

March 10, 2011

City of Hamilton  
 Kevin C Christenson, City Clerk  
 71 Main Street West  
 City Hall, 2nd Floor  
 Hamilton, Ontario, L8P 4Y5

Dear Mr Christenson:

**RE: Niagara to GTA Corridor Planning and Environmental Assessment Study – Phase 1  
 Draft Transportation Development Strategy – Document for Public Access and Review**

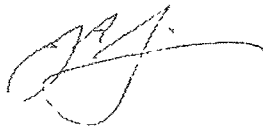
The Ontario Ministry of Transportation (MTO) will be inviting stakeholders to review and comment on the draft Transportation Development Strategy (draft Strategy) for the Niagara to GTA (NGTA) Corridor Planning and Environmental Assessment Study. Please find enclosed one copy of the draft Strategy and a CD containing the draft Strategy. Please ensure that the report and the CD are available for public review at your municipal offices starting on **March 14, 2011**. Copies of the report are also available on the project website. <http://www.niagara-gta.com>, under the "Reports and Discussion Papers" tab. Please also note that CDs containing the full report have been provided to the municipal representatives on the NGTA Municipal Technical Advisory Group for their review.

The Niagara to GTA Corridor Planning and EA study is being undertaken in accordance with the *Ontario Environmental Assessment Act* (EA Act) and the Niagara to GTA Corridor Environmental Assessment Terms of Reference, which was approved by the Minister of the Environment in June 2006.

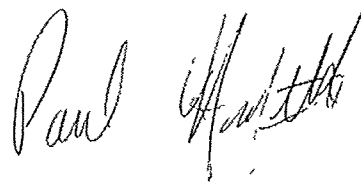
Comments and information regarding this project will be collected to assist the MTO in meeting the requirements of the OEAA. This material will be maintained on file for use during the project and may be included in project documentation. Information collected will be used in accordance with the *Freedom of Information and Protection of Privacy Act* and the *Access to Information Act*. With the exception of personal information (e.g., name and address), all comments received will become part of the public record.

Thank you for your cooperation and assistance. Should you have any questions, please feel free to contact the NGTA Study Team;

Sincerely,



Mr. John Slobodzian  
 MTO Study Team Lead  
 Provincial Planning Office  
 Ontario Ministry of Transportation



Mr. Paul Hudspith, P Eng  
 Consultant Project Manager  
 URS Canada Inc.

**NGTA Study Team**

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**Niagara to GTA Corridor**  
**Planning and Environmental Assessment Study**

**TRANSPORTATION DEVELOPMENT  
STRATEGY**

**EXECUTIVE SUMMARY**  
**Draft for Consultation**

February 2011

[www.niagara-gta.com](http://www.niagara-gta.com)



## EXECUTIVE SUMMARY

### The Challenges and Opportunities of Growth

The study area is located within the Greater Golden Horseshoe (GGH), which stretches from Niagara Region to Waterloo Region, from Simcoe County to Northumberland. As one of the fastest growing regions in North America, the population of this region is expected to increase to 11.5 million people with 5.5 million jobs in the area by 2031.

In order to deal with this anticipated growth, the Ontario government released *The Growth Plan for the Greater Golden Horseshoe (The Growth Plan)* in 2006, which provides a framework for building strong and prosperous communities by managing growth. *The Growth Plan* also provides the strategic policy framework for the transportation system in the GGH that provides for more transportation choices, promotes public transit and active transportation and gives priority to goods movement on highway corridors. Under this policy framework, the Niagara to GTA Corridor Planning and Environmental Assessment study (NGTA study) is designed to explore all modes of transportation for facilitating the efficient inter-regional movement of people and goods.

The GGH will continue to experience the benefits that come from growth, with vibrant, diversified communities and economies, new and expanded community services, and arts, culture and recreation facilities. However, without properly managing growth, communities will experience the negative aspects associated with rapid growth, such as inefficient land use and infrastructure, increased transportation demand and traffic congestion, declining economic productivity, and development pressure on agricultural lands and natural resources.



The Niagara to GTA study area (NGTA study area) is in a strategically important location critical to Ontario's long term economic competitiveness as part of the Ontario-Quebec Continental Gateway and Trade Corridor, ensuring the efficient movement of people and goods between Ontario communities and US markets. Within the NGTA study area the municipalities of Hamilton, Halton and Niagara expect over 445,000 new residents and 195,000 new jobs by 2031.

From a transportation planning perspective, this growth poses a significant challenge, as many of the existing transportation facilities are already operating at or near capacity during peak periods. By 2031, according to the analysis undertaken for this study, the existing transportation network within the NGTA study area will not be able to support the additional transportation demands that correspond with the projected growth.

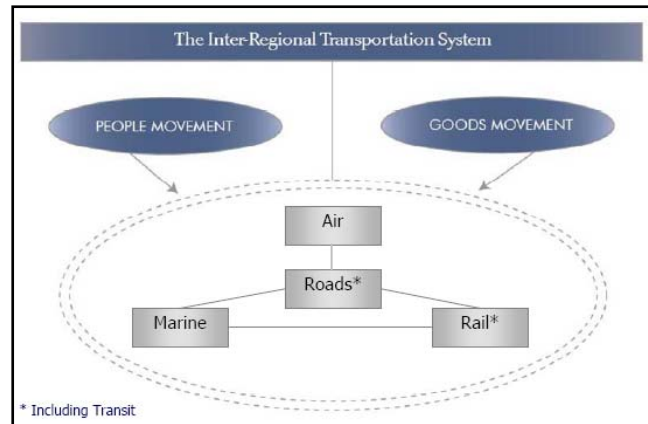
## Transportation Problems and Opportunities

Transportation in the study area is characterized by a high degree of reliance on the road network as the vast majority of trips in the NGTA Corridor are made by automobile and truck.

Furthermore, as established by analysis and stakeholder consultation, the road network is important to the operation of all travel modes in the study area including transit, rail, air and marine.

All of these modes rely upon and connect to the road network. All travel modes have been considered in generating alternative transportation solutions to address the identified transportation problems.

Transportation service providers for rail, air and marine have indicated that their systems generally 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 different travel modes; and
- Roadway congestion particularly during the weekday peak period commute, especially in the Hamilton and Halton areas, as well as high volumes of summer tourism and recreation travellers, particularly in the Niagara area.

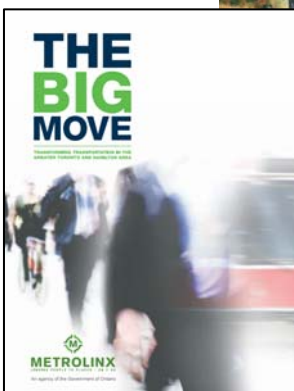
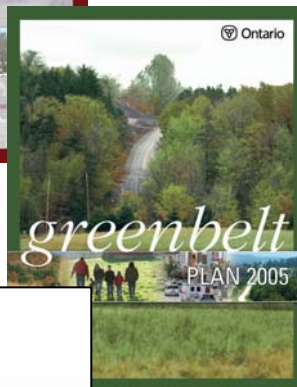
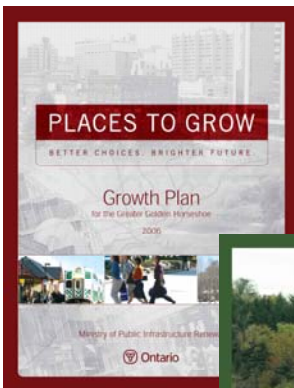
In addition to the transportation problems, there are also numerous transportation opportunities that can be achieved within the study area by providing an efficient multi-modal transportation system. These include:

- Improved multi-modal connections to the GTA and areas west of the Corridor;
- Improved access to Niagara Falls and the US border for tourism and trade;
- Improved access to inter-modal facilities such as Hamilton International Airport and the Port of Hamilton;
- Support for approved municipal land use planning:
  - Niagara's "Grow South" plan to protect the tender fruit lands;
  - Hamilton's planned Airport Employment Growth District (AEGD); and
  - Halton's planned employment growth lands in Milton, Oakville and Burlington.
- Minimized impacts to the natural, social, economic and cultural environments, through measures including optimizing existing transportation infrastructure.

## The Province's Action Plan

To address these issues, the Ontario government has begun the process of planning for the future. *The Growth Plan*, *The Greenbelt Plan*, and *the Niagara Escarpment Plan* provide an important policy context and foundation for future growth. These policies provide a basis for municipalities and the Ontario government to plan for communities with land use that is supportive of a more balanced transportation system that makes best use of the existing infrastructure, and prioritizes the use of transit and other non-roadway modes of transportation for people and goods movement.

In addition to providing a sustainable policy framework, a *Regional Transportation Plan (RTP)* for the Greater Toronto and Hamilton Area (GTHA), also known as “The Big Move,” has been completed by Metrolinx (including GO Transit) and adopted by the Metrolinx Board of Directors in accordance with the Metrolinx Act. This plan includes a number of initiatives referred to as “Quick Wins” to be in service within five years or less and “The Big 5” to be in service within ten years.



Projects have started:

- **Metrolinx “Quick Wins” in the NGTA study area**
  - Hamilton A and B Line Bus Rapid Transit (BRT) improvements
  - Hamilton James Street North GO / VIA Station – gateway to Niagara
  - Halton Region BRT
- **The Big 5 Metrolinx Big Move Projects**
  - Sheppard LRT
  - Eglinton LRT
  - York Viva
  - Scarborough RT
  - Finch LRT
- **GO service expansion into Niagara Region**
- **High Occupancy Vehicle Lane Network Plan (2007-2011)**
  - Highway 404 – construction complete
  - Highway 403 – construction complete
  - Queen Elizabeth Way (QEW) – construction underway with HOV lanes now open between Trafalgar Road and Guelph Line
  - Highway 400 – construction underway
  - Highway 427 – study underway
- **MTO’s 2008-2012 Southern Highways Program**
  - Over \$2 billion to repair and expand highways, roads and bridges across the province
  - \$927 million designated for Southern Ontario highway construction

In addition, the Ontario Ministry of Transportation (MTO) has developed a *High Occupancy Vehicle (HOV) Lane Network Plan (2007-2011)* to encourage car-pooling and to support bus transit. Several elements of this plan have already been constructed, including new HOV lanes on:

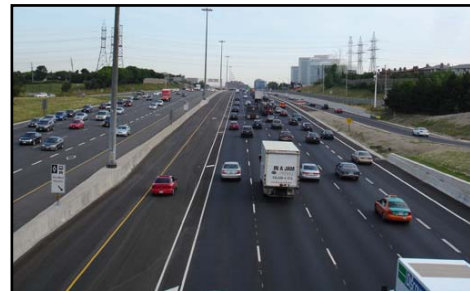
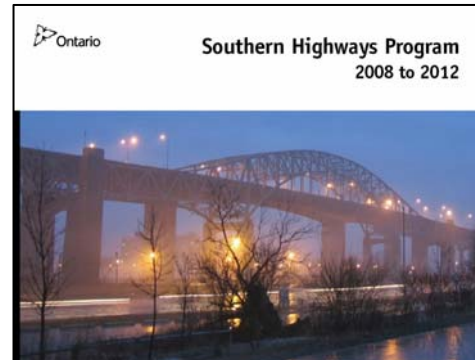
- Highway 404 between 407 ETR and Highway 401;
- Highway 403 through Mississauga; and
- The Queen Elizabeth Way (QEW) between Trafalgar Road in Oakville and Guelph Line in Burlington.

Construction is underway on sections of other provincial facilities such as Highway 400.

In addition to these initiatives, the MTO's *2008-2012 Southern Highways Program* has invested more than \$2 billion to repair and expand highways, roads and bridges across the province, with \$927 million designated for Southern Ontario highway construction.

At a municipal level, all municipalities within the GGH either have approved or are working on Official Plan amendments to conform to *The Growth Plan*, which promotes more compact, transit-supportive development. This is the first step towards building compact transit supportive complete communities.

While all of these initiatives will help to address the future travel demand that is anticipated by 2031, more is needed.



This *NGTA Study* has been initiated to explore all modes of transportation, including:

- transit,
- freight rail,
- marine,
- air,
- freight inter-modal, and
- roads and highways.

The objective of this study is to develop a broad, multi-modal Transportation Development Strategy (the Strategy) for the NGTA study area that builds upon all of the Ontario government's current plans and identifies multi-modal transportation improvements to address the future needs.

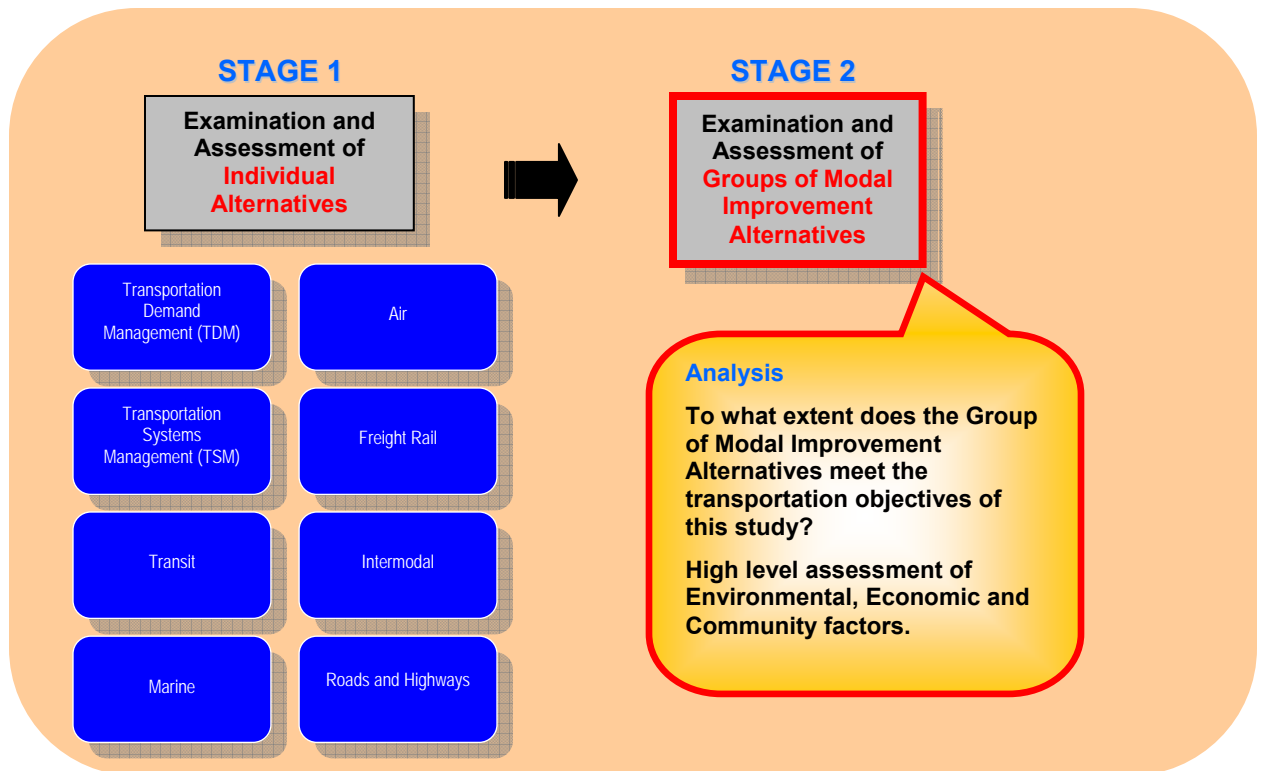
## The Building Block Approach

On the basis of the identified future transportation needs, the study team developed a series of multi-modal Area Transportation System Alternatives to address these needs (refer to **Chapter 3** of this report). The development of the Area Transportation System Alternatives has involved a unique and creative process, built upon an extensive consultation program with a wide range of stakeholders and other transportation service providers.

The process has followed a two-stage approach which began with a comprehensive assessment of the individual transportation alternatives to assess their ability to address the future inter-regional transportation problems and opportunities identified by the study team.

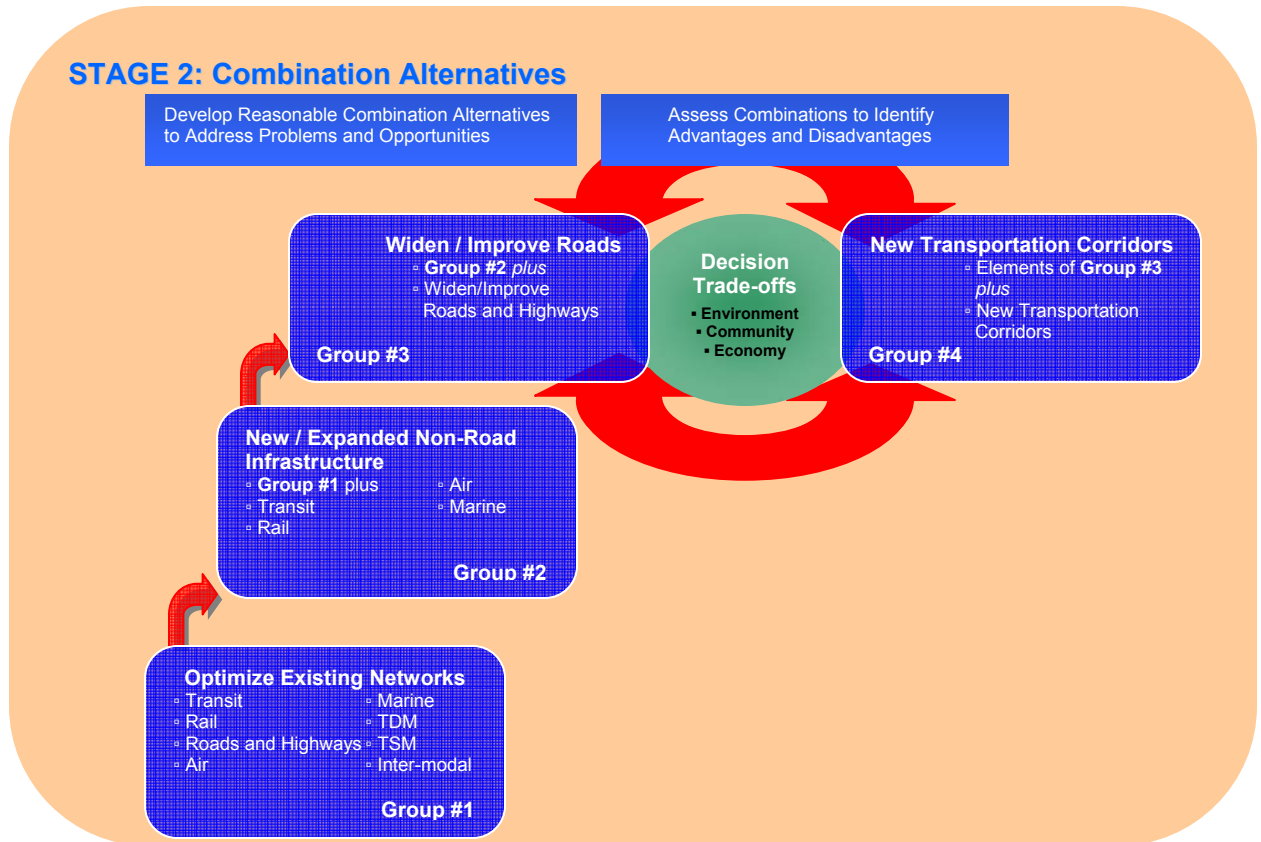
Based on this assessment, multi-modal alternatives considered capable of substantively contributing to addressing these problems and opportunities were carried forward to the second stage of the process, which involved assembling the multi-modal individual alternatives into group alternatives (**Exhibit E-1**).

Exhibit E-1: The Creative Process



The “building block” approach (**Exhibit E-2**) is consistent with current government policies and priorities of first optimizing the existing transportation network, and then if necessary, incorporating non-roadway infrastructure improvements and expansion, before moving to consider the widening of existing roadways or the provision of new roads and / or highways.

**Exhibit E–2: The “Building Block” Approach**



The study team’s objectives throughout the process have been to fully explore the potential of all transportation modes, as well as the potential of optimization techniques aimed at managing transportation demand (Transportation Demand Management – TDM) and enhancing and improving the existing transportation system using emerging technologies (Transportation Systems Management – TSM).

As part of this exercise, study team specialists for each of the modes of transportation were tasked with reviewing transportation practices in other jurisdictions around the world to determine which elements of these practices can be applied to the unique set of circumstances presented by the transportation, environmental, economic and social features and conditions within the NGTA study area.

In addition, the specialists have conducted numerous meetings with other transportation service providers such as Metrolinx (including GO Transit), CN Rail, CP Rail, Ontario Motor Coach Association, St. Lawrence Seaway Authority, Hamilton Port Authority and the Hamilton International Airport. The goal of these meetings has been to discuss with these agencies the potential to increase the utilization of their respective mode of transportation for the movement of people and goods, and to gain valuable insight with



regard to the specific policy issues and constraints that govern their ability to provide transportation services.

The findings of the specialists have been used by the broader study team through numerous workshops, as well as through meetings with municipalities, government agencies, members of the public and First Nations, to inform the development of an innovative and creative 'long-list' of multi-modal transportation alternatives.

In developing the initial 'long-list', the study team removed perceived barriers from consideration, such as policy constraints and / or pre-conceived notions based on past experience. This fostered the development of a truly creative set of alternatives. This list was subsequently analyzed and refined by the study team's specialists. Each alternative was examined on the basis of its ability to substantively contribute to addressing the transportation problems and opportunities identified by the study team during the previous phase of work. Concepts that were not considered capable of addressing the inter-regional transportation problems and opportunities were not carried forward for further consideration. The remaining concepts were categorized as worthy of pursuit as part of subsequent phases of this study or by other studies and initiatives.

The findings of the specialists, the initial 'long-list' of alternatives, the study team's assessment of the 'long list' of alternatives, together with the generation and assessment of the group alternatives are all documented in the *Niagara to GTA Area Transportation Systems Alternatives Report (March 2010)* (available under separate cover).

## Area Transportation System Alternatives

Through the process described in the previous section, the study team identified four groups of Area Transportation Alternatives:

- **Group #1: Optimize Existing Transportation Networks**

Transportation initiatives that focus on improving the performance of the existing transportation system for all modes of travel and transport through strategies designed to reduce auto and truck demand and improve system operating efficiency.

- **Group #2: New or Improved Non-Road Infrastructure**

This alternative builds upon the transportation system performance enhancements provided by Group #1 through provision of additional "non-road-based" capacity such as new air, marine, transit, and freight rail infrastructure to address potential shortfalls in addressing the transportation problems and opportunities inherent in Group #1.

- **Group #3: Widen or Improve Roads**

This alternative builds upon the transportation system enhancements and non-road capacity improvements provided by Group #2 and adds new capacity by widening existing roads or highways beyond that planned or contemplated by municipalities and the Ontario government.

- **Group #4: New Transportation Corridors**

This alternative builds upon the transportation system enhancements and both road and non-road capacity improvements provided by Group #1 and #2, as well as some existing road widening from Group #3, and adds new road and / or highway capacity on a new corridor to address identified transportation problems and opportunities.

The following provides a summary of each of the group alternatives.

## **OVERVIEW OF GROUP #1**

The Group #1 alternatives build upon comprehensive optimization strategies embodied in the *RTP*, *GO 2020 Strategic Plan*, MTO's *High Occupancy Vehicle Lane Network Plan* and Carpool Lot Program, and municipal transportation plans. These strategies aim at:

- Improving access to transit stations for pedestrians and motorists and advancing the concept of mobility hubs;
- Making active transportation a viable choice. Potential strategies include secure storage at transit terminals and bicycles on transit vehicles;
- Expanding the use of bus bypass shoulders during peak periods;
- Improving schedule and fare integration between transit providers;
- Providing drivers with real time trip planning information;
- Providing real time information to transit riders in stations and vehicles along with remote access via telephone and the internet;
- Optimizing use of commuter rail system (e.g., use of longer trains comprising 12 cars); and
- More aggressive use of TDM and TSM.

In addition to these strategies, the study team identified a number of complementary strategies, which may be further supplemented and refined. These strategies are described in further detail below:

### **Speed Harmonization**

Speed harmonization is used widely in numerous European jurisdictions and essentially involves adjusting the speed limit on inter-regional facilities based on prevailing congestion levels. In the US, pilot projects have been initiated to assess the feasibility of implementing speed harmonization. Changeable message speed signs which are connected through an electronic system to sensors in the pavement are used to reduce the speed limit during times of congestion. The reduced speeds promote a more even traffic flow which increases throughput and improves safety.

### **Provincial / Employer Led TDM Programs**

TDM programs could be improved upon by expanding the Smart Commute program beyond the GTHA. Other potential initiatives to support TDM include marketing of carpooling using overhead signage in the corridor or at carpool lots in the area, and providing support for municipalities along the corridor to implement TDM measures.

Experience in other jurisdictions has shown that regional organization of TDM initiatives leads to operational and economic efficiencies that translate into increased awareness of the programs, a greater variety of services and higher utilization. This concept may also involve providing additional Park 'n Ride lots at key locations.

### **Long Combination Vehicles (LCVs)**

Long Combination Vehicles (LCVs) consist of a single tractor with two 16-metre (53 foot) trailers. MTO recently initiated a pilot program to allow up to 100 LCVs on the provincial highway network. This program improves fuel efficiency and traffic operations for goods movement and MTO is reviewing the experience with the LCVs to determine the next stage of the program.

### **Ramp Metering**

Ramp metering involves the implementation of signal control measures on a freeway on-ramp to control the traffic entering the highway in order to ensure a smooth downstream traffic flow. Ramp metering is already in existence on portions of the QEW. The draft Strategy recommends exploring the potential of expanding the ramp metering program to other sections of QEW, Highway 403 and 407 ETR in the Hamilton, Halton and Niagara areas.

### **HOV / Transit Bypass at Key Locations**

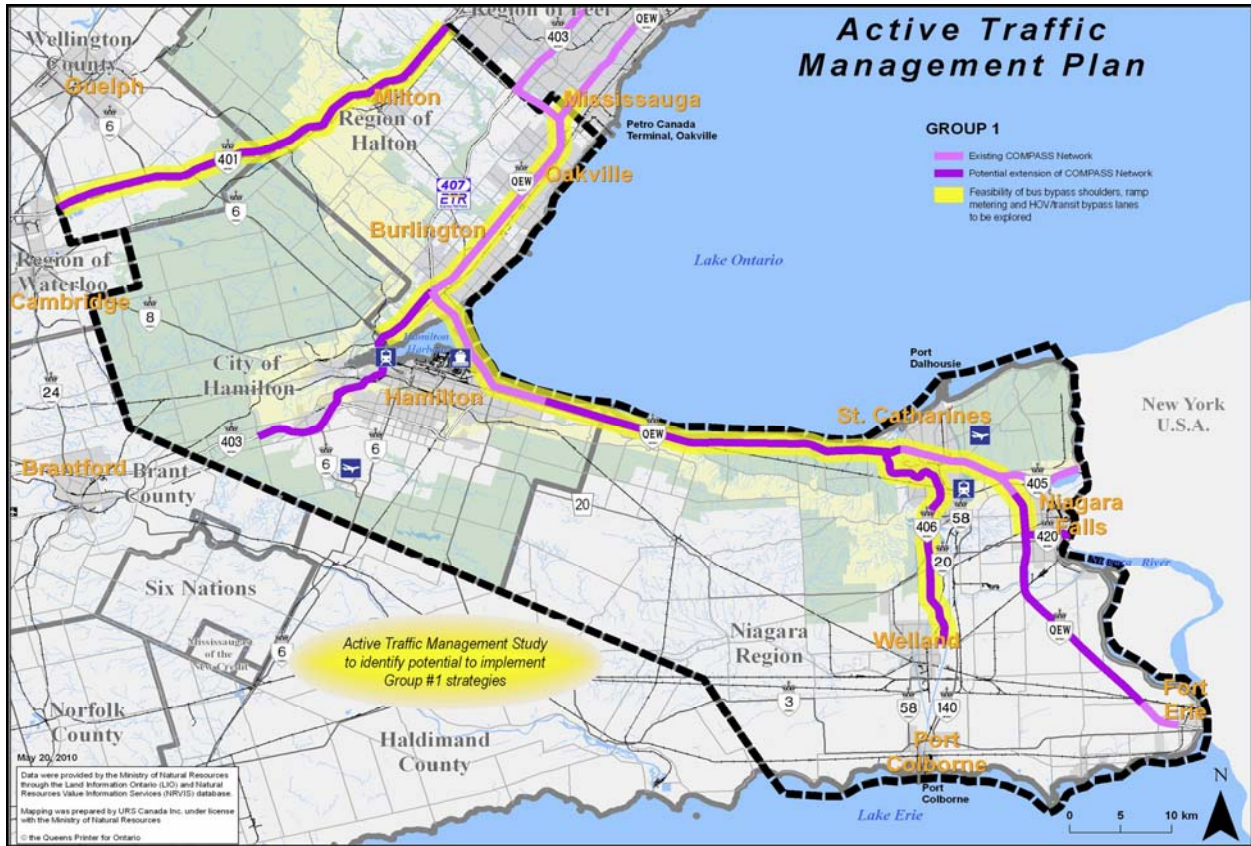
This concept involves providing bypass lanes on metered ramps, ramps accessing transit stations, and ramps in vicinity of carpool lots for HOV and transit vehicles. This would allow HOV and transit vehicles to bypass traffic queues on these ramps and access facilities more efficiently.

### **Improved Incident Management**

This concept involves increased utilization of emerging technologies to improve detection of incidents, improve EMS response times, and as a result reduce the amount of congestion and delays resulting from traffic incidents.

Through further analysis and consultation with Ministry of Transportation specialists in Intelligent Transportation Systems (ITS) and Advanced Traffic Management Systems (ATMS), the following concepts were carried forward to be included in the draft Transportation Development Strategy (Strategy), as illustrated in **Exhibit E-3** below:

Exhibit E-3: Recommended Optimization Strategies



Bus Bypass Shoulders



Traffic Updates



Ramp Metering / By Pass Lanes



Adjustable Speed Limits



Carpooling



Reversible Lanes



Innovative Technologies

## **OVERVIEW OF GROUP #2**

The Group #2 alternatives include the significant transit, marine and air service expansion initiatives envisioned by the *RTP*, *GO 2020*, Hamilton International Airport, and Port of Hamilton that serve the study area. These include:

- Express rail service along GO Transit Lakeshore Corridor;
- GO Transit Lakeshore extension to downtown Hamilton;
- Rapid transit in Hamilton area;
- Rapid transit along Highway 5;
- Rapid transit along Trafalgar Road;
- Rapid transit along Brant Street;
- Bus Rapid Transit and Transitway along 407 ETR / 403;
- GO Transit expanded service to Niagara Falls;
- Port of Hamilton Infrastructure Development Strategy (including the Sea3 – container feeder service between Hamilton and Montreal);
- Hamilton International Airport – expansion of existing taxiways and terminal; and
- Expanded and improved parking facilities at selected transit stations.

In addition to these strategies, the study team identified a number of complementary strategies, which may be further supplemented and refined. These strategies are described in further detail below:

### **Hamilton-Focused Inter-Regional Transit Service**

The concept of a Hamilton-focused inter-regional transit service is based on Hamilton's increasing role as a significant employment area, which is anticipated to continue to increase over the coming decades. A transit service that is focused on Hamilton would offer scheduling that would allow commuters in the outlying areas surrounding the City of Hamilton to access the employment districts within Hamilton during peak periods.

### **Transit Supportive Highway Corridors**

This concept involves introducing reserved bus lanes, HOV lanes, bus bypass shoulders and other transit supportive measures within existing provincial facilities such as the QEW, Highway 403, Highway 401, etc. that would serve to make bus transit a more reliable and viable service.

### **New Inter-Regional Transit Links between Urban Growth Centres**

This concept involves providing a western 'web' of passenger transit services which would provide coverage to the Kitchener-Waterloo, Guelph, Cambridge, Hamilton and Brantford areas and could be combined with the Hamilton focused inter-regional transit service described above. The concept would initially focus on bus services, but in the longer term could involve providing new passenger rail services on existing rail corridors to link urban growth centres. Given that these are smaller growth centres and the potential ridership may not be significant, an opportunity exists to use smaller train systems or even self-propelled railcars, which can be individual or clustered. Rail stations would be comprised of multi-modal facilities to provide for a well-connected and integrated transportation system.

### **Promote Improved Integration and Utilization of Multi-Modal Goods Movement**

While the existing freight rail network has sufficient capacity to address future growth in goods movement by rail, there are numerous locations where conflicts exist between passenger and freight rail services when both services use the same tracks, as well as at-grade road / rail crossings where road traffic has to stop to let trains through. These locations have an adverse effect on current rail operations.

Removal of these constraints will have an overall positive effect on passenger and freight rail operations, allowing people and goods to be moved more efficiently, which may result in a higher efficiency of this mode to attract commuters and shippers. Road / rail grade separations will improve the efficiency of the local roads intersecting increasingly busy railway tracks and improve safety.

To support increased utilization of freight rail, the Ministry will coordinate with CN Rail, CP Rail and Metrolinx in the mid-term to identify the conflict points and will support potential future initiatives aimed at removing freight rail / passenger rail conflicts and providing grade separations at road / rail crossings. Opportunities for high-speed rail on separate tracks will also be considered.

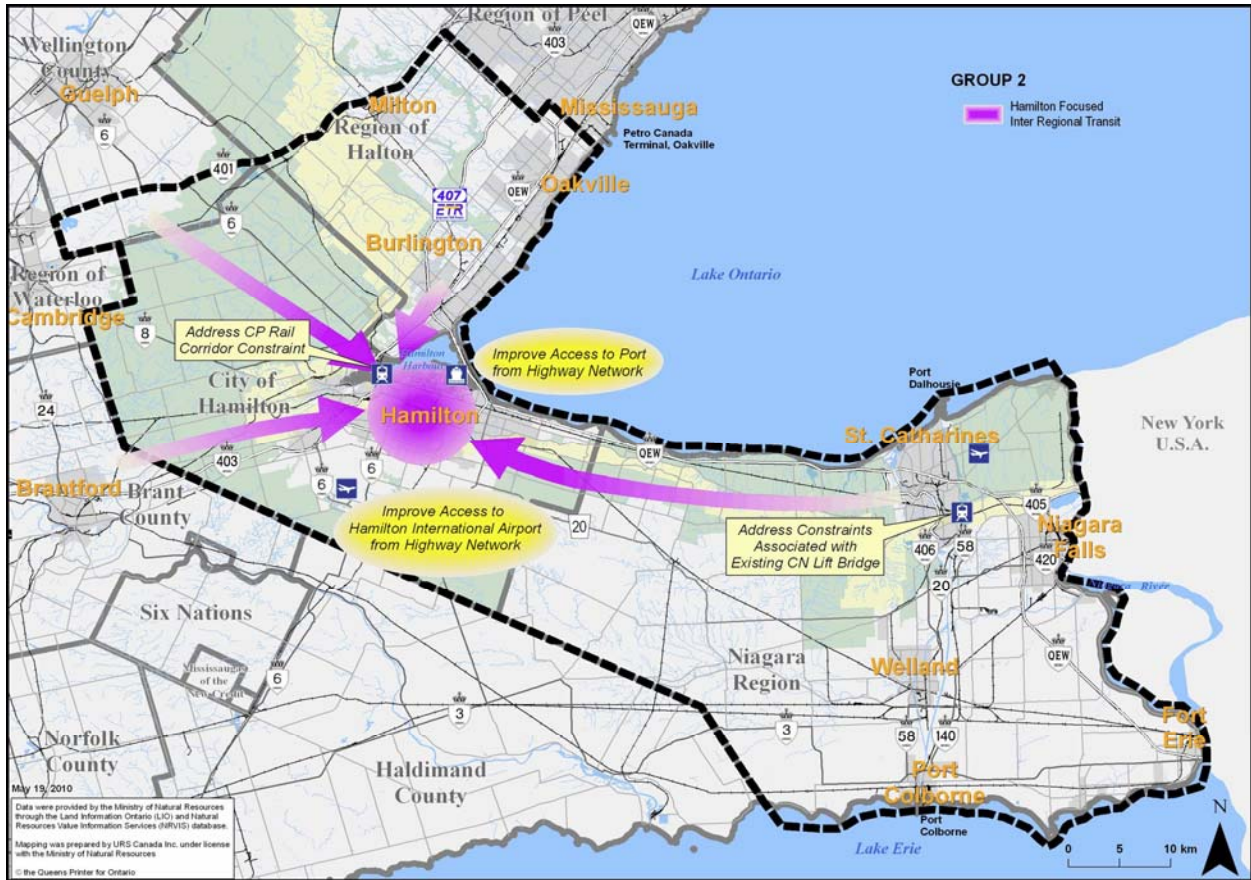
With regard to the marine mode of transportation, the Port of Hamilton and St. Lawrence Seaway have sufficient capacity to address future growth in goods movement by marine. However, the Port of Hamilton has advised that improvements to the current access to the port from the provincial highway system via Burlington Street could result in improved efficiencies and increased utilization of the Port in the future.

In addition, current US legislation such as the US Harbor Maintenance Tax, the Cabotage Laws and the Environmental Ballast Water Regulations affect the competitiveness of the marine mode of transportation for goods movement as compared to the other modes of transportation.

The Ministry will work with the ports in the study area (Hamilton and Port Colborne) and the St. Lawrence Seaway Authority and relevant municipalities in the mid-term regarding the provision of improved access to port lands from the provincial highway system – where warranted by increased demand. This, along with potential changes to legislation, positively affects the ability of the marine mode of transportation to compete for a larger share of the goods movement market. This may have an overall positive effect on the utilization of the marine transportation system by shippers.

The above concepts were carried forward to be included in the draft Strategy, as illustrated in **Exhibit E-4**.

Exhibit E-4: Recommended Non-Roadway Elements



Transit Study



Improved Multi-Modal Connections



## THE NEED FOR ROADWAY BASED SOLUTIONS

By 2031, the population in the GGH is expected to increase by almost 4 million people. To accommodate this growth, the study team anticipates that by 2031:

- The land use intensification targets prescribed in *The Growth Plan* will be fully achieved;
- Urban Growth Centres will be built with transit supportive densities and a healthy mix of land uses;
- The development of compact, vibrant and complete communities will be fostered in which people will live, work and play;
- An additional 700 million transit trips within the GTHA will be accommodated;
- All current provincial transportation plans, such as the *RTP* and the *GO 2020 Strategic Plan*, will be implemented;
- More commuters will switch from single occupant cars to transit, carpools and active transportation (i.e., cycling);
- A significant share (approximately 10%) of goods transport will be diverted from long distance trucks to other modes;
- The existing transportation infrastructure will be optimized through implementation of the Group #1 type initiatives; and
- More non-road based infrastructure such as the Group #2 initiatives will be investigated, along with additional related actions.

Based on the above, the potential of all transportation modes has been explored and together with the *RTP* and the *GO 2020 Strategic Plan*, the potential of existing infrastructure will be fully maximized.

Notwithstanding these positive improvements, by the year 2031, roadway conditions will become increasingly congested, with severe congestion in the vicinity of the Burlington Skyway and the QEW / Highway 403 / 407 ETR Interchange. This is fully the result of the projected growth in population and employment in the GGH.

To realize the vision of a functional transportation network that provides user choice and balance, additional roadway capacity will be required: either by widening existing highways (Group #3) and / or protecting for new transportation corridors (Group #4). While the draft Strategy includes long-term roadway recommendations, the Ontario government's first priority will be on optimization of existing infrastructure and transit improvements / expansion.

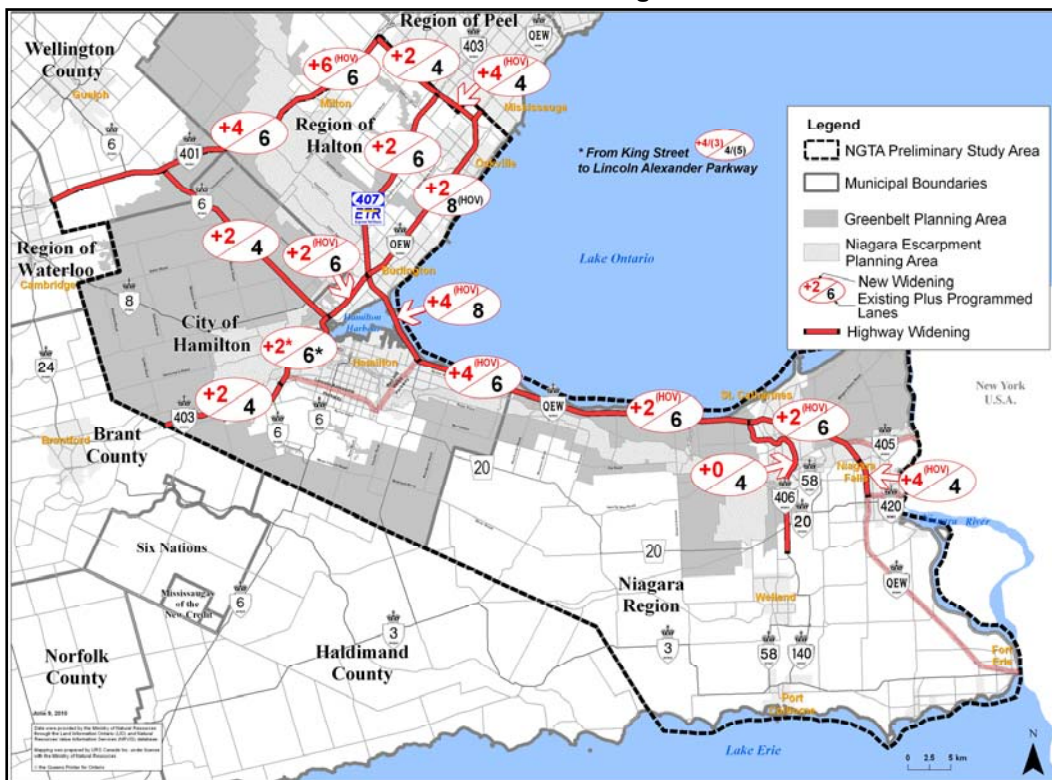
## OVERVIEW OF GROUP #3

The Group #3 alternatives include all of the elements from Group #1 and Group #2 as well as the widening of existing provincial inter-regional transportation facilities, as illustrated in **Exhibit E-5**.



Within the 'ovals' on this exhibit, the lower (black) number indicates the number of lanes that are existing as well as any widening that has already been planned. The upper number (red) indicates the number of lanes that will be required over and above the existing and planned lanes. The number of lanes required was calculated based on the travel demand analysis completed during the identification of Transportation Problems and Opportunities, and as summarized in the *Area Transportation System Problems and Opportunities Report, July 2009* (under separate cover). These widenings reflect what will be needed after all transit plans are implemented, all modal shifts have been made, all trips have been reduced by TDM, and all growth has been managed / intensified. This incremental widening is the basis for comparing the Group #3 alternative to the Group #4 alternative.

**Exhibit E-5: Widening Alternative**



### OVERVIEW OF GROUP #4

The Group #4 alternatives reflect what will be needed after all transit plans are implemented, all modal shifts have been made, all trips have been reduced by TDM, all growth has been managed / intensified, and the recommended highway widenings have been made. The Group #4 alternatives include all of the elements from Group #1 and Group #2 and a portion of the highway widening identified in Group #3, as well as a consideration of the following new corridor alternatives:

- Complete new corridor connecting either:
  - QEW in Fort Erie / Niagara Falls area to Highway 403;
  - QEW in Fort Erie / Niagara Falls area to Highway 401; or
  - QEW in Fort Erie / Niagara Falls area to 407 ETR.
- A combination of new and existing corridors to provide a bypass around urban core of the City of Hamilton, together with an upgrade or widening of Highway 406 connecting to a new corridor between Highway 406 and QEW south of Niagara Falls.

Each of the new corridor alternatives is depicted in **Exhibits E-6 to E-9**. For the detailed assessment of Group #3 and Group #4, please refer to **Chapter 4** of this report.

**Exhibit E-6: New Corridor Connecting to Highway 403 West of Hamilton**

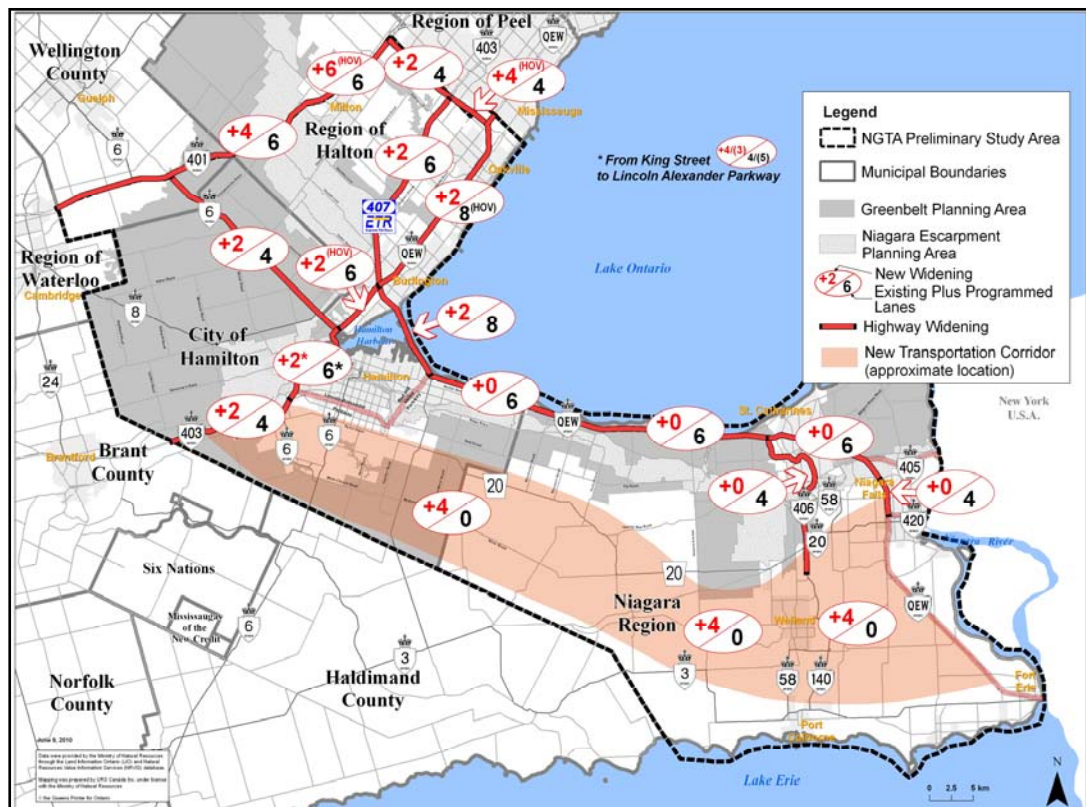


Exhibit E-7: New Corridor Connecting to Highway 401 West of Milton

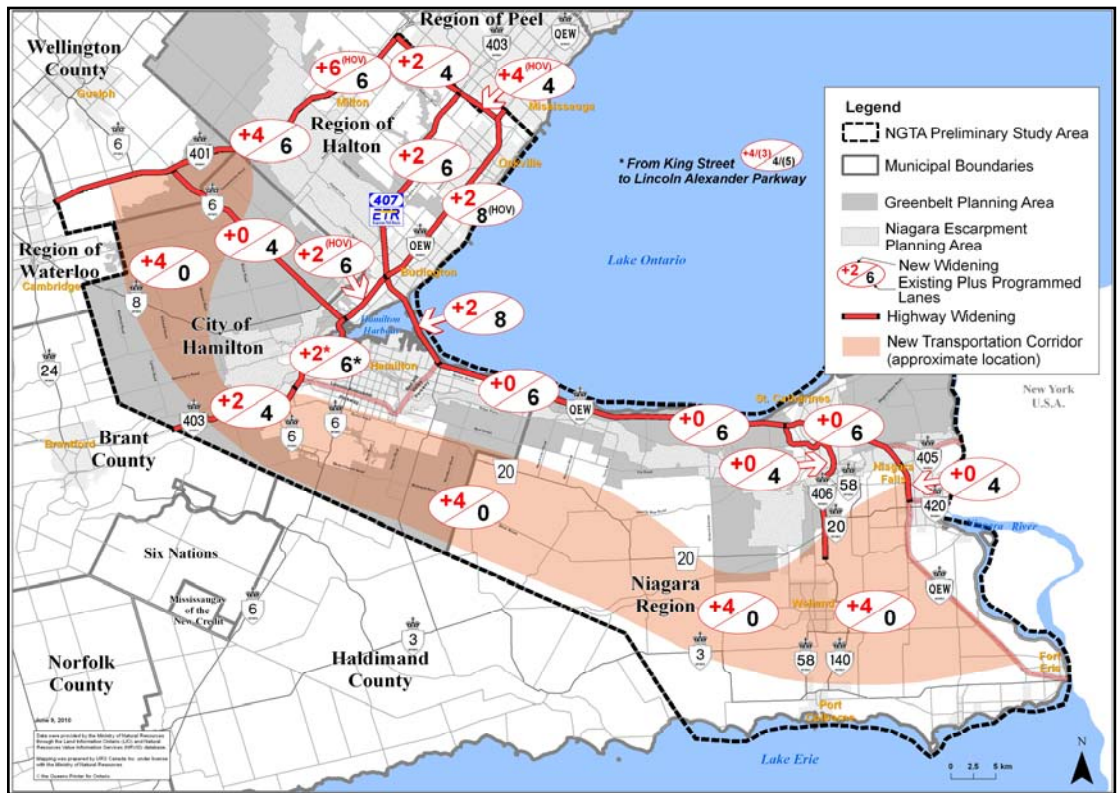


Exhibit E-8: New Corridor Connecting to 407 ETR

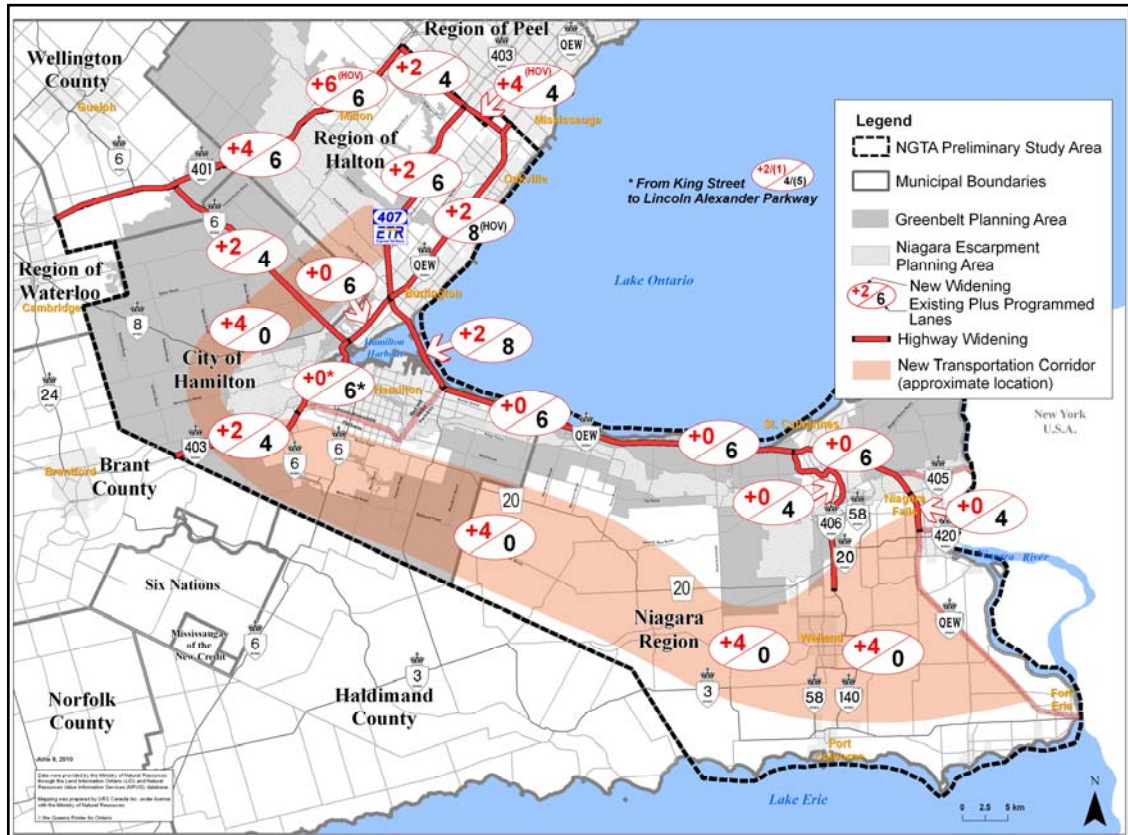
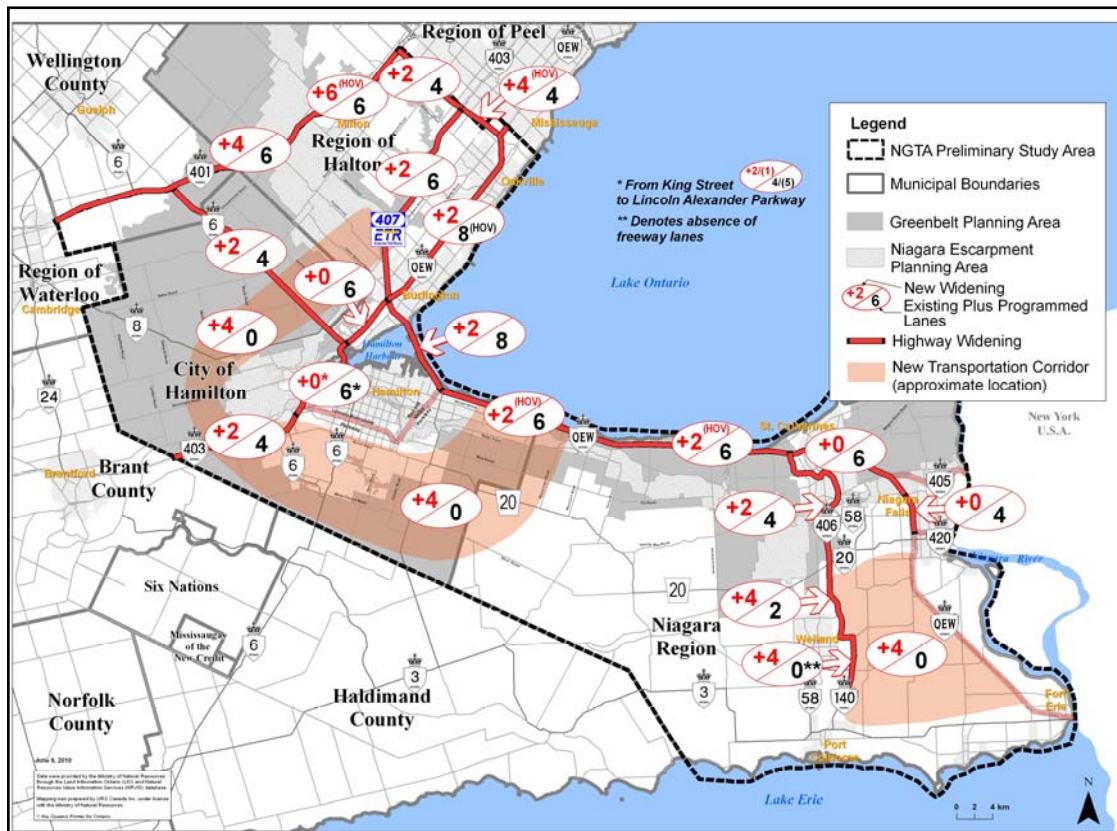


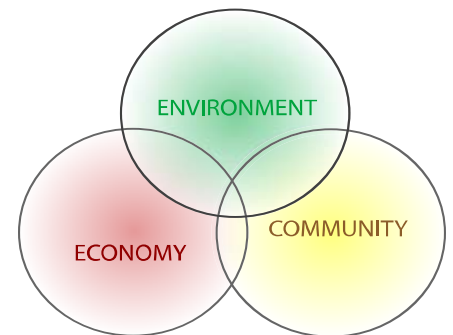
Exhibit E-9: New Bypass / Link Corridors



## Analysis and Evaluation of Group #3 and Group #4 Transportation Alternatives

The analysis of Group #3 and Group #4 alternatives was divided into four work streams, based on consideration of the “Triple-bottom Line” as well as Transportation and Engineering considerations:

- **Environment** – potential impacts to fish and fish habitat; terrestrial ecosystems; groundwater; etc.
- **Community** – potential impacts to residences; businesses; agriculture; noise; air quality; built heritage; archaeology; etc.
- **Economy** – economic benefits of increased transportation capacity to all sectors of the GGH economy, as well as the ability of each alternative to support future employment growth (including tourism) and municipal economic development objectives.
- **Transportation and Engineering** – future traffic capacity, operational and safety conditions as well as significant constructability issues and costs.

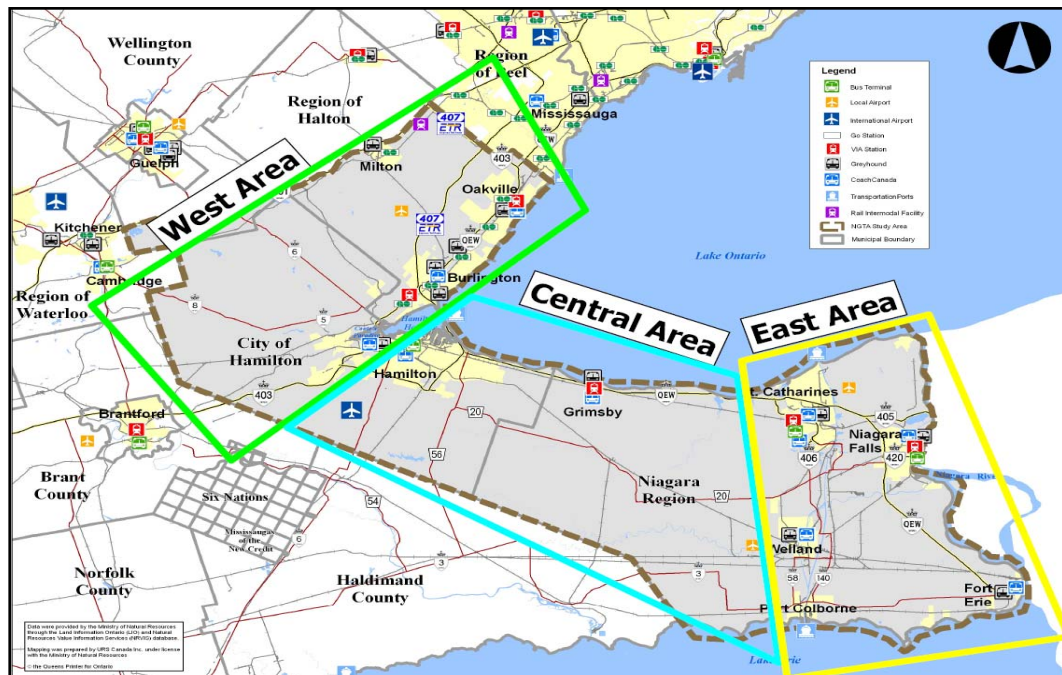


During the transportation and engineering analysis and evaluation stakeholders expressed concerns regarding the future freight forecasts. Given the demonstrated need for additional roadway capacity that promotes efficient movement of people and goods, additional analysis will be undertaken to re-examine these forecasts. The

recommendations embodied in the draft Strategy described in **Table E-1** will be reviewed in light of the findings of this additional analysis.

At a broad evaluation level, none of the alternatives as originally developed (refer to **Exhibits E-5 to E-9**) emerged as being clearly preferred. Through the evaluation process it was clear that there were distinct geographic regions in the study area and each has its own unique set of transportation, economic, environmental and community characteristics that needed to be assessed separately. This led to the assessment of the three geographic sub areas depicted in **Exhibit E-10**. Within each region, the corresponding components of the widening and new corridor alternatives were compared and evaluated to arrive at a preferred alternative in each area.

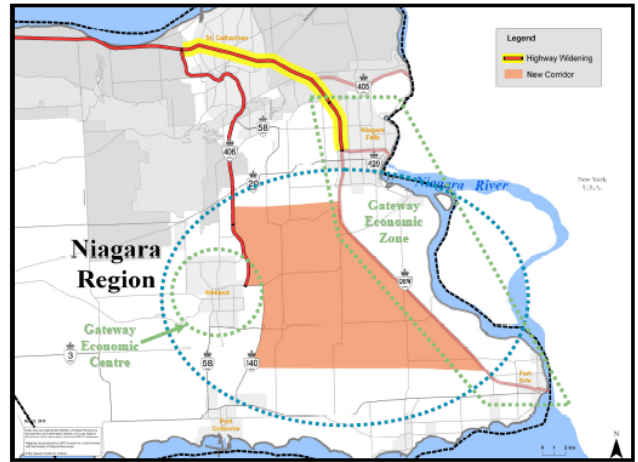
**Exhibit E-10: Geographic Specific Assessment**



The result is a hybrid alternative that captures the most promising elements of the widening and new corridor alternatives. The following provides an overview of the study team's assessment and evaluation within each geographic area. Please refer to **Chapter 4** of this report for more details.

**EAST AREA – ST. CATHARINES / NIAGARA FALLS / WELLAND / FORT ERIE**

CRITERIA	ALTERNATIVES	
	Widening	New Corridor
COMMUNITY	●	●●●
ECONOMY	●●●	●●●●●
ENVIRONMENT	●●●	●
TRANSPORTATION	●●●	●●●●●











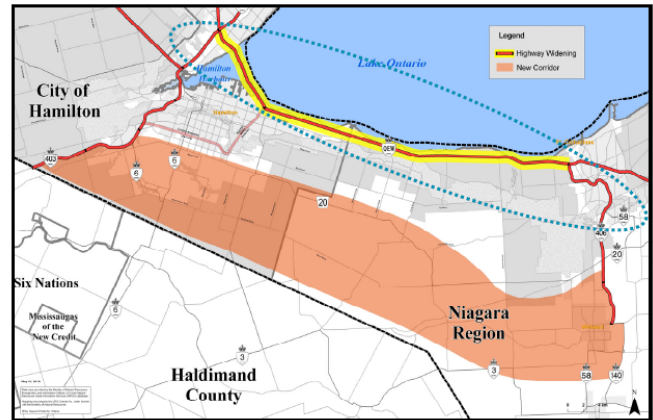
In the east end of the study area, providing a new corridor between Highway 406 in the Welland area and QEW would avoid the need for further widening of QEW through St. Catharines and crossing the Niagara Escarpment until beyond 2031. Further widening of QEW through the St. Catharines area beyond the six lanes that are currently being constructed could be expected to have a significant community impact. Well over 100 residences would have to be displaced and there would be major impacts to a number of businesses and industrial areas.

In addition, a new corridor would provide alternative access and flexibility for goods and people movement to the border, along with the economic benefits of a direct connection between the Gateway Economic Centre (in the Welland area) and Gateway Economic Zone along the Niagara River as defined in *The Growth Plan*. Moreover, a new corridor connection would allow opportunities for better border management by providing a higher order highway alternative to facilitate better distribution of traffic between the Niagara border crossings.

From an overall perspective, the study team believes that the new corridor alternative provides the best balance of advantages and disadvantages from a triple-bottom line (environment, economy and community) and a transportation perspective. Therefore a new corridor connecting Highway 406 and the QEW is preferred.

**CENTRAL AREA – WEST NIAGARA TO STONEY CREEK / HAMILTON**

CRITERIA	ALTERNATIVES	
	Widening	New Corridor
COMMUNITY		
ECONOMY		
ENVIRONMENT		
TRANSPORTATION		



In the Central Area, the over-arching consideration is that the future growth in traffic volumes along the section of QEW from Niagara to Hamilton by 2031 can be accommodated with the addition of HOV lanes. Much of the roadway platform for the HOV lanes is already constructed and can be accommodated generally within the existing right-of-way with minimal additional property requirements, so the impacts on adjacent communities, farmlands, and environment features associated with the widening of QEW are expected to be relatively minor.

In contrast, in the time period up to 2031 a new corridor through southern Niagara and south-eastern Hamilton is not forecasted to divert enough traffic to avoid the need to widen QEW, and would have comparatively greater impacts to natural environmental features and agricultural communities.

From an economic perspective, widening of QEW will provide additional capacity in a corridor that is still very desirable from an economic growth and economic development perspective. It is recognized, however, that a new corridor would better service the economic development areas in southern Niagara, and would provide an alternate route for goods movement to the international border.









In summary, if current population and employment growth patterns continue beyond 2031, a new multi-use corridor would be required to divert future traffic growth from the QEW, to take advantage of economic development opportunities in southern Niagara, and to provide an alternative route for long-distance cars and trucks destined to Niagara Region and the international border crossing in Fort Erie. Such a corridor could be used to accommodate a variety of services, including high-speed rail, goods movement, and / or transit.

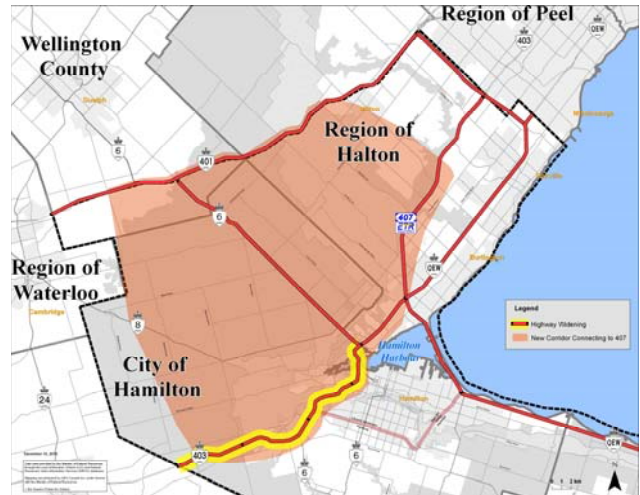
Therefore, widening of the QEW in the Central Area is the preferred alternative to the 2031 time period. It is also recommended that the ministry monitor growth patterns and transportation system performance to determine when a new transportation corridor between Hamilton and Welland will be required in the longer term. While not anticipated

to be required until beyond 2031, it is likely that the planning for this new corridor will commence before 2031 to enable corridor route identification measures to be put in place. The corridor is expected to be a multi-use corridor that could also accommodate other services such as high speed rail, transit, utilities, etc.



**WEST AREA – HAMILTON TO BURLINGTON / OAKVILLE**

CRITERIA	ALTERNATIVES	
	Widening	New Corridor
COMMUNITY		
ECONOMY		
ENVIRONMENT		
TRANSPORTATION		



In the West Area, the traffic analysis has indicated that without an alternative transportation corridor within the planning horizon, Highway 403 through Hamilton will require widening to ten lanes to avoid severe congestion. A widening of this magnitude would have significant impacts to residences, the natural environment, businesses, and community features.

From an environmental perspective, it is recognized that a new corridor could have significant environmental effects associated with a new crossing of the Niagara Escarpment, and / or impacts to the provincially significant wetlands in Flamborough.

A widening of Highway 403, however, would result in many environmental impacts to features such as Cootes Paradise, Royal Botanical Gardens, community parks and trails, and would also have a significant impact in the area of Highway 403 through the Niagara Escarpment.

Extensive community and economic impacts would also result from the widening and replacement of all of the structures along this section of Highway 403. Consideration would be given to improving the existing alignment of Highway 403, which would further increase the magnitude of community impacts.



In considering the alternative of widening Highway 403 through Hamilton in the long-term, any future expansion beyond ten lanes would require a core-collector freeway system, and would have significant negative community and environmental impacts.



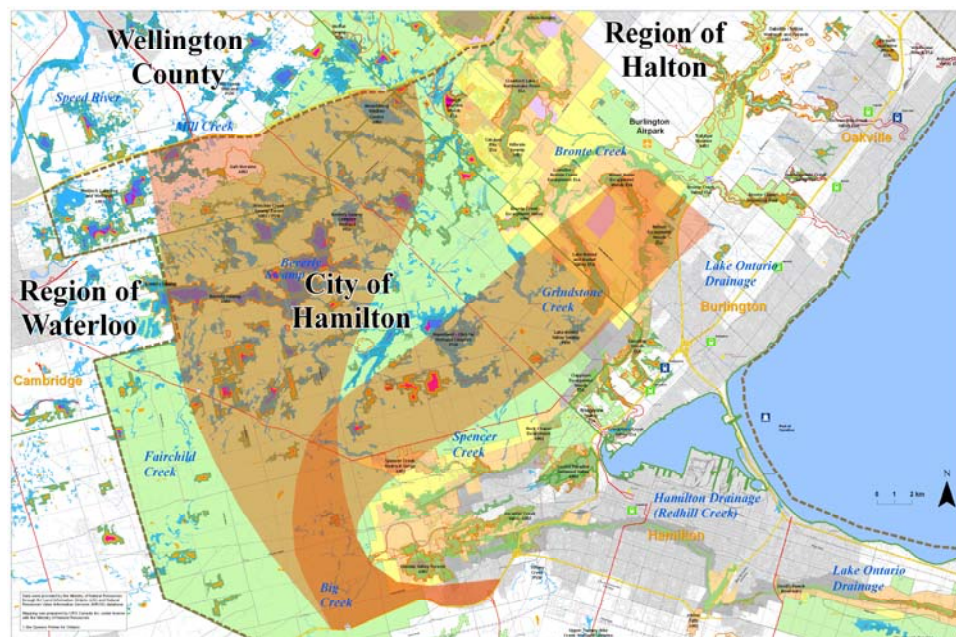
As such, potential widening of the existing highway limits the ability to accommodate future travel demands in this area whereas a new corridor would provide adequate capacity and network redundancy for the long-term.

There are two new corridor options in the Hamilton / Halton area – a corridor that connects Highway 403 to Highway 401 west of Milton, and a corridor that connects to 407 ETR in the Burlington area. In assessing these options, consideration has again been given to the triple-bottom line (environment, economy and community).

From an environmental perspective, a connection to 407 ETR requires a new crossing of the Niagara Escarpment, which is considered to be a significant environmental impact. However, the density and distribution of natural features within this corridor allows for more opportunity to avoid or mitigate removal and / or fragmentation of large natural areas. Although some features will be impacted, the extent of these impacts can be minimized through careful routing.

Along a new corridor connecting to Highway 401, there is a higher density of significant natural features such as the Beverly Swamp and its associated Provincially Significant Wetlands, as shown on the map below (**Exhibit E-11**). These important wetland complexes are continuous though the study area and fragmentation and significant impacts to these important natural features may not be avoidable through route planning. As such, there is considerably less potential to mitigate adverse natural impacts associated with a Highway 401 connection relative to a 407 ETR connection (where mitigation measures such as bridges or tunneling can be examined to minimize impacts). A new corridor connection to Highway 401 would also require additional widening of Highway 401 through the Niagara Escarpment area.

**Exhibit E-11: Natural Features along the Route to Highway 401 and 407 ETR**



From a community perspective, the impacts of both options are anticipated to be similar with regard to potential impacts to rural communities and agricultural lands, and both alternatives can avoid built up areas, although a 407 ETR connection has the potential to be closer to some developed areas in the Waterdown area.

From an economic perspective, a 407 ETR connection better serves the population growth areas of Hamilton and Halton and provides a more direct connection for the movement of people and goods to the major employment areas. However, a connection to Highway 401 provides a new corridor connecting Hamilton to the northern portions of Halton and the GTA which would also provide economic benefits.

From a transportation perspective, both corridor options address forecasted congestion on Highway 403 through Hamilton, but a connection to 407 ETR diverts nearly twice as much traffic off of this section of Highway 403 as compared to a connection to Highway 401. A new route connecting to 407 ETR would also connect into the proposed 407 ETR transitway, providing additional options for extending transit services in the future.

In summary, all of the alternatives in the West Area will address the future transportation needs to the 2031 planning horizon. However, both of the new corridor alternatives provide opportunities to divert future travel demands away from the Highway 403 corridor through Hamilton and may provide a better long term strategy. Of the two new corridor alternatives it is anticipated that a connection to 407 ETR will divert more traffic away from Highway 403 through Hamilton than a connection to Highway 401. In terms of community and environmental considerations, while a widening of Highway 403 through Hamilton is anticipated to result in lower environmental impacts than either of the new corridor alternatives, the new corridor alternatives are anticipated to result in lower community impacts than a widening of Highway 403 through Hamilton.

Given the demonstrated need for additional roadway capacity, the complexity and inter-relationship of the environmental, social, and economic factors in this area and in response to the stakeholder feedback received during and subsequent to the fourth round of Public Information Centres regarding these factors, it has been determined that more focused analysis and assessment should be undertaken to better understand and compare the relative advantages and disadvantages of the transportation options and corridor alternatives in the Halton-Hamilton area. The scope of this work is described in more detail in **Chapter 5**.

Notwithstanding the above, in the short-term a review of traffic operations to optimize the efficiency of this section of Highway 403 is recommended.

## Draft Transportation Development Strategy

The draft Transportation Development Strategy is illustrated in **Exhibit E-11** and **Tables E-1, E-2** and **E-3**, and combines the results of the roadway assessments completed in each of the three geographic regions described in the previous section, together with the recommended strategies for network optimization and transit enhancements described previously.

**Tables E-1, E-2** and **E-3** below provide a tabular summary of the elements of the draft Strategy, as well as the anticipated jurisdiction and timing for implementation. In general, the ministry's vision is for the roadway recommendations to be implemented in the mid- to long-term, as it will be many years before the strategic highway widenings and new corridor recommendations are fully implemented. During this time, the transportation network optimization and transit recommendations will be explored and implemented by the ministry and other agencies in concert with the RTP by Metrolinx

and the GO 2020 Strategic Plan. These include an Active Traffic Management study for the NGTA study area and beyond, as well as transit feasibility studies to investigate the potential for a Hamilton-focused inter-regional transit service, and an inter-regional transit service connecting the western urban areas of Kitchener-Waterloo, Cambridge, Brantford, Hamilton and Guelph. In general, it is envisioned that implementation of these initiatives will take priority to the roadway-based components of the draft Transportation Development Strategy.

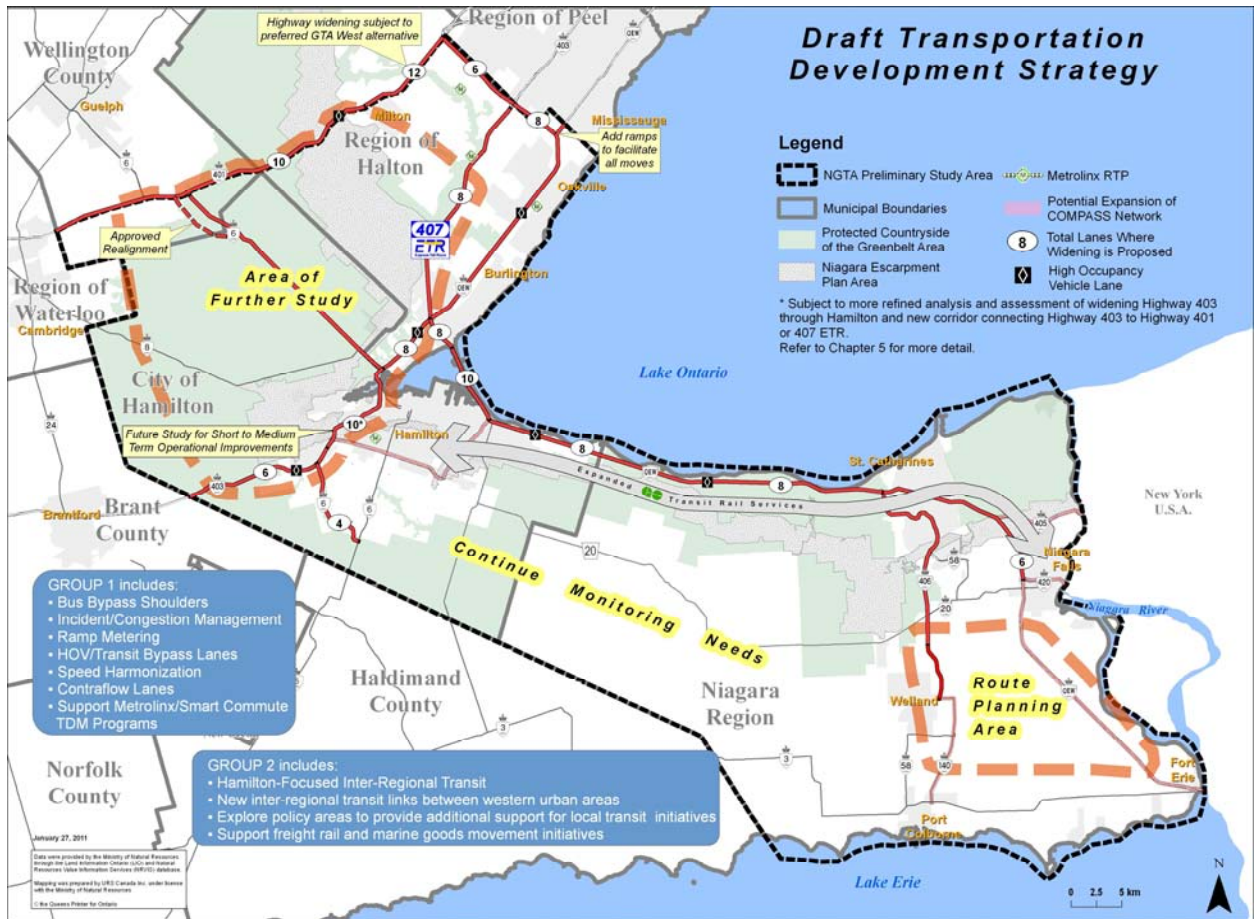
Route planning for a new corridor from Welland to the QEW should commence – building on the work begun by Niagara Region. It is also recommended to continue planning in the Hamilton / Halton area with a review of traffic operations on Highway 403 to identify short-term operational improvements that can be undertaken.

To identify the most appropriate longer term solution in this area, additional focused analysis and assessment should be undertaken to better understand and compare the relative advantages and disadvantages of the transportation options and corridor alternatives in the Halton-Hamilton area.

The assessment of all of the transportation options and corridor alternatives will be reviewed with the relevant municipalities, agencies and interest groups to obtain input and feedback prior to finalizing the recommendations in the West Area. This input will be factored into the evaluation of the alternatives, and a preferred alternative will emerge.

The ministry will also continue to monitor growth patterns and transportation system performance to determine when a new transportation corridor between Welland and Hamilton will be required. Planning for this new corridor will commence as determined by the monitoring. The corridor is expected to be multi-use, including options for high speed rail, goods movement, and / or transit purposes.

Exhibit E-12: Draft Transportation Development Strategy



**Table E-1: Draft Transportation Development Strategy (Short-Term)**

<b>Short-Term (0-5 years)</b>		
<b>Element</b>	<b>Description</b>	<b>Jurisdiction</b>
<b>Active Traffic Management Study for NGTA Study Area and Beyond</b>	<p>MTO to undertake an Active Traffic Management Study for the NGTA study area and beyond. The scope of this study could include:</p> <ul style="list-style-type: none"> <li>Identifying if there are locations where bus bypass shoulders should be provided along existing provincial facilities such as QEW, Highway 403, Highway 401 and 407 ETR.</li> <li>Assessing the potential for further expansion of the COMPASS system beyond the current service area.</li> <li>Identifying if there are areas where ramp metering and / or HOV / transit bypass lanes would be beneficial at interchanges along existing provincial facilities such as QEW, Highway 403, and 407 ETR.</li> <li>Reviewing the potential for implementing speed harmonization on existing provincial facilities based on experience with current initiatives in the US.</li> <li>Reviewing the potential for implementing contra flow lanes in areas where there is a significant difference in traffic volumes in one direction as compared to the other direction during peak periods.</li> </ul>	MTO
<b>Support MTO, Metrolinx and Smart Commute in Expanding Their TDM Programs</b>	While these initiatives will be led primarily by Metrolinx, MTO will explore opportunities to provide additional support as well as the potential for legislative or policy changes to address current barriers.	Metrolinx
<b>Linking Urban Areas Through Inter-Regional Transit</b>	MTO to initiate an "Inter-Regional Transit Feasibility Study" to investigate potential needs and opportunities for inter-regional transit connecting the western urban areas of Kitchener-Waterloo, Cambridge, Brantford, Hamilton and Guelph. MTO to work with Metrolinx / GO Transit and other transit authorities to determine the timing for such a study.	MTO, Metrolinx, Other Transit Authorities
<b>QEW / Highway 403 Interchange</b>	MTO to commence a study to provide a full freeway-to-freeway interchange at the QEW / Highway 403 interchange which currently only provides access to and from the west.	MTO
<b>Further Analysis of Freight Forecasts</b>	MTO will undertake additional analysis to re-examine the future freight forecasts that have been developed for this study.	MTO
<b>Further Study in the West Area</b>	MTO to undertake additional focused analysis to assess and evaluate the relative advantages and disadvantages of the transportation options and corridor alternatives in the Hamilton-Halton area.	MTO

**Table E-2: Draft Transportation Development Strategy (Medium-Term)**

Medium-Term (5-15 years)		
Element	Description	Jurisdiction
<b>Hamilton-Focused Inter-Regional Transit Service</b>	MTO and Metrolinx to consider the timing for initiating a feasibility study to assess future ridership potential for an inter-regional transit service that is focused on bringing commuters from outlying areas into the City of Hamilton during the morning peak period, and out of the City during the afternoon peak period.	Metrolinx
<b>Support Rail Initiatives</b>	MTO to work with CN, CP and Metrolinx to identify and study potential solutions to resolve freight rail / passenger rail conflicts and to provide road / rail grade separations at strategic locations.	MTO, CN, CP, Metrolinx
<b>Support Marine Goods Movement Initiatives</b>	MTO to work with the Port of Hamilton, the St. Lawrence Seaway Authority and other relevant agencies to identify potential access improvements for the Port of Hamilton and the potential for changes to current marine transport legislation that affect the competitiveness of short sea shipping and other marine initiatives.	MTO, Port of Hamilton, St. Lawrence Seaway Authority
<b>Strategic Highway Widening</b> <i>Note: Some of these improvements may also be applicable to the Long-Term timeframe.</i>	<p>MTO to undertake Class Environmental Assessment studies to investigate and confirm the need to widen the following provincial facilities within the NGTA study area.</p> <ul style="list-style-type: none"> <li>• <b>Highway 401</b> – Widen to ten lanes (including two HOV lanes) between the east junction of Highway 6 and James Snow Parkway.</li> <li>• <b>Highway 401</b> – Widen to 12 lanes (including two HOV lanes) between James Snow Parkway and 407 ETR.</li> <li>• <b>407 ETR</b> – Widen to eight lanes between the 407 ETR / Highway 403 / QEW interchange and Highway 403.</li> <li>• <b>407 ETR</b> – Widen to six lanes between Highway 403 and Highway 401.</li> <li>• <b>QEW / Highway 403 / 407 ETR Interchange</b> – Provide additional lanes to improve lane balance throughout the interchange.</li> </ul>	MTO

Medium-Term (5-15 years)		
Element	Description	Jurisdiction
<p><b>Strategic Highway Widening (Cont'd)</b>  <b>Note: Some of these improvements may also be applicable to the Long-Term timeframe.</b></p>	<ul style="list-style-type: none"> <li>• <b>Highway 403</b> – Add two HOV lanes between the QEW / Highway 403 / 407 ETR Interchange and the east junction of Highway 6.</li> <li>• <b>Highway 403</b> – Add two HOV lanes* west of Highway 6.</li> <li>• <b>Highway 6</b> – Widen to four lanes from Highway 403 to the Hamilton International Airport.</li> <li>• <b>QEW</b> – Widen to eight lanes (including two HOV lanes) between the QEW / Highway 403 / 407 ETR Interchange and the Burlington Skyway.</li> <li>• <b>QEW</b> – Add two HOV lanes* over the Burlington Skyway to the Red Hill Valley Parkway.</li> <li>• <b>QEW</b> – Add two HOV lanes from the Red Hill Valley Parkway to Highway 406.</li> <li>• <b>QEW</b> – Widen to six lanes between Highway 405 and Highway 420.</li> </ul> <p>The ultimate widening requirements will be determined at an early stage of the subsequent Class EA studies based on traffic analysis that is conducted to support these studies. If the findings of the Class EA studies differ from the recommendations in this draft Strategy, the findings of the Class EA studies will govern.</p> <p>* - represents an expansion of MTO's 2007 HOV Plan.</p>	MTO
<p><b>Operational Improvement Study Along Highway 403 Through the City of Hamilton</b></p>	<p>MTO will continue to seek opportunities to make strategic operational improvements to the section of Highway 403 through the City of Hamilton which may require Class EA studies to address existing operational issues during the morning and afternoon peak periods. Strategies that may be considered include widening into the median, widening through structures at interchanges by reconfiguring on-ramps to remove existing ramp lanes under structures, and contra flow lanes.</p>	MTO
<p><b>Highway 6 Freelton to Guelph</b></p>	<p>MTO to commence design for a bypass of the community of Morriston.</p>	MTO
<p><b>Undertake Route Planning for New Multi-use Transportation Corridor(s)</b></p>	<p>MTO to proceed into Phase 2 of the Environmental Assessment to identify a preferred route for connecting Highway 406 in the Welland area to the QEW between Highway 420 and Fort Erie. Subject to the results of the additional corridor planning in the West Area (short-term recommendation) a route planning study or a Class EA study may be initiated in the medium term.</p>	MTO
<p><b>Monitoring</b></p>	<p>MTO to monitor growth patterns and transportation system performance to determine when a new transportation corridor between Hamilton and Welland will be required. Planning for this new corridor will commence as determined by the monitoring.</p>	MTO



**Table E-3: Draft Transportation Development Strategy (Long-Term)**

<b>Long-Term (15-25 years)</b>		
<b>Element</b>	<b>Description</b>	<b>Jurisdiction</b>
<b><i>Implementing New Multi-use Transportation Corridors</i></b>	<p>MTO to implement a new multi-use transportation corridor connecting Highway 406 in the Welland area to the QEW between Highway 420 and Fort Erie based on the results of Phase 2 of the Environmental Assessment and any subsequent design studies.</p> <p>Subject to more refined analysis and assessment of the transportation options and corridor alternatives in the West Area, MTO may implement a new multi-use transportation corridor in the West Area. The location of the new multi-use corridor would be based on the results of the West Area further study and Phase 2 of the Environmental Assessment and any subsequent design studies.</p>	MTO
<b><i>Monitoring</i></b>	<p>MTO to continue to monitor growth patterns and transportation system performance to determine when a new transportation corridor between Hamilton and Welland will be required. Planning for this new corridor will commence as determined by the monitoring.</p>	MTO

**Niagara to GTA Corridor**  
**Planning and Environmental Assessment Study**

**TRANSPORTATION DEVELOPMENT  
STRATEGY**

**Draft for Consultation**

February 2011

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**APPENDICES**

**Appendix A** – Minutes of Community Advisory Group (CAG) Meetings

**Appendix B** – Minutes of Municipal Technical Advisory Group (MTAG), Municipal Executive Advisory Group (MEAG), and Regulatory Agency Advisory Group (RAAG) Meetings

# 1. Introduction

## 1.1 STUDY BACKGROUND

In June 2001, the Premier of Ontario and the Minister of Transportation (MTO) announced the completion of the draft Niagara Peninsula Transportation Needs Assessment Study. The needs assessment study involved a comprehensive examination of future transportation problems, opportunities and a range of transportation alternatives. Various travel and growth scenarios were considered for a 30-year planning period. The needs assessment study concluded that significant additional transportation capacity will be required through the Niagara Peninsula into the Greater Toronto Area (GTA) to accommodate future growth in the movement of people and goods.

In 2005, MTO initiated the *Niagara to GTA Corridor Planning and Environmental Assessment Study* (NGTA Study) through the Environment Assessment (EA) Terms of Reference (ToR) process with a thorough consultation program. The EA ToR was approved by the Ministry of the Environment in June 2006. This approved EA ToR defines the planning process to be followed for this multi-phase and multi-modal transportation project, and identifies the purpose to address existing and future anticipated transportation capacity deficiencies within the corridor to 2031 and beyond.

The first-phase of the process (this phase) is a robust, multi-year, multi-modal planning process that considers all modes of transportation and has no “pre-defined” outcome. This unprecedented approach is complemented by an extensive consultation program and has resulted in a multi-modal draft Transportation Development Strategy (Strategy) as opposed to a specific project.

In June 2006, the Ontario government released *The Growth Plan for the Greater Golden Horseshoe* (*The Growth Plan*), which outlines a set of policies for managing growth, development and guiding planning decisions in the Greater Golden Horseshoe (GGH). 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 Growth Plan* provides population and employment projections for each of the municipalities within the GGH for the ultimate 2031 planning horizon. In addition, it specifies land use intensification and density targets for each of the municipalities.

The province also established the *Greenbelt Plan* through the *Greenbelt Act* in 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.

Past transportation needs assessment work undertaken by MTO and *The Growth Plan* identify the need for additional transportation capacity in the NGTA Corridor to support the long-term vision for the province. It is these two important bodies of work, together, that support the need to proceed with this important Corridor Planning and EA Study.

## 1.2 STUDY PURPOSE

The purpose of the NGTA Study is to proactively plan for future infrastructure needs by examining long-term transportation problems and opportunities to the year 2031 and beyond and considering alternative solutions to address those issues.

The study considered options corresponding to all modes of transportation and assessed the ability of these multi-modal options to address the identified transportation problems and opportunities. Throughout the study process, MTO coordinated with Metrolinx (including GO Transit) and other ministries, municipalities and transportation service providers (rail, air and marine).

## 1.3 STUDY PROCESS AND SCHEDULE

### 1.3.1 Planning and Environmental Assessment Process

The planning for all major infrastructure projects in the Province of Ontario is conducted in accordance with the requirements of the *Ontario Environmental Assessment Act (OEAA) (R.S.O. 1990)* unless otherwise exempted. The NGTA Study is following the requirements of the OEAA under Section 6.1 of the Act.

The first step in an application for approval to proceed with the planning of an EA study under the OEAA is the submission of a ToR for the EA. A ToR sets out a framework that guides the preparation of the EA. The approval of the ToR is the first statutory decision made by the Minister of the Environment and Cabinet in the EA planning and approval process.

**The Ontario Minister of the Environment approved the ToR for this project on June 9, 2006.**

Consistent with the approved ToR for this study, this EA is being undertaken in two phases. Phase 1 – this phase – is focused on the identification of transportation problems and opportunities (refer to **Exhibit 1-1**), and the generation, evaluation and selection of Area Transportation System Alternatives leading to the draft Strategy, which is documented in **Chapter 5**. Phase 2 is focused on further developing the elements of the draft Strategy to locate the actual infrastructure, evaluate alternative locations and develop mitigation for impacts.

As per the OEAA, Phase 1 of this EA study was undertaken consistent with the requirements identified in *Section 6.1 (2)* of the OEAA. The study addressed the following components:

- A description of the purpose of the undertaking;
- A description and statement of the rationale for the proposed undertaking, alternatives to the undertaking and alternative methods for carrying out the undertaking;
- A description of:
  - The environment that will be affected or that might reasonably be expected to be affected, directly or indirectly;
  - The effects that will be caused or that might reasonably be expected to be caused to the environment;
  - The actions necessary or that may reasonably be expected to be necessary to prevent, change, mitigate or remedy the effects upon or the effects that might reasonably be expected upon the environment;
  - An evaluation of the advantages and disadvantages to the environment; and
  - A description of the consultation undertaken by the proponent and the results of the consultation.

Exhibit 1-1: Overview of 2031 Transportation Problems within the Study Area

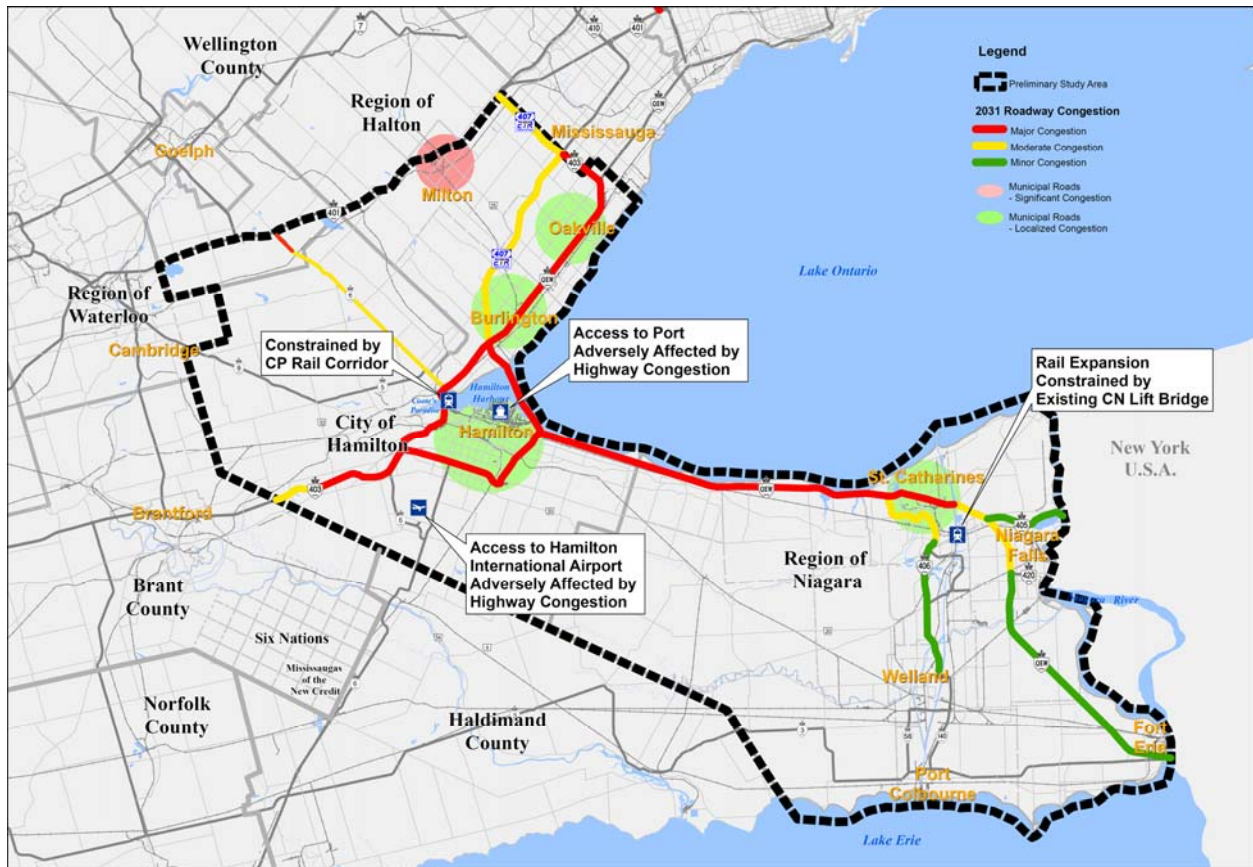


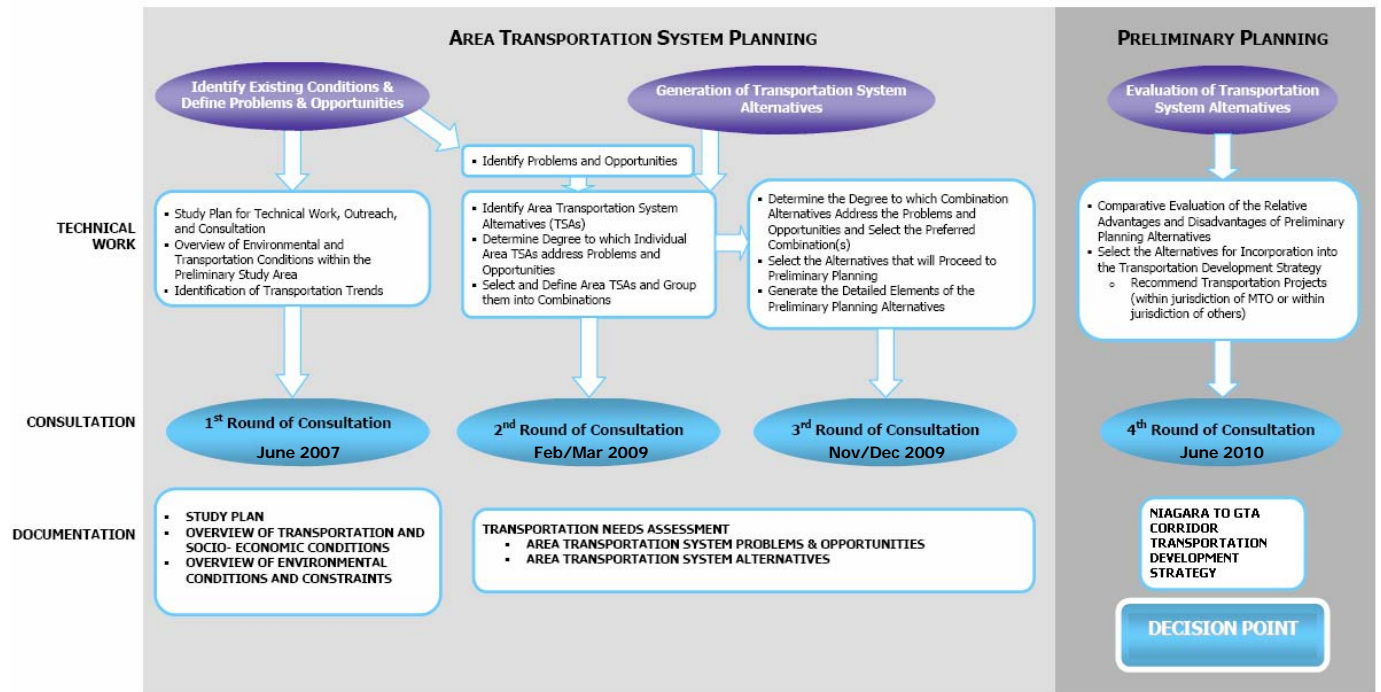
Exhibit 1-2 shows the EA Phase 1 study steps, the technical work required, the consultation milestones and the documentation. The process allows for the study team to complete technical work, document that work, present the findings at a series of consultation meetings (which together constitute a round of consultation) and then refine the work based on comments received.

The schedule for the project was designed to allow the various technical and management teams adequate time to undertake thorough data collection and technical work, while providing time for extensive consultation with affected stakeholders.

The key consultation milestones for this project are:

- 1st Round of Consultation (Public Information Centre #1): June 2007;
- 2nd Round of Consultation (Public Information Centre #2): February and March 2009;
- 3rd Round of Consultation (Public Information Centre #3): November and December 2009; and
- 4th Round of Consultation (Public Information Centre #4): June 2010.

**Exhibit 1-2 Phase 1 Study Process**



Each round of consultation included a large number of consultation events including PICs held in three locations and meetings with municipal staff, regulatory agencies, First Nations and other stakeholders. More details on the consultation program are provided in **Chapter 6**.

**1.4 PURPOSE, RELEVANCE AND POSITION OF REPORT WITHIN STUDY PROCESS**

The purpose of this report is to document the work undertaken as part of Phase 1 of the EA as well as the draft Strategy. It is the final report for Phase 1 of the EA and will be used to guide future stages and initiatives undertaken by MTO and other agencies during the future EA studies.

Phase 2 of the study will involve the development, assessment, and evaluation of alternative methods (i.e., routes) corresponding to the recommended new corridor elements of the draft Strategy. All other recommendations that fall within MTO's jurisdiction such as highway widening, interchange reconfiguration, etc. will be pursued a part of future Provincial Highways Class EA studies.

All recommendations that are outside of MTO's jurisdiction will be forwarded to the relevant agencies / authorities for further review and action. **Chapter 5** describes the complete elements of the draft Strategy and also how the Ministry can assist in furthering those initiatives outside of its jurisdiction.

**1.5 STUDY AREA AND AREAS OF INFLUENCE**

The study area can be seen in **Exhibit 1-3**. This area includes Niagara Region, the City of Hamilton and the Halton Region, and is characterized by a mix of urban and rural communities. This area includes land designated under the *Greenbelt Act* and *Greenbelt Plan* (2005).

It was recognized that transportation issues in the study area are related to and influenced by much broader “Areas of Influence”. Therefore, inter-regional travel demand analysis was carried out in a much broader context including the consideration of major transportation infrastructure in proximity to the study area and linkages to and from other regional transportation services, hubs and gateways. This area includes most of Southern Ontario and allows for consideration of transportation connectivity to the international borders and the GTA. **Exhibit 1-4** highlights this relationship.

**Exhibit 1-3: Niagara to GTA Corridor Study Area**

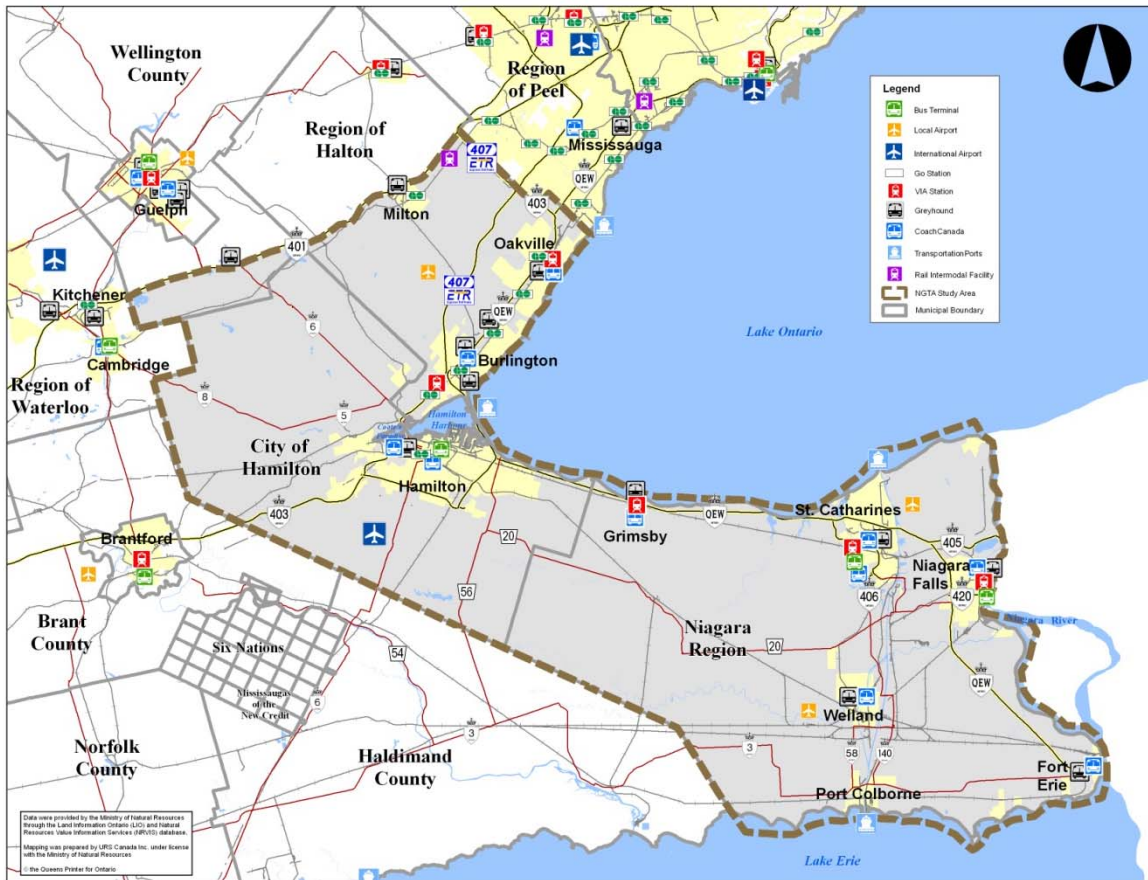
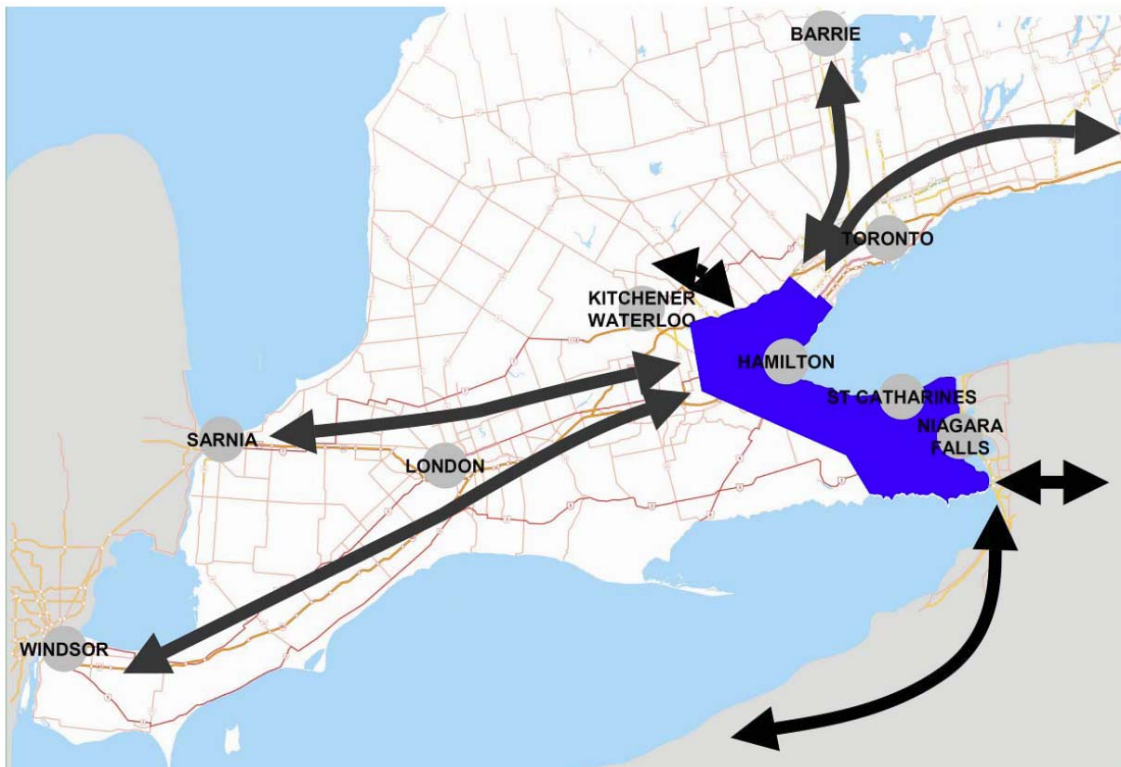


Exhibit 1-4: Areas of Influence



## 1.6 STUDY AREA TRANSPORTATION SYSTEM

This section presents a brief overview of the existing transportation system within the NGTA study area. Please refer to the *Area Transportation System Alternatives Report* available on the project website ([www.niagara-gta.com](http://www.niagara-gta.com)) for more detailed information about the existing transportation system within the study area.

### 1.6.1 Transit

Currently, there are large areas within the study area without higher order inter-regional transit services. **Exhibit 1-5** shows the existing regional rapid transit and highway network, including peak and full-day rail services, subways, and bus and light rail rapid transit.

**Exhibit 1-5: Appendix A: Existing Regional Rapid Transit and Highway Network, The Big Move, November 2008**



The NGTA study area contains a mix of local municipal transit services as well as inter-regional transit services. The following municipalities operate transit systems within the NGTA study area:

- Niagara Falls;
- St. Catharines;
- Welland / Port Colborne;
- Fort Erie;
- Hamilton;
- Burlington; and
- Oakville.

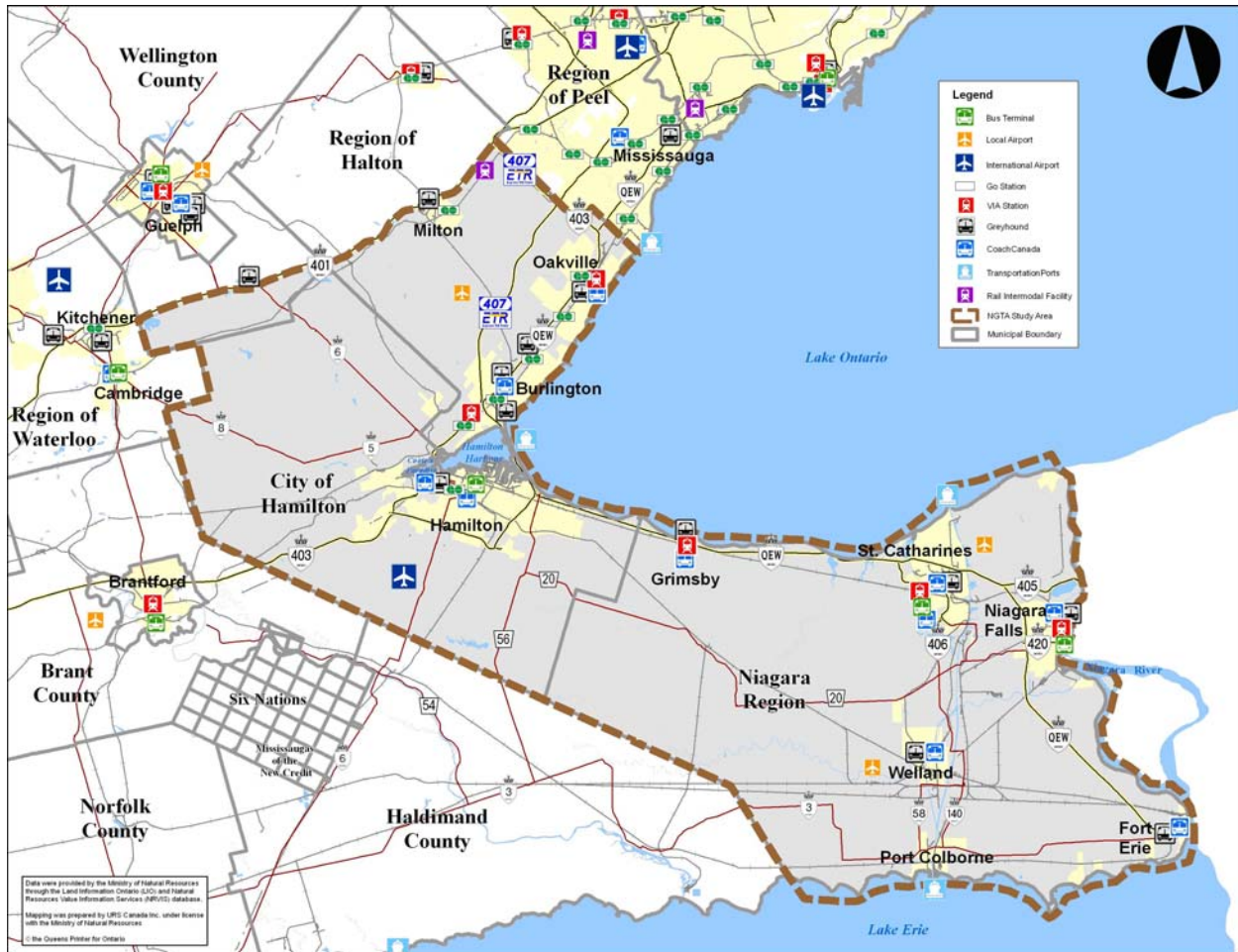
These transit systems operate primarily within their respective municipalities using local bus routes to provide access to a large coverage area, primarily in urban / suburban environments.

Inter-regional transit systems provide service between urban centres. Major stops on these systems are typically *transit hubs*, such as bus terminals or train stations. Transit hubs provide connections to different transit systems (local and regional) and often include freight inter-modal facilities such as commuter parking lots and passenger pick-up and drop-off lots. Regional transit systems also provide stops at key trip generators such as colleges, universities, shopping centres, sports venues and highway commuter / carpool lots. Inter-regional transit services in the NGTA study area are illustrated in **Exhibit 1-6**, and include:



- GO Train service from Toronto to Hamilton on the Lakeshore West Line (full-day, two-way service to Aldershot and peak period to Hamilton);
- all-day, two-way GO Bus service from Burlington GO Station to Niagara Falls, via Grimsby, Stoney Creek and St. Catharines;
- all-day, two-way 407 ETR West GO Bus service from York University to Hamilton;
- all-day, two-way QEW GO Bus service from Union Station to Hamilton;
- all-day, two-way GO Bus service from Meadowvale Business Park to Hamilton;
- Greyhound Bus, Coach Canada and VIA Rail provide scheduled service to Toronto, Hamilton, Niagara and points beyond; and
- VIA Rail operates two trains daily each way along the Toronto - Niagara route and four trains daily each way along the Toronto - Windsor route.

Exhibit 1-6: Existing Inter-Regional Transit Services



### Regional Transportation Plan (RTP) – The “Big Move”

Metrolinx was created by the Ontario government to develop and implement an integrated multi-modal transportation plan for the Greater Toronto and Hamilton Area (GTHA). It plays an important role in developing a plan to resolve congestion problems, coordinate and improve transit systems, and create a more sustainable economy, environment and quality of life.

A significant part of its mandate has been the development of *The Big Move*, the *Regional Transportation Plan (RTP)* for the GTHA that includes a comprehensive regional transit network. The following are a few of Metrolinx's key transit-related strategies and priority items as identified in the *RTP*:

- a. *Build a Comprehensive Regional Rapid Transit Network.* The network includes proposed regional and municipal rapid transit systems across the GTHA in three planning horizons: urgently needed *quick-win* projects (see **Exhibit 1-7**), a 15-year planning horizon and a 25-year planning horizon (see **Exhibit 1-8**).
- Some of the proposed *quick-win* projects relevant to this study include:
  - BikeLinx Program (to accommodate and encourage trips which combine cycling and public transit throughout the GTHA);
  - GO Transit Rail Fleet Expansion; and
  - GO Transit Double-Decker Buses.

In addition, the following projects, identified in the *RTP*, which have received provincial funding, are scheduled to be in service within five years or less:

- Hamilton A and B Line Bus Rapid Transit (BRT) Improvements;
- Hamilton James Street North GO / VIA Station Gateway to Niagara; and
- Halton - Dundas Street Bus Rapid Transit.

Metrolinx is currently undertaking a planning study for *Rapid Transit in Hamilton*, one of the six priority transit projects identified in the *RTP*. *The Rapid Transit in Hamilton* study will support Hamilton's evaluation of the potential for rapid transit improvements along the King-Main corridor and the James-Upper James corridor mentioned above.

- b. *Build a fast, frequent and expanded regional rapid transit network.*
- c. *Create high-order transit connections to the Pearson International Airport district from all directions.*
- d. *Implement a region-wide integrated transit fare system.*
- e. *Create a system of connected mobility hubs.*
- f. *Create an information system for travelers.*
- g. *Implement an investment strategy to provide immediate, stable and predictable funding.*

Exhibit 1-7: The Big Move: Quick Wins for Regional Rapid Transit

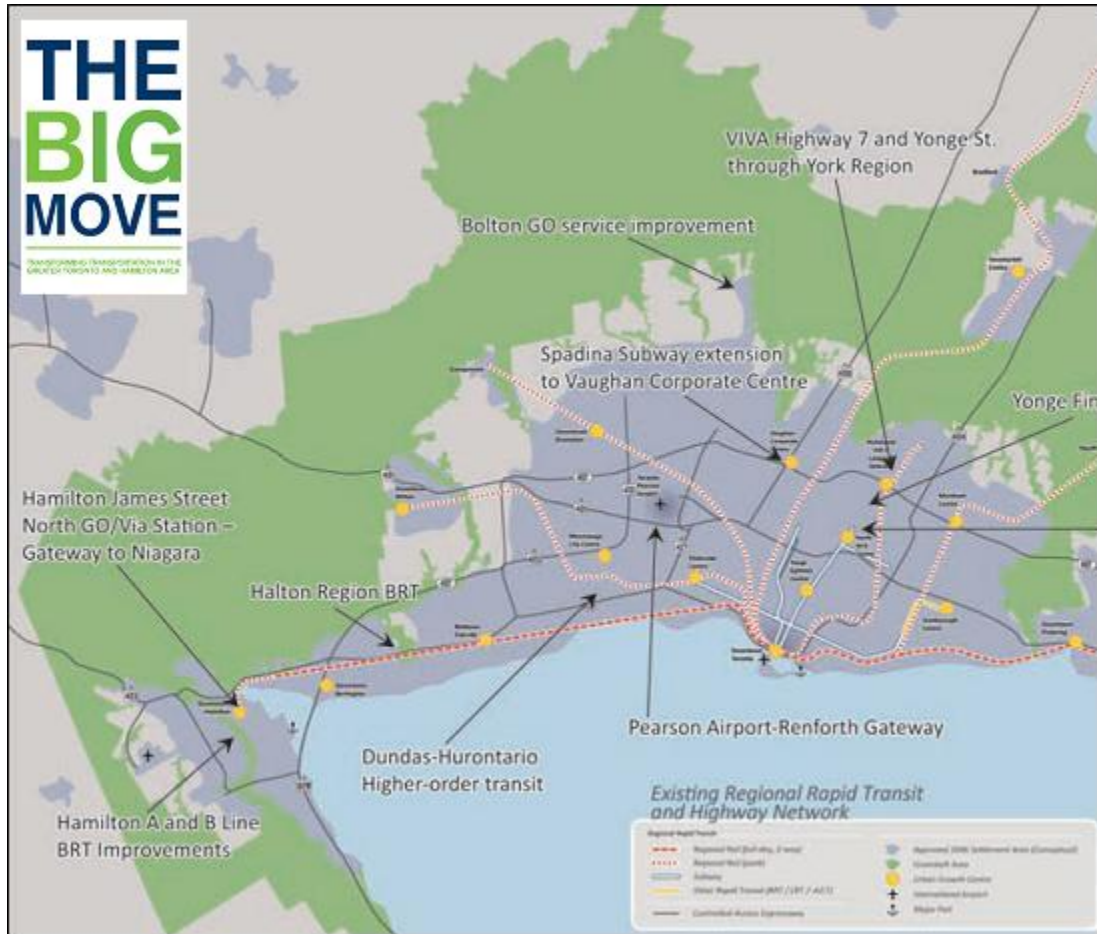


Exhibit 1-8: The Big Move: 25-Year Plan for Regional Rapid Transit



### GO Transit 2020 Strategic Plan

GO Transit, now a division of Metrolinx, provides regional bus and rail service in the GTA and beyond. Its service area was recently expanded to include a larger portion of the GGH, including the regional municipalities of Dufferin, Durham, Halton, Niagara, Peel, Peterborough, Simcoe, Waterloo, Wellington and York; and the municipalities Barrie, Guelph, Hamilton, Kawartha Lakes, Peterborough and Toronto.

GO Transit has developed the *GO 2020 Strategic Plan* (see **Exhibit 1-9**) with a horizon year of 2020. The plan anticipates that GO ridership to the Toronto core, served by Union Station, will more than double and GO ridership outside the Toronto core will triple. Future plans for GO Transit expansion are identified in GO Transit's *2020 Strategic Plan* and the *Regional Transportation Plan: The Big Move*. Key relevant points of the *GO 2020 Strategic Plan* include:

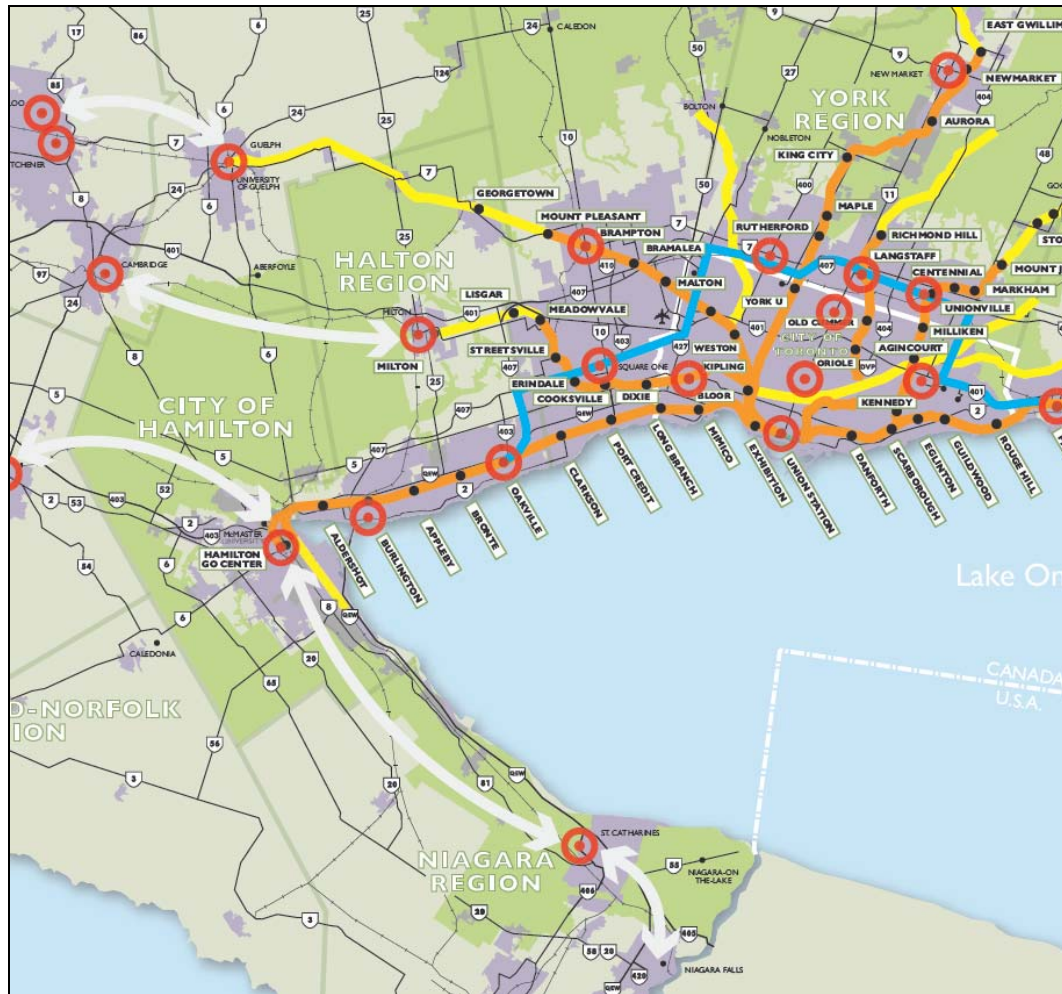
- Delivering a high-quality inter-regional transit service throughout the GGH.
- Providing an excellent customer experience, effective customer communications and increased access to transportation for people with disabilities.
- Adopting improved technologies and alternative energy sources to increase vehicle energy efficiency and providing priority access for active transportation modes like walking and cycling.

- Working with all transportation stakeholders and municipalities to develop a well-integrated public transportation system and support visionary community development, while facilitating access by all modes to GO services. Stations designated in the *RTP* as mobility hubs will provide early opportunities for revitalization.
- Striving for a cost-recovery rate of 75% while maintaining fares that ensure service that is competitive with driving.

The *GO 2020 Strategic Plan* identifies the following improvements within the NGTA study area:

- Provisions for peak service along the Lakeshore West line, with 15-minute or better train service, with express service during high demand periods;
- All day train service hourly between Union Station and Hamilton; and
- Provisions for possible service area extension to provide all day bus or train service to Niagara Falls / St. Catharines as warranted by demand.

Exhibit 1–9: Go Transit 2020 Strategic Service Plan



### 1.6.2 Rail

Canada's two major freight railway companies operate within the NGTA study area, Canadian National (CN) and Canadian Pacific (CP) Railways. Relatively few rail stops are made by the Class 1 railways in the NGTA study area, and few services operate between the Niagara peninsula to south western Ontario / Central US. CN has over 30,000 kilometres of track in Canada and the United States, and operates the largest rail network in Canada, with operations in eight provinces and 16 US states. CN's corridor within the NGTA study area runs close to the Lakeshore between Burlington and Niagara Falls, and then west to Fort Erie.

CP operates over 20,000 kilometres of track in Canada and the US over a network which extends from the Port of Vancouver to the Port of Montreal, and to US industrial centres including Chicago, Philadelphia, New York City and Buffalo. Its route through the NGTA study area runs from Toronto, through downtown Hamilton and east through the Niagara Peninsula to Welland and Niagara Falls.

Class 1 railway markets are based on these primary routes through the GTA, and their efficiencies are based on long haul shipments between terminals in a just-in-time delivery manner. These rail corridors are essential for economic and industrial growth and are increasingly used for passenger services. Shortline (Class 2) railways also exist within the NGTA study area. Shortlines operate in a limited geographical area and focus on local interests and flexibility of service, forming an important link in the short-haul, door-to-door movement of goods.

Freight inter-modal terminals generally refer to facilities where traffic consists largely of goods in overseas containers that can be transported by train, ship and truck and in domestic containers and trailers that can be moved by train and truck. Freight inter-modal facilities are generally located to the north and east of the NGTA study area. CN has a freight inter-modal facility in Brampton, Peel Region and CP has freight inter-modal facilities in Vaughan, York Region and the Obico terminal in Toronto.

While Class 1 railways are unlikely to introduce new freight rail services between destinations within or in the vicinity of the NGTA study area, there could be potential for shortline railway services if a financial return is generated and an agreement can be reached with the Class 1 railways for use of the rail corridors. Similarly, freight siding development to industrial parks would be of interest to the railways once traffic volumes are at a significant level.

An overview of rail corridors and facilities within the NGTA study area is provided in **Exhibit 1-10**.

**Exhibit 1-10: Area Rail Corridor Locations**



### 1.6.3 Airports

There are three airports in the NGTA study area, the largest being the John C. Munro Hamilton International Airport (HIA), within the City of Hamilton. HIA specializes in courier and cargo transport, while also working to expand its passenger services. It is Canada's largest multi-modal cargo facility<sup>1</sup>. The 2004 Master Plan identified the airport's strategic location in the GGH and the lack of night-time flight curfew as key strengths and opportunities. HIA's own vision for the airport is to become one of Canada's five busiest passenger airports and the number one air freighter gateway in Canada.

The regional, lower volume St. Catharines Niagara District Airport and Welland Niagara Central Airport are also located in the NGTA study area. The Niagara District Airport is located in Niagara-on-the-Lake and is a small general aviation facility just north of the QEW. In June 2009 it was announced that the St. Catharines Niagara District Airport will be receiving Infrastructure Stimulus Funds, which will be used for airport improvements to its runway and terminal facilities, considered as phase 1 in the airport's evolution.

The Niagara Central Airport, also known as the Welland-Port Colborne Airport, is a smaller scale regional airport located in the Town of Pelham on River Road.

In addition, there are four international airports within 100 kilometres of the NGTA study area: Canada's largest, Lester B. Pearson International Airport in Toronto; Waterloo International Airport; and in New York state, Buffalo Niagara International Airport and Niagara Falls International Airport. Billy Bishop Toronto City Airport and Buttonville Airports are also of potential interest as they serve the most significant employment areas in the GGH.

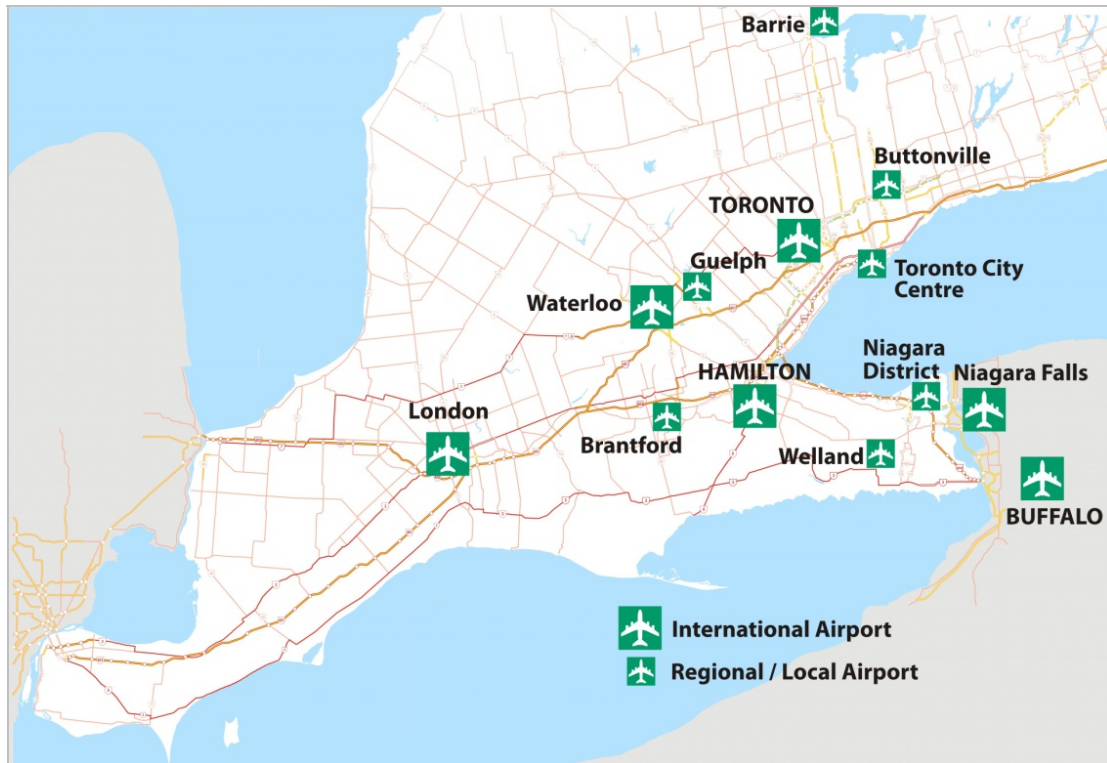
**Exhibit 1-11** provides an overview of the airports that influence travel patterns within the NGTA study area.

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<sup>1</sup> 2007 Annual Report, Hamilton International Airport, June 2008



Exhibit 1-11: Area Airport Locations



#### 1.6.4 Marine

Key marine facilities within the NGTA study area include the Port of Hamilton and the Welland Canal, which are two significant port facilities in the Great Lakes St. Lawrence Seaway System. The Port of Toronto is located to the northeast of the NGTA study area. This is essentially a receiving port. Recreational and residential interests are competing for waterfront use in this location.

The Great Lakes St. Lawrence Seaway System is comprised of the St. Lawrence River, St. Lawrence Seaway and the Great Lakes. The Seaway operates as a bi-national partnership between Canada's St. Lawrence Seaway Management Corporation (SLSMC) and the US, with shared administration of the system. The Welland Canal links Lake Ontario and Lake Erie and the majority of its tonnage comprises bulk cargo<sup>2</sup>.

The Port of Hamilton handles the largest volume of cargo and shipping traffic of all the Canadian Great Lakes ports and ranks in the top ten ports in Canada<sup>3</sup>. The port serves the local steel industry and the marina offers facilities for pleasure craft and for winter storage. About 90% of the Port's tonnage is inbound, and of that a high proportion destined to the US. About 70% of all cargo accessing the Port is moved by truck and about 30% by rail<sup>4</sup>.

In July 2009, a new container feeder service was launched between Montreal and Hamilton, which provides weekly fixed day transport for approximately 250 TEU (20-foot equivalent unit) per sailing, driven by the Hamilton Port Authority subsidiary, Sea 3 Inc. The development of this service is expected to generate truck traffic in and around the

<sup>2</sup> NGTA Overview of Existing Transportation and Socio-Economic Conditions, December 2007

<sup>3</sup> Hamilton Port Authority website (<http://www.hamiltonport.ca/commercial/default.aspx>)

<sup>4</sup> Port Authority Interview – Bob Hart, May 29, 2009

Port, although it will likely remove some trucks traveling between Montreal and Hamilton. Depending on the cargo, freight inter-modal rail will also be used for the distribution of some cargo to / from the Port.

Port Colborne is the southern terminus of the Welland Canal located at Lake Erie. Its major marine-based activity is grain handling and milling.

Marine ports in the vicinity of the NGTA study area are identified in **Exhibit 1-12**.

**Exhibit 1-12: Major Area Marine Facilities**



### 1.6.5 Roadways

Provincial, regional and municipal roads in Southern Ontario service an increasing demand for road transportation by providing an inter-city network of links used for the transport of goods and people. Automobiles continue to be the preferred mode of travel in Southern Ontario. Trucks are a principal means of goods transport in Southern Ontario with highways linking to all major manufacturing centres and international border crossings.

#### **Provincial Network**

The provincial highway network within the NGTA study area consists of sections of the following:

- Queen Elizabeth Way (QEW);

- Highway 401;
- Highway 403;
- Highway 405;
- Highway 406;
- 407 ETR;
- Highway 420;
- Highway 3;
- Highway 5;
- Highway 6;
- Highway 8;
- Highway 58;
- Highway 20; and
- Highway 140.

### **Regional Network**

#### ***Region of Niagara***

The primary east-west roadways under the jurisdiction of the Niagara Region include:

- Regional Road 20 (formerly Highway 20);
- Regional Road 25 (Netherby Road);
- Regional Road 57 (Thorold Stone Road);
- Regional Road 69 (Pelham Road);
- Regional Road 73 (Fly Road); and
- Regional Road 81 (St. Paul Street).

The primary north-south road ways include:

- Regional Road 24 (Victoria St);
- Regional Road 50 (Merritville Road);
- Regional Road 55 (Niagara Stone Road);
- Regional Road 70 (Thorold Townline);
- Regional Road 98 (Montrose Road);
- Regional Road 102 (Stanley Avenue); and
- Regional Road 116 (Sodom Road).

#### ***City of Hamilton***

The primary east-west roadways under the jurisdiction of the City of Hamilton include:

- Lincoln M. Alexander Parkway;
- Red Hill Valley Parkway;
- Rymal Road;

- Stone Church Road;
- Mohawk Road;
- King Street / Main Street; and
- Burlington Street.

The primary north-south Regional arterials include:

- Main Street / Wilson Street (formerly Highway 2);
- Upper James Road (formerly Highway 6); and
- Upper Centennial Parkway (formerly Highway 20).

### **Halton Region**

The primary east-west regional arterials include:

- Dundas Street (Regional Road 5) through Burlington and Oakville; and
- Derry Road and Steeles Avenue through Milton.

The primary north-south regional arterials include:

- Guelph Line;
- Regional Road 25 (Bronte Road); and
- Trafalgar Road.

## **1.7 OVERVIEW OF RELEVANT FEDERAL AND PROVINCIAL POLICIES**

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. This study was carried out within a policy framework that includes all relevant approved provincial planning policies. This section presents an overview of the policies and documents that form the policy framework for this study. Please refer to the *Area Transportation System Problems and Opportunities Report* available on the study website ([www.niagara-gta.com](http://www.niagara-gta.com)) for detailed descriptions of each policy and document.

### **1.7.1 Provincial Policy Statement**

The Provincial Policy Statement, 2005 (PPS) influences 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.

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 in the study area.

### 1.7.2 Growth Plan for the Greater Golden Horseshoe

In order to manage the anticipated growth in the GGH area, the Ontario Government released the *Growth Plan for the GGH* in June 2006, which provides a framework for building strong, prosperous communities by managing growth in this region to the year 2031 and beyond. *The Growth Plan* builds on other key government initiatives, including the *Greenbelt Plan* and the *Provincial Policy Statement, 2005*. Under this planning regime the Province, municipalities and other authorities have to conform to the policies contained in *The Growth Plan*.

*The Growth Plan* also provides the strategic policy framework for the transportation system in the GGH. *The Growth Plan* envisions an integrated transportation network that allows people choices for easy travel both within and between urban centres throughout the region. It will also be financially and environmentally sustainable and provide connectivity among transportation modes.

Public transit is the first priority for transportation infrastructure planning and major transportation investments. Alternative transportation modes, including public transit, walking and biking will also be integrated into transportation planning.

The first priority of highway investment is to facilitate efficient goods movement by linking inter-modal facilities, international gateways and communities within the GGH. Investment in highway infrastructure to accommodate all other projected inter-regional travel demands by the 2031 horizon is also an important consideration.

Under this policy framework, the Niagara to GTA Corridor Planning and Environmental Assessment study (NGTA study) is designed to explore all modes of transportation for facilitating the efficient inter-regional movement of people and goods.

### 1.7.3 Greenbelt Plan

Similar to the PPS and *The Growth Plan*, the *Greenbelt Plan* policies influence transportation demand primarily through municipal planning policy, as the Greenbelt Act requires that official plans conform to the policies of the Plan. The Greenbelt protects environmentally sensitive land and farmland in the GGH area from urban development. In addition to providing agricultural and environmental protection, the Greenbelt contains important natural resources and supports a wide range of recreational, tourism and cultural opportunities.

The Protected Countryside of the *Greenbelt Plan* contains an Agricultural System that provides a continuous and permanent land base necessary to support long-term agricultural production and economic activity.

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 study area includes a large portion of Greenbelt Planning Area. The location of the Greenbelt was a significant factor in the identification and evaluation of transportation alternatives to address the transportation problems and opportunities in the study area. This study fully integrated the goals, objectives and policy requirements of the *Greenbelt Plan* into the NGTA 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:

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.*

#### **1.7.4 Niagara Escarpment Plan**

The Niagara Escarpment is the most distinctive landform in the study area, paralleling the southern and western shores of Lake Ontario and ranging in distance from one to several kilometres south of the lake. 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 (the United Nations Educational, Scientific, and Cultural Organization) World Biosphere Reserve. This designation gives

an area international recognition for the important ecological and cultural values in an area.

The Escarpment land is managed by the Niagara Escarpment Commission (NEC) and the Niagara Escarpment Plan (NEP). The NEC reports to the Government of Ontario through the Minister of Natural Resources. 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 area through limitations on new lot creation and limitations on permitted uses. Its intent is to balance development, preservation, and public use. Municipality's official plans are required to conform to the NEP.

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.

#### **1.7.5 Regional Transportation Plan (RTP) by Metrolinx**

Metrolinx is a provincial crown agency established by the Ontario government in 2006. This agency was tasked to develop and implement an integrated multi-modal transportation plan for the GTHA. In November 2008, Metrolinx published its *Regional Transportation Plan: The Big Move*. The RTP by Metrolinx 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 northern portion of the NGTA study area lies within the area covered by the RTP by Metrolinx. The principles, priorities and planned system improvements in the RTP were included in the NGTA Study and in the GGH Model's Base Case.

#### **1.7.6 GO Transit Strategic Plan – GO 2020**

The GO Transit Strategic Plan, *GO 2020*, published in December 2008, presents GO Transit's (now a division of Metrolinx) direction to 2020 including its vision, objectives and goals, and service strategy. Alongside the RTP by Metrolinx, 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.

The GO Transit Strategic Plan's focus on inter-regional travel is relevant to the purpose of the NGTA Study. Measures that will affect transportation conditions in the study area were included in the GGH Model, including full GO service to Hamilton, full service to Stoney Creek and a possible extension to Niagara.

#### **1.7.7 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 gateway corridor strategies coming out of this framework will influence the movement of people and goods within and through the study area. The NGTA Study was carried out in the context of this framework, incorporating its integrated approach to infrastructure, policy, regulation and operational practice. The NGTA study area lies within the Ontario-Quebec Continental Gateway and Trade Corridor.

#### **1.7.8 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 US and other partners. 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.

Major transportation facilities in the NGTA 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 Trade Corridor progresses, its findings regarding infrastructure, policy and regulatory strategy have been incorporated into the current study.

#### **1.7.9 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 importance of transportation in supporting Ontario's tourism industry is highlighted in the Discovering Ontario Report. Tourism and recreation activities and associated travel are important for the NGTA corridor. The NGTA Study considered these needs.

#### **1.7.10 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.

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.

#### **1.7.11 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 for the environment that Ontario has ever contemplated. GO Green sets firm targets and goals towards making better, greener choices that will save money, helping the economy and the environment.

Go Green's Move Ontario 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 the study area will need to be evaluated in the context of the Go Green's vision and targets to reduce greenhouse gas emissions.

#### **1.7.12 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, 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.

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.

#### **1.7.13 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. The Program lists all major highway projects already under construction or starting in 2008, as well as a five-year outlook to 2012. The document also recognizes the importance of long term planning to ensure first-class transportation infrastructure for the future.

The program includes current and future highway improvements in the NGTA study area, including widening of sections of the QEW and rehabilitation of Highway 405, which were included in the study's assessment of 2031 transportation conditions. The NGTA Study is included in the Program as a Future Southern Ontario Project.

#### **1.7.14 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.

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.

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.

## **1.8 OVERVIEW OF LINKAGES BETWEEN NGTA AND GTA WEST STUDIES**

The *GTA West Corridor Planning and EA Study – Stage 1* (GTA West Study) is a similar study to the NGTA Study. Both studies are being undertaken at the same stage of the EA process, and both studies are being undertaken by the same Consultant Joint Venture on behalf of the MTO. The prime consulting firms involved in this Joint Venture are URS Canada, McCormick Rankin (part of Marshall Macklin Monaghan), AECOM, and Ecoplans.

The study area for the GTA West and NGTA studies are shown together in **Exhibit 1-13** below. As described in **Section 1.5**, the NGTA study area includes Niagara Region, the City of Hamilton and the Halton Region. The GTA West study area borders the NGTA study area to the north and extends from Highway 400 in Peel Region westerly to Highway 6 in the Guelph area.

Exhibit 1-13: NGTA Study Area (Blue) and GTA West Study Area (Green)



Both studies commenced in early 2006 and it was recognized by both study teams at the outset that a high degree of coordination between the teams would be vital to facilitating successful outcomes.

To this end, both study teams established a regular meeting schedule where members of the Project Management Board from both the consultant team and the MTO met to discuss coordination issues from the standpoint of the technical work being undertaken, as well as consultation with stakeholders common to both studies.

Many of the technical team members involved in the transportation, economic, environmental and consultation streams of the two studies were common to both study teams and undertook their work in a joint fashion where applicable.

As an example, all of the transportation modelling that was completed for this study was undertaken by a team of transportation specialists common to both studies, and utilized the GGH Transportation Model which encompasses the NGTA and GTA West study areas as well as other parts of the GGH.

During later phases of the study when both study teams were testing the various highway widening and new corridor alternatives (refer to **Chapter 4** for more details), the model runs were undertaken with regard to the proposed infrastructure in the other study area. For example, when the GTA West team was running various new corridor alternatives in their study area, various highway widening and new corridor scenarios were also assumed in the NGTA study area and vice versa.

From a consultation standpoint, joint meetings were held when possible with common stakeholders such as the Halton Region, the Mississaugas of the New Credit First Nation, the Six Nations of the Grand River Territory First Nation, Transportation Service Providers such as CN, CP, Metrolinx and GO Transit, as well as many others. This was done to avoid providing repetitive information and to reduce the consultation demands on the stakeholders.

In summary, both studies have been undertaken in a parallel and integrated fashion. While the ultimate recommendations of both studies may differ, the process that was followed in arriving at these recommendations and the technical work and underlying assumptions have been used were well coordinated.

## 2. Study Reports and Supporting Documents

### 2.1 OVERVIEW

**Chapter 2** presents an overview of the study reports that were produced at key milestones in the NGTA Study:

- Overview of Transportation and Economic Conditions Report;
- Overview of Environmental Conditions and Constraints Report;
- Area Transportation Systems Problems and Opportunities Report; and
- Area Transportation System Alternatives Report.

Each report was distributed to key stakeholders and is available for review on the study website ([www.niagara-gta.com](http://www.niagara-gta.com)).

### 2.2 OVERVIEW OF TRANSPORTATION AND ECONOMIC CONDITIONS REPORT

#### 2.2.1 Report Overview

The *Overview of Transportation and Socio-Economic Conditions Report* was published for consultation in December 2007. The purpose of this report was to establish baseline transportation and socio-economic data upon which the EA study was built. The key focus was to document the historical transportation and socio-economic conditions in the study area. The study team also investigated the area transportation system needs by examining the existing conditions and patterns.

The report includes an overview of relevant federal, provincial and municipal policies, a definition and description of the area transportation system, a description of the socio-economic conditions and outlooks, as well as travel markets and key factors that influence the area transportation system. It can be referenced on the study web site or by contacting the study team.

#### 2.2.2 Report Findings

A number of key factors that influence area transportation system needs were identified through the preliminary assessment presented in this report. Key factors driving area transportation system needs were summarized into the following themes:

- Policy Framework;
- Socio-Economic Conditions;
- Modal Outlooks; and
- Existing Transportation System Travel Characteristics.

#### **Policy Framework**

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

From a provincial perspective, a new transportation corridor should function within the provincial transportation network, and connect to the major economic and trade corridors

at locations that are compatible with existing infrastructure or future plans. Better use of land and infrastructure can be made by directing growth to the existing urban areas. The provincial policy including the *Greenbelt Plan* and *The Growth Plan* envisages increasing intensification of the existing built-up areas, with a focus on urban growth centres, intensification corridors, major transit stations areas, brownfield sites and greyfields.

From a local perspective, the focus of Niagara Region, City of Hamilton and Halton Region staff and politicians has been on how and where a future transportation corridor enters and serves their respective municipalities, and the compatibility of the future corridor with their land use strategies and plans for future development.

### **Traffic Conditions**

In order to assess historic patterns in travel and transportation demand throughout the study area, the information documented by the province over the past 40 plus years was assembled for all provincial highways at six screenlines including Halton West, Highway 6 Burlington, Burlington Skyway, Niagara-Hamilton, Welland Canal, Niagara River and north of Highway 403.

The summer average daily traffic is generally higher than average annual daily traffic throughout the study area, most significantly reflecting the high level of summer tourism in the Niagara Peninsula. Significant growth in traffic volumes has occurred throughout Niagara Region, Hamilton and Halton Region. Traffic volumes at the Halton West, Highway 6 Burlington and Burlington Skyway have increased more than four fold since 1970, representing an annual growth rate of approximately 5%.

The growth in volume along the Niagara Peninsula is approximately two-fold since 1970 reflecting an average growth of 2.4% relative to 1970 volumes, whereas the average annual growth at the Niagara River screenline is approximately 1%.

Within the study area the QEW is the most significant road-based transportation facility. For this reason, a separate analysis was undertaken to examine historical trends on the QEW through Halton, Hamilton and Niagara regions over the past 45 years. Traffic volumes on the QEW have been steadily increasing since 1960.

The recorded traffic at the Burlington Bay James N. Allen Skyway Bridge (Burlington Skyway) has increased approximately eight-fold from 1960 to 2004, which represents an annual growth rate of approximately 5%. The QEW traffic flows crossing the Niagara-Hamilton boundary and Welland Canal screenlines increased more than four-fold (approximately 3.5% average annual growth) between 1960 and 2004.

### **Existing QEW Traffic Volumes**

Congestion is currently observed on most weekday peak periods in the segment of the QEW between the Skyway Bridge and the QEW / Highway 403 / 407 ETR Interchange and through St. Catharines, where the highway has a four-lane cross-section (the expansion of the QEW to six-lanes through St. Catharines is currently in nearing completion).

Information taken from the 1999 Commercial Vehicle Survey indicates that on the QEW, near Hamilton, some 15,000 trucks travel on an average weekday transporting approximately \$400 million in freight. The 1999 data also indicates that during the weekday, trucks represent approximately 16% of the total vehicular volume.

### **Highway 403 Traffic Volumes**

Traffic flows are generally congested during the commuter peak periods from the south mountain to the QEW / Highway 403 / 407 ETR Interchange. Highway 403 is also a major truck corridor linking the GTA to Hamilton and south-western Ontario. Upwards of 15,000 daily commercial vehicles travel the Highway 403 corridor based on an average commercial vehicle composition of 14%.

### **Highway 20 / Hamilton Road 20 / Regional Road 20**

Traffic flows through the study area on Highway 20 / Hamilton Road 20 and Regional Road 20 are constrained in built-up areas by its function as an arterial road through suburban areas.

### **Niagara River Gateway – National and Regional Importance**

Travel between Canada and the US represented approximately 75 million trips in 2005, with same day trips accounting for approximately 75% of the total trips. Of Canadians travelling to the US, the most popular destinations were Michigan and New York.

The importance of the Niagara River 'Gateway' crossings for trade and tourist / business travel in relation to all ports of entry between Canada and the US are as follows:

- |                                     |  |
|-------------------------------------|--|
| Lewiston-Queenston Bridge Crossing: | <ul style="list-style-type: none"><li>• 4th in Commercial Traffic; and</li><li>• 6th in Total Traffic.</li></ul> |
| Rainbow Bridge Crossing             | <ul style="list-style-type: none"><li>• 1st in Tourist Traffic; and</li><li>• 7th in Total Traffic.</li></ul>    |
| Whirlpool Bridge Crossing:          | <ul style="list-style-type: none"><li>• 25th in Total Traffic (estimated).</li></ul>                             |
| Peace Bridge Crossing:              | <ul style="list-style-type: none"><li>• 3rd in Commercial Traffic; and</li><li>• 2nd in Total Traffic.</li></ul> |

### **Socio Economic Conditions**

International trade and goods movement through the peninsula into Canada's economic heartland is critical to the regional, provincial and national economies. Canada and the US enjoy the largest bi-national trading relationship in the world, at about \$570 billion in 2005. Approximately 87% of Canadian exports and 90% of Ontario's exports go to the US. Increases in exports during the past few years account for 20% of Ontario's economic growth.

The Niagara Peninsula is a key economic trade corridor connecting the eastern US seaboard and northeastern US industrial centres to the GTA, Kitchener-Waterloo and southwestern Ontario. The Niagara Frontier plays a significant role in this trade, as about 17% of all Canada-US trade moves through the Peninsula to cross the border.

### **Travel Market Summary**

The travel markets for the study area are summarized below:

#### *Auto*

- Non-GTA communities have very high internalization of trips;
- Travel patterns are dominated by commuter and other business trips during typical weekday peak hour; and
- Existing focus is on auto trips as transit use is low.

#### *Transit*

- Inter-urban services are limited to connecting urban centres and major gateways; and
- Transit travel to and from major destinations outside Niagara Region is served by local service integration and park and ride.

#### *Truck*

- Trucking activity on major freeway systems has more than doubled over the past twenty years;
- There is a need to provide safe and efficient transportation systems to accommodate trucks and associated goods movement to meet the existing demographic and economic conditions for Ontario; and
- Congestion levels on the freeway system impede overall trucking efficiency.

#### *Air*

- Hamilton, Waterloo and London represent the best opportunities to provide capacity for additional regional air service; and
- Frequency and cost of service become limiting factors in determining effectiveness of potential for air to service primary travel needs of the study area.

#### *Marine*

- Marine port locations, frequency and cost of service are the limiting factors in determining effectiveness of marine travel as an alternative service for movement of people; and
- The Highway H2O concept provides opportunity for increased movement of goods through ports.

### **Existing Transportation Considerations**

Niagara and Hamilton will continue to experience population and employment growth to the 2021 and 2031 planning horizons, and beyond. Given physical constraints to growth in the study area (Lake Ontario, Niagara Escarpment, QEW, etc.), the City of Hamilton and the Region of Niagara will be encouraged to allocate growth to the urban growth centres of the City of Hamilton and St. Catharines.

In implementing *The Growth Plan* policies and directives, improved levels of accessibility to the designated growth areas and international gateways should be provided. Improved accessibility could be provided through implementation of structural and non-structural initiatives, i.e., a multi-modal transportation plan.

Within Niagara, the economy is highly dependent on tourism, and in order to facilitate growth in all of these markets, improved accessibility is required. Congestion affects the physical ability of visitors to reach the area, and the perception that visitors have of the area in terms of high quality, efficient transportation services. These issues present opportunities related to the development of infrastructure that potentially includes expansion of the highway and public transportation systems. To facilitate the future viability of these growth areas, existing travel characteristics and infrastructure supply will require policy directions to allow for multi-modal transportation opportunities.

With respect to the existing transportation infrastructure, there are capacity constraints on the QEW through St. Catharines, on the Burlington Skyway and through Halton Region. Even with widening to six-lanes through St. Catharines, capacity problems on



the QEW are experienced at various time periods through the year. With the QEW being the only provincial facility that links the international bridges to the GTA (i.e., the Rainbow Bridge, Queenston-Lewiston Bridge and Whirlpool Rapids Bridge), there is the potential for the magnitude of the problem through the Niagara to GTA corridor to increase commensurate with growth in the economy, population and employment of the study area.

## 2.3 OVERVIEW OF ENVIRONMENTAL CONDITIONS AND CONSTRAINTS REPORT

The *Overview of Environmental Conditions and Constraints Overview Report* was prepared early in the study process, and input was obtained from ministries, agencies and the public. The report was finalized in December 2007.

This report documents the existing environmental conditions and constraints in the NGTA study area. The environmental investigations identify significant and sensitive natural, socio-economic and cultural features in order to avoid or mitigate potential negative impacts to these features during the development and evaluation of planning alternatives. This report provides a basis for analysis in two stages of evaluation to assist in the generation of "Area Transportation System Planning Alternatives" and "Preliminary Planning Alternatives."

The following is a summary of the *Overview of Environmental Conditions and Constraints Report*, which includes the natural, socio-economic and cultural environment. For more detail on this report please see the *Environmental Conditions and Constraints Report* (available under separate cover).

### 2.3.1 Natural Environment

The Niagara Escarpment, a recognized World Biosphere Reserve, is a significant resource in the study area from a fisheries and aquatic ecosystem, terrestrial ecosystem, surface water, drainage and wildlife perspective.

#### *Hydrogeology*

Several overburden aquifers have been identified within the study area in previous studies and reports:

- Bedrock Valley Aquifers (Killbride / Lowville, Campbellville, Dundas Valley, St. Davids Gorge);
- East and Middle Sixteen Mile Aquifers (Milton area);
- Valens Outwash Aquifer (Puslinch Township);
- Ancaster-West Flamborough Aquifer (Ancaster Township, West Flamborough Township);
- Fonthill Aquifer Complex (Pelham Township);
- Lincoln Aquifer (Ancaster Township, Glanford Township, Seneca Township, Binbrook Township, West Lincoln Township, Saltfleet Township, North Cayuga Township, Canborough Township);
- Wainfleet Aquifer (Moulton Township, Wainfleet Township);
- Port Colborne Aquifer (Port Colborne and vicinity);
- St. Catharines Aquifer (St. Catharines); and

- Niagara-on-the-Lake Aquifer (Niagara-on-the-Lake).

The locations of these aquifers are as previously identified but the townships identified are now dated or are considered “geographic townships” as they no longer exist.

Three hydrogeological indicators are used to determine which area are the most sensitive to the potential impacts of transportation infrastructure:

- Proximity to groundwater recharge areas;
- Proximity to groundwater discharge areas; and
- Proximity to water wells set in shallow, unconfined aquifers.

Recharge areas are the water source for the groundwater system. Therefore, the proximity of infrastructure to such areas may affect water resources that are used by humans and / or support the natural environment. The proximity to a discharge area is also significant because the infrastructure will exhibit groundwater upwelling that supports aquatic habitat. Reductions in upwelling in groundwater-fed wetlands could reduce vegetation diversity by starving those species that require more water. Given the reliance of so many animal species on wetland habitat, animals may be displaced or unable to survive. Similarly, such disruption may redirect groundwater discharge, which could lead to flooding of low-lying areas. Reduced discharge into particularly sensitive reaches of streams could also impact fish habitat and spawning grounds.

The proximity of water wells set in shallow, unconfined aquifers is significant for two reasons. First, the building of infrastructure may temporarily lower the water levels of nearby shallow wells. Nearby water wells set in the same shallow aquifer could also be affected. Another effect could be the permanent lowering of the water table created by permeable bedding of services such as storm sewers. Secondly, these wells are sensitive to inadvertently introduced contaminants entering the groundwater system. Shallow, dug wells relying on tile joints to allow water entry are particularly susceptible to contamination due to the short travel distance necessary to reach the aquifer and the absence of any extensive aquitards to intercept the contaminants.

#### *Aquatic Resources*

The study area occupies portions of the Lake Erie and Lake Ontario watersheds. Lake Erie drainage includes a portion of the Grand River watershed as well as minor drainage from watercourses along the north shore of Lake Erie. Lake Ontario includes drainage from subwatersheds within the jurisdictions of Niagara Peninsula, Hamilton and Halton Conservation Authorities and includes: Twelve Mile Creek, Twenty Mile Creek, Welland River, Spencer Creek, Red Hill Creek, Grindstone Creek, Bronte Creek and Sixteen Mile Creek.

Coldwater streams and their fish communities are considered the most sensitive aquatic resource in the study area. Coldwater fish habitat and their communities are considered intolerant of disturbance such as changes in water chemistry or changes in thermal regime, particularly related to loss of or changes in the quality of groundwater discharging to the streams. Coldwater fish species are typically found where forested riparian cover is intact, water quality is good, and base flow is sufficient to maintain flow rates and moderate stream temperatures. The absence or impairment of these conditions can undermine the viability of fish populations. In particular, coldwater fish such as Brook Trout are dependent on groundwater direct discharge for successful egg incubation. Therefore, groundwater discharge that contributes functionally to these fish communities must be protected.

Warmwater streams and many warmwater species may also be sensitive; however, they typically support fish species that are more tolerant to environmental disturbance. Common warmwater fish species, particularly in urbanized areas, can usually withstand changes to habitat and fluctuating environmental conditions without any significant impact on the community.

*Terrestrial Resources*

**Table 2-1** provides a summary of the key terrestrial features and functions identified for the Preliminary Study Area and their related legislative / policy protection.

**Table 2-1: Summary of Key Terrestrial Features and Functions Identified within the Study Area**

Feature and / or Function	Significance
Provincially and Regionally Significant Wetlands	Protected under the <i>Federal Policy on Wetland Conservation, Strategy 2</i> and the <i>Provincial Policy Statement</i> . See <i>EPRs1 WET-1</i> and <i>WET-2</i> .
Designated Areas – ANSI	Protected under the <i>Provincial Policy Statement</i> . See <i>EPR DA-1</i> to <i>DA-5</i> .
Significant Wildlife Habitats and Movements (including Interior Forest habitat)	Protected under the <i>Canada Wildlife Act, Migratory Birds Convention Act, (Migratory Bird Regulations), Species At Risk Act, Endangered Species Act, Provincial Policy Statement, and Fish and Wildlife Conservation Act</i> .  See <i>EPRs: WDL-1</i> to <i>WDL-9</i> and <i>VEG-1</i> to <i>VEG-6</i> .
Significant Woodlands and Other Vegetated Areas	
Species of Conservation Concern	

The proximity to infrastructure of any of these features may affect the feature / species, habitat or their functions. For example, reductions in surface water or groundwater contribution to wetlands would potentially compromise the biodiversity of both wildlife and vegetation. Fragmentation of interior forest habitat would potentially compromise the ability of certain birds and wildlife species to carry out life processes. The removal of their habitat would lead to a reduction in abundance and biodiversity at a broader level.

All of the features listed above have been identified within the study area. Most are protected under the PPS and other legislation.

*Designated Areas*

The following designated areas are situated within the Preliminary Study Area:

- 146 (20,113 ha) Provincially Significant Wetlands;
- 35 (1,237 ha) Locally Significant Wetlands;
- 176 (13,858 ha) Life Science Areas of Natural and Scientific Interest;
- 90 (5,337) Earth Science Areas of Natural and Scientific Interest; and
- 118 Environmentally Sensitive / Significant Areas (81 in Hamilton, 23 in Halton Region and 14 in Niagara Region).

*Woodlands*

- 70,788 ha of woodland (including treed, plantation and hedgerow);
- 10,956 ha of interior forest (100 metres from edge); and

- 2,528 ha of deep interior (200 metres from edge).

#### *Wildlife*

- Significant Wildlife Habitats within the study area are Deer Wintering Areas, Colonial and other important nesting sites and waterfowl staging and concentration areas.

#### *Species of Conservation Concern (including historic records)*

Within the study area, there are a number of rare or at risk species (counts still considered approximate):

- 153 plant species;
- 6 mammal species;
- 23 bird species;
- 5 reptile / amphibian species;
- 8 fish species;
- 3 mussel species; and
- 19 insect species. These 19 species have no formal MNR / COSSARO or federal COSEWIC designation. Provincially, they are ranked S1 to S3.

### **2.3.2 Land Use / Socio-Economic Environment**

A significant component of the socio-economic environment in the study area is of interest to Six Nations of the Grand River and Mississaugas of The New Credit First Nations based on the potential to impact on traditional lands used for hunting and fishing and the potential impacts to their communities. Continued discussions with the First Nations and the consideration of their traditional land uses and interest in the area are important to this study.

At this stage of the study process, general and preliminary land use constraints have been identified. Potential displacement of existing residences, commercial or institutional uses, is recognized as the highest land use constraint to transportation corridor expansion / development. Consequently, existing developed urban areas pose significant land use constraints, as do developed villages and hamlets, clustered rural residential development and existing community institutional features. Isolated residences, industrial development, recreational use and other special area uses are also recognized as significant land use constraints.

The next level of significance for land use impact is undeveloped, but fully serviced areas and approved Plans of Subdivision. This approach recognizes the investment in infrastructure and the anticipated development potential of these areas.

The identification and protection of specialty crop areas and prime agricultural areas are important in the study area, as defined by the PPS, Section 2.3 Agriculture and supported by the Ontario Ministry of Agriculture, Food and Rural Affairs (OMAFRA) and *Greenbelt Plan* policies regarding agriculture. In particular, the Niagara Peninsula Tender Fruit and Grape Area is one of two specialty crop areas on the Greenbelt and these lands are subject to the highest level of protection in the *Greenbelt Plan*.

Consistent with the PPS, Section 2.3 Agriculture, the following order of priority for protection will be given to agricultural lands within the study area:

- Specialty crop areas;

- CLI Class 1 soils;
- CLI Class 2 soils;
- CLI Class 3 soils; and
- Other soils.

Specialty Crop Areas are identified as zones of unique soil and climate characteristics where a variety of fruit and / or vegetable, nursery stock crops are produced. In addition to the production of these unique crops, these areas also comprise the infrastructure for the storage, packaging and transportation of the crop.

The Regional Niagara Agricultural Land Base Map for the Region of Niagara identifies Good Tender Fruit Lands and Good Grape Lands in multiple areas within the Region. The majority of these lands are located between the Niagara Escarpment and Lake Ontario. Smaller areas located above and immediately adjacent to the Niagara Escarpment have been identified as Good Grape Lands, while an area near Fonthill has been identified as a Good Tender Fruit Area.

Recreational trails pose a moderate constraint to corridor expansion / development. Further investigation would be required should an alternative impact existing or planned trails. Mitigation measures may be available to eliminate or minimize adverse impacts.

Areas containing significant aggregate resources are also present within the study area and are a moderate constraint in terms of the potential disruption / displacement of an active extraction activity, as well as the need to protect identified areas containing this non-renewable resource. As a mitigating measure, the resource can be extracted prior to implementation if required. Potential adverse impacts on active aggregate business operations will be considered.

The potential for the presence or absence of environmental issues was assessed from a broad perspective. Further review and reconnaissance level field investigation will be completed once the specific alternatives to be assessed are developed.

### **2.3.3 Cultural Environment**

The results of background historic research and data collection pertaining to identified aboveground cultural heritage resources, available from provincial and federal databases, reveals a study area with a long history of Euro-Canadian occupation and a large number of heritage sensitive areas and features.

Within the broad Preliminary Study Area there are:

- 19 aggregate areas of heritage sensitivity;
- 51 National Historic Sites;
- 595 features designated under Part IV of the Ontario Heritage Act;
- 13 heritage conservation districts designated under Part V of the Ontario Heritage Act and five additional heritage conservation districts currently in the planning stages;
- Three bridges identified on the Ontario Heritage Bridge List, two bridges protected under Part IV of the Ontario Heritage Act, and ten bridges identified in the Heritage Bridge Assessment and Identification Guide, Ontario 1945-1965;
- 11 provincially owned heritage properties;
- 27 properties that have Ontario Heritage Trust Easements;

- Nine properties that have provincial plaques;
- Three properties that have been protected under the Railway Stations Protection Act; and
- 14 properties listed on the Ministry of Culture's Ontario Heritage Properties Database as identified on municipal heritage inventories.

While these features were included during data collection and analysis and have been mapped using GIS data coordinates, it should be noted that features listed on municipal heritage inventories are not consistently or typically listed on the Ontario Heritage Properties Database. As such, this list is not indicative of the amount or breadth of aboveground cultural heritage resources located in the study area that have been identified by municipal levels of government as being of heritage interest and / or listed on local heritage inventories. It should also be noted that data collection of previously identified aboveground cultural heritage resources does not include information pertaining to historic roads and has not provided an exhaustive listing of cemeteries located in the study area.

As well, an inventory of more than 2,800 registered archaeological sites for the study area was compiled by the Data Co-ordinator of the Archaeology and Heritage Planning Unit, MCL.

## **2.4 AREA TRANSPORTATION SYSTEMS PROBLEMS AND OPPORTUNITIES REPORT**

### **2.4.1 Report Overview**

The *Area Transportation Systems Problems and Opportunities Report* was published as a Draft for Consultation in July 2009. An overview of the key transportation problems and opportunities stage of the study was presented at the second round of PICs, held in March 2009.

The purpose of this report was to summarize the process and methodology used to identify transportation problems and opportunities, and to document the key findings of this work. It served as a critical stage in the study, providing a foundation for the generation and evaluation of transportation alternatives to address future problems and opportunities, and ultimately development of a technically, environmentally and economically sound multi-modal development strategy.

The report included detailed information on the factors that influence transportation demand in the NGTA study area, forecasting of travel demand, the specific transportation problems within and outside of the study area and transportation opportunities. It can be referenced on the study web site or by contacting the study team.

### **2.4.2 Report Findings**

#### **Forecast of Future Travel Demands**

Future population and employment growth across the GGH will result in an increase in travel demand for people and goods movement. 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 NGTA 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 including transit, rail, air and marine. All of these modes rely upon and connect to the road network.

Forecasts for the NGTA study area show substantial growth by 2031. Population and employment levels are expected to grow by 45% and 53%, respectively, between 2001 and 2031 (576,000 people and 304,000 jobs). Accordingly, study area travel is expected to increase significantly, as shown in **Table 2-2**.

Future area transit improvements are expected to result in significant increases in transit trips, varying depending on trip origins and destinations. Additionally, analysis indicates that weekday PM traffic volumes are forecast to increase substantially: by as much as 35% across the Burlington Skyway Bridge and 15% across the Welland Canal. Across the Hamilton East Boundary, traffic is expected to increase by approximately 40% to 70% by year 2031.

**Table 2-2: Projected Growth in the NGTA Corridor, 2001-2031**

	2001	2031	% Change
<b>Population</b>	1,277,000	1,853,000	45%
<b>Employment</b>	570,000	874,000	53%
<b>Total PM* Peak Period Person Trips</b>	686,264	1,107,418	61%
<b>PM* Peak Period Auto Trips</b>	536,489	814,590	52%
<b>PM* Peak Period Transit Trips</b>	27,625	79,701	189%
<b>PM* Peak Period Transit Mode Share</b>	4%	7%	75%

\* Refers to afternoon and evening

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

CPR, CNR and VIA Rail operate in the study area, and rail use is anticipated to steadily increase through to 2031, driven largely by growth in volumes of containerized goods. Stakeholder consultation indicated that the existing infrastructure is anticipated to meet demand until between 2020 and 2030.

Air transportation in the study area is also projected to increase to 2031, with substantial increases in air cargo movements at HIA. Similarly, the Port of Hamilton plans to develop and expand its container services. This growth in air and marine transportation services will result in increased automobile and truck traffic on the study area road network.

### **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. Every mode connects to and relies on the road network, creating significant issues for the efficient movement of people and goods in the future.

Transportation in the NGTA study area in 2031 can be considered in the context of three sub-areas with different geographic, land use and transportation system characteristics:

- West – Halton Region: represents an area of transportation problems and opportunities, with major congestion along area highways constraining commuter travel and trucking transportation – a major concern for economic growth and prosperity.
- Central – City of Hamilton: characterized by good highway accessibility and transit connections along the lake and important air and marine transportation features. However, there is a lack of adequate higher order connections to HIA, the Port of Hamilton, and highway capacity to the GTA and east to Niagara and the US.

- East – Niagara Region: the QEW is the main highway route through Niagara Region and major alternate roadways connecting Hamilton and the GTA to the US border are limited. Transit connections to tourist connections are also limited.

### **Moving People – Commuter**

#### **Transit**

- Inter-regional transit connections linking communities and employment areas located away from the QEW lakeshore corridor are limited. Outside of the urban areas, transit connections are even more limited. There are also limited transit connections to other transportation modes in the study area. For example, the lack of transit service to HIA has been identified as a problem.

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, increases unreliability and travel times.
- 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 the QEW through Halton being congested throughout much of the day.

- Major congestion issues are anticipated in 2031 on the main highways throughout the study area, including:
  - QEW between Hamilton and Halton;
  - QEW through Hamilton and to St Catharines;
  - Highway 403 from Ancaster through Hamilton and Halton; and
  - The length of Highway 401 within the study area's boundary through Hamilton and Halton.
- The expected capacity shortfall will increase automobile travel times between the urban centres throughout the study area. Delays that occur due to collisions, inclement weather conditions, road maintenance and construction will further contribute to congested conditions.
- With the exception of the 407 ETR through Halton Region, there is a lack of alternate higher order inter-regional routes to avoid congested conditions on the existing network.

### **Moving People – Tourism and Recreation**

#### **Transit**

While the introduction of seasonal weekend and holiday GO Rail and daily GO Bus services to Niagara will provide greater choice for tourists destined to this area from the



GTA, the vast majority of tourism trips are forecast to continue to be by automobile, even with even with additional GO services to Niagara in the longer term. Further to this:

- There are inadequate transit connections between urban centres, tourist gateways such as HIA, 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 service focused on AM and PM commuting times and limited weekend services. There are private sector inter-city services to tourist destinations but they are limited in terms of geographic coverage and in their integration with GO Transit and municipal transit services.

### **Automobile**

Tourism and recreation travel is of particular importance in the NGTA Corridor, as Toronto and the Niagara Region are major Ontario tourist destinations. The problems for road-based tourism and recreation travel include congestion and increased travel times, limited travel routes and modal options. The automobile is the transportation mode of choice for more than 85% of visitors to the study area. Tourism and recreation travellers also pass through the study area to destinations in Toronto, northern and eastern Ontario, and the US.

- For the most part, the study area's tourism and recreation destinations are connected to urban centres by the Highway 401 and the QEW 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 tourist destinations.
- There are limited options for by-passing road congestion, which can cause inter-regional travellers to move onto regional and local roads.
- High volumes of trucks on the major highway corridors can be a deterrent to tourist travel, especially during the summer months.

### **Moving Goods**

The inter-regional road system is the primary distribution mode for moving goods in the area, shipping almost 70% of Canada-US trade by value and 45% by tonnage. The key collective issue for rail, air and marine modes relates to the limitations associated with the inter-regional road network from the perspective of access and / or congestion.

### **Truck**

- Increased congestion and travel times.
- Limited alternate route options.
- Insufficient road and inter-modal connections between urban centres, commercial centres and inter-modal facilities, such as HIA and the Port of Hamilton.
- Diversion of trucks to regional and local roads, which results in out-of-way travel with associated community, social, noise and safety concerns.

### **Rail**

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

Other problems include:

- Operational constraints on the rail network, including potential conflicts between rail-based transit and freight services during peak AM and PM commuting periods. As growth in both freight and passenger traffic occurs on existing shared infrastructure, these problems will increase. Limited connectivity of inter-modal facilities can increase the difficulty of moving goods by rail and produce bottlenecks at the trucking interface.

### **Air**

- The key problems for air transportation in the study area relate to direct connections to higher order roadway and transit systems.
- Connections between HIA, the Port of Hamilton and the QEW are currently facilitated by lower order (i.e., municipal) and constrained capacity roads and this will become a problem for the airport as growth occurs. The lack of rail connections directly serving the airport and the planned Airport Employment Growth District (AEGD) may also constrain the growth of this economic hub.

### **Marine**

The Port of Hamilton and the Welland Canal are two significant features of the Great Lakes St. Lawrence Seaway System.

- Area roadway congestion and bottlenecks at locations that interface with rail / trucking are serious limiting factors for the use of marine transportation in the NGTA study area.
- The Port of Hamilton plans to expand container shipping operations, which has the potential to keep goods on ships for longer portions of their journey from the Atlantic Ocean but would contribute to increased roadway congestion in the vicinity of the Port and to the QEW as containers are transferred to trucks for delivery.
- Goods movement by marine transportation is somewhat constrained by the vessel size limitations of the St. Lawrence Seaway and its closure during the winter period.

### **Summary of Future Transportation Opportunities**

In addition to identifying the transportation problems, an equally important aspect of this study is the identification of transportation opportunities, referring to the “big picture” strategic benefits of an efficient transportation system. These opportunities within the NGTA study area are summarized as follows:

#### **1. Support Approved 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 approved municipal land use planning to support municipal growth aspirations that conform to the requirements of *The Growth Plan*, while at the same time accommodating both the local and inter-regional future travel demands.

#### **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, as well as Niagara’s prime agricultural areas such as the tender fruit and grape lands.

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

The opportunity exists to build upon the *RTP* by Metrolinx and the GO Transit Strategic Plan to provide a robust transportation system that offers commuters real alternatives to automobile travel throughout the NGTA study area.

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

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 use of other modes for goods movement, including rail, marine and air, as well as to provide better connections between modes.

**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 Niagara Region.

**6. Optimize Existing Transportation Infrastructure**

There are opportunities to use TDM and TSM strategies to reduce / shift trip making and automobile usage while optimizing use of the existing system.

**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 use of existing infrastructure, and gives due regard to the requirements of approved provincial environmental protection policies, heritage resources and First Nations lands when developing and evaluating transportation alternatives.

## **2.5 AREA TRANSPORTATION SYSTEM ALTERNATIVES REPORT**

### **2.5.1 Report Overview**

The purpose of the *Area Transportation System Alternatives Report* is to summarize the process and methodology that was used to develop a broad range of the Area Transportation System Alternatives and to document the key findings of this work.

The *Area Transportation System Alternatives Report* served as a critical stage in the study providing a foundation for the further generation, evaluation and selection of Preliminary Planning Alternatives that were incorporated in the draft Strategy for this phase of the NGTA Study.

An overview of the transportation alternatives was presented at the third round of Public Information Centres (PICs), held in November and December 2009. The Area Transportation System Alternative Report provides further detail and background to the information presented at PIC#3.

### **2.5.2 Report Findings**

The assessment of the 'long list' of alternatives involved assessing the degree to which each alternative could meaningfully contribute to addressing the inter-regional transportation problems and opportunities that have been identified by the study team.

The assessment of the individual transportation alternatives is summarized in **Table 2-3** below.

**Table 2–3: Assessment of Individual Transportation Alternatives**

MODE	CARRIED FORWARD	RATIONALE
Transportation Demand Management (TDM)	✓	Is recognized as an important component of transportation networks. On its own it does not provide a significant improvement to transportation problems in the NGTA study area.
Transportation Systems Management (TSM)	✓	Is recognized as an important component of transportation networks. On its own it does not provide a significant improvement to transportation problems in the NGTA study area.
Transit	✓	Improved transit is recognized as an important component of a transportation network for the movement of people. On its own it does not fully address the full range of transportation problems in the NGTA study area.
Air	✓	Improved multi-modal connections to HIA have some potential to reduce dependence on the road network in the NGTA study area.
Marine	✓	Improved multi-modal connections to Hamilton Harbour have some potential to reduce congestion on the road network in the NGTA study area.
Rail	✓	Rail will continue to be an important aspect of goods movement in the NGTA study area. A number of recommendations are to be pursued by others or are already being pursued by others.
Freight Inter-Modal	✓	Improved freight inter-modal facilities have some potential to address transportation problems in the NGTA study area.
Road and Highways	✓	Improved roadway facilities have the potential to reduce congestion on the road network and to address some opportunities in the NGTA study area.

The findings of this assessment identified numerous alternatives representing all transportation modes. One of the key findings, however, was that no single mode of transportation is capable of fully addressing all of the transportation problems and opportunities. As such, all of the individual transportation alternatives were carried forward for further consideration to the second stage of the process – the assembly of the group alternatives. Each of the group alternatives are described briefly below. Further detail with regard to the elements of each of the group alternatives are summarized in **Chapter 3** of this report.

- **Group #1: Optimize Existing Transportation Networks**

Transportation initiatives that focus on improving the performance of the existing transportation system for all modes of travel and transport through strategies designed to reduce auto and truck demand and improve system operating efficiency.

- **Group #2: New or Improved Non-Road Infrastructure**

This alternative builds upon the transportation system performance enhancements provided by Group #1 through provision of additional “non-road-based” capacity such as new air, marine, transit, and freight rail infrastructure to address potential shortfalls in addressing the transportation problems and opportunities inherent in Group #1.

- **Group #3: Widen or Improve Roads**

This alternative builds upon the transportation system enhancements and non-road capacity improvements provided by Group #1 and #2 and adds new capacity by widening existing roads or highways beyond that which is currently planned or contemplated by municipalities and the Province.

- **Group #4: New Transportation Corridors**

This alternative builds upon the transportation system enhancements and both road and non-road capacity improvements provided by Group #1 and #2, as well as some existing road widening from Group #3, and adds new road and / or highway capacity on a new corridor to address identified transportation problems and opportunities.

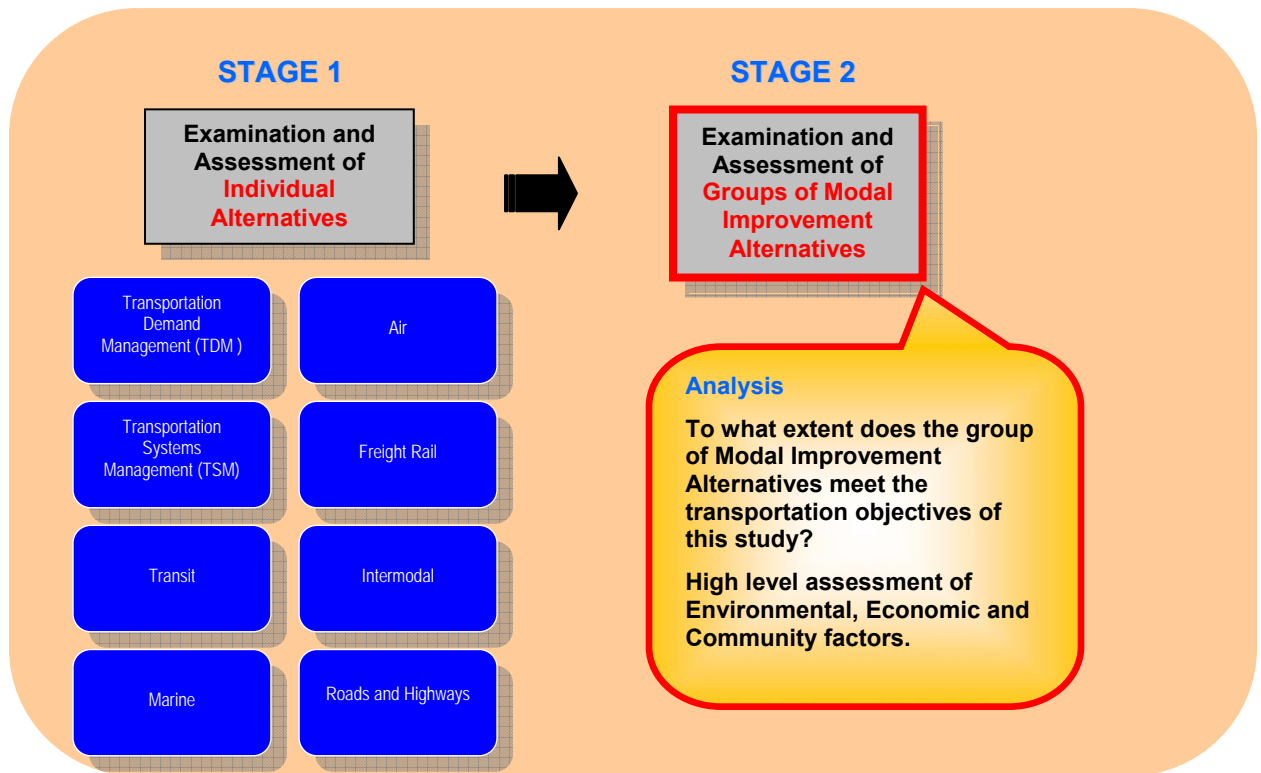
Based on the study team’s assessment of the ‘long list’ of alternatives, the alternatives considered worthy of pursuing as part of the current study were grouped into each of the above categories.

## 3. Area Transportation System Alternatives

### 3.1 OVERVIEW

This Chapter provides an overview of the generation and assessment of the Area Transportation System Alternatives. The development of the Area Transportation System Alternatives involved a unique and creative process, built upon an extensive consultation program with a wide range of stakeholders and other transportation service providers. This process followed a two-stage approach which began with a comprehensive assessment of the individual transportation alternatives to assess their ability to address the future inter-regional transportation problems and opportunities identified by the study team. Based on this assessment, multi-modal alternatives considered capable of substantively contributing to addressing these problems and opportunities were carried forward to the second stage of the process, which involved assembling the multi-modal individual alternatives into group alternatives (**Exhibit 3-1**).

**Exhibit 3-1: The Creative Process**



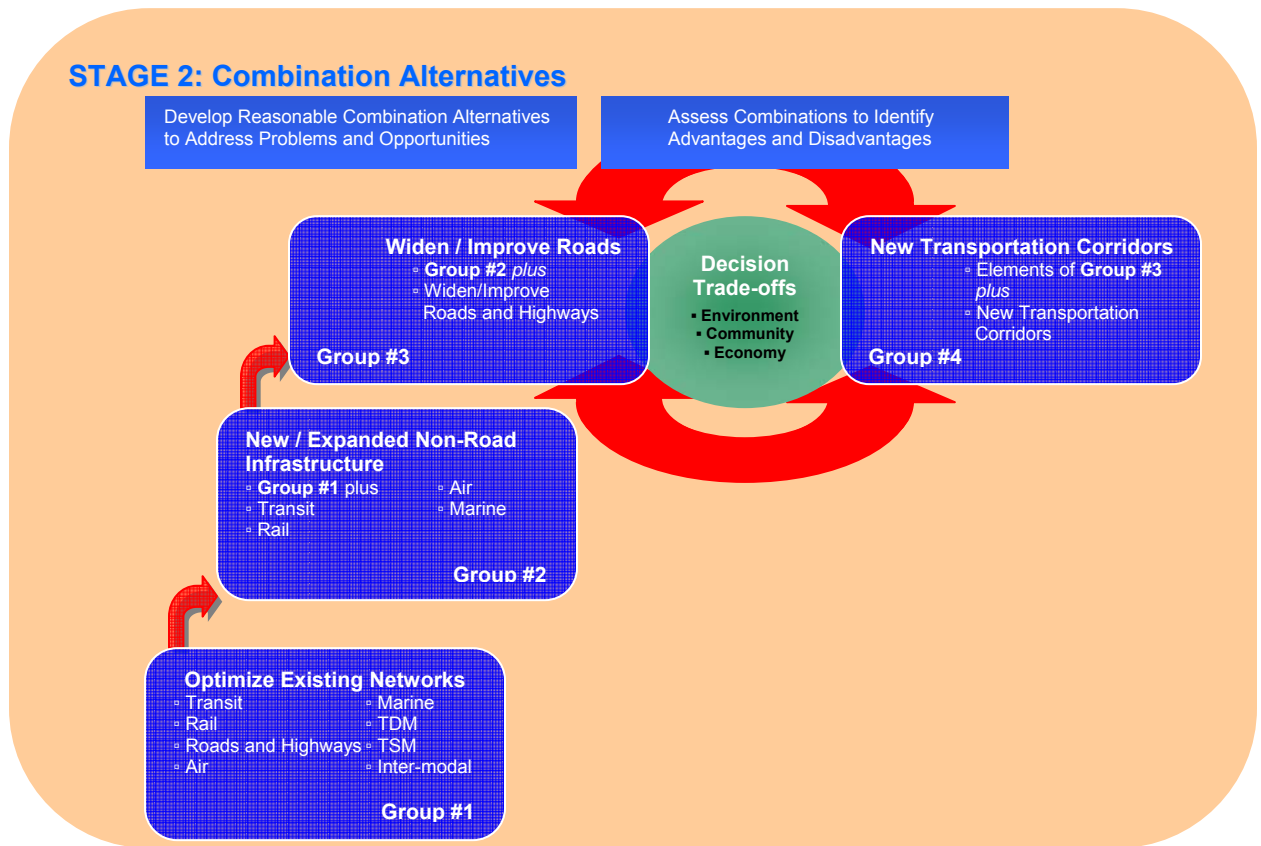
The development and assessment of alternatives was undertaken at an increasing level of detail. As the range of alternatives under consideration became more focused (i.e., individual to group, and later to preliminary planning), the level of detail and range of criteria to be considered to identify potential environmental, community and economic impacts and benefits also became more detailed.

The primary focus of the process was to assemble the group alternatives based on the 'long list' of individual alternatives for each mode of transportation that was generated initially by the study team and supplemented based on consultation with municipalities,

agencies, members of the public, transportation service providers and other stakeholders. For more details on the long list of individual modal alternatives, please refer to the *Area Transportation System Alternatives Report* available on the project website ([www.niagara-cta.com](http://www.niagara-cta.com)).

A “building block” approach (**Exhibit 3-2**) was used to assemble the group alternatives based on the principle of first optimizing the existing transportation network, and then if necessary, incorporating non-roadway infrastructure improvements and expansion before considering the widening of existing roadways or the provision of new roads and / or highways. This approach is consistent with current government policy which talks to optimizing existing infrastructure before new infrastructure is built and it also promotes transit initiatives as a priority. Moreover the development of group alternatives at this stage of the process is inherently additive. Where a group alternative does not adequately satisfy the identified transportation objectives it will not be removed from further consideration, but rather used as a building block that the next group will build upon.

**Exhibit 3–2: The “Building Block” Approach**



### 3.2 ASSESSMENT OF GROUP ALTERNATIVES

The focus of the generation and assessment of group alternatives was to identify what further enhancements are needed for the transportation system to adequately address the identified problems and opportunities. In Stage 2, each group alternative was assessed based on the degree to which it achieves the transportation objectives of the study.

A high level assessment of environmental, economic and community factors was also undertaken to support the consideration of group alternatives. The level of assessment of these factors was reflective of the detail available in the group alternatives. A more detailed impact assessment was conducted during Stage 3 – Preliminary Planning. For more details, please refer to **Chapter 4**.

The assessment criteria builds upon that outlined in the NGTA ToR and the Study Plan and reflects the input received through stakeholder consultation in the development of study goals and objectives.

### **3.3 GROUP #1 – OPTIMIZE EXISTING NETWORKS**

The Ontario government has a vision for building strong, prosperous communities by managing growth in this region to the year 2031 and beyond. The provincial government is planning for the future through policies like *The Growth Plan*, the *Greenbelt Plan* and the *RTP*.

These plans and policies place a strong emphasis on making the most of our existing infrastructure and focusing infrastructure development on non-roadway modes of transportation. As such, the foundation of all of the group alternatives (Group #1) includes strategies that are aimed at optimizing the existing transportation networks.

#### **3.3.1 Overview of Group #1**

Group #1 builds upon comprehensive optimization strategies embodied in the *RTP*, the *GO 2020 Strategic Plan*, MTO's *High Occupancy Vehicle Lane Network Plan* and Carpool Lot Program, and municipal transportation plans. These strategies aim at:

- Improving access to transit stations for pedestrians and motorists and advancing the concept of mobility hubs;
- Making active transportation a viable choice. Potential strategies include secure storage at transit terminals and bicycles on transit vehicles;
- Expanding the use of bus bypass shoulders during peak periods;
- Improving schedule and fare integration between transit providers;
- Providing drivers with real time trip planning information;
- Providing real time information to transit riders in stations and vehicles along with remote access via telephone and the internet;
- Optimizing use of commuter rail system, through the use of longer trains comprising of 12 cars for example; and
- More aggressive use of TDM / TSM.

In addition to these strategies, the study team identified a number of complementary strategies, which may be further supplemented and refined. These strategies are described in further detail below:

#### **Speed Harmonization**

Speed harmonization is used widely in numerous European jurisdictions and essentially involves adjusting the speed limit on inter-regional facilities based on prevailing congestion levels. In the US, pilot projects have been initiated to assess the feasibility of implementing speed harmonization. Changeable message speed signs which are connected through an electronic system to sensors in the pavement are used to reduce



the speed limit during times of congestion. The reduced speeds promote a more even traffic flow which increases throughput and improves safety.

### **Provincial / Employer Led TDM Programs**

TDM programs could be improved upon by expanding the Smart Commute program beyond the GTHA. Other potential initiatives to support TDM include marketing of carpooling using overhead signage in the corridor or at carpool lots in the area, and providing support for municipalities along the corridor to implement TDM measures.

Experience in other jurisdictions has shown that regional organization of TDM initiatives leads to operational and economic efficiencies that translate into increased awareness of the programs, a greater variety of services and higher utilization. This concept may also involve providing additional Park 'n Ride lots at key locations.

### **Long Combination Vehicles (LCVs)**

Long Combination Vehicles (LCVs) consist of a single tractor with two 16-metre (53 feet) trailers. MTO recently initiated a pilot program to allow up to 100 LCVs on the provincial highway network. This program improves fuel efficiency and traffic operations for goods movement and MTO is reviewing the experience with the LCVs to determine the next stage of the program.

### **Ramp Metering**

Ramp metering involves the implementation of signal control measures on a freeway on-ramp to control the traffic entering the highway in order to ensure a smooth downstream traffic flow. Ramp metering is already in existence on portions of the QEW. It may be beneficial to recommend expanding the ramp metering program to other sections of the QEW, Highway 403 and 407 ETR through Hamilton, Halton and Niagara.

### **HOV / Transit Bypass at Key Locations**

This concept involves providing bypass lanes on metered ramps, ramps accessing transit stations, and ramps in vicinity of carpool lots for HOV and transit vehicles that would allow them to bypass traffic queues on these ramps and access the corresponding facilities more efficiently.

### **Improved Incident Management**

This concept involves increased utilization of emerging technologies to improve detection of incidents, improve EMS response times, and as a result reduce the amount of congestion and delays resulting from traffic incidents.

## **3.3.2 Assessment of Group #1**

The high level assessment of the Group #1 alternative based on potential community, economic, environmental impacts as well as transportation considerations and costs is summarized below.

### **Community**

- Minimizes footprint impacts to existing residences and community features.
- Will not fully accommodate future planned population and employment growth.
- Does not provide improved connections between urban growth centres.

### **Economy**

- Minimizes footprint impacts to existing businesses.
- Limited ability to support future economic, trade and tourism growth.
- Minimizes impacts to agricultural areas, and may support agricultural economy by providing for more efficient movement of agricultural products.

### **Environment**

- Minimizes footprint impacts to Niagara Escarpment and Greenbelt lands.
- Minimizes footprint impacts to other natural and cultural features.
- Minimizes air quality impacts.

### **Transportation and Cost**

- Utilizes innovative approaches to make best use of existing infrastructure.
- Relative costs are low in comparison to other alternatives.
- Helps to manage future travel demands, but cannot fully address future travel demands for people and goods movement.

The Group #1 strategies represent innovative and effective ways of improving and getting the most out of what already exists. While these strategies provide an important foundation for improving the transportation system and helping to manage future congestion in a relatively cost effective and low impact manner, they will not address all of the identified transportation problems and opportunities.

## **3.4 GROUP #2 – NEW / EXPANDED NON-ROAD INFRASTRUCTURE**

The extensive transit recommendations embodied in the *RTP* as well as GO Transit's *GO 2020 Strategic Plan* demonstrate the government's commitment to making transit a viable alternative to the automobile. The concepts proposed by this study build upon the recommendations of the *RTP* and *GO 2020*.

### **3.4.1 Overview of Group #2**

Group #2 includes significant transit, marine and air service expansion initiatives envisioned by the *RTP*, *GO 2020*, HIA and Port of Hamilton that serve the study area. These include:

- Express rail service along GO Transit Lakeshore Corridor;
- GO Transit Lakeshore extension to downtown Hamilton;
- Rapid transit in Hamilton area;
- Rapid transit along Highway 5;
- Rapid transit along Trafalgar Road;
- Rapid transit along Brant Street;
- Bus Rapid Transit and Transitway along 407 ETR / 403;
- GO Transit expanded service to Niagara Falls;
- Port of Hamilton Infrastructure Development Strategy;
- Sea3 – container feeder service between Hamilton and Montreal;

- HIA – expansion of existing taxiways and terminal; and
- Expanded and improved parking facilities at some transit stations.

In addition to these strategies, the study team identified a number of complementary strategies, which may be further supplemented and refined. These strategies are described in further detail below:

#### **Hamilton-Focused Inter-Regional Transit Service**

The concept of a Hamilton-focused inter-regional transit service is based on Hamilton's increasing role as a significant employment area, which is anticipated to continue to increase over the coming decades. A transit service that is focused on Hamilton would therefore offer scheduling that would allow commuters in the outlying areas surrounding the City of Hamilton to access the employment districts within Hamilton during peak periods.

#### **Transit Supportive Highway Corridors**

This concept involves introducing reserved bus lanes, HOV lanes, bus bypass shoulders and other transit supportive measures within existing provincial facilities such as the QEW, Highway 403, Highway 401, etc. that would serve to make bus transit a more reliable and viable service.

#### **Bus Transit Service between HIA and Niagara Tourist Destinations**

Through consultation with the HIA, it is understood that a significant portion of tourists that arrive at the airport are destined to the Niagara tourist areas. While the airport offers limited shuttle services to Niagara, these services are not well utilized due to their limited frequency and availability. The airport has suggested that there is a latent demand for a dedicated bus transit service that provides services to Niagara Falls and other tourist areas.

#### **New Inter-Regional Transit Links between Urban Growth Centres**

This concept involves providing a western 'web' of passenger transit services which would provide coverage to the Kitchener-Waterloo, Guelph, Cambridge, Hamilton and Brantford areas and could be combined with the Hamilton focused inter-regional transit service described above. The concept would initially focus on bus services, but in the longer term could involve providing new passenger rail services on existing rail corridors to link urban growth centres. Given that these are smaller growth centres and the potential ridership may not be significant, an opportunity exists to use smaller train systems or even self-propelled railcars, which can be individual or clustered. Rail stations would be comprised of multi-modal facilities to provide for a well-connected and integrated transportation system.

### **3.4.2 Assessment of Group #2**

The high level assessment of the Group #2 alternative (which also includes the Group #1 alternative) on the basis of potential community, economic, environmental impacts as well as transportation considerations and costs is summarized below.

#### **Community**

- Provides greater choice for commuters and tourists.
- May provide improved connections between urban growth centres to a limited extent.

- Potential for minor impacts to existing residences and community features.
- Does not fully accommodate future planned population and employment growth.

### **Economy**

- Provides greater choice for shippers.
- Limited ability to support future economic, trade and tourism growth.
- May result in localized impacts to agricultural areas.
- May support agricultural economy by providing greater choice for transportation of agricultural products.

### **Environment**

- Potential for impacts to Niagara Escarpment and Greenbelt lands.
- Potential for impacts to other natural and cultural features.
- Potential for impacts to air quality in built up areas.

### **Transportation and Cost**

- Provides greater choice and a more balanced transportation system.
- Relative costs will vary in comparison to other alternatives.
- Cannot fully address future travel demands for commuters, goods movement and tourists.

## **3.5 THE NEED FOR ROADWAY BASED SOLUTIONS**

By 2031, the population in the GGH is expected to increase by almost 4 million people. To accommodate this growth, the study team anticipates that by 2031:

- The land use intensification targets prescribed in *The Growth Plan* will be fully achieved;
- Urban growth centres will be built with transit supportive densities and a healthy mix of land uses;
- The development of compact, vibrant and complete communities will be fostered in which people will live, work and play;
- An additional 700 million transit trips within the GTHA will be accommodated;
- All current provincial transportation plans, such as the *RTP* and the *GO 2020 Strategic Plan*, will be implemented;
- More commuters will switch from single occupant cars to transit, carpools and active transportation (i.e., cycling);
- A significant share of goods transport will be diverted from long distance trucks to other modes;
- The existing transportation infrastructure will be optimized through implementation of the Group #1 type initiatives; and
- More non-road based infrastructure such as the Group #2 initiatives will be implemented, along with additional related actions.

Based on the above, the potential of all transportation modes has been explored and together with the *RTP* and the *GO 2020 Strategic Plan*, the potential of existing infrastructure will be fully maximized.

Notwithstanding these positive improvements, by the year 2031, roadway conditions will become increasingly congested, with severe congestion in the vicinity of the Burlington Skyway and the QEW / Highway 403 / 407 ETR Interchange. This is fully the result of the projected growth in population and employment in the GGH.

To realize the vision of a functional transportation network that provides user choice and balance, additional roadway capacity will be required: either by widening existing highways (Group #3) and / or protecting for new transportation corridors (Group #4). While the draft Strategy includes long-term roadway recommendations, the Ontario government's first priority will be on optimization of existing infrastructure and transit improvements / expansion.

### **3.6 GROUP #3 – WIDEN / IMPROVE ROADS**

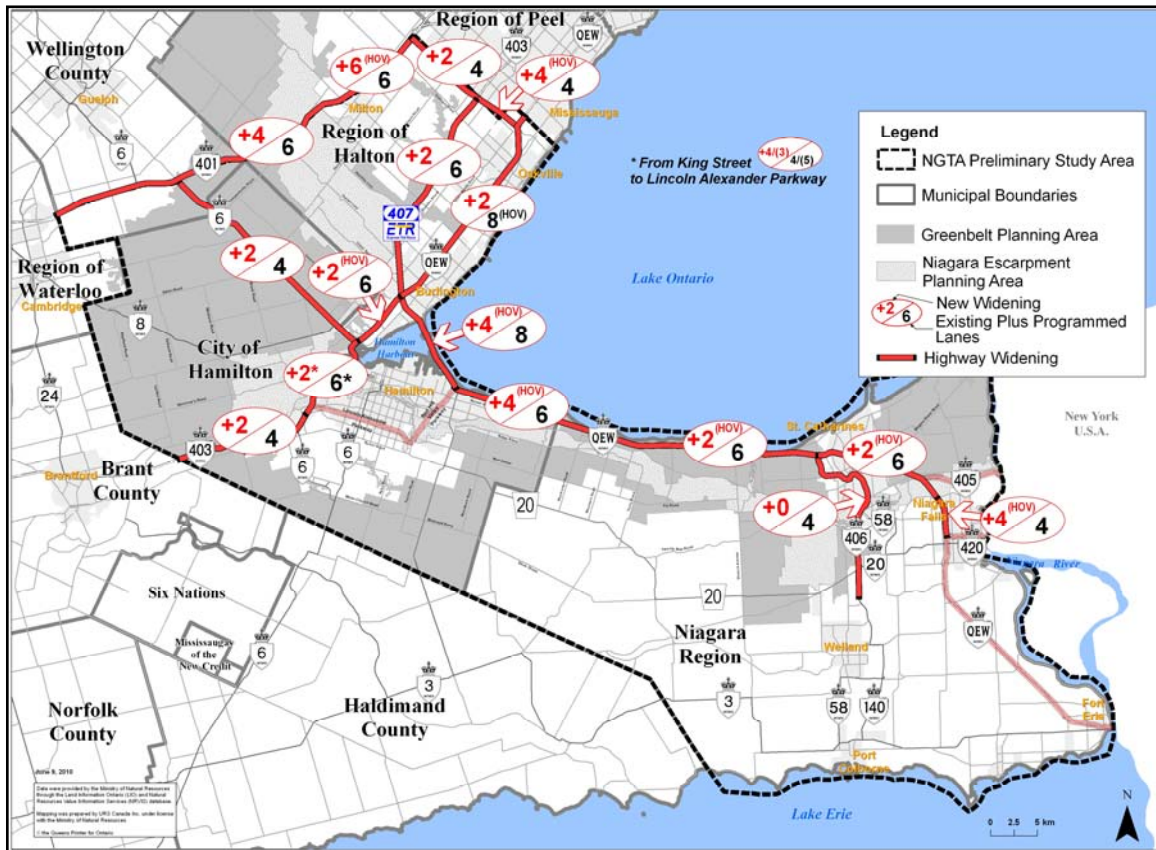
The Group #3 alternative has been developed to address the future transportation problems that have been identified within the study area. As such, the additional roadway widening described in the following section are based on providing adequate traffic capacity, operations and safety conditions on existing provincial facilities to the year 2031.

#### **3.6.1 Overview of Group #3**

Group #3 includes all of the elements from Group #1 and Group #2 as well as the widening of existing provincial inter-regional transportation facilities, as illustrated in **Exhibit 3-3**.

Within the 'ovals' on this exhibit, the lower (black) number indicates the number of lanes that are existing as well as any widening that has already been planned. The upper number (red) indicates the number of lanes that will be required over and above the existing and planned lanes. The number of lanes required was calculated based on the travel demand analysis completed during the identification of Transportation Problems and Opportunities, and as summarized in the *Area Transportation System Problems and Opportunities Report, July 2009* (under separate cover). These widenings reflect what will be needed after all transit plans are implemented, all modal shifts have been made, all trips have been reduced by TDM, and all growth has been managed / intensified. This incremental widening is the basis for comparing the Group #3 alternative to the Group #4 alternative.

Exhibit 3–3: Alternative 3-1 Widening Alternative



### 3.7 GROUP #4 – NEW TRANSPORTATION CORRIDORS

#### 3.7.1 Overview of Group #4

The Group #4 alternatives reflect what will be needed after all transit plans are implemented, all modal shifts have been made, all trips have been reduced by TDM, all growth has been managed / intensified, and the recommended highway widenings have been made. Group #4 includes all of the elements from Group #1 and Group #2 and some of the highway widening identified in Group #3, as well as the following new corridor alternatives:

- New corridor connecting either:
  - QEW in Fort Erie / Niagara Falls area to Highway 403;
  - QEW in Fort Erie / Niagara Falls area to Highway 401; or
  - QEW in Fort Erie / Niagara Falls area to 407 ETR.
- A combination of new and existing corridors to provide a bypass around urban core of the City of Hamilton, together with an upgrade or widening of Highway 406 connecting to a new corridor between Highway 406 and QEW south of Niagara Falls.

Each of the new corridor alternatives is depicted in **Exhibits 3-4 to 3-7**. For the detailed assessment of Group #3 and Group #4, please refer to **Chapter 4** of this report.

Exhibit 3-4: Alternative 4-2 New Corridor Connecting to Highway 403 West of Hamilton

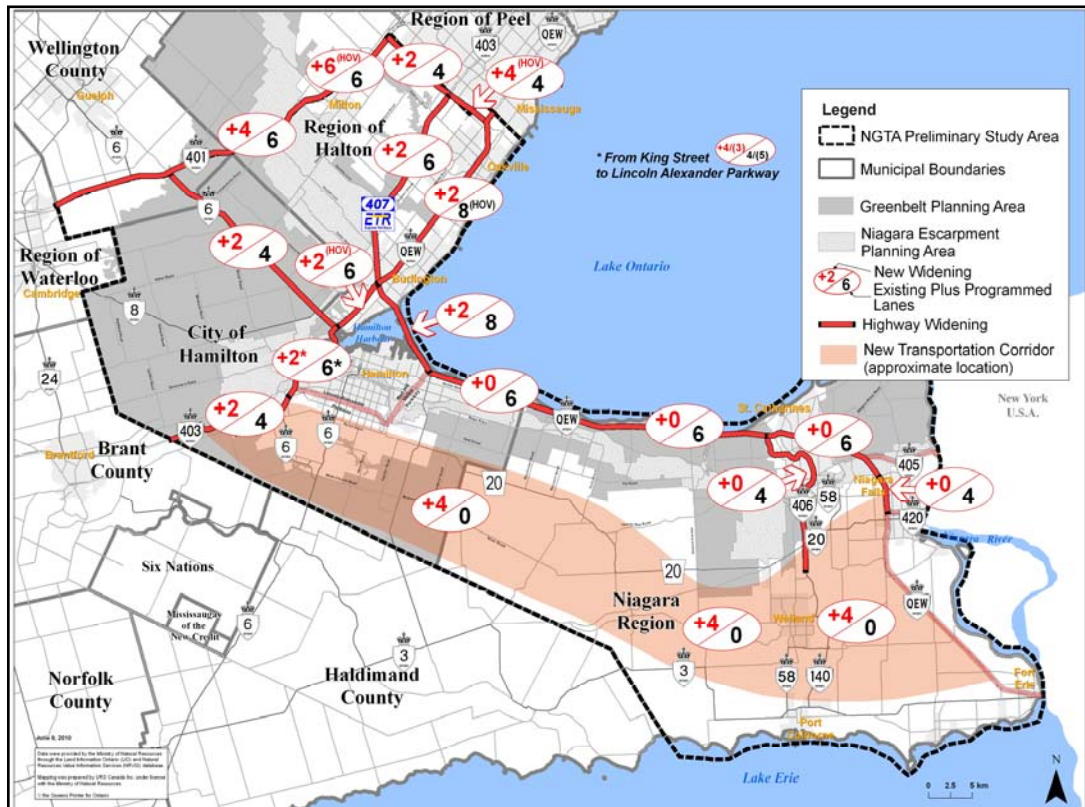


Exhibit 3-5: Alternative 4-3 New Corridor Connecting to Highway 401 West of Milton

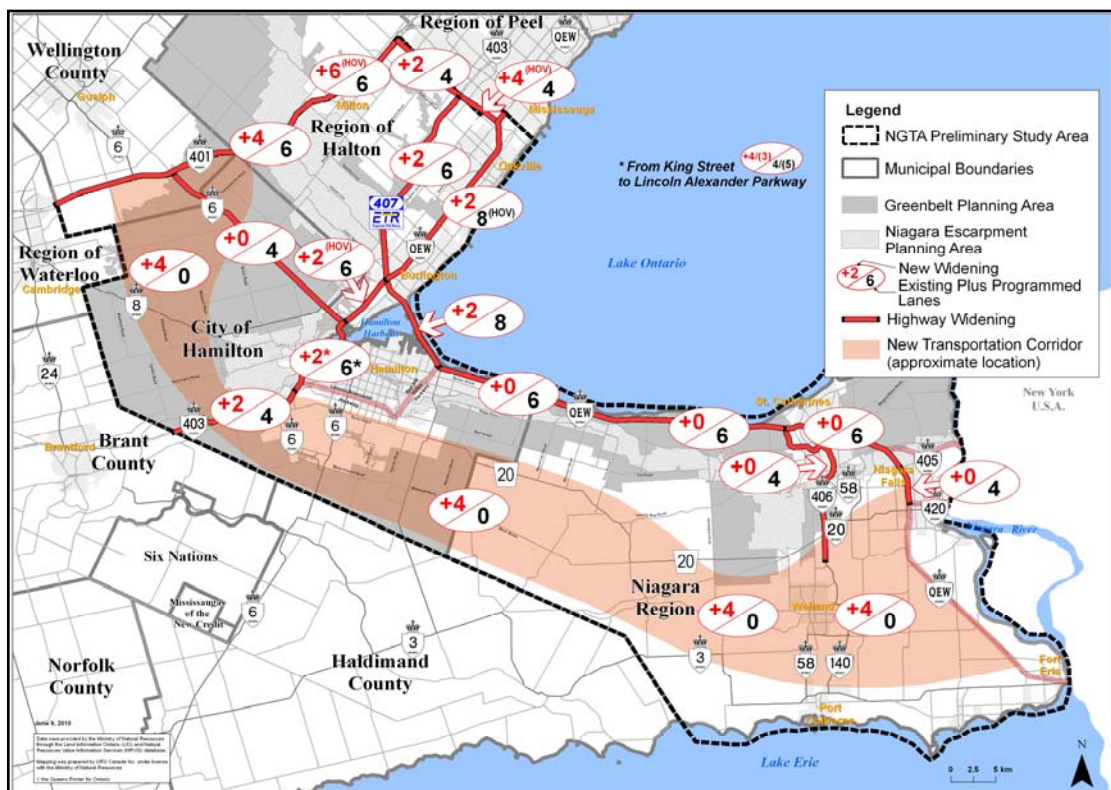


Exhibit 3-6: Alternative 4-4 New Corridor Connecting to 407 ETR

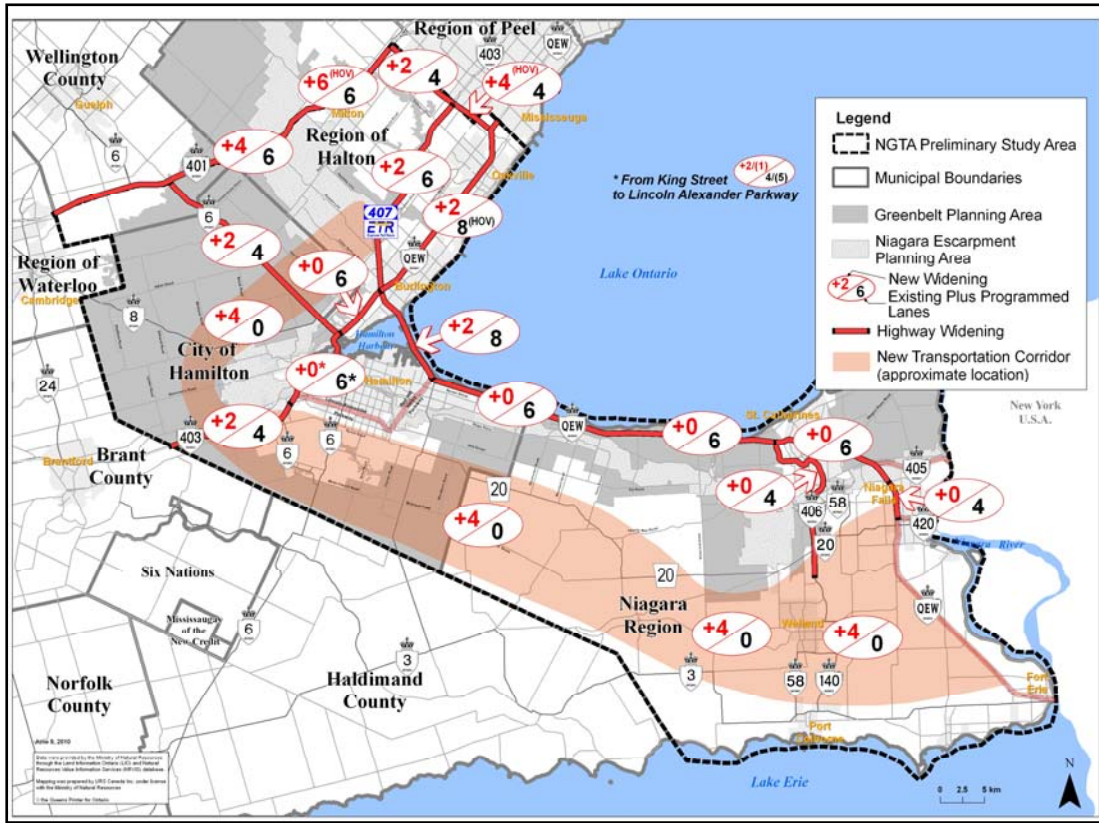
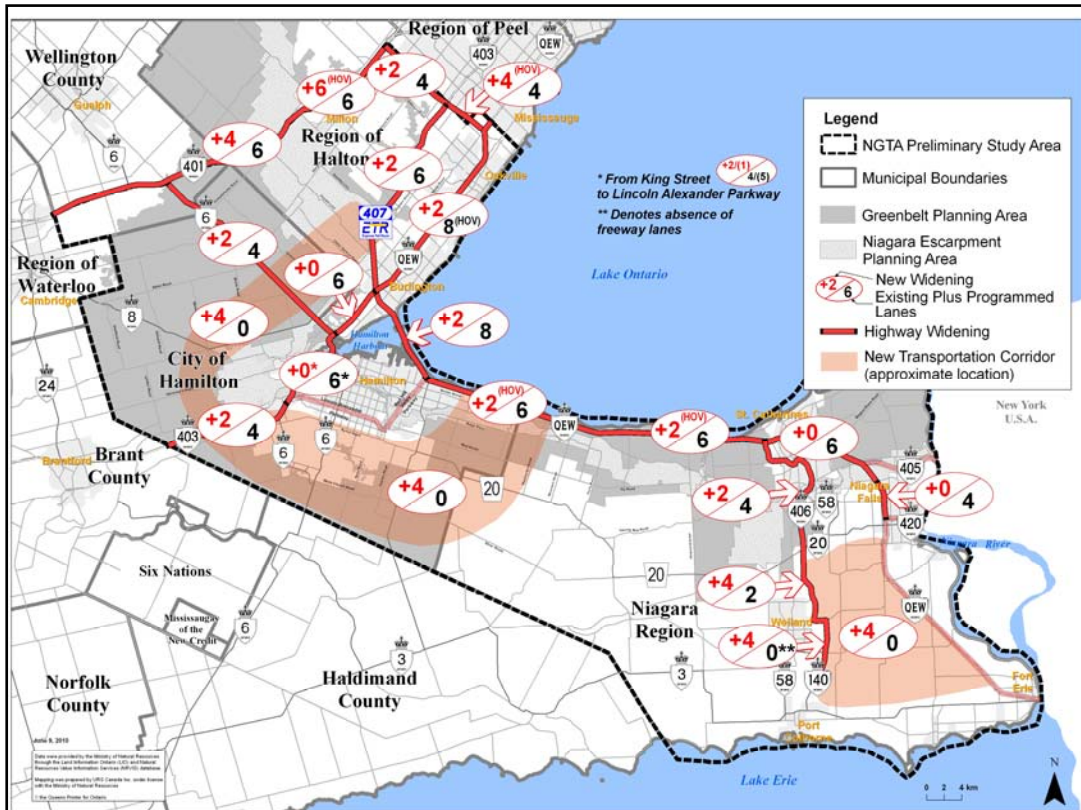


Exhibit 3-7: Alternative 4-5 New Bypass / Link Corridors





## 4. Assessment of Group #3 and Group #4 Transportation Alternatives

### 4.1 ANALYSIS OVERVIEW

#### 4.1.1 Triple Bottom Line Approach

The analysis of Group #3 and Group #4 was divided into four work streams, based on consideration of the “Triple Bottom Line” as well as Transportation and Engineering considerations:

- **Environment** – potential impacts to fish and fish habitat; terrestrial ecosystems; groundwater; etc.
- **Community** – potential impacts to residences; businesses; agriculture; noise; air quality; built heritage; archaeology; etc.
- **Economy** – economic benefits of increased transportation capacity to all sectors of the GGH economy, as well as the ability of each alternative to support future employment growth (including tourism) and municipal economic development objectives.
- **Transportation and Engineering** – future traffic capacity, operational and safety conditions as well as significant constructability issues, and costs.

This approach was demonstrated through the study team’s assessment tables, the main factors included in the tables were Natural Environment, Land Use / Socio-Economic Environment, Cultural Environment, Area Economy and Transportation. The Community work stream was divided up into Land Use / Socio-Economic and Cultural Environment, in the tables, to be consistent with the NGTA ToR (As Amended February 16, 2006) and Study Plan (December 2007).

#### 4.1.2 Reasoned Argument

The environmental, community, economic, and transportation criteria to support the assessment and evaluation of alternatives are outlined in the tables that follow in subsequent sections. Consistent with the approved ToR a “Reasoned Argument” method of evaluation was used to select a preferred alternative that was evaluated in these tables. This method highlighted the differences in potential effects associated with the various alternatives. Based on these differences, the advantages and disadvantages of each alternative were identified based on the evaluation of the trade-offs between the various categories, factors and indicators. The relative significance of the impacts was examined to provide a clear rationale for the selection of a preferred alternative. The rationale that favoured the selection of one alternative over another was derived from the following sources:

- Government legislation, policies and guidelines;
- Municipal policy (i.e., Official Plans);
- Issues and concerns identified during consultation with ministries and agencies, municipalities, ratepayer and interest groups and the general public (including input obtained through the weighting of the relative level of importance of evaluation criteria); and
- Study Team expertise.

## 4.2 FACTORS AND CRITERIA

Factors and criteria were used to evaluate the short list of Area Transportation System Alternatives. These factors and criteria were first established in the NGTA ToR. The criteria are intended to assist the factor specific environmental and transportation specialists in determining the overall impact of the various alternatives on the natural, social, economic and cultural environment, as well as transportation considerations and cost. In determining the overall impact, the specialists consider how the various factors and criteria interact and function together. Since the NGTA ToR was approved by MOE in June 2006 the factors and criteria have been further developed to provide a higher level of detail during the Preliminary Planning stage. Sub factors, as well measurements of effects, have been refined through stakeholder input for use in this phase of the EA. This portion of the table can be seen in **Table 4.1**.

The assessment of the Area Preliminary Planning Alternatives includes not only quantitative measures of “footprint” impacts, where applicable, but also includes a qualitative examination of potentially impacted systems or functions, where applicable. This will be described in subsequent sections and demonstrated in the tables throughout the findings.

Table 4–1: Factors and Criteria

FACTOR	SUB-FACTOR	EVALUATION CRITERIA	MEASUREMENT OF THE EFFECTS
<b>1.0 Natural Environment</b>			
1.1 Fish and Fish Habitat	1.1.1 Fish Habitat	Potential to affect sensitive fish habitat and fish community.	Qualitative assessment that considers the nature, significance and sensitivity of fisheries and aquatic habitat using, as indicators: <ul style="list-style-type: none"> <li>• the presence and density of warmwater and coldwater watercourse;</li> <li>• watercourse habit (e.g., degree of meander); and</li> <li>• the presence and density of aquatic Species at Risk (SAR).</li> </ul>
	1.1.2 Fish Community		Qualitative assessment using, as indicators: <ul style="list-style-type: none"> <li>• the type(s) of fish communities (i.e., warmwater / coldwater); and</li> <li>• aquatic SAR.</li> </ul>
1.2 Terrestrial Ecosystems	1.2.1 Wetlands	Potential to affect provincially and locally significant wetlands.	Qualitative assessment considering the nature, significance and sensitivity of wetland units based on density and classification; as well as, potential to avoid or mitigate impacts. Also, where feasible, a qualitative assessment of the nature of potential impact(s) (fragmentation, encroachment, loss) including impacts to wetlands and adjacent lands (within 120 metres of an individual wetland, or element of a wetland complex).
	1.2.2 Woodlands and Other Vegetated Areas (e.g., forest stands, woodlots, interior forest habitat and significant woodlands)	Potential to affect significant forest and vegetation communities.	Qualitative assessment considering the nature, significance and sensitivity of upland vegetation units based on the presence and / or density of: <ul style="list-style-type: none"> <li>• interior habitat (&gt;100m and &gt;200m);</li> <li>• terrestrial Species at Risk (SAR);</li> <li>• S-Rank (1-3) species; and</li> <li>• sensitive or rare vegetation communities (based on provincial ELC ranks), as available.</li> </ul> Also, where feasible, a qualitative assessment of the nature of potential impacts (fragmentation, encroachment, loss) to

FACTOR	SUB-FACTOR	EVALUATION CRITERIA	MEASUREMENT OF THE EFFECTS
	1.2.3 Wildlife Habitats and Movements	Potential to affect significant wildlife habitat and wildlife movement opportunities.	significant upland vegetation units; and the potential to avoid or mitigate impacts to significant upland units.  Qualitative assessment considering the nature, significance and sensitivity of significant wildlife habitat and landscape connectivity based on the presence and density of: <ul style="list-style-type: none"> <li>• species at risk (SAR);</li> <li>• known wildlife use (e.g., deer overwintering areas, waterfowl staging, etc.); and</li> <li>• landscape-level habitat connectivity.</li> </ul> Also, where feasible, a qualitative assessment of the nature of potential impact(s) (fragmentation, encroachment, loss) to significant wildlife habitat and landscape connectivity; and the potential to avoid or mitigate impacts to significant wildlife habitat and landscape connectivity.
1.3 Groundwater	1.3.1 Areas of Groundwater Recharge and Discharge, highly vulnerable aquifers and areas of complex ground water surface water interaction.	Potential to affect areas of groundwater recharge and discharge.	Qualitative assessment based on soil type and permeability to identify areas of high, moderate, low groundwater recharge capability, including consideration of number and location of groundwater recharge and discharge areas. Regional mapping of aquifer vulnerability to spills or releases is also considered as a secondary constraint.
	1.3.2 Groundwater Source Areas and Wellhead Protection Areas (WHPA)	Potential to affect groundwater source areas and wellhead protection areas.	Number and location of wellhead protection areas potentially affected.
1.4 Surface Water	1.4.1 Watershed / Sub-Watershed Drainage Features / Patterns	Potential to affect existing drainage systems associated with permanent watercourses.	Qualitative assessment of new pavement area.
1.5 Designated Areas	Designated Areas are defined by resource agencies, municipalities, the government and / or the public, through legislation, policies, or approved	Potential to affect designated areas.	Qualitative assessment of the nature and significance of potentially impacted designated areas, including consideration of ability to avoid or mitigate impacts.

FACTOR	SUB-FACTOR	EVALUATION CRITERIA	MEASUREMENT OF THE EFFECTS
	management plans, to have special or unique value. Examples of Designated Areas include: <ul style="list-style-type: none"> <li>• Niagara Escarpment;</li> <li>• Bruce Trail;</li> <li>• Trans Canada Trail;</li> <li>• National and Provincial Parks; Designated federal wildlife / marine Areas;</li> <li>• RAMSAR wetlands;</li> <li>• Remedial Action Plan areas (RAP);</li> <li>• International Biological Program areas;</li> <li>• World Biosphere Reserves;</li> <li>• Designated heritage rivers;</li> <li>• Environmentally Sensitive Areas (ESA); Environmentally Sensitive Policy Areas (ESPA); Provincially Significant Areas of Natural and Scientific Interest (ANSI);</li> <li>• Conservation Authority parks / Open Space lands;</li> <li>• Stewardship lands; and</li> <li>• Land trust areas (such as Nature Conservancy of Canada and others).</li> </ul>		Also, where feasible, a qualitative assessment of the nature of the potential impact (fragmentation, encroachment, loss).
<b>2.0 Land Use / Socio-economic</b>			
2.1 Land Use Planning Policies, Plans, Goals, Objectives	2.1.1 Provincial / Federal land use planning policies / goals / objectives	Potential to support federal / provincial land use policies / plans /goals / objectives	Qualitative assessment of ability to support federal / provincial land use policies, plans, goals and objectives.
	2.1.2 Municipal land use planning policies / goals / objectives	Potential to support municipal Official Plans.	Qualitative assessment of potential to support municipal Official Plans.
2.2 Land Use / Community	2.2.1 Indian Reserves	Potential to affect Indian Reserves.	Qualitative assessment of potential to avoid Indian Reserves.
	2.2.2 First Nations Sacred Grounds	Potential to affect First Nations Sacred Grounds.	Qualitative assessment of potential to avoid First Nations Sacred grounds.
	2.2.3 Residential (Urban and Rural)	Potential to affect urban and residential areas.	Qualitative assessment of potential to affect urban and rural residential areas, using

FACTOR	SUB-FACTOR	EVALUATION CRITERIA	MEASUREMENT OF THE EFFECTS
			number of areas affected and potential to avoid or mitigate impacts as indicator.
	2.2.4 Commercial / Industrial	Potential to affect commercial and industrial areas.	Qualitative assessment of potential to impact commercial and industrial areas using estimated number of properties / industrial parks potentially impacted as indicator.
	2.2.5 Tourism Operations	Potential to support tourist areas and attractions.	Qualitative assessment of potential to impact or support tourist areas and attractions in the study area.  NOTE: Potential impacts / benefits to tourism travel beyond the study area are dealt with under Economic Factor.
	2.2.6 Community Facilities / Institutions	Potential to affect major community facilities and institutions.	Qualitative assessment of the potential to affect major community facilities and institutions using, as indicators, type and the approximate number.
2.3 Noise	2.3.1 Transportation Noise	Potential for increased transportation noise in Noise Sensitive Areas (NSAs) (residential areas and sensitive institutional uses).	Qualitative description of the: <ul style="list-style-type: none"> <li>• different types of noise impacts;</li> <li>• locations of increased noise;</li> <li>• proximity to NSAs; and</li> <li>• magnitude and severity of impacts.</li> </ul>
2.4 Air	2.4.1 Local air quality	Potential for exposure of sensitive receptors to various levels of air pollution (including extent and duration of exposure).	Size of sensitive areas where a quality threshold may be exceeded.
	2.4.2 Regional Air Quality	Incremental annual amounts of air pollutants (criteria air contaminants emitted into the region for the horizon year).	Network-wide, peak hour emissions of NOx, CO, THC and PM.
	2.4.1 Greenhouse Gas Emissions	Incremental annual amounts of greenhouse gases emitted per annum for the horizon year.	Network-wide, peak hour emissions of Greenhouse gases.
2.5 Land Use / Resources	2.5.1 First Nations Treaty Rights and Interests or Use of Land and Resources for Traditional Purposes	Potential to affect First Nations Treaty Rights and Interest or use of land and resources for traditional	Potential to impact FN Treaty rights and interests or use of land and resources for traditional purposes (i.e., hunting, fishing, harvesting food and medicinal plants, etc.)

FACTOR	SUB-FACTOR	EVALUATION CRITERIA	MEASUREMENT OF THE EFFECTS
		purposes	
	2.5.2 Agriculture	Potential to affect specialty crop areas and / or areas of Canada Land Inventory Classes 1, 2 and 3 soils.	Qualitative assessment of prime agricultural lands and description of specialty crop areas. Number of property parcels that could potentially impact agricultural lands.
	2.5.3 Recreational Lands and Natural Areas of Provincial Significance (e.g. national / provincial parks, conservation areas, major trails)	Potential to affect parks and recreational areas.	Number of parks and recreational areas potentially affected.
	2.5.4 Aggregate and Mines	Potential to affect aggregates and mineral resources sites.	Number of pits and quarries potentially affected.
2.6 Municipal Services	2.6.1 Major Utility Transmission Corridors	Potential to affect major utility transmission corridors.	Number of potential major utility transmission corridors that could be potentially impacted.
2.7 Contaminated Property Identification and Management	Landfills, Hazardous Waste Sites, Brownfield Areas, etc.	Potential for release of existing site contamination from landfills (open and closed), hazardous waste sites and other known contaminants.	Number and type of contaminated sites potentially affected.
<b>3.0 Cultural Factors</b>			
3.1 Cultural Heritage – Built Heritage and Cultural Heritage Landscapes	3.1.1 Buildings (i.e., standing sites of architectural or heritage significance, Ontario Heritage Properties, heritage bridges, cemeteries) and Cultural Heritage Landscapes (i.e., areas of historic 19 <sup>th</sup> century settlement).	Potential to affect cultural heritage areas / resources	Qualitative assessment of the potential to impact built cultural heritage areas and resources.
	3.1.2 First Nations Burial Sites	Potential to affect known burial sites.	Qualitative assessment of the potential to impact First Nations Burial Sites.
3.2 Cultural Heritage – Archaeology	3.2.1 Pre-Historic and Historic First Nations Sites	Potential to affect significant pre-historic and historic First Nations archaeological sites of extreme local, provincial or national interest.	Qualitative assessment of potential to impact archaeological sites of historical significance to First Nations.
	3.2.2 Archaeological Sites or Resources	Potential to affect significant archaeological sites of extreme local, provincial or national interest.	Qualitative assessment of impacts to archaeological sites or resources using impacts to undisturbed areas as indicator.

FACTOR	SUB-FACTOR	EVALUATION CRITERIA	MEASUREMENT OF THE EFFECTS
<b>4.0 Area Economy</b>			
4.1 First Nations Industry		The potential to support First Nations industry.	Potential to support heavy industry and trade by efficient and reliable goods movement.
4.2 Heavy Industry and Trade		Potential to support heavy industry and trade by efficient and reliable goods movement.	Qualitative economic impact analysis. Use of TREDIS.
4.3 Tourism and Recreation Industry		Potential to support tourism and recreation industry by efficient and reliable movement of people.	Qualitative economic impact analysis. Use of TREDIS.
4.4 Agriculture Industry		Potential to support area agriculture industry by efficient movement of goods.	Qualitative economic impact analysis. Use of TREDIS.
<b>5.0 Transportation</b>			
5.1 Traffic Operations		Potential impact on traffic operations due to factors such as design features and transportation network connections	Peak period performance of key corridors – forecast volume / capacity issues at critical screenlines  Peak period performance of key inter-regional corridors – forecast volume / capacity issues at critical screenlines  Potential to provide for higher order inter-regional transportation corridors (qualitative)  Percentage of inter-regional trips* on key corridors at critical screenlines
5.2 Commuter Travel Characteristics		Potential impact on commuter trip distribution and trip length	Percentage of peak period self-containment of trips with the municipality / region  Average automobile trip length (km)  Potential to support transit opportunities on a new corridor ^
5.3 Efficient movement of people		Potential to support the efficient movement of people between communities and regions by road	Percentage of inter-regional network operating better than LOS D (automobile km)  Percentage of local road network operating better than LOS D (automobile km)



FACTOR	SUB-FACTOR	EVALUATION CRITERIA	MEASUREMENT OF THE EFFECTS
			Percentage of inter-regional automobile trips* using the local road network  Automobile hours of delay on the inter-regional transportation network* (automobile hours)  Average automobile vehicle occupancy  Total persons moved in study area
5.4 Efficient movement of goods		Potential to support the efficient movement of goods between communities and regions by road	Percentage of inter-regional system operating better than LOS D (truck km)  Percentage inter-regional truck trips* using the local road network  Truck hours of delay on the inter-regional transportation network*
5.5 System reliability / redundancy		Potential to support system reliability and redundancy for travel (people and goods) between regions and communities during adverse conditions	Availability of alternate routes / facilities for inter-regional transportation between regions, communities and terminals (qualitative)  Potential to improve transportation system reliability (qualitative)
5.6 Safety		Potential to improve traffic safety based on opportunity to reduce congestion on the area road network	Potential to improve response times for emergency service providers due to reduced congestion on the inter-regional road network (refer to volume-capacity ratio in Traffic Operations)  Potential to reduce collisions due to improved network LOS (refer to LOS in Traffic Operations)
5.7 Modal integration, balance and choice for movement of people (commuters, recreation / tourist)		Potential to improve modal integration, balance and choice for person trips between communities, employment centres and major transit hubs	Potential to increase attractiveness / effectiveness of existing, new and improved transit services (qualitative)  Peak period transit mode share (by destination)

FACTOR	SUB-FACTOR	EVALUATION CRITERIA	MEASUREMENT OF THE EFFECTS
			Provision of higher order inter-regional transit services (qualitative)  Provision of linkages between inter-regional and regional / community (local) transit systems (qualitative)  Bus operational performance on inter-regional road network (refer to LOS in Traffic Operations)  Availability / provision of alternate travel modes for tourism / recreational travel (qualitative)  Provision of / allowance for active transportation measures (e.g., bike lanes, bike racks on buses / trains) (qualitative)
5.8 Modal integration, balance and choice for movement of goods		Potential to improve modal integration, balance and choice for goods movement between ports and terminals, communities and employment centres.	Potential to improve accessibility of inter-modal centres, ports and terminals (qualitative)
5.9 Linkages to population and employment centres		Potential to improve accessibility to urban growth centres, Gateway Economic Centres and Gateway Economic Zones for people and goods movement based on higher order network continuity and connectivity	Availability / provision of higher order linkages between urban growth centres, Gateway Economic Centres and Gateway Economic Zones (qualitative)  Accessibility of urban growth centres, Gateway Economic Centres and Gateway Economic Zones (qualitative)  Percentage change in peak hour travel times between urban growth centres
5.10 Recreation and tourism travel		Potential to support recreation and tourism travel within and to / from the study area	Directness of routes between population centres, international gateways and tourist / recreation destinations (qualitative)

FACTOR	SUB-FACTOR	EVALUATION CRITERIA	MEASUREMENT OF THE EFFECTS
			<p>Peak period (summer / weekend) transportation system performance on key inter-regional corridors – forecast volume / capacity issues at critical screenlines</p> <p>Diversion of summer recreational trips from local and regional roadways (qualitative)</p>
5.11 Constructability		<p>Potential to ease implementation considering relative cost, relative property impacts, feasibility / difficulty and requirements for environmental mitigation.</p>	<p>Cost (range)</p> <p>Feasibility of implementation (including interchange reconstruction requirements, impacts on existing schemes, etc.).</p> <p>Potential transportation construction staging impacts.</p> <p>Requirements for environmental mitigation.</p>

### 4.3 NATURAL ENVIRONMENT

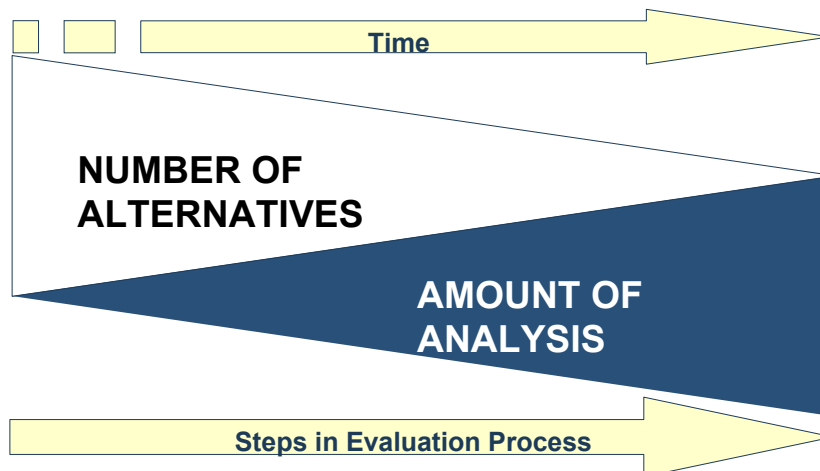
#### 4.3.1 Methodology

Background information (secondary source) about natural environmental (aquatic and terrestrial ecosystem) features and sensitivities has been compiled, reviewed, analyzed throughout Phase 1. A preliminary overview of the initial information and mapping is provided in the *Existing Environmental Conditions and Constraints Report* (2007) that was produced early in the study. This initial information / database and subsequent updates have formed the basis of the natural environmental input to the initial screening of transportation strategies and the assessment and evaluation of Group #3 and Group #4 alternatives.

The provincial Land Information Ontario (LIO) and MNR's Natural Resource Values Information System (NRVIS) databases comprise the key information sources for the natural environmental mapping during Phase 1. These sources provide the most consistent coverage of base natural environmental information across the broad study area and therefore are most useful when comparing transportation planning alternatives across such a broad region.

The study team also used other secondary source information (i.e., mapping, aerial photography, documentation, other studies, reports, websites, etc.) obtained from agencies (Conservation Authorities), ministries (MNR) and municipalities during the study. While this information certainly augmented the team's knowledge in specific areas, it generally proved to be too localized in nature to be valuable for comparisons among broad regional strategies. This challenge is described further, below.

The underlying principle guiding the generation and assessment of alternatives is to start with a broad perspective and narrow to the more focused as the study progresses. The concept of focusing the range of alternatives and increasing the level of environmental and technical investigations as the project progresses is schematically illustrated below. This approach is based on MTO's existing policies and protocols and has been used on many similar EA studies in Ontario.



In terms of the data and information used to support the assessment and evaluation, there are several considerations and data challenges, and limitations that must be recognized. These are discussed below.

- The Phase 1 assessment is based on secondary source information, which is consistent with the approved ToR and appropriate given the large geographic area,

- broad scale and high level strategic planning nature of this phase of study. Field-based data collection programs will obviously be a major component of future phases and this more detailed information will appropriately guide the finer levels of planning / design. As such, the information on which the assessment is based is entirely that which was received from the province and agencies. As the study progresses into Phase 2 and specific routes are defined the level of detail of information will increase, which is common practice for studies of this type.
- As noted above, the ability to incorporate more detailed local information provided by agencies and municipalities was limited by the fact that this information was inconsistent in its coverage on a regional level. That is, the information provided by one CA / municipality / agency was not necessarily matched in other areas.
  - Rare species information obtained from MNR's Natural Heritage Information Centre (NHIC) database was used to provide information about the sensitivity and significance of habitats potentially affected by the transportation planning alternatives. However, rare species information had certain limitations for use in the assessment and evaluation. Records of rare species occurrences depend greatly on where surveys are undertaken and particular survey methods. On such a broad / regional scale, high densities of rare species occurrences may be a function of surveys being preferentially targeted in certain areas (e.g., an abundance of information is available for areas of the Niagara Escarpment). The absence of rare species records does not necessarily mean that rare species are not present. Therefore, while rare species information was useful where it was present, a lack of information was not interpreted as an absence of rare species and as such, caution was applied in using this information.

Assessment of the Group #4 alternatives focused on the geographic distribution of features within corridors and identifying constraint areas (natural features or areas of high concentrations of natural features that should be avoided) and potential impacts to sensitive or significant natural features within the corridors. The assessment highlights particular routing challenges that may be faced in Phase 2 rather than providing a quantitative account of impacts to natural features within corridors because these are impossible to predict in a high level strategic planning study. This approach recognizes that future potential routes generated within a given corridor will not necessarily result in impacts to every natural feature within that corridor, and that impacts to natural features within a given corridor may be largely avoided or minimized through careful route planning (in the next phase of the EA).

In other instances, it was apparent when natural features were so large or linear in nature that they occupied a large portion of a corridor and as such may not be completely avoided (e.g., The Beverley and Sheffield / Rockton Provincially Significant Wetland Complexes and the Niagara Escarpment). In these cases, the assessment focused on identifying the sensitive features, acknowledging the particular routing challenges and potential for significant natural environmental impacts and identifying any potential opportunities to minimize impacts that might be achieved through careful routing during Phase 2. These types of distinctions about the magnitude of potential impacts and the likelihood of avoidance or mitigation were noted in the assessment tables.

When comparing the Group #3 and Group #4 alternatives, the study team sought to balance the differences in the level of detail or information and what was known or unknown about the particular elements of the Group #3 and #4 alternatives. For widening alternatives, the nature and extent of the impacts to natural features is

relatively straightforward to assess and can be estimated quantitatively. However, given the magnitude of the corridors for the Group #4 alternatives and the issues described above, this detail cannot be matched for the Group #4 alternatives. To maintain consistency, a qualitative assessment that focused on magnitude, extent and significance of potential impacts was used for assessing and comparing the Group #3 and Group #4 alternatives. Generally speaking, Group #3 natural environmental impacts involved encroachment into adjacent natural areas, many of which had been previously impacted by the existing transportation facilities. However, specific areas or 'hotspots' of significant impacts associated with Group #3 are identified and discussed in the assessment tables.

#### **4.3.2 Findings**






The transportation analysis findings are summarized through the following assessment of Area Transportation System Alternatives (**Table 4-2**). The subsequent sections will summarize the factors and key issues that lead to the development of the draft Strategy.

Table 4-2: Natural Environment Findings






Factor	Sub-Factor and Measure	Alternative 3-1	Alternative 4-2	Alternative 4-3	Alternative 4-4	Alternative 4-5
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1.0 Natural Environment Factors






<p>1.1 Fish and Fish Habitat</p>	<p>1.1.1 Fish Habitat <i>Measure:</i> <i>Qualitative assessment that considers the nature, significance and sensitivity of fisheries and aquatic habitat using, as indicators:</i></p> <ul style="list-style-type: none"> <li>- the presence and density of warmwater and coldwater watercourse;</li> <li>- watercourse habit (e.g., degree of meander); and</li> <li>- the presence and density of aquatic Species at Risk (SAR).</li> </ul>	<p>Widening of existing roads will result in incremental increases in culvert lengths with limited opportunities to redesign crossing types (i.e., culverts vs. "spanning" structures).</p> <ul style="list-style-type: none"> <li>- Opportunity to retrofit for improved water quality treatment is more limited than with new corridor construction.</li> </ul> <p>The areas with potential for high impacts to fish and fish habitat are:</p> <ol style="list-style-type: none"> <li>1. Improvements to the QEW / Red Hill Valley Parkway interchange to accommodate additional lanes – which will likely impact Red Hill Creek and Van Wagners Marsh; and</li> <li>2. Widening Highway 403 adjacent to Cootes Paradise, where its tributary parallels Highway 403 (between Cootes Paradise and Longwood Drive) – direct / indirect impacts to Cootes Paradise are likely.</li> </ol> <p>Despite the potential for high levels of localized impacts to fish and fish habitat (due to infilling, realignments, etc.), the magnitude of effect is considerably lower relative to the potential impacts associated with a new corridor (i.e., 100+ watercourse crossings; infilling of numerous wetland features); particularly with respect to Endangered, Threatened and Special Concern Species.</p> <p>Widening of existing roads may cause further impact to already impacted reaches with aquatic SAR (based on DFO Aquatic SAR mapping). One or more reaches may be impacted on the following watercourses that have been identified as having aquatic SAR: Twelve Mile Creek, Fourteen Mile Creek, Sixteen Mile Creek, Bronte Creek, Hamilton-Westdale area, Joshua's Creek.</p> <p>Overall impacts to aquatic SAR would be less than with a new corridor as the areas to be impacted are already of reduced quality.</p>	<p>New corridor will likely require numerous crossings of headwater (1<sup>st</sup> and 2<sup>nd</sup> order) streams. Greater potential for Harmful Alteration, Disruption or Destruction (HADD) of fisheries habitat due to numerous crossings of sensitive watercourses. Good opportunity to avoid / minimize effects through siting and design (e.g., span valleys); and to treat water quality in a Greenfield setting.</p> <p>Major watercourse systems within the corridor include: Welland River, Twenty Mile Creek, Welland Canal, and Lyons Creek.</p> <p>Major tributaries include: Three Mile Creek, West Wolf Creek, Wolf Creek, Sinkhole Creek, Moore's Creek, Mill Creek, Beaver Creek, North Creek, Parkers Creek, Black Ash Creek, Sucker Creek and Beaver Dams Creek.</p> <p>Other permanent and intermittent tributaries exist throughout the corridor.</p> <p>Tributary density is generally higher in the west half of the corridor.</p> <p>The major watercourses generally flow from west to east through the corridor (with the exception of the Welland Canal). Orientation of the major (and minor) tributaries within the study corridor varies; generally oriented on a north-south axis.</p> <p>The vast majority of the fish habitat within the corridor is mapped as warmwater.</p> <p>The only coldwater habitat identified at this broad review level, occurs in the headwaters / upper reaches of the Welland River near the west limit of the corridor.</p> <p>Coldwater reaches of the Welland River extend from the southern corridor boundary to near the northern corridor boundary. Crossing of coldwater reaches may therefore be required.</p> <p>Density of watercourse reaches with aquatic SAR is relatively low at the east end of the corridor, and increase in density, with increasing watercourse density towards the west. All reaches identified with aquatic SAR are identified as having Species of Concern.</p> <p>Although there are no Endangered or Threatened species identified, and the overall density of reaches with SAR are</p>	<p>This new corridor component is the same as 4-2 between the QEW and Highway 403. Alternative 4-3 differs from 4-2 by providing a connection between Highway 403 and 401.</p> <p>Major watercourse systems within this portion of the corridor include:</p> <ul style="list-style-type: none"> <li>- Big Creek and Fairchild Creek (tributaries of the Grand River), Fletcher Creek and Spencer Creek. Portions of the Mill Creek and Sixteen Mile Creek watersheds are crossed along the west edge of the corridor.</li> <li>- Drainage is complex with flow generally being from west to east.</li> <li>- Many watercourses are inextricably linked with a major concentration of wetlands that exist across the Flamborough Plain physiographic region. This large forested wetland area serves a highly significant hydrological function as a natural storage reservoir which moderates stream flow within and across the headwaters zone of three stream systems: Fairchild Creek, Spencer Creek, and Bronte Creek.</li> <li>- The headwaters of each stream system include high quality coldwater fish habitat.</li> <li>- The forested cover and base flow contribution provided by this large swamp maintains downstream water quality.</li> </ul> <p>Impacts to aquatic SAR are similar to those for Alternative 4-2 for the portion of this alternative that is east of Highway 403. The corridor that extends from the 403 to the 401 requires crossing the dense network of watercourses associated with Beverly Swamp, Fletcher and Spencer Creeks. Watercourses through this section are identified as having Redside dace. This corridor would require numerous crossings of sensitive reaches. The potential overall impact to the aquatic system relative to SAR in this area would be significant due to the density of SAR reaches and the creation of new crossing locations.</p> <p>The complex myriad of watercourses and wetlands creates obvious challenges for</p>	<p>This new corridor component is the same as 4-2 between the QEW and Highway 403. Comparatively, Alternative 4-4 extends beyond Highway 403, providing a new connection from Hamilton to Burlington across the Niagara Escarpment.</p> <p>Major watercourse systems within this portion of the corridor include: Big Creek, Spencer Creek, and Grindstone Creek. Portions of the Bronte Creek and Sheldon Creek watersheds are crossed along the northern edge of the corridor.</p> <p>Drainage is towards Lake Ontario, with watercourse flowing either west to east or north to south.</p> <p>Drainage is complicated by: 1) the presence of the escarpment which disconnects upper and lower reaches of watercourses, and 2) karst topography which interrupts the continuous surface water features and introduces an element of underground flow not normally encountered in other parts of Ontario.</p> <p>Impacts to aquatic SAR are similar to those for Alternative 4-2 for the portion of this alternative that is east of Highway 403. The portion north and east of the 403 has a lower density of reaches identified as supporting aquatic SAR. Reaches that may be impacted include West Spencer Creek (Redside Dace), Tributaries to West Spencer and Christie Reservoir. Impacts associated with this alternative are lower than for 4-3, but greater than widening existing roads.</p> <p>Route selection should focus on avoiding or limiting coldwater stream crossings, and limiting major watercourse / tributary crossings to the extent possible.</p>	<p>Major watercourse systems within the corridor include: Welland River, Twenty Mile Creek, Eighteen Mile Creek, Fifteen and Sixteen Mile Creeks, the Welland Canal, Fifty Creek, Forty Mile Creek, Big Creek, Spencer Creek, and Grindstone Creek. Portions of the Bronte Creek and Sheldon Creek watersheds are crossed along the northern edge of the corridor.</p> <p>Major tributaries of these watercourses include Lyons Creek, Ten Creek, Gassy Brook, Three Mile Creek, Sinkhole Creek, Beaver Creek and Sucker Creek.</p> <p>Other permanent and intermittent tributaries are found throughout the corridor.</p> <p>Drainage is complicated by: 1) the presence of the escarpment which disconnects upper and lower reaches of watercourses, and 2) karst topography which interrupts the continuous surface water features and introduces an element of underground flow not normally encountered in other parts of Ontario.</p> <p>The eastern extension between Highway 406 and the QEW crosses a very high density of reaches with aquatic SAR (fish and mussels) including a SARA protected species. A new connection through this area would impact aquatic SAR with high potential for significant impacts to aquatic SAR.</p> <p>The western corridor has similar impacts to Alternative 4-4 as it extends from the 403 to the 407 ETR. There is a relatively low density reaches identified with Special Concern aquatic SAR through this area. Impacts associated with a new corridor are greater than with widening of existing roads.</p> <p>Route selection within the corridor should limit watercourse crossings to the extent possible. Crossing of the Welland Canal is unavoidable; however, crossing of the other major watercourses may be avoided through careful route selection. Crossing of major and minor tributaries will be required. Route selection</p>
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Factor	Sub-Factor and Measure	Alternative 3-1 	Alternative 4-2 	Alternative 4-3 	Alternative 4-4 	Alternative 4-5 
			<p>slightly lower, the overall impact to SAR associated with a large number of new crossings that would be required and impacts associated with development of a new corridor would be higher than with the widening of existing roads.</p> <p>Route selection within the corridor should limit watercourse crossings to the extent possible. Crossing of the Welland Canal is unavoidable; however, crossing of the other major watercourses may be avoided through careful route selection. Crossing of major and minor tributaries will be required. Route selection should focus on avoiding or limiting stream crossings with sensitive or SAR habitat, and limiting major watercourse / tributary crossings to the extent possible.</p>	<p>routing in subsequent design phases. Route selection should focus on avoiding or limiting coldwater stream crossings, and limiting major watercourse / tributary crossings to the extent possible.</p>		<p>should focus on avoiding or limiting coldwater stream crossings, and limiting major watercourse / tributary crossings to the extent possible.</p>
1.1 Fish and Fish Habitat (Cont'd)	<p>1.1.2 Fish Community <u>Measure</u> Qualitative assessment using, as indicators:</p> <ul style="list-style-type: none"> <li>- the type(s) of fish communities (i.e., warmwater / coldwater); and</li> <li>- aquatic Species at Risk (SAR).</li> </ul>	Diverse array of fish communities.	Diverse array of fish communities tends to be dominated by warm water fish communities associated with tributaries of the Welland River.	Presence of high quality coldwater fish communities in the western portion of this corridor, associated with the Beverly Swamp. High quality habitat supports resident brook trout populations.	Diverse array of fish communities.	Diverse array of fish communities.
1.2 Terrestrial Ecosystems	<p>1.2.1 Wetlands <u>Measure</u> Qualitative assessment considering the nature, significance and sensitivity of wetland units based on density and classification; as well as, potential to avoid or mitigate impacts.</p> <p>Also, where feasible, a qualitative assessment of the nature of potential impact(s) (fragmentation, encroachment, loss) including impacts to wetlands and adjacent lands (within 120 m of an individual wetland, or element of a wetland complex).</p>	<p>The areas with potential for high impacts are:</p> <p>Generally, potential for physical habitat removal where roads border existing wetland features and where widening extend beyond the existing ROW. Contaminant drift may extend further into intrusion areas.</p> <p>Similar to fish and fish habitat, the areas of high potential for impacts to wetlands are: 1) improvements to the QEW / Red Hill Valley Parkway interchange to accommodate additional lanes – which will likely impact Van Wagners Marsh PSW; and 2) widening of Highway 403 adjacent to Cootes Paradise. Despite the potential for localized impacts to wetland habitat (i.e. infilling) the magnitude of effect is low considered relative to the potential impacts associated with a new corridor, which could include impacts to numerous wetland features.</p>	<p>Greater potential for removal and fragmentation of wildlife habitat and wetlands depending on location. Fragmentation may be minimized if corridor is carefully located balancing all other opportunities and constraints.</p> <p>Four major PSW's within Corridor: Tiffany Creek, Upper Twenty Mile Creek Wetland Complex, Lower Twenty Mile Creek Wetland Complex, and Caistor Centre SE Mill Creek Tributaries.</p> <p>PSW's are generally localized in the west half of the corridor and have large gaps between them.</p> <p>Unevaluated / Non-PSW wetlands are scattered throughout the corridor and are generally well separated from one another with no distinct areas of concentration.</p> <p>Impacts to PSW can be largely avoided through careful route selection. Impacts to Unevaluated / Non-PSW wetlands can be minimized to the extent possible through careful route selection within corridor. No constraint areas requiring mandatory crossings of wetlands identified.</p>	<p>In addition to those features reported for Alternative 4-2, there are three extensive PSW complexes which occur in the western portion of the corridor: Fletcher Creek, Beverly Swamp and Sheffield-Rockton Wetland Complexes.</p> <p>The Beverly Swamp PSW is the most extensive of these - stretching some 15 km east from the edge of Waterloo Region to Highway 6 north of Freelon. Due to its position and large surface area, this wetland stabilizes stream flows and maintains the regional hydrological balance. The Beverly Swamp is located in a region characterized by a dolostone bedrock plain with shallow soils and scattered drumlins. The soils of this region are frequently too shallow, stony, and / or poorly-drained to be suitable for agriculture and, consequently, much of the surrounding area also remains in a natural condition relative to most rural landscapes in southwestern Ontario. The continuous forested wetland within this study area is one of the largest swamps in southwestern Ontario and, because it is relatively undisturbed, is also considered one of the best</p>	<p>In addition to those features reported for Alternative 4-2, there are three PSW complexes occurring in the northern portion of the corridor: Hayesland-Christie, Lake Medad and Flamborough Centre Wetland Complexes.</p> <p>The wetlands are not as extensive as in Alternative 4-3 and intervening areas of agriculture and urban / rural settlement are more prominent on the landscape. However, while it may be possible to avoid wetlands in large portions of this corridor, the orientation of wetlands such as Lake Medad, relative to the corridor means that a crossing resulting in encroachment or fragmentation of Provincially Significant wetlands may be difficult to avoid. It would be important to site crossings of these wetlands in relative narrow portions of the wetland or where agriculture has already impacted the wetland.</p>	<p>There are numerous major PSW's within Corridor including: Tiffany Creek, Upper Twenty Mile Creek Wetland Complex, Lower Twenty Mile Creek Wetland Complex, Hayesland-Christie, Lake Medad and Flamborough Centre Wetland Complexes.</p> <p>Numerous unevaluated / non-PSW wetlands are scattered throughout the corridor with many occurring between the Welland River and escarpment, west of Welland.</p> <p>While it may be possible to avoid Provincially Significant Wetlands in large portions of this corridor, the orientation of wetlands such as Lake Medad, relative to the corridor means that a crossing resulting in encroachment or fragmentation of Provincially Significant wetlands in the north portion of the corridor may be difficult to avoid. It would be important to site crossings of these wetlands in relative narrow portions of the wetland or where agriculture has already impacted wetlands.</p> <p>Given the abundance and scattered nature of unevaluated wetlands in other parts of the corridor, it is likely that total avoidance of all of</p>













Factor	Sub-Factor and Measure	Alternative 3-1	Alternative 4-2	Alternative 4-3	Alternative 4-4	Alternative 4-5
						
1.2 Terrestrial Ecosystems (Cont'd)	<p>1.2.2 Woodlands and Other Vegetated Areas (e.g., forest stands, woodlots, interior forest habitat and significant woodlands)</p> <p><u>Measure:</u>  <i>Qualitative assessment considering the nature, significance and sensitivity of upland vegetation units based on the presence and / or density of:</i></p> <ul style="list-style-type: none"> <li>- interior habitat (&gt;100m and &gt;200m);</li> <li>- terrestrial Species at Risk (SAR);</li> <li>- S-Rank (1-3) species; and</li> <li>- sensitive or rare vegetation communities (based on provincial ELC ranks), as available.</li> </ul> <p><i>Also, where feasible, a qualitative assessment of the nature of potential impacts (fragmentation, encroachment, loss) to significant upland vegetation units; and the potential to avoid or mitigate impacts to significant upland units.</i></p>	<p>Potential for physical habitat removal where roads border existing vegetation features and where widening extend beyond the existing ROW. Contaminant drift may extend further into intrusion areas (e.g. salt, heavy metals).</p> <p>Despite the potential for localized impacts of vegetation features, the magnitude of effect is low considered relative the potential impacts associated with a new corridor, which could include impacts to numerous wooded features.</p>	<p>Greater potential for removal and fragmentation of wildlife habitat and vegetation depending on location. Fragmentation may be minimized if corridor is carefully located balancing all other opportunities and constraints.</p> <p>Woodland blocks of varying size are scattered throughout the corridor.</p> <p>Woodlands are generally isolated, although bands of smaller woodland blocks are clustered along rear lot limits of Agricultural properties and rural roads and are generally oriented on an east-west axis.</p> <p>Several areas with relatively higher densities of larger woodlands sustaining interior habitat (&gt;100m and &gt;200m) are found within the corridor. These include:</p> <ul style="list-style-type: none"> <li>- An area bounded by the Welland Canal to the west and the Welland River to the north;</li> <li>- An area bounded by the Welland River to the north, Haldimand Highway 56 to the west, and Highway 24 to the east;</li> <li>- Woodlands associated with the Bismark and St Anns Slough Forest ANSI's;</li> <li>- An area within a 4 km radius of Caistorville Centre, which includes woodlands associated with the Caistor Centre Slough Forest ANSI and the Caistor Centre SE; and</li> <li>- Mill Creek Tributaries PSW.</li> </ul> <p>Selection of routes within the corridor should focus on avoidance of identified areas with</p>	<p>representations of a swamp forest and associated natural communities within the Carolinian Zone in Ontario. This site contains varied wetland habitats, including extensive broadleaf and mixed swamps as well as patches of marsh and treed bog communities. The latter two communities are rare in Hamilton-Wentworth Region and are therefore considered regionally significant. In addition to the extensive broadleaf and mixed swamps, this study area contains terrestrial, wetland, and aquatic communities that are rare or uncommon in Hamilton-Wentworth. Numerous rare and uncommon species are present in this study area.</p> <p>The prevalence of wetlands and their orientation across the corridor create significant routing challenges within the west corridor. It is likely that any route options generated within this corridor will result in removal and fragmentation of wetlands.</p> <p>In addition to those features reported for Alternative 4-2, the following points characterize the nature of vegetation / woodland cover in the west portion of the corridor:</p> <p>Upland areas within and adjoining the wetlands included in the study area contain coniferous, broadleaf and mixed woods, a treed alvar community, as well as plantations and successional communities on previously cleared lands.</p> <p>Selection of routes within the corridor should focus on avoidance of identified areas with relatively higher density of large woodlands supporting interior forest habitat.</p>	<p>these wetland communities is not possible.</p> <p>In addition to those features reported for Alternative 4-2 and aside from designated natural areas listed below, a large woodland exists just west of the Hayesland-Christie PSW, just north of a large aggregate pit. This woodland is large enough to support deep interior forest habitat (&gt;200m from forest edge). This woodland is one of very few upland areas on the landscape that remain large enough to support deep interior habitat.</p> <p>Selection of routes within the corridor should focus on avoidance of identified areas with relatively higher density of large woodlands supporting interior forest habitat.</p>	<p>Woodland blocks of varying size are scattered throughout the corridor.</p> <p>Woodlands are generally isolated, although bands of smaller woodland blocks are often clustered along rear lot limits of Agricultural properties and rural roads and are generally oriented on an east-west axis.</p> <p>Several areas with relatively higher densities of larger woodlands sustaining interior habitat (&gt;100m and &gt;200m) are found within the corridor. These include:</p> <ul style="list-style-type: none"> <li>- An area bounded by the Welland Canal to the west and the Welland River to the north and Lyons Creek to the south;</li> <li>- An area west of Wainfleet Bog and south of the Welland River; and</li> <li>- Along the Twenty Mile Creek valley, south of Hamilton.</li> </ul> <p>Selection of routes within the corridor should focus on avoidance of identified areas with relatively higher density of large woodlands supporting interior forest habitat. The east-west orientation of smaller woodlands at rear-lot limits and on either side of select rural roads provides an opportunity to limit / avoid impacts by selecting routes that avoid clustered bands of woodlands.</p>

Factor	Sub-Factor and Measure	Alternative 3-1	Alternative 4-2	Alternative 4-3	Alternative 4-4	Alternative 4-5
						
1.2 Terrestrial Ecosystems (Cont'd)	<p>1.2.3 Wildlife Habitats and Movements</p> <p><b>Measure:</b> <i>Qualitative assessment considering the nature, significance and sensitivity of significant wildlife habitat and landscape connectivity based on the presence and density of:</i></p> <ul style="list-style-type: none"> <li>- species at risk (SAR);</li> <li>- known wildlife use (e.g., deer overwintering areas, waterfowl staging, etc.); and</li> <li>- landscape-level habitat connectivity.</li> </ul> <p><i>Also, where feasible, a qualitative assessment of the nature of potential impact(s) (fragmentation, encroachment, loss) to significant wildlife habitat and landscape connectivity; and the potential to avoid or mitigate impacts to significant wildlife habitat and landscape connectivity.</i></p>	<p>The study area encompasses a landscape with an exceptional diversity of habitat and natural features, including some of provincial, national and international importance. Three broad physiographic / climate-based areas within the study area broadly represent the diversity and importance of the features on the landscape: Carolinian Zone features through Niagara, Niagara Escarpment, Halton, Hamilton, and Beverly Swamp area (Flamborough Plain Physiographic Region). These large-scale features and areas represent an exceptional diversity of habitats that would be expected to support rare species.</p> <p><b>Niagara Region (Haldimand Clay Plain / Carolinian Zone):</b> The Carolinian Zone is characterized by mixed forests with a high diversity of flora and fauna. The combination of physiography and climate that characterize the Carolinian Zone can be found in Niagara and other areas of south-western Ontario. The climate and conditions through the Carolinian Zone have also made it highly valuable as agricultural land for specialty crops like tender fruits and grapes. This area has a history of land use change from natural to agricultural, reducing natural areas to remnant features. However, even these remnant features provide habitat for a high diversity of rare species found nowhere else in Canada, making them very important for rare species and SAR. Loss of natural features through this area could have a large impact on rare and SAR populations and need to be carefully considered during route selection.</p> <p><b>Niagara Escarpment:</b> The Niagara Escarpment is an internationally recognized natural heritage feature (World Biosphere Reserve). This geologic feature provides a diverse array of habitats and microclimates in a very small geographic area – ranging from upland forest to cliff communities. The Niagara Escarpment provides habitat for a diverse array of rare species and SAR. Any additional crossing(s) of the Niagara Escarpment has the potential impact rare species and their habitat.</p> <p><b>Beverly Swamp (Flamborough Plain Physiographic Region):</b> The unique bedrock and surficial geology of this area has created a landscape of wetlands. This region includes a variety of wetland types and encompasses the Beverly Swamp PSW, Fletcher Creek Swamp Forest PSW, Hayesland – Christie Wetland Complex PSW and the Sheffield – Rockton Wetland Complex PSW as well as other, smaller wetlands. Southern Ontario has an extensive history of wetland loss; the area around Beverly Swamp represents a very valuable portion of the wetlands remaining in Southern Ontario. Loss, encroachment and / or fragmentation of these features could have significant impact to the ecological function of the area as they represent some of the largest contiguous features for fauna that require large tracts of land.</p> <p>All 'Group #4' alternatives will cross one or more of the above mentioned features / areas. The features described above broadly represent the diverse natural heritage that exists across the study area. Southwestern Ontario is comprised of varied physiographic areas that provide specialized habitat for a diverse array of rare species and SAR. Impacts associated with the creation of a new corridor through these features could be significant to one or more of these and other natural heritage features with potentially significant impacts to their ecological form and function.</p>	<p>relatively higher density of large woodlands supporting interior forest habitat. The east-west orientation of smaller woodlands at rear-lot limits and on either side of select rural roads provides an opportunity to limit / avoid impacts by selecting routes that avoid clustered bands of woodlands.</p>			
		<p>Wildlife passage opportunities may be impaired as existing drainage crossing structures may require lengthening, in some cases significant lengthening, which could further reduce their potential for use by some species if length / light thresholds are exceeded, creating Openness Ratios below recommended thresholds.</p> <p>However, no new potential barriers to wildlife movement will be created as all improvements are on existing roadways and within existing interchanges.</p> <p>Wildlife habitat of note that will potentially be impacted by Highway 403 widening through Hamilton will be: 1) the Waterfowl Winter Concentration Areas in Cootes Paradise both east and west of Highway 403; and 2) potential edge impacts to Deer Wintering Areas located east and west of Highway 403 just north of the Lincoln M. Alexander Parkway interchange.</p> <p>Despite the potential for localized impacts to wildlife habitat, the magnitude of effect is low when considered relative to potential impacts associated with a new corridor, which could include impacts to regionally</p>	<p>New corridor introduces barriers / filters to wildlife movements – this requires special consideration in roadway routing and design.</p> <p>Wildlife habitats and wildlife movement opportunities within the corridor are generally associated with watercourses, wetlands, woodlands and designated features as described in sub-factors 1.1.1, 1.1.2, 1.2.1, 1.2.2, and 1.5.</p> <p>Major watercourse systems within the corridor include the Welland River, 20 Mile Creek, Welland Canal, and Lyons Creek. Major tributaries of these tributaries include Three Mile Creek, West Wolf Creek, Wolf Creek, Sinkhole Creek, Moore's Creek, Mill Creek, Beaver Creek, North Creek, Parkers Creek, Black Ash Creek, Sucker Creek and Beaver Dams Creek.</p> <p>Core natural areas through this corridor option include: East Smithville Slough Forest, Bismark Slough Forest, St. Ann's Slough Forest, Caistor Centre Slough Forest and PSW. These units provide some of the largest contiguous habitat areas through the Niagara Region providing important ecological function for species that require larger habitat tracts. These units have a</p>	<p>In addition to those features reported for Alternative 4-2, the Beverly Swamp (and Fletcher Creek and Sheffield-Rockton wetland complexes) forms a core natural area within the extensive network of natural areas which extends across Flamborough Township and east to the Niagara Escarpment in Halton Region. This very large natural area serves a vital ecological function as a refuge for species requiring extensive tracts of forests with minimal human disturbance. However, several utility corridors and local roads transect the area, reducing connectivity and hindering localized wildlife movement – amphibians and reptiles in particular.</p> <p>Through the Niagara area, all MNR mapped forest units are identified as Deer Overwintering Habitat. Large portions of the Beverly Swamp, Fletcher Creek, and Hayesland-Christie PSW Complexes are also designated as Deer Overwintering Habitat.</p> <p>A number of Waterfowl Staging Areas are located within the Corridor within the Welland River watershed in Niagara Region.</p> <p>Any route alternatives must consider ways to avoid fragmentation of large contiguous habitats and</p>	<p>In addition to those features reported for Alternative 4-2, the Hayesland-Christie Wetland, Lake Medad Valley, Flamborough Centre Wetland form a network of natural areas, which connect to the escarpment forests (Mount Nemo, Nelson). Connectivity between natural areas is already hindered by Highway 5, Highway 6, numerous local roads as well as urban development and rural settlement areas.</p> <p>Through the Niagara area, all MNR mapped forest units are identified as Deer Overwintering Habitat.</p> <p>A number of Waterfowl Staging Areas are located within the Corridor within the Welland River watershed in Niagara Region.</p> <p>Careful routing would be required to maintain wildlife movement opportunities and linkages while at the same time being compatible with the existing road network and development areas.</p>	<p>Wildlife habitats and wildlife movement opportunities within the corridor are generally associated with watercourses, wetlands, woodlands and designated features as described in sub-factors 1.1.1, 1.1.2, 1.2.1, 1.2.2, and 1.5.</p> <p>Connectivity between natural areas is currently hindered by Highways (Highway 5, 6) numerous local roads as well as urban development and rural settlement areas. On a broad scale, the Niagara escarpment forms the most important linkage relative to this alternative. This alternative will result in two new perpendicular crossings of the escarpment, increasing habitat fragmentation and barrier effects.</p> <p>Through the Niagara area, all MNR mapped forest units are identified as Deer Overwintering Habitat.</p> <p>Any route alternatives must consider ways to avoid fragmentation of large contiguous habitats and maintenance of regional-scale habitat linkages (i.e., a potential new route</p>

Factor	Sub-Factor and Measure	Alternative 3-1 	Alternative 4-2 	Alternative 4-3 	Alternative 4-4 	Alternative 4-5 
		<p>important habitat areas (e.g., Beverly Swamp, new Niagara Escarpment crossings etc.).</p> <p>Impacts to SAR would be predominantly limited to areas impacted by existing roads. Impacts may include additional loss and / or encroachment on SAR habitat. Areas of note could include: crossing locations of the Niagara Escarpment, Significant Valley Lands (e.g., Sixteen Mile Creek).</p>	<p>history of edge impacts; loss and fragmentation by local roads, but still provide important ecological function.</p> <p>Through the Niagara area, all MNR mapped forest units are identified as Deer Overwintering Habitat.</p> <p>A number of Waterfowl Staging Areas are located within the Corridor within the Welland River watershed in Niagara Region.</p>	<p>maintenance of regional-scale habitat linkages (i.e., a potential new route would need to be very 'permeable' for wildlife – which may necessitate large structures / causeways).</p>		<p>would need to be very 'permeable' for wildlife – which may necessitate large structures / causeways).</p>
1.3 Groundwater	<p>1.3.1 Areas of Groundwater Recharge and Discharge, highly vulnerable aquifers and areas of complex ground water surface water interaction.</p> <p><u>Measure:</u> Qualitative assessment based on soil type and permeability to identify areas of high, moderate, low groundwater recharge capability, including consideration of number and location of groundwater recharge and discharge areas Regional mapping of aquifer vulnerability to spills or releases is also considered as a secondary constraint.</p> <p>1.3.2 Groundwater Source Areas and Wellhead Protection Areas (WHPA).</p> <p><u>Measure:</u> Number and location of wellhead protection areas potentially affected.</p>	<p>Widening an existing Highway has minimal overall impact on groundwater recharge and discharge areas.</p> <p>The widening of Highway 6 may impact the Campbellville WHPA in Halton Region. The significance of this incremental effect would need to be ascertained.</p>	<p>Major discrete groundwater recharge areas and highly vulnerable aquifers are present around Mount Hope, Binbrook Fonthill, Wellandport, and Stevensville, within the boundaries of this alternative. These discrete features should be avoided as possible.</p> <p>Intervening areas within this alternative do not have a hydrogeologic constraint.</p> <p>No WHPA mapped in Niagara Region. This alternative is not in proximity to the City of Hamilton's WHPA.</p>	<p>Major discrete groundwater recharge areas and highly vulnerable aquifers are present around Mount Hope, Binbrook Fonthill, Wellandport, and Stevensville, within the boundaries of this alternative. These discrete features should be avoided as possible.</p> <p>This alternative may also impact vulnerable aquifer areas in Rockton and Westover areas. North of Rockton this alternative passes through the Beverly Swamp and many other wetland swamps and complexes in the area, which is another highly vulnerable area. In the Beverly Swamp and area, there is bedrock at or near ground surface, poorly drained areas, significant surface water-groundwater interaction, water movement at or near surface, and karst features are present. The maintenance of natural drainage and ground water surface water interaction would be difficult to replicate / mitigate. A spill / release would be difficult to contain in this area.</p> <p>No WHPA mapped in Niagara Region. This alternative may impact the Lynden and Freelon WHPAs in the City of Hamilton.</p>	<p>Major discrete groundwater recharge areas and highly vulnerable aquifers are present around Mount Hope, Binbrook Fonthill, Wellandport and Stevensville, within the boundaries of this alternative. These discrete features should be avoided as much as possible.</p> <p>This alternative may impact vulnerable aquifer areas south of Rockton.</p> <p>The Hayesland –Christie Wetland complex should be avoided as much as possible. As it is an area of complex ground water / surface water interaction.</p> <p>From Millgrove to the brow of the Niagara Escarpment in Burlington, this alternative will cross localized areas where aquifers are highly vulnerable, due to bedrock at or near ground surface, and the presence of karst terrain.</p> <p>No WHPA mapped in Niagara Region. This alternative is not in proximity to the City of Hamilton or Halton Region's WHPAs.</p>	<p>Major discrete groundwater recharge areas and highly vulnerable aquifers are present around Mount Hope, Binbrook and Stevensville, within the boundaries of this alternative. These discrete features should be avoided as much as possible.</p> <p>This alternative may impact vulnerable aquifer areas south of Rockton.</p> <p>The Hayesland –Christie Wetland complex should be avoided as much as possible. As it is an area of complex ground water surface we water interaction.</p> <p>From Millgrove to the brow of the Niagara Escarpment in Burlington, this alternative will cross localized areas where aquifers are highly vulnerable, due to bedrock at or near ground surface, and karst terrain is present.</p> <p>The Niagara escarpment crossing near Stoney Creek is in an area that has been mapped as a highly vulnerable bedrock aquifer.</p> <p>No WHPA mapped in Niagara Region. This alternative is not in proximity to the City of Hamilton or Halton Region's WHPAs.</p>
1.4 Surface Water	<p>1.4.1 Watershed / Sub-Watershed Drainage Features / Patterns</p> <p><u>Measure:</u> Qualitative assessment of new pavement area.</p>	<p>Widening the existing Highways will have the least amount of new pavement. The area of new pavement may potentially impact the existing drainage systems associated with permanent watercourses as a result of an increase in impervious surfaces. All Highway surface drainage will be dealt within highway ROW.</p>	<p>The new corridor will have more new pavement than widening existing Highways alone.</p> <p>The corridor length is approximately 90 km. The new corridor may potentially impact the existing drainage systems associated with permanent watercourses as a result of an increase in impervious surfaces. All Highway surface drainage will be dealt within highway ROW.</p>	<p>The new corridor will have more new pavement than widening existing Highways alone.</p> <p>The corridor length is approximately 125 km.</p> <p>The new corridor may potentially impact the existing drainage systems associated with permanent watercourses as a result of an increase in impervious surfaces. All Highway surface drainage will be dealt within highway ROW.</p>	<p>The new corridor will have more new pavement than widening existing Highways alone.</p> <p>The corridor length is approximately 130 km.</p> <p>The new corridor may potentially impact the existing drainage systems associated with permanent watercourses as a result of an increase in impervious surfaces. All Highway surface drainage will be dealt within highway ROW.</p>	<p>The new corridor will have more new pavement than widening existing Highways alone.</p> <p>The corridor length is approximately 100 km.</p> <p>The new corridor may potentially impact the existing drainage systems associated with permanent watercourses as a result of an increase in impervious surfaces. All Highway surface drainage will be dealt within highway ROW.</p>

Factor	Sub-Factor and Measure	Alternative 3-1	Alternative 4-2	Alternative 4-3	Alternative 4-4	Alternative 4-5
<p><b>1.5 Designated Areas</b></p>	<p>Designated Areas are defined by resource agencies, municipalities, the government and / or the public, through legislation, policies, or approved management plans, to have special or unique value.</p> <p>Examples of Designated Areas include:</p> <ul style="list-style-type: none"> <li>- Niagara Escarpment;</li> <li>- Bruce Trail;</li> <li>- Trans Canada Trail;</li> <li>- National and Provincial Parks;</li> <li>- Designated federal wildlife / marine Areas;</li> <li>- RAMSAR wetlands;</li> <li>- Remedial Action Plan areas (RAP);</li> <li>- International Biological Program areas;</li> <li>- World Biosphere Reserves;</li> <li>- Designated heritage rivers;</li> <li>- Environmentally Sensitive Areas (ESA);</li> <li>- Environmentally Sensitive Policy Areas (ESPA);</li> <li>- Provincially Significant Areas of Natural and Scientific Interest (ANSI);</li> <li>- Conservation Authority parks / Open Space lands;</li> <li>- Stewardship lands; and</li> <li>- Land trust areas (such as Nature Conservancy of Canada and others).</li> </ul> <p><u>Measure:</u> <i>Qualitative assessment of the nature and significance of potentially impacted designated areas, including consideration of ability to avoid or mitigate impacts.</i></p> <p><i>Also, where feasible, a qualitative assessment of the nature of the potential impact (fragmentation, encroachment, loss).</i></p>	<p>Potential for incremental intrusion where road widening extends beyond the existing ROW into designated features.</p> <p>The areas of high potential for impacts to designated natural features are: 1) improvements to the QEW / Red Hill Valley Parkway interchange to accommodate additional lanes – which will likely impact Van Wagners Marsh PSW; and 2) widening of Highway 403 on its existing crossing of the Niagara Escarpment. Despite the potential for localized impacts to these features the magnitude of effect is low considered relative the potential impacts associated with a new corridor, which could include impacts to numerous designated natural features.</p> <p><i>Note: Cootes Paradise has overlapping designations of PSW and ANSI; however, the designated portions of Cootes Paradise are well away from the Highway 403.</i></p>	<p>Designated Areas within the corridor include locally and provincially significant ANSI's, PSW, and Greenbelt Plan Area.</p> <p>Greenbelt Plan Area transects the entire corridor east and south of the City of Hamilton. A portion of Greenbelt Plan Area extends to the west corridor boundary, but this western extension is generally limited to the southern half of the corridor.</p> <p>ANSI's identified within the corridor include:</p> <ul style="list-style-type: none"> <li>- Humberstone Muck Basin Swamp Forest Provincially Significant (PS) ANSI</li> <li>- Wainfleet Bog Regionally Significant (RS) ANSI</li> <li>- Bismark Slough Forest RS ANSI</li> <li>- St Anns Slough Forest PS ANSI</li> <li>- East Smithville Slough Forest RS ANSI</li> <li>- Caistor Centre Slough Forest RS ANSI</li> <li>- 20 Mile Creek Meander RS ANSI</li> <li>- Eramosa Karst PS ANSI</li> <li>- Albion Falls ANSI</li> </ul> <p>PSW's identified within the corridor include:</p> <ul style="list-style-type: none"> <li>- Tiffany Creek</li> <li>- Upper 20 Mile Creek Wetland Complex</li> <li>- Lower 20 Mile Creek Wetland Complex</li> <li>- Caistor Centre SE Mill Creek Tributaries</li> </ul> <p>Many of the woodland features discussed in sub-factor 1.2.2 (Woodlands and Other Vegetated Areas) are likely considered provincially / regionally / locally significant under the Provincial Policy Statement (PPS) or municipal official plans. Identification and analysis of potential impacts to these features is not practical given the scale of the current assessment. Impacts to these features should be considered further once route alternatives have been selected. For general analysis of impacts to woodlands, the reader is referred to sub-factor 1.2.2.</p> <p>ANSI's and PSW's are generally found along the periphery of the corridor in the east half, and are more centrally located within the west half.</p> <p>Near the east-west centre of the corridor, several ANSI / PSW features including the Lower 20 Mile Creek Wetland Complex PSW, the Bismark Slough Forest RS ANSI, the St. Anns Slough Forest RS ANSI and the East Smithville Slough Forest RS ANSI are clustered and somewhat constrain</p>	<p>In addition to those features reported for Alternative 4-2, there are additional Designated Areas within the corridor.</p> <p>The west portion of the corridor largely falls within the Greenbelt Plan Area and encroaches into the Niagara Escarpment Plan Area (World Biosphere Reserve).</p> <p>Additional ANSI's identified within the corridor include:</p> <ul style="list-style-type: none"> <li>- Beverly Swamp RS ANSI</li> <li>- Mountsberg Wildlife Centre RS ANSI</li> <li>- Galt Moraine PS ANSI</li> <li>- Fletcher Creek Swamp Forest RS ANSI</li> </ul> <p>PSW's identified within the corridor include:</p> <ul style="list-style-type: none"> <li>- Beverly Swamp Wetland Complex</li> <li>- Fletcher Creek Swamp Forest Wetland Complex</li> <li>- Sheffield-Rockton Wetland Complex</li> </ul> <p>In addition, many ESAs are associated with the PSW and ANSI designated areas.</p> <p>Many of the woodland features discussed in sub-factor 1.2.2 (Woodlands and Other Vegetated Areas) are likely considered provincially / regionally / locally significant under the provincial policy statement (PPS) or municipal official plans. Identification and analysis of potential impacts to these features is not practical given the scale of the current assessment. Impacts to these features should be considered further once route alternatives have been selected. For general analysis of impacts to woodlands, the reader is referred to sub-factor 1.2.2.</p> <p>The prevalence of ANSIs and PSWs and their extensive nature create significant routing challenges within the west corridor. It is likely that any new route will result in fragmentation of these features.</p> <p>Crossing of the Greenbelt Plan Area will be required. The new Highway length through the Greenbelt would be approximately 65 km.</p> <p>Respective policies (Provincial Policy Statement and the Niagara Escarpment Plan) will guide any planning of potential new transportation facilities in these areas.</p>	<p>In addition to those features reported for Alternative 4-2, there are additional Designated Areas within the corridor.</p> <p>The west portion of the corridor largely falls within the Greenbelt Plan Area and crosses the Niagara Escarpment Plan Area (World Biosphere Reserve).</p> <p>Additional ANSIs identified within the corridor include (Most ANSIs have overlapping designations as ESAs):</p> <ul style="list-style-type: none"> <li>- Hayesland-Christie Wetland Complex ANSI</li> <li>- Spencer Creek Bedrock Gorge ANSI</li> <li>- Lake Medad and Medad Valley ANSI / ESA</li> <li>- Nelson Escarpment Woods ANSI / ESA</li> <li>- Mount Nemo Escarpment Woods ANSI / ESA</li> </ul> <p>PSW's identified within the corridor include:</p> <ul style="list-style-type: none"> <li>- Hayesland-Christie Wetland Complex</li> <li>- Lake Medad Valley Swamp</li> <li>- Flamborough Centre Wetland Complex</li> </ul> <p>Many of these features (those within the Niagara Escarpment) are designated as Niagara Escarpment Natural Areas, as well as Nature Reserve and Natural Environment (within the NE Parks and Open Space System). From an ecological perspective, Niagara Escarpment Natural Areas, Nature Reserves and Natural Environment should be the priority for protection in future routing.</p> <p>Many of the woodland features discussed in sub-factor 1.2.2 (Woodlands and Other Vegetated Areas) are likely considered provincially / regionally / locally significant under the provincial policy statement (PPS) or municipal official plans. Identification and analysis of potential impacts to these features is not practical given the scale of the current assessment. Impacts to these features should be considered further once route alternatives have been selected. For general analysis of impacts to woodlands, the reader is referred to sub-factor 1.2.2.</p> <p>The presence of designated natural features associated with the Niagara Escarpment creates significant routing challenges within the northern portion of the corridor. Opportunities to avoid or minimize impacts to natural features could result in</p>	<p>Designated Areas within the corridor include locally and provincially significant ANSI's, PSW, and Greenbelt Plan Area.</p> <p>Greenbelt Plan Area transects the entire corridor east and south of the City of Hamilton. A portion of Greenbelt Plan Area extends to the west corridor boundary, but this western extension is generally limited to the southern half of the corridor.</p> <p>ANSI's identified within the corridor include:</p> <ul style="list-style-type: none"> <li>- Hayesland-Christie Wetland Complex ANSI</li> <li>- Spencer Creek Bedrock Gorge ANSI</li> <li>- Lake Medad and Medad Valley ANSI / ESA</li> <li>- Nelson Escarpment Woods ANSI / ESA</li> <li>- Mount Nemo Escarpment Woods ANSI / ESA</li> <li>- Humberstone Muck Basin Swamp Forest Provincially Significant (PS) ANSI</li> <li>- Wainfleet Bog ANSI</li> <li>- Twenty Mile Creek Meander B and C RS ANSI</li> <li>- Eramosa Karst PS ANSI</li> <li>- Albion Falls ANSI</li> <li>- Vinemount Quarry ANSI</li> <li>- Grassie Slough Forest ANSI</li> <li>- Fenwick Forest ANSI</li> <li>- Ridgeville Swamp ANSI</li> <li>- 15 / 16 Mile Creek Valleys ANSI</li> <li>- Jordan Valley ANSI</li> </ul> <p>PSW's identified within the corridor include:</p> <ul style="list-style-type: none"> <li>- Hayesland-Christie Wetland Complex</li> <li>- Lake Medad Valley Swamp</li> <li>- Flamborough Centre Wetland Complex Tiffany Creek</li> <li>- Upper 20 Mile Creek Wetland Complex</li> <li>- Lower 20 Mile Creek Wetland Complex</li> </ul> <p>Many of these features (those within the Niagara Escarpment) are designated as Niagara Escarpment Natural Areas, as well as Nature Reserve and Natural Environment (within the NE Parks and Open Space System). From an ecological perspective, Niagara Escarpment Natural Areas, Nature Reserves and Natural Environment should be the priority for protection in future routing.</p> <p>Many of the woodland features discussed in sub-factor 1.2.2 (Woodlands and Other Vegetated Areas) are likely considered provincially / regionally / locally significant under the provincial policy statement (PPS) or municipal official plans. Identification and</p>

Factor	Sub-Factor and Measure	Alternative 3-1 	Alternative 4-2 	Alternative 4-3 	Alternative 4-4 	Alternative 4-5 
			<p>potential route alignments, although large gaps between these features are still present.</p> <p>Impacts to designated features can largely be avoided through careful route selection.</p> <p>Crossing of the Greenbelt Plan Area will be required. Works within the Greenbelt Plan Area can be limited by selection of an alignment within the City of Hamilton city limits. The new Highway length through the Greenbelt would be approximately 30 km.</p>		<p>increased impacts to urban development areas. The combination of urban development and natural features in this area will highly constrain routing options during subsequent phases.</p> <p>Crossing of the Greenbelt Plan Area will be required. The new Highway length through the Greenbelt would be approximately 65 km. A new crossing of the Niagara Escarpment will also be required.</p> <p>Respective policies (Provincial Policy Statement and the Niagara Escarpment Plan) will guide any planning of potential new transportation facilities in these areas.</p>	<p>analysis of potential impacts to these features is not practical given the scale of the current assessment. Impacts to these features should be considered further in the future route planning phase.</p> <p>Despite careful routing during subsequent phases, it is likely that this combination will result in multiple new crossings of the Niagara Escarpment. The escarpment is a significant designated natural area on a global / provincial / regional scale and supports a concentration of rare flora and fauna. Multiple new crossings of the escarpment will result in fragmentation of this significant natural feature.</p> <p>The new Highway length through the Greenbelt would be approximately 75 km.</p>
<b>Summary</b>						
<p>Based on the above assessment, the widening alternative was preferred over all in comparison to the new corridor alternatives, although it is recognized that significant localized impacts will occur as a result of widening. The following summarizes the major issues associated with each alternative.</p>	<ul style="list-style-type: none"> <li>Widening existing roads will result in increases in culvert / structure lengths at existing crossing but with limited opportunity to retrofit or improve crossing design for fish habitat.</li> <li>Impacts to terrestrial features will be primarily associated with edge encroachment into natural areas adjacent to the existing highway.</li> <li>Limited impacts in terms of new fragmentation of large contiguous habitat areas.</li> <li>High degree of localized impacts to natural features, however the overall magnitude is considered relatively low when compared to the potential impacts associated with a new corridor.</li> <li>Significant impacts to natural features are anticipated at:                         <ul style="list-style-type: none"> <li>Cootes Paradise (although not to the Provincially Significant Wetland portion)</li> <li>Grindstone Creek valley</li> <li>Royal Botanical Garden lands</li> <li>Red Hill Creek</li> <li>Van Wagners Marsh PSW</li> </ul> </li> </ul> <p>No new barriers to wildlife movement however wildlife passage opportunities at existing watercourse crossings may be hindered as these culverts / structures are lengthened, potentially reducing use by some species.</p>	<ul style="list-style-type: none"> <li>Alternative 4-2 has the same widening requirements as 3-1 in the west section. However, 4-2 also includes a new corridor in that extends from Hamilton to Niagara, across the central and east portions of the study area.</li> <li>Four major PSW's within corridor – these are generally localized in the west half of the corridor and have large gaps between them. Impacts to the PSW can likely be avoided through careful route selection.</li> <li>Unevaluated / Non-PSW wetlands are scattered throughout the corridor and are generally well separated from one another with no distinct areas of concentration.</li> <li>Several areas with relatively higher densities of larger woodlands sustaining interior habitat (&gt;100 metres and &gt;200 metres) are found in four areas within the corridor. These areas contain a high diversity of habitat types and support a variety of flora and faunal SAR.</li> <li>Core natural habitats provide some of the largest contiguous habitat areas through the Niagara Region providing important ecological function for species that require larger habitat tracts. These units have a history of edge impacts; loss and fragmentation by local roads, but still provide</li> </ul>	<ul style="list-style-type: none"> <li>Alternative 4-3 is similar to Alternative 4-2 in the central and east portions but also includes a new corridor in the west that extends from Highway 403 to Highway 401.</li> <li>The 401 connection of Alternative 4-3 will result in unavoidable fragmentation impacts to the Beverley Swamp, Sheffield-Rockton and Fletcher Creek PSWs. These features contain a high diversity of habitat types and support a variety of flora and faunal SAR as well as Provincially Significant Vegetation Communities. The density and extent of these vegetation communities / habitats across the corridor create significant routing challenges. These features coupled with the extensive area of groundwater discharge and groundwater/surface water interaction and associated ecological dependencies underscores the particular vulnerability of this area to the impacts of a new corridor. Changes to the groundwater regime would be wide-reaching and could not be fully mitigated. Broad areas of organic deposits associated with the wetlands will also present constructability issues may result in additional direct and indirect impacts to ecological features.</li> </ul>	<ul style="list-style-type: none"> <li>Alternative 4-4 is similar to Alternative 4-2 in the central and east portions but also includes a new corridor in the west to connect with 407 ETR. This new corridor necessitates a new crossing of the Niagara Escarpment in Halton.</li> <li>Natural environmental features within the Halton escarpment crossing corridor are similar in terms of ecological significance to those in the west portion of Alternative 4-3. However, the density and distribution of these features within the new corridor in both of these alternatives allows for more opportunity to avoid and / or mitigate removal and fragmentation of large areas. Impacts to natural features in this corridor would be significant, however there is better opportunity to minimize and mitigate compared to 4-3. Furthermore, while areas of groundwater discharge and groundwater / surface water interaction are present, these areas are much more discrete than in Alternative 4-3, which provides more opportunity to minimize the extent of potential impacts to these areas and to the groundwater-dependent ecological communities.</li> </ul>	<ul style="list-style-type: none"> <li>4-5 is similar to Alternative 4-4 in the west portion and similar to Alternatives 4-2 and 4-3 in the east portion.</li> <li>4-5 does not include a new corridor through the central portion and as such avoid the impacts associated with a new corridor in that area.</li> <li>4-5 includes a second crossing of the Niagara Escarpment in Grimsby. The combination of the two escarpment crossings is considered a significant impact as numerous provincially significant natural areas (wetlands, ANSIs, etc.) may be impacted and complete avoidance of all significant features will not likely be possible.</li> </ul>	

Factor	Sub-Factor and Measure	Alternative 3-1	Alternative 4-2	Alternative 4-3	Alternative 4-4	Alternative 4-5
						
			<p>important ecological function.</p> <ul style="list-style-type: none"> <li>• Selection of routes within the corridor should focus on avoidance of identified areas with relatively higher density of large woodlands supporting interior forest habitat.</li> <li>• The east-west orientation of smaller woodlands at rear-lot limits and on either side of select rural roads provides an opportunity to limit / avoid impacts by selecting routes that avoid clustered bands of woodlands.</li> </ul>			

#### 4.3.2.1 Fish and Fish Habitat

For Alternative 3-1, potential impacts to fish and fish habitat, including SAR will be associated with expansion of existing watercourse crossings and associated need for localized watercourse realignments and other in-water or near-water works. Impacts tend to be focused on existing crossings which may be a benefit in terms of avoiding potential impacts associated with new crossing locations but may be more limiting in terms of retrofit to improve existing crossing design for fisheries. Alternative 3-1 will have an impact to fish and fish habitat at Red Hill Creek and Van Wagners Marsh, as well as Coote's Paradise, through widening the QEW and Highway 403 through Hamilton in the west region.

The new corridor alternatives will require numerous new watercourse crossings, including crossings of headwater (1st and 2nd order) streams. The Alternative 4-2 corridor encompasses a high density of warmwater watercourses in Niagara Region, many with potential to support aquatic SAR (including both fish and mussel species). The general east-west orientation of the drainage network would create some challenges in avoiding numerous new crossings within this corridor.

Alternative 4-3 is similar to Alternative 4-2 in the central and east portions but also includes a corridor in the west portion that extends from Highway 403 to Highway 401 and would require crossings through a the dense network of watercourses and wetlands associated with the Beverly Swamp, Sheffield-Rockton and Fletcher Creek PSW Complexes that form a broad headwater area for several systems (e.g., Fletcher, Spencer and Sixteen Mile Creeks). Watercourses through this section are identified as supporting resident Brook Trout populations (highway sensitive as well as Redside Dace, which is federally and provincially designated as Endangered). This corridor would require numerous crossings of sensitive reaches and the potential impact to the fish and fish habitat could be significant. There are anticipated to be significant routing challenges involved Alternative 4-3. Generally, corridor / route planning would focus on avoiding or limiting crossings of significant fish habitat, and limiting major watercourse and tributary crossings to the extent possible. However, the ability to minimize the number of watercourse crossings or minimize potential impacts associated with crossings is made challenging by the fact that watercourses and wetlands form a complex drainage mosaic and discrete crossing locations may not be apparent in some areas.

Alternative 4-4 is similar to Alternative 4-2 in the central and east portions but also includes a corridor in the west portion that extends from Highway 403 to the 407 ETR. This corridor has a lower density of reaches identified as supporting Redside Dace compared to 4-3, but similar to 4-3 and has many reaches of highly sensitive fish habitat. However, watercourse crossings tend to be more discrete or defined compared to 4-3. Therefore potential impacts associated with watercourse crossings in 4-4 are considered somewhat lower than for Alternative 4-3, but greater than widening existing roads.

Alternative 4-5 is similar to Alternative 4-4 in terms of impacts to watercourses in the Highway 403 to 407 ETR corridor and the eastern extension between Highway 406 and the QEW crosses a very high density of reaches with aquatic SAR.

#### 4.3.2.2 Terrestrial Ecosystems

The new corridors in the Group #4 alternatives have a greater potential for impacts to upland and wetland vegetation and associated wildlife habitat in terms of removal and fragmentation of these features. These impacts can be minimized though careful route planning (Phase 2) but in some cases, fragmentation of sensitive / significant habitats

may be unavoidable. These types of impacts are generally considered significant although measures to maintain wildlife movement / connectivity through road-ecology-sensitive design (e.g., maintaining permeability through the provision of wildlife passages) may offset some of these impacts.

Impacts to Provincially Significant Wetlands (PSW) can be largely avoided through careful route selection in Alternative 4-2 within the Central Area. In the remaining Group #4 alternatives, it may be not possible to avoid all PSWs in large portions of these corridors.

The west portion of the Alternative 4-3 corridor that connects Highway 403 with Highway 401 creates one of the most significant routing challenges in the study area. This area has a high density of significant natural features including three PSW complexes, ANSIs, the Galt Moraine, interior forest, alvar and other significant wildlife habitat including habitat for SAR. These features coupled with extensive areas of groundwater discharge and groundwater / surface water interaction, and the associated functional ecological dependences, underscores the particular vulnerability of this area to the impacts of a new corridor. Direct habitat removal and fragmentation is an obvious issue. However, given the expansive area of bedrock at or near the ground surface, significant surface water-groundwater interaction and water movement at or near the surface, any changes to the groundwater regime and groundwater-dependant ecological features / functions would be wide-reaching and could not be fully mitigated.

The portion of the Alternatives 4-4 and 4-5 corridors that connect Highway 403 to 407 ETR also creates a significant routing challenge. Features in this area are part of the Niagara Escarpment and consist of PSW complexes, ANSIs, large upland and slope forests, interior forest habitat and habitat for SAR. These natural features are similar in terms of significance to those in Alternative 4-3 in that these habitat support high botanical and vegetation community diversity and rare species. However, the overall distribution of the natural features within the corridor does provide increased opportunity over Alternative 4-3 to avoid or minimize impacts to natural features. Furthermore, while areas of groundwater discharge and surface water-groundwater interaction are present in the Highway 403 to 407 ETR corridor, these areas tend to be more discrete than in Alternative 4-3, which provides better opportunity to minimize the extent of potential impacts to these areas and to the groundwater-dependent ecological features / functions. The orientation of features such as the Lake Medad Valley relative to the corridor may create routing challenges and be difficult to completely avoid. Although significant features may be impacted, it is believed that the overall extent of these impacts (and cumulative impacts) can be minimized compared to 4-3. Specialized mitigation measures such as tunnelling would need to be examined to minimize impacts to significant features in the Highway 403 to 407 ETR corridor.

It is important to note that in carrying out the vegetation and wildlife component of the evaluation, focus has been placed on ecological features and function and not broader policy designations.

#### **4.3.2.3 Groundwater**

In regards to Alternative 3-1, widening an existing highway has minimal overall impact on groundwater recharge and discharge areas.

Alternatives 4-3 and 4-5 have the potential to impact the highest number of vulnerable aquifer areas. Specifically a major aquifer included in Alternative 4-3 would be the Beverly Swamp area. In the Beverly Swamp area, there is bedrock at or near ground surface, poorly drained areas, significant surface water-groundwater interaction, and



water movement at or near surface, and karst features are present. The maintenance of natural drainage and ground water surface water interaction would be difficult to replicate or mitigate. A spill or release would be difficult to contain in this area. In Alternative 4-5, the Niagara Escarpment crossing near Stoney Creek is in an area that has been mapped as a highly vulnerable bedrock aquifer.

For Alternatives 4-4 and 4-5, the groundwater sensitivity is considered to be lower than Alternative 4-3 because groundwater / surface water interaction is more discrete and groundwater flow patterns are more defined. While there are still vulnerable groundwater areas, they could likely be avoided through careful routing.

Specific groundwater recharge areas and highly vulnerable aquifers affected in Group #4 alternatives are mentioned in the evaluation table (**Table 4-2**).

#### 4.3.2.4 Surface Water

In Alternative 3-1, widening the existing highways will add the least amount of new pavement. The area of new pavement may impact the existing drainage systems associated with permanent watercourses as a result of an increase in impervious surfaces.

For Group #4 alternatives, the new corridor will have more new pavement than widening existing highways alone. Alternatives 4-4 and 4-3 have the longest corridor length and thus the most potential impact to surface water, but this would be dependent on the extent of the widening proposed in the next Phase.

#### 4.3.2.5 Designated Areas

Designated Areas include Designated Natural Features (Areas of Natural and Scientific Interest, ANSI, Provincially Significant Wetlands, PSW, and Environmentally Significant Areas, ESA) as well as broader policy areas such as the Niagara Escarpment and Greenbelt and other special designations such as World Biosphere Reserve. These are discussed in the evaluation table above (**Table 4-2**).

In most cases the ecological values for which natural features have been designated (such as PSWs, etc.) are discussed in the vegetation, wildlife and aquatic sections.

In Alternative 3-1, there is potential for incremental intrusion where road widening extends beyond the existing ROW into designated natural features and areas. The areas of high potential for impacts to designated natural features are in the west portion of the study area and include: 1) improvements to the QEW / Red Hill Valley Parkway interchange to accommodate additional lanes – which would impact Van Wagners Marsh PSW; and 2) widening of Highway 403 on its existing crossing of the Niagara Escarpment, as well as adjacent to the Royal Botanical Garden lands. Despite the potential for localized impacts to these features the magnitude of effect is lower when considered relative to the potential impacts associated with a new corridor, which could include impacts to numerous designated natural features and areas.

In Alternative 4-2, in the central portion of the corridor, several ANSI / PSW features including the Lower 20 Mile Creek Wetland Complex PSW, the Bismark Slough Forest ANSI, the St. Anns Slough Forest ANSI and the East Smithville Slough Forest ANSI are clustered and somewhat constrain potential route alignments, although large gaps between these features are still present. Impacts to these designated features could largely be avoided through careful route selection.

The east portion of Alternatives 4-3 and 4-4 are the same as 4-2. The west portion of Alternative 4-3 largely falls within the Greenbelt Plan Area and encroaches slightly into

the Niagara Escarpment Plan Area near the community of Dundas. The Highway 403-Highway 401 connection crosses an area with a dense concentration of designated natural features including the Beverly Swamp, Fletcher Creek Swamp Forest and Sheffield-Rockton Provincially Significant Wetland Complexes and ANSIs. The prevalence of ANSIs and PSWs and their extensive nature create significant routing challenges within the west corridor. It is likely that any new route would result in severances and fragmentation of these features. Impacts to the specific features and functions have been discussed in the Terrestrial Ecosystem section.

As noted above in **Section 4.3.2.2** the portions of the Alternatives 4-4 and 4-5 corridors that connect Highway 403 to 407 ETR also create a significant routing challenge with respect to designated natural features and areas. Natural features consist of PSWs, ANSIs and ESAs etc. and lie within the Niagara Escarpment Plan Area. As such, these features are also designated as Natural Area, Nature Reserve and Natural Environment within the Niagara Escarpment Plan and the Niagara Escarpment Parks and Open Space System. Intervening rural and agricultural lands are designated as Escarpment Protection Areas, Rural Areas, Minor Urban Centres, Recreation Areas and Mineral Resource Extraction Areas under the Niagara Escarpment Plan.

As noted above in **Section 4.3.2.2**, from an ecological perspective, Niagara Escarpment Natural Areas, Nature Reserves and Natural Environment would be the priority for protection in corridor / route planning. In this context, the distribution of these areas within the Highway 403 to 407 ETR corridor appears to provide some increased opportunity over Alternative 4-3 to avoid or minimize impacts to sensitive ecological features that are designated as Natural Area, Nature Reserve and Natural Environment within the Niagara Escarpment Plan and the Niagara Escarpment Parks and Open Space System. However, the orientation of features such as the Lake Medad Valley, relative to the corridor may create routing challenges and be difficult to completely avoid. It is still recognized these types of impacts may be significant and may not fully be mitigated.

All Group #4 alternatives will involve crossing large areas of the Greenbelt. The Natural System policies within the *Greenbelt Plan protect areas of natural heritage, hydrologic and / or landform features, which are often functionally inter-related and which collectively support biodiversity and overall ecological integrity.* Specific ecological features, landforms and associated functional dependencies have been identified in the assessment tables and have been summarized in the Fish and Fish Habitat and Terrestrial Ecosystem discussion, above. These include Key Natural Heritage Features defined in the *Greenbelt Plan* such as significant habitat of endangered species, threatened species and special concern species; fish habitat; wetlands; Life Science ANSIs; significant woodlands; significant wildlife habitat; and Alvars.

The Natural Heritage System of the *Greenbelt Plan includes areas of the Protected Countryside with the highest concentration of the most sensitive and / or significant natural features and functions.* The *Greenbelt Plan* indicates that these areas *need to be managed as a connected and integrated natural heritage system given the functional inter-relationships between them, and the fact this system builds upon the natural systems contained in the Niagara Escarpment Plan.* Together with the landscape surrounding the Greenbelt, these systems currently comprise, and function as, a *connected natural heritage system.* The assessment table and discussion highlights particular areas where the presence of, density and distribution of significant features creates particular challenges to future route planning (Phase 2). Future corridor / route planning will specifically incorporate routing objectives related to protecting the natural heritage system (including but not limited to natural heritage features within the NEP and

Greenbelt Plan Areas). These objectives may include avoiding fragmentation and minimizing intrusion into significant features and habitats and providing wildlife movement opportunities between core areas to maintain habitat connectivity.

In addition to the Natural System policies outlined in the *Greenbelt Plan*, agriculture is a provincial interest and agriculture makes significant contributions to the economy through the agri-food sector and agri-tourism. As such, the potential to impact agricultural lands in the Greenbelt is an important consideration and is reflected in **Table 4-4** in the following section which deals with the Social Environment.

The *Greenbelt Plan* and its associated policies will guide any planning of potential new transportation facilities in these areas.

**Table 4-3** outlines the number of new Niagara Escarpment crossings and existing Escarpment crossings requiring widening, as well the impact (in kilometres) to the Greenbelt involved in the Group #4 alternatives.

**Table 4-3: Escarpment Crossings and Impact (km) to Greenbelt**

NGTA Alternatives	4-2	4-3	4-4	4-5
# of New Escarpment Crossings	0	0	1	2
Highway Length through Greenbelt (km)	30	65	65	75
Approx. Total Highway Length (km)	90	125	130	100
# of Existing Escarpment Crossings Requiring Widening	3	2	3	4

Of the Group #4 Alternatives, Alternative 4-5 has the greatest impact to the Greenbelt (length crossed) and Niagara Escarpment (number of new crossings and existing crossings requiring widening), where Alternative 4-2 includes the least amount of impact to the Greenbelt and no new Niagara Escarpment crossings. Alternative 4-3 requires the least amount of impact to existing Niagara Escarpment crossings.

## 4.4 SOCIAL ENVIRONMENT

### 4.4.1 Methodology

The study team used secondary source information (i.e., mapping and text from Provincial policy statements and local Official Plans, Secondary Plans, etc.) obtained from agencies (i.e., NEC), ministries (i.e., OMAFA, Ontario Growth Secretariat and MMAH) and municipalities during the study to map and document existing social environmental conditions in accordance with the factors and criteria under social environment. Secondary source information was supplemented by local knowledge obtained through consultation with the public, agencies, municipalities and First Nations.

In addition, the study team carried out an air quality analysis for this phase of the EA which was specifically initiated to provide an understanding of both local and regional air quality impacts and greenhouse gas (GHG) emissions associated with the Group #3 and Group #4 alternatives, using the evaluation criteria established.

The air quality analysis work was completed utilizing the output from the transportation demand model, as the input for the air quality modelling assessment.

As described in **Section 1.8** of this report, the NGTA study was coordinated with the GTA West study on many fronts. For example, the alternative scenarios for both studies were modelled to develop traffic demand estimates and performance-based parameters

such as vehicle and person-miles traveled, roadway network levels of service, etc. In order to maintain a manageable number of model runs, the study teams adopted a consolidated list of modelling scenarios to represent both studies. The consolidated group of modelling scenarios represent the transportation network changes deemed to be significant enough to alter the regional trip distribution.

Recognizing that Phase 1 of the EA process identifies wide corridors, as seen in the alternative figures, the study team understood that every feature in the corridor would not be impacted by future routes, and that some features (i.e., small hamlets, pockets of existing residential areas or agricultural operations, etc.) could be avoided in the next phase of the EA – when route planning would occur. In other instances, it was apparent that the feature was so large that it crossed the entire width of the corridor (or study area) and could not be avoided (e.g., lands designated for future urban expansion in some municipalities). These types of distinctions about the magnitude of potential impacts and the likelihood of avoidance or mitigation were noted in the evaluation tables. Although significant features within the Group #3 and #4 alternatives could be named and in some cases counted or “measured” to provide a comparison between alternatives, other criteria required a qualitative assessment of potential impacts or benefits of the Group #3 or #4 alternatives, at a higher level of detail. The most significant or largest features potentially impacted by each alternative were documented in the evaluation tables. Additional information on land use and community features is provided in the *Existing Environmental Conditions and Constraints Report (Section 2.3)*. The air quality analysis report is available under separate cover.

The methodology for evaluating potential impacts to residential, business and industrial properties was further supplemented by a high level assessment of potential footprint impacts carried out for the widening sections of each alternative as part of the cost analysis (refer to **Section 4.8** for more details).

This work provided an estimate of the number of residential, commercial and industrial properties potentially impacted in widening sections of each alternative. A similar methodology was carried out for the new corridor community and agricultural impacts as well. A combination of aerial mapping and environmental constraints layers were used to create hypothetical alignments within the broader specified demand corridors. A ROW of 110 metres was assumed for the mainline of the new highway. Interchanges were placed in appropriate locations and a 200 metres radius from the centre was assumed to determine the ROW at interchanges. A buffer was created around the centreline of the hypothetical alignment and around interchanges to create a footprint that represented the assumed ROW. Property fabric for the corridor was imported into GIS and was clipped using the footprint. The data in the clip represents the property that is affected by the ROW of the hypothetical alignment. Assumptions were made to determine the breakdown of land use types in the corridor: Agricultural - 75%, Residential - 5 %, Industrial - 5 %, other urban - 5 %, and Open space - 10 %. The assumption of land use type percentages were made based on reviewing existing land use data and aerial photography. The assumptions above were applied to the clipped property data to determine a breakdown of the number of affected property parcels by land use type and the total amount of affected land.

#### 4.4.2 Findings


The transportation analysis findings are summarized through the following assessment of Area Transportation System Alternatives (**Table 4-4**). The subsequent sections will summarize the factors and key issues that lead to the development of the draft Strategy.

Table 4-4: Social Environment Findings

Factor	Sub-Factor and Measure	Alternative 3-1	Alternative 4-2	Alternative 4-3	Alternative 4-4	Alternative 4-5
<b>2.0 Land Use / Socio-Economic Environment Factors</b>						
<p><b>2.1 Land Use Planning Policies, Plans, Goals, Objectives</b></p>	<p>2.1.1 Provincial / Federal land use planning policies / goals / objectives</p> <p><i>Measure:</i> Qualitative assessment of potential to affect federal / provincial land use policies / plans / goals / objectives.</p>	<p>Widening existing freeways supports the PPS on the protection of Natural Heritage, Agricultural and Cultural Heritage / Archaeological resources and optimizes the use of existing infrastructure. This alternative includes widening of Highway 403, Highway 401, Highway 5 and QEW through Niagara Escarpment Commission (NEC) and Greenbelt Plan Areas.</p> <p>This alternative supports planned future land use or growth as identified in the Growth Plan. Widenings, including HOV, provide new transit service connections, and by expanding capacity within existing corridors, reduces impact on natural areas. It also provides improved connections between the urban growth centres of downtown St Catharines, Burlington, Hamilton and Midtown Oakville along existing widened Highways.</p> <p>It does have limited ability to accommodate planned future growth in Niagara Region and the City of Hamilton though.</p>	<p>Widening existing freeways supports the PPS on the protection of Natural Heritage, Agricultural and Cultural Heritage / Archaeological resources and optimizes the use of existing infrastructure.</p> <p>New Greenbelt crossings occur in all Group #4 alternatives. Greenbelt Plan Area crossings should be minimized, where possible per Section 4.2.1 of the <i>Greenbelt Plan</i>. The approximate length of the new Greenbelt crossing is 30km.</p> <p>It does accommodate planned future growth in Niagara Region and the City of Hamilton.</p> <p>This alternative supports the Gateway Economic Zone and Centre identified in the Growth Plan.</p>	<p>Widening existing freeways supports the PPS on the protection of Natural Heritage, Agricultural and Cultural Heritage / Archaeological resources and optimizes the use of existing infrastructure.</p> <p>New Greenbelt crossings occur in all Group #4 alternatives. Greenbelt Plan Area crossings should be minimized, where possible per Section 4.2.1 of the <i>Greenbelt Plan</i>. The approximate length of the new Greenbelt crossing is 65km.</p> <p>It does accommodate planned future growth in Niagara Region and the City of Hamilton. Border area economic development surrounding the Niagara Gateway Economic Zone is particularly supported here, but limited in Alternative 3-1.</p> <p>This alternative supports the Gateway Economic Zone and Centre identified in the Growth Plan.</p>	<p>Widening existing freeways supports the PPS on the protection of Natural Heritage, Agricultural and Cultural Heritage / Archaeological resources and optimizes the use of existing infrastructure.</p> <p>New Greenbelt crossings occur in all Group #4 alternatives. Greenbelt Plan Area crossings should be minimized, where possible per Section 4.2.1 of the <i>Greenbelt Plan</i>. The approximate length of the new Greenbelt crossing is 65km.</p> <p>It does accommodate planned future growth in Niagara Region and the City of Hamilton. Border area economic development surrounding the Niagara Gateway Economic Zone is particularly supported here, but limited in Alternative 3-1.</p> <p>This alternative supports the Gateway Economic Zone and Centre identified in the Growth Plan.</p>	<p>Widening existing freeways supports the PPS on the protection of Natural Heritage, Agricultural and Cultural Heritage / Archaeological resources and optimizes the use of existing infrastructure.</p> <p>New Greenbelt crossings occur in all Group #4 alternatives. Greenbelt Plan Area crossings should be minimized, where possible per Section 4.2.1 of the <i>Greenbelt Plan</i>. The approximate length of the new Greenbelt crossing is 75km.</p> <p>It does accommodate planned future growth in Niagara Region and the City of Hamilton.</p> <p>This alternative supports the Gateway Economic Zone and Centre identified in the Growth Plan.</p>
	<p>2.1.2 Municipal (regional and local) land use planning policies / goals / objectives (Official Plans)</p> <p><i>Measure:</i> Qualitative assessment of potential to affect municipal Official Plans.</p>	<p>Coordinating with the Region of Niagara, City of Hamilton, and Halton Region to implement the Growth Plan objectives of compact, mixed-use, complete communities.</p>	<ul style="list-style-type: none"> <li>• Supports Niagara's "Grow South" plans and relieve development pressures on the tender fruit and grape lands.</li> <li>• Supports Hamilton's plans to develop employment lands around the HIA.</li> </ul>	<ul style="list-style-type: none"> <li>• Supports Niagara's "Grow South" plans and relieve development pressures on the tender fruit and grape lands.</li> <li>• Supports Hamilton's plans to develop employment lands around the HIA.</li> </ul>	<ul style="list-style-type: none"> <li>• Supports Niagara's "Grow South" plans and relieve development pressures on the tender fruit and grape lands.</li> <li>• Supports Hamilton's plans to develop employment lands around the HIA.</li> <li>• Coordinating with the Halton Region as they develop a plan to grow to 2031.</li> </ul>	<ul style="list-style-type: none"> <li>• Supports Niagara's "Grow South" plans and relieve development pressures on the tender fruit and grape lands.</li> <li>• Supports Hamilton's plans to develop employment lands around the HIA.</li> <li>• Coordinating with the Halton Region as they develop a plan to grow to 2031.</li> </ul>
<p><b>2.2 Land Use Planning Policies, Plans, Goals, Objectives</b></p>	<p>2.2.1 Indian Reserves</p> <p><i>Measure:</i> Qualitative assessment of potential to affect Indian Reserves.</p>	<p>There are no First Nations Indian Reserves in the study area.</p>	<p>There are no First Nations Indian Reserves in the study area.</p>	<p>There are no First Nations Indian Reserves in the study area.</p>	<p>There are no First Nations Indian Reserves in the study area.</p>	<p>There are no First Nations Indian Reserves in the study area.</p>






Factor	Sub-Factor and Measure	Alternative 3-1	Alternative 4-2	Alternative 4-3	Alternative 4-4	Alternative 4-5
	<p>2.2.2 First Nations Sacred Grounds <i>Measure:</i> Qualitative assessment of potential to avoid First Nations Sacred Grounds.</p>	<p>The potential to impact cultural resources of historical significance to First Nations will be confirmed through discussions with First Nations as the study progresses and study area reduces in size.</p>	<p>The potential to impact cultural resources of historical significance to First Nations will be confirmed through discussions with First Nations as the study progresses and study area reduces in size.</p>	<p>The potential to impact cultural resources of historical significance to First Nations will be confirmed through discussions with First Nations as the study progresses and study area reduces in size.</p>	<p>The potential to impact cultural resources of historical significance to First Nations will be confirmed through discussions with First Nations as the study progresses and study area reduces in size.</p>	<p>The potential to impact cultural resources of historical significance to First Nations will be confirmed through discussions with First Nations as the study progresses and study area reduces in size.</p>
	<p>2.2.3 Residential (Urban and Rural) <i>Measure:</i> Qualitative assessment of potential to affect urban and residential areas, using number of areas affected and potential to avoid or mitigate impacts as indicator.</p>	<p>Widening existing freeways has the potential to effect urban and residential areas more than a new corridor. This is because there are developments of urban and residential areas already surrounding the current QEW, 403, 407 ETR and 406 Highways. Residential areas in the communities of Oakville, Burlington, Hamilton, Niagara Falls and St. Catharines. Improving the Burlington Skyway could impact approximately 13 residential properties.</p> <p>Widening Highway 403 in the King and Main Street area could have a major impact on approximately three residential properties and two three-storey apartment buildings. There is also the potential to impact a 16 storey apartment building.</p> <p>Widening the QEW will have a major impact on approximately 125 properties and minor impact on approximately 172.</p> <p>Widening Highway 6 will have a major impact on approximately 20 properties and a minor impact on approximately 166 properties.</p>	<p>This new corridor alternative has some potential to change or effect the "rural" character. The impacts of a new corridor in areas that are currently rural can be reduced through avoidance of the most sensitive areas and mitigation. It has the potential to minimize impacts to existing communities along existing freeways through Niagara Region and Hamilton with less widening.</p> <p>Widening Highway 403 in the King and Main Street area could have a major impact on approximately three residential properties and two three-storey apartment buildings. There is also the potential to impact a 16 storey apartment building.</p> <p>Widening the QEW will have a major impact on approximately two properties and minor impact on approximately six.</p> <p>Widening Highway 6 will have a major impact on approximately 20 properties and a minor impact on approximately 166 properties.</p> <p>Approximately 20-25 parcels of residential land and 20-25 parcels of urban land could be impacted by the new corridor.</p>	<p>This new corridor alternative has some potential to change or effect the "rural" character. The impacts of a new corridor in areas that are currently rural can be reduced through avoidance of the most sensitive areas and mitigation. It has the potential to minimize impacts to existing communities along existing freeways through Niagara Region and Hamilton with less widening.</p> <p>Widening Highway 403 in the King and Main Street area could have a major impact on approximately three residential properties and two three-storey apartment buildings. There is also the potential to impact a 16 storey apartment building.</p> <p>Widening the QEW will have a major impact on approximately two properties and minor impact on approximately six.</p> <p>Approximately 30-35 parcels of residential land and 30-35 parcels of urban land could be impacted by the new corridor.</p>	<p>This new corridor alternative has some potential to change or effect the "rural" character. The impacts of a new corridor in areas that are currently rural can be reduced through avoidance of the most sensitive areas and mitigation. It has the potential to minimize impacts to existing communities along existing freeways through Niagara Region and Hamilton with less widening.</p> <p>Widening Highway 403 in the King and Main Street area could have a major impact on approximately three residential properties and two three-storey apartment buildings. There is also the potential to impact a 16 storey apartment building.</p> <p>Widening the QEW will have a major impact on approximately two properties and minor impact on approximately six.</p> <p>Widening Highway 6 will have a major impact on approximately 20 properties and a minor impact on approximately 166 properties.</p> <p>Approximately 30-35 parcels of residential land and 30-35 parcels of urban land could be impacted by the new corridor.</p>	<p>This new corridor alternative has some potential to change or effect the "rural" character. The impacts of a new corridor in areas that are currently rural can be reduced through avoidance of the most sensitive areas and mitigation. It has the potential to minimize impacts to existing communities along existing freeways through Niagara Region and Hamilton with less widening.</p> <p>Widening Highway 403 in the King and Main Street area could have a major impact on approximately three residential properties and two three-storey apartment buildings. There is also the potential to impact a 16 storey apartment building.</p> <p>Widening the QEW will have a major impact on approximately seven properties and a minor impact on approximately 53.</p> <p>Widening Highway 6 will have a major impact on approximately 20 properties and a minor impact on approximately 166 properties.</p> <p>Approximately 25-30 parcels of residential land and 25-30 parcels of urban land could be impacted by the new corridor segments.</p>
<p>2.2 Land Use / Community (Cont'd)</p>	<p>2.2.4 Commercial/Industrial <i>Measure:</i> Qualitative assessment of the potential to affect commercial and industrial areas using, as an indicator, the estimated number of properties/industrial parks likely impacted.</p>	<p>Improving the Garden City Skyway could potentially impact approximately 10 industrial properties and approximately six commercial properties.</p> <p>Improving Red Hill Valley could have a major impact on approximately one Industrial property.</p> <p>Widening Highway 403 in the King and Main Street areas could have a major impact on</p>	<p>Widening Highway 403 in the King and Main Street areas could have a major impact on approximately six commercial properties.</p> <p>Widening the QEW will have a moderate impact on approximately five commercial properties and approximately 55 minor. It will have a minor impact on approximately 24 industrial properties.</p>	<p>Widening Highway 403 in the King and Main Street areas could have a major impact on approximately six commercial properties.</p> <p>Widening the QEW will have a moderate impact on approximately five commercial properties and approximately 55 minor. It will have a minor impact on approximately 24 industrial properties.</p>	<p>Widening Highway 403 in the King and Main Street areas could have a major impact on approximately six commercial properties.</p> <p>Widening the QEW will have a moderate impact on approximately five commercial properties and approximately 55 minor. It will have a minor impact on approximately 24 industrial properties.</p>	<p>Widening Highway 403 in the King and Main Street areas could have a major impact on approximately six commercial properties.</p> <p>Widening the QEW will have a moderate impact on approximately six commercial properties and a minor impact on approximately 65. It will also have a minor impact on approximately 31 industrial properties.</p>

Factor	Sub-Factor and Measure	Alternative 3-1	Alternative 4-2	Alternative 4-3	Alternative 4-4	Alternative 4-5
		<p>approximately six commercial properties.</p> <p>Widening the QEW will have a moderate impact on 14 commercial properties and 81 minor. It will have a minor impact on 35 industrial properties.</p> <p>Widening Highway 6 will have a minor impact on approximately four industrial properties and approximately 23 commercial properties, and a moderate impact on approximately five commercial properties.</p>	<p>Widening Highway 6 will have a minor impact on approximately four industrial properties and approximately 23 commercial properties, and a moderate impact on approximately five commercial properties.</p> <p>Approximately 20-25 parcels of industrial land could be impacted by the new corridor.</p>	<p>Approximately 30-35 parcels of industrial land could be impacted by the new corridor.</p>	<p>Widening Highway 6 will have a minor impact on approximately four industrial properties and approximately 23 commercial properties, and a moderate impact on approximately five commercial properties.</p> <p>Approximately 30-35 parcels of industrial land could be impacted by the new corridor.</p>	<p>Widening Highway 6 will have a minor impact on approximately four industrial properties and approximately 23 commercial properties, and a moderate impact on approximately five commercial properties.</p> <p>Approximately 25-30 parcels of industrial land could be impacted by the new corridor segments.</p>
	<p>2.2.5 Tourism Operations <i>Measure:</i> <i>Qualitative assessment of the potential to impact or support tourist areas and attractions in the study area.</i></p>	<p>Adding additional lanes allows for better flow of traffic on the route to the Niagara border and tourist areas.</p>	<p>Promotes increased tourism by providing a high quality alternate route to the Niagara border and tourist areas through a better linkage to Southwest Ontario (i.e., Niagara to London / Kitchener / Brantford).</p>	<p>Promotes increased tourism by providing a high quality alternate route to the Niagara border and tourist areas through a better linkage to Southwest Ontario (i.e., Niagara to London / Kitchener / Brantford).</p>	<p>Promotes increased tourism by providing a high quality alternate route to the Niagara border and tourist areas through a better linkage to Southwest Ontario (i.e., Niagara to London / Kitchener / Brantford).</p>	<p>Somewhat improved access may promote increased tourism. Does not provide alternate route between the Niagara and Hamilton / GTA area. Somewhat improved access to Niagara Falls tourist area.</p>
	<p>2.2.6 Community Facilities / Institutions <i>Measure:</i> <i>Qualitative assessment of the potential to affect major community facilities and institutions using, as indicators, type and the approximate number.</i></p>	<p>Widening the QEW will have a minor impact on approximately 38 institutional / office properties.</p> <p>Widening Highway 6 will have a minor impact on approximately one institutional / office property.</p>	<p>Widening the QEW will have a minor impact on approximately 29 institutional / office properties.</p> <p>Widening Highway 6 will have a minor impact on approximately one institutional / office property.</p>	<p>Widening the QEW will have a minor impact on approximately 29 institutional / office properties.</p>	<p>Widening the QEW will have a minor impact on approximately 29 institutional / office properties.</p> <p>Widening Highway 6 will have a minor impact on approximately one institutional / office property.</p>	<p>Widening the QEW will have a minor impact on approximately 31 institutional / office properties.</p> <p>Widening Highway 6 will have a minor impact on approximately one institutional / office property.</p>
<p>2.3 Noise</p>	<p>2.3.1 Transportation Noise <i>Measure:</i> <i>Qualitative description of the:</i> - different types of noise impacts; - locations of increased noise; - proximity to NSAs; and - magnitude and severity of impacts.</p>	<p>Nuisance / proximity impacts (increased noise, illumination etc.) may occur in built-up areas. This alternative has the most widening and therefore potential to have largest noise increases along the QEW, Highway 403, Highway 6, Highway 406 and 407 ETR. These areas are urban areas with more noise receivers. Less of an issue throughout the QEW from Hamilton, Grimsby area though as it is less populated along the Highway.</p>	<p>Concentrates on rural areas mostly in new corridor. Noise is farther away from where people are located. Less noise sensitive receivers potentially impacted.</p> <p>Lane widening through Oakville / Burlington / Hamilton is located near existing communities, however widening is incremental and is anticipated to have low impacts.</p>	<p>Concentrates on rural areas mostly in new corridor. Noise is farther away from where people are located. Less noise sensitive receivers potentially impacted.</p> <p>Lane widening through Oakville / Burlington / Hamilton is located near existing communities, however widening is incremental and is anticipated to have low impacts.</p>	<p>Concentrates on rural areas mostly in new corridor. Noise is farther away from where people are located. Less noise sensitive receivers potentially impacted.</p> <p>Lane widening through Oakville / Burlington / Hamilton is located near existing communities, however widening is incremental and is anticipated to have low impacts.</p>	<p>Concentrates on rural areas mostly in new corridor. Noise is farther away from where people are located. Less noise sensitive receivers potentially impacted.</p> <p>Lane widening through Oakville / Burlington / Hamilton / Niagara is located near existing communities, however widening is incremental and is anticipated to have low impacts.</p>
<p>2.4 Air</p>	<p>2.4.1 Local air quality <i>Measure:</i> <i>Size of sensitive areas where a quality threshold may be exceeded</i></p>	<p>For most sections of freeway, the traffic volume in 2031 will be approximately the same as for other alternatives.</p> <p>However, the QEW, East of Hamilton, has higher projected traffic volumes than for other alternatives.</p> <p>Traffic volumes remain small enough that the highway will not cause above-threshold</p>	<p>Lower traffic volume on QEW, East of Hamilton, eliminates the minor impact identified in Alternative 3-1.</p> <p>Traffic volume on proposed new corridor is relatively low, and the potential zone of above-background pollutant levels is contained within the planned 110m wide ROW.</p>	<p>Lower traffic volume on QEW, East of Hamilton, eliminates the minor impact identified in Alternative 3-1.</p> <p>Traffic volume on proposed new corridor is relatively low, and the potential zone of above-background pollutant levels is contained within the planned 110m wide ROW.</p>	<p>Lower traffic volume on QEW, East of Hamilton, eliminates the minor impact identified in Alternative 3-1.</p> <p>Traffic volume on proposed new corridor is relatively low, and the potential zone of above-background pollutant levels is contained within the planned 110m wide ROW.</p>	<p>Lower traffic volume on QEW, East of Hamilton, eliminates the minor impact identified in Alternative 3-1.</p> <p>Traffic volume on proposed new corridor is relatively low, and the potential zone of above-background pollutant levels is contained within the planned 110m wide ROW.</p>

Factor	Sub-Factor and Measure	Alternative 3-1	Alternative 4-2	Alternative 4-3	Alternative 4-4	Alternative 4-5
		 <p>pollutant levels outside the right-of-way (ROW), but may cause above-background pollutant levels within approx. 75m (distance from Highway centreline). Residences within this distance occur in some areas of Winona, Grimsby, St. Catharines and Niagara Falls.</p>				
	<p>2.4.2 Regional Air Quality <i>Measure:</i> Network-wide, peak hour emissions of NO<sub>x</sub>, CO, THC and PM</p>	Network-wide, peak hour vehicle kilometres travelled (VKT) and pollutant emissions are slightly lower (2% or less) than other alternatives.	Network-wide, peak hour VKT and pollutant emissions are slightly higher than Alternative 3-1, and slightly lower than other Group #4 alternatives.	Network-wide, peak hour VKT and pollutant emissions slightly higher than Alternatives 3-1 and 4-2.	Network-wide, peak hour VKT and pollutant emissions slightly higher than Alternatives 3-1 and 4-2.	Network-wide, peak hour VKT and pollutant emissions slightly higher than Alternatives 3-1 and 4-2.
	<p>2.4.3 Greenhouse Gas Emissions <i>Measure:</i> Network-wide, peak hour emissions of Greenhouse gases.</p>	Network-wide, peak hour vehicle kilometres travelled and GHG emissions are slightly lower (2% or less) than other alternatives.	Network-wide, peak hour VKT and GHG emissions are slightly higher than alternative 3-1.	Network-wide, peak hour VKT and GHG emissions are slightly higher than Alternative 3-1.	Network-wide, peak hour VKT and GHG emissions are slightly higher than Alternative 3-1.	Network-wide, peak hour VKT and GHG emissions are slightly higher than Alternatives 3-1.
2.5 Land Use / Resources	<p>2.5.1 First Nations Treaty Rights and Interests or Use of Land and Resources for Traditional Purpose (e.g., hunting, fishing, harvesting of traditional foods, harvesting of medicinal plants) <i>Measure:</i> Potential to impact FN Treaty rights and interests, or use of land and resources for traditional purposes (i.e., hunting fishing, harvesting food and medicinal plants etc.)</p>	The potential significance to impact First Nations Treaty Rights and Interest or use of land and resources for traditional purposes will be confirmed through discussions with First Nations as part of the EA process.	The potential significance to impact First Nations Treaty Rights and Interest or use of land and resources for traditional purposes will be confirmed through discussions with First Nations as part of the EA process.	The potential significance to impact First Nations Treaty Rights and Interest or use of land and resources for traditional purposes will be confirmed through discussions with First Nations as part of the EA process.	The potential significance to impact First Nations Treaty Rights and Interest or use of land and resources for traditional purposes will be confirmed through discussions with First Nations as part of the EA process.	The potential significance to impact First Nations Treaty Rights and Interest or use of land and resources for traditional purposes will be confirmed through discussions with First Nations as part of the EA process.
	<p>2.5.2 Agriculture <i>Measure:</i> Qualitative assessment of prime agricultural lands and description of specialty crop areas.  Number of property parcels that could potentially impact agricultural lands.</p>	Widening existing freeways has minimal potential to fragment agricultural lands. Fringe impacts may occur in agricultural areas. This alternative results in minimal loss of agricultural lands along existing freeways.	New corridors generally result in greater fragmentation and loss of agricultural lands. This corridor will result in the fragmentation of farms and results in loss of Class 1, 2, and 3 agricultural lands in Niagara and Hamilton.  Approximately 345-365 parcels of agricultural land could be impacted by the new corridor.	New corridors generally result in greater fragmentation and loss of agricultural lands. This corridor will result in the fragmentation of farms and results in loss of Class 1, 2, and 3 agricultural lands in Niagara and Hamilton.  Approximately 450-470 parcels of agricultural land could be impacted by the new corridor.	New corridors generally result in greater fragmentation and loss of agricultural lands. This corridor will result in the fragmentation of farms and results in loss of Class 1, 2, and 3 agricultural lands in Niagara and Hamilton.  Approximately 495-510 parcels of agricultural land could be impacted by the new corridor.	New corridors generally result in greater fragmentation and loss of agricultural lands. This corridor will result in the fragmentation of farms and results in loss of Class 1, 2, and 3 agricultural lands in Niagara and Hamilton.  Impact to tender fruit lands through connection in Grimsby.  Approximately 420-430 parcels of agricultural land could be impacted by the new corridor.
	<p>2.5.3 Recreational Lands and Natural Areas of Provincial Significance (e.g., national / provincial parks, conservation areas, major trails) <i>Measure:</i></p>					



Factor	Sub-Factor and Measure	Alternative 3-1	Alternative 4-2	Alternative 4-3	Alternative 4-4	Alternative 4-5
	<p>Name and number of parks / recreational areas potentially affected.</p> <p>2.5.4 Aggregates and Mines <i>Measure:</i> Number and size of pits and quarries potentially affected.</p>	<p>There are no Niagara Escarpment Plan Parks located along the existing Highways.</p> <p>There are no Provincial Parks anticipated to be impacted.</p> <p>There are no aggregates or mines within along the existing Highways.</p>	<p>There are no Niagara Escarpment Plan Parks located along the new corridor.</p> <p>There are no Provincial Parks anticipated to be impacted.</p> <p>Potential to impact 4 smaller pits / quarries and 2 larger ones; which are located south of Welland along Highway 406.</p>	<p>There are no Niagara Escarpment Plan Parks located along the new corridor.</p> <p>There are no Provincial Parks anticipated to be impacted.</p> <p>Potential to impact 6 smaller pits / quarries and 3 larger ones; which are located south of Welland along Highway 406 and north of the City of Hamilton, south of the 401.</p>	<p>There is potential to impact Lake Medad Forest of the Niagara Escarpment Plan Parks located along the new corridor of Highway 403 to 407 ETR connection.</p> <p>There are no Provincial Parks anticipated to be impacted.</p> <p>Potential to impact 4 smaller pits / quarries and 5 larger ones; which are located south of Welland along Highway 406 and west of 407 ETR in Burlington.</p>	<p>There is potential to impact Lake Medad Forest of the Niagara Escarpment Plan Parks located along the new corridor of Highway 403 to 407 ETR connection.</p> <p>There are no Provincial Parks anticipated to be impacted.</p> <p>Potential to impact 3 smaller pits / quarries and 5 larger ones; which are located south of Welland along Highway 406 and west of 407 ETR in Burlington.</p>
<p>2.6 Municipal Services</p>	<p>2.6.1 Major Utility Transmission Corridors (e.g., railway, hydro, gas, oil) <i>Measure:</i> Number of major utility transmission corridors potentially impacted.</p>	<p>Potential to impact hydro / utility lines that run along QEW through to Hamilton, Highway 403 and 401. Number of hydro / utility lines running east / west along north and south of Highway 406.</p>	<p>Potential to impact a number of hydro / utility lines that run in the area of the new corridor. Greatest potential in Highway 406 area where there is multiple utility lines and TransCanada pipelines. One TransCanada Pipeline running through / along the rural area in the new corridor between Niagara and Hamilton.</p> <p>In regards to widening, there is potential to impact hydro / utility lines that run along QEW through to Hamilton, Highway 403 and 401.</p>	<p>Potential to impact a number of hydro / utility lines that run in the area of the new corridor. Greatest potential in Highway 406 area where there is multiply utility lines and TransCanada pipelines. One TransCanada Pipeline running through / along the rural area in the new corridor between Niagara and Hamilton.</p> <p>In regards to widening, there is potential to impact hydro / utility lines that run along QEW through to Hamilton, Highway 403 and 401.</p>	<p>Potential to impact a number of hydro / utility lines that run in the area of the new corridor. Greatest potential in Highway 406 area where there is multiply utility lines and TransCanada pipelines. One TransCanada Pipeline running through / along the rural area in the new corridor between Niagara and Hamilton.</p> <p>In regards to widening, there is potential to impact hydro / utility lines that run along QEW through to Hamilton, Highway 403 and 401.</p>	<p>Potential to impact a number of hydro / utility lines that run in the area of the new corridor. Greatest potential in Highway 406 area where there is multiply utility lines and TransCanada pipelines. One TransCanada Pipeline running through / along the rural area in the new corridor in Hamilton.</p> <p>In regards to widening, there is potential to impact hydro / utility lines that run along Highway QEW through to Hamilton, Highway 403 and 401.</p>
<p>2.7 Contaminated Property Identification and Management</p>	<p>(e.g., Landfills, Hazardous Waste Sites, "Brownfield" Areas, other known contaminated sites, and high-risk contamination areas) <i>Measure:</i> Number and type of contaminated sites that potentially affected.</p>	<p>There is a high probability to avoid sites during route planning, but the widening of the existing Highway will pass through four Brownfields and two landfills.</p>	<p>There is a high probability to avoid sites during route planning, but the corridor will pass through 52 Brownfields, 13 Federal Contaminated Sites and 26 landfills.</p>	<p>There is a high probability to avoid sites during route planning, but the corridor will pass through 51 brownfields, 13 Federal Contaminated Sites and 31 landfills.</p>	<p>There is a high probability to avoid sites during route planning, but the corridor will pass through 55 Brownfields, 14 Federal Contaminated Sites and 28 landfills.</p>	<p>There is a high probability to avoid sites during route planning, but the corridor will pass through 30 Brownfields, 12 Federal Contaminated Sites and 14 landfills.</p>
<p><b>Summary</b></p>						
<p>Based on the above assessment, none of the alternatives are clearly preferred from a Land Use / Socio-Economic perspective. The following summarizes the major issues associated with each alternative.</p>	<ul style="list-style-type: none"> <li>Limited ability to accommodate planned future growth in Niagara Region and the City of Hamilton.</li> <li>Requires widening of QEW to eight lanes through St Catharines that will result in significant community impacts with well over 100 residences displaced and major impacts to a number of businesses and industrial areas.</li> </ul>	<ul style="list-style-type: none"> <li>Potential to change or affect the 'rural' character though Central Niagara and Eastern Hamilton.</li> <li>Requires new Greenbelt crossings of approximately 30 kilometres.</li> <li>Results in potential fragmentation of farms and results in loss of Class 1, 2 and 3 agricultural lands in Niagara and Hamilton.</li> </ul>	<ul style="list-style-type: none"> <li>Potential to change or affect the 'rural' character.</li> <li>Requires new Greenbelt crossings of approximately 65 kilometres.</li> <li>Results in potential fragmentation of farms and results in loss of Class 1, 2 and 3 agricultural lands in Niagara and Hamilton.</li> <li>Major property impacts (including</li> </ul>	<ul style="list-style-type: none"> <li>Potential to change or affect the 'rural' character.</li> <li>Requires new Greenbelt crossings of approximately 65 kilometres.</li> <li>New Niagara Escarpment Plan Area crossing to connection with 407 ETR.</li> <li>Largest amount of agricultural land impacted by this new corridor.</li> </ul>	<ul style="list-style-type: none"> <li>Requires the longest new Greenbelt crossings of approximately 75 kilometres.</li> <li>Two new crossings through New Escarpment Plan Area.</li> <li>Higher potential to impact tender fruit lands with connection in Grimsby.</li> <li>Major property impacts (including</li> </ul>	

Factor	Sub-Factor and Measure	Alternative 3-1	Alternative 4-2	Alternative 4-3	Alternative 4-4	Alternative 4-5
		 <ul style="list-style-type: none"> <li>• Significant widening of QEW to ten lanes in the Grimsby area that will result in impacts to adjacent residences and businesses along QEW.</li> <li>• Requires widening of the existing QEW crossing of the Niagara Escarpment Plan Area between St. Catharines and Niagara Falls.</li> <li>• Requires widening QEW through Greenbelt Plan Area in the Town of Niagara-on-the-Lake.</li> <li>• Major property impacts (including displacements) associated with widening Highway 403 to eight lanes through Hamilton, Highway 6 to six lanes north of Highway 403 and QEW through Halton to ten lanes.</li> </ul>	 <ul style="list-style-type: none"> <li>• Will not divert enough traffic to avoid the need to widen QEW resulting in high cumulative impacts to agricultural communities</li> <li>• Major property impacts (including displacements) associated with widening Highway 403 to eight lanes through Hamilton, Highway 6 to six lanes north of Highway 403 and QEW through Halton to ten lanes.</li> </ul>	 <p>displacements) associated with widening Highway 403 through Hamilton and QEW through Halton.</p>	 <ul style="list-style-type: none"> <li>• Results in potential fragmentation of farms and results in loss of Class 1, 2 and 3 agricultural lands in Niagara and Hamilton.</li> <li>• Major property impacts (including displacements) associated with widening Highway 403 to eight lanes through Hamilton, Highway 6 to six lanes north of Highway 403 and QEW through Halton to ten lanes.</li> </ul>	 <p>displacements) associated with widening Highway 403 to eight lanes through Hamilton, Highway 6 to six lanes north of Highway 403 and QEW through Halton to ten lanes.</p>

#### 4.4.2.1 Land Use, Planning Policies, Plans, Goals Objectives

Alternative 3-1 supports the planned future land use and growth as identified in *The Growth Plan*; highway widening, including HOV, provide new transit service connections, and by expanding capacity within existing corridors, reduces impact on natural areas.

All of the Group #4 alternatives result in new Greenbelt crossings. Greenbelt Plan Area crossings should be avoided unless it meets one of the following two objectives, as stated under Section 4.2 of the *Greenbelt Plan*:

1. It supports agriculture, recreation and tourism, rural settlement areas, resource use or the rural economic activity that exists and it is permitted within the Greenbelt; or
2. 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.

In this case the Group #4 alternatives primarily address significant growth and economic development expected in Southern Ontario as envisioned in *The Growth Plan*.

With regard to the Gateway Economic Centre (Welland area) and the Gateway Economic Zone (Niagara Border Crossings), which are identified in *The Growth Plan*, these areas are best supported by Alternatives 4-2, 4-3 and 4-4.

#### 4.4.2.2 Land Use / Community

The focus of this section includes First Nations land uses, Residential, Commercial / Industrial and Community Facilities / Institutions. The approximate range of properties potentially impacted can be seen in **Table 4-5**.

In general, Alternatives 3-1, 4-2 and 4-4 result in the greatest residential and commercial property impacts, as they involve the most significant widening of existing facilities in the West Area. In particular these alternatives result in significant impacts associated with widening Highway 403 to eight lanes through Hamilton, Highway 6 to six lanes north of Highway 403 and QEW through Halton to ten lanes.

Overall though, Alternative 3-1 would have the greatest business and residential impacts associated with widening through built up areas, with over 400 properties affected. In the St. Catharines area, the residential impacts would be very high, as it is anticipated that approximately 120 homes would be displaced. In Hamilton, significant impacts along Highway 403 in Hamilton would occur (between King Street and Main Street). As well, there would be moderate commercial / industrial impacts associated with widening the QEW (Garden City Skyway). In addition, as Highway 403 requires widening to ten lanes by 2031 and beyond, there would be very significant community and environmental impacts to accommodate ten lanes and the associated improvements to highway geometry. These impacts include the displacement of a number of additional apartment buildings along King Street and Main Street, as well as additional major impacts to Cootes Paradise and the existing Niagara Escarpment Crossing.

Business and residential impacts associated with Group #4 would be lower than Group #3 as there is increased potential to avoid impacts with a new route, with the exception of the widening components associated with each the of the Group #4 alternatives.

#### 4.4.2.3 Noise

Alternative 3-1 has a greater potential for significant noise impacts than the Group #4 alternatives, considering that this alternative has the most highway widening and that they are occurring in mostly built up areas where the number of noise receivers is greater.

The new corridors for Group #4 alternatives occur in more rural areas which are less populated than urban areas, therefore there are less noise sensitive receivers potentially impacted and there is an increased ability to mitigate through routing alternatives. The highway widening associated with Group #4 alternatives is incrementally lower and are anticipated to result in lower impacts.

#### 4.4.2.4 Air

Overall, the alternatives are relatively similar in regard to air quality, from a local, regional and GHG perspective. Alternatives 4-4 and 4-5 are most preferred, followed closely by 4-2 and 4-3, which have slightly greater potential exposure to sensitive receptors. Alternative 3-1 is somewhat less preferred than the Group #4 alternatives in terms of potential exposure to sensitive receptors, and is more-or-less equal to them in terms of system-wide, incremental emissions.

#### 4.4.2.5 Land Use / Resources – Agriculture

In general, widening existing highways (i.e., Alternative 3-1), has minimal potential to fragment agricultural lands. Although fringe impacts may occur in agricultural areas, this alternative is anticipated to result in minimal loss of agricultural lands along existing highways.

In contrast, the Group #4 corridors are anticipated to result in a greater fragmentation and loss of agricultural lands. The new corridors in the Group #4 alternatives result in the fragmentation of farms and loss of Class 1, 2, and 3 agricultural lands in Niagara and Hamilton along the Central Area of the alternatives. Alternative 4-3 has the potential to impact the greatest number of parcels of agricultural land. Alternative 4-5 has the least amount of impact to agricultural land, with almost half the amount of Alternative 4-4.

Alternative 4-5 has the potential to impact the tender fruit lands associated with the new connection to QEW around Hamilton.

#### 4.4.2.6 Utilities

There is potential to avoid utility transmissions during route planning, but there are a number of hydro and utility lines that run throughout all of the new corridors in the Group #4 alternatives. In particular, the greatest potential is in the East Area in the vicinity of Highway 406 where there are multiple utility lines and TransCanada pipelines. In all alternatives the widening scenarios have potential to impact hydro and utility lines that run along QEW, Highway 403 and Highway 401. All alternatives are anticipated to have similar impacts to utility transmission corridors.

#### 4.4.2.7 Contaminated Property Identification and Management

There is a high probability to avoid sites during the route planning stage, but the alternatives pass through a number of contaminated sites, such as brownfields, Federal Contaminated Sites, and landfills. This is discussed in greater detail in **Table 4-5**. In general, Alternative 3-1 passes through the least amount of contaminated sites. Within

the Group #4 alternatives, Alternative 4-5 passes through the least amount of contaminated sites.

## 4.5 CULTURAL ENVIRONMENT

### 4.5.1 Methodology

The study team used secondary source information (i.e., Stage 1 Archaeological Assessment and historic records, mapping, aerial photography, documentation, other studies, reports, websites, etc.) carried out during this study and obtained from agencies (local historical groups), Ministry of Culture and municipalities during the study to assess the alternatives in accordance with the factors and criteria under cultural environment. Secondary source information was supplemented by local knowledge obtained through consultation with the public, agencies, municipalities and First Nations. Additional field work will be carried out during Phase 2 of the EA process.

Recognizing that Stage 1 of the EA process identifies wide corridors, as seen in the alternative figures, the study team understood that every cultural feature in the corridor would not be impacted by future routes, and that some features could be avoided in the next phase of the EA – when route planning would occur. In other instances, it was apparent that the feature was so large that it crossed the entire width of the corridor (or study area) and could not be avoided (i.e., areas with high potential for archaeological resources because they are currently undisturbed). These types of distinctions about the magnitude of potential impacts and the likelihood of avoidance or mitigation were noted in the evaluation tables.

Although significant cultural features within the Group #3 and #4 alternatives could be named and in some cases counted or “measured” to provide a comparison between alternatives, other criteria required a qualitative assessment of potential impacts or benefits of the Group #3 or #4 alternatives, at a higher level of detail. Additional information on cultural resources is provided in the *Overview of Existing Environmental Conditions and Constraints Report*, referred to **Section 2.3**.

### 4.5.2 Findings

The transportation analysis findings are summarized through the following assessment of Area Transportation System Alternatives (**Table 4-5**). The subsequent sections will summarize the factors and key issues that lead to the development of the draft Strategy.

#### 4.5.2.1 Cultural Heritage- Built Heritage and Cultural Heritage Landscapes

When considering the difference between Group #3 and #4 alternatives for Built Heritage, the Group #4 alternatives have more potential to avoid built heritage features as compared to Alternative 3-1, given the broad width of the corridors.

As noted in the table, the potential to impact First Nations Burial Sites will be confirmed through ongoing discussions with First Nations as part of EA process.

#### 4.5.2.2 Cultural Heritage – Archaeology

When considering the difference between Group #3 and #4 alternatives for Archaeological Sites and Resources, it can be said the widening involved in Group #3 have a lower potential to impact archaeological resources or cultural landscape. Many of the areas affected by Alternative 3-1 have been previously disturbed already, whereas the Group #4 alternatives generally affect areas that have not been previously disturbed.

As noted in the table, the potential to impact cultural resources of historical significance to First Nations will be confirmed through ongoing discussions with First Nations as part of EA process.

Table 4-5: Cultural Environment Findings

Factor	Sub-Factor and Measure	Alternative 3-1	Alternative 4-2	Alternative 4-3	Alternative 4-4	Alternative 4-5
<b>3.0 Cultural Environment Factors</b>						
<b>3.1 Cultural Heritage – Built Heritage and Cultural Heritage Landscapes</b>	<p>3.1.1 Built Heritage (i.e., standing sites of architectural or heritage significance, Ontario Heritage Properties, heritage bridges, cemeteries) and Cultural Heritage Landscapes (i.e., areas of historic 19<sup>th</sup> century settlement)</p> <p><i>Measure:</i> Qualitative assessment of the potential to affect or avoid cultural heritage areas / resources.</p>	Widening existing freeways has some potential to impact built heritage features that are located adjacent to existing Highways.	New corridors have more potential to avoid built heritage features.	New corridors have more potential to avoid built heritage features.	New corridors have more potential to avoid built heritage features.	New corridors have more potential to avoid built heritage features.
	<p>3.1.2 First Nations Burial Sites</p> <p><i>Measure:</i> Qualitative assessment of potential to impact First Nations burial sites.</p>	Widening existing freeways has some potential to impact to cultural resources of historical significance to First Nations. The potential to impact cultural resources of historical significance to First Nations will be confirmed through discussions with First Nations as part of the EA process.	The potential to impact cultural resources of historical significance to First Nations will be confirmed through discussions with First Nations as part of the EA process.	The potential to impact cultural resources of historical significance to First Nations will be confirmed through discussions with First Nations as part of the EA process.	The potential to impact cultural resources of historical significance to First Nations will be confirmed through discussions with First Nations as part of the EA process.	The potential to impact cultural resources of historical significance to First Nations will be confirmed through discussions with First Nations as part of the EA process.
<b>3.2 Cultural Heritage – Archaeology</b>	<p>3.2.1 Pre-Historic and Historic First Nations Sites</p> <p><i>Measure:</i> Qualitative assessment of potential to impact archaeological sites of historical significance to First Nations.</p>	The potential to impact cultural resources of historical significance to First Nations will be confirmed through discussions with First Nations as part of the EA process.	The potential to impact cultural resources of historical significance to First Nations will be confirmed through discussions with First Nations as part of the EA process.	The potential to impact cultural resources of historical significance to First Nations will be confirmed through discussions with First Nations as part of the EA process.	The potential to impact cultural resources of historical significance to First Nations will be confirmed through discussions with First Nations as part of the EA process.	The potential to impact cultural resources of historical significance to First Nations will be confirmed through discussions with First Nations as part of the EA process.
	<p>3.2.2 Archaeological Sites and Resources</p> <p><i>Measure:</i> Qualitative assessment of impacts to archaeological sites or resources using impacts to undisturbed areas as indicator.</p>	There is relatively low potential to impact archaeological resources or cultural landscapes because most areas have been previously disturbed.	The new corridor section has some potential to impact archaeological sites and resources in previously undisturbed areas.	The new corridor section has some potential to impact archaeological sites and resources in previously undisturbed areas.	The new corridor section has some potential to impact archaeological sites and resources in previously undisturbed areas.	The new corridor section has some potential to impact archaeological sites and resources in previously undisturbed areas.
<b>Summary</b>						
Based on the above assessment, none of the alternatives are clearly preferred from a Cultural perspective. The following summarizes the major issues associated with each alternative.		Widening existing freeways has some potential to impact to built heritage features and cultural resources of historical significance to First Nations.	The new corridor section has some potential to impact archaeological sites and resources in previously undisturbed areas.	The new corridor section has some potential to impact archaeological sites and resources in previously undisturbed areas.	The new corridor section has some potential to impact archaeological sites and resources in previously undisturbed areas.	The new corridor section has some potential to impact archaeological sites and resources in previously undisturbed areas.

## 4.6 ECONOMIC ANALYSIS

The purpose of the economic analysis was to provide an assessment of the degree to which each project alternative supported the economy of the NGTA study area and of the GGH as a whole.

Transportation investments benefit the economy in several ways. Traffic congestion, collisions, pollution, and other delays cost businesses and people money. Commuters and goods are stuck in traffic, wasting time and money. Vehicle emissions damage the natural environment, with costs to society as a whole, including health care costs associated with poor air quality. And collisions can have terrible human costs, and even minor ones cause damage to vehicles and further delays. These are all costs to society that cannot be recovered.

When the transportation system works more efficiently, these costs are reduced – and Ontario is more competitive. This brings jobs, increased investment, and higher quality of life.

As such, increased transportation capacity can have the following benefits:

- **Travel time savings** – people and goods move more efficiently – this improves our competitiveness as a Province;
- **Collision reduction savings** – the costs of personal injuries and property damage is reduced, and the delays caused by collisions are reduced;
- **Vehicle operating costs** – where cars operate more efficiently, and where people or goods can travel by alternate modes such as by rail, vehicle operating costs are reduced;
- **Emissions reductions** – the costs to society of emissions, such as health care costs and greenhouse gas emissions, are reduced;
- **Land use benefits** – increased capacity can “unlock” lands for new development, stimulate revitalization and permit development at higher densities within urban areas, which reduces costs for other municipal services; and
- **Increased mobility** – people can access jobs, services, tourist attractions and other opportunities that they could not access before.

This is in addition to the jobs and spending directly generated by the construction of new transportation facilities.

The economic analysis of project alternatives was conducted using two types of analysis – a quantitative economic impact modelling exercise, using a software package called Transportation Economic Development Impact System (TREDIS), and a qualitative analysis of the fit between the options and the location and scale of current and future economic growth areas in the corridor.

### 4.6.1 Methodology

#### 4.6.1.1 Quantitative Modelling

The expected economic impact of the NGTA alternatives on a regional basis was calculated using the TREDIS multi-modal economic analysis tool (Transportation Economic Development Impact System). This economic analysis system has been applied in numerous provinces in Canada and states across the United States, but the version applied here was built by separating regions of the GGH into the NGTA and GTA



West study areas, and the rest of GGH and analyzing ways in which different NGTA industries depend on transportation for workers, materials and product deliveries from within and outside its borders.

The TREDIS modelling is used to estimate the mode specific incremental impacts of increased transportation capacity on different sectors of the economy, as well as transportation benefits to households. It is a way of systematically evaluating the economic benefit of improving multimodal access to consumer, producer, and labour markets.

The economic analysis process estimated long-term productivity impacts, which are the continuing effects of improved transportation conditions on economic productivity and competitiveness, and hence economic growth many years after an investment is made. In this case, the impacts were calculated out to the year 2031. Estimates for both types of impact were measured in terms of additional employment, gross domestic product (GDP) and wages due to the proposed mobility improvements. The long-term benefit of capital investment in transportation facilities is the improvement in travel conditions that lead to economic cost savings and productivity enhancement for NGTA residents and businesses. These improvements occur through five types of impacts on transportation system users:

- Cost savings due to reduced user time delay and expense;
- Cost savings due to enhanced reliability;
- Cost savings from enhanced inter-modal capacity and connectivity;
- Cost savings and scale economies from enhanced market access; and
- Added growth enabled by elimination of capacity constraints at gateways.

Those user benefits, in turn, lead to direct, indirect and induced effects on household living costs, business operating costs, productivity and competitiveness. They enable more jobs and business activity to take place in the NGTA study area and the whole GGH, which also reduces the “leakage” of income and savings that might otherwise flow to businesses located outside of the region.

These long-term economic impacts of planned capital investments should be interpreted carefully. It is important to note that these impacts represent the difference between a scenario in which needed investments are made and a scenario in which those capital investments are not made. So in a very real sense, the capital investments are enabling a continued level of economic growth while the failure to invest would lead to a lower level of economic growth.

#### **4.6.1.2 TREDIS – Structure and Parameters**

The economic impact model provided to MTO is TREDIS – the “Transportation Economic Development Impact System.” The system is designed to provide both economic development impact evaluation and benefit-cost analysis for transportation investments and policies. It is applicable for all modes – highway, transit (rail / bus), air and marine projects, as well as multi-modal projects. It is also applicable for both freight and passenger transportation projects, and accounts for rural accessibility as well as urban congestion factors. The system also distinguishes between economic growth due to mobility improvements (e.g., faster speeds, more reliable) and economic improvements due to business growth attracted by mobility improvements. This is done using economic geography tools that integrate GIS with an economic development

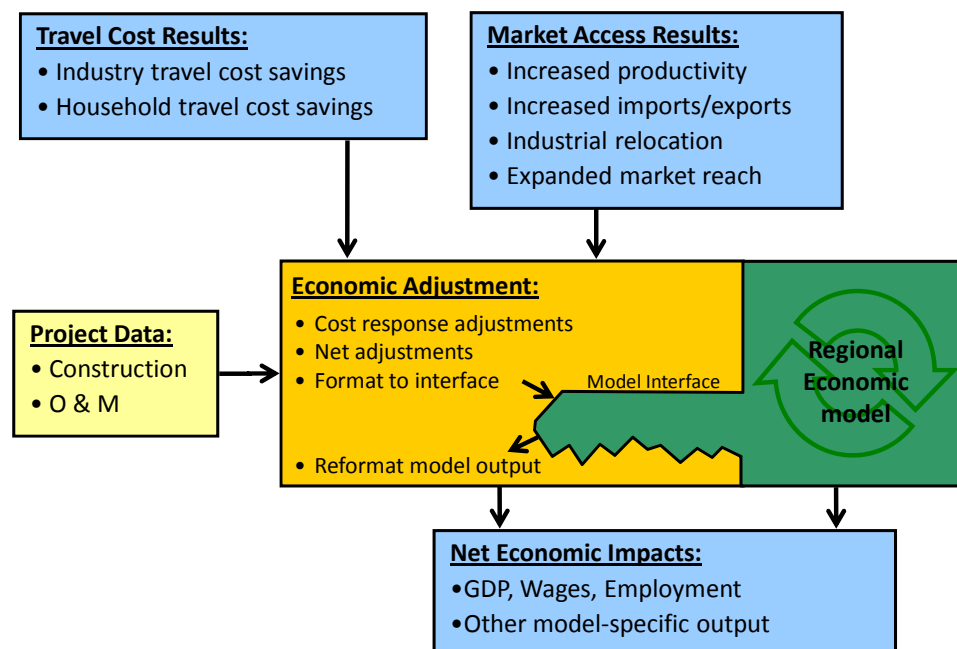
assessment process that accounts for threshold effects associated with changes in service areas, market access and travel times.

The version of TREDIS developed for this analysis is tailored to reflect the composition of the GTA economy, including separate treatments of the economies in the NGTA and GTA-West study areas. It is also designed to use results of the transportation demand modelling conducted by MTO and the study team as an input for highway projects and transit projects.

TREDIS is comprised of modules that work together to determine the full economic impact of transportation projects. They are listed below and illustrated in **Exhibit 4-1**.

- **Travel Cost Module (TC).** The first module translates changes in traffic volumes, travel times and collisions into direct cost savings that accrue to households and businesses. Factors that translate changes in vehicle kilometres traveled, vehicle hours traveled, reliability and safety to economic benefits were developed by research of the study team.
- **Market Access Module (MA).** The second module translates changes in regional accessibility and intermodal connectivity into effects on productivity and business relocation.
- **Economic Adjustment Module (EA).** The third module incorporates a dynamic time series economic impact model to estimate total impacts on growth of regional economies over time. This module was developed by using the Canadian industry by industry purchasing developed by Statistics Canada on behalf of the Organisation for Economic Co-operation and Development (OECD), and economic data purchased from Statistics Canada (employment and wages by place of work for NGTA, GTA-West, and the rest of the GTA).

**Exhibit 4-1: TREDIS Components**



Information on project costs, travel patterns, traffic conditions, market access and intermodal connectivity can be input through a series of input forms, or they can be input directly from spreadsheets or from travel demand models. The range of inputs is shown in **Exhibit 4-2**.

**Exhibit 4-2: Example of the Range of Inputs Allowed by the TREDIS Framework**

The image displays four overlapping data input forms:

- Project cost data:** A table with columns for Category, Road, Rail, Air, and Marine. Rows include Property Acquisition, Earthwork, Right-of-Way (paving, rails), Transport Structures (bridges), Terminal Bldgs & Equipment, and Vehicles.
- Travel demand volumes, speed, etc.:** A table with columns for Facility, Mode, Purpose, Period Veh-Trips, Period VMT, Period VMT, Fraction Congested, Avg. Crew Members, Passengers per Veh, Freight tons per Veh, and Toll Charges per Trip.
- Access times, market size:** A table with columns for Facility, Local Market Size (access to population w/in 40 minute drive), Regional Market Size (access to employment w/in 3 hour drive time), Activity Level (annual operations), Average Drive Time to Terminal (minutes), and Average Drive Time to Int'l Gateway (minutes).
- Accident Data:** A table with columns for Facility, Mode, Fatality rate per 100m VMT, Injury rate per 100m VMT, and Property Damage rate per 100m VMT.

A central box labeled "Enter Project Scenario Data" has arrows pointing to each of these forms.

From those inputs, TREDIS then calculates changes in travel patterns, speed, safety and reliability. This is illustrated in the report form shown as **Exhibit 4-3**.

**Exhibit 4-3: Example of a Report on Transportation System Changes**

DIRECT IMPACT BY MODE (TARGET YEAR)							
Period/Region Combination Inputs							
Base Scenario: Base Scenario							
Region: Unnamed Region / Period: Annual							
Transportation Measure	Pass Car	Truck Freight	Bus Transit	Rail Freight	Rail Transit	Air Trans	Water Trans
Gross VMT	0	0	0	0	0	0	0
Gross VHT	0	0	0	0	0	0	0
Gross VHT w/reliability adj	0	0	0	0	0	0	0
Passenger Trips	0	0	0	0	0	0	0
Passenger Miles	0	0	0	0	0	0	0
Freight Ton - Trips	0	0	0	0	0	0	0
Freight Ton - Miles	0	0	0	0	0	0	0
Fatalities	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Injuries	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Property Damage	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Local Gross VMT	0	0	0	0	0	0	0
Local Gross VHT w/reliability adj.	0	0	0	0	0	0	0
<b>Total Value of Travel Costs:</b>							
Passenger Cost - Total	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Crew Cost - Total	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Freight Cost - Total	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Veh Oper Cost - Total	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Toll Cost - Net Total	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Safety Cost - Total	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Environmental Cost - Total	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Sum of Total Travel Costs	\$0	\$0	\$0	\$0	\$0	\$0	\$0

The results are then portrayed in terms of a wide range of alternative perspectives, showing regional and GTA-wide benefits in terms of traveler benefit, and impact on the NGTA and overall GTA economy.

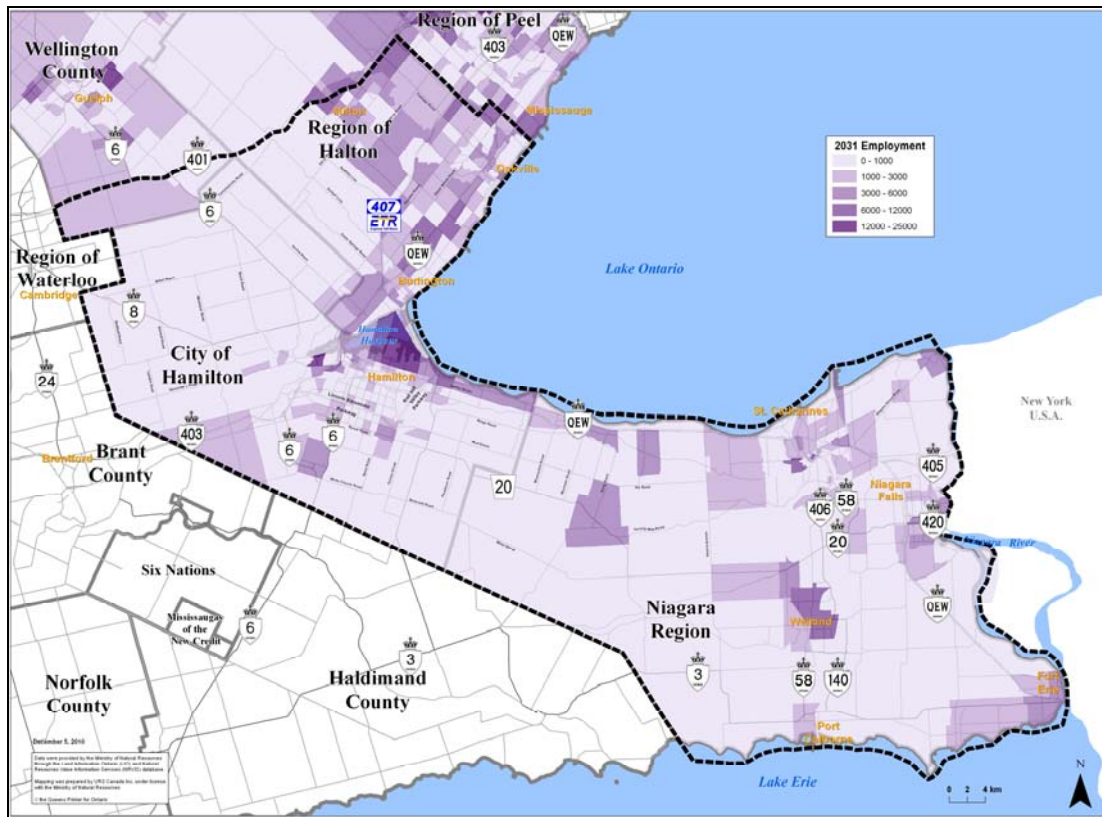
#### 4.6.1.3 Qualitative assessment

The qualitative assessment was designed to assess the degree to which each project alternative supported future patterns of employment and growth sectors. A number of secondary sources were used to complete this analysis, including:

- Growth Management Strategies and studies at the municipal level;
- Economic forecasts completed by the Provincial government;
- Traffic zone allocations of population and employment, reflecting these strategies; and
- Economic development strategies and studies at the municipal level.

In order to geographically understand the relationship between growth patterns and the proposed alternatives, growth areas were mapped using a series of thematic maps at the traffic zone showing the amount of employment anticipated by 2031. The alternatives were mapped as an overlay (**Exhibit 4-4**).

**Exhibit 4-4: Total Employment by Traffic Zone in 2031**








In addition, the assessment considered local economic development strategies by identifying sectors that municipal partners have targeted for growth, and the degree to which the proposed alternative supported this sector. This was accomplished by comparing the TREDIS economic impact results by sector to the sectors identified for growth in the economic development strategies.

#### 4.6.2 Findings

The economic analysis findings are summarized through the following assessment of Area Transportation System Alternatives (**Table 4-6**). The subsequent sections will summarize the factors and key issues that lead to the development of the draft Strategy.

Table 4-6: Economic Analysis Findings

Factor	Sub-Factor and Measure	Alternative 3-1	Alternative 4-2	Alternative 4-3	Alternative 4-4	Alternative 4-5
<b>4.0 Area Economy</b>						
4.1 First Nations Industry	<i>Measure:</i> Potential to support heavy industry and trade by efficient and reliable goods movement.	The potential to support First Nations industry will be confirmed through discussions with First Nations as part of the EA Process.	The potential to support First Nations industry will be confirmed through discussions with First Nations as part of the EA Process.	The potential to support First Nations industry will be confirmed through discussions with First Nations as part of the EA Process.	The potential to support First Nations industry will be confirmed through discussions with First Nations as part of the EA Process.	The potential to support First Nations industry will be confirmed through discussions with First Nations as part of the EA Process.
4.2 Heavy Industry and Trade	<i>Measure:</i> Qualitative economic impact analysis. Use of TREDIS.	<p>Expands capacity to existing industrial areas. Does not provide connections to some new employment areas; does not provide new route through southern Niagara region growth areas.</p> <p>Expands QEW to border, provides new capacity to and on Highway 401 for interprovincial and international trade.</p> <p>The assessment of economic impact identifies the highest level of economic benefits associated with this option. When coupled with widening in the GTA-West area (the assumption for economic assessment of all options), this option would produce:</p> <ul style="list-style-type: none"> <li>• Approx. \$2.2 billion in annual transportation cost savings in the GGH</li> <li>• Approx. \$1.0 billion in annual increased GDP in the GGH</li> <li>• Approx. 12,100 in increased employment in the GGH</li> </ul> <p>The economic impact assessment shows that this option will produce the highest potential output and employment gains for the manufacturing sector.</p>	<p>Expands capacity to existing industrial areas in Hamilton, Halton. Does not provide new connections to new employment areas in Halton. Provides new route through southern Niagara region growth areas.</p> <p>Provides new route to border from Hamilton, widening provides capacity to and on Highway 401 for interprovincial and international trade.</p> <p>The assessment of economic impact identifies the lowest level of economic benefits associated with this option. When coupled with widening in the GTA-West area (the assumption for economic assessment of all options), this option would produce:</p> <ul style="list-style-type: none"> <li>• Approx. \$1.8 billion in annual transportation cost savings in the GGH;</li> <li>• Approx. \$0.9 billion in annual increased GDP in the GGH;</li> <li>• Approx. 10,500 in increased employment in the GGH.</li> </ul> <p>The economic impact assessment shows that this option will produce the lowest potential output and employment gains for the manufacturing sector.</p>	<p>Expands capacity to existing industrial areas in Hamilton, Halton. Provides new route from west GTA (west of Milton) through Hamilton airport growth area and southern Niagara region growth areas.</p> <p>Provides new route to border from GTA, widening provides capacity to and on Highway 401 for interprovincial and international trade, provides new connection to Highway 401 from Hamilton/Niagara.</p> <p>The assessment of economic impact identifies a moderate level of economic benefits associated with this option. When coupled with widening in the GTA-West area (the assumption for economic assessment of all options), this option would produce:</p> <ul style="list-style-type: none"> <li>• Approx. \$2.0 billion in annual transportation cost savings in the GGH;</li> <li>• Approx. \$0.9 billion in annual increased GDP in the GGH;</li> <li>• Approx. 10,900 in increased employment in the GGH.</li> </ul> <p>The economic impact assessment shows that this option will produce lower potential output and employment gains for the manufacturing sector than Alternative 3-1, but higher than Alternative 4-2.</p>	<p>Expands capacity to existing industrial areas in Hamilton and Halton. Provides new route from growth areas in south Halton through Hamilton Airport growth and southern Niagara region growth areas.</p> <p>Provides new route to border from GTA, widening provides capacity to and on Highway 401 for interprovincial and international trade, provides new connection to Highway 403 / 407 ETR in Halton from Hamilton/Niagara.</p> <p>The assessment of economic impact identifies a moderate level of economic benefits associated with this option. When coupled with widening in the GTA-West area (the assumption for economic assessment of all options), this option would produce:</p> <ul style="list-style-type: none"> <li>• Approx. \$2.0 billion in annual transportation cost savings in the Greater Golden Horseshoe;</li> <li>• Approx. \$0.9 billion in annual increased GDP in the GGH; and</li> <li>• Approx. 10,900 in increased employment in the GGH.</li> </ul> <p>The economic impact assessment shows that this option will produce lower potential output and employment gains for the manufacturing sector than Alternative 3-1 but higher than Alternative 4-2.</p>	<p>Expands capacity to existing industrial areas through widening.</p> <p>Provides new connection to border through southern Niagara region growth areas.</p> <p>Widening provides capacity to and on Highway 401 for interprovincial and international trade, provides new connection to Highway 403 / 407 ETR in Halton from Hamilton.</p> <p>This option was not evaluated through TREDIS; however, benefits are likely to be very similar to Alternative 4-4.</p>
4.3 Tourism and Recreation Industry	<i>Measure:</i> Qualitative economic impact analysis. Use of TREDIS.	Widening existing transportation corridors would service current tourism operations located close to provincial Highways. Additional capacity on existing Highways would reduce congestion and facilitate improved travel for tourism and recreational purposes. Widening serves Niagara Falls and Niagara wine region through additional lanes on QEW but does not provide redundancy to Niagara from GTA. Additional capacity assists tourist movement	Provides additional route to Niagara tourist areas from south Hamilton; however does not provide significant benefit in terms of GTA-Niagara routing.	Provides additional route to Niagara tourist areas from GTA; provides connection to 401 from Hamilton and Niagara for access to central, northern and eastern Ontario tourist areas	Provides additional route to Niagara tourist areas from GTA; provides connection to 407 ETR from Hamilton and Niagara for access to central, northern and eastern Ontario tourist areas.	Provides localized by-passes which may provide redundancy and reduce congestion in Niagara and Hamilton; however does not provide continuous new route to Niagara from GTA/Hamilton.

Factor	Sub-Factor and Measure	Alternative 3-1	Alternative 4-2	Alternative 4-3	Alternative 4-4	Alternative 4-5
		 <p>throughout GGH. The economic impact assessment shows that this option will produce the highest potential output and employment gains for the hotel and restaurant sector.</p>	 <p>The economic impact assessment shows that this option will produce the lowest potential output and employment gains for the hotel and restaurant sector.</p>	 <p>The economic impact assessment shows that this option will produce moderate potential output and employment gains for the hotel and restaurant sector.</p>	 <p>The economic impact assessment shows that this option will produce moderate potential output and employment gains for the hotel and restaurant sector.</p>	
4.4 Agriculture Industry	<p><i>Measure:</i> Qualitative economic impact analysis. Use of TREDIS.</p>	<p>Provides new capacity to serve tender fruit areas in northern Niagara Region. Additional capacity should reduce delays in perishable goods movement on all widened routes. Widening minimizes agricultural land required, resulting in less lands taken out of productive capacity.</p>	<p>Does not provide additional capacity on QEW in tender fruit area; would provide new high-speed route through south Niagara and Hamilton agricultural areas for food transport. No direct access to GTA markets.</p> <p>New corridor requires more agricultural lands to be taken out of production than other options.</p>	<p>Does not provide additional capacity on QEW in tender fruit area; would provide new high-speed route through south Niagara, Hamilton and Halton region agricultural areas for food transport with access to 401 in GTA.</p> <p>New corridor requires more agricultural lands to be taken out of production than other options.</p>	<p>Does not provide additional capacity on QEW in tender fruit area; would provide new high-speed route through south Niagara, Hamilton and Halton agricultural areas for food transport with access to 407 ETR in GTA.</p> <p>New corridor requires more agricultural lands to be taken out of production than other options.</p>	<p>Provides additional capacity on QEW in tender fruit area; provides new high-speed route through agricultural lands in Niagara, south Hamilton and Halton.</p> <p>New corridor segments require agricultural lands to be taken out of production.</p>
<b>Summary</b>						
<p>Based on the above assessment, none of the alternatives are clearly preferred from an Economic perspective. The following summarizes the major issues associated with each alternative.</p>	<p>Alternative 3-1 serves a significant number of existing population and employment centres with additional highway capacity and expands capacity to most existing industrial areas in the study area.</p> <p>However, Alternative 3-1 does not provide a direct connection between the Hamilton AEGD and the US border. It also does not provide connections to new employment areas planned in south Hamilton, or some areas of Halton Region, and does not support the economic development objectives of south Niagara.</p> <p>Alternative 3-1 does not provide an alternate connection to the US border or a direct connection between the Gateway Economic Centre in the Welland area and the Gateway Economic Zone along the Niagara River that have been identified in <i>The Growth Plan</i>.</p>	<p>Alternative 4-2 provides the same degree of additional capacity on the existing inter-regional facilities as Alternative 3-1 in the Hamilton / Halton area, but does not provide additional capacity on the QEW through Niagara.</p> <p>Instead of providing additional capacity on the QEW through Niagara, Alternative 4-2 provides a new corridor extending from Highway 403 in the Hamilton area to QEW in the Welland area. This corridor provides a connection between the Hamilton AEGD and the US border, and provides alternate routes and network flexibility for people and goods movement between Hamilton and Niagara. It also provides a direct connection between the Gateway Economic Centre in the Welland area and the Gateway Economic Zone along the Niagara River, and supports the economic development objectives of south Niagara.</p> <p>As with Alternative 3-1, a new corridor is not provided to provide alternate connections to new employment areas in south Hamilton or some areas of Halton.</p>	<p>Alternative 4-3 provides a similar level of additional capacity on the existing inter-regional facilities as Alternative 3-1 in the Hamilton / Halton area, but does not include a widening of Highway 6 north of Highway 403. It also does not provide additional capacity on the QEW through Niagara.</p> <p>Instead of providing additional capacity on the QEW through Niagara, Alternative 4-3 provides a new corridor extending from Highway 401 west of Milton to QEW in the Welland area. This corridor improves upon Alternative 4-2 by connecting Hamilton to northern portions of Halton (including Milton) and the GTA as well as providing a connection between the Hamilton AEGD and the US border.</p> <p>As with Alternative 4-2, it provides alternate routes and network flexibility for people and goods movement. It also provides a direct connection between the Gateway Economic Centre in the Welland area and the Gateway Economic Zone along the Niagara River, and supports the economic development objectives of south Niagara.</p>	<p>Alternative 4-4 provides the same degree of additional capacity on the existing inter-regional facilities as Alternative 3-1 in the Hamilton / Halton area, but does not provide additional capacity on the QEW through Niagara.</p> <p>Instead of providing additional capacity on the QEW through Niagara, Alternative 4-4 provides a new corridor extending from the 407 ETR in the Burlington area to QEW in the Welland area. This corridor connects Hamilton to the major employment growth areas in south Halton and the GTA. It also provides a connection between the Hamilton AEGD and the US border.</p> <p>As with Alternatives 4-2 and 4-3, it provides alternate routes and network flexibility for people and goods movement. It also provides a direct connection between the Gateway Economic Centre in the Welland area and the Gateway Economic Zone along the Niagara River, and supports the economic development objectives of south Niagara.</p>	<p>Alternative 4-5 provides the same degree of additional capacity on the existing inter-regional facilities as Alternative 3-1 in the Hamilton / Halton area, and provides more capacity on the QEW through Niagara than the other Group #4 alternatives, but not as much as Alternative 3-1 in the Grimsby area.</p> <p>Alternative 4-5 provides two new corridor links, one extending around the City of Hamilton and connecting the 407 ETR to the QEW in the Grimsby area, the other connecting Highway 406 to QEW in the Welland area.</p> <p>As with Alternative 4-4, this corridor connects Hamilton to the major growth areas in Halton and the GTA. However it does not provide a connection between the Hamilton AEGD and the US border.</p> <p>Alternative 4-5 provides some alternate routing and network flexibility for people and goods movement where the new corridors are provided. It also provides a direct connection between the Gateway Economic Centre in the Welland area and the Gateway Economic Zone along the Niagara River, but unlike the other Group #4 alternatives, it does not support the economic development objectives of south Niagara by providing a continuous new corridor through south Niagara.</p>	

#### 4.6.2.1 TREDIS Analysis

TREDIS was used to analyze regional economic impacts of NGTA Alternatives 3-1, 4-2, 4-3, and 4-4.<sup>5</sup> These analyses all assumed that the GTA West 3-1 project alternative (highway widenings) had been implemented.

Direct economic benefits stemming from improvements in the NGTA transportation system will reduce households' travel costs (including vehicle operating expenditures), provide transportation cost savings to area businesses (including reduced highway congestion effects), as well as improve reliability on the transportation network. The first benefit is simply a reduced consumption demand by households away from purchases of transportation products (gas, parking, automotive parts and services and into other consumer goods / services. The latter reflects improved regional competitiveness for metro-area businesses. They now have lower costs of doing businesses, including access to a larger labour market because improvements to the transit system result in less congestion. The impact of the improved NGTA highway and transit network will be different for each business sector, depending on its level of highway freight dependency.

Overall, the alternatives initially modeled (Alternatives 3-1, 4-2, 4-3 and 4-4) showed similar results across the GGH. The direct value of transportation impacts in the GGH is expected to fall between \$1.9 and \$2.2 billion (**Table 4-7**). These impacts include savings for passengers' costs, reliability benefits, tolls and adjustments for transit and truck crew costs, vehicle operating costs and tolls based on the bundle of highway and transit changes imbedded in each alternative. Benefits for the alternatives analyzed are expected to yield similar transportation between \$1.9 billion and \$2.2 billion. Note these are annual benefits accruing to the GGH by 2031 due to mobility improvements created by proposed NGTA projects.

**Table 4-7: Direct Transportation Benefits in the GGH by Selected Alternative in 2031**

Alternative	Direct Transportation Benefits (Millions \$CA in Constant 2010 Value)
3-1	\$2,199
4-2	\$1,874
4-3	\$2,019
4-4	\$2,004

These transportation savings yield a comprehensive forecast of total economic impacts (direct + indirect) as measured by changes in GDP, employment, and household income attributable to the proposed bundles of transportation investments defined by the alternatives. Impacts are attributable to:

- Existing transit riders who will benefit from faster travel and more convenient service, as well as travelers who switch from auto travel and save money as the new transit alternative costs them less than they currently spend on car operating costs (tires, fuel, oil and parking). They can then redirect a portion of those savings to purchase other consumer products and services.
- Travelers, who continue to drive or ride in autos, as well as commercial vehicles and the businesses dependent on freight transported on highways, benefit from reduced peak period traffic congestion, which leads to direct savings in time and vehicle

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<sup>5</sup> The TREDIS analysis was approached from the standpoint of examining representative alternatives. Therefore TREDIS was not applied to Alternative 4-5.

operating costs. Household savings are redirected to the purchase other consumer products and services as desired (including expenditures associated with more leisure time).

- As traffic congestion gets reduced along the corridor, some businesses will gain productivity from fewer late arrivals due to traffic delay. This could reduce overall wage costs or allow them to accept shorter work hours to attract workers in those congested areas. The net effect is a reduction in the cost of doing business.
- Businesses can also gain productivity as a result having access to larger labour markets with more diverse and specialized skills. This can allow businesses to better match available workers and required skill needs, and it can also allow some industries to achieve greater economies of scale.
- Direct effects on business growth occur as the greater productivity and changes in consumer spending lead to more business sales and attraction of new business activity. There are further impacts as the directly affected businesses also buy more from suppliers within the region (“indirect economic effects”).

By 2031, the potential economic impacts of implementing any of the proposed NGTA alternatives are expected to generate approximately \$1 billion in annual GDP, which will support 11,000 – 12,000 jobs in the GGH (**Table 4-8**).

**Table 4–8: Total Economic Impacts in the GGH by Selected Alternative in 2031**

Alternative	Gross Domestic Product (Millions \$CA)	Jobs
3-1	\$ 1,030	12,100
4-2	\$ 890	10,500
4-3	\$ 930	10,900
4-4	\$ 930	10,900

**Note: GDP is rounded to the nearest \$10 million and jobs are rounded to the nearest 100.**

**Dollars are in constant 2010 value.**

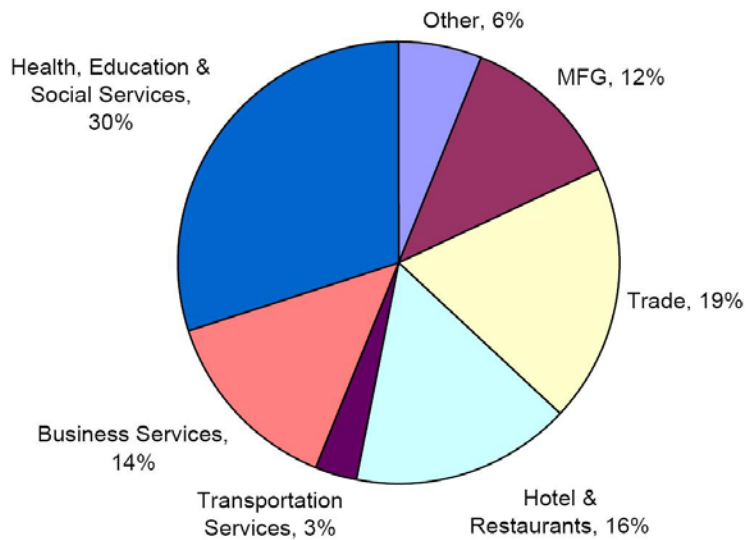
**GDP shown in this table cannot be added to the total transportation benefits exhibited in Table 4-7, above. Doing so would double count the portion of transportation benefits that contribute to GDP.**

**Impacts assume implementation of GTA-W 3-1.**

Impacts of alternatives will vary across sectors. **Exhibit 4-5**, below, illustrates the average impacts among major sectors within the GGH in terms of jobs (Alternatives 3-1, 4-2, 4-3 and 4-4).



**Exhibit 4–5: Job Impacts in GGH by Major Economic Sector (Average among all NGTA Alternatives)**



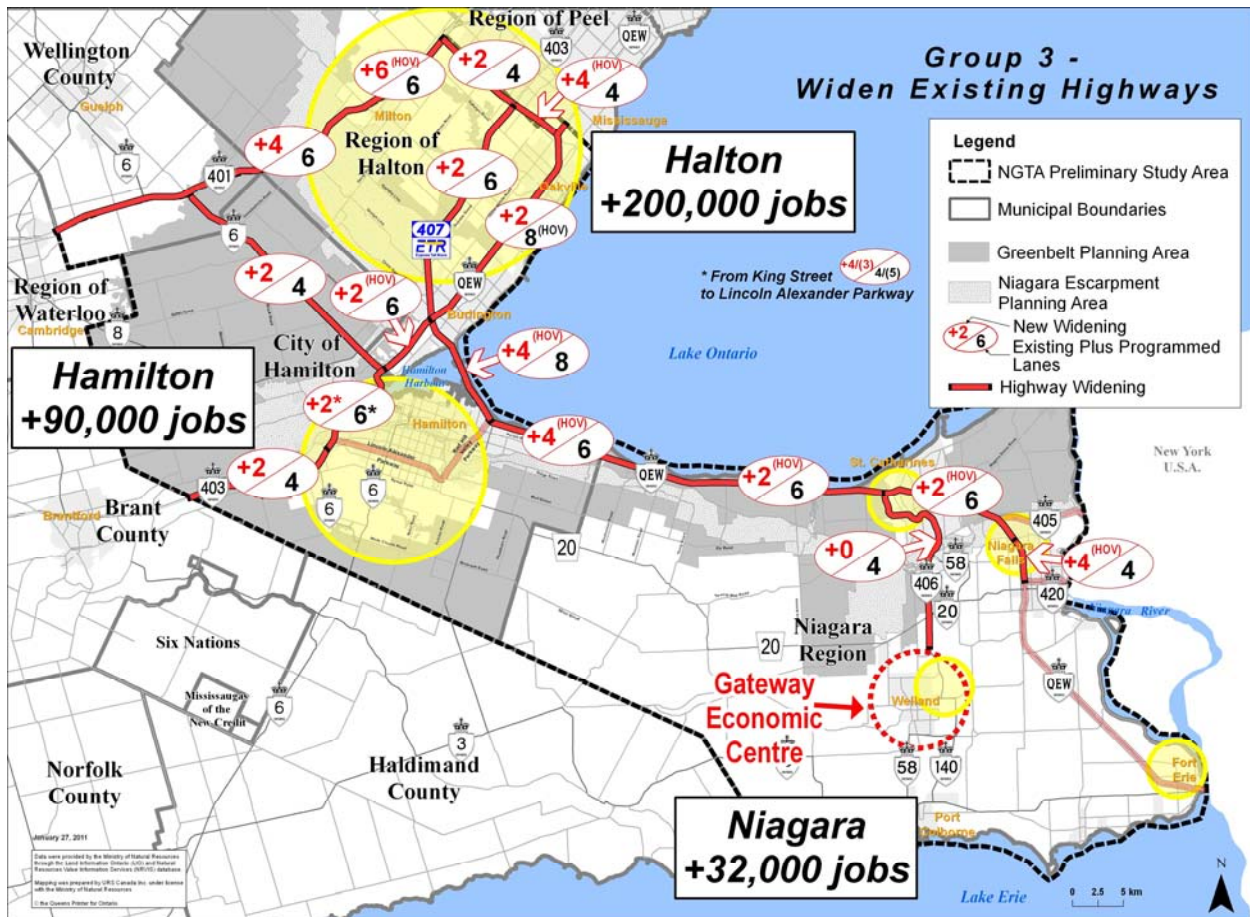
#### 4.6.2.2 Qualitative Analysis

The qualitative analysis considered the location of future employment as outlined in both *The Growth Plan* and individual municipal growth management strategies.

It is worth noting the significant employment growth that is forecast in south Hamilton, in the Hamilton AEGD. As well both *The Growth Plan* and Niagara Region Growth Management Strategy have identified the “Gateway Economic Zone and Gateway Economic Centre” (the Niagara river border area from Niagara Falls to Fort Erie, and Welland respectively) as locations for employment growth.

While these areas are forecast for growth, it is important to note that employment growth is anticipated to be much faster in the western areas of the corridor than in the central and eastern portions of the corridor, per **Exhibit 4-6**, below.

Exhibit 4-6: Growth Plan Forecasts of Employment Growth, 2001-2031



### Widening Alternative (3-1)

This alternative consists of a series of widening of existing facilities. It expands capacity to most existing industrial areas in the study area, but does not provide connections to new employment areas planned in Niagara Region, South Hamilton, or some areas of Halton Region. It does not provide a new route through southern Niagara region growth areas.

However, this alternative expands QEW access to the border and provides new capacity to and on Highway 401 for interprovincial and international trade. It also serves a significant number of existing population and employment centres with additional highway capacity. It is partly for this reason that the quantitative assessment of economic impact identifies the highest level of economic benefits associated with the initial options.

In terms of sector benefits, the economic impact assessment shows that this option will produce the highest potential output and employment gains for the manufacturing sector, as well as producing the highest output and employment gains for the hotel and restaurant sector. Widening existing transportation corridors close to provincial highways would service existing tourism operations, reduce congestion and facilitate improved travel for tourism and recreational purposes.

However, the widening alternative does not provide a new connection between the Hamilton AEGD and the US border, a connection that would also serve Niagara Region's southern employment growth areas. And it is important to note that the

widening alternative could come with extremely high costs in terms of disruption to existing businesses in areas such as Highway 403 in Hamilton, as the construction of required new structures and associated delays would be substantial.

#### **New Corridor Alternatives (4-2 through 4-5)**

The new corridor alternatives provide various possible new corridor connections from Hamilton / Halton Region through Niagara. All of the alternatives are illustrated in **Exhibits 3-3 to 3-6** in **Section 3.7**, and begin with a connection to the QEW in the Niagara area and extend to Highway 403 in west Hamilton (Alternative 4-2), Highway 401 west of Milton (Alternative 4-3) and 407 ETR in Burlington (Alternative 4-4). Alternative 4-5 provides two large “bypass” corridors connecting Halton to the QEW around Hamilton, and QEW to Highway 406 to QEW in the Welland area.

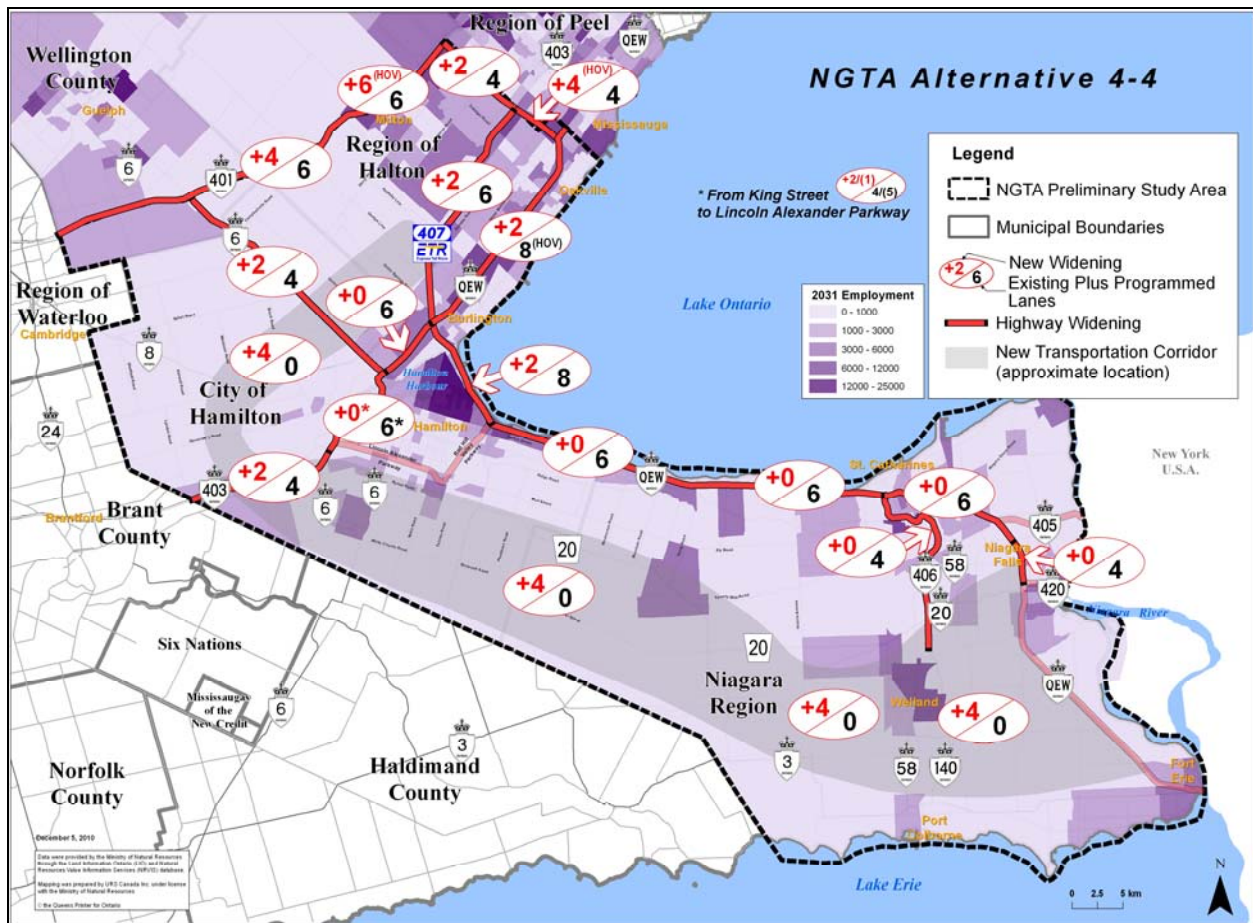
All of these alternatives provide a new route through southern Niagara region growth areas, and a new route to the border from the Hamilton AEGD. The widening proposed as part of the option also provides additional capacity to and on Highway 401 for interprovincial and international trade.

Of these new corridor alternatives, Alternative 4-2 is not preferred as it does not provide new connections to new employment areas in Halton. The assessment of economic impact identifies the lowest level of economic benefits associated with this option, including the lowest potential output and employment gains for the manufacturing sector.

By contrast, Alternatives 4-3 and 4-4 provide a continuous connection from the Hamilton AEGD and south Niagara growth areas to Halton Region and the US border. In Halton, Alternative 4-3 (a Highway 401 connection) serves the growth area of Milton, while Alternative 4-4 serves the growth areas of north Oakville.

These options better serve future growth areas than Alternative 4-2, and provide additional connections to growth areas currently served by only one provincial highway. They provide an alternative in the highway network for traffic to the US border from the GTA / Hamilton, and the associated widening will provide capacity to and on Highway 401 for interprovincial and international trade.

Exhibit 4-7: Alternative 4-4 Overlaid over Total Employment by Traffic Zone in 2031



The economic impact assessment shows that these options will produce lower potential output and employment gains for the manufacturing sector than Alternative 3-1, but higher than Alternative 4-2. Both 4-3 and 4-4 provide an additional route to Niagara tourist areas from the GTA; for access to central, northern and eastern Ontario tourists, 4-3 provides a connection to Highway 401 from Hamilton and Niagara, and 4-4 provides a connection to 407 ETR. The economic impact assessment shows that these options will produce moderate potential output and employment gains for the hotel and restaurant sector; lower than the widening option but higher than Alternatives 4-2 or 4-5.

#### 4.7 TRANSPORTATION ANALYSIS

The transportation analysis work to aid in the evaluation of NGTA corridor alternatives included detailed modelling of various transit and road network improvement alternatives, the development of various transportation criteria to measure how well each alternative performs in addressing transportation objectives, and assessment of each alternative using both qualitative and quantitative evaluation methodologies. The alternatives evaluation followed the Triple-Bottom Line approach (environment, economy and community) approach adopted for this Phase of the study and the results were used in the formulation of the draft Strategy. The transportation analysis findings are summarized through the following assessment of Area Transportation System Alternatives (**Table 4-16**). The subsequent sections will summarize the factors and key issues that lead to the development of the draft Strategy.

The results from the transportation modelling and forecasting also provided key inputs to support the economic analysis, and air quality modelling documented in separate sections (**Sections 4.4.2.4, and 4.6**) of this report.

#### 4.7.1 Methodology

##### 4.7.1.1 Modelling Methodology

###### Greater Golden Horseshoe Model Setup

The study team used the MTO Greater Golden Horseshoe Model (GGH Model) to forecast future travel demands for the transportation analysis. The GGH Model as developed and validated has been used by Metrolinx in the development of the *RTP*, and is also being used by MTO in major planning studies throughout the GGH area. The model utilizes a detailed transportation network including both transit and roadway and forecasts trip making by all modes of travel based on forecasts of population and employment growth, land use densities, socio-economic and demographic information, current and future transportation costs (representing fuel costs, tolls, parking costs, transit fares, vehicle operating costs, etc.), and transportation network performance for all travel modes.

An updated version of the GGH Model (version 2.2) was used for the modelling and analysis undertaken for assessment and evaluation of Area Transportation System Alternatives to support the draft Strategy. This version includes some of the improvements implemented as part of MTO's ongoing efforts to improve and update its travel demand forecasting model, and reflects updated information collected by the study team and incorporated into the model, as discussed below.

###### Land Use Assumptions

The land use developed for the *RTP* by Metrolinx was used as the starting point for the study. The population and employment forecasts used in the *RTP* were developed prior to each municipality completing updates to its Official Plan to conform to the new policy directions outlined in *The Growth Plan*. Therefore, the initial modelling work for the *RTP* used population and employment growth totals that were consistent with the regional municipal allocations outlined in Schedule 3 of *The Growth Plan*. The allocation of future growth within each municipality was estimated using a top down approach, based on the policies outlined in *The Growth Plan*.

Since the completion of the *RTP*, all of the municipalities have embarked upon Growth Plan conformity exercises, and many of them have completed their own assessment of where future population and employment growth will be located in the communities based on the policies outlined in *The Growth Plan* and the planning policies contained in their respective Official Plans. These growth forecasts, developed from the bottom-up, represent the most recent land use forecasts available and were therefore incorporated into the detailed travel demand forecasting work undertaken for this study. The population and employment estimates for the rest of the GGH were retained from the *RTP* model.

**Table 4-9** summarizes the 2031 population and employment forecasts and lower tier allocations for the municipalities within the NGTA study area, encompassing the regions of Halton, Hamilton and Niagara. **Exhibits 4-8 and 4-9** illustrate the distribution of future population and employment growth in the study area respectively.

**Table 4–9: 2031 NGTA Study Area Population and Employment Forecasts**

Region	Lower-Tier Municipality	2031 Population	2031 Employment
Halton	Burlington	196,653	105,576
	Halton Hills	93,952	42,547
	Milton	232,508	114,533
	Oakville	256,895	127,348
Hamilton	Hamilton	659,992	300,006
Niagara	Fort Erie	37,209	14,566
	Grimsby	29,990	9,425
	Lincoln	27,705	11,834
	Niagara Falls	97,655	45,793
	Niagara-on-the-Lake	20,756	11,481
	Pelham	21,197	5,238
	Port Colborne	22,833	7,733
	St. Catharines	143,799	72,099
	Thorold	25,968	9,673
	Wainfleet	7,769	1,633
	Welland	61,120	23,209
	West Lincoln	14,999	5,317

The land use forecasts for Niagara Region were developed using a hybrid methodology, recognizing that the Region has expressed concern with *The Growth Plan* regional growth allocation totals. The population and employment estimates were developed by adjusting the forecasts provided by the Region to match *The Growth Plan* regional control totals as per current provincial policy, while ensuring that there is no negative growth from 2006 to 2031 in any of the municipalities.

Exhibit 4-8: 2031 NGTA Study Area Population Growth

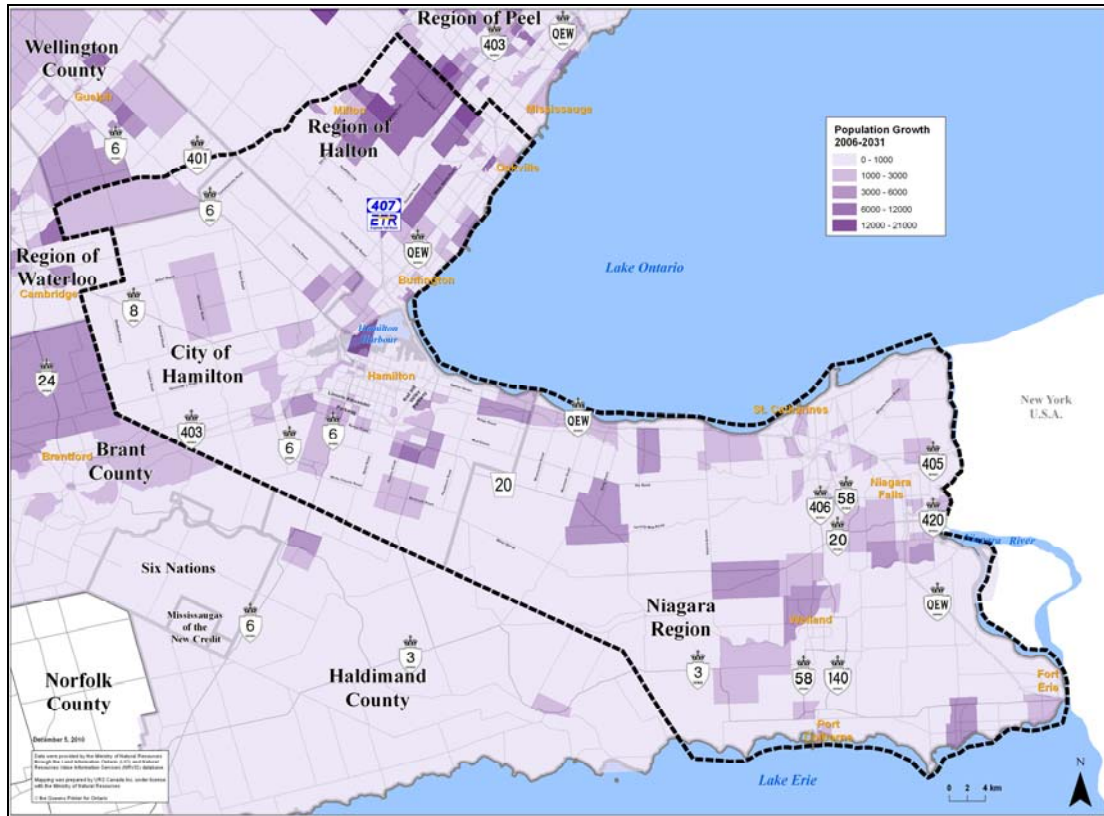
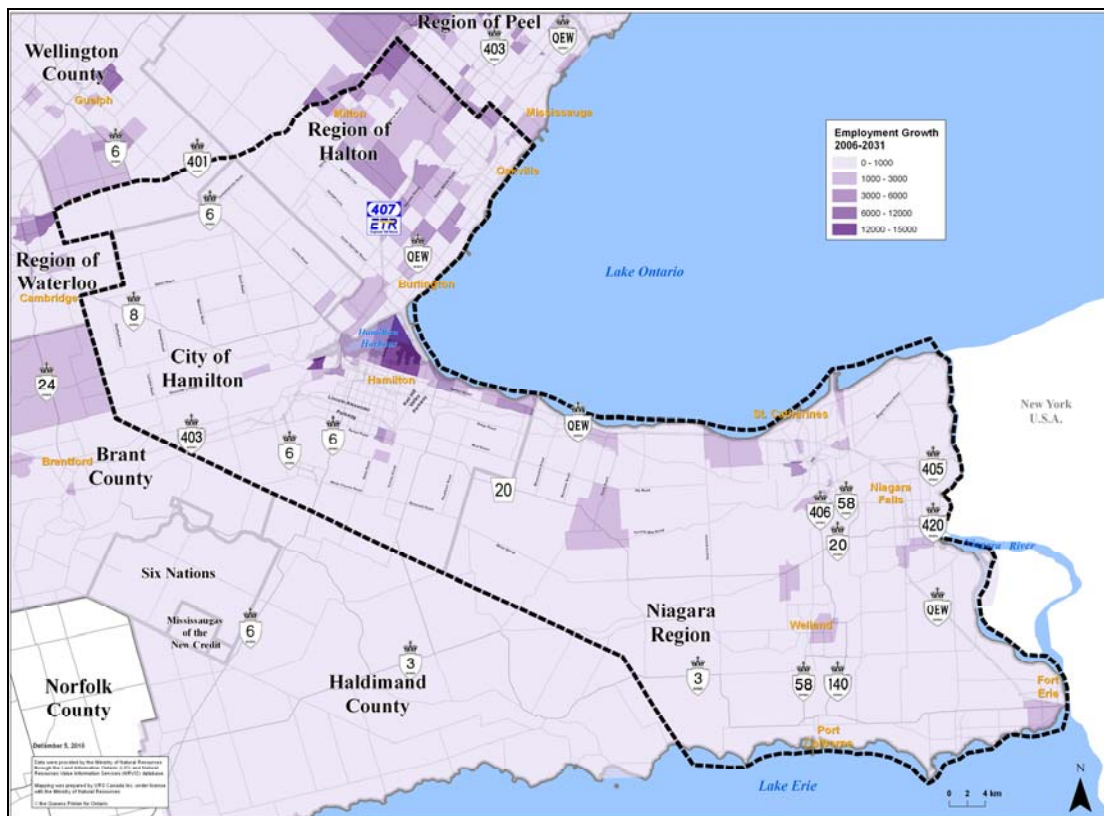


Exhibit 4-9: 2031 NGTA Study Area Employment Growth



### **Base Case Transportation Network**

The Base Case Scenario was identified as a benchmark for comparing other transportation alternatives. The Base Case is considered the status quo, where improvements to the transportation system would be limited to the implementation of approved provincial, regional and local municipal initiatives. This includes the broad range of infrastructure improvements listed below that are planned to be implemented by 2031:

- The *RTP* by Metrolinx, which identifies a multi-billion dollar transit investment in the GTHA, including new express and commuter rail services, bus and light rail transit services;
- GO Transit's Strategic Plan, *GO 2020*, which proposes increased service frequencies and provide new rail service extensions to Guelph, Kitchener / Waterloo and Niagara;
- MTO's planned and committed improvements including projects identified in the *Southern Ontario Highway Program (2006-2010)* and the *HOV Lanes Plan (2007)*. Other planned improvements to the Provincial Highway network, beyond the projects noted above were not considered to be included in the Base Case; and
- Road, transit and active transportation programs identified through approved Transportation Master Plans, Official Plans or Development Charge Background Studies completed by Regional / Lower Tier municipalities. Local and regional roads in the *RTP* model were updated based on information provided by the following regions:
  - Halton Region: Updates based on 2007 Development Charge Study;
  - Durham Region: Updates based on 2008 Development Charge Study;
  - Peel Region: Updates based on Peel Long Range Transportation Plan (2005) and Peel Capital Plan (2009);
  - York Region: Updates based on York Region Transportation Model;
  - Wellington County / City of Guelph: Updates based on Guelph-Wellington Transportation Study;
  - City of Hamilton: Updates based on information from City of Hamilton; and
  - Niagara Region: Updates based on Niagara Region 2031 Transportation Model.

### **Commercial Vehicle Forecasting**

In the current version of the GGH Model, MTO has provided a separate model to forecast commercial vehicle demand in the GGH area. MTO's Commercial Vehicle (CV) model generates, distributes and assigns commercial vehicle trips by truck type for the 12.5 hour daytime period and distributes trips to the AM and PM peak periods using time of day factors from available traffic counts data.

This model forecasts the growth in commercial vehicle travel based on forecasts of increased goods movement activity in various industrial and manufacturing sectors of the economy. For example, the higher the anticipated growth in a sector that relies on trucking to transport raw materials or finished goods, the higher the tonnage of goods that are moved and the more trucks that are required to move those goods. The MTO commercial vehicle model uses the Commercial Vehicle Survey (CVS), undertaken by



MTO every five years, to provide data on the types of goods being moved by truck, and the origin-destination patterns of these truck trips.

For the purpose of this study, the commercial vehicle demand estimates developed in the GGH Model origin-destination zone format are assigned to the transportation roadway network and analyzed along with the auto and transit demands.

In response to the stakeholder feedback received during and subsequent to the fourth round of PICs regarding the future forecasts for freight movement that have been developed, additional analysis will be undertaken to re-examine these forecasts subsequent to the release of the draft Strategy. The recommendations embodied in the draft Strategy will be reviewed in light of the findings of this additional analysis.

### **Modelling Group #1 and Group #2 Initiatives**

Following the “Building Block” approach used in this study, the modelling for the Group #3 and #4 alternatives have assumed that the implementation of Group #1 and #2 initiatives would proceed in advance. These include TSM and TDM measures aimed at improving the efficiency of existing infrastructure and reducing auto demand, respectively.

It is to be noted that the GGH Model already incorporates a series of demographic and socio-economic assumptions (such as higher vehicle operating costs in 2031) that result in increased auto occupancies and higher transit mode splits. The *RTP* also included a number of post-model adjustments to account for some of the policy initiatives in the *RTP* including:

- Increase auto occupancy by 0.05 over modeled result;
- Work at home increase from 5.3% to 8%;
- Transit mode split – add 2% to modeled mode split; and
- Active Transportation – add 5% to AT modes for trips under ten kilometres

These assumptions are internal to the GGH Model, and capture the anticipated behavioural trends that are likely to occur in trip making independent of TDM policy measures introduced through the GTAW or NGTA studies.

The *Problems and Opportunities Report* for the NGTA corridor study applied additional post-GGH Model reductions to the auto demand to account for the TDM / TSM measures incorporated into the Group #1 and #2 initiatives. These include:

- A global 4% reduction in auto demand to account for TDM and other transit initiatives; and
- A 10% reduction in long-distance truck demand to account for diversion to other travel modes, predominantly freight rail.

These adjustments were retained for the detailed evaluation of GTAW and NGTA alternatives, although the global 4% reduction in auto demand was applied in a more targeted manner. Higher reductions were applied in urban areas where TDM and transit measures can have a larger impact on auto demands, and lower reductions were used in suburban or rural areas where opportunities are more limited. A trip reduction matrix was developed with a higher reduction in trips internal to regions and a lower reduction in long-distance trips, as well as in regions with lower potential for TDM.

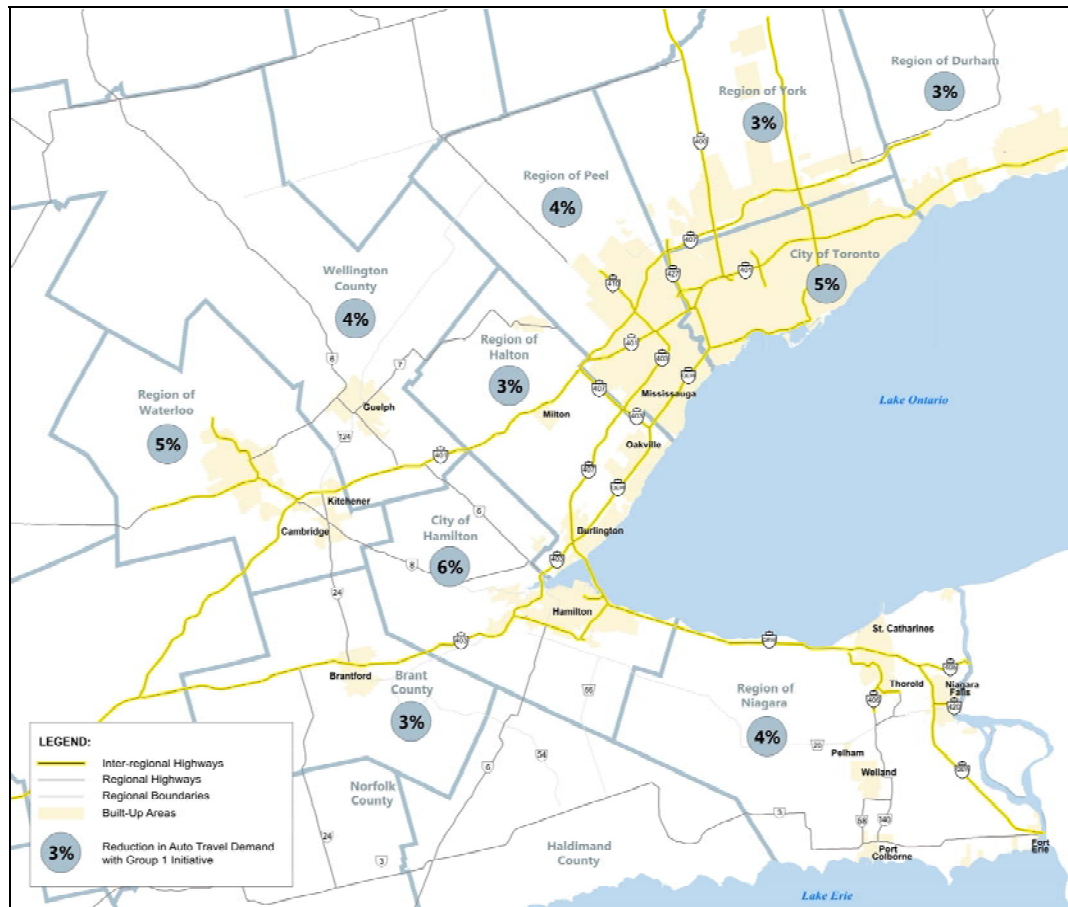
Of the 4% reduction in auto demand:

- 2.5% of trips were assumed to shift from auto driver to transit;

- 1% of trips were assumed to shift from auto driver to auto passenger (carpooling); and
- 0.5% of trips no longer travel during peak periods (or at all).

**Exhibit 4-10** illustrates the distribution of the auto trip reduction assumptions used in the updated modelling work.

**Exhibit 4-10: 2031 Auto Trip Reduction – Group #1 and #2 Alternatives**



The 10% reduction in long distance truck demand was applied to the 2031 heavy truck demand with a trip length of 500 kilometres or greater. These reductions were applied to the demand matrices produced by the CV model and were implemented in the GH Model runs prior to the traffic assignment stage, to forecast resulting traffic volumes on the roadway network.

### Accounting for Improvements in GTAW Study Area

The travel demand forecasting for both GTAW and NGTA studies was performed simultaneously using an integrated travel demand forecasting model and common transportation evaluation criteria. The need for transportation improvements within each study area was previously identified in the *Problems and Opportunities Report* for each respective project. Given that the study areas share a boundary along the Highway 401 corridor it was recognized that capacity improvements in one study area may affect the travel demands and more importantly, the routing of trips through the adjacent study area. Therefore, the modelling to support the evaluation process has assumed that some form of improvements would be made to address the problems and opportunities in the other study area.

For that reason, the modelling of various transportation improvement alternatives for each project needed to consider the potential improvements that might occur in the other study area. Rather than trying to model every permutation and combination of the various alternatives identified in each study, the modelling approach identified a series of combinations of improvements that the study team considered would have the potential to alter the regional trip distribution patterns, transit mode shares and resulting auto demand patterns. Each study contained various Group #3 alternatives that focused on increasing capacity on existing corridors and various Group #4 alternatives that include various configurations for new transportation corridors.

Therefore, the following three basic alternatives could occur in the NGTA study area:

1. A Group #3 alternative (widening) is implemented in both study areas;
2. A Group #4 alternative (new corridor) is implemented in the NGTA study area and a Group #3 alternative is implemented in the GTAW study area; or
3. A Group #4 alternative (new corridor) is implemented in both study areas.

While it is important that the evaluation of transportation network performance consider improvements beyond the study area boundary to properly assess how well the overall network would perform, the economic analysis component of the study required the transportation benefits associated with each alternative be considered independently of the transportation benefits associated with improvements in the other study area. To accommodate this, two additional model runs were required to identify the basic transportation benefits associated with the Group #3 alternatives in each study area on their own.

**Table 4-10** summarizes the various NGTA and GTAW combinations that were used for the initial GGH model runs. For the Group #4 alternatives, Alternative 4-3 was used in the first set of runs in each study area since this alternative provided an extensive length of new corridor in each study area that connected to Highway 401 in the Milton area. It was assumed that this combination (NGTA 4-3 and GTAW 4-3) would represent the most integrated network of new corridors between the two study areas that would have the highest potential to alter regional trip distribution patterns in both study areas. For each of the various combination alternatives the regional travel demand patterns and transit mode shares were reviewed to determine the degree to which the different combinations of improvement alternatives influenced regional travel demand patterns.

**Table 4-10: GGH Model Run Scenarios for NGTA and GTAW Transportation Modelling**

GGH MODEL RUN	NGTA	GTA WEST
1	Base Case	
2	NGTA 3-1	
3	GTAW 3-1	
4	NGTA 4-3	GTAW 3-1
5	NGTA 3-1	GTAW 4-3
6	NGTA 4-3	GTAW 4-3

These GGH model runs established the transit mode share component of travel and the zone-zone auto travel demand for each of the above scenarios. **Table 4-11** summarizes the resulting total person trips by mode of travel for each respective scenario for the AM and PM peak periods.

**Table 4-11: 2031 GGH Model Person Trips by mode with Group #1 and Group #2 Initiatives**

		Base Case	NGTA 3-1	NGTA 4-3 / GTAW 3-1	NGTA 4-3 / GTAW 4-3
<b>AM</b>	<b>Auto Driver</b>	1,402,750	1,348,300	1,349,050	1,350,070
	<b>Auto Passenger</b>	283,460	297,790	297,920	298,030
	<b>Transit Person</b>	451,000	484,060	483,340	482,500
	<b>Total Person</b>	2,235,150	2,210,400	2,210,350	2,210,370
	<b>Transit Mode Share</b>	20.2%	21.9%	21.9%	21.8%
	<b>Auto Occupancy</b>	1.20	1.22	1.22	1.22
<b>PM</b>	<b>Auto Driver</b>	1,493,570	1,434,580	1,435,860	1,436,290
	<b>Auto Passenger</b>	403,470	418,940	419,170	419,440
	<b>Transit Person</b>	396,510	432,470	431,160	430,610
	<b>Total Person</b>	2,367,970	2,350,360	2,350,400	2,350,340
	<b>Transit Mode Share</b>	16.7%	18.4%	18.3%	18.3%
	<b>Auto Occupancy</b>	1.27	1.29	1.29	1.29

As shown above the PM peak hour has a higher number of auto trips on the roadway network compared to the AM peak hour. As a result, the PM peak hour was selected as the time period used in the assessment and evaluation of the various network alternatives.

The number of auto trips is forecast to decrease for all of the Group #3 and #4 alternatives compared to the Base Case due to the benefits of the Group #1 and #2 initiatives. Transit mode shares are also expected to increase under all the alternatives compared to the Base Case, from 20.2% to 21.9% in the AM peak and from 16.7% to 18.4% under Group #3 and 18.3% under Group #4 alternatives in the PM peak hour. Although transit ridership is generally anticipated to decrease with provision of additional roadway capacity (widening or new corridor), the implementation of the Group #1 and Group #2 initiatives result in a net increase in transit mode share in the GGH area compared to the Base Case. The new corridor alternatives, while impacting transit use to a degree, do not significantly impact the transit mode shares compared to the NGTA Alternative 3-1.

Similar to transit mode share, average auto (passenger car) occupancy would increase under all the alternatives compared to the Base Case, from 1.20 to 1.22 in the AM peak and from 1.27 to 1.29 in the PM peak hour. This can also be attributed to the Group #1 and Group #2 initiatives.

**Tables 4-12 and 4-13** summarize the PM peak hour Transit Mode Shares and Self Containment (trips staying within the Region) for each of the municipalities in the NGTA study area based on the results of the above noted GGH Model Runs.

**Table 4–12: 2031 PM Peak Hour Transit Mode Share for Regional Trips**

	Transit Mode Share by Regional Municipality (%)			
	Base Case	NGTA 3-1	NGTA 4-3 / GTAW 3-1	NGTA 4-3 / GTAW 4-3
Niagara	2%	4%	4%	4%
Hamilton	9%	11%	11%	11%
Halton	11%	12%	12%	12%
Peel	16%	18%	17%	17%
Brant	3%	4%	4%	4%
Wellington	3%	5%	5%	5%

**Table 4–13: 2031 PM Peak Hour Regional Self-Containment**

	Self-Containment by Regional Municipality (%)			
	Base Case	NGTA 3-1	NGTA 4-3 / GTAW 3-1	NGTA 4-3 / GTAW 4-3
Niagara	94%	94%	94%	94%
Hamilton	80%	80%	80%	80%
Halton	64%	63%	63%	63%
Peel	70%	70%	70%	70%
Brant	88%	88%	88%	88%
Wellington	80%	80%	80%	80%

As summarized above the PM peak hour transit mode shares generally increase slightly due to the TDM and TSM benefits of the Group #1 and Group #2 measures. Between the Group #3 and Group #4 road improvement alternatives there is no difference between the transit mode shares – except for approximately 1% reduction in Peel Region, since each alternative was generally designed to provide sufficient road network capacity to accommodate future demands. The degree of self-containment in trip making within Halton Region does reduce by approximately 1% with the introduction of the NGTA 3-1 widening and NGTA 4-3 new corridor.

As a result of the above analysis, it was concluded that the introduction of new road capacity will have a negligible impact on the future transit use and auto occupancies in the study area. In addition, the method of providing new road capacity (widening versus new corridor) does not have a significant impact on the transit use or auto occupancies for either the entire study area nor at the local municipal level. Further to this, the inclusion of the Group #1 and Group #2 optimization and non-roadway infrastructure recommendations described in **Chapter 3** will result in an increase in mode share in some areas as illustrated in **Table 4-12**.

### Traffic Assignment Methodology

Given the importance of goods movement in the study area, an integrated approach to forecasting truck travel demands was used for the both the GTAW and NGTA studies. With this approach, both the auto and commercial vehicle demand were assigned to the roadway network. The commercial vehicle fleet is stratified into three classes – light, medium and heavy trucks. Light trucks are equivalent to passenger cars in their utilization of roadway capacity. Medium and heavy trucks are assumed to be equivalent to 1.75 and 2.5 passenger cars, respectively.

The medium and heavy truck demands were assigned to the road network using an all-or-nothing (AON) assignment reflecting the fact that trucks typically take the shortest and most direct route to their destination and are less likely to divert from freeway facilities to

local roads in response to congestion. These modeled truck demands were used as a pre-load (or existing fixed volume) for the auto and light truck assignment.

As a result, the capacities in the GGH Model for the auto assignment were adjusted upwards from their original total capacities to reflect passenger car equivalent (PCE) capacities by functional class of roadway as shown in **Table 4-14**.

**Table 4–14: GGH Model Original and Modified Roadway Link Capacities**

Roadway Link Type	Original GGH Model Roadway Link Capacity (pce / hr / lane)	Modified Total Roadway Link Capacity (pce / hr / lane)
Inter-regional Facility Mainline	1800	2200
Inter-regional Facility Ramp	1400	1700
Inter-regional Facility Mainline HOV Lane	1400	1700
Other Roadway Links	Varies by Road Class Less than 1,300	Original Capacity + 100

**4.7.1.2 Alternatives Evaluation Methodology**

The Triple-Bottom Line approach involves evaluating the alternatives from an environment, community, and economic perspective. In addition to these considerations, the alternatives must reasonably address the key problem statements identified for the study. Therefore a series of qualitative and quantitative transportation criteria were included to assess the ability of each of the alternatives to:

- Address traffic operations;
- Support efficient movement of people and goods;
- Provide multi-modal integration;
- Support future inter-regional transit opportunities;
- To provide transportation system reliability, redundancy and safety; and
- To accommodate recreational and tourism travel.

Some of these criteria such as ability to provide capacity and reduce travel delays are quantitative, while some others, such as potential for multi-modal integration and impacts on safety, are addressed through qualitative evaluation approaches.

A list of the transportation evaluation criteria are presented in **Table 4-15**.

**Table 4–15: Transportation Criteria and Measures for Alternatives Evaluation**

FACTOR / CRITERIA	EVALUATION CRITERIA	MEASURES
Traffic Operations	Potential impact on traffic operations due to factors such as design features and transportation network connections	Peak period performance of key corridors (including entire roadway network) – forecast volume / capacity issues at critical screenlines
		Peak period performance of key inter-regional corridors – forecast volume / capacity issues at critical screenlines
		Potential to provide for higher order inter-regional transportation corridors

FACTOR / CRITERIA	EVALUATION CRITERIA	MEASURES
		Percentage of inter-regional automobile trips* using inter-regional facilities
Commuter Travel Characteristics	Potential impact on commuter automobile trip distribution and trip length	Percentage of peak period self-containment of trips with the municipality / region
		Average Automobile trip length (km)
		Potential to support transit opportunities on a new corridor
Efficient movement of people	Potential to support the efficient movement of people between communities and regions by road	Percentage of inter-regional road network operating better than LOS D (automobile km)
		Percentage of local road network operating better than LOS D (automobile km)
		Percentage inter-regional automobile trips* using the local road network
		Automobile hours of delay on the local transportation network
		Automobile hours of delay on the inter-regional transportation network
		Average Auto Occupancy Total Persons Moved in Study Area
Efficient movement of goods	Potential to support the efficient movement of goods between communities and regions by road	Percentage of inter-regional system operating better than LOS D (truck km)
		Percentage of inter-regional truck trips using the local road network
		Truck hours of delay on the inter-regional transportation network
System Reliability / Redundancy	Potential to support system reliability and redundancy for travel (people and goods) between regions and communities during adverse conditions	Availability of alternate routes / facilities for inter-regional transportation between regions, communities, and terminals
		Potential to improve transportation system reliability
Safety	Potential to improve traffic safety based on opportunity to reduce congestion on the area road network	Potential to improve response times for emergency service providers due to reduced congestion on the inter-regional network
		Potential to reduce collisions due to improved network LOS
Modal integration, balance and choice for movement of people (commuters, recreation / tourist)	Potential to improve modal integration, balance and choice for person trips between communities, employment centres and major transit hubs	Potential to increase attractiveness / effectiveness of existing, new and improved transit services
		Peak period transit mode share
		Provision of higher order inter—regional transit services
		Provision of linkages between inter-regional and regional/community (local) transit systems

FACTOR / CRITERIA	EVALUATION CRITERIA	MEASURES
		Bus operational performance on inter-regional road network Availability / provision of alternate travel modes for tourism/recreational travel Provision of / allowance for active transportation measures (e.g., bike lanes, bike racks on buses)
Modal integration, balance and choice for movement of goods	Potential to improve modal integration, balance and choice for goods movement between ports and terminals, communities and employment centres	Potential to improve accessibility of inter-modal centres, ports and terminals
Linkages to Population and Employment Centres	Potential to improve accessibility to urban growth centres, Gateway Economic Centres and Gateway Economic Zones for people and goods movement based on higher order network continuity and connectivity	Availability / provision of higher order linkages between urban growth centres, gateway Economic Centres, and Gateway Economic Zones Accessibility of urban growth centres, gateway Economic Centres, and Gateway Economic Zones Percentage change in peak hour travel times (automobile and transit) between Urban Growth Centres

#### 4.7.2 Findings

The transportation analysis findings are summarized through the following assessment of Area Transportation System Alternatives (**Table 4-16**). The subsequent sections will summarize the factors and key issues that lead to the development of the draft Strategy.



Table 4-16: Transportation Analysis Findings

Factor	Sub-Factor and Measure	Alternative 3-1	Alternative 4-2	Alternative 4-3	Alternative 4-4	Alternative 4-5
<b>5.0 Transportation Factors</b>						
<b>5.1 Traffic Operations</b>	<p><i>Measure:</i> Peak period performance of key inter-regional corridors – forecast volume / capacity issues at critical screenlines</p> <p>Peak periods performance of key corridors (including entire roadway network) – forecast volume / capacity issues at critical screenlines</p> <p>Potential to provide for higher order inter-regional transportation corridors (qualitative)</p> <p>Percentage of inter-regional trips* on key inter-regional corridors at critical screenlines</p>	<p>West of Highway 6 WB – 0.84 Burlington Skyway EB – 0.95 Hamilton East Boundary N. EB – 0.74 Welland Canal N. WB – 0.85 Highway 403 West WB – 0.55 Bronte Creek WB – 1.00</p> <p>West of Highway 6 WB – 0.93 Burlington Skyway EB – 0.89 Hamilton East Boundary N. EB – 0.62 Welland Canal N. WB – 0.83 Highway 403 West WB – 0.55 Bronte Creek WB – 0.93</p> <p>No new inter-regional transportation corridors beyond new transit corridors.</p> <p>West of Highway 6 WB – 79% Burlington Skyway EB – 100% Hamilton East Boundary N. EB – 78% Welland Canal N. WB – 40% Highway 403 West WB – 100% Bronte Creek WB – 89%</p>	<p>West of Highway 6 WB – 0.86 Burlington Skyway EB – 1.00 Hamilton East Boundary N. EB – 0.75 Welland Canal N. WB – 0.87 Highway 403 West WB – 0.57 Bronte Creek WB – 1.00</p> <p>West of Highway 6 WB – 0.98 Burlington Skyway EB – 0.93 Hamilton East Boundary N. EB – 0.65 Welland Canal N. WB – 0.85 Highway 403 West WB – 0.57 Bronte Creek WB – 0.93</p> <p>Provides new higher order inter-regional transportation corridor over a long distance through Niagara to Hamilton.</p> <p>West of Highway 6 WB – 80% Burlington Skyway EB – 100% Hamilton East Boundary N. EB – 72% Welland Canal N. WB – 42% Highway 403 West WB – 100% Bronte Creek WB – 89%</p>	<p>West of Highway 6 WB – 0.81 Burlington Skyway EB – 0.95 Hamilton East Boundary N. EB – 0.74 Welland Canal N. WB – 0.87 Highway 403 West WB – 0.66 Bronte Creek WB – 0.96</p> <p>West of Highway 6 WB – 0.85 Burlington Skyway EB – 0.89 Hamilton East Boundary N. EB – 0.64 Welland Canal N. WB – 0.84 Highway 403 West WB – 0.66 Bronte Creek WB – 0.90</p> <p>Provides new higher order inter-regional transportation corridor over a long distance through Niagara to Hamilton and the GTA West Corridor.</p> <p>West of Highway 6 WB – 87% Burlington Skyway EB – 100% Hamilton East Boundary N. EB – 73% Welland Canal N. WB – 42% Highway 403 West WB – 100% Bronte Creek WB – 89%</p>	<p>West of Highway 6 WB – 0.81 Burlington Skyway EB – 0.97 Hamilton East Boundary N. EB – 0.74 Welland Canal N. WB – 0.87 Highway 403 West WB – 0.63 Bronte Creek WB – 1.02</p> <p>West of Highway 6 WB – 1.00 Burlington Skyway EB – 0.90 Hamilton East Boundary N. EB – 0.64 Welland Canal N. WB – 0.85 Highway 403 West WB – 0.63 Bronte Creek WB – 0.95</p> <p>Provides new higher order inter-regional transportation corridor over a long distance through Niagara and Hamilton to Halton.</p> <p>West of Highway 6 WB – 84% Burlington Skyway EB – 100% Hamilton East Boundary N. EB – 73% Welland Canal N. WB – 42% Highway 403 West WB – 100% Bronte Creek WB – 89%</p>	<p>West of Highway 6 WB – 0.81 Burlington Skyway EB – 0.98 Hamilton East Boundary N. EB – 0.79 Welland Canal N. WB – 0.92 Highway 403 West WB – 0.63 Bronte Creek WB – 1.01</p> <p>West of Highway 6 WB – 0.99 Burlington Skyway EB – 0.91 Hamilton East Boundary N. EB – 0.72 Welland Canal N. WB – 0.90 Highway 403 West WB – 0.63 Bronte Creek WB – 0.94</p> <p>Provides new segments of higher order inter-regional transportation corridor in Hamilton to Halton and in Niagara over moderate distances.</p> <p>West of Highway 6 WB – 84% Burlington Skyway EB – 100% Hamilton East Boundary N. EB – 71% Welland Canal N. WB – 40% Highway 403 West WB – 100% Bronte Creek WB – 89%</p>
<b>5.2 Commuter Travel Characteristics</b>	<p><i>Measure:</i> Percentage of peak period self-containment of trips with the municipality/region (by origin)</p> <p>Average automobile trip length (km)</p> <p>Potential to support transit opportunities on a new corridor</p>	<p>Niagara – 94% Hamilton – 80% Halton – 63% Peel – 70% Brant – 88% Wellington – 80%</p> <p>20.0</p> <p>Does not provide opportunities for new transit linkages on a new corridor; road widening may provide for improved transit services on existing corridors linking Urban Growth Centres</p>	<p>Niagara – 94% Hamilton – 80% Halton – 63% Peel – 70% Brant – 88% Wellington – 80%</p> <p>20.1</p> <p>Provides opportunities for new transit linkages between Urban Growth Centres / Gateway Economic Centre of Welland and Hamilton; limited demand between these centres.</p>	<p>Niagara – 94% Hamilton – 80% Halton – 63% Peel – 70% Brant – 88% Wellington – 80%</p> <p>20.1</p> <p>Provides opportunities for new transit linkages between Urban Growth Centres / Gateway Economic Centre of Welland and Hamilton and toward Guelph; limited demand between these centres within the study area.</p>	<p>Niagara – 94% Hamilton – 80% Halton – 63% Peel – 70% Brant – 88% Wellington – 80%</p> <p>20.1</p> <p>Provides opportunities for new transit linkages between Urban Growth Centres / Gateway Economic Centre of Welland, Hamilton and Burlington; limited demand between Welland and the GTA; significant demand between Hamilton and Burlington.</p>	<p>Niagara – 94% Hamilton – 80% Halton – 63% Peel – 70% Brant – 88% Wellington – 80%</p> <p>20.0</p> <p>Provides opportunities for new transit linkages between Urban Growth Centres of Hamilton and Burlington; significant demand between Hamilton and Burlington.</p>
<b>5.3 Efficient Movement of People</b>	<p><i>Measure:</i> Percentage of inter-regional network operating better than LOS D (automobile km)</p> <p>Percentage of local road network operating better than LOS D (automobile km)</p> <p>Percentage inter-regional automobile trips* using the local road network</p>	<p>39%</p> <p>77%</p> <p>41%</p>	<p>43%</p> <p>77%</p> <p>38%</p>	<p>45%</p> <p>78%</p> <p>35%</p>	<p>46%</p> <p>77%</p> <p>37%</p>	<p>44%</p> <p>77%</p> <p>37%</p>

Factor	Sub-Factor and Measure	Alternative 3-1	Alternative 4-2	Alternative 4-3	Alternative 4-4	Alternative 4-5
	<p><i>Automobile hours of delay on the inter-regional transportation network+ (automobile hours)</i></p> <p><i>Automobile hours of delay on the local transportation network+ (automobile hours)</i></p> <p><i>Average automobile vehicle occupancy</i></p> <p><i>Total persons moved in study area</i></p>	<p>19,343 (-10,747 from base)</p> <p>22,080 (- (-11,868))</p> <p>Niagara-Hamilton: 1.24 Hamilton-Halton: 1.23 Hamilton-Wellington: 1.23</p> <p>Niagara/Hamilton: 16,400 Hamilton/Halton: 48,800 Hamilton/Wellington: 4,600</p>	<p>20,091 (-10,000 from base)</p> <p>21,717 (-12,231)</p> <p>Niagara-Hamilton: 1.24 Hamilton-Halton: 1.23 Hamilton-Wellington: 1.23</p> <p>Niagara/Hamilton: 16,500 Hamilton/Halton: 49,200 Hamilton/Wellington: 4,600</p>	<p>19,634 (-10,456 from base)</p> <p>20,345 (-13,603)</p> <p>Niagara-Hamilton: 1.24 Hamilton-Halton: 1.23 Hamilton-Wellington: 1.23</p> <p>Niagara/Hamilton: 16,500 Hamilton/Halton: 49,200 Hamilton/Wellington: 4,600</p>	<p>19,111 (-10,980 from base)</p> <p>20,999 (-12,949)</p> <p>Niagara-Hamilton: 1.24 Hamilton-Halton: 1.23 Hamilton-Wellington: 1.23</p> <p>Niagara/Hamilton: 16,500 Hamilton/Halton: 49,200 Hamilton/Wellington: 4,600</p>	<p>19,385 (-10,706 from base)</p> <p>21,063 (-12,885)</p> <p>Niagara-Hamilton: 1.24 Hamilton-Halton: 1.23 Hamilton-Wellington: 1.23</p> <p>Niagara/Hamilton: 16,400 Hamilton/Halton: 48,800 Hamilton/Wellington: 4,600</p>
5.4 Efficient Movement of Goods	<p><i>Measure:</i> <i>Percentage of inter-regional system operating better than LOS D (truck km)</i></p> <p><i>Percentage inter-regional truck trips* using the local road network</i></p> <p><i>Truck hours of delay on the inter-regional transportation network+</i></p>	<p>34%</p> <p>16%</p> <p>4,643 (-4,350 from base)</p>	<p>35%</p> <p>15%</p> <p>4,419 (-4,573 from base)</p>	<p>35%</p> <p>14%</p> <p>4,381 (-4,612 from base)</p>	<p>38%</p> <p>15%</p> <p>4,104 (-4,888 from base)</p>	<p>37%</p> <p>15%</p> <p>4,268 (-4,724 from base)</p>
5.5 System Reliability / Redundancy	<p><i>Measure:</i> <i>Availability of alternate routes / facilities for inter-regional transportation between regions, communities and terminals (qualitative)</i></p> <p><i>Potential to improve transportation system reliability (qualitative)</i></p>	<p>No new alternate routes for inter-regional transportation beyond new transit corridors; provides increased inter-regional road capacity on freeway system.</p> <p>Potential to improve transportation system reliability with increased inter-regional road and transit capacity.</p>	<p>New alternate corridor through Niagara to Hamilton, plus new transit corridors and increased roadway capacity throughout the study area. Direct connections to QEW and Highway 403 provide route choice.</p> <p>Potential to improve transportation system reliability with new inter-regional corridor over a long distance and increased road and transit capacity.</p>	<p>New alternate corridor through Niagara and Hamilton to the GTA West corridor, plus new transit corridors and increased roadway capacity throughout the study area. Direct connections to QEW, Highway 401 and Highway 403 provide route choice.</p> <p>Potential to improve transportation system reliability with new inter-regional corridor over a long distance and increased road and transit capacity.</p>	<p>New alternate corridor through Niagara, Hamilton to Halton, plus new transit corridors and increased roadway capacity throughout the study area. Direct connections to QEW, Highway 403 and 407 ETR provide route choice.</p> <p>Potential to improve transportation system reliability with new inter-regional corridor over a long distance and increased road and transit capacity.</p>	<p>New alternate corridor through Hamilton to Halton and new corridor over a short distance in Niagara, plus new transit corridors and increased roadway capacity throughout the study area. Direct connections to QEW, Highway 403 and 407 ETR provide route choice.</p> <p>Potential to improve transportation system reliability with two new inter-regional corridors over short-moderate distances, and increased road and transit capacity.</p>
5.6 Safety	<p><i>Measure:</i> <i>Potential to improve response times for emergency service providers due to reduced congestion on the inter-regional road network (refer to LOS in Traffic Operations)</i></p> <p><i>Potential to reduce collisions due to improved network LOS (refer to LOS in Traffic Operations)</i></p>	<p>Provides safety and response time benefits due to improvement in transportation system congestion from increased road capacity. No system alternatives to accommodate traffic during closures.</p> <p>Potential to reduce collisions due to improved network performance.</p>	<p>Provides safety and response time benefits due to improvement in transportation system congestion from new corridor through Niagara to Hamilton and increased road capacity. No system alternatives in Hamilton and Halton to accommodate traffic during closures.</p> <p>Potential to reduce collisions due to improved network performance.</p>	<p>Provides safety and response time benefits due to improvement in transportation system congestion from new corridor through Niagara and Hamilton to the GTA West corridor and increased road capacity. New route connection to Highway 401 and QEW provides alternative to accommodate traffic during closures.</p> <p>Potential to reduce collisions due to improved network performance.</p>	<p>Provides safety and response time benefits due to improvement in transportation system congestion from new corridor through Niagara, Hamilton to Halton and increased road capacity. New route connection to QEW and 407 ETR provides alternative to accommodate traffic during closures.</p> <p>Highest potential to reduce collisions due to improved network performance.</p>	<p>Provides safety and response time benefits due to improvement in transportation system congestion from new corridor through Hamilton to Halton and new corridor in Niagara over moderate distance, and increased road capacity. New route connection to 407 ETR and QEW east of Hamilton provides alternative to accommodate traffic during closures, and also between Highway 406 and QEW in south Niagara.</p> <p>Potential to reduce collisions due to improved network performance.</p>

Factor	Sub-Factor and Measure	Alternative 3-1	Alternative 4-2	Alternative 4-3	Alternative 4-4	Alternative 4-5
<p><b>5.7 Modal Integration, Balance and Choice for Movement of People (Commuters, Recreation / Tourist)</b></p>	<p><i>Measure:</i> <i>Potential to increase attractiveness / effectiveness of existing, new and improved transit services (qualitative)</i></p> <p><i>Peak period transit mode share (by destination)</i></p> <p><i>Provision of higher order inter-regional transit services (qualitative)</i></p> <p><i>Provision of linkages between inter-regional and regional / community (local) transit systems (qualitative)</i></p> <p><i>Bus operational performance on inter-regional road network (refer to LOS in Traffic Operations)</i></p> <p><i>Availability/provision of alternate travel modes for tourism/recreational travel (qualitative)</i></p> <p><i>Provision of / allowance for active transportation measures (e.g., bike lanes, bike racks on buses / trains) (qualitative)</i></p>	<p>Potential to improve attractiveness / effectiveness of inter-regional transit on existing corridors due to widened freeways.</p> <p>Niagara – 4% Hamilton – 11% Halton – 12% Peel – 18% Brant – 4% Wellington – 5%</p> <p>Higher order inter-regional transit services limited to existing / widened inter-regional freeways.</p> <p>Minor potential to improve linkages between inter-regional and local transit with improved service integration and new opportunities for station locations and service connections on widened inter-regional corridors.</p> <p>Improves bus operational performance on existing facilities with improved road network operations.</p> <p>Potential to provide alternate travel modes for tourism/ recreational travel on new bus and rail services.</p> <p>Results in highest use of local roads for inter-regional trips impacting safety / security for active transportation.</p>	<p>Moderate potential to increase attractiveness / effectiveness of inter-regional transit on existing corridors. Opportunity to introduce new services on a new corridor between Hamilton and Niagara.</p> <p>Niagara – 4% Hamilton – 11% Halton – 12% Peel – 17% Brant – 4% Wellington – 5%</p> <p>Potential for new higher order inter-regional transit on the new corridor between Hamilton and Niagara.</p> <p>Moderate potential to improve linkages between inter-regional and local transit with improved service integration and new opportunities for station locations and service connections on widened inter-regional corridors and new corridor linking Niagara and Hamilton systems.</p> <p>Improves bus operational performance with improved road network operations and potential for bus rapid transit (BRT) on new corridor.</p> <p>Potential to provide alternate travel modes for tourism / recreational travel on new transit services, with transit opportunities on new corridor to Niagara.</p> <p>New corridor creates barrier effect to movement by active modes across new facility over a long distance although this can be mitigated by providing sidewalks / bike lanes on new structures.</p>	<p>Significant potential to increase attractiveness / effectiveness of inter-regional transit by introducing new services on a new corridor over the entire study area. Moderate potential to increase attractiveness / effectiveness of inter-regional transit on existing corridors.</p> <p>Niagara – 4% Hamilton – 11% Halton – 12% Peel – 17% Brant – 4% Wellington – 5%</p> <p>Potential for new higher order inter-regional transit on new corridor over the entire study area.</p> <p>Major potential to improve linkages between inter-regional and local transit with improved service integration and new opportunities for station locations and service connections on widened inter-regional corridors and new corridor linking Niagara and Hamilton systems and potentially linking to transit on GTA West corridor.</p> <p>Improves bus operational performance with improved road network operations and potential for bus rapid transit (BRT) on new corridor.</p> <p>Potential to provide alternate travel modes for tourism / recreational travel on new transit services, with transit opportunities on new corridor linking 401 near Guelph to Niagara.</p> <p>Results in lowest use of local roads for inter-regional trips impacting safety / security for active transportation. New corridor creates barrier effect to movement by active modes across new facility over a long distance although this can be mitigated by providing sidewalks / bike lanes on new structures.</p>	<p>Significant potential to increase attractiveness / effectiveness of inter-regional transit by introducing new services on a new corridor over the entire study area. Moderate potential to increase attractiveness / effectiveness of inter-regional transit on existing corridors.</p> <p>Niagara – 4% Hamilton – 11% Halton – 12% Peel – 17% Brant – 4% Wellington – 5%</p> <p>Potential for new higher order inter-regional transit on new corridor over the entire study area, including opportunity for expansion of 407 ETR transit way.</p> <p>Major potential to improve linkages between inter-regional and local transit with improved service integration and new opportunities for station locations and service connections on widened inter-regional corridors and new corridor linking Niagara, Hamilton and Halton systems.</p> <p>Improves bus operational performance with improved road network operations and potential for bus rapid transit (BRT) on new corridor.</p> <p>Potential to provide alternate travel modes for tourism / recreational travel on new transit services, with transit opportunities on new corridor linking the GTA to Niagara.</p> <p>New corridor creates barrier effect to movement by active modes across new facility over a long distance although this can be mitigated by providing sidewalks / bike lanes on new structures.</p>	<p>Moderate potential to increase attractiveness / effectiveness of inter-regional transit on existing corridors. Opportunity to introduce new services on a new corridor between Hamilton and Halton, and within Niagara.</p> <p>Niagara – 4% Hamilton – 11% Halton – 12% Peel – 18% Brant – 4% Wellington – 5%</p> <p>Potential for new higher order inter-regional transit on the new corridor between Hamilton and Halton, including opportunity for expansion of 407 ETR transit way.</p> <p>Moderate potential to improve linkages between inter-regional and local transit with improved service integration and new opportunities for station locations and service connections on widened inter-regional corridors and two new corridors, one linking Hamilton and Halton systems.</p> <p>Improves bus operational performance with improved road network operations and potential for bus rapid transit (BRT) on new short-moderate distance corridors.</p> <p>Potential to provide alternate travel modes for tourism / recreational travel on new transit services, with transit opportunities on new corridor linking Hamilton and the GTA.</p> <p>New corridor creates barrier effect to movement by active modes across new facility over a long distance although this can be mitigated by providing sidewalks / bike lanes on new structures.</p>
<p><b>5.8 Modal Integration, Balance and Choice for Movement of Goods</b></p>	<p><i>Measure:</i> <i>Potential to improve accessibility of inter-modal centres, ports and terminals (qualitative)</i></p>	<p>Improved inter-regional road network operations with increased roadway capacity to improve accessibility of inter-modal facilities.</p>	<p>Improved inter-regional road network operations with a new corridor through Niagara to Hamilton, and increased roadway capacity improve accessibility of inter-modal facilities.</p>	<p>Improved inter-regional road network operations with a new corridor through Niagara, Hamilton and toward the GTA West corridor, and increased roadway capacity improve accessibility of inter-</p>	<p>Improved inter-regional road network operations with a new corridor through Niagara, Hamilton to Halton, and increased roadway capacity to improve accessibility of inter-modal facilities.</p>	<p>Improved inter-regional road network operations with new corridors through Hamilton to Halton and in Niagara to the Canada / US border, and increased roadway capacity improve</p>

Factor	Sub-Factor and Measure	Alternative 3-1	Alternative 4-2	Alternative 4-3	Alternative 4-4	Alternative 4-5
				modal facilities.		accessibility of inter-modal facilities.
<b>5.9 Linkages to Population and Employment Centres</b>	<p><i>Measure:</i> Availability / provision of higher order linkages between Urban Growth Centres, Gateway Economic Centres and Gateway Economic Zones (qualitative)</p> <p>Accessibility of Urban Growth Centres, Gateway Economic Centres and Gateway Economic Zones (qualitative)</p> <p>Percentage change in peak hour travel times between urban growth centres</p>	<p>No new higher order roadway or transit linkages between Urban Growth Centres and the Gateway Economic Zone beyond base improvements.</p> <p>Improves accessibility to Urban Growth Centres and the Gateway Economic Centre and Zone with additional inter-regional road capacity and transportation network operation improvements.</p> <p>Auto improvement and road-based transit improvement = 24.9%</p>	<p>New transit linkages and services possible on new higher order transportation corridor improving linkages between Urban Growth Centres of St. Catharines and Hamilton, and to Gateway Economic Zone.</p> <p>Improves accessibility to Urban Growth Centres and the Gateway Economic Centre and Zone with new corridor through Niagara to Hamilton, additional inter-regional road capacity and transportation network operation improvements; limited roadway linkage improvements to St. Catharines and Milton.</p> <p>Auto improvement and road-based transit improvement = 24.5%</p>	<p>New transit linkages and services possible on new higher order transportation corridor between Urban Growth Centres of St. Catharines and Hamilton and toward GTA West Corridor and Guelph, and to Gateway Economic Zone.</p> <p>Improves accessibility to Urban Growth Centres and the Gateway Economic Centre and Zone with new corridor through Niagara and Hamilton toward the GTA West corridor and Guelph, additional inter-regional road capacity and transportation network operation improvements; limited roadway linkage improvements to St. Catharines and Milton.</p> <p>Auto improvement and road-based transit improvement = 27.0%</p>	<p>New transit linkages and services possible on new higher order transportation corridor between urban growth centres of St. Catharines, Hamilton and Burlington, and to Gateway Economic Zone.</p> <p>Improves accessibility to urban growth centres and the Gateway Economic Centre and Zone with new corridor through Niagara and Hamilton to Halton, additional inter-regional road capacity and transportation network operation improvements; limited roadway linkage improvements to St. Catharines and Milton.</p> <p>Auto improvement and road-based transit improvement = 26.1%</p>	<p>New transit linkages and services possible on new higher order transportation corridor between urban growth centres of Hamilton and Burlington, and within Gateway Economic Zone.</p> <p>Improves accessibility to urban growth centres with a new corridor through Hamilton to Halton, and between the Gateway Economic Centre and Zone with a new corridor in Niagara, also additional inter-regional road capacity and transportation network operation improvements; roadway linkage improvements to St. Catharines and Milton, limited improvements to connections between Niagara and GTA urban centres.</p> <p>Auto improvement and road-based transit improvement = 25.9%</p>
<b>5.10 Recreation and Tourism Travel</b>	<p><i>Measure:</i> Directness of routes between population centres, international gateways and tourist / recreation destinations (qualitative)</p> <p>Peak period (summer / weekend) transportation system performance on key inter-regional corridors – forecast volume / capacity issues at critical screenlines</p> <p>Diversion of summer recreational trips from local and regional roadways. (qualitative)</p>	<p>No improvement to directness of routes to tourist destinations of Niagara and the GTA. Relies on increased road capacity on existing routes and new / expanded transit services.</p> <p>West of Highway 6 WB – 0.90 Burlington Skyway EB – 1.05 Hamilton East Boundary N. EB – 0.82 Welland Canal N. WB – 1.02 Highway 403 West WB – 0.58 Bronte Creek WB – 1.10</p> <p>Potential to divert summer / recreational trips from local / regional roads with increased freeway capacity on alternate routes.</p>	<p>Provides moderate potential to improve directness of routes to tourist destinations of Niagara and toward the GTA, with a new transportation corridor over a long distance, improved international gateway linkage, increased road capacity and new / expanded transit services.</p> <p>West of Highway 6 WB – 0.93 Burlington Skyway EB – 1.11 Hamilton East Boundary N. EB – 0.83 Welland Canal N. WB – 1.05 Highway 403 West WB – 0.61 Bronte Creek WB – 1.10</p> <p>Potential to divert summer / recreational trips from local / regional roads with new corridor over a long distance between Niagara and Hamilton and increased freeway capacity.</p>	<p>Provides significant potential to improve directness of routes to tourist destinations of Niagara and the GTA, with a new transportation corridor over a long distance, improved international gateway linkage, increased road capacity and new / expanded transit services. Potential for improved directness to the GTA West area if connected to GTAW corridor and to Southwest Ontario via 401.</p> <p>West of Highway 6 WB – 0.88 Burlington Skyway EB – 1.06 Hamilton East Boundary N. EB – 0.82 Welland Canal N. WB – 1.04 Highway 403 West WB – 0.69 Bronte Creek WB – 1.06</p> <p>Potential to divert summer / recreational trips from local / regional roads with new corridor over a long distance between Niagara and Hamilton toward the GTA West Corridor and Highway 401, and increased freeway capacity.</p>	<p>Provides significant potential to improve directness of routes to tourist destinations of Niagara and the GTA, with a new transportation corridor over a long distance, improved international gateway linkage, increased road capacity and new / expanded transit services.</p> <p>West of Highway 6 WB – 0.88 Burlington Skyway EB – 1.07 Hamilton East Boundary N. EB – 0.82 Welland Canal N. WB – 1.05 Highway 403 West WB – 0.67 Bronte Creek WB – 1.12</p> <p>Potential to divert summer / recreational trips from local / regional roads with new corridor over a long distance between Niagara, Hamilton to Halton, and increased freeway capacity.</p>	<p>Provides moderate potential to improve directness of routes to tourist destinations of Niagara and the GTA, with two new transportation corridors over short-moderate distance, improved international gateway linkage, increased road capacity and new / expanded transit services.</p> <p>West of Highway 6 WB – 0.88 Burlington Skyway EB – 1.09 Hamilton East Boundary N. EB – 0.88 Welland Canal N. WB – 1.11 Highway 403 West WB – 0.67 Bronte Creek WB – 1.11</p> <p>Potential to divert summer / recreational trips from local / regional roads with new corridor over moderate distance, and an improved international gateway linkage, and increased freeway capacity.</p>

Factor	Sub-Factor and Measure	Alternative 3-1	Alternative 4-2	Alternative 4-3	Alternative 4-4	Alternative 4-5
<b>Summary</b>						
<p>Based on the above assessment, none of the alternatives are clearly preferred from a transportation perspective. The following summarizes the major issues associated with each alternative.</p>	<p>Addresses future capacity needs better than the new corridor alternatives between Hamilton and Niagara.</p> <p>Relies on widening Highway 403 through Hamilton and QEW through St. Catharines – so does not provide a suitable long-term solution in these areas.</p> <p>Does not provide alternative routing to the US border as it provides additional capacity by widening QEW through St. Catharines to eight lanes.</p> <p>Does not provide opportunities for new transit linkages through new corridor.</p> <p>Does not provide redundancy benefits and results in higher use of local road network for inter-regional auto and truck trips.</p> <p>Provides limited opportunities for modal integration of people and goods movement (between urban growth centres, transit hubs, employment centres)</p>	<p>Does not sufficiently address future capacity needs.</p> <p>Terminates the west end of the new corridor at Highway 403 in Hamilton and therefore does not provide a suitable long-term solution in the Halton-Hamilton area.</p> <p>Provides limited improvement to traffic operations and results in the least amount of delay savings on the inter-regional network for autos and trucks.</p> <p>Provides limited opportunities for transit linkages on new corridor – does not include new corridor in the Hamilton and Halton area to serve the significant transit demands in this area.</p> <p>Provides moderate redundancy benefits and significantly reduces use of local road network for inter-regional auto and truck trips.</p> <p>Provides limited opportunities for modal integration of people and goods movement (between urban growth centres, transit hubs, employment centres).</p>	<p>Addresses future capacity needs through widening and new corridor.</p> <p>Provides significantly improved traffic operations and significantly reduces delays on the local road network for autos and trucks.</p> <p>Facilitates diversion of some traffic through Highway 403 in Hamilton and QEW in Halton to Highway 401 in Halton.</p> <p>Provides opportunities for transit linkages on new corridor between Niagara, Hamilton, and Halton.</p> <p>Provides significant redundancy benefits and significantly reduces the use of the local road network for inter-regional auto and truck trips.</p> <p>Provides moderate opportunities for modal integration of people and goods movement (between urban growth centres, transit hubs, employment centres).</p>	<p>Addresses future capacity needs through widening and new corridor.</p> <p>Provides significantly improved traffic operations and significantly reduces delays on the local road network for autos and trucks.</p> <p>Provides congestion relief in areas of highest need – through Hamilton, by providing a parallel alternative corridor.</p> <p>Provides greatest opportunities for transit linkages on new corridor with highest potential transit demand in Hamilton and Halton (Burlington and Oakville) areas – provides opportunities to connect to the 407 ETR Transitway.</p> <p>Provides significant redundancy benefits and reduces use of local road network for inter-regional auto and truck trips.</p> <p>Provides significant opportunities for modal integration of people and goods movement (between urban growth centres, transit hubs, employment centres).</p>	<p>Addresses future capacity needs with widening and new corridor segments over limited distances.</p> <p>Provides congestion relief in areas of highest need – through Hamilton, by providing a parallel alternative corridor.</p> <p>Provides sufficient capacity on QEW between Niagara and Hamilton by widening QEW.</p> <p>Provides opportunities for transit linkages on new corridor.</p> <p>Provides moderate redundancy benefits and reduces use of local road network for inter-regional auto and truck trips.</p> <p>Provides moderate opportunities for modal integration of people and goods movement (between urban growth centres, transit hubs, employment centres).</p>	

### Updated Base Case

Based on the modelling and alternatives evaluation methodology discussed earlier, the evaluation of each NGTA alternative was done by comparing its performance against other NGTA alternatives and also against the Base Case.

Forecasts of peak hour congestion on the key inter-regional facilities in the study area for the Base Case conditions in 2031 are illustrated in the congestion plots shown in **Exhibits 4-11** and **4-12** for AM and PM peak hours, respectively.

The levels of congestion noted on the plots are classified in to three categories as shown in **Table 4-17**.

**Table 4-17: Congestion Type; LOS and V / C) Ratio**

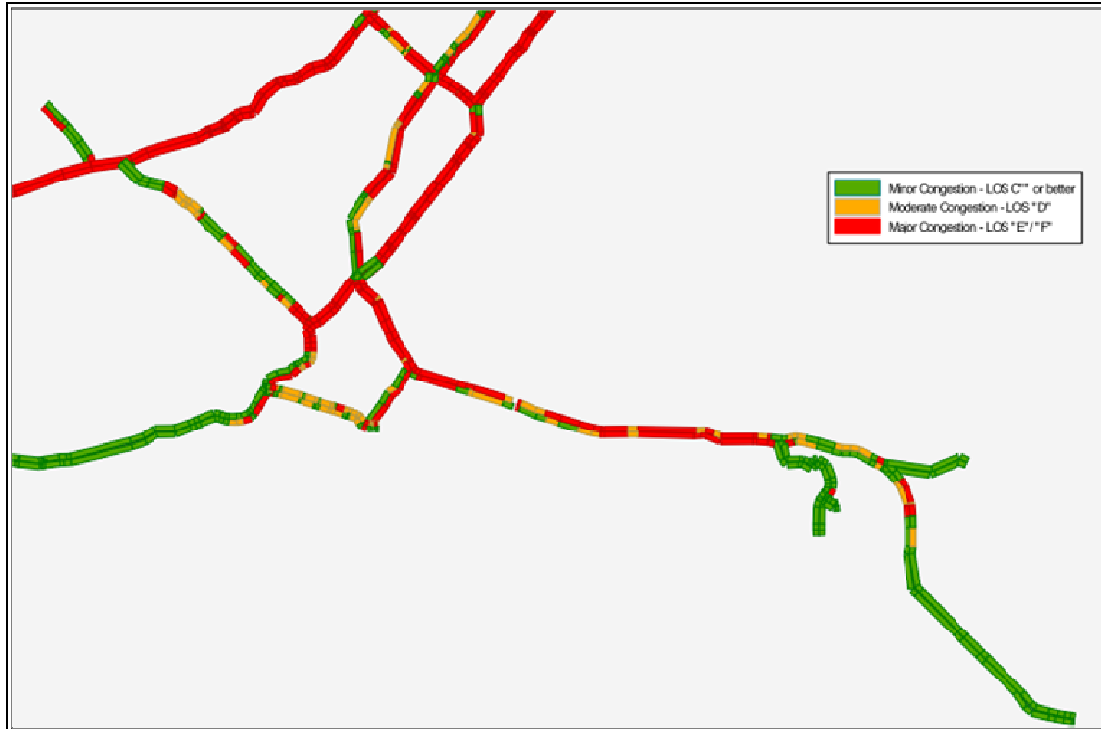
Congestion Type	Approx. LOS	Approx. V / C	Description
Minor	LOS C or better	Less than 0.80	Non-recurring congestion*
Moderate	LOS D	0.80 to 0.90	Approaching Unstable conditions
Major	LOS E or F	0.90 and above	Unstable Conditions (Stop-and-Go)

\* Congestion may result from non-recurring incidents such as inclement weather, collisions, road maintenance, etc.

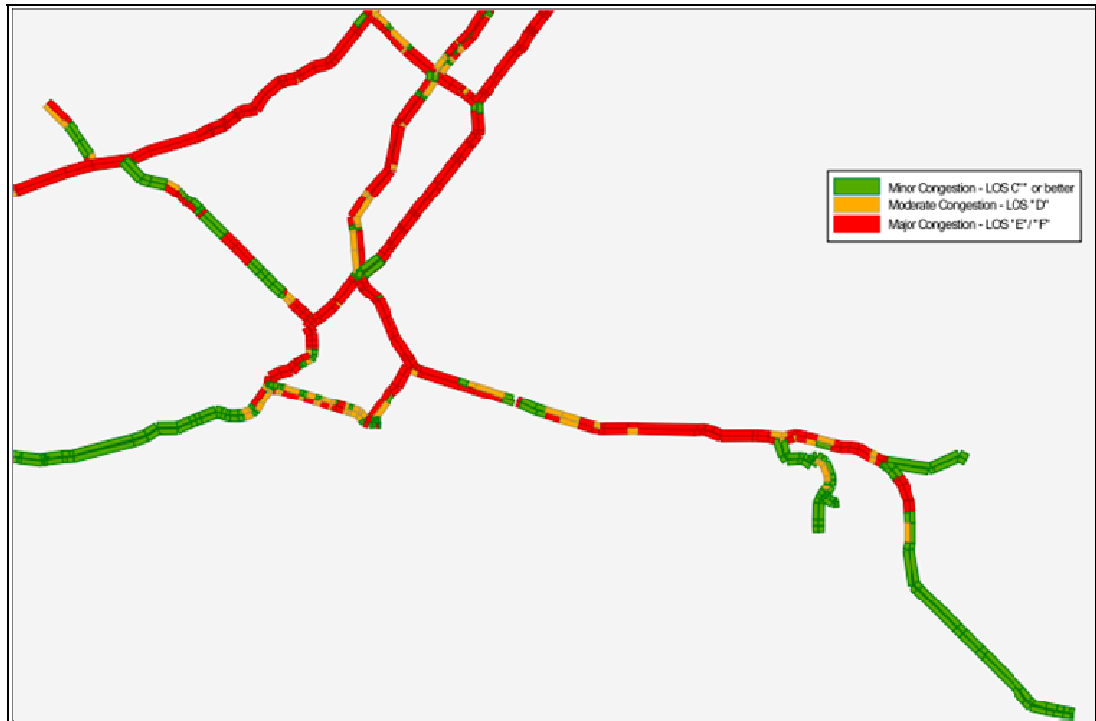
Based on the updated Base Case model runs for the 2031 AM and PM peak hour periods the following key observations are noted:

- The majority of the section of Highway 401 through the study area is forecast to experience major congestion by 2031 during both the AM and PM peak hours. The directional nature of the congestion that is observed on a regular basis today is expected to change over time, such that both directions of travel will experience major congestion during each of the peak periods. This pattern is also observed on other highways such as QEW and Highway 403, though to a slightly lower degree.
- The stretch of 407 ETR between Highway 403 and Highway 401 is forecast to experience major congestion in the peak direction in both the AM and PM peak periods. The stretch between Highway 403 and the QEW / Highway 403 / 407 ETR Interchange in Burlington is forecast to experience major congestion in the peak direction in AM and in both directions in PM. This overall pattern, however, suggests that even with the tolls on 407 ETR, there would be a significant increase in demand, and consequently increased congestion on 407 ETR by 2031. This is a direct result of the significant increase in congestion on alternative corridors such as QEW.
- Except for a short stretch in Grimsby, the entire section of QEW between Hamilton and Niagara is forecast to experience major congestion by 2031. The PM peak congestion would be more significant, with congestion extending past Highway 406 to beyond Highway 405.
- Highway 403 is forecast to major congestion in both directions between the QEW / Highway 403 / 407 ETR Interchange and Highway 6, and in the peak direction from Highway 6 through downtown Hamilton.
- Highway 406 and Highway 6 experience an increase in demands and therefore congestion; however, they would operate at LOS E or better for the most part.

**Exhibit 4-11: 2031 Base Case AM Peak Congestion Levels on Inter-Regional Facilities**



**Exhibit 4-12: 2031 Base Case PM Peak Congestion Levels on Inter-Regional Facilities**



The travel demand forecasts for the Base Case 2031 conditions suggest that the transportation network would experience higher travel demands and more severe congestion during the PM peak than the AM peak period. Therefore, the evaluation of

the NGTA alternatives in terms of travel demand modelling focused on the performance of the system during the PM peak period.

In addition to congestion plots, the transportation network was analyzed for its capacity to accommodate travel demands at critical screenlines in 2031.

The study team assessed roadway system capacity in the study area by comparing estimated traffic flows on selected corridors and at selected screenlines against available capacity. This is measured in units of Volume-to-Capacity ratio ( $V / C$ ). The lower the  $V / C$  ratio; the more capacity that is available and the better the traffic flows on the corridor. As the  $V / C$  ratio approaches 0.9 (meaning that the volume demand is about 90% of the available capacity) the speed deteriorates and the traffic flow becomes unstable and / or congested as the traffic volumes reach capacity. This is referred to as congested traffic conditions.

A screenline is a real or imaginary boundary that defines a broad corridor across which traffic flows. The screenline may represent one or several road links. Each roadway link has limited capacity, which is its maximum ability to accommodate vehicular traffic.

Screenlines are used to examine travel demands within a broader area to determine the ability of the overall network to accommodate travel demands. Some roadways crossing a screenline may be congested, but there may be available capacity on other under-utilized roads. This would suggest that improvements aimed at balancing the flow across the available roads would address the problem before looking at adding new capacity. When the majority of the roads crossing the screenline are operating at or close to capacity this would tend to suggest the need for new capacity, either new lanes or a new roadway.

The selection of screenlines in the NGTA study area for alternatives evaluation is presented in **Exhibit 4-13**.

**Exhibit 4-13: NGTA Study Screenlines**





**Exhibit 4-13** shows the screenline V / C ratios for the 2031 PM peak hour. Since the primary objective of the NGTA study is to address inter-regional transportation needs, inter-regional facilities within each of these screenlines were examined for their performance separate from other roadways. As summarized in the **Exhibit 4-13** on most screenlines the inter-regional facilities are forecast to perform worse in terms of V / C ratio compared to the overall screenline results with all roadways included. The screenline assessment suggests that there would be significant congestion at Welland Canal, Burlington Skyway, Highway 403 west of Highway 6, and QEW through Oakville and Burlington.

The study team also reviewed the impact of summer traffic on the transportation system. While it is important to understand the influence of summer travel demands on the inter-regional transportation system, it must be recognized that these values do not necessarily drive the implementation of new or improved infrastructure, as in many cases they represent an upper bound of travel demands that are significantly higher than the demands experienced by a facility during typical operating conditions, and are only realized during relatively short and localized periods of time.

The *Problems and Opportunities Report* established the factors to expand weekday peak hour traffic into Annual Average Daily Traffic (AADT) and Summer Average Daily Traffic (SADT) based on current observed patterns. These factors were used to estimate traffic flows during a typical summer peak hour. Given that the summer traffic count data was not available for local and regional facilities, the summer congestion levels were estimated only for inter-regional facilities. The screenline V / C ratios for the inter-regional facilities for a summer peak are tabulated in **Table 4-18**. It can be seen that the influence of the summer demand pattern on inter-regional facilities increases the level of congestion forecast for 2031 with the West of Highway 6, Burlington Skyway and Bronte Creek screenlines reporting summer demands in excess of capacity by 20-30%.

**Table 4-18: 2031 Base Case Screenline Evaluation**

Screenline	All Facilities – Weekday Peak	Inter-Regional Facilities - Weekday Peak	Inter-Regional Facilities - Summer Peak
6001: West of Highway 6 (WB)	<b>1.08</b>	<b>1.16</b>	<b>1.23</b>
6004: Burlington Skyway (EB)	<b>1.10</b>	<b>1.18</b>	<b>1.31</b>
7001: Hamilton East Boundary North (EB)	0.77	0.80	0.88
7002: Welland Canal North (WB)	<b>0.92</b>	<b>0.94</b>	<b>1.13</b>
7002: Welland Canal South (WB)	0.79	-	-
7001: Hamilton East Boundary South (EB)	0.52	-	-
6002: Highway 403 West (WB)	0.72	0.72	0.76
8001: Bronte Creek (WB)	<b>1.11</b>	<b>1.19</b>	<b>1.31</b>
6006: South of Lincoln M. Alexander Parkway (WB)	0.61	-	-

**XX** – V / C ratio of 0.9 and above (LOS E or F)

Based on the deficiencies identified for the updated Base Case model run, it is clear that significant inter-regional transportation solutions are required, even with the updated

land use and transportation network improvements incorporated into the model. This confirms the original assessment completed as part of the *NGTA Problems and Opportunities Report*.

The updated Base Case Modelling results for each of the evaluation criteria and measures were compared to the results for the NGTA improvement alternatives. A summary of the evaluation findings are discussed in the sections below.

### **Assessment of Commuter Travel Characteristics for NGTA Alternatives**

The new capacity provided by roadway widening and / or new corridors included within the Group #3 and Group #4 alternatives has the potential to improve travel times between municipalities. This, in turn, may encourage additional longer distance auto travel and reduce transit use and municipal self-containment to some degree. To address this concern, the evaluation process has considered the implications on regional travel patterns for each of the alternatives using the GGH Model. The Group #1 and #2 initiatives, as discussed previously, would also reduce auto travel and encourage additional transit use compared to the Base Case conditions. Therefore, this assessment includes the benefits of the Group #1 and #2 initiatives, which introduce new or enhanced TDM / TSM and inter-regional transit services into the study area in addition to adding new road capacity. By including the expected benefits of the Group #1 and #2 initiatives the net cumulative effects of the transportation alternatives, compared to the Base Case Scenario, are assessed.

The GGH Model runs provided the auto and transit person trip demands on the transportation network for the various network scenarios. The model predicts the future auto and transit travel demands based on a number of factors including transit travel times and fares; and auto travel times, operating costs and tolls. While the cost related factors are consistent between alternatives, the travel times will vary by network alternative, which can impact the overall travel patterns and mode choice for trips in the study area. The commercial vehicle model provided the future truck demands, which are assumed to be constant across the alternative scenarios.

The GGH Model calculates 2031 AM and PM peak period Total Person, Transit Person and Auto trip tables at a detailed traffic zone level. To assess the changes to regional travel patterns, the GGH Model travel demand tables were aggregated to Regional and municipal planning districts in order to assess:

- Self-Containment (trips staying within each Regional Municipality),
- Interregional travel across municipal boundaries, and
- Regional Transit Mode Shares (% of trips using transit).

The degree of trip self-containment and the regional transit mode shares that were forecast for each alternative were previously discussed in **Section 4.7.1**, above. These results are illustrated below in **Exhibits 4-14** and **4-15**.

A summary of the 2031 PM peak hour cross-boundary trips without externals to GGH is presented in **Table 4-19**. The trip distribution and mode split patterns from the GGH Model run for NGTA 3-1 was also used to represent the patterns that would occur for NGTA 4-5. The GGH Model run for NGTA 4-3 was used to represent the patterns for NGTA 4-2, 4-3 and 4-4. Total person trips include auto person, transit and other modes such as walk and bike. Truck trips were derived from the CV model and not part of the GGH Model run.

**Table 4–19: 2031 PM Peak Hour Cross-boundary trips (excluding externals)**

	Base Case		NGTA 3-1		NGTA 4-3	
	EB/NB	WB/SB	EB/NB	WB/SB	EB/NB	WB/SB
<b>Hamilton – Halton</b>						
Auto Person	18,600	20,400	19,000	21,100	19,100	21,200
Transit Person	3,900	4,200	4,300	4,400	4,400	4,500
Truck	2,600	2,500	2,600	2,400	2,600	2,400
<b>Total Person</b>	<b>22,500</b>	<b>24,600</b>	<b>23,300</b>	<b>23,500</b>	<b>23,500</b>	<b>25,700</b>
<b>Auto Occupancy</b>	<b>1.23</b>	<b>1.20</b>	<b>1.25</b>	<b>1.21</b>	<b>1.25</b>	<b>1.21</b>
<b>Hamilton – Wellington</b>						
Auto Person	2,500	2,000	2,600	2,000	2,600	1,900
Transit Person	0	0	50	30	70	10
Truck	330	250	320	240	320	240
<b>Total Person</b>	<b>2,500</b>	<b>2,000</b>	<b>2,600</b>	<b>2,000</b>	<b>2,600</b>	<b>2,000</b>
<b>Auto Occupancy</b>	<b>1.21</b>	<b>1.23</b>	<b>1.22</b>	<b>1.24</b>	<b>1.23</b>	<b>1.23</b>
<b>Hamilton – Niagara</b>						
Auto Person	7,300	8,900	7,400	8,800	7,400	8,800
Transit Person	50	40	120	140	120	150
Truck	840	1,100	810	1,100	810	1,100
<b>Total Person</b>	<b>7,400</b>	<b>9,000</b>	<b>7,500</b>	<b>8,900</b>	<b>7,500</b>	<b>9,000</b>
<b>Auto Occupancy</b>	<b>1.24</b>	<b>1.22</b>	<b>1.25</b>	<b>1.23</b>	<b>1.25</b>	<b>1.23</b>

Note – Total person trips could be less than the sum of auto and transit person trips due to rounding

The graphics show how the auto and transit trips would change with the alternatives from the Base Case. The truck demand was assumed constant under Base Case and NGTA alternatives, with the exception of a 10% reduction in long-distance trucks under Group #3 and #4 alternatives to account for Group #1 and #2 initiatives.

Exhibit 4–14: Cross-Boundary Trips, Transit Modal Share and Self-Containment for NGTA 3-1 and NGTA 4-5

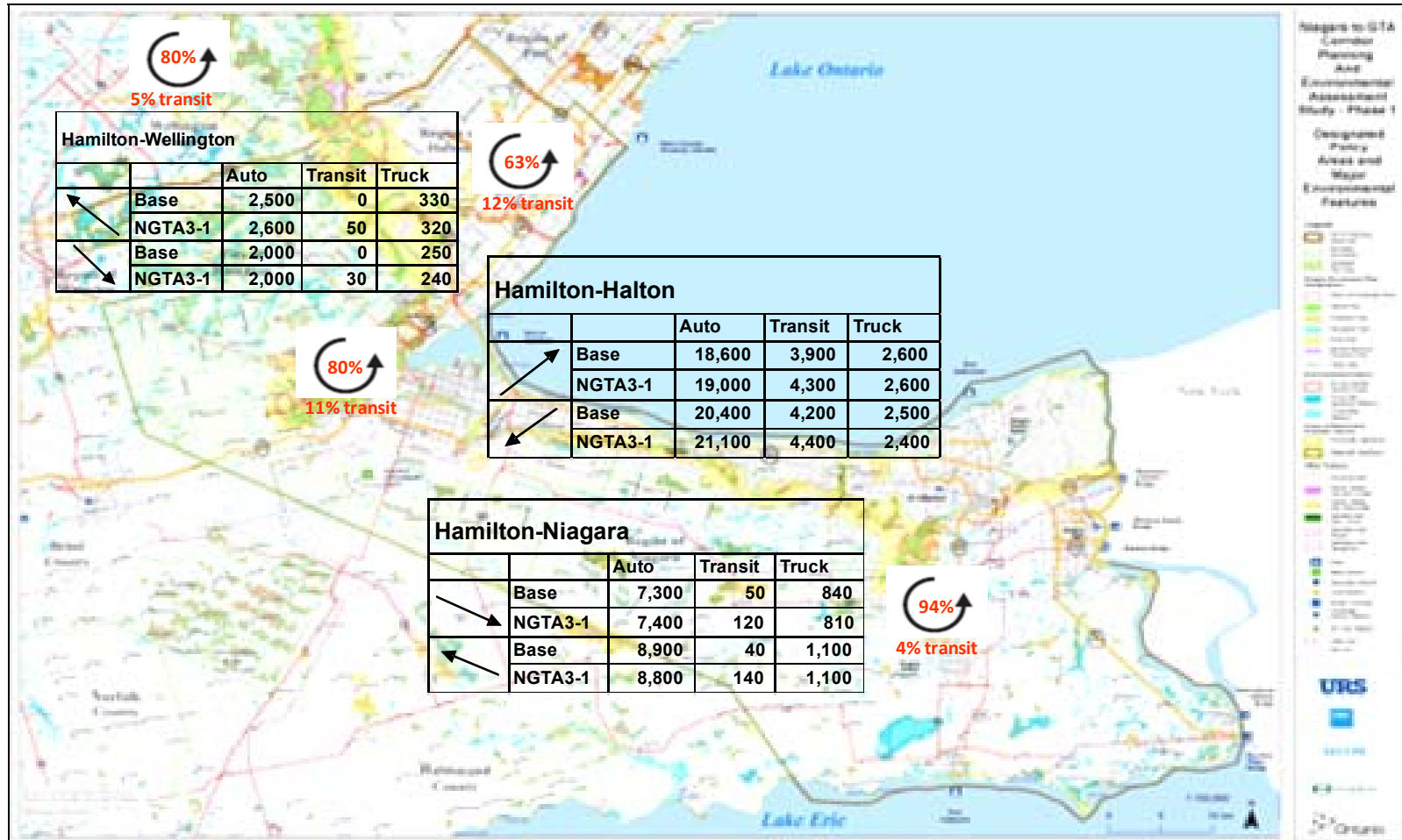
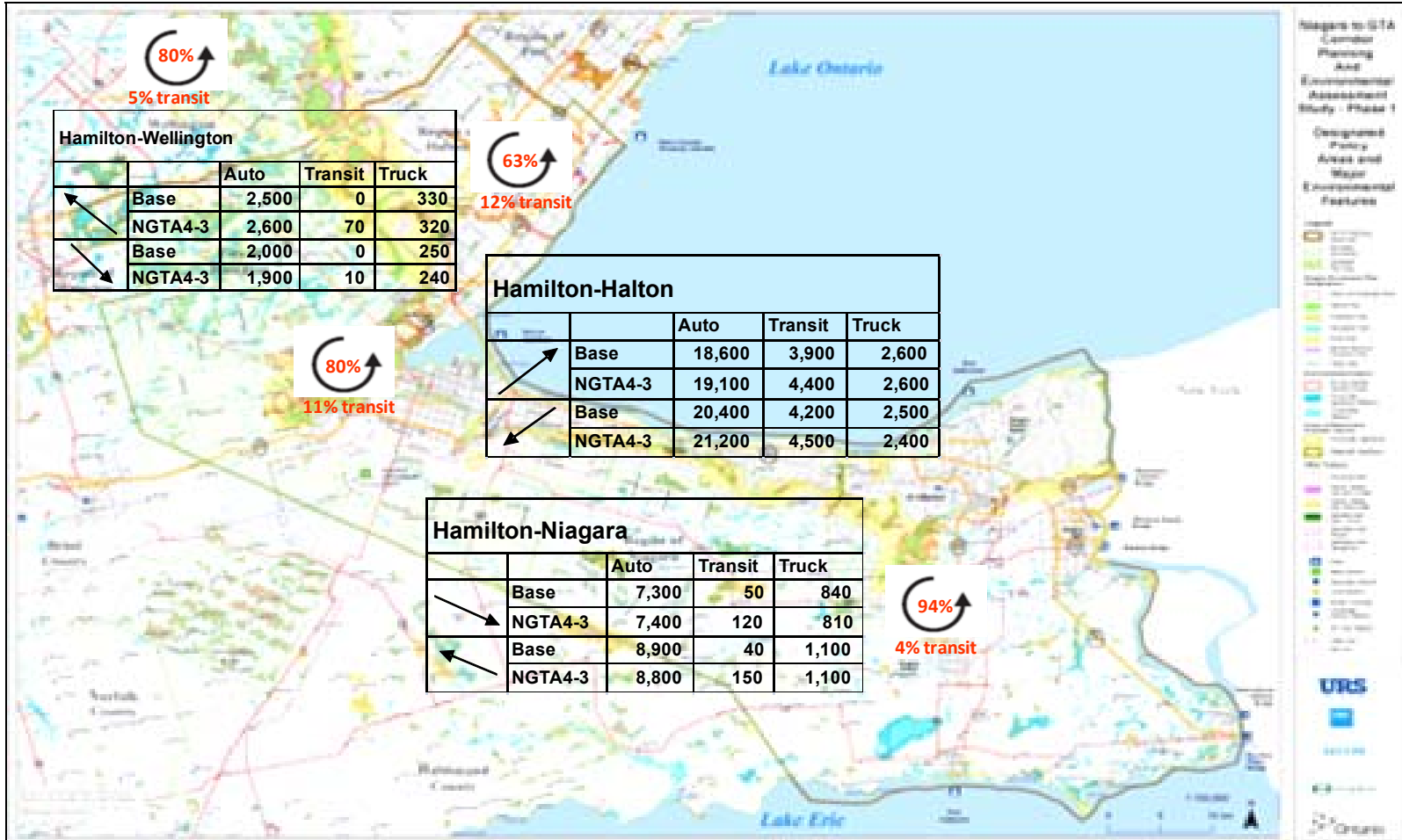


Exhibit 4-15: Cross-Boundary Trips, Transit Modal Share and Self-Containment for NGTA 4-2, 4-3 and 4-4



Alternatives 3-1 and 4-5 both rely on significant widening of existing facilities to accommodate inter-regional travel demands. In Alternative 4-5, two local bypasses are provided in Hamilton and Niagara. Alternatives 4-2 to 4-4 provide similar levels of new road capacity as Alternatives 3-1 and 4-5, except a greater share of this is provided in a new corridor rather than widening of existing roads.

Even with the additional road capacity provided in all the alternatives, cross-boundary transit trips increase at all the boundaries due to the influence of Group #1 and #2 initiatives which offset the effect of additional roadway capacity. For Alternatives 3-1 and 4-5, cross-boundary auto trips increase marginally at the Hamilton-Wellington boundary. The increase is around 5% at the Hamilton-Halton boundary, and the transit trips increase threefold at the Hamilton-Niagara boundary. For Alternatives 3-1 and 4-5, cross boundary auto trips also increase by 3% for Hamilton-Halton, but do not change at Hamilton-Wellington and Hamilton-Niagara boundaries. The change in auto and transit trips for Alternatives 4-2 to 4-4 is similar to that under 3-1 and 4-5, suggesting that the impact of additional capacity is similar whether provided through widening of existing facilities or new facility.

The share of intra-regional trip-making (self-containment) drops by 1% for Halton as a result of Alternatives 3-1 and 4-5. The longer extent of new corridor in Alternatives 4-2 to 4-4 does not result in additional drop in municipal self-containment over Alternatives 3-1 and 4-5, indicating a lack of significant demand for a new route in this location. The average auto trip length does not change from 20.0 kilometres in the Base Case to NGTA 3-1 and 4-5, but increases marginally to 20.1 kilometres in NGTA 4-2 to 4-4.

The increase in auto person trips observed at most of the boundaries with all of the NGTA alternatives suggests that the new road capacity is diverting some trips from transit; however these shifts are being offset by the increase in transit ridership resulting from the Group #1 and #2 transit initiatives. As a result, all of the NGTA alternatives result in a marginal 1-2% increase in transit mode shares in Niagara, Hamilton, Halton and Wellington Regions under 3-1 and 4-5. While Alternatives 4-2 to 4-4 see a similar increase in transit mode share for all the above regions, the transit mode share for Peel increases by 1% compared to 2% under 3-1 and 4-5. The Group #1 and #2 TDM initiatives also offset the effect of highway widening, resulting in a marginal increase in average passenger car occupancy.

The addition of new capacity to the transportation network can also play an important role in supporting existing and new inter-regional transit services. A new corridor can be used to provide bus-based transit services (similar to the popular 407 ETR GO Bus service) or a new transitway within the corridor that can be used for bus or rail based services. For NGTA 3-1, the potential to support transit opportunities is limited to improving the performance of current inter-regional transit services operating on existing corridors. For the new corridor alternatives, the potential person demand for inter-regional transit services was estimated as the forecasted commute trips during the three-hour AM peak period.

With NGTA 4-2, there is an opportunity to introduce new inter-regional transit services on the new corridor between Welland and Hamilton; and forecasts suggest a potential market of 480 person trips between these municipalities by 2031 during peak periods.

NGTA 4-3 provides a longer corridor which can be used to support new inter-regional transit services, effectively linking Welland to Hamilton and Milton. This alternative serves a much higher demand of 5,860 persons between these municipalities by 2031 during peak periods, with only a minor portion of this transit market between Hamilton and Welland.

NGTA 4-4 provides a new corridor that directly links Welland to Hamilton, Burlington and Oakville, increasing the potential market served to 65,900 person trips by 2031 during peak periods, with only a minor portion of this transit market between Hamilton and Welland.

NGTA 4-5 provides two localized bypasses around Hamilton and Niagara. The bypass in the west end links Hamilton with Burlington and Oakville. The bypass in Niagara region does not connect any municipalities with urban growth centres or gateway economic centres. The forecast person demand between the municipalities is 64,710 trips by 2031 during peak periods.

**Table 4-20: 2031 PM Peak Period Demand between Municipalities Served By Alternative**

Alternative	2031 Peak Period Person Trip Demand	Comments
NGTA 3-1	N/A	No new inter-regional transit corridor opportunities
NGTA 4-2	480	Demand between Welland and Hamilton
NGTA 4-3	5,860	Demand between Welland, Hamilton and Milton
NGTA 4-4	65,900	Demand between Welland, Hamilton, Burlington and Oakville
NGTA 4-5	64,710	Demand between Hamilton, Burlington and Oakville

Based on the above analysis (**Table 4-20**), the various NGTA corridor alternatives will have a very marginal impact on regional commuting patterns between communities although there is slight increase in auto person travel compared to Base Case conditions. The resulting impacts to transit use are mitigated by the proposed Transit and TDM measures contained within the Group #1 and #2 initiatives, which actually result in higher overall transit mode shares in all regions compared to Base Case conditions. Since the main differences in commuting patterns that were observed occur in all NGTA alternatives it can be concluded that these changes are caused by the addition of new road capacity, and is less influenced by how that new capacity is added.

Alternative 4-4 provides the best support for new inter-regional transit services by providing a significant length of new corridor (that can be used for new transit services) combined with the highest potential demand between urban growth centres directly served by the corridor. It also allows for future integration with the planned 407 ETR Transitway, which will better promote opportunities to introduce new inter-regional transit services and carpooling in the NGTA corridor over the longer term.

**Assessment of Traffic Operations Performance – Screenline Analysis**

Model runs for each of the NGTA alternatives were completed to develop forecasts of future traffic volumes on the various road links in the study area. PM peak hour travel demand forecasts for the key inter-regional facilities were assessed to determine the screenline performance results to determine how well each of the alternatives address previously identified capacity issues in 2031. A comparison of the PM peak hour screenline V / C ratios for all facilities and for inter-regional facilities is presented in **Table 4-21** and **Table 4-22**. The results are presented for the for the peak direction of travel (typically Westbound / Northbound in the PM peak).

**Table 4–21: 2031 PM Peak Hour Screenline Evaluation – All Facilities**

Screenline	NGTA Base	NGTA 3-1	NGTA 4-2	NGTA 4-3	NGTA 4-4	NGTA 4-5
6001: West of Highway 6 (WB)	<b>1.08</b>	<b>0.93</b>	<b>0.98</b>	0.85	0.89	0.88
6004: Burlington Skyway (EB)	<b>1.10</b>	0.89	<b>0.93</b>	0.89	<b>0.90</b>	<b>0.91</b>
7001: Hamilton East Boundary North (EB)	0.77	0.62	0.65	0.64	0.64	0.72
7002: Welland Canal North (WB)	<b>0.92</b>	0.83	0.85	0.84	0.85	<b>0.90</b>
7002: Welland Canal South (WB)	0.79	0.70	0.60	0.61	0.61	0.58
7001: Hamilton East Boundary South (EB)	0.52	0.37	0.41	0.43	0.42	0.29
6002: Highway 403 West (WB)	0.72	0.55	0.57	0.66	0.63	0.63
8001: Bronte Creek (WB)	<b>1.11</b>	<b>0.93</b>	<b>0.93</b>	<b>0.90</b>	<b>0.95</b>	<b>0.94</b>
6006: South of Lincoln M. Alexander Parkway (WB)	0.61	0.57	0.57	0.56	0.56	0.55

XX – V / C ratio of 0.9 and above (LOS E or F)

**Table 4–22: 2031 PM Peak Hour Screenline Evaluation–Inter-Regional Facilities**

Screenline	NGTA Base	NGTA 3-1	NGTA 4-2	NGTA 4-3	NGTA 4-4	NGTA 4-5
6001: West of Highway 6 (WB)	<b>1.16</b>	<b>1.03</b>	<b>1.08</b>	<b>0.91</b>	<b>0.96</b>	<b>0.95</b>
6004: Burlington Skyway (EB)	<b>1.18</b>	<b>0.95</b>	<b>1.00</b>	<b>0.95</b>	<b>0.97</b>	<b>0.98</b>
7001: Hamilton East Boundary North (EB)	0.80	0.74	0.75	0.74	0.74	0.79
7002: Welland Canal North (WB)	<b>0.94</b>	0.85	0.87	0.87	0.87	<b>0.92</b>
7002: Welland Canal South (WB)	-	-	0.44	0.45	0.45	0.30
7001: Hamilton East Boundary South (EB)	-	-	0.46	0.50	0.49	0.41
6002: Highway 403 West (WB)	0.72	0.55	0.57	0.66	0.63	0.63
8001: Bronte Creek (WB)	<b>1.19</b>	<b>1.00</b>	<b>1.00</b>	<b>0.96</b>	<b>1.02</b>	<b>1.01</b>
6006: South of Lincoln M. Alexander Parkway (WB)	-	-	-	-	-	-

XX – V / C ratio of 0.9 and above (LOS E or F)

In summary, all the alternatives were developed to address the future travel demands and would therefore provide congestion relief compared to the Base Case. All the screenlines are forecast to operate at LOS D or better in one of the alternatives, except for the Bronte Creek screenline due to congestion on QEW through Oakville and Burlington. Alternatives 4-3 and 4-4 rank the best in improving the most screenlines to perform at LOS D or better.



### Summer Congestion

One of the deficiencies identified in the *Problems and Opportunities Report* for the Base Case Scenario was the performance of the transportation network during weekend and summer peak travel periods. The summer peak traffic is reflective of the tourism and recreational traffic associated with the Niagara region. The inter-regional facilities were found to operate at significantly higher levels of congestion during peak periods, which results in delays to tourist travel to and through the NGTA study area. Based on the factors established in the *Problems and Opportunities Report*, forecasts of summer peak travel demands on the key inter-regional facilities in the study area were estimated. **Table 4-23** shows the screenline V / C ratios for summer peak conditions.

**Table 4-23: 2031 Summer Peak Hour Screenline Evaluation– Inter-Regional Facilities**

Screenline	NGTA Base	NGTA 3-1	NGTA 4-2	NGTA 4-3	NGTA 4-4	NGTA 4-5
6001: West of Highway 6 (WB)	1.23	1.09	1.14	0.98	1.03	1.02
6004: Burlington Skyway (EB)	1.31	1.05	1.11	1.06	1.07	1.09
7001: Hamilton East Boundary North (EB)	0.88	0.82	0.83	0.82	0.82	0.88
7002: Welland Canal North (WB)	1.13	1.02	1.05	1.04	1.05	1.11
7002: Welland Canal South (WB)	-	-	0.53	0.54	0.54	0.36
7001: Hamilton East Boundary South (EB)	-	-	0.51	0.55	0.54	0.46
6002: Highway 403 West (WB)	0.76	0.58	0.61	0.69	0.67	0.67
8001: Bronte Creek (WB)	1.31	1.10	1.10	1.06	1.12	1.11
6006: South of Lincoln M. Alexander Parkway (WB)	-	-	-	-	-	-

**XX** – V / C ratio of 0.9 and above (LOS E or F)

In most cases, the NGTA alternatives provide some relief for summer weekend peak traffic congestion, but a number of the screenlines are still forecast to operate at or just over capacity during the summer peak periods. Three screenlines – Burlington Skyway, Bronte Creek and Welland Canal North – operate over capacity in all of the alternatives.

The NGTA alternatives that involve providing a new inter-regional facility would attract traffic away from local and regional facilities but they do not provide as much benefit to QEW as the widening included in NGTA 3-1.

### **Average Annual Daily Traffic (AADT) Forecasts by Inter-Regional Facility**

Future volume forecasts for the key interregional facilities in the NGTA study area were converted to AADT using current patterns of AADT compared to peak hour volumes. **Exhibits 4-16 to 4-20**, on the following pages, illustrate the forecasted AADT and V / C ratios for the key segments of the major inter-regional facilities in the study area for each NGTA alternative.

For Alternative 3-1, Highway 401 would be less congested relative to Base Case conditions to the west of Milton and through Milton due to the proposed widening from six to ten lanes. QEW is significantly improved at the Burlington Skyway Bridge, between Hamilton and Niagara, and through St. Catharines and Niagara Falls. The

additional HOV lane between Hamilton and Niagara would relieve congestion so that it does not operate over capacity. However, QEW through Oakville and Burlington still operates over capacity though at improved conditions from the Base Case. The addition of HOV lanes on Highway 403 in Hamilton east of Highway 6 significantly relieves congestion, though Highway 403 still operates over capacity west of Highway 6. This indicates a need for 10 lanes through the urban area of Hamilton.

Alternative 4-2 provides a new facility between Highway 403 in Hamilton and QEW in Niagara. By terminating the corridor at Highway 403, it worsens the congestion on Highway 403 compared to Alternative 3-1, though it still operates better than under Base Case. The daily traffic volumes on the new corridor are around 35,000-45,000 between Hamilton and Niagara. Though the new corridor diverts some traffic demand from QEW, it does not draw enough for QEW to perform better than under Alternative 3-1. QEW through St. Catharines operates comparably to Alternative 3-1, while QEW through Niagara Falls operates worse. QEW through Burlington and Oakville performs comparably to Alternative 3-1.

Alternative 4-3 provides a new facility between Highway 401 west of Milton and QEW in Niagara. The new corridor is forecast to serve between 40,000 and 55,000 vehicles per day between Niagara and Hamilton. The demand served between Highway 403 in Hamilton and Highway 401 in Halton is around 70,000 to 80,000 vehicles per day. A considerable share this demand is drawn from local and regional roads, as indicated by improved regional and local traffic operations. By diverting traffic headed from and to GTA away from 407 ETR / QEW corridors, Alternative 4-3 provides marginal congestion relief on the inter-regional system through Burlington and Oakville. QEW between Hamilton and Niagara is not improved over Alternative 4-2 as only marginally higher traffic is drawn from QEW. Alternative 4-3 results in increased congestion on Highway 401 through Halton due to an increased traffic demand from the NGTA corridor connection. In this alternative, QEW is not widened through St. Catharines and Niagara Falls, and hence operates slightly worse than under Alternative 3-1 though the new corridor diverts some traffic away from QEW.

Compared to Alternative 4-3, Alternative 4-4 provides additional congestion relief to Highway 403 through Hamilton with the new corridor connecting to 407 ETR in Burlington. As a result, 407 ETR would experience higher demands through Halton. Traffic demand for the new corridor is comparable to Alternative 4-3 between Niagara and Hamilton, and around 55,000 to 75,000 vehicles per day between Highway 403 in Hamilton and 407 ETR in Burlington. While the projected travel demands are slightly lower in comparison to Alternative 4-3, the diversion of traffic will have a more significant effect in terms of relieving congestion in the areas where severe congestion is forecast in the future such as Highway 403 through Hamilton, the Burlington Skyway, and the QEW / Highway 403 / 407 ETR Interchange.

Alternative 4-5 provides localized bypasses in Hamilton and Niagara. This alternative does not provide a continuous connection between Niagara and the GTA, and as such, does not divert traffic and relieve the QEW through Niagara of congestion to the extent that the other new corridor alternatives would. Alternative 4-5 operates similar to Alternative 4-4 in the west end of the study area, west of Highway 403.

Exhibit 4-16: 2031 NGTA 3-1 Inter-Regional AADT and PM Peak Hour V / C Ratios

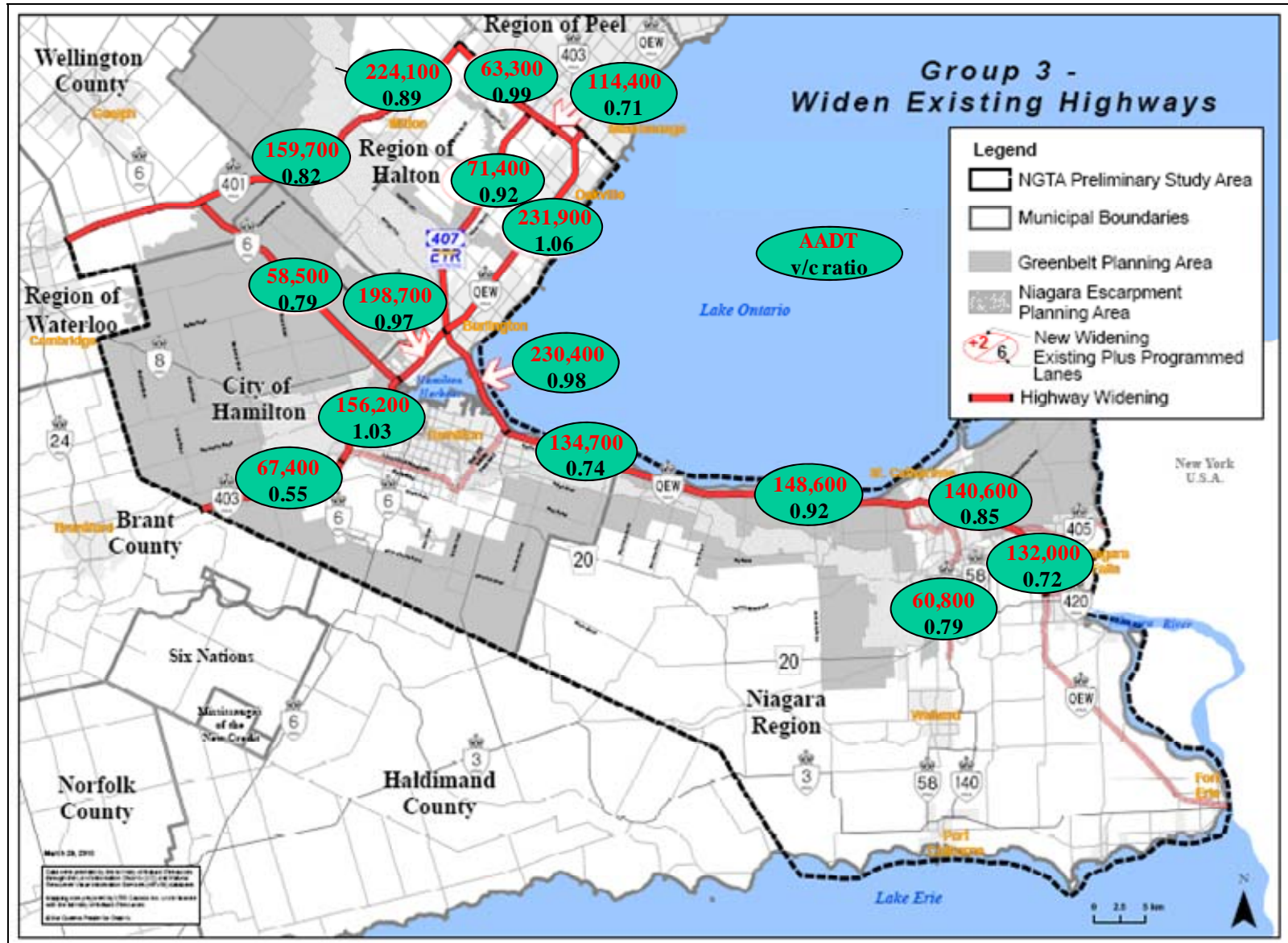


Exhibit 4-17: 2031 NGTA 4-2 Inter-Regional AADT and PM Peak Hour V/C Ratios

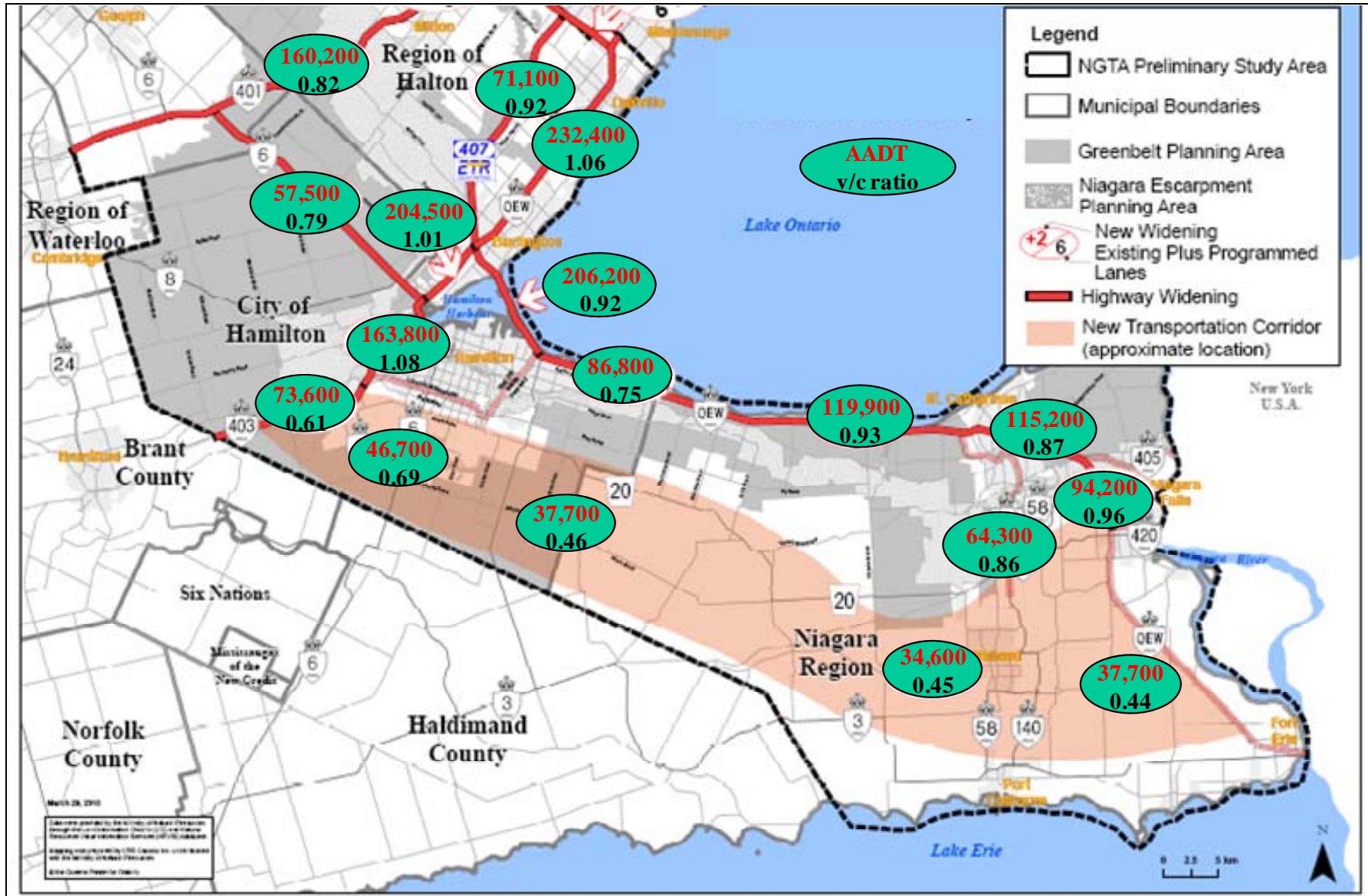


Exhibit 4-18: 2031 NGTA 4-3 Inter-Regional AADT and PM Peak Hour V / C Ratios

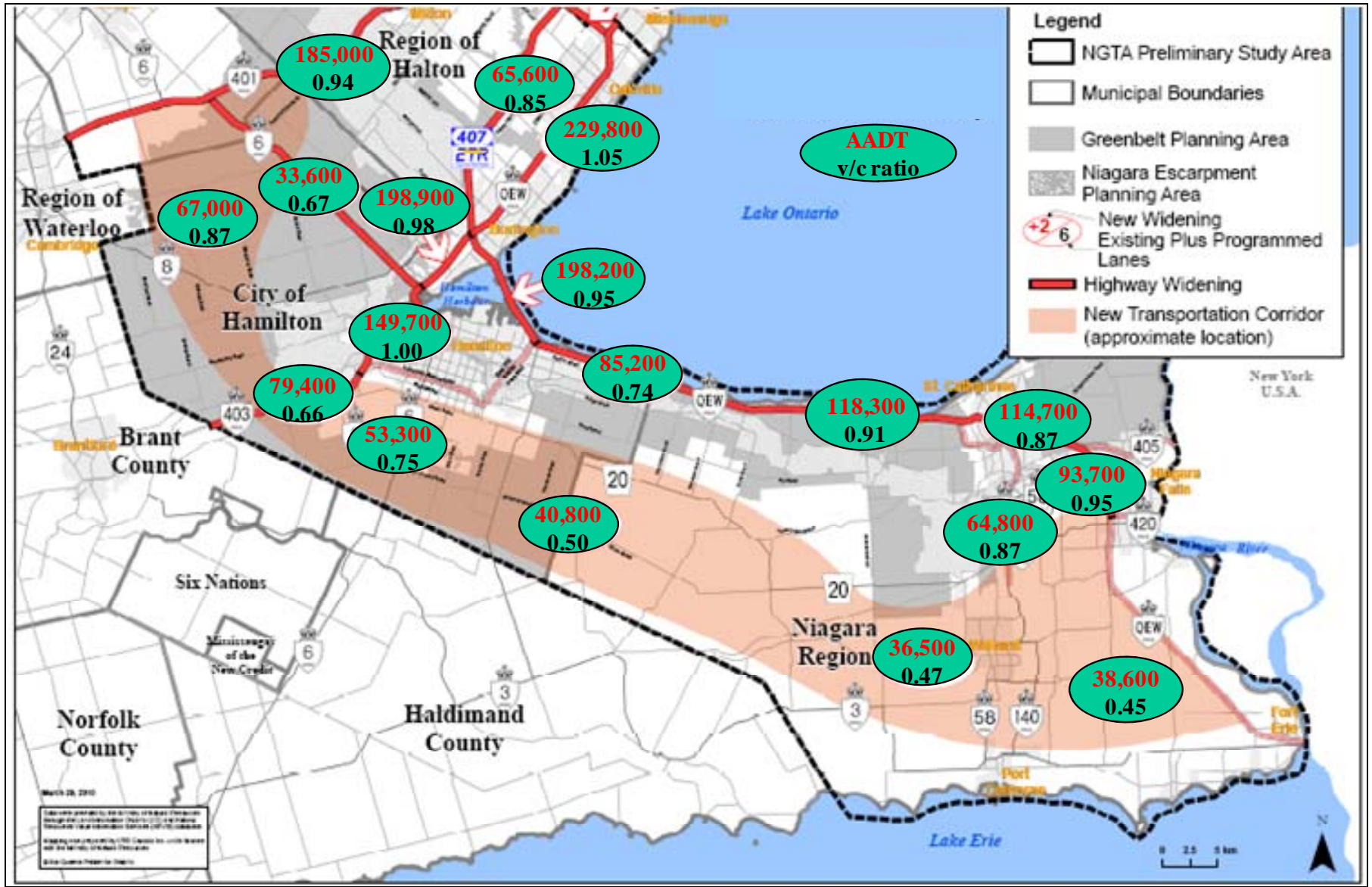


Exhibit 4-19: 2031 NGTA 4-4 Inter-Regional AADT and PM Peak Hour V / C Ratios

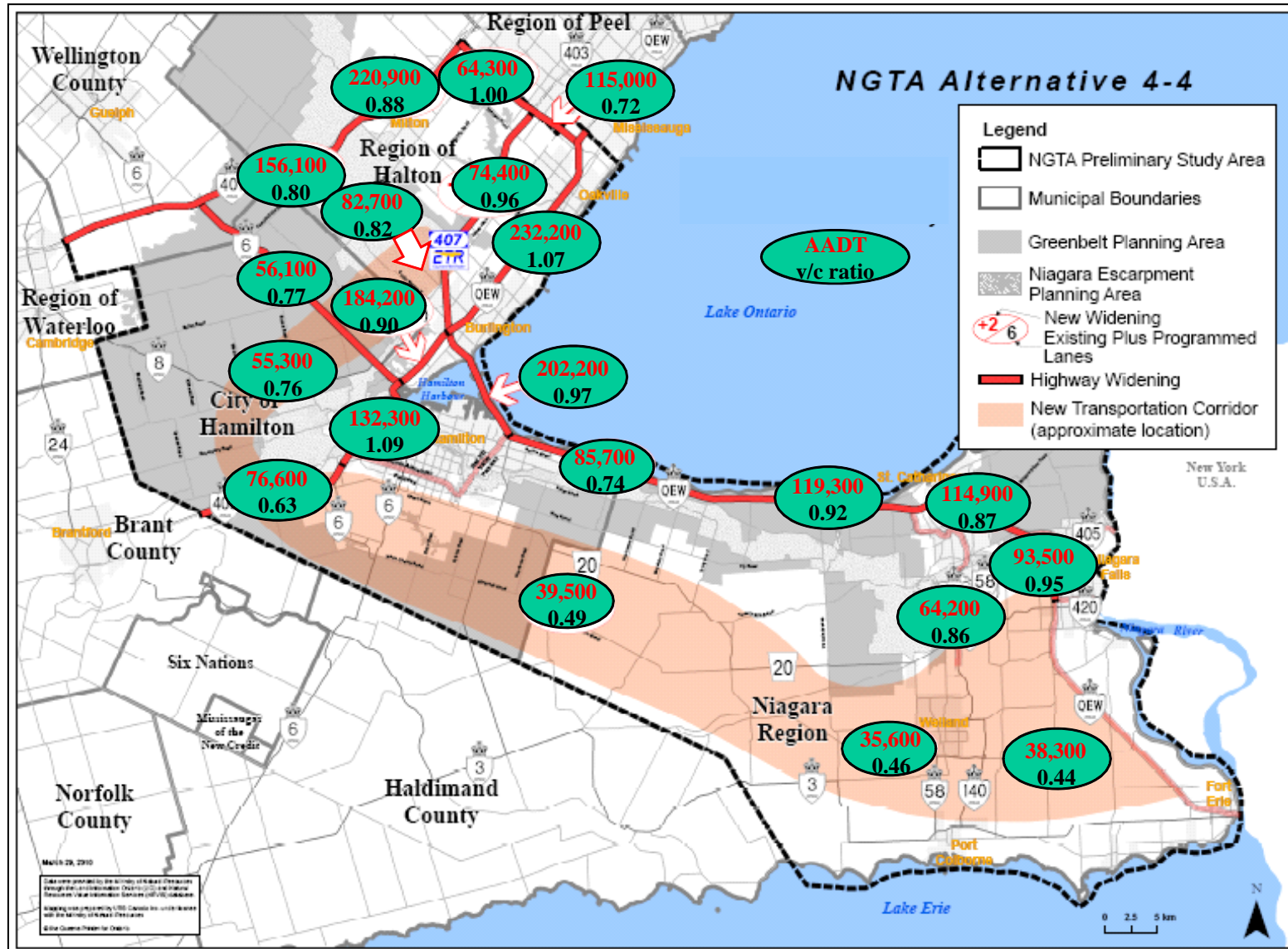
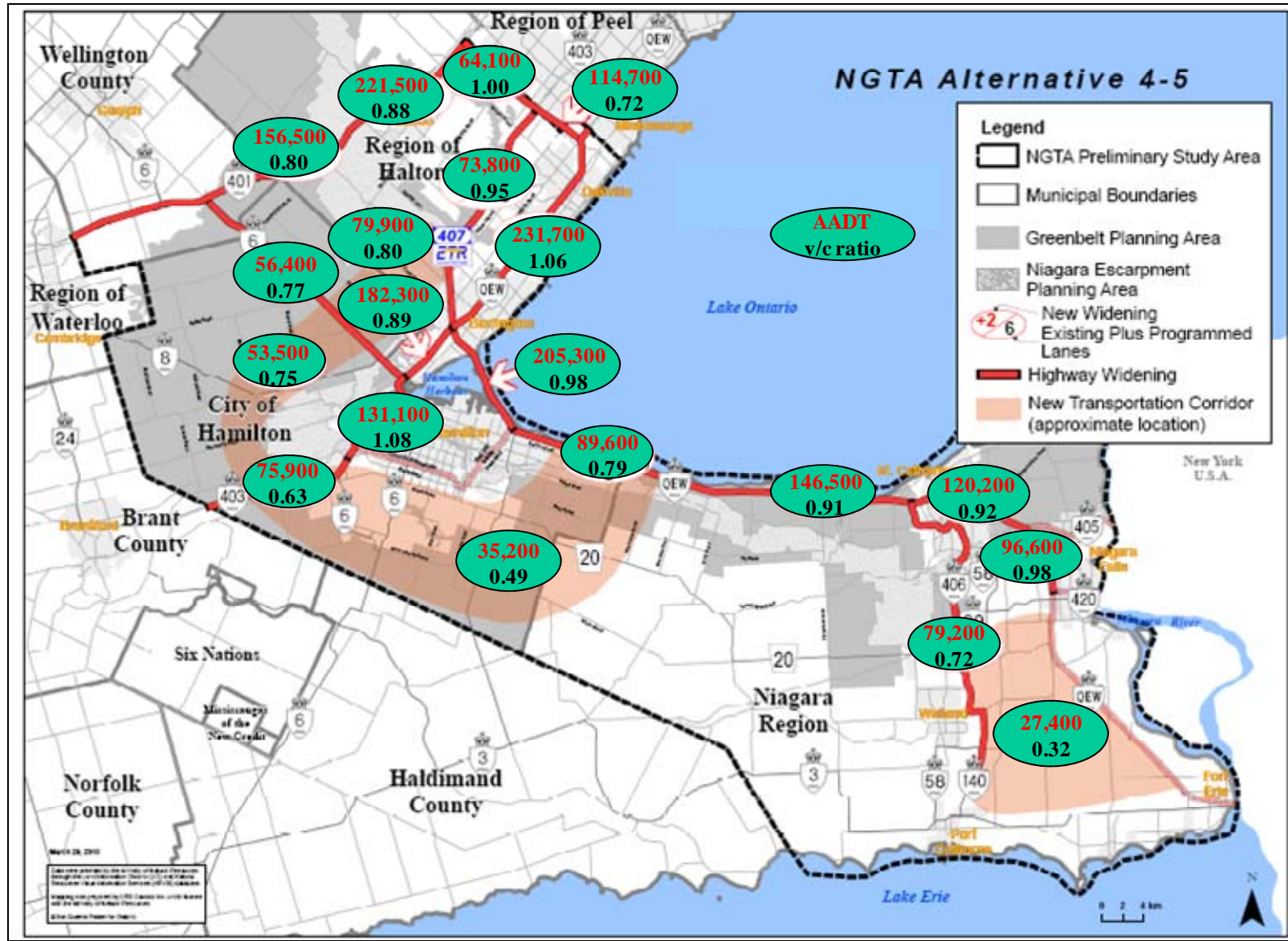


Exhibit 4-20: 2031 NGTA 4-5 Inter-Regional AADT and PM Peak Hour V / C Ratios



### **Movement of People**

One of the primary objectives of the NGTA study is to develop a solution to improve the movement of people in the study area. To achieve this, a series of criteria and performance measures were used including:

- The percentage of inter-regional and local road travel performing at LOS D or better;
- The percentage of inter-regional trips using local roads;
- Auto delays on the inter-regional and local road networks; and
- The average vehicle occupancy on the road network.

For the purpose of this assessment, an inter-regional trip is defined as a trip that is longer than the average commuting distance within the study area, which was estimated at 20 kilometres based on 2006 census results.

**Table 4-24**, on the following page, summarizes the modelling results and the quantitative measures used to evaluate how well the NGTA alternatives perform in terms of movement of people relative to the Base Case Scenario.

In terms of inter-regional network performing at LOS D or better all of the Group#4 alternatives perform better than the Base Case and considerably better than Alternative 3-1. This measure needs to be considered in the context of the usage of the new facility to understand how it benefits the network. The modeling results indicate that a new corridor would attract demand in the range of 40,000 to 80,000 vehicles per day, which is comparable to other rural freeways in Southern Ontario. In terms of benefits to the local road network, all of the alternatives perform at a similar level and improve the percentage of local roads operating at LOS D or better compared to the base case.



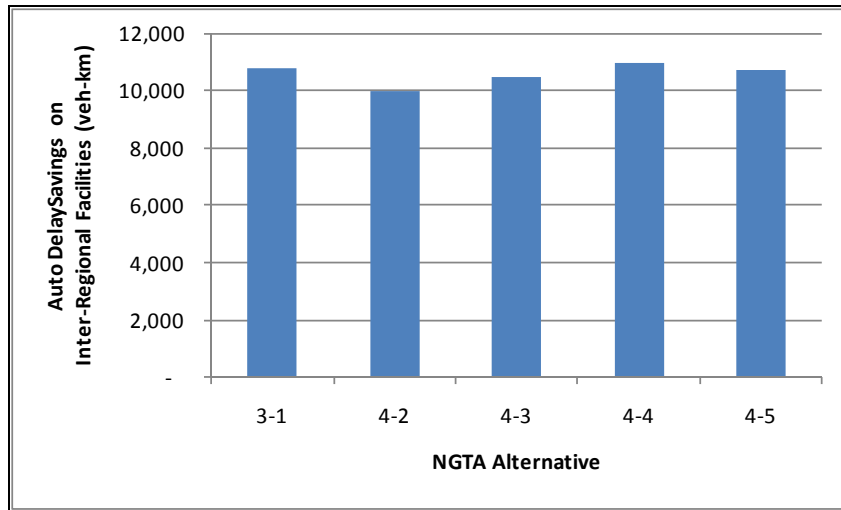
**Table 4–24: 2031 PM Peak Hour NGTA Alternatives Evaluation – Movement of People**

Criteria	Base Case	NGTA 3-1	NGTA 4-2	NGTA 4-3	NGTA 4-4	NGTA 4-5
% of Inter-regional roadway auto network better than LOS D (auto veh-km)	20%	39%	43%	45%	46%	44%
% of local roadway auto network better than LOS D (auto veh-km)	66%	77%	77%	78%	77%	77%
Auto delay on inter-regional roadway network (auto veh-hr)	30,091	19,343 (10,747)	20,091 (10,000)	19,634 (10,456)	19,111 (10,980)	19,385 (10,706)
Auto delay on local roadway network (auto veh-hr)	33,948	22,080 (11,868)	21,717 (12,231)	20,345 (13,603)	20,999 (12,949)	21,063 (12,885)
% of Inter-regional auto travel using local roads	53%	41%	38%	35%	37%	37%

(XXX): Reduction from the Base Case

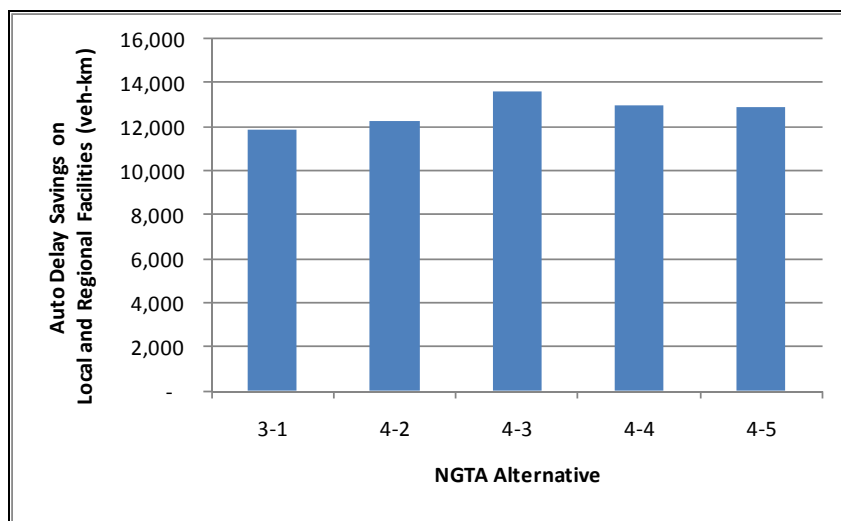
Auto delays on the inter-regional road network, which represent another measure of the amount of congestion and the overall performance of the road network, are also positively affected by all of the NGTA alternatives. Under the Base Case Scenario, the inter-regional road network in the NGTA study area is forecast to experience about 30,090 veh-hours of delay during a typical PM peak hour by 2031. This compares to approximately 14,530 veh-hours of delay in 2006, or a 107% increase over today's conditions. All of the Group #3 and Group #4 alternatives result in a significant reduction in auto delays in comparison to the Base Case. The comparison of auto delay savings on inter-regional facilities across the NGTA alternatives is summarized in **Exhibit 4-21**. All the Group #3 and #4 alternatives provide significant delay savings on inter-regional facilities over the Base Case, with 4-4 performing marginally better than the rest of the alternatives.

Exhibit 4-21: Auto Delay Savings on Inter-Regional Facilities



The performance of the local road network is positively affected by all of the Group #3 and Group #4 alternatives, with a significantly greater portion of the local road network operating at LOS D than the Base Case. Delays on the local road network are also expected to improve with all of the NGTA alternatives. Under the Base Case Scenario, the local road network in the NGTA study area is forecast to experience approximately 33,950 veh-hours of delay during a typical PM peak hour by 2031. This represents a tripling of the 10,890 veh-hours of delay estimated in 2006. The comparison of auto delay savings on local and regional facilities across the NGTA alternatives is summarized in **Exhibit 4-22**. All the Group #3 and #4 alternatives provide significant delay savings on local and regional facilities over the Base Case, with 4-3 performing marginally better than the rest of the alternatives.

Exhibit 4-22: Auto Delay Savings on Local and Regional Facilities



Auto delays on the transportation network represent a significant drain on the economy and places the GGH at a competitive disadvantage to other regions in terms of attracting new investment and maintaining current transportation dependent industries. A recent study completed for Metrolinx estimated that the economic cost of congestion in the GTA

and Hamilton area amounted to approximately \$6 billion per year in 2006, of which \$3.3 billion represents the cost of congestion to commuters<sup>6</sup>.

This combined auto delay savings on the local and inter-regional road network within the NGTA study area is estimated to be on the order of 22,000 to 24,000 veh-hours for each of the alternatives. The travel time savings corresponding to the upper bound of this range would be on the order of about \$1.47 billion per year<sup>7</sup> for commuter traffic. **Table 4-25** summarizes the auto delay savings for each of the alternatives.

**Table 4–25: 2031 PM Peak Hour Delay Savings by Alternative (auto veh-hours)**

Alternative	Inter-Regional Roads	Local Roads	Total
NGTA 3-1	10,750	11,870	22,620
NGTA 4-2	10,000	12,230	22,230
NGTA 4-3	10,460	13,600	24,060
NGTA 4-4	10,980	12,950	23,930
NGTA 4-5	10,710	12,890	23,600

The share of inter-regional trips using the local road network is an important measure of how well the transportation network is serving the different travel demand markets in an area. As noted earlier, inter-regional trips have been defined as trips that are longer than the average commuting distance in the NGTA study area (20 kilometres based on 2006 data). If longer distance trips are forced to use local roads due to the lack of a higher order link to serve these trips, this tends to raise issues related to neighbourhood impacts, safety concerns, and other social impacts typically associated with traffic infiltration. Local road congestion caused by long distance trips using local roads also presents challenges for municipalities which are typically responsible for funding the ongoing maintenance and improvement costs of these roads.

For the Base Case Scenario, approximately 53% of the inter-regional auto trips in the study area are using the local road network. Each of the Group #3 and Group #4 alternatives reduce the percentage of inter-regional auto trips using the local road network to between 35% and 40% which is a significant reduction from the Base Case Scenario. This indicates the effectiveness of the alternatives in shifting the longer-distance traffic to the inter-regional road network.

System reliability and redundancy are also important considerations in the evaluation of how well a transportation network supports person movement. Reliability of the transportation network affects the lives of commuters and business travellers alike and in networks with high levels of congestion incidents that reduce the capacity of the network (such as collisions, weather conditions, and construction). Adding new capacity can increase the level of reliability for existing corridors, as the “stop and go” conditions will occur more readily when the volume demand approaches the physical capacity of the facility. Adding a new corridor can also improve reliability by improving system wide capacity, and providing an alternate corridor that can be used during incidents that affect another corridor.

Alternative 3-1 does not provide any new alternate routes for inter-regional transportation beyond new transit corridors recommended in the *RTP* by Metrolinx. This alternative provides increased inter-regional road capacity on existing freeway system

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<sup>6</sup> Cost of Road Congestion in the Greater Toronto and Hamilton Area: Impact and Cost Benefit Analysis of the Metrolinx Draft Regional Transportation Plan, Final Report, Dec 2008, HDR Corp.

<sup>7</sup> Calculation based on 10% of traffic in PM peak, 260 days per year, auto occupancy of 1.2, and an average Value of Time of \$21 / hr per person in 2010 value. Delays based on congested travel times versus free flow travel times, which differs from the methodology used to calculate the cost of congestion noted in reference 1, above.

which can support improved transportation system reliability. Alternative 4-2 would provide a new alternate corridor between Hamilton and Niagara through a direct connection between QEW and Highway 403 plus new transit corridors and increased roadway capacity throughout the study area. This creates a potential to improve transportation system reliability with a new inter-regional corridor over a portion of the NGTA study area.

Alternatives 4-3 and 4-4 improve upon this by increasing the length of the new alternate corridor, providing a direct connection from QEW in Niagara to Highway 401 west of Milton and 407 ETR in Burlington, respectively. This alternate route has an enhanced potential to improve transportation system reliability by providing more direct connections and route choice.

Alternative 4-5 provides route choice by providing two new corridor segments over short distances in Hamilton and Niagara. The corridor connection in Niagara between QEW and Highway 406 serves as an alternative route to QEW through built up areas of St Catharines and Niagara Falls. Similarly, the corridor in the west end provides additional route choice to avoid congestion on QEW through Burlington and Hamilton.

### **Goods Movement**

Similar to movement of people, improved goods movement is one of the critical objectives of the NGTA study. To assess how well the various alternatives improve goods movement in the study area, a series of criteria and performance measures were used including:

- The percentage of inter-regional road network performing at LOS D or better;
- The percentage of inter-regional truck trips using local roads; and
- Truck delays on the inter-regional road networks.

As noted previously, commercial vehicle demands for the 2031 horizon year were obtained from MTO's commercial vehicle model. The commercial vehicle demand from the MTO model was adjusted to reflect the anticipated benefits of the Group #1 and #2 initiatives that are designed to encourage longer distance truck traffic to shift to rail based travel. Based on a review of the commodities being shipped by truck at the various CVS stations, it was estimated that these policy initiatives could result in a 10% reduction in longer distance truck trips that are over 500 kilometres in length. This reduction was implemented to the truck travel demands prior to running the model to assess the various NGTA alternatives. **Table 4-26** summarizes the quantitative measures used to evaluate the alternatives in terms of goods movement.

For the Base Case Scenario only 17% of the PM Peak Hour truck travel on the inter-regional road network is forecast to operate at LOS D or better by 2031. This represents a significant amount of delay to commercial goods movement in the region, which could significantly impact the competitiveness of our industries and the costs of the goods we purchase. All of the NGTA alternatives improve upon this to some degree, although the new corridor alternatives provide a marginal improvement in delay savings compared to the widening in NGTA 3-1.

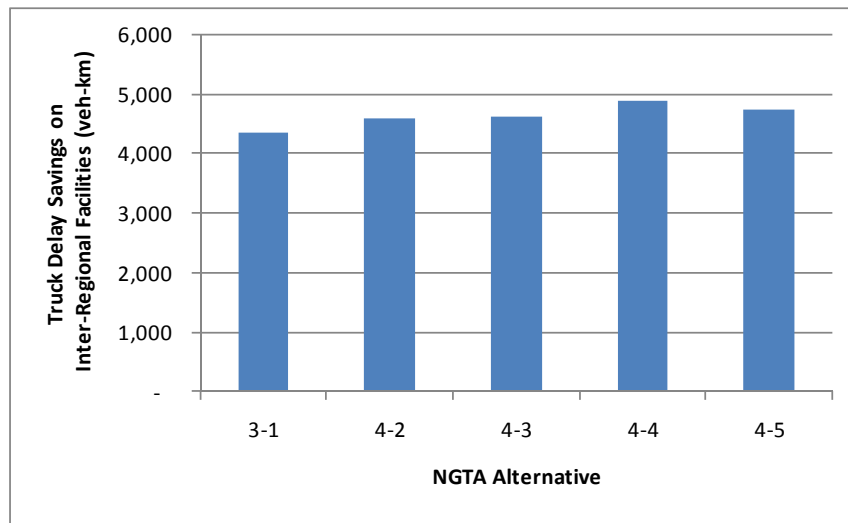
**Table 4–26: 2031 PM Peak Hour NGTA Alternatives Evaluation - Goods Movement**

Criteria	Base Case	NGTA 3-1	NGTA 4-2	NGTA 4-3	NGTA 4-4	NGTA 4-5
% of Inter-regional roadway truck network better than LOS D (truck-km)	17%	34%	35%	35%	38%	37%
Truck delay on inter-regional roadway network (truck-hr)	8,993	4,643 (4,350)	4,419 (4,573)	4,381 (4,612)	4,104 (4,888)	4,268 (4,724)
% of Inter-regional truck travel using local roads	18%	16%	15%	14%	15%	15%

(XXX): Reduction from the Base Case

All of the alternatives represent considerable improvements to commercial vehicle travel times during peak periods in comparison to the Base Case, with Alternative 4-4 providing marginally higher delay saving than the others. This helps shippers and manufacturers maintain the efficiency of their just-in-time manufacturing processes. The comparison of truck delay savings on inter-regional facilities across the NGTA alternatives is summarized in **Exhibit 4-23**.

**Exhibit 4–23: Truck Delay Savings on Inter-Regional Facilities**



Beyond the modelling analysis findings, improving access to areas or facilities that support or rely on goods movement is also an important consideration. Alternative 3-1 provides improved inter-regional accessibility to inter-modal facilities and employment centres that are oriented in close proximity to the existing freeway network, although connections to new industrial areas are not served as well. Alternative 4-2 provides improved inter-regional goods movement between Niagara and Hamilton through the new corridor between QEW and Highway 403. Alternatives 4-3 and 4-4 improve upon this by extending the new corridor to Highway 401 in Halton and 407 ETR in Burlington, respectively. Of these two alternatives, Alternative 4-4 provides a better connection between Hamilton and major growth areas in Halton and the GTA than Alternative 4-3. Alternative 4-5 provides linkages for goods movement within Hamilton and Niagara, but

does not provide an alternative to QEW to improve goods movement between Niagara and the GTA.

### **Modal Integration and Linking Population and Growth Centres**

Since movement of people is a critical objective of the NGTA Study, the study team evaluated the alternatives for their potential to improve modal integration, balance and choice for movement of people between activity centres.

One of the measures used under this evaluation criterion was the potential to increase attractiveness / effectiveness of existing, new and improved transit services. Others are provision of alternative modes for travel and allowance for active transportation measures.

Under Alternative 3-1, higher-order inter-regional transit services are limited to existing / widened inter-regional freeways. Though 3-1 has the potential to improve operations and thus effectiveness of inter-regional transit on existing corridors, it has only minor potential to improve linkages between inter-regional and local transit with improved service integration and new opportunities for station locations and service connections. Alternative 3-1 also results in the highest use of local roads for inter-regional trips impacting safety / security for active transportation.

Alternative 4-2 is slightly better than 3-1 with its ability to provide new higher order transit services and connections on the proposed corridor, but the new corridor terminates at Highway 403 in Hamilton. The alternative relies on Highway 403 for modal linkages, and given the restraints on Highway 403 through Hamilton, this can be a shortcoming for Alternative 4-2 in providing new inter-regional transit services.

Alternatives 4-3 and 4-4 create potential for new higher order inter-regional transit on the new corridor over approximately the entire study area. They improve bus operational performance with improved road network operations and potential for bus rapid transit (BRT) on the new corridor. Both these alternatives result in a very low use of local roads for inter-regional trips, thus improving safety / security for active transportation users. While Alternative 4-3 connects to Highway 401 west of Milton, Alternative 4-4 connects to 407 ETR in Burlington. By connecting to 407 ETR, NGTA 4-4 allows for a future integration with the planned 407 ETR Transitway, which will better promote opportunities to introduce new inter-regional transit services and carpooling in the NGTA corridor over the longer term. In addition, as illustrated in **Table 4-20**, Alternative 4-4 has the potential to service a considerably higher demand for movement between Hamilton and the Burlington / Oakville area as compared to the demand for travel between the Hamilton and Milton area which is serviced by Alternative 4-3.

Alternative 4-5 provides improved inter-regional road network operations with new corridors through Hamilton and Halton and in Niagara to the Canada / US border, and increased roadway capacity to improve accessibility of inter-modal facilities. But the alternative does not allow for a more complete connectivity of higher order transit between Niagara and the GTA through the new corridor.

In addition to potential for new modal linkages and transit services, the alternatives were evaluated for their ability to improve travel times between urban growth centres over the Base Case. Travel time is a measure of the ability to move people faster and better between activity centres. **Table 4-27** shows the percent reduction in PM peak hour travel times for auto and road-based transit between urban growth centres.

**Table 4–27: Change in Travel Times Between Urban Growth Centres**

<b>Alternative</b>	<b>Percent Reduction in 2031 PM Peak Hour Travel Times</b>
NGTA 3-1	24.9%
NGTA 4-2	24.5%
NGTA 4-3	27.0%
NGTA 4-4	26.1%
NGTA 4-5	25.6%

The results indicate that all alternatives have comparable reductions in travel times as compared to the Base Case Scenario.

### **4.7.3 Sensitivity Analysis**

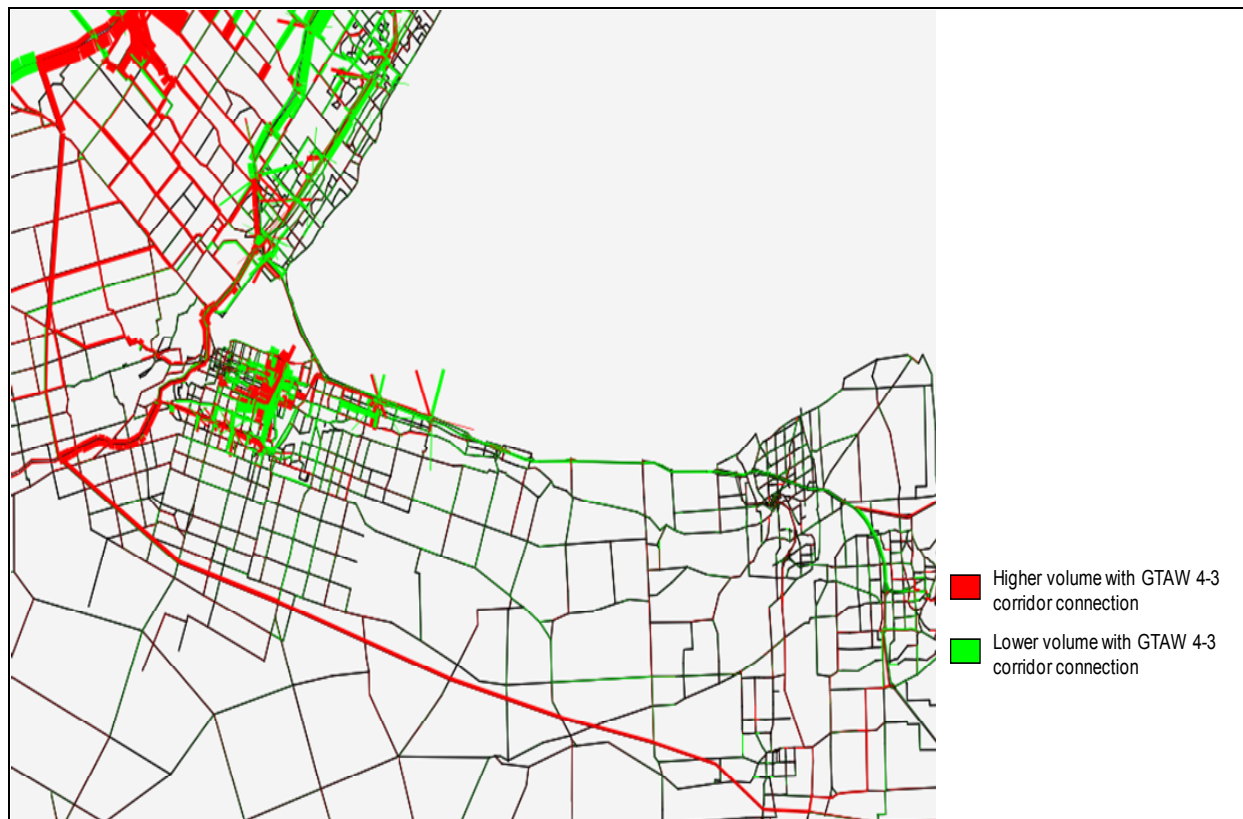
In addition to evaluating the alternatives based on the transportation criteria, the study team conducted sensitivity testing as part of the process to better understand the strengths and weaknesses of the various alternatives. In some areas, such as the Central and East Areas, the alignment and route of a new corridor alternative may influence how effective it is in terms of relieving the QEW corridor. In the West Area, the influence of a potential connection to the GTAW corridor was tested to understand how this could influence the performance of the NGTA alternatives.

#### **Connection to the GTAW Corridor**

Since the GTAW and NGTA studies are being conducted simultaneously, it is desirable for the two studies to be coordinated in terms of the development and assessment of the various and alternatives. To a large degree, traffic patterns between the two study areas are different and distinct as were the problems and opportunities that were highlighted in *Transportation Problems and Opportunity Reports* for each study; however, it is also recognized there are some longer distance trips which may benefit from a connection between the two facilities.

To assist in understanding how a road connection between the two corridors would influence the network performance, the study team tested one of the GTAW alternatives modelled in combination with one of the NGTA alternatives. Since both NGTA 4-3 and GTAW 4-3 alternatives connect to Highway 401 in Halton, the combination of these two alternatives was considered to likely have the most interaction between the two study alternatives.

Exhibit 4–24: 2031 PM Peak Hour Traffic Demands for NGTA 4-3 with and without GTAW 4-3



**Exhibit 4-24**, above, shows the difference in travel demands for the NGTA 4-3 alternative with the GTAW 4-3 corridor connection in place compared to the scenario with the GTAW 3-1 alternative (which assumes widening of existing facilities and no new corridor). The plot suggests that the demand on the NGTA corridor as well as the local and regional roads around the corridor to the west of Highway 403 would increase slightly with the introduction of the GTAW corridor. The existing highways such as QEW and portions of the 407 ETR through Oakville and Burlington would experience a minor decrease in travel demand. Highway 403 would experience an increase in demand through Hamilton with the additional demand routed through local and regional roads and the new corridor. The effect on the roadway network to the east of Hamilton is limited to a marginal increase in usage of the new NGTA corridor with a slight reduction in traffic using QEW.

The connection to the GTAW 4-3 corridor increases the overall vehicle-kilometres of travel on the NGTA corridor by approximately 1% compared to the scenario with no connection. This equates to a 1% increase in vehicles per hour over the length of the corridor, although it is recognized that the increase will be higher in the west section of the study area and lower in the central and east sections of the study area.

The study team also assessed the selected screenlines to assess how the connection to a new GTAW corridor would influence forecasted capacity at the NGTA screenlines. **Table 4-28** shows the screenline assessment with and without GTAW connection.



**Table 4–28: 2031 PM Peak Hour Screenline Assessment – With and Without GTAW Connection**

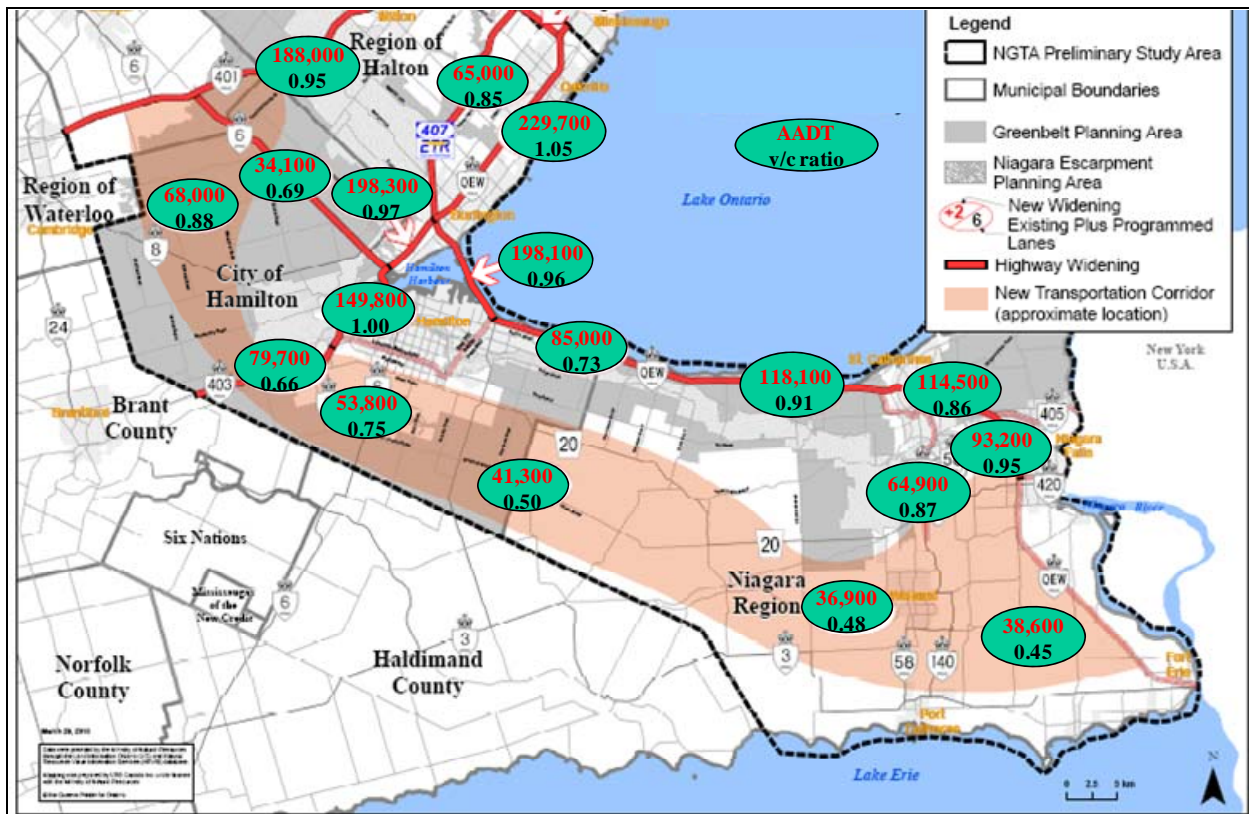
Screenline	All Facilities		Inter-Regional Facilities		Summer Peak – Inter-Regional Facilities	
	NGTA 4-3	NGTA 4-3 with GTAW 4-3	NGTA 4-3	NGTA 4-3 with GTAW 4-3	NGTA 4-3	NGTA 4-3 with GTAW 4-3
6001: West of Highway 6 (WB)	0.85	0.86	0.81	0.81	0.88	0.88
6004: Burlington Skyway (EB)	0.89	0.89	<b>0.95</b>	<b>0.96</b>	<b>1.06</b>	<b>1.06</b>
7001: Hamilton East Boundary North (EB)	0.64	0.64	0.74	0.73	0.82	0.82
7002: Welland Canal North (WB)	0.84	0.84	0.87	0.86	<b>1.04</b>	<b>1.04</b>
7002: Welland Canal South (WB)	0.61	0.61	0.45	0.45	0.54	0.55
7001: Hamilton East Boundary South (EB)	0.43	0.43	0.50	0.50	0.55	0.55
6002: Highway 403 West (WB)	0.66	0.66	0.66	0.66	0.69	0.70
8001: Bronte Creek (WB)	<b>0.90</b>	<b>0.90</b>	<b>0.96</b>	<b>0.96</b>	<b>1.06</b>	<b>1.06</b>
6006: South of Lincoln M. Alexander Parkway (WB)	0.56	0.56	-	-	-	-

**XX** – V / C ratio of 0.9 and above (LOS E or F)

The above results suggest that the introduction of GTAW 4-3 alternative would have negligