / CR 124 Traffic Count Locations	Year 2031 PM Peak Hour Vehicles			Operating Level of Service
	NB	SB	Total	LOS
North of Wellington Road 32	868	920	1788	E
Wellington Road 32 to Township Road 1	1,109	1,101	2,210	E
Township Road 1 to Maple Grove Road	1,286	1,297	2,583	F
South of Maple Grove Road to Highway 401 (4-lane Highway)	1,745	1,856	3,6011	D

As noted, CR 124 provides a key transportation linkage between the City of Guelph and the City of Cambridge. The 2006 Transportation Tomorrow Survey (TTS) database indicates upwards of 1,900 person trips interact between the Cities during the PM peak hour. This interaction is forecast to increase by over 30% by year 2031.

A review of future 2031 PM peak hour travel flows on CR 124 northeast of Maple Grove Road indicate that approximately 30% of the forecast traffic on CR 124 is traffic travelling between the City of Cambridge and the City of Guelph. These travel characteristics suggest that CR 124 currently provides an inter-regional travel role for longer distance travel in the overall GGH transportation system.

## 6. IDENTIFICATION OF TRANSPORTATION OPPORTUNITIES

This section describes the Study Team’s assessment of the inter-regional transportation opportunities in the Study Area.

While prior sections of this report have focused on the inter-regional transportation problems that have been identified with the multi-modal transportation system within the Study Area, transportation opportunities are an equally important consideration. A key measure of the success of this study will be its ability to not only address the current and future transportation problems, but also to capitalize on the significant opportunities of providing a more balanced, robust and higher order transportation system which offers greater reliability, flexibility and choice for moving people and goods in the western part of the Greater Toronto Area (GTA) and beyond.

In the context of this study, the term “transportation opportunities” refers to the “big picture” strategic benefits of an efficient transportation system. Given the scale and strategic nature of this study as well as the early planning stage that this study represents, a visionary approach is required, which entails viewing the multi-modal transportation system within the Study Area as a whole and identifying ways of using the system to achieve the broader strategic goals and objectives of the study. These goals and objectives are summarized in **Section 1.5.2** of this report and again in later paragraphs of this chapter. The Study vision built upon existing approved provincial planning policies on community and economic development, and environmental protection.

The identification of transportation opportunities at this stage of the process does not involve identifying solutions to specific transportation safety, operational or capacity problems within the Study Area. Rather, the focus is on identifying ways of enhancing the existing inter-regional multi-modal transportation system to support the principles of the “triple bottom line” philosophy consistent with the provincial planning context upon which this project is founded: compact, vibrant and complete communities, a prosperous and competitive economy, and a protected environment.

While the transportation opportunities identified are relatively broad in nature, it is envisioned that as the project proceeds through the development of the transportation alternatives, and ultimately to the identification of a multi-modal Transportation Development Strategy (TDS), the opportunities will continue to become more refined but will remain generally consistent with the broader opportunities described in this report.

These transportation opportunities stem from the study goals and objectives, building upon existing approved provincial planning policies on community and economic development, and environmental protection.

These policies, which are described in greater detail in **Section 2.2** of this report, include the Growth Plan, the Provincial Policy Statement and the Greenbelt Plan, among many others. In addition, the Study Team reviewed municipal official plans of each upper and single tier municipality – Region of Peel, Region of Halton, Region of York, City of Guelph and the County of Wellington. The policies embodied in each of these approved planning documents formed the foundation for the study goals and objectives that have been identified by the Study Team as described in **Section 1.5.2**.

## **6.1 Transportation Opportunities**

The transportation opportunities further build upon the study goals and objectives discussed above, and are described in the following paragraphs.

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

The Metrolinx RTP has been developed based on an assumed future land use allocation for the GTHA that has been derived through consultation with GTHA municipalities, and is in accordance with the requirements of the Growth Plan. As the conformance exercise is ongoing, the land use allocation assumed for the Metrolinx RTP is based on current municipal thinking but may be further refined as the conformity exercise progresses.

The Study Team has consulted with the Region of Peel, Region of York, Region of Halton, City of Guelph and County of Wellington to obtain insight as to how they plan to allocate the Growth Plan's future population and employment growth. This knowledge will enable the Study Team to model and forecast future transportation demands as accurately as possible and to develop transportation alternatives that will accommodate these demands.

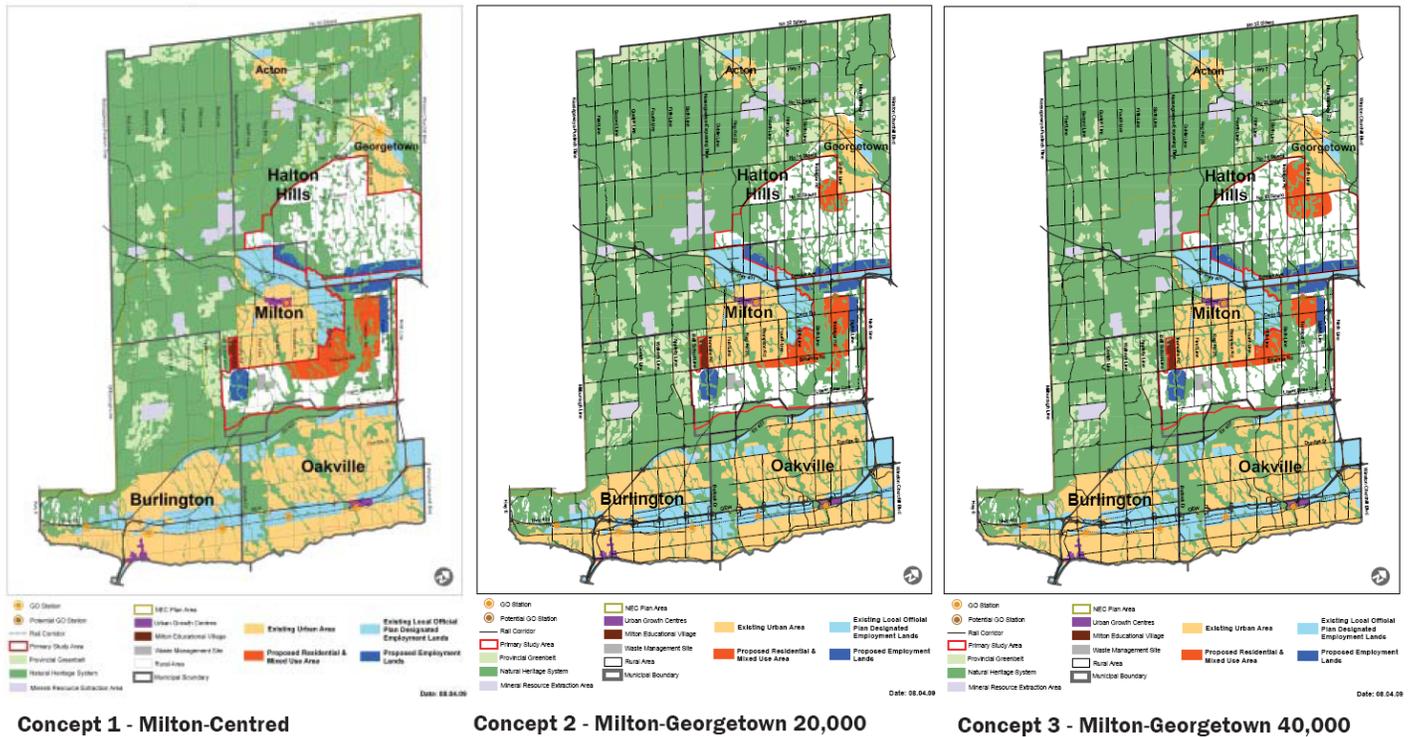
Ongoing consultation with each municipality will be undertaken throughout the remainder of the study to stay abreast of their plans with regard to future land use allocation and to co-ordinate the development of the transportation alternatives with the planning work that is being undertaken by these municipalities.

The Region of Halton has provided the Study Team with insight into their future land use allocation intentions. There are currently five scenarios under consideration, which include:

- Scenario 1: Milton-Centred – all new mixed-use/residential development area is located in Milton;
- Scenarios 2a and 2b: Milton-Georgetown (Low) – approximately 20,000 people are allocated around Georgetown in two potential configurations, with the remaining mixed-use/residential lands in Milton; and
- Scenarios 3a and 3b: Milton-Georgetown (High) – approximately 40,000 people are accommodated in Georgetown, again in two potential configurations, with a smaller amount of remaining mixed-use/residential land in Milton.

The broader land use concepts are illustrated in **Exhibit 6-1**. There is an opportunity to co-ordinate with the Region of Halton during the development of the transportation alternatives as a preferred land use option is identified.

Exhibit 6-1: Sustainable Halton Land Use Concepts



Source: Sustainable Halton Working Paper #3, Options Under the Preferred Concept, Regional Municipality of Halton, April 2009

In addition to developing alternatives that support the land use aspirations of the municipalities, the opportunity exists to co-ordinate with municipal land use planning staff in developing land use scenarios that optimize potential transportation alternatives, such as 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 while at the same time optimizing the function of the inter-modal facility. This type of arrangement could improve the efficiency of moving goods in the Study Area, as well as reduce some truck traffic between warehouses and retail outlets.

Similarly, considering connections to the Study Area’s designated Urban Growth Centres (Vaughan Corporate Centre, Downtown Brampton, Downtown Milton and Downtown Guelph) during the development of the transportation alternatives provides the opportunity to create quality communities for a diverse population, an enhanced environment with heritage and culture, and a vibrant economy.

In addition, through review of the Region of Peel’s Official Plan, as well as consultation with the Region, it is understood that the Region has begun a new initiative, Liveable Peel, which extends the goals and objectives of the province to the Region’s municipalities. This initiative complements the province’s strong commitments to a policy framework that improves future communities through balanced planning with respect to environmental, social, economic and cultural issues. The Liveable Peel policy framework has been established with the following objectives:

- To manage the impacts of growth and affect change;
- To achieve a sustainable land use and transportation system;
- To balance the demands of social, economic, environmental and cultural interests;
- To increase recognition and support of long-term planning; and
- To capitalize on community capacity and stakeholder involvement.

Planning transportation infrastructure that reflects these objectives represents an important opportunity to be considered in developing the transportation alternatives.

Similarly in the City of Vaughan, the Vaughan Corporate Centre is a planned new downtown area that will incorporate business offices, recreational and cultural facilities and pedestrian shopping areas. The Vaughan Enterprise Zone comprises more than 1,000 ha in the City's west end, designated as employment lands. Considering connections to these areas during the development of the transportation alternatives provides the opportunity to create quality communities for a diverse population, an enhanced environment with heritage and culture, and a vibrant economy.

There is also an opportunity to co-ordinate 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.

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

The Provincial Greenbelt is an important feature which traverses large sections of the Study Area, and strong policies have been developed to preserve rural and agricultural lands. As noted in Section 3.1 of the Greenbelt Plan:

*“The Protected Countryside contains an Agricultural System that provides a continuous and permanent land base necessary to support long-term agricultural production and economic activity. Many of the farms within this system also contain important natural heritage and hydrologic features, and the stewardship of these farms has facilitated both environmental and agricultural protection. The Agricultural System is therefore integral to the long-term sustainability of the Natural Heritage System within the Protected Countryside. It is through evolving agricultural and environmental approaches and practices that this relationship can continue and improve”.*

In addition to the protection, enhancement and preservation principles embodied in the Greenbelt Plan, the Growth Plan conformance work undertaken by municipalities will focus population and employment growth in Urban Growth Centres, Built Up Areas, and Designated Greenfield Areas, thereby serving to preserve key agricultural lands.

By co-ordinating the development of transportation alternatives with the planning by municipalities, and accommodating the preservation principles embodied in the Provincial Greenbelt Act and Plan, Niagara Escarpment Act and Plan, and Oak Ridges Moraine Conservation Act and Plan, there is an opportunity to minimize potential impacts to prime agricultural areas such that they can be preserved to the greatest possible extent.

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

The Metrolinx RTP has been developed and endorsed by the Metrolinx Board of Directors. The recommendations embodied in Metrolinx's 15 year and 25 year plans have been incorporated into the future transportation network assumed for this study.

While the Metrolinx RTP and GO Transit's Strategic Plan will provide greater choice for commuters in the GTHA, the opportunity exists to build upon this plan and provide a robust transportation system which offers commuters reliable and convenient alternatives to the automobile.

As noted previously, one of the key transportation problems that has been identified is congestion on the highway system, which is central to all other modes of transportation, and must operate efficiently in order to allow the other modes of transportation to operate efficiently as well. There is an opportunity to provide improved transportation services for commuters in the Study Area, which may reduce the pressure on the highway system. By providing expanded transit services, as well as improved connections between inter-regional transit services and local transit services, the opportunity exists to provide commuters with more choice, convenience and flexibility in making their travel choices during weekday morning and afternoon peak periods. This would reduce the demands on the highway system during these periods, which could improve the efficiency of all modes of transportation for moving people and goods.

In addition to making commuter travel more convenient and flexible, there is also an opportunity to facilitate a healthier lifestyle by incorporating active transportation considerations into the development of the transportation alternatives, such as providing lockers and bicycle storage facilities at transit terminals, and aboard transit vehicles.

A more balanced transportation network with greater choice for commuters that encourages active transportation could result in a greater balance of demands on the transportation system which would improve travel times and quality of life for commuters in Peel, Halton, York, Guelph and Wellington.

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

The GTA West Study Area is a major trade corridor in Ontario, and the export and import industry is a major economic driver. While trucks will continue to play an integral role in goods movement, there is an opportunity to encourage increased utilization of other modes of travel for goods movement, including rail, marine and air, and to provide better connections between all modes, particularly through inter-modal facilities.

Canada's "distribution economy" has generally grown faster than the economy as a whole, with sectors such as wholesale trade, logistics, and transportation expanding rapidly; this is in part due to ongoing growth in global trade. Serving the distribution economy will require expanded transportation capacity.

The expansion of third party and fourth-party logistics providers, and the expansion of the scale of their facilities is reshaping the distribution economy, providing increased focus on access to key nodes, and increasing the importance of targeted investments in capacity by transportation service providers.

Improved transportation system performance for connections between Pearson International Airport and related clusters of logistics uses, industries and urban centres within the Study Area would facilitate goods movement.

The concentration of major automotive and warehousing facilities in the northwest portion of the GTA makes this area an important local and regional transportation hub. Further development of inter-modal transportation yards located in Vaughan, Milton, and Brampton present an important opportunity to increase transportation efficiency throughout the Study Area.

In addition, given the importance of the border crossings (e.g. Niagara, Sarnia, Windsor) to the Ontario economy, improved connections between these areas and the GTA represent a significant opportunity. Again, improvements to the highway system and rail system would represent key areas of focus to facilitate these connections.

A more balanced utilization of available transportation modes, coupled with better inter-connection between the modes and international gateways, could enhance the level of trade within the Study Area, and, by extension, the economic competitiveness of Ontario.

## **5. Provide Improved Transportation Service for Tourists**

Tourism and recreation trips are discretionary in nature and are therefore greatly affected by external forces such as fluctuations in currency rates, gas prices, etc., which tend to be globally influenced. However, trip experience is a factor which has a significant effect on the level of tourism in an area, and can be greatly influenced by the quality of transportation services.

Trip experience includes not only the experience that a tourist has at a particular tourist destination, but also the quality of travel experienced while travelling to/from and within the destination. The latter component of trip experience can be significantly influenced by factors such as the overall duration of travel, overall travel convenience (which includes the degree of choice and range of costs associated with the various available modes of transportation), as well as the reliability and frequency of services.

Although moderate tourism growth is anticipated in the coming decades, there is an opportunity to enhance the growth of tourist trips to the Study Area by providing improved connections and greater modal choice for tourists arriving at gateways such as Pearson International Airport, and destined to the GTA West Corridor.

In addition, there is an opportunity to provide better connections to local transportation services that exist within the tourist destinations, and to facilitate active transportation by accommodating the storage of bicycles and other forms of active transportation in the services available to tourists.

These measures will enable convenient access to tourism and recreational destinations within the Study Area, and movement within these destinations without necessarily requiring an automobile.

## **6. Optimize Existing Transportation Infrastructure**

While Ontario enjoys a world class provincial transportation system, there are opportunities to optimize the existing system without inducing the capital costs and environmental impacts associated with new transportation infrastructure.

Transportation Demand Management (TDM) strategies such as high occupancy vehicle (HOV) lanes and carpool lots can be implemented on our existing provincial highways and highways to encourage increased vehicle occupancy, thereby reducing the number of vehicles using the highway system.

Similarly, Transportation Systems Management (TSM) strategies such as Intelligent Transportation Systems (ITS), use of changeable message signs, highway cameras, and “real time” adaptive transportation systems can provide travellers with “real time” information on traffic conditions, enabling improved decision making and consequently a better distribution of travel on the existing transportation system during times of heavy congestion, poor weather conditions and incidents.

Other strategies, including speed harmonization, high occupancy toll lanes (HOT) and road pricing, may also provide significant benefits in terms of optimizing our existing transportation infrastructure. Speed harmonization involves the use of variable message signs to continually update the posted speed on a roadway based on the level of congestion. As congestion increases, the posted speed is reduced to promote a more even flow of traffic and eliminate the “wave effect” that is caused by acceleration/deceleration cycles.

The removal of operational constraints within the transportation system can improve travel flows, thereby increasing the capacity, operational and safety characteristics of the system. Such constraints include at-grade rail-to-rail and road-to-rail crossings.

Such opportunities to improve the existing multi-modal transportation system will be fully explored by the Study Team before considering new roadway and/or non-roadway transportation infrastructure.

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

Given the significant growth that is projected for the GTA West Corridor, this study presents an important opportunity in and of itself. Through wise and careful planning that makes best use of existing infrastructure, and reflects the requirements of approved provincial environmental protection policies when developing, assessing and evaluating all reasonable transportation alternatives, there is an opportunity to minimize and potentially avoid impacts to important natural, social, economic and cultural environmental features at the earliest planning stages.

## **7. DEFINITIONS**

<b>AADT</b>	<b>Annual Average Daily Traffic</b> The total volume of traffic passing a point or segment of a highway facility in both directions for one year, divided by the number of days in the year
<b>ALU</b>	<b>Alternate Land Use Allocation</b> A scenario developed by the Study Team to reflect current (2008) land use planning information from the municipalities within the Study Area
<b>BAU</b>	<b>Business as Usual</b> A trend forecast of automobile flows established by extrapolating the 2001 Transportation Tomorrow Survey (TTS) peak hour automobile trips, based on the population and employment growth in the Metrolinx RTP
<b>BCS</b>	<b>Business and Commercial Stakeholder</b> Includes large corporations / industries, business associations, logistics providers, shipping associations; and universities / colleges – consulted to assist with development of Study Area knowledge
<b>CAG</b>	<b>Community Advisory Group</b> Established as a forum to provide ongoing advice to the Study Team, comprising members of the communities and organizations interested in or potentially affected by the current study (residents and ratepayers with representation throughout the municipalities of the Study Area; environmental and conservation NGOs, business and agricultural sectors; and others including academia, and unique groups concerned about the Niagara Escarpment, Oak Ridges Moraine, etc.)
<b>EA</b>	<b>Environmental Assessment</b> Decision-making process that promotes good environmental planning by assessing the potential effects of proposed activities, undertaken under the Ontario Environmental Assessment Act; the purpose of the EA is to provide for the protection, conservation and wise management of Ontario's natural, social/cultural and economic environment
<b>ETR</b>	<b>Express Toll Route</b> The 407 ETR is an all-electronic, barrier-free toll highway currently extending from Burlington to Pickering

<b>GGH</b>	<b>Greater Golden Horseshoe</b> The geographic area designated as the Greater Golden Horseshoe growth plan area in Ontario Regulation 416/05
<b>GGH Model</b>	<b>Greater Golden Horseshoe Model</b> Comprehensive travel demand forecasting model, designed for use in all major provincial studies in the GGH including the Metrolinx RTP; considers automobile and transit commuter trips and truck freight trips
<b>GTA</b>	<b>Greater Toronto Area</b> The metropolitan region encompassing the City of Toronto and the four surrounding Regional municipalities (Durham, Halton, Peel and York)
<b>GTHA</b>	<b>Greater Toronto and Hamilton Area</b> The metropolitan region encompassing the City of Toronto, the four surrounding Regional municipalities (Durham, Halton, Peel and York) and the City of Hamilton
<b>HOV Lane</b>	<b>High Occupancy Vehicle Lane</b> A roadway lane designated for use only by vehicles with a specified minimum number of occupants (>1); can also be opened to buses, taxis and carpools
<b>LOS</b>	<b>Level of Service</b> A qualitative measure describing operational conditions within a traffic stream, based on service measures such as speed and travel time, freedom to maneuver, traffic interruptions, comfort and convenience
<b>MAG</b>	<b>Municipal Agencies Group</b> Comprised of representatives from the City of Guelph, County of Wellington, and Regions of Halton, Peel, and York, to consult with the Study Team throughout the duration of the EA Study on relevant municipal issues
<b>MTO</b>	<b>Ontario Ministry of Transportation</b> Provincial agency responsible for Ontario's transportation and roads
<b>RAAG</b>	<b>Regulatory Agency Advisory Group</b> Established for Study Team consultation with potentially affected provincial ministries, agencies and federal departments
<b>RTP</b>	<b>Regional Transportation Plan/ "The Big Move"</b>

A long-term strategic plan for the GTHA for an integrated, multi-modal regional transportation system, developed by Metrolinx with a mandate from the Greater Toronto Transportation Authority Act 2006

- SADT**      **Summer Average Daily Traffic**  
Average twenty four hour, two way traffic for the period July 1st to August 31<sup>st</sup>, including weekends
- SDF Model**      **Strategic Demand Forecasting Model**  
Planning approach used to forecast trips not included in the GGH Model: goods movement by rail, marine and air freight and tourism and recreation travel by all modes; considers historical growth trends (Business as Usual – BAU) as well as future influences
- TSP**      **Transportation Service Providers**  
Stakeholders include: municipal transit; inter-regional transit; freight rail service; air and marine service; transportation associations/organizations; and trucking organizations - consulted to assist with development of Study Area knowledge
- UGC**      **Urban Growth Centres**  
Twenty-five centres designated in the provincial Growth Plan, planned as focal areas for investment in institutional and region-wide public services, as well as commercial, recreational, cultural and entertainment uses; to accommodate and support major transit infrastructure; to serve as high density major employment centres; and to accommodate a significant share of population and employment growth
- V/C Ratio**      **Volume / Capacity Ratio**  
A level-of-service measure for roadways comparing roadway demand (vehicle volumes) with roadway supply (carrying capacity); <0.8 typically considered minor, non-recurring congestion; 0.8-0.9 typically considered moderate congestion/ approaching unstable conditions; >0.9 typically considered major congestion/ unstable, “stop and go” conditions

## **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)**

## **APPENDIX A**

### **SUMMARY OF INPUT RECEIVED THROUGH OUTREACH AND CONSULTATION**

## **SUMMARY OF INPUT RECEIVED THROUGH OUTREACH AND CONSULTATION**

The transportation problems and opportunities were defined in consultation with all relevant stakeholders, including the general public, local community and interest groups, federal and provincial ministries and agencies, upper- and lower-tier municipalities and First Nations.

### **Community Advisory Group**

A Community Advisory Group (CAG) was established as a forum to provide ongoing advice to the Study Team. The CAG is comprised of members of the communities and organizations interested in or potentially affected by the current study, including:

- Residents and ratepayers with representation throughout the municipalities of the Study Area;
- Environmental and conservation NGOs;
- Business and agricultural sectors; and
- Others including academia, and unique groups concerned about the Niagara Escarpment, Oak Ridges Moraine, etc.

The mandate of the CAG is to:

- Act as a sounding board where the CAG and the Study Team can test ideas and findings;
- Provide advice, critiques and suggestions to see that study is comprehensive, and that data is adequately collected and analyzed;
- Provide a sense of the broader community reactions and concerns and how these might be addressed;
- Provide a direct, face-to-face channel of communications between and among CAG members, the residents, environmental community, the developers, and the Study Team; and
- Identify and discuss potential issues, challenges and opportunities in a timely fashion, and assist in developing mechanisms to identify satisfactory outcomes.

During the problems and opportunities phase of this study, the CAG held its second meeting on December 4, 2008 to discuss the project goals and objectives, the identified transportation problems, and the framework for Public Information Centre (PIC) #2. The table below provides a summary of the CAG's input on the transportation problems identified by the Study Team, and a list of other problems and opportunities identified by the CAG.

**CAG Meeting #2 - Input Received Regarding Problems & Opportunities**

Comment	Suggestions on P&O Identification Process	CAG Identified Problem	CAG Identified Opportunity
With respect to commuting by transit, the CAG listed the following problems as being most important: 1. Limited integration between local and inter-regional transit; 2. Limited community to community transit service; and 3. Conflicts with freight for use of rail capacity.		✓	
With respect to commuting by private vehicle, the CAG listed the following problems as being most important: 1. Recurring congestion during peak periods; 2. Inefficient road connections between Urban Growth Centres; and 3. Lack of residual capacity to accommodate rerouting of traffic during non-recurring incidents (accidents, weather, roadwork).		✓	
With respect to goods movement by truck, the CAG listed the following problems as being most important: • Recurring congestion during peak periods; • Inefficient road connections between Urban Growth Centres, commercial centres and inter-modal terminals; and • Infiltration of local communities by inter-regional trucking.		✓	
With respect to goods movement by rail, the CAG listed the following problems as being most important: • Few railway connections between growth areas; and • Track capacity constrained in some areas.		✓	
With respect to goods movement by air, the CAG listed the following problems as being most important: • Limited multi-modal connections to airports.		✓	
Another problem is congestion caused by the amount of time (including jurisdictional issues) it takes to clear roadway accidents (including investigations and vehicle removal).		✓	
For long distance travel, solutions could involve “drive-on, drive-off” services that blur the line between railways, transit and personal vehicle use.			✓
Rationale/suggestions for transit related problems: • Use data to show the absence of public transit service, low frequency of service, quality of service, and schedule delays; • Use examples that prove you cannot take public	✓		

Comment	Suggestions on P&O Identification Process	CAG Identified Problem	CAG Identified Opportunity
<p>transit to/from certain places;</p> <ul style="list-style-type: none"> <li>• Use data to show that some routes only run in certain directions;</li> <li>• Show that transit service runs mostly east-west, not north-south;</li> <li>• Show the effects that transit strikes have on those that depend on transit;</li> <li>• Use cost analysis – compare the cost of taking a family to downtown Toronto using public transit vs. the cost of driving in a personal vehicle and parking;</li> <li>• The use of the car is so ingrained in our society that progress in the realm of transit is hindered. The concept of “build it and they will come” should be employed for transit infrastructure;</li> <li>• Compare data on peoples’ perceptions of the transit system vs. reality; and</li> <li>• Show travel times to different destinations by car and transit.</li> </ul>			
<p>Rationale/suggestions for goods movement problems:</p> <ul style="list-style-type: none"> <li>• Show the effect on goods movement of rail lines being owned by different entities;</li> <li>• Show the limitations posed by having only two major rail freight corridors in the Study Area;</li> <li>• Use historical data/trends;</li> <li>• Show where routes currently do not exist to meet the needs of particular shippers;</li> <li>• Review the number of trucks infiltrating local communities that could be by-passing via an alternate route;</li> <li>• Show how roads are not designed to accommodate certain vehicle sizes/loads;</li> <li>• Provide data on what is being shipped in the Study Area, how it is being transported and where it is going;</li> <li>• Compare the data on the amount of goods going through the Study Area to the goods being shipped to the Study Area; and</li> <li>• Show the impact of “just-in-time” deliveries on the congestion on the roadways.</li> </ul>	✓		
<p>Rationale/suggestions for tourism and recreation problems:</p> <ul style="list-style-type: none"> <li>• Show that there is currently no way to get to Pearson Airport by rail and provide data on how many passenger trains currently pass by Pearson;</li> <li>• Show the impacts that grid vs. radial road patterns</li> </ul>	✓		

<b>Comment</b>	<b>Suggestions on P&amp;O Identification Process</b>	<b>CAG Identified Problem</b>	<b>CAG Identified Opportunity</b>
have on making the appropriate transportation connections; and <ul style="list-style-type: none"> <li>• “Air” should be a type of mode added to the tourism and recreation market – a number of tourists use and need access to/from airports (including smaller ones) in the Study Area.</li> </ul>			

The CAG held its third meeting during the problems and opportunities phase of this study on February 4, 2009 to provide an update on the project status, discuss the updated transportation problems, and review the content for PIC #2. The following table provides a summary of the CAG’s input regarding the transportation problems identified by the Study Team.

**CAG Meeting #3 - Input Received Regarding Problems & Opportunities**

<b>Question Posed By Study Team</b>	<b>CAG Response</b>
Overall, what are your views of the transportation problems as presented?	Problems have been underestimated. For example, the assumptions of improve future live/work relationships, transit usage, etc., have been overestimated. As a result, the forecasting seems overly optimistic.
	A diagram should be created to show what the problems would be if historical trends continue. This could be compared to the optimistic predictions that result when the Metrolinx RTP is modelled.
	The large volume of commercial vehicles on Highway 401 leaves no lanes on the highway for commuters.
	Goods are moved during all hours.
	More inter-modal terminals are needed.
	Need to address road and rail needs for tourism.
What, if anything, would you add or change about the transportation problem statements?	The right kinds of problems were identified.
	Road is the only way to access airports.
	Waterloo Airport and the corridor between Woodstock, Kitchener, and Guelph have not been mentioned.
	Some of the data does not seem to be accurate, particularly the estimated automobile travel times. If the model does not accurately predict current travel times, the all resulting projections must be questioned.
Do you have any feedback on the data used in the presentation to support the transportation problem statements? What other supporting data might be used?	Need more Highway 407 data.
	Incorporate influences from the perimeter and outside of the Study Area boundaries. For example, when outside towns and cities do not meet their transportation infrastructure growth, how does this influence the problem statements identified?
	The validity of certain assumptions is questionable.
	More time should be spent on analyzing the relationship between goods and people movement.
In your view, which of the problems are the greatest priority?	Transit commuting.
	Lack of encouragement for commuters to work in their own

Question Posed By Study Team	CAG Response
	cities or take transit.
	Lack of a northern transit hub – Union Station is the only current hub.
	Shipping of garbage – the GTA should deal with its own garbage instead of shipping to the U.S.
	The data needs to be corrected before priorities can be determined.

### Regulatory Agency Advisory Group

The Regulatory Agency Advisory Group (RAAG) was established as a means to consult with potentially affected provincial ministries, agencies and federal departments. The RAAG is comprised of members from:

- Ontario Provincial Police
- Grand River Conservation Authority
- Toronto and Region Conservation Authority
- Credit Valley Conservation
- Conservation Halton
- Niagara Escarpment Commission
- Hydro One Networks
- Canadian Pacific Rail
- Metrolinx / GO Transit *[formerly separate agencies]*
- Greater Toronto Airports Authority
- Ministry of Culture
- Ministry of Municipal Affairs and Housing
- Ministry of Natural Resources
- Ministry of Energy and Infrastructure *[formerly the Ministry of Public Infrastructure Renewal]*
- MTO Freight Policy Office
- MTO Modal Policy and Partnerships Branch
- Canadian Environmental Assessment Agency
- Environment Canada

The RAAG held its second meeting during the problems and opportunities phase of this study on February 12, 2009 to provide an update on the project status, discuss the project goals and objectives, review the existing conditions within the Study Area, review how the Study Team predicted future transportation conditions, discuss the transportation problems and opportunities, and discuss corridor planning and protection. A summary of the RAAG's input regarding the transportation problems and opportunities identified by the Study Team is provided below.

#### RAAG Meeting #2 - Input Received Regarding Problems & Opportunities

Issue	RAAG Comments
Future Commuter Problems	The Study Team should consider increased telecommuting and off-peak trucking in the transportation modelling.
Future Goods Movement Problems	Connectivity between modes of goods movement is important. The Study Team should encourage intensification of proper land use around major terminals and distribution centres through land use planning measures. This would make the best use of existing inter-modal infrastructure and decrease overall truck mileage.
Future Tourism and Recreation Problems	The Study Team should consider the amount of trips made to cottage country from the Study Area.

## **Municipal Outreach and Consultation**

### **Municipal Agencies Group**

Based on the geographic context of the Study Area, the City of Guelph, County of Wellington, and Regions of Halton, Peel and York (including lower tier municipalities) were invited to join the Municipal Agencies Group (MAG), as a means for consultation with the Study Team throughout the duration of the EA Study. The MAG is comprised of representatives from:

- Region of Peel
- York Region
- Halton Region
- Region of Waterloo
- City of Brampton
- City of Guelph
- City of Mississauga
- Town of Caledon
- City of Vaughan
- Township of King
- Town of Halton Hills
- Town of Milton
- Wellington County
- Town of Erin
- Town of Puslinch
- Township of Guelph/Eramosa
- Township of Centre Wellington

The MAG held its second meeting during the problems and opportunities phase of this study on February 3, 2009 to provide an update on the project status, discuss the project goals and objectives, review the existing conditions within the Study Area, review how the Study Team predicted future transportation conditions, discuss the transportation problems and opportunities, and discuss corridor planning and protection. The table below provides a summary of the MAG’s input regarding the transportation problems and opportunities identified by the Study Team.

**MAG Meeting #2 - Input Received Regarding Problems & Opportunities**

<b>Issue</b>	<b>MAG Comments</b>
Future Commuter Problems	The modelling has assumed an aggressive shift towards transit use; however the transit travel times predicted for 2031 still aren’t competitive with the predicted automobile travel times. Transit is the first priority outlined in the Growth Plan, thus the model should take into account ideal transit times and quantify the amount of investment needed to achieve this.
	A sensitivity analysis should be performed that considers advancing a potential GTA West Corridor prior to other planned corridor improvements.
Future Goods Movement Problems	The graph which displays the lack of reliable connection between Simcoe County and Highway 401 is effective. A graphic that displays the relationship between Guelph and Highway 401 would be useful.
	The Southern Ontario Gateway Council has flagged the interchange at Highway 401 and Highway 400 as a problem. The GTA West Corridor could be an important strategic alternative to the unpredictable flow in that area.

**Halton Planning and Public Works Committee**

The Study Team met with the Halton Planning and Works Committee during the problems and opportunities phase of the study on February 4, 2009 to provide an update on the project status, review how the Study Team predicted future transportation conditions, discuss the transportation problems and opportunities, and discuss corridor planning and protection. A summary of the committee’s input regarding the transportation problems and opportunities identified by the Study Team is provided below.

**Halton Planning and Public Works Committee – Input Received Regarding Problems & Opportunities**

<b>Issue</b>	<b>Halton Planning and Public Works Committee Comments</b>
Air Emissions	The Study Team should consider innovative ways to reduce emissions through vehicle technologies.
Rail Opportunities	The province should find a way to ensure rail is considered to its fullest potential, disregarding current conflicts and rivalry issues.
	The Study Team should consider the European experience and rail transit model.
Unused Rail Corridors	The Study Team should prevent the loss of rail network sections (i.e. unused rail corridors being converted to

Issue	Halton Planning and Public Works Committee Comments
	recreational uses).
Trucking Restrictions	The Study Team should consider harsh trucking restrictions, such as: <ul style="list-style-type: none"> <li>o A 500 mile threshold for trucking; and</li> <li>o No trucks on highways during peak periods.</li> </ul>
Elevated Route on Lake Ontario	The Study Team should consider a new road-based structure in Lake Ontario.
HOV and BRT	The Study Team should provide for higher-order transit as part of the solution.

**York Region Planning and Economic Development Committee**

The Study Team met with the York Region Planning and Economic Development Committee during the problems and opportunities phase of the study on March 4, 2009 to provide an update on the project status, review how the Study Team predicted future transportation conditions, discuss the transportation problems and opportunities, and discuss corridor planning and protection. Below is a summary of the committee’s input regarding the transportation problems and opportunities identified by the Study Team.

**York Region Planning and Economic Development Committee – Input Regarding Problems & Opportunities**

Issue	York Region Planning and Economic Development Committee Comments
Consultation Regarding Problems and Opportunities	It is important that the public are being educated about the purpose of the study, the opportunities to provide input and the public consultation process. It is key that they are engaged in the study at an early stage so that they are well informed when the study concludes that transportation improvements are proposed.
Future Goods Movement Problems	It is important to understand that there is a steady growth in freight and goods movement, and they are directly linked to the economy. We have to find the right answer to address these transportation issues.

**Region of Peel Council**

During the problems and opportunities phase of this study, the Study Team met with the Region of Peel Council on February 5, 2009 to provide an update on the project status, review how the Study Team predicted future transportation conditions, discuss the transportation problems and opportunities, and discuss corridor planning and protection. The table below provides a summary of Council’s input regarding the transportation problems and opportunities identified by the Study Team.

**Region of Peel Council – Input Regarding Problems & Opportunities**

Issue	Region of Peel Council Comments
Areas of Interest	The Winston Churchill/Terra Cotta area is an area of interest to the Town of Caledon. The Town of Caledon would like to work closely with the Study Team so as to benefit the employment growth along the future GTA West corridor while protecting agricultural lands.
	There are significant areas of interest in south Bolton. This area should be looked at before the whole corridor.
	It is critical to identify the areas of interest as soon as possible, and to consider how the GTA West corridor may potentially connect to other transportation facilities such as Highway 427.

**Wellington County Council**

During the problems and opportunities phase of this study, the Study Team met with the Wellington County Council on February 26, 2009 to provide an update on the project status, review how the Study Team predicted future transportation conditions, discuss the transportation problems and opportunities, and discuss corridor planning and protection. A summary of Council’s input regarding the transportation problems and opportunities identified by the Study Team is provided below.

**Wellington County Council – Input Regarding Problems & Opportunities**

Issue	Wellington County Council Comments
Preferred Transportation System Alternative	The Study Team should ensure that the problem statements include previously identified needs such as a connection of Highway 6 to Highway 24, and Highway 7 to Kitchener.
	Concern from the southern portion of Wellington County regarding the location of a GTA West corridor and whether access would be provided to/from the smaller towns.

**Transportation Service Providers & Business and Commercial Stakeholders**

The Study Team engaged the Business and Commercial Stakeholders (BCSs) and Transportation Service Providers (TSPs) to identify transportation problems and opportunities within the Study Area.

It should be noted that numerous BCSs and TSPs are represented within both the GTA West Study Area and the Study Area for the NGTA Corridor Planning and Environmental Assessment Study. BCSs and TSPs that are relevant to both studies were consulted only once, while all additional consultation undertaken as part of the GTA West Study was for the BCSs and TSPs that are located strictly within the GTA West Study Area. Between October 2007 and February 2008, the NGTA Study Team consulted (via face-to-face interviews, telephone interviews and electronic questionnaires) with various BCSs and TSPs, many of which operate within the GTA West Study Area as well. As such, the consultation for the GTA West study was developed to be consistent with, and build upon, the consultation completed as part of

the NGTA Study. This streamlined the consultation process between the two studies and built a consistent body of knowledge that can be referenced by both Study Teams.

The BCS stakeholders consulted during the problems and opportunities phase included:

- Large Corporations / Industries;
- Business Associations;
- Logistics Providers;
- Shipping Associations; and
- Universities / Colleges.

The TSP stakeholders consulted during the Problems and Opportunities phase included:

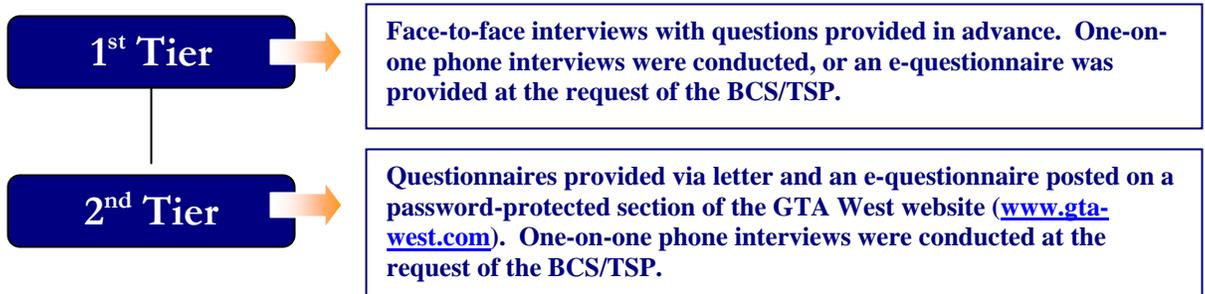
- Municipal transit;
- Inter-regional transit;
- Freight Rail service;
- Air service;
- Transportation Associations / Organizations; and
- Trucking Organizations.

The consultation approach was the same for the BCS and TSP stakeholders and involved a two-tiered approach.

**Tier One BCS and TSP Stakeholders:** The strategy for consulting with the Tier One BCS stakeholders was to focus on obtaining insights from agencies/organizations which provide transportation service within the larger Study Area, and those primarily business/organizations which have a broad knowledge of the business/sector, and trends and policy implications. These groups have the most comprehensive and consolidated information on various aspects of business operations and issues relative to the movement of people and goods. The input received from these groups is critical to developing freight and passenger profiles and understanding transportation problems, opportunities, trends, and limitations.

**Tier Two BCS and TSP Stakeholders:** Organizations/agencies that provide locally based transportation services, and those businesses/organizations that can provide a more localized context on various aspects of business operations and issues relative to the movement of people and goods were consulted to better understand the transportation problems, opportunities, trends, and limitations within the Study Area.

The following outlines the consultation tools and techniques that were employed for each of the above-noted BCS and TSP stakeholder groupings:



Consultation began in April 2008. The following is a list of the conclusions from the consultation with the BCSs and TSPs as can be drawn from information received through both studies:

**Insufficient and inefficient public transportation results in low transit ridership:**

- Improve connections between transit providers/regions;
- Construct dedicated transit lanes; and
- Provide funding/support for improvements (e.g. higher order transit, more routes and vehicles).

**Existing roadways are at capacity which causes delays, decreases productivity and costs money:**

- Widen existing roadways (e.g. Highway 401) and designate the new lanes as truck lanes to increase the capacity of the existing infrastructure;
- Convert existing east-west roadways to controlled access to improve operations;
- Improve connections to highways to reduce traffic on local roads;
- Approve new technologies to increase the capacity on existing roadways (e.g. combination vehicles, longer trailers);
- Focus on transportation demand management (e.g. flexible working hours, restricting hours for shipping via truck, etc) to relieve congestion on existing roadways;
- Install changeable message signs at the interface of all major highways to provide updates on traffic and alternate routes; and
- Provide a traffic update system (like GIS) to truckers so they can obtain instantaneous updates on traffic.

**Limitations to making inter-modal transportation a viable mode:**

- Provide better roadway access to inter-modal facilities since you still need trucks to transport goods to the rail/marine facilities;
- Reduce the congestion at the inter-modal facilities;

- Allow flexibility in the transportation schedules of each mode since they are dependent on one another and need to accommodate the “just-in-time” deliveries;
- Provide more rail infrastructure to accommodate shorter hauls;
- Expand the type of goods that can be shipped via rail and marine (weight, size, materials); and
- Provide funding/support for rail/marine improvements (e.g. expansion of existing rail yards and lines, expansion existing ports and construction of new ports).

**Lack of alternate routes in the GTA West Corridor:**

- Construct a new multi-use corridor for transit, automobiles, and trucks. Or construct a new corridor dedicated to truck traffic - this corridor should not be a toll highway since the cost is prohibitive.

**Land Use Planning Can Positively or Negatively Impact Transportation:**

- Intensify development to make transit more efficient and supportable;
- Restrict residential development in the vicinity of existing or future inter-modal facilities; and
- Situate industrial areas near rail lines.

**Other:**

- Centralize transportation governing bodies to streamline approval processes;
- Integrate major, related transportation environmental assessments (e.g. NGTA, GTA West)

**Public Information Centre #2**

The second round of PICs was held in March 2009 to provide the public with an opportunity to view and comment on maps and displays that illustrate the problems and opportunities within the GTA West Study Area. The dates and locations of the PICs were as follows:

<p>Wednesday March 4, 2009  River Run Centre  Canada Company Hall  35 Woolwich Street  Guelph, ON  4:00 PM. – 8:00 PM</p>	<p>Thursday March 5, 2009  Brampton Fairgrounds  Hall  12942 Heart Lake Road  Caledon, ON  4:00 PM. – 8:00 PM</p>	<p>Monday March 9, 2009  Mold-Master Sportsplex  Alcott Hall  221 Guelph Street  Georgetown, ON  4:00 PM – 8:00 PM</p>
<p>Wednesday March 11, 2009  Le Jardin Special Events Centre  Venetian Room  8440 Highway 427  Woodbridge, ON  4:00 PM – 8:00 PM</p>	<p>Thursday March 12, 2009  Pearson Convention Centre  Hall C  2638 Steeles Avenue East  Brampton, ON  4:00 PM – 8:00 PM</p>	

A total of 338 members of the public chose to sign the visitor’s register at the five locations, and 43 comments sheets were submitted to the Study Team. The following table provides a summary of Council’s input regarding the transportation problems and opportunities identified by the Study Team.

**PIC#2 - Input Regarding Problems & Opportunities**

Issue	Public Comments
Transportation Problems, Opportunities and System Alternatives	Congestion is an issue for all system users, particularly for truckers.
	Truck infiltration into stable residential neighbourhoods is a concern.
	Data may be outdated/inaccurate, particularly the future projections given the current economic state.
	Walking and hiking tourism opportunities should be considered by the Study Team.
	Bicycle lanes and a lower speed limit should be implemented on Highway 6 between Woodlawn Road and Conservation Road.
	Highway 407 should be extended westerly and a highway should be built between Barrie and Guelph.
	If the Study Team already knows where the new corridor will be, just show it on a map now.
	Support for multi-modal options, however public transit and rail alternatives should be the priority.
	The Study Team should improve existing infrastructure (particularly rail and other transit) before constructing new infrastructure.
	The Study Team should develop bold/visionary transportation solutions.
	More goods should be moved via rail, not truck.
	Need to protect agricultural lands/rural areas, recreational areas, and the natural environment.
	Question how a GTA West corridor can be placed through the Greenbelt or Niagara Escarpment.
Question how areas of interest were determined, and if these areas will determine the route for the new corridor.	

## **APPENDIX B**

### **POLICY FRAMEWORK**

<b>Places to Grow – Growth Plan for the Greater Golden Horseshoe (GGH)</b>	
<b>Policy</b>	
<i>Where and How to Grow (s. 2.2)</i>	
Population and employment growth will be accommodated by: (s. 2.2.2.1)	
e) providing convenient access to intra- and inter-city transit.	
g) planning and investing for a balance of jobs and housing in communities across the GGH to reduce the need for long distance commuting and to increase the modal share for transit, walking and cycling.	
<i>Infrastructure to Support Growth (s. 3.2)</i>	
<i>Transportation – General (s. 3.2.2)</i>	
The transportation system within the GGH will be planned and managed to - (s. 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.	
Transportation system planning, land use planning, and transportation investment, will be co-ordinated to implement this Plan. (s. 3.2.2.2)	
In planning for the development, optimization, and/or expansion of new or existing transportation corridors, the Ministers of Public Infrastructure Renewal and Transportation, other Ministers of the Crown, and other public agencies and municipalities will – (s. 3.2.2.3)	
a) ensure that corridors are identified and protected to meet current and projected needs for various travel modes	
b) support opportunities for multi-modal use where feasible, in particular prioritizing transit and goods movement needs over those of single occupant automobiles	
c) consider increased opportunities for moving people and moving goods by rail, where appropriate	
d) consider separation of modes within corridors, where appropriate	
e) for goods movement corridors, provide for linkages to planned and existing inter-modal opportunities where feasible.	
<i>Moving People (s. 3.2.3)</i>	
Public transit will be the first priority for transportation infrastructure planning and major transportation investments. (s. 3.2.3.1)	
All decisions on transit planning and investment will be made according to the following criteria: (s. 3.2.3.2)	
b) Placing priority on increasing the capacity of existing transit systems to support	

<b>Places to Grow – Growth Plan for the Greater Golden Horseshoe (GGH)</b>	
<b>Policy</b>	
	intensification areas;
	c) Expanding transit service to areas that have achieved, or will be planned so as to achieve, transit-supportive residential and employment densities, together with a mix of residential, office, institutional and commercial development wherever possible;
	d) Facilitating improved linkages from nearby neighbourhoods to urban growth centres, major transit station areas, and other intensification areas;
	e) Consistency with the strategic framework for future transit investments outlined on Schedule 5;
	f) Increasing the modal share of transit.
<i>Moving Goods (s. 3.2.4)</i>	
The first priority of highway investment is to facilitate efficient goods movement by linking inter-modal facilities, international gateways, and communities within the GGH. (s. 3.2.4.1)	
The Ministers of Transportation and Public Infrastructure Renewal, other appropriate Ministers of the Crown, and municipalities will work with agencies and transportation service providers to – (s. 3.2.4.2)	
	a) co-ordinate and optimize goods movement systems
	b) improve corridors for moving goods across the GGH consistent with Schedule 6 of this Plan
	c) promote and better integrate multi-modal goods movement and land-use and transportation system planning, including the development of freight-supportive land-use guidelines.
The planning and design of highway corridors, and the land use designations along these corridors, will support the policies of this Plan, in particular that development is directed to settlement areas, in accordance with policy 2.2.2.1(i) (s. 3.2.4.3).	

<b>Ontario Environmental Assessment Act</b>
<b>Policy</b>
<b>Objectives</b>
1. To provide for the protection, conservation, and wise management of Ontario's environment.

<b>Greenbelt Plan (2005)</b>
<b>Policy</b>
<b>Vision and Goals (s. 1.2)</b>
The Greenbelt is a broad band of permanently protected land which: (s. 1.2.1) Protects against the loss and fragmentation of the agricultural land base and supports agriculture as the predominant land use;
Gives permanent protection to the natural heritage and water resource systems that sustain ecological and human health and that form the environmental framework around which major urbanization in south-central Ontario will be organized; and
Provides for a diverse range of economic and social activities associated with rural communities, agriculture, tourism, recreation and resource uses.
To enhance our urban and rural areas and overall quality of life by promoting the following matters within the Protected Countryside:
1. Agricultural Protection (s. 1.2.2) Protection of specialty crop area land base while allowing supportive infrastructure and value added uses necessary for sustainable agricultural uses and activities; and
Support for the Niagara Peninsula specialty crop areas as a destination and centre of agriculture focused on the agri-food sector and agri-tourism related to grape and tender fruit production.
2. Environmental Protection (s. 1.2.2) Protection, maintenance and enhancement of natural heritage, hydrologic and landform features and functions, including protection of habitat for flora and fauna and particularly species at risk;
Protection and restoration of natural and open space connections between the Oak Ridges Moraine, the Niagara Escarpment, Lake Ontario, Lake Simcoe and the major river valley lands, while also maintaining connections to the broader natural systems of southern Ontario beyond the Golden Horseshoe; and
Protection, improvement or restoration of the quality and quantity of ground and surface water and the hydrological integrity of watersheds.
3. Culture, Recreation and Tourism (s. 1.2.2) Support for the conservation and promotion of cultural heritage resources.
4. Settlement Areas (s. 1.2.2) Sustaining the character of the countryside and rural communities.
5. Infrastructure and Natural Resources (s. 1.2.2)

<b>Greenbelt Plan (2005)</b>
<b>Policy</b>
Support for infrastructure which achieves the social and economic aims of the Greenbelt and the Growth Plan while seeking to minimize environmental impacts; and
Recognition of the benefits of protecting renewable and non-renewable natural resources within the Greenbelt.

<b>Provincial Policy Statement, 2005 (PPS)</b>
<b>Policy</b>
<b><i>Transportation Systems (s. 1.6.5)</i></b>
Transportation systems should be provided which are safe, energy efficient, facilitate the movement of people and goods, and are appropriate to address projected needs. (s. 1.6.5.1)
Efficient use shall be made of existing and planned infrastructure. (s. 1.6.5.2)
Connectivity within and among transportation systems and modes should be maintained and, where possible, improved including connections, which cross-judicial boundaries. (s. 1.6.5.3)
A land use pattern, density and mix of uses should be promoted that minimize the length and number of vehicle trips and support the development of viable choices and plans for public transit and other alternative transportation modes, including commuter rails and bus. (s. 1.6.5.4)
Transportation and land use considerations shall be integrated at all stages of the planning process. (s. 1.6.5.5)
<b><i>Transportation and Infrastructure Corridors (s. 1.6.6)</i></b>
Planning authorities shall plan for and protect corridors and rights-of-way for transportation, transit and infrastructure facilities to meet current and projected needs. (s. 1.6.6.1)
Planning authorities shall not permit development in planned corridors that could preclude or negatively affect the use of the corridor for that purpose(s) for which it was identified. (s. 1.6.6.2)
The preservation and reuse of abandoned corridors for purposes that maintain the corridor's integrity and continuous linear characteristics should be encouraged, wherever feasible. (s. 1.6.6.3)
When planning for corridors and rights-of-way for significant transportation and infrastructure facilities, consideration will be given to the significant resources in Section 2: Wise Use and Management of Resources. (s. 1.6.6.4)
<b><i>Other Sections with Transportation Related Policies</i></b>
Healthy, liveable and safe communities are sustained by: <ul style="list-style-type: none"> <li>g) ensuring that necessary infrastructure and public service facilities are or will be available to meet current and projected needs. (s. 1.1.1)</li> </ul>
Planning authorities shall promote economic development and competitiveness by: <ul style="list-style-type: none"> <li>d) ensuring the necessary infrastructure is provided to support current and projected needs. (s. 1.3.1)</li> </ul>
Infrastructure and public service facilities shall be provided in a co-ordinated, efficient and cost-

**Provincial Policy Statement, 2005 (PPS)**

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. (s. 1.6.1)

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. (s. 1.6.2)

Infrastructure and public service facilities should be strategically located to support the effective and efficient delivery of emergency management services. (s. 1.6.3)

Long term economic prosperity should be supported by: (s. 1.7.1)

- d) providing for an efficient, cost-effective, reliable multi-modal transportation system that is integrated with adjacent systems and those of other jurisdictions, and is appropriate to address projected needs; and
- e) planning so that major facilities (such as...transportation/transit/rail infrastructure and corridors, and inter-modal facilities...) and sensitive land uses are appropriately designed, buffered and/or separated from each other to prevent adverse effects from odour, noise and other contaminants, and minimize risk to public health and safety.

**Go Green Action Plan on Climate Change, August 2007**

**Policy**

**Objectives**

1. Reduce Ontario's greenhouse gas emissions to 6 per cent below 1990 levels by 2014 (a reduction of 61 megatonnes relative to business-as-usual).
2. By 2020 Ontario will reduce greenhouse gas emissions to 15 per cent below 1990 levels (a reduction of 99 megatonnes relative to business-as-usual).
3. By 2050 we will reduce greenhouse gas emissions to 80 per cent below 1990 levels.

**Straight Ahead – A Vision for Transportation in Canada, February 2003**

**Policy**

**Objectives**

1. Concrete steps to preserve and improve the benefits of competition, including improved recourse for rail shippers against the market power of railways;
2. Confirming our made-in-Canada policy on airline competition, with gradual and reciprocal liberalization of our international air markets;
3. New measures to improve transparency in advertising airfares;
4. 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;
5. A comprehensive review process for transportation merger proposals, for example between Canadian and American railways;

**Straight Ahead – A Vision for Transportation in Canada, February 2003**

<b>Policy</b>
6. An emphasis on infrastructure investments aimed at reducing congestion in our cities and bottlenecks at the Canada-U.S. border and in our trade corridors;
7. 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;
8. New legislation for VIA Rail and legislative amendments to strengthen publicly funded passenger rail services; and
9. Support for partnerships to address skills shortages and innovation challenges in the transportation sector.

**Niagara Escarpment Plan (2005)**

<b>Policy</b>
<i><b>Purpose</b></i>
The purpose of this Plan is to provide for the maintenance of the Niagara Escarpment and land in its vicinity substantially as a continuous natural environment, and to ensure only such development occurs as is compatible with that natural environment.
<i><b>Objectives</b></i>
1. To protect unique ecologic and historic areas;
2. To maintain and enhance the quality and character of natural streams and water supplies; and
3. To ensure that all new development is compatible with the purpose of the Plan.

<b>Oak Ridges Moraine Conservation Plan, 2002</b>	
<b>Policy</b>	
<b><i>Purpose</i></b>	
The Oak Ridges Moraine Conservation Plan is an ecologically based plan established by the Ontario government to provide land use and resource management direction for the 190,000 hectares of land and water within the Moraine.	
<b><i>Objectives</i></b>	
1. Protecting the ecological and hydrological integrity of the Oak Ridges Moraine Area;	
2. Ensuring that only land and resource uses that maintain, improve or restore the ecological and hydrological functions of the Oak Ridges Moraine Area are permitted;	
3. Maintaining, improving or restoring all the elements that contribute to the ecological and hydrological functions of the Oak Ridges Moraine Area, including the quality and quantity of its water and its other resources;	
4. Ensuring that the Oak Ridges Moraine Area is maintained as a continuous natural landform and environment for the benefit of present and future generations;	
5. Providing for land and resource uses and development that are compatible with the other objectives of the Plan;	
6. Providing for continued development within existing urban settlement areas and recognizing existing rural settlements;	
7. Providing for a continuous recreational trail through the Oak Ridges Moraine Area that is accessible to all including persons with disabilities; and	
8. Providing for other public recreational access to the Oak Ridges Moraine Area; and	
9. Any other prescribed objectives.	

<b>National Tourism Strategy (2006)</b>	
<b>Policy</b>	
<b><i>Goals</i></b>	
F/P/T governments working in close partnership and in collaboration with the private sector to ensure Canada is among the world's top 10 tourist destinations, in terms of international arrivals and expenditures, and to increase domestic and international tourism revenues to \$75 billion by 2010.	
<b><i>Strategic Objectives</i></b>	
1. Exceptional Hosts: Canadians continue to be renowned as welcoming, friendly and truly exceptional hosts to our visitors.	
2. Exceptional Experiences: Canada offers truly exceptional and authentic tourism experiences that provide opportunities for visitors to continue exploring Canada.	

<b>National Tourism Strategy (2006)</b>	
<b>Policy</b>	
	3. Accessible Destination: Getting to and around Canada is efficient, affordable and secure.
	4. Exceptional Reputation: Canada is renowned as an exciting, yet sustainable and safe destination.

<b>Ontario's Tourism Strategy (2004)</b>	
<b>Policy</b>	
<i>Purpose</i>	
<p>This strategy recognizes the vital role that tourism plays in the continuing economic success and development of Ontario.</p> <p>The priority of Ontario's Tourism Strategy is to focus on opportunities for growth and development on destinations that have the potential to become or are currently international icons, including Toronto and Niagara. The Ministry of Tourism has identified infrastructure as one of the "enablers" to building a strong and sustainable tourism industry, including the need for:</p> <ul style="list-style-type: none"> <li>• Smooth border crossings;</li> <li>• Welcoming international airports;</li> <li>• The ability of visitors to move around easily;</li> <li>• Improvements to all modes of transportation – road, train, air, water and transit – from a tourism perspective; and</li> <li>• Improved linkages between Toronto and Niagara.</li> </ul>	
<i>Objectives</i>	
	1. Working with the Ministry of Transportation to promote ongoing investment in highways, regional connecting roads, and public transit to support the tourism industry; and
	2. Maintaining open, safe and efficient border flows and enhancing first experiences at international airports as a priority.

<b>Ontario Budget (2007/2008)</b>	
<b>Policy</b>	
<i>Objectives (2007 Budget)</i>	
	1. Major new investments to make transit an attractive and green alternative for more people, including the Toronto-York subway, Brampton's AcceleRide, Mississauga's Transitway, improved GO Transit services, and investments of gasoline tax revenues towards municipal transit; and

<b>Ontario Budget (2007/2008)</b>	
<b>Policy</b>	
2. Improving and expanding highways in southern and northern Ontario, as well as border crossings.	
<b>Objectives (2008 Budget)</b>	
1. Funding for all of Metrolinx’s recommended “Quick Win” projects including: B-Line Improvements, King-Main Corridor, A-Line Improvements, James-Upper James Corridor with service to HIA, James Street North GO/VIA Station Gateway to Niagara, and Dundas Street Bus Rapid Transit;	
2. Funding for MoveOntario 2020 projects;	
3. Provide gas tax revenues to public transit;	
4. New funding for infrastructure investments in GO Transit. These investments will improve services, modernize infrastructure and help address concerns raised in the Auditor General’s 2007 Annual Report;	
5. Investment in GO Transit projects identified by Metrolinx, including the purchase of 20 new bi-level passenger rail coaches, 10 new double-decker commuter buses, and track expansions on GO Transit rail corridors;	
6. New funding over the next five years to accelerate projects to rehabilitate bridges that are part of the provincial highway network;	
7. Investment (through the five-year ReNew Ontario infrastructure plan and Southern Ontario Highways Program) to improve the provincial highway network in southern Ontario; and	
8. Protecting and improving Ontario’s natural environment.	

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<b>2</b>	<b>The Natural Environment</b>
<b>2.2</b>	<b>Large Environmental Systems</b>
2.2.9.3.20	Transportation, Utilities, and Infrastructure
	Prohibit, subject to jurisdictional limitations, transportation, utility, and infrastructure uses in all land use designations and key natural heritage features and hydrologically sensitive features unless the requirements of the ORMCP have been addressed to the satisfaction of the applicable approval authority, such as the Region of Peel and the Town of Caledon, in consultation with other relevant agencies, as appropriate.
2.2.9.3.20.1	In planning for the Regional Transportation and Road network, the Region will consider, jointly with the Town of Caledon, restrictions on haulage routes for transportation of chemicals and volatile materials in wellhead protection areas and in areas of high aquifer vulnerability.
2.2.9.3.20.2	Prohibit the construction or expansion of partial services unless the following appropriate circumstances apply: <ul style="list-style-type: none"> <li>a) To address a serious health concern or environmental concern;</li> <li>b) The construction or expansion of partial services approved under the <i>Environmental</i></li> </ul>

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	<p><i>Assessment Act</i> before November 17, 2001 provided that the period of time during which the construction or expansion may begin has not expire.</p> <p>c) To service existing uses and new uses that are established in accordance with the Region of Peel Official Plan and Town of Caledon Official Plan within the approved partial service area identified on Figure 14.</p>
<b>2.5</b>	<b>Restoration of the Natural Environment</b>
2.5.2.5	Ensure that the possibility of the Parkway Belt West Plan Area providing Natural Areas and Corridors in the Greenlands System is explored, evaluated and <i>protected, as appropriate</i> , in co-operation with the area municipalities and the Ministry of Municipal Affairs and Housing.
<b>5</b>	<b>Regional Structure</b>
5.1.2	Goal
	<p>To provide a diversity of <i>healthy communities</i> for those living and working in <i>Peel Region</i>, offering a wide range and mix of housing, employment, and recreational and cultural activities. These communities will be served and connected by a multi-modal transportation system and provide an efficient use of land, public <i>services</i>, finances and <i>infrastructure</i>, while respecting the natural environment, hazards and resources, and the characteristics of existing communities in <i>Peel</i>.</p>
5.1.3	General Policies
5.1.3.1	Plan for major facilities (such as transportation corridors, airports, sewage treatment facilities, <i>waste</i> management system and industrial and aggregate activities) and sensitive land uses to be appropriately designed, buffered and/or separated from each other to prevent adverse effects from odour, noise and other contaminants.
<b>5.2</b>	<b>The 2021 Regional Urban Boundary</b>
	The 2021 Regional Urban Boundary indicates where urban growth is planned to occur in a phased manner over the longer term, subject to the financial capabilities of <i>the Region</i> , area municipalities, province and other government agencies. <i>Development</i> and <i>redevelopment</i> within this 2021 Regional Urban Boundary will take place in a timely, orderly and sequential manner, making the most efficient use of available <i>services</i> , and prolonging existing agricultural uses.
<b>2.3</b>	<b>Greenlands System in Peel</b>
<b>5.3.3</b>	<b>Regional Urban Nodes</b>
5.3.3.1.2	To achieve Regional Urban Nodes that support safe and secure communities, <i>public transit</i> , walking and cycling.
<b>5.6</b>	<b>Transportation System in Peel</b>
	The transportation system in <i>Peel</i> refers to the network of freeways, <i>major roads</i> and <i>public transit</i> systems linking communities in <i>Peel Region</i> and other areas in the <i>GTA</i> . While all of the freeways are under provincial jurisdiction, parts of the major roads are under provincial, regional or area municipal jurisdiction. The <i>public transit</i> systems are under provincial or area municipal jurisdiction. Of the transportation system in <i>Peel</i> , only the Regional roads identified on Schedule F are under the jurisdiction of the <i>Region of Peel</i> .
	The concurrent planning of urban and rural growth and the transportation system is required to provide an integrated, safe and efficient system for transporting people and goods. This system is intended to accommodate projected travel demands. In addition

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	the transportation system in <i>Peel</i> serves commuters and through traffic.
	Co-ordinated planning of the transportation system in <i>the region</i> is required to protect rights-of way for future improvements and to ensure integration with the area municipalities and neighbouring municipalities.
<b>5.6.1</b>	<b>General Objectives</b>
5.6.1.1	To achieve convenient and efficient movement of people and goods in <i>the region</i> and the <i>GTA</i> .
5.6.1.2	To ensure the provision of an integrated transportation system in <i>Peel</i> that balances travel demand with the <i>transportation capacity</i> of transportation facilities.
5.6.1.3	To plan and implement a transportation system in <i>Peel</i> that is safe, sensitive to the protection of the Greenlands System, environmentally responsible and cost effective.
5.6.1.4	To encourage an increased <i>public transit modal share</i> .
5.6.1.5	To encourage greater accessibility by road and <i>public transit</i> to the Lester B. Pearson International Airport from <i>Peel</i> and the <i>GTA</i> .
5.6.1.6	To integrate the transportation system in <i>Peel</i> with the transportation plans of the area municipalities, neighbouring municipalities and the province.
5.6.1.7	To <i>support</i> the objectives and policies in this Plan and <i>area municipal official plans</i> , especially the Regional Structure policies of this chapter of the Plan.
5.6.1.8	To provide for bicycle and pedestrian opportunities in the design of roadways.
<b>5.6.2</b>	<b>General Policies</b>
5.6.2.1	Minimize adverse social, environmental and resource impacts when developing and planning for transportation facilities, by ensuring consistency with the objectives and policies in this Plan.
5.6.2.2	Consider, as part of the <i>development</i> review approval process, the magnitude and timing of <i>development</i> proposals relative to the anticipated transportation demand of the proposed <i>development</i> , and anticipated cumulative transportation effects on Regional facilities.
5.6.2.3	Identify, in co-operation with the area municipalities and the province, transportation improvements to the provincial, regional and area municipal systems required to <i>support</i> future <i>development</i> or <i>redevelopment</i> , and determine region-wide impacts through comprehensive transportation studies.
5.6.2.4	Ensure, in accordance with the requirements of <i>the Region</i> and the area municipalities, that <i>development</i> only proceed with adequate existing or committed improvements to regional <i>transportation capacity</i> and, if necessary, <i>development</i> be phased until that capacity is or will be available.
5.6.2.5	Encourage the provincial government and neighbouring municipalities to increase <i>public transit</i> usage and ridesharing as well as other <i>travel demand management</i> programs.
5.6.2.6	Pursue, in co-operation with the appropriate agencies, the improvement of the transportation system in <i>Peel</i> and connections to the Lester B. Pearson International Airport from all parts of the <i>GTA</i> and particularly from <i>Peel</i> .
5.6.2.7	Encourage the area municipalities, and the adjacent regions and area municipalities, in co-operation with <i>the Region</i> , to identify any regional and provincial transportation implications as part of their official plan review.
5.6.2.8	Encourage the area municipalities and the Ministry of Transportation of Ontario to implement <i>travel demand management</i> strategies including <i>car or van pooling</i> and ride-share programs.

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5.6.2.9	<i>Support</i> the identification by the area municipalities and the Ministry of Transportation of Ontario, in co-operation with <i>the Region</i> , of opportunities for incorporating a <i>bicycle route</i> or route network into the transportation system in <i>Peel</i> .
5.6.2.10	Work co-operatively with the area municipalities and other municipalities to develop an appropriate integrated transportation plan across the <i>GTA</i> .
5.6.2.11	Co-ordinate planning with adjacent regions and municipalities, to establish a planned transportation network which considers and co-ordinates the road linkages across municipal boundaries that will accommodate cross-boundary traffic. This includes the recommendations of the York/Peel Boundary Transportation Study, which is intended to be implemented by official plan amendment.
<b>5.6.3</b>	<b>The Provincial Highway Network</b>
	The Provincial Highway Network provides for inter-regional travel and is comprised of controlled access freeways (the QEW and 400 series freeways and tollways) and other highways (such as provincial routes 9 and 10). Continuing improvement of the Provincial Highway Network and the integration of provincial highways with other roads in <i>Peel</i> and neighbouring municipalities are essential for the effective and efficient movement of people and goods within and through <i>Peel</i> and the <i>GTA</i> in the future.
<b>5.6.3.1</b>	<b>Objective</b>
	To advocate the provision and maintenance of a reliable, efficient and safe Provincial Highway Network to facilitate the movement of people and goods within and through <i>Peel</i> into neighbouring municipalities.
<b>5.6.3.2</b>	<b>Policies</b>
5.6.3.2.1	Request the Ministry of Transportation of Ontario, in co-operation with the <i>GTA</i> municipalities and neighbouring municipalities, to provide an efficient and safe Provincial Highway Network in <i>Peel</i> that can accommodate regional and inter-regional travel demands at an acceptable <i>level of service</i> .
5.6.3.2.	<i>Support</i> the planning, corridor protection and the early construction of the following facilities:
	a) staged widening of Highway 7, Hurontario to Winston Churchill Boulevard
	b) the construction of <i>High Occupancy Vehicle (HOV)</i> lanes on Highway 403 between Highway 401 and the Halton- <i>Peel</i> boundary;
	c) the investigation and provision of HOV or reserve bus lanes on Highway 410 from Highway 401 to Bovaird Drive;
	d) the extension of Highway 410 north-westward to join with Highway 10;
	e) the widening to 12 lanes of Highway 401 between Highway 410 and Erin Mills Parkway and to 10 lanes between Erin Mills Parkway and Winston Churchill Boulevard;
	f) widening and other improvements of Highway 10 through the Town of Caledon, consistent with the policies of the Niagara Escarpment Plan, the Town of Caledon Official Plan and Caledon Community Resource Study (CCRS) where applicable;
	g) intersection and widening improvements to Highway 9; and,
	h) the completion of the Courtney Park Drive/Highway 410 interchange, by adding ramps to provide access to and from the north.
5.6.3.2.3	<i>Support</i> , in co-operation with the province, the Region of York, the City of Vaughan, the City of Brampton, the Town of Caledon and private road providers if appropriate, the planning corridor protection and early construction of a <i>major road</i> facility running from the intersection of Highway 427 and Highway 7 northward by official plan

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	amendment and/or secondary plans that integrate land and transportation planning development.
<b>5.6.4</b>	<b>Major Road Network</b>
	The Major Road Network in <i>Peel</i> , with the exception of freeways and tollways, is comprised of <i>major roads</i> under the jurisdiction of the province of Ontario, <i>the Region</i> and the area municipalities. <i>The Region</i> co-operates with the area municipalities to plan for transportation on a region-wide basis, and operates Regional roads that typically provide a high <i>transportation capacity</i> inter-municipal service.
<b>5.6.4.1</b>	<b>Objectives</b>
5.6.4.1.1	To have a reliable and efficient Major Road Network to enhance the safe movement of people and goods.
5.6.4.1.2	To achieve a Major Road Network as shown on Schedule E.
<b>5.6.4.2</b>	<b>Policies</b>
5.6.4.2.1	Ensure the provision, in conjunction with the province and the local municipalities, of the Major Road Network shown on Schedule E, regardless of road jurisdiction. A jurisdictional transfer between area municipal and Regional roads will not require an amendment to Schedule F or this Plan.
5.6.4.2.2	Direct the area municipalities to identify in their official plans rights-of-way for portions of the Major Road Network shown on Schedule E which are under area municipal jurisdiction.
5.6.4.2.3	Locate, where possible, activities generating substantial truck traffic near <i>major roads</i> or <i>expressways</i> . Haul routes will be determined <i>jointly</i> by <i>the Region</i> and the area municipalities.
5.6.4.2.4	Ensure that adequate <i>transportation capacity</i> on Regional roads is based on a “Level of Service Policy” adopted and periodically reviewed by <i>Regional Council</i> .
5.6.4.2.5	Encourage the area municipalities to integrate transportation modes at transit nodes.
5.6.4.2.6	Protect the designated Regional road rights-of-way, as shown on Schedule F, to accommodate future road widenings and improvements consistent with Section 7.7 of this Plan.  Require wider rights-of-way where necessary at the intersection of all its designated rights-of-way. However, within the 36/45 metre (120/150 feet) designation the basic right-of-way shall be 36 metres except within 150 metres (495 feet) of an intersection. At the centre line of the intersection the designated right-of-way is 45 metres which tapers to 36 metres over a 150 metre distance on either side of the intersection.
5.6.4.2.7	<i>Protect</i> and preserve the natural environment, consistent with the objectives and policies in this Plan, the <i>area municipal official plans</i> , the Environmental Assessment procedures, and if applicable, the Niagara Escarpment Plan where Regional roads are proposed to be widened, reconstructed or improved. Where portions of Regional roads have scenic, environmental, or cultural heritage characteristics, it is intended to retain and protect the unique features of the road section. For rural villages and settlements in <i>the region</i> appropriate exceptions have been made and will be considered for reduced Regional rights-of-way to maintain historic streetscapes and heritage characteristics of the village or settlement.
5.6.4.2.8	Generally locate Regional two lane roads within 20-30 metre (66-100 feet) rights-of-way, four lane roads within 30-45 metre (100-150 feet) rights-of-way and six lane roads within 36-50 metre (120-165 feet) rights-of-way in urban and rural settings.

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5.6.4.2.9	Notwithstanding the right-of-way widths identified on Schedule F, ensure that future road widenings within the Niagara Escarpment Plan Area are consistent with the policies of the Niagara Escarpment Plan.
5.6.4.2.10	Control frontage <i>development</i> and vehicular access onto Regional roads consistent with relevant Regional By-laws.
5.6.4.2.11	Control access to Regional roads so as to optimize traffic carrying capacity and control the number and location of intersections with Regional roads in consultation with the affected area municipality.
5.6.4.2.12	Protect residential <i>development</i> adjacent to Regional roads from vehicular noise through appropriate noise mitigating, planning and design, and by ensuring the provision of appropriate noise attenuation measures at the time of <i>development</i> .
5.6.4.2.13	Determine the priority for improvements to the Regional road system periodically in the context of monitoring reports, system status reports, studies on growth and other indicators related to the Regional Structure, in consultation with the area municipalities.
5.6.4.2.14	Implement, in co-operation with the area municipalities and the province, the <i>Region of Peel's High Occupancy Vehicle (HOV) Network 2021</i> , as shown on Figure 5 in the Appendix, on Regional roads and encourage the area municipalities to implement HOV facilities on roads under their jurisdiction.
5.6.4.2.15	Work with the area municipalities to integrate the <i>High Occupancy Vehicle (HOV) system</i> shown on Figure 5 in the Appendix with neighbouring municipalities.
5.6.4.2.16	Encourage the area municipalities to identify and integrate a network of <i>bicycle routes</i> and lanes in greenbelts and along local streets. Where necessary, <i>bicycle routes</i> along Regional roads may be considered where they provide essential linkages to the local <i>bicycle route</i> network. <i>Bicycle routes</i> along Regional roads should be separated from motorized traffic travel lanes to satisfy safety and road <i>transportation capacity</i> considerations.
5.6.4.2.17	Investigate, in concert with the on-going <i>GTA Transportation Plan Study</i> and/or inter-regional transportation planning studies, and with the Ministry of Transportation of Ontario and appropriate municipalities, the need and demand for an east-west transportation corridor north of Highway 407.
5.6.4.2.18	Study the need and demand for a future alternate route around Caledon Village in consultation with the Town of Caledon and the province.
5.6.4.2.19	Identify Conceptual Corridors for the Bolton Rural Service Centre as shown on Schedule E.
5.6.5	<b>Inter- and Intra-Regional Transit Network</b>
	<p>Inter-regional transit for municipalities in the <i>Greater Toronto Area</i> and vicinity is in part provided by the Government of Ontario's "<i>GO</i>" <i>Commuter Rail</i> and <i>Bus services</i>, with some limited private carrier service. In <i>Peel</i>, the City of Brampton and the City of Mississauga provide municipal transit <i>services</i>, with connections to the Toronto Transit Commission (TTC), other neighbouring municipal transit <i>services</i> and the <i>GO Transit</i> system. In the future, it is anticipated that both inter- and intra-regional transit <i>services</i> will be operated within <i>Peel</i> on provincial freeways and highways, and on <i>major roads</i>, as buses in mixed traffic, on <i>High Occupancy Vehicle (HOV) lanes</i>, on <i>reserved buslanes</i> and on <i>transitways</i>.</p> <p>It is recognized that the existing road network, even with additions and expansions, will not accommodate the long-term travel demands of the projected population and</p>

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	<p>employment base at an acceptable <i>level of service</i>. A <i>significant</i> portion of trips will have to be accommodated by <i>public transit</i> to reduce the growth rate of the number of private automobiles using the road network. Fare integration and service co-ordination of local municipal transit systems and other transit systems would help reduce automobile traffic in <i>Peel</i> and the <i>GTA</i>, and would provide commuters with a viable alternative to the car. An integrated transit system would assist in reducing the impact of automobiles on the natural environment.</p> <p>The demand for transit travel that crosses <i>Peel's</i> local and regional municipal boundaries needs to be met and enhanced through effective co-ordination in planning and implementation by all levels of government.</p>
<b>5.6.5.1</b>	<b>Objectives</b>
5.6.5.1.1	To <i>support</i> and encourage a higher use of <i>public transit</i> and an increase in <i>transit modal share within the region</i> .
5.6.5.1.2	To encourage an economically feasible, effective, efficient and safe inter- and intra-regional transit network.
5.6.5.1.3	To encourage greater <i>public transit</i> accessibility to the Lester B. Pearson International Airport.
5.6.5.1.4	To <i>support</i> and encourage transit-supportive <i>development</i> densities and patterns particularly along <i>major bus transit corridors</i> .
<b>5.6.5.2</b>	<b>Policies</b>
5.6.5.2.1	<i>Support</i> the implementation of the <i>High Order Transit</i> Network, as shown on Schedule G, and protect the right-of-way. Any changes to the <i>High Order Transit</i> Network shown on Schedule G will require an amendment to this Plan.
5.6.5.2.2	Encourage the area municipalities to designate in their official plans transit strategies which <i>support</i> the <i>High Order Transit</i> Network shown on Schedule G, and protect the necessary local road rights-of-way. The area municipalities may show in their official plans other transit routes and facilities in addition to those shown on Schedule G.
5.6.5.2.3	Encourage the area municipalities to achieve a minimum target of 20% Peak Period modal split within the Urban System served by transit by 2021.
5.6.5.2.4	Request the province to plan, protect and construct a <i>transitway</i> along or adjacent to the Highway 407 corridor.
5.6.5.2.5	<p>Request the province to improve the level of GO <i>commuter rail</i> and bus service through and to <i>Peel</i>, and in particular:</p> <p>a) to maintain and improve existing GO <i>commuter rail</i> stations and provide the proposed GO <i>commuter rail</i> line and stations, as shown on Schedule G, as <i>development</i> and <i>redevelopment</i> occurs;</p> <p>b) to provide all-day two-way GO <i>commuter rail</i> service on the Milton and Georgetown lines as soon as possible;</p> <p>c) to improve the frequency of service on the Lakeshore GO <i>commuter rail</i> line; and</p> <p>d) to provide GO service on other rail lines and increased inter-municipal/inter-regional GO bus service in corridors where there is sufficient demand.</p>

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5.6.5.2.6	Provide preferential treatment for transit vehicles on Regional roads, when and where appropriate. 5.6.5.2.7 Integrate the Regional special needs transit service (Transhelp) with similar <i>services</i> provided by neighbouring municipalities.
5.6.5.2.8	Participate with the area municipalities, the province and neighbouring municipalities in the planning and development of an inter-regional transit network.
5.6.5.2.9	<i>Support</i> transit stations and terminals in urban nodes and corridors, as identified in this Plan and the <i>area municipal official plans</i> .
5.6.5.2.10	<i>Support</i> the fare integration and service co-ordination of transit <i>services</i> , especially at transfer points, within <i>Peel</i> with <i>services</i> in neighbouring municipalities and with GO Transit.
5.6.5.2.11	Encourage the area municipalities, in co-operation with <i>the Region</i> and having regard for the Provincial Guidelines for Transit Supportive Land Uses to plan for intra-regional transit connections and to integrate transit plans into secondary plans.
5.6.5.2.12	<i>Support</i> gateways and interconnections between the local bus network and future <i>transitways</i> , especially at Regional Urban Nodes.
5.6.5.2.13	Pursue improved transit service to the Lester B. Pearson International Airport, initially through express bus connections to the GO <i>commuter rail</i> service and eventually through a rapid transit connection to the Mississauga Transitway, the Eglinton West Rapid Transit facility and the Georgetown GO Rail line on alignments to be determined through the Environmental Assessment process. Alignments and technologies for rapid transit <i>services</i> to Pearson International Airport must be the subject of further studies to be co-ordinated with the Ministry of Transportation of Ontario and involving all affected municipalities. The Lester B. Pearson International Airport Master Plan must make provision for these and other connections to the local and regional transit <i>services</i> , especially to the west.
5.6.5.2.14	<i>Support</i> improved passenger service to the Lester B. Pearson International Airport through the integration of taxi, mini bus and other forms of ground transportation.
5.6.5.2.15	<i>Support</i> provincial, municipal and privately run transit <i>services</i> to rural communities, where feasible.
5.6.5.2.16	Investigate with the area municipalities, at an appropriate time in the future, the need, feasibility and implications of a regionally integrated transit system.
<b>5.6.6</b>	<b>Airports</b>
	<p>Lester B. Pearson International Airport (L.B.P.I.A.) is an important element of <i>infrastructure</i> in the <i>Greater Toronto Area</i>. L.B.P.I.A. is a <i>significant</i> generator of positive economic benefits and is directly responsible for attracting a broad range of industries and businesses to the <i>Region of Peel</i> and the <i>Greater Toronto Area</i>.</p> <p>The presence of L.B.P.I.A. within the Region of Peel provides both opportunity and responsibility. It provides national and international transportation linkages, creates <i>significant</i> employment and generates many direct and indirect economic benefits.</p> <p>Because of its significance, it is a priority of this Plan to ensure that new <i>development</i> is compatible with Airport operations and allows the Airport to function efficiently while recognizing approved land uses and other considerations. In addition to the role of Lester B. Pearson International Airport, consideration should be given to the potential for The Brampton Flying Club airport to become of greater significance in <i>Peel</i> and the <i>GTA</i> over the next 30 years.</p>
<b>5.6.6.1</b>	<b>Objectives</b>

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5.6.6.1.1	To optimize the full economic potential of Lester B. Pearson International Airport and The Brampton Flying Club airport to the <i>Region of Peel</i> and the <i>GTA</i> having regard for:  a) existing and future industry, business and employment opportunities; and  b) the interests of existing and future residents.
5.6.6.1.2	To <i>support</i> the recreational opportunities of airports in <i>Peel</i> where appropriate.
<b>5.6.6.2</b>	<b>Policies</b>
5.6.6.2.1	<i>Support</i> the improvement and enhancement of the facilities, access to and capacity of the Lester B. Pearson International Airport, taking into account the concerns of existing and future residents of <i>Peel Region</i> , to maintain the importance of the Airport to the <i>Region of Peel</i> , the <i>Greater Toronto Area</i> , the province and Canada.
5.6.6.2.2	Study <i>jointly</i> , with the Town of Caledon, and in consultation with the City of Brampton, the potential role of The Brampton Flying Club airport.
5.6.6.2.3	Protect the Lester B. Pearson International Airport (L.B.P.I.A.) Operating Area to ensure that development adjacent to the Airport is compatible with airport operations and the needs of residents.
5.6.6.2.4	Prohibit the development, redevelopment and infill of new residential and sensitive land uses specifically, hospitals, nursing homes, daycare facilities and public and private schools in L.B.P.I.A Operating Area outlined on Schedule “H”.
5.6.6.2.5	Direct the Cities of Mississauga and Brampton, in consultation with the Greater Toronto Airports Authority and the Region, to include in their official plans:  i) Airport Operating Area policies consistent with Policy 5.6.6.2.4;  ii) Definitions and illustrations of the areas to which the Airport Operating Area policies apply; and  iii) Definitions of the term sensitive land uses, redevelopment and infill.
5.6.6.2.6	Direct the Cities of Mississauga and Brampton, in consultation with the Greater Toronto Airports Authority and the Region, to define specific exceptions to Policy 5.6.6.2.4 in the municipal official plan, which may be considered for Malton, Meadowvale Village and East Credit, within the L.B.P.I.A. Operating Area subject to:  i) Prohibit, above the 35 NEF/NEP contour, development, redevelopment or infilling which increases the number of dwelling units, and development, redevelopment and infill for new sensitive land uses, specifically hospitals, nursing homes, daycare facilities and public and private schools;  ii) Define the areas to which the exceptions would apply; and,  iii) Requiring that MOE acoustical design standards be met.
5.6.6.2.7	Update Figure 6 in the Appendix with the latest provincially issued Aircraft Noise Exposure Contours, as they become available.
<b>5.6.7</b>	<b>Goods Movement</b>

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	The safe and efficient movement of goods on rail and road networks is an important component of a regional economy in attracting and retaining a range of industries and businesses. The existing and proposed 400 series provincial freeway network, the 407 tollway, the <i>major road</i> network and inter-modal rail facilities are all important components of the transportation system in <i>Peel</i> for the movement of goods.
<b>5.6.7.1</b>	<b>Objective</b>
5.6.7.1.1	To facilitate the safe and efficient movement of goods within <i>Peel</i> and between <i>Peel</i> and neighbouring municipalities.
<b>5.6.7.2</b>	<b>Policies</b>
5.6.7.2.1	Work with other levels of government, agencies and the private sector to minimize the risks and help ensure the safe and efficient movement of goods by either rail or road in <i>the region</i> .
5.6.7.2.2	<p><i>Support</i> a safe and efficient railway network by:</p> <ul style="list-style-type: none"> <li>a) recognizing the importance of <i>the Region's</i> rail classification facilities as key components of the rail network;</li> <li>b) securing grade separation of railways and <i>major roads</i>, where warranted, in co-operation with the Canadian Transportation Agency and railways; and</li> <li>c) ensuring that noise, vibration and safety issues are addressed for land uses adjacent to railway corridors and terminal facilities.</li> </ul>

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<b>Nodes and Corridors</b>	
78.	The objectives of Nodes and Corridors are:
78(1)	<ul style="list-style-type: none"> <li>• To provide an urban form that is complementary to existing developed areas, uses space more economically, promotes live-work relationships, fosters social interaction, enhances public safety and security, reduces travel by private automobile, promotes cycling and walking, and is environmentally more sustainable.</li> </ul>
78(2)	<ul style="list-style-type: none"> <li>• To provide opportunities for more cost-efficient and innovative urban design.</li> </ul>
78(3)	<ul style="list-style-type: none"> <li>• To provide a range of employment opportunities, facilities and services in centralized locations that is readily accessible by public transit.</li> </ul>
78(4)	<ul style="list-style-type: none"> <li>• To promote a greater mix of land uses.</li> </ul>
78(5)	<ul style="list-style-type: none"> <li>• To create a vibrant, diverse and pedestrian-oriented urban environment.</li> </ul>
79.	Nodes and Corridors are areas designated in Regional and/or Local Official Plans that exhibit or will exhibit the following characteristics:
79(1)	<ul style="list-style-type: none"> <li>• presence of both residential and employment lands that would allow residents to live and work within the Node or along the designated Corridor;</li> </ul>
79(2)	<ul style="list-style-type: none"> <li>• an appropriate mix of various land uses without a single dominant land use or form;</li> </ul>
79(3)	<ul style="list-style-type: none"> <li>• an urban design that favours pedestrian traffic and public transit over the private automobile;</li> </ul>

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79(4)	<ul style="list-style-type: none"> <li>• their strategic location on the inter-municipal/inter-regional rapid transit network;</li> </ul>
79(5)	<ul style="list-style-type: none"> <li>• development densities and patterns supportive of a high level of transit service; and</li> </ul>
79(6)	<ul style="list-style-type: none"> <li>• an open space system that complements and enhances the urban environment.</li> </ul>
80.	Nodes may be Primary Nodes or Secondary Nodes. Primary Nodes are those of Regional scale and complementary to the development of the inter-regional rapid transit network. The general locations of Primary Nodes are shown on Map 1. Local Official Plans will designate the locations of Secondary Nodes and Corridors.
81.	It is the policy of the Region to:
81(4)	Require Secondary Plans for Nodes and Corridors to include: <ol style="list-style-type: none"> <li>a) guidelines for the integration of local transit services with the road network and the inter-municipal/inter-regional rapid transit network; and</li> <li>b) urban design guidelines to promote transit supportive land uses in Nodes and Corridors in accordance with Regional standards under Section 81(5).</li> </ol>
81(5)	Adopt alternative design standards for Major Arterial Roads through Nodes and along Corridors to promote pedestrian-oriented development and transit-friendly facilities while maintaining the mobility function of the Major Arterial Road.
81(8)	Encourage the local municipalities to adopt parking standards and policies within Nodes and Corridors to promote the use of public transit.
<b>Parkway Belt Areas</b>	
82.	The objectives of the Parkway Belt Areas are:
82(1)	To direct into one area as many as possible of the major transportation, communication and utility facilities and ancillary uses that link urban areas to each other and connect them to areas beyond.
82(2)	To provide land reserves to accommodate future linear facilities whose nature, demand or land needs cannot be set out specifically at the date of approval of this Plan.
82(3)	To provide physical, identifiable boundaries to urban areas by including such linear facilities as major transportation, communication and utility facilities.
82(5)	To locate major transportation, communication and utility rights-of-way so that they do not cut through urban communities.
83.	Subject to other policies of this Plan and applicable Local Official Plan policies and Zoning Bylaws, the following uses may be permitted:
83(8)	<ul style="list-style-type: none"> <li>• linear transportation, communication, and utility facilities, including necessary accessory facilities and installations such as interchanges, transformer stations, and treatment plants that are part of the linear distribution or collection networks.</li> </ul>
<b>Transportation</b>	
173.	It is the policy of the Region to:
173(1)	<ul style="list-style-type: none"> <li>• Adopt a Functional Plan of Major Transportation Facilities, as shown on Map 3 and described in Table 3, for the purpose of meeting travel demands for year 2021 as well as protecting key components of the future transportation system to meet travel demands beyond year 2021.</li> </ul>
173(2)	<ul style="list-style-type: none"> <li>• Ensure that the development of the transportation system in and around Halton</li> </ul>

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	supports the development of Nodes and Corridors.
173(3)	<ul style="list-style-type: none"> <li>Encourage the respective agencies having jurisdiction over any major transportation facilities of regional significance in Halton, including but not necessarily limited to those shown in Map 3, to have regard to the contents of Table 3 of this Plan and to consult the Region in the planning, design and construction of such facilities.</li> </ul>
173(4)	<ul style="list-style-type: none"> <li>Adopt a Right-of-Way Plan of Arterial Roads, as shown on Map 4, for future highway widenings for transportation purposes.</li> </ul>
173(6)	<ul style="list-style-type: none"> <li>Adopt a set of Highway Dedication Guidelines to guide the specific application of Section 173(5). Development process under Section 173(5) includes plans of subdivision and condominium, part-lot control applications, consents, re-zonings, site plan agreements, minor variances, and Parkway Belt and Niagara Escarpment applications.</li> </ul>
173(7)	<ul style="list-style-type: none"> <li>In conjunction with the province and the local municipalities , establish, and require proposed developments to comply with, minimum setback standards, parking provision policies, access control policies, and other design criteria on major transportation facilities in Halton consistent with the function and design guidelines of these facilities as described in Table 3.</li> </ul>
173(8)	<ul style="list-style-type: none"> <li>In conjunction with the local municipalities , restrict access of land uses to Arterial Roads in accordance with Council-adopted access management policies that balance providing access to land uses, meeting urban design objectives within Nodes and Corridors and maintaining a satisfactory level of service for traffic on the Arterial Road.</li> </ul>
173(10)	<ul style="list-style-type: none"> <li>Co-ordinate with the province and the local municipalities the planning, development and funding of both highway and inter-regional rapid transit projects in Halton to ensure the provision of a balanced transportation system with a satisfactory level of service.</li> </ul>
173(12)	<ul style="list-style-type: none"> <li>Promote and support travel demand management initiatives, including the formation of a Regional transportation management association, to reduce travel by single-occupancy vehicles and to reduce congestion on Halton’s transportation network.</li> </ul>
173(13)	<ul style="list-style-type: none"> <li>Require, in the planning and design of Arterial Roads in Halton, the consideration of incorporating transportation supply management facilities and/or measures that would maximize network efficiency, give priority to transit vehicles, and increase safety.</li> </ul>
173(14)	<ul style="list-style-type: none"> <li>In co-operation with the province and local municipalities , develop and adopt a strategic plan for implementing intelligent transportation systems, including action plans for emergency road closures, in Halton’s transportation network.</li> </ul>
173(15)	<ul style="list-style-type: none"> <li>In conjunction with the local municipalities , identify and implement a network of high-occupancy-vehicle lanes on Arterial Roads in Halton that would integrate with other provincial and municipal networks.</li> </ul>
173(23)	<ul style="list-style-type: none"> <li>Participate with other municipalities in the Greater Toronto Area and the City of Hamilton in the planning and development of an interregional transportation network, including a rapid transit system throughout the Greater Toronto Area and into the City of Hamilton. In particular, the Region, in consultation with the Town of Halton Hills, will participate with the Region of Peel and the province where necessary, in a study to identify the long term transportation and transit network requirements and other</li> </ul>

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	<p>transportation solutions along the north Halton/Peel boundary. That study is intended to be completed on a timely basis and may lead to an amendment to this.</p> <ul style="list-style-type: none"> <li>• Plan and other appropriate implementation mechanisms.</li> </ul>
173(24)	<ul style="list-style-type: none"> <li>• Support and invest, in partnership with the province and other upper tier or single tier municipalities in the Greater Toronto/Hamilton Area, in the continuous enhancement of the provincial GO transit network.</li> </ul>
173(25)	<ul style="list-style-type: none"> <li>• Secure, through the development process and/or strategic property acquisitions, the necessary rights-of-way and sites for stations and inter-modal transfer centres for the implementation of an inter-municipal/inter-regional rapid transit system within Halton as shown in Map 3.</li> </ul>
173(26)	<ul style="list-style-type: none"> <li>• In developing and implementing an inter-municipal/inter-regional rapid transit system in Halton as shown in Map 3, consider: <ul style="list-style-type: none"> <li>○ the mid-Halton corridor of Highway 407 and Dundas Street as the highest priority;</li> <li>○ the two north-south corridors of Appleby Line and Trafalgar Road as the next priorities to complement the mid-Halton corridor; and</li> <li>○ site acquisition and early development of the two Regional Intermodal Transfer Centres at Highway 401/Highway 407 and Regional Road 25/Highway 407/Dundas Street areas as essential components of the rapid transit infrastructure in Halton.</li> </ul> </li> </ul>
173(27)	<ul style="list-style-type: none"> <li>• Seek provincial and federal funding and advocate other revenue sources to support strong local transit systems characterized by: <ul style="list-style-type: none"> <li>○ a good state of repair;</li> <li>○ excellent feeder services to the inter-municipal/inter-regional rapid transit network; and</li> <li>○ timely services for new and existing communities.</li> </ul> </li> </ul>
173(28)	<ul style="list-style-type: none"> <li>• Investigate, jointly with the local municipalities and the province, the integration of fare and service between local transit systems and between local and provincial systems, including the need for and feasibility of a single transit operating authority in Halton.</li> </ul>
173(29)	<ul style="list-style-type: none"> <li>• Encourage and support the adaptation of local and provincial transit systems to make them fully accessible to persons with physical disabilities.</li> </ul>
173(30)	<ul style="list-style-type: none"> <li>• Support, through co-ordination and/or provision, a transportation service for Halton residents who, because of physical, developmental and/or medical conditions, cannot utilize the conventional transit services even after their adaptation for persons with physical disabilities.</li> </ul>
173(31)	<ul style="list-style-type: none"> <li>• Support the provision of a safe and efficient railway network by: <ul style="list-style-type: none"> <li>○ securing grade separations of railways and Arterial Roads where warranted;</li> <li>○ supporting the continuous monitoring and necessary actions to improve the safety of the movement of dangerous goods by rail; and</li> <li>○ ensuring, where possible, compatible land uses adjacent or in proximity to railway corridors and terminal facilities including railway yards.</li> </ul> </li> </ul>
173(32)	<ul style="list-style-type: none"> <li>• Require proposed development adjacent or in proximity to railway lines/yards or</li> </ul>

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	within railway right-of-way to ensure that appropriate safety measures such as setbacks, berms and security fencing are provided to the satisfaction of the Region and the Local municipality to mitigate any safety concerns by the railway agency and/or abutting residents.
173(33)	<ul style="list-style-type: none"> <li>• Investigate, jointly with municipalities in the Greater Toronto Area and the City of Hamilton, the following issues related to air transportation:                             <ul style="list-style-type: none"> <li>○ existing operational deficiencies of the system of airports in or near the Greater Toronto Area;</li> <li>○ Halton's role in a local airport authority;</li> <li>○ the role of Burlington Air Park, as identified by symbol on Map 3, in Halton and within the Greater Toronto Area airport system, taking into account social, economic and environmental impact;</li> <li>○ options for maximizing the utilization of John C. Munro HIA; and</li> <li>○ improved highway and transit access to Lester B. Pearson International Airport and HIA.</li> </ul> </li> </ul>
173(34)	<ul style="list-style-type: none"> <li>• Review and comment on any proposal of water transportation service for commuters based on its compatibility with the goals, objectives and policies of this Plan.</li> </ul>

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<b>3.</b>	<b>Healthy Communities</b>
<b>3.2</b>	<b>Air Quality and Climate Change</b>
3.2 (3)	To reduce vehicle emissions by ensuring that communities are designed to prioritize pedestrians and cyclists, reduce single occupancy automobile use, and support public transit and transportation demand management initiatives.
<b>3.3</b>	<b>Provision of Human Services</b>
3.3 (5)	To ensure that public buildings and facilities are designed to be accessible, and are located in proximity to pedestrian, cycling and transit systems.
<b>3.4</b>	<b>Cultural Heritage</b>
3.4 (9)	To encourage access to core historic areas by walking, cycling and transit, and to ensure that the design of vehicular access and parking complements the historic built form.
<b>3.5</b>	<b>Housing Our Residents</b>
3.5 (14)	To encourage that <i>special needs housing</i> , and emergency, <i>affordable</i> , and seniors' housing be located in proximity to rapid transit and other human services.
<b>4.</b>	<b>Economic Vitality</b>
<b>4.2</b>	<b>City Building</b>
4.2 (4)	To require a mixed-use pedestrian environment in Regional Centres and Corridors that promotes transit use and enhances these areas as destinations for business, entertainment and recreation.
<b>4.3</b>	<b>Protecting Employment Lands</b>
4.3 (13)	That employment land development be designed to be both walkable and transit accessible where possible.

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<b>4.4</b>	<b>Planning for Retail</b>
4.4 (1)	To require that new retail be designed to be walkable, transit-supportive, and integrated into communities and pedestrian and cycling networks, with high-quality urban design.
4.4 (9)	That new retail facilities in excess of 30,000 gross leasable square metres shall require a Regional impact analysis that addresses the following: a. transportation requirements; c. pedestrian, cycling and transit access to the facilities.
<b>4.5</b>	<b>Financial Management</b>
4.5 (11)	To advocate for revisions to the Development Charges Act for the recovery of costs that place greater emphasis on projected service levels, particularly for those service areas that are maturing or have had historically lower levels of capital investment, such as transit and emergency medical services.
4.5 (14)	To require that an economic/fiscal impact analysis be completed for secondary plans, comprehensive plans and any other significant proposal, as determined by the Council. This analysis shall be co-ordinated between the Region and local municipalities, boards and agencies and shall include but not be limited to: a. an assessment of Regional service costs including transportation, water, wastewater, police, community and health services.
<b>5.</b>	<b>An Urbanizing Region: Building Cities and Complete Communities</b>
<b>5.1</b>	<b>Forecasting and Phasing Growth</b>
5.1 (6)	To require local municipalities to develop a phasing plan for <i>new community areas</i> that is co-ordinated with the following Regional plans and policies: e. the York Region Transportation Master Plan.
5.1 (9)	To require local municipalities to prepare detailed sequencing plans within each secondary plan that are supported by water, wastewater and transportation infrastructure, and the provision of human services.
5.1 (11)	That the forecasts in Table 1 be monitored annually and reviewed at least every 5 years, taking the following into account: d. York Region Transportation Master Plan.
<b>5.2</b>	<b>Sustainable Cities, Sustainable Communities</b>
5.2 (3)	That communities be designed to ensure walkability through interconnected and accessible mobility systems. These systems will give priority to pedestrian movement and transit use, provide pedestrian and cycling facilities, and implement the York Region Pedestrian and Cycling Master Plan.
5.2 (4)	That <i>development</i> requiring Regional approval shall be supported by a transportation study that assesses the impacts on the Region's transportation system and surrounding land uses. Significant <i>development</i> shall prioritize walking, cycling and transit.
5.2 (8)	To employ the highest standard of urban design, which: g. follows the York Region Transit-Oriented Development Guidelines.
5.2 (9)	That retail, commercial, office, and institutional structures be carefully designed in a compact form and be pedestrian-oriented, transit-supportive, and multi-storey where appropriate.
5.2 (10)	That secondary plans and zoning by-laws shall, in consultation with the Region and related agencies, incorporate parking management policies and standards that include: a. reduced minimum and maximum parking requirements that reflect the walking distance to transit and complementary uses.
5.2 (40)	To work with local communities and the building and land development industry to provide each resident, worker, and employer with information on the sustainability features of their communities including water and energy conservation, transit

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	information, ride share, car share, and carpooling options.
<b>5.3</b>	<b>Intensification</b>
5.3 (3,b)	Identify the role for each of the following: ii. GO Transit trains stations, bus terminals, and subway stations; iv. other major streets.
5.3 (4)	That the distance to a transit stop be generally no more than 500 metres (a 5-to-10 minute walk) for 90% of the residents and no more than 200 metres for 50% of residents.
5.3 (5)	That <i>intensification</i> areas are planned and designed to meet: a. the York Region Transit-Oriented Development Guidelines.
5.3 (11)	That human services facilities be located in close proximity to public transit.
<b>5.4</b>	<b>Regional Centres and Corridors</b>
5.4 (5)	That <i>development</i> within Regional Centres and Corridors be of an urban form and design that is compact, mixed-use, oriented to the street, pedestrian- and cyclist-friendly, and transit-supportive.
5.4 (6)	That comprehensive secondary plans for Regional Centres and <i>key development areas</i> along Regional Corridors be prepared by local municipalities and implemented in co-operation with the Region and related agencies. These secondary plans shall include: d. a concentration of the most intensive <i>development</i> and greatest mix of uses within a reasonable and direct walking distance of rapid transit stations and/or planned subway stations; f. policies that sequence <i>development</i> in an orderly way, co-ordinated with the provision of human services, transit and other infrastructure.
5.4 (8)	That secondary plans and zoning by-laws shall, in consultation with the Region and related agencies, incorporate parking management policies and standards that include: a. reduced minimum and maximum parking requirements that reflect the walking distance to transit and complementary uses.
5.4 (12)	To prepare, in consultation with local municipalities, a comprehensive and innovative suite of implementation guidelines for the Regional Centres and Corridors. The guidelines will address: a. transit-oriented development.
5.4 (14)	To require innovative approaches for the delivery of infrastructure that support city building in Regional Centres and Corridors, including: a. working with utility providers to ensure appropriate utility design and placement, including burying cables and structures, consistent with Transit-Oriented Design guidelines for Regional Centres and Corridors; and, b. transit and surface and subway infrastructure, including transformer stations, vent shafts, turning loops, transit stations and emergency exits.
5.4 (15)	To require local municipalities to adopt official plan policies and related zoning by-law provisions, to provide community benefits in Regional Centres and Corridors in exchange for additional height and density, consistent with the Increased Density provision of the Planning Act. Community benefits shall include consideration of: a. transit station improvements, in addition to lands required as a condition of development approval; c. direct pedestrian connections to transit stations.
5.4 (20)	That the planning and implementation of Regional Centres will provide: c. mobility choices and associated facilities for all residents and employees for walking, cycling, transit, and carpooling, which shall be supported through the preparation of a mobility plan; f. sequencing of <i>development</i> that is co-ordinated with infrastructure availability, including transportation, water and wastewater, and human services.
5.4 (28)	That Regional Corridors are planned to function as urban main streets that have a compact, mixed-use, well-designed, pedestrian-friendly and transit-oriented built form.

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5.4 (31)	That the most intensive and widest range of uses within the Regional Corridors be directed to specific <i>intensification</i> areas, identified by local municipalities as <i>key development areas</i> . These areas shall include the following segments of the Regional Corridor: a. lands within a reasonable and direct walking distance from all planned subway stations, and select rapid transit stations as identified by local municipalities; b. major transit areas immediately adjacent to transit stations and terminals, including GO Transit.
5.4 (32)	That secondary plans, consistent with criteria in policy 5.4.6, shall be prepared by local municipalities for the following key development areas: a. all planned subway stations outside of Regional Centres; b. lands immediately adjacent to transit terminals, including GO Transit terminals and key gateway hubs.
5.4 (33)	That minimum densities for <i>key development areas</i> be established in secondary plans, consistent with: a. a 3.5 <i>floor space index</i> per development block at, and adjacent to, the Steeles West Station on the Spadina Subway Extension, and the Steeles Station on the Yonge Subway Extension; b. a 2.5 <i>floor space index</i> per development block at, and adjacent to, the 407 Transitway Station on the Spadina Subway Extension, and the Clark and Royal Orchard Stations on the Yonge Subway Extension; and c. an appropriate <i>floor space index</i> per development block for lands at or adjacent to other rapid transit stations and/or other select areas, as determined by the local municipality, in consideration of community context and character.
5.4 (35)	To consider extensions to existing Regional Corridors, and the designation of new Regional Corridors, in consultation with local municipalities and based on the following: b. opportunities for the extension of well-planned and transit-supportive intensification; and, c. the introduction of new or expanded rapid transit services to Regional streets.
<b>5.5</b>	<b>Local Centres and Corridors</b>
5.5 (3,i)	That land use and transit is co-ordinated to ensure that Local Centres are focal points for current and/or future public transit services and infrastructure and that they prioritize pedestrian movement, transit use and access.
5.5 (4,c)	That new employment uses be generally located within 200 metres of transit stops.
5.5 (6)	That Local Corridors located on existing or planned rapid transit corridors consider the Regional Corridor policies of Section 5.4 of this Plan.
<b>5.6</b>	<b>Building Complete, Vibrant Communities</b>
5.6 (5)	That <i>new community</i> areas shall be designed to contain community core areas, which will be the focus of local retail, personal services, human services, community services and provide connections to rapid transit. The community cores shall be within a reasonable walking distance from the majority of the population.
5.6 (12)	That mobility plans shall be completed to ensure that: a. communities are designed to have interconnected and accessible mobility systems, with a priority on pedestrian movement, and on transit use and access; b. communities are designed to include a system of pedestrian and bicycle paths linking the community internally and externally to other areas, and providing access to the transit system; c. a transit plan is completed in consultation with York Region Transit, which identifies transit routes and corridors, co-ordinates transit with land use patterns and ensures the early integration of transit into the community; d. the distance from a transit stop is generally no more than 500 metres for 90% of the population, and no more than 200 metres for 50% the population; e. all schools and communities centres shall be integrated into the community mobility system and provide the ability to walk, cycle, transit and carpool

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	to these locations; f. the street network includes continuous collector streets that run both north-south and east-west and/or a grid system of streets linked to the Regional Street network; g. <i>new community areas</i> are designed to meet the York Region Transit-Oriented Development Guidelines; h. a rapid transit corridor and/or transit terminal that connects to a rapid transit corridor is included in the community; i. parking standards, consistent with policy 5.2.10, encourage and support transit use and include reduced minimum and maximum parking standards; and, j. trip-reduction strategies consistent with the policies of Section 7.1 are promoted.
5.6 (13)	That <i>new community areas</i> shall be designed to implement the York Region Pedestrian and Cycling Master Plan.
<b>6.</b>	<b>Agricultural and Rural Areas</b>
<b>6.1</b>	<b>The Greenbelt Plan</b>
6.1 (7)	That transportation, infrastructure and utilities are permitted in the Greenbelt Plan Area, in all land use designations shown on Map 8, and <i>key natural heritage features and key hydrologic features</i> , where the provisions of the Greenbelt Plan have been met. Demonstrated need for a project and conformity with the Greenbelt Plan will be assessed and included as part of an Environmental Assessment Act process. If an Environmental Assessment Act process does not apply, the requirements of the Greenbelt Plan will be met through Planning Act, Condominium Act, Local Improvement Act processes, or other applicable approval processes.
<b>6.2</b>	<b>The Oak Ridges Moraine Conservation Plan</b>
6.2 (16)	That transportation infrastructure and utilities are permitted in all Oak Ridges Moraine land use designations, and <i>key natural heritage features and key hydrologic features</i> , where the Infrastructure provisions of the Oak Ridges Moraine Conservation Plan have been met. Demonstrated need for a project and conformity with the Oak Ridges Moraine Conservation Plan will be assessed and included as part of an Environmental Assessment Act process. If an Environmental Assessment Act process does not apply, the requirements of the Oak Ridges Moraine Conservation Plan will be met through Planning Act, Condominium Act, Local Improvement Act processes, or other applicable approval processes. The opening of a street within an unopened street allowance is prohibited unless all other requirements of the Oak Ridges Moraine Conservation Plan are met.
<b>7.</b>	<b>Servicing Our Population</b>
7.1	Reducing the Demand for Services
7.1 (1)	To require that appropriate transportation demand management measures to reduce single occupancy automobile trips are identified in transportation studies and in <i>development applications</i> .
7.1 (2)	To work with local municipalities, Metrolinx and other stakeholders to support local Smart Commute associations.
7.1 (3)	To manage the supply of parking in Regional Centres and Corridors, consistent with the policies in Section 5.4 of this Plan.
7.1 (4)	To investigate establishing a Regional Parking Authority or municipal parking authority framework in conjunction with local municipalities.
7.1 (5)	To work with local municipalities to develop a co-ordinated approach to parking and parking management, consistent with the parking policies in Chapter 5 of this Plan.
7.1 (6)	To work with local municipalities to update the York Region Transit-Oriented Development Guidelines to provide greater emphasis on trip reduction and to identify

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	key benchmarks and targets.
7.1 (7)	To require new <i>development</i> applications to demonstrate that the <i>development</i> meets or exceeds the York Region Transit-Oriented Development Guidelines.
7.1 (8)	To work with developers to provide all new-home buyers with information on available pedestrian, cycling and transit facilities and carpooling options within the community, including local transit routes and schedules.
7.1 (9)	To require that new institutional, commercial and industrial <i>development</i> applications include a transit demand strategy that considers preferential carpool parking, bicycle facilities, employee transit passes, and alternative work arrangements.
7.1 (10)	To work with institutional, commercial and industrial employers to undertake transit demand strategies to encourage preferential carpool parking, bicycle facilities, employee transit passes, and alternative work arrangements.
7.1 (11)	To require local municipalities to adopt land use and site design policies that promote alternative modes of transportation, including walking, cycling, transit, and carpooling.
7.1 (12)	To implement transit pass bulk-buying programs for employers and to encourage employers to provide transit passes in lieu of parking.
7.1 (13)	To partner with the Province and Metrolinx to provide transit services to carpool lots along 400-series highways.
7.1 (14)	To promote, in partnership with Smart Commute, employer-based initiatives and policies that reduce the need for peak-period trips, including alternative work arrangements, transit incentives, and carpooling.
7.1 (15)	To encourage retailers and community facilities to provide discounts and incentives to those using transit and active forms of transportation.
7.1 (16)	To develop a discounted university and college transit pass program with educational institutions.
7.1 (17)	To partner with Metrolinx, the private sector and non-governmental agencies to deliver real-time information on commuting options.
7.1 (18)	To explore leverage opportunities for funding from the Province and Federal government, as well as from other funding sources, for transportation demand management measures and programs.
<b>7.2</b>	<b>Moving People and Goods</b>
	<b>Active Transportation</b>
7.2 (1)	To implement the Regional Cycling Network shown on Map 10.
7.2 (2)	To update the York Region Pedestrian and Cycling Master Plan at least every 5 years, concurrent with the 5-year review of this Plan.
7.2 (3)	To apply the York Region Pedestrian and Cycling Master Plan's Planning and Design Guidelines in the implementation of the Regional pedestrian and cycling network.
7.2 (4)	To develop an integrated Regional cycling network connecting people to places of recreation, services and employment and transit.
7.2 (5)	To provide safe, comfortable and accessible pedestrian and cycling facilities that meet the needs of York Region's residents and workers, including children, youth, seniors and people with disabilities.
7.2 (6)	To partner with local municipalities and other stakeholders to implement pedestrian and cycling programs.
7.2 (7)	To partner with local municipalities to co-ordinate infrastructure within Regional rights-of-way for operating and capital components, including street lighting, sidewalks and cycling facilities.

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7.2 (8)	To work with local municipalities to ensure that sidewalks and street lighting are provided on both sides of all local arterial and collector streets with transit services.
7.2 (9)	To ensure the safe year-round operation of Regional pedestrian, cycling and transit facilities through design, signage, enforcement and effective maintenance.
7.2 (10)	That the construction of proposed pedestrian and cycling routes will protect and enhance the Regional Greenlands System.
7.2 (11)	To integrate pedestrian, cycling and transit activities through improvements such as bicycle racks and storage at transit stops, bicycle racks on buses, and improved access for pedestrians and bicycles at transit stops, stations and terminals.
7.2 (12)	To encourage property owners to provide facilities such as benches, shelters and secure bicycle storage at major destinations, including employment, educational, institutional and shopping locations.
7.2 (13)	To co-ordinate Regional and local pedestrian and cycling networks with trail connections to the Regional Greenlands System trails network, where appropriate.
7.2 (14)	To develop and promote a continuous pedestrian and cycling path from Lake Simcoe to Lake Ontario in partnership with local municipalities and the City of Toronto.
7.2 (15)	To encourage the development and implementation of local municipal pedestrian and cycling master plans.
7.2 (16)	To partner with York Region District and Catholic School Boards to implement the Active and Safe Routes to School program, and to design and locate school campuses to promote walking, cycling and transit as a primary means of transportation.
7.2 (17)	To work with the Province, Metrolinx and other partners to develop innovative programs that support active transportation, such as cycling safety training, education and information, bicycle sharing programs and bicycle libraries.
7.2 (18)	To encourage the Province and Federal government to provide funding and tools to support the development and promotion of active transportation as part of a healthy, active lifestyle.
	<b>Transit</b>
7.2 (19)	To recognize transit as a strategic investment priority and a key element of York Region's urban structure.
7.2 (20)	To develop effective transit services to connect rural communities.
7.2 (21)	To develop transit corridors and related infrastructure necessary to establish the York Region Transit and Viva network as illustrated on Map 11.
7.2 (22)	To work with partners to complete the transit network, as illustrated on Map 11, including subway line extensions, Metrolinx enhancements, the 407 Transitway and other rapid transit corridors.
7.2 (23)	To ensure communities are planned with the early integration of transit.
7.2 (24)	To provide preferential treatment for transit vehicles on Regional streets, including the construction of <i>high-occupancy vehicle lanes</i> , dedicated transit lanes, transit signal priority and other transit priority measures.
7.2 (25)	To achieve high transit usage by supporting improvements in service, convenient access and good urban design, including the following: a. minimizing walking distance to planned and existing transit stops through measures such as the provision of walkways, sidewalks and more direct street patterns. The Region will plan to provide transit service so that the distance to a transit stop is within 500 metres of 90% of residents, and within 200 metres of 50% of residents in the Urban Area; b. connecting transit stops directly to sidewalks and adjacent building in the Urban Area; c. providing

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	bus bays, transit shelters and bus loops with sufficient lighting and accessibility features; d. directing medium- and high-density urban development to rapid transit corridors; e. creating a system of parking and drop-off facilities for commuters; f. providing intermodal terminals or hubs; g. providing transit service on mid-block collectors; h. giving priority to pedestrian and cycling access to transit through the planning and development approval process; i. utilizing the York Region Transit-Oriented Development Guidelines and related tools in the review and evaluation of development applications and related studies; and, j. requiring all new <i>development</i> applications to prepare a mobility plan and demonstrate the proposal's approach to transit.
7.2 (26)	To achieve an overall transit modal split of 30% during peak periods in the Urban Area and 50% in the Regional Centres and Corridors by 2031.
7.2 (27)	To work with local municipalities to provide multi-use paths, sidewalks and street lighting along Regional streets serviced by transit.
7.2 (28)	To work with local municipalities to ensure that sidewalks and street lighting are provided on all streets within the Urban Area, and Towns and Villages that are serviced by transit.
7.2 (29)	To encourage the provision of sidewalks and street lighting on all streets in York Region.
7.2 (30)	To support and implement an equitable transit fare strategy that is integrated with transit services in adjacent regions and with Metrolinx.
7.2 (31)	To require, at no expense to the Region, the dedication of public transit rights-of-way and lands for related facilities for the purpose of implementing the Transit Network shown on Map 11.
7.2 (32)	To support the transit network shown on Map 11 by securing lands, at no expense to the Region, for facilities such as: a. transit stations including intermodal terminals, mobility hubs, subway, bus and light rail stations and related passenger drop-off and commuter parking areas; b. related infrastructure, including vent shafts, <i>transit operation and maintenance facilities</i> , passenger standing pads and passenger pick-up and drop-off areas, electrical substations and passenger safety facilities; c. pedestrian and cycling facilities; d. intelligent transit and travel information systems; and, e. public streetscape enhancements.
7.2 (33)	That the transit network is generally described in one or more of the following documents: a. approved environmental assessments or approved transit project assessments; b. the York Region Transit 5-Year and annual Service Plans; c. the York Region Transportation Master Plan; d. Regional Rapid Transit Standards; e. the Regional Rapid Transit Network Plan; and, f. the Pedestrian and Cycling Master Plan.
7.2 (34)	To manage the movement of traffic in the Regional Rapid Transit Corridors shown on Map 11 to improve the safety and efficiency of all movements including that of pedestrians, cyclists and transit vehicles.
7.2 (35)	To provide accessible and integrated public transit to people with disabilities.
7.2 (36)	To require local municipalities to include all policies in local official plans to implement the Transit Network shown on Map 11, consistent with the policies of this Plan.
7.2 (37)	To co-ordinate the planning, integration and operation of existing and new transit services with local municipalities, the Toronto Transit Commission, the Province, Metrolinx and adjacent municipalities.
7.2 (38)	To work with local municipalities, the Toronto Transit Commission, Metrolinx and

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	adjacent municipalities to encourage the Province and the Federal government to provide sustainable capital and operational funding and tools to support transit.
	<b>Streets</b>
7.2 (39)	That the hierarchy of streets on Map 12 supports the Region's proposed urban structure. These corridors are to accommodate all modes of transportation including walking, cycling, transit, automobile use and the movement of goods, as well as public and private utilities.
7.2 (40)	To improve the street network identified on Map 12, based on the following: a. the York Region Transportation Master Plan and the 10-Year Capital Plans; b. the completion of the necessary planning and environmental assessment studies for each project; c. street improvement projects that take into account the needs and requirements of all forms of transportation including walking, cycling, transit, automobiles, and goods movement; and, d. priority accorded to the needs of pedestrians, cyclists and transit uses and the integration of adjacent land uses in Regional Centres and Corridors, to promote these forms of transportation.
7.2 (41)	To implement transit improvements on urban streets as identified on Map 12, which may include transit lanes, <i>high-occupancy vehicle lanes</i> , queue jump lanes, bicycle lanes and other transit signal priority needs.
7.2 (42)	To require transit or <i>high-occupancy vehicle lanes</i> and bicycle lanes within the right-of-way of 6-lane Regional streets.
7.2 (43)	To encourage the planning and implementation of <i>high-occupancy vehicle lanes</i> on all 400-series highways within and/or adjacent to York Region.
7.2 (44)	To investigate establishing a continuous alternative east-west corridor(s) in the central part of the Region.
7.2 (45)	That street widening and proposed Regional streets shall protect and enhance the Regional Greenlands System.
7.2 (46)	That within the Oak Ridges Moraine, all improvements to the Regional Transit and Street Networks shall conform with the policies of the Oak Ridges Moraine Conservation Plan.
7.2 (47)	That priority be given to protecting existing heritage streetscapes using techniques such as variable rights-of-way widths, as identified on Map 12, and innovative street cross-section standards.
7.2 (48)	That the street widths shown in Map 12 be considered as basic rights-of-way widths, and additional widths may be required for elements such as sight triangles, cuts, fills, streetscaping and extra turn lanes at intersections, and shall be conveyed at no expense to the Region.
7.2 (49)	That, in general, street widening shall be taken equally from the centre line of the street. Landowners will be required to provide land at no expense to the Region for street widening based on the following principles: a. that land will be conveyed to the Region for street widening as a result of new development, changes in uses that generate significant traffic volumes, or additions that substantially increase the size or usability of buildings or structure; b. that unequal or reduced widenings may be required where topographic features, public lands, historic buildings or other cultural heritage resources such as archaeological features, significant environmental concerns or other unique conditions necessitate talking a greater widening or the total widening on one side of the existing street right-of-way; and, c. that additional land may also be required to construct future grade separations where there is an existing at-grade crossing of a Regional street and a railway line.

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7.2 (50)	That land required for new or realigned Regional streets to accommodate land development be conveyed, at no expense to the Region, up to and including the first 36 metres of the required right-of-way.
7.2 (51)	To restrict vehicle access from developments adjacent to Regional streets to maximize the efficiency of the Regional street system through techniques such as suitable local street access, shared driveways and interconnected properties. Exceptions may be made to this policy in Regional Centres and Corridors, and main streets.
7.2 (52)	To request that the Province work with York Region and the local municipalities to expedite the planning, corridor protection and early construction of the following facilities: a. Highway 427 north beyond Highway 7; b. Highway 404 north beyond Green Lane to the Highway 48/Highway 12 junction; c. the Bradford Bypass; d. the GTA West Corridor; and, e. interchanges on 400-series highways at Regional and other arterial street crossings as identified in the York Region Transportation Master Plan.
7.2 (53)	To require local municipalities to design street systems to accommodate pedestrian, cycling and transit facilities.
7.2 (54)	To work with local municipalities to complete missing sidewalk links on Regional streets in the Urban Area.
7.2 (55)	That arterial streets identified on Map 12 that are currently not part of the Regional street network may be considered for a transfer in jurisdiction to York Region, and such a transfer shall not require an amendment to this Plan.
7.2 (56)	To require local municipalities to protect arterial streets under local jurisdiction, as illustrated on Map 12, as major transportation corridors.
7.2 (57)	To require local municipalities to plan and implement, including land takings necessary for, continuous collector streets in both east-west and north-south directions in each concession block, in all new urban developments, including <i>new community areas</i> .
7.2 (58)	To require local municipalities to plan and implement, including land takings necessary for, mid-block crossings of 400-series highways, as shown on Map 12.
7.2 (59)	To encourage all appropriate agencies to expedite the construction of street/railway grade separations where warranted.
7.2 (60)	To plan and co-ordinate cross-boundary transportation needs with adjacent municipalities and appropriate agencies.
7.2 (61)	To update the York Region Transportation Master Plan at least every 5 years concurrent with the 5-year review of this Plan.
7.2 (62)	To update and implement York Region's Towards Great Regional Streets study.
	<b>Goods Movement</b>
7.2 (63)	To promote an interconnected goods movement network that links local municipalities and surrounding areas, utilizing Provincial highways, Regional streets and rail corridors.
7.2 (64)	To work with Metrolinx, the Province, local municipalities, and surrounding jurisdictions to plan for an effective and integrated goods movement system throughout the Greater Toronto and Hamilton Area.
7.2 (65)	To support the optimization of the existing transportation network for goods movement, through methods such as access management and intelligent transportation systems.
7.2 (66)	To support the protection of existing rail lines and promote rail as an efficient goods movement method.

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7.2 (67)	To encourage the protection of abandoned railway rights-of-way for public uses such as trails, cycling paths, and transit.
7.2 (68)	To ensure that noise, vibration and safety issues are carefully managed for land uses in proximity to rail facilities, rail corridors and intermodal yards.
7.2 (69)	To encourage freight and logistics uses to locate in clusters that create synergies within the goods movement industry.
7.2 (70)	To encourage employment uses and activities that require heavy truck traffic to locate in areas near and adjacent to Provincial highways.
7.2 (71)	To support an interconnected and efficient system for goods movement through: a. the completion of the 400-series highway network, including the GTA West Corridor, the Highway 427 Extension, the Highway 404 Extension, and the Bradford Bypass; and, b. the addition of 400-series highway interchanges and overpasses.
7.2 (72)	To recognize that Provincial highways and Regional streets are generally corridors for goods movement, subject to existing truck and load restrictions.
7.2 (73)	To promote an urban structure and street network in Regional Centres and Corridors that allows for the efficient movement of goods.
7.2 (74)	To work with other levels of government, agencies and the private sector to minimize risks and ensure the safe and efficient movement of goods by either rail or streets in the Region.
7.2 (75)	To direct the movement of hazardous goods to rail and roadways outside of the Urban Area, where possible.
7.2 (76)	To consider restrictions on the haulage of chemicals and volatile materials in <i>Wellhead Protection Areas</i> , shown on Map 6 and Areas of High Aquifer Vulnerability, shown on Map 7.
7.2 (77)	To encourage grade separation of railways and major streets, where warranted.
7.2 (78)	To encourage businesses to move towards more energy efficient and effective freight modes and technologies.
7.2 (79)	To encourage rail and truck operators to investigate new technologies and increase the efficiency of the design and operations of their facilities.

## **APPENDIX C**

### **SUMMARY OF INPUT RECEIVED ON DRAFT AREA TRANSPORTATION SYSTEM PROBLEMS AND OPPORTUNITIES REPORT – DRAFT FOR CONSULTATION (2009)**

<b>Correspondence</b>	<b>Reference</b>	<b>Comments Received / Concerns Identified</b>	<b>Response and Actions Planned / Taken</b>	<b>Change to Revised Draft Report</b>
Regional Municipality of Halton  Email of August 4, 2009	N/A	What is the deadline for providing comments on the Draft Area Transportation System Problems & Opportunities Report for the GTA West Corridor Environmental Assessment Study?	Question addressed – relevant deadline provided.	No change to report
Region of Halton  Letter of November 19, 2009	N/A	This will confirm that the Council of the Regional Municipality of Halton, at its meeting held Wednesday, November 18, 2009, adopted the following resolution: 1. THAT Report No. PW-48-09 re: "Greater Toronto Area West Corridor Environmental Assessment - Area Transportation System Problems and Opportunities Report" be endorsed by Regional Council. 2. THAT the Regional Clerk forward a copy of Report No. PW-48-09 to the Ministry of Transportation, the GTA West Corridor Project Team and Local Municipalities for their information. 3. THAT the Ministry of Transportation be requested to assess the effect of road pricing strategies.  Enclosed please find a copy of Report No. PW-48-09 for your information. Please note that the resolution adopted by Council differs from the staff recommendation in the report.	Comments noted – explanation that tolling is not currently being assessed as part of the study but may be reviewed at a later stage	No change to report
	N/A	The study is being carried out within a policy framework of approved provincial (Provincial Policy Statement, Metrolinx Regional Transportation Plan, Growth Plan for the Greater Golden Horseshoe, etc.) And municipal (Official Plans, Transportation Master Plans, Land Use Designations, etc.) Planning policies,	Comments noted – any new information will be incorporated into the next study process	No change to report

<b>Correspondence</b>	<b>Reference</b>	<b>Comments Received / Concerns Identified</b>	<b>Response and Actions Planned / Taken</b>	<b>Change to Revised Draft Report</b>
		and does not address how changes to provincial or municipal policies could potentially impact transportation problems and opportunities identified within the report. Within this context it is noted that the report and technical analysis need to be updated to reflect most current population and employment information available through Sustainable Halton and the Regional Official Plan Amendment (ROPA) 38.		
	N/A	The report explains the application of the Southern Ontario Highway Programs to the Greater Toronto Area West Corridor Study Area in the assessment of the 2031 transportation network conditions, however it was suggested that further discussion be provided regarding projects such as Highway 401 from Mississauga to Milton and Highway 403 from QEW to Highway 407 which are of interest to Halton Region. These projects will impact transportation conditions in the Study Area and should be documented as such.	Comments noted – clarification provided on how these projects have been considered in study	No change to report
	N/A	It was also noted that work underway through the Halton Peel Boundary Area Transportation Study (HPBATS) needs to be considered through the GTA West work. Ontario Ministry of Transportation's study team has been closely liaising with the HPBATS steering committee.	Comments noted – will continue to incorporate relevant findings of this work	No change to report
	N/A	The report notes that the proportion of internal trips within Halton Region is expected to decrease between 2006 and 2031. It was requested that the study team review this finding in light of the Sustainable Halton Study and Region's growth management strategy to 2031.	Comments noted – will review findings of study and determine their impact on assessment of alternatives	No change to report

<b>Correspondence</b>	<b>Reference</b>	<b>Comments Received / Concerns Identified</b>	<b>Response and Actions Planned / Taken</b>	<b>Change to Revised Draft Report</b>
	N/A	<p>The Regional Transportation Advisory Committee emphasized the importance of recognizing the significant congestion issues within Halton, and the potential impact of national and international initiatives on traffic volumes in the study area. It was also noted that proposed timelines for the next steps of the studies are very aggressive.</p> <p>The Committee also requested that the study team consider environmental impacts identified through previous work in the study area when evaluating alternatives under Phase 2 of the Study.</p> <p>In summary, the report provides data and broadly identifies problems and opportunities, but does not present any new significant information. This is not a concern at this point in the Study, however staff understand the importance of this Study in establishing the nature of inter-regional transportation to 2031 and will continue to work closely with the study team.</p>	Comments noted – explanation that environmental issues are a key component of the study and provision of link to access further information	No change to report
Region of York Email of August 17, 2009	Page 48 and Appendix B	York Region has completed an Official Plan update and it is currently available for public review in draft form (I have attached the link to our website where you can download the material). It is expected to be approved by the end of 2009. The references in your Draft Area Transportation System Problems and Opportunities Report should be updated accordingly.	Comments noted – text will be revised to reflect updated York Region Official Plan	References on Page 48 and in Appendix B updated accordingly
City of Mississauga Email of September	N/A	At this point, City of Mississauga has no comments or concerns with regard to the Draft Transportation System Problems and Opportunity report. We would	Interest noted	No change to report

<b>Correspondence</b>	<b>Reference</b>	<b>Comments Received / Concerns Identified</b>	<b>Response and Actions Planned / Taken</b>	<b>Change to Revised Draft Report</b>
9, 2009		like to be further involved in the study and monitor the proceedings.		
City of Brampton  Emails of October 29, 2009 and November 2, 2009	Section 2.3.1 and Appendix B	Why are lower-tier municipal Official Plans not included in the discussion in Section 2.3.1 and Appendix B? Brampton OP contains specific policies related to corridor protection in west and east Brampton (relating to the North-South Transportation Corridor currently being studied through HPBATS, and the Hwy 427 and arterial network are in east Brampton).	Question addressed – guidance on relevant sections of report provided	No change to report
	Page 78	Pg 78, Section 3.2, Road Network Assumptions: It mentions that the traffic analysis accounted for proposed road improvements by upper and single tier municipalities in their tmps. Does this mean that lower tier municipalities such as Brampton were not included? The City of Brampton’s Transportation & Transit Master Plan (TTMP 2009) should be included in the modeling and traffic analysis	Question addressed – explanation that Plan was included in modelling	No change to report
	N/A	Previous transportation studies undertaken by the City of Brampton have identified the need for a new North-South Transportation Corridor along the Halton-Peel boundary including the City’s Transportation and Transit Master Plan (TTMP) and preliminary findings from the Halton-Peel Boundary Area Transportation Study (HP BATS). The purpose of the study and problem statement should be explicit regarding future north-south transportation infrastructure needs. The traffic analysis should identify the traffic growth issues associated with planned development in Brampton and Georgetown along the Halton-Peel boundary and the opportunity to provide north-south	Comments noted – guidance on relevant reports provided	No change to report

<b>Correspondence</b>	<b>Reference</b>	<b>Comments Received / Concerns Identified</b>	<b>Response and Actions Planned / Taken</b>	<b>Change to Revised Draft Report</b>
		transportation infrastructure (such as a new North-South Transportation Corridor).		
	Page 92	Pg 92, Exhibit 3-17, screenlines were analyzed at South of Hwy 407 and South of Mayfield Road. These screenlines do not capture the significant future traffic volumes between Hwy 407 and south of Mayfield Road (most of Brampton not captured), particularly between WCB and Hurontario St. The only screenline capturing traffic volumes in Brampton is south of Mayfield Road, which would be significantly less at the north end of Brampton than the south end of Brampton. A new screenline needs to be added in the south end of Brampton in the vicinity of north of Hwy 407 to capture the higher traffic volumes.	Comments noted – as part of the ‘alternatives to’ analysis, new screenlines will be added to reflect flows north of Highway 407	No change to report - new screenlines added for subsequent study analysis and the results are provided in the Transportation Alternatives Report.
	N/A	At the appropriate stage in this EA Study, the extension of existing Highways such as Highways 410 and 427 needs to be identified as connecting with GTA West Corridor.	Comments noted	No change to report
	N/A	Need to proceed with this EA study as quickly as possible in order to protect the lands for a North-South Transportation Corridor as well as future extension of Highway 427 in NE Brampton.	Comments noted	No change to report
	N/A	Does the GGH model use the same methodology to project LRT and BRT trips?	Question addressed – affirmative response	No change to report
	Page 78	Page 78, “Highway 410 extension from Mayfield Road to Highway 10”: what is the northerly terminus of 410 in the GGH 2006 scenario?	Question addressed – Bovaird Drive as based on 2006 data	No change to report
	Page 79	Page 79: There appears to be some confusion in describing the RT corridors in Brampton. The	Comments noted – will amend Page 79 of the	Description of relevant corridors

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		<p>Brampton acceleride BRT initiative (now rebranded as “Züm”) includes Queen St, Main St, Steeles Ave, Bovaird Dr, a yet-to-be-defined corridor in the east (either Airport Rd or Bramalea Rd), and Mississauga Rd in the west (added as part of the recent Transportation &amp; Transit Master Plan update) – 6 arterial corridors in total. Of these, Queen, Main, and Steeles are identified as RT corridors in the Metrolinx RTP 15-Year Plan, and Steeles in the 25-Year Plan. Hurontario Street is represented in the RTP 15-Yr Plan in 3 sections: Mayfield to Downtown Brampton, Downtown Brampton to Highway 407, and Hwy 407 to Port Credit. The latter two sections comprise the Main Street/Hurontario High Order Transit corridor study, which is looking at potential LRT service. The section north to Mayfield is not included in the Hurontario HOT study, but is part of the acceleride/Züm network as a BRT corridor, though its identification in the RTP does not discount future LRT on this section. Transit (BRT or LRT)-Extension of a line on Hurontario Street north to Mayfield Road”. Based on the foregoing, please clarify bullets 6 and 7 of the “Metrolinx RTP/GO Transit” section and the 1<sup>st</sup> bullet under the “Other Rapid Transit (BRT or LRT)” section. Also, clarify whether Hurontario LRT in the GGH model extends to Mayfield Rd in 2031.</p>	<p>report to reflect comments</p>	<p>amended on Page 79</p>
	<p>N/A</p>	<p>Has road capacity been reduced on those arterial corridors with RT service? (e.g. Hurontario/Main St, five Brampton arterial corridors)</p>	<p>Question addressed – assumption that RT services will be accommodated through additional lanes</p>	<p>No change to report</p>

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	Page 80	Page 80: how is parking cost determined for new paid parking areas in 2031?	Question addressed – use of GGH model assumptions	No change to report
	Page 81	Page 81, Exhibit 3-4: Clarify the assumption/what is meant by “2031 current trends”	Question addressed – reference to relevant report provided	No change to report
	Page 85	Page 85, Exhibit 3-10: clarify what is meant by “Highway 401-west of Highway 401”.	Comments noted – will amend to read ‘west of Highway 407’	Amendment made to Exhibit 3-10 accordingly
	Page 86	Page 86: BAU analysis appears to use a Furness/Fratar methodology, based on land use growth and 2001 TTS data; is it able to forecast trips in new growth areas?	Question addressed – explanation provided on methodology	No change to report
	Page 87	Page 87, Exhibit 3-11: The table should include interregional trip interchanges between Brampton and Vaughan.	Comments noted – will amend Exhibit 3-11 to include relevant data	Amendment made to Exhibit 3-11 accordingly
TRCA  Letter of October 2, 2009	N/A	The report provides very little discussion on the natural environment. While general statements are provided throughout the report, staff was expecting to review a greater level of detail with respect to the natural environment. The report goes into great detail on the future transportation problems and opportunities, specific transportation problems within the study area, but does not highlight the known environmental sensitivities and the constraints they may impose, or how they will be incorporated into the decision making process. A greater emphasis should be provided on the known natural heritage features and how they will be incorporated into the decision making process.	Comments noted – guidance on relevant reports provided	No change to report

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	N/A	It is mentioned several times throughout the report under 'Environment' that congestion increases fuel consumption and increases air and noise emissions. Staff acknowledges that congestion is a problem in certain areas of the GTA, however, there is no mention of natural features or impacts to the natural features. As mentioned above, a greater emphasis on impacts to the natural heritage features will need to be included in the EA.	Comments noted – see above	No change to report
	Page xiv	Section 6, item 7 (page xiv) states that planning will give due regard to the requirements of approved provincial environmental protection policies. Other policies also need to be considered, as not all natural heritage features and functions are captured in provincial policies. A statement indicating that other policies, such as the <i>Conservation Authorities Act</i> , should be included in the report. It is also noted in the report that there is an opportunity to minimize, and potentially avoid impacts to important natural, social, economic and cultural features at the earliest planning stages. Please indicate when this opportunity will be provided in this EA process.	Comments noted – a reference to the Conservation Authorities Act will be included	Reference included in Page xv
	Page 10	The Problems and Opportunities Development Framework outlined on page 10 should also incorporate a 'natural heritage features' opportunities and constraints phase. It appears as if the options to provide better linkages between urban growth centres in the GTA West Corridor Study Area do not consider natural heritage features or functions, based on what is provided in the framework.	Comments noted – will give consideration to renaming to 'Transportation Problems and Opportunities Development Framework'	Framework outlined on Page 10 renamed accordingly
	Page 23	Section 2.2.1 (page 23) Provincial Policy Statement	Comments noted –	No change to report

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		should include a section on Natural Heritage Features. It provides a brief overview of the PPS on employment, and infrastructure, but nothing on natural heritage.	guidance on relevant section of report provided	
	N/A	Once the EA has been developed to a point where stormwater management will need to be addressed, staff will require that any proposed structure be constructed such that it: Minimizes the number of watercourse crossings; Provides the largest span crossings possible based on fluvial geomorphologic considerations; Crosses watercourses at as straight a reach as possible; Provides appropriate stormwater management controls.	Comments noted for future reference	No change to report
Member of the Public  Webform of August 16, 2009	N/A	No mention of the Guelph-Junction Railway and the role of industrial rail in the City of Guelph's economic plans  No mention of lower tier municipal consultation with the Township of Guelph/Eramosa or Centre Wellington. Both of these municipalities will likely experience social, economic and environmental problems and opportunities with respect to the outcomes of the GTA-West Corridor EA decisions. These municipalities should receive consideration for resources to conduct independent municipal planning studies with respect to the GTA-West corridor so that they are able to coordinate municipal plans with the likely outcomes of the EA process.  In particular, land use and economic development	Comments noted – text will be revised to include Townships of Guelph/Eramosa and Centre Wellington	List of MAG members on Page 164 revised accordingly

Correspondence	Reference	Comments Received / Concerns Identified	Response and Actions Planned / Taken	Change to Revised Draft Report
		<p>studies associated with the likely corridor route(s) would provide the constituents of these lower tier municipalities with chances for meaningful comment on ways to manage the opportunities and problems that will result from the GTA-West Corridor EA decisions.</p> <p>The Township of Guelph/Eramosa and Centre-Wellington should be considered for representation on the MAG.</p> <p>There exist opportunities for the coordination of multi-modal transportation and land use planning with municipal land use planning to support municipal growth aspirations specific to the Guelph Junction Railway and the municipalities of Guelph and the Township of Guelph/Eramosa. Engagement of the Township of Guelph/Eramosa is particularly important in this respect given the Guelph Junction Railways' customers in the agri-food sector: "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..." (page xii) This is important with respect to supporting sustainable agricultural development in the area.</p>		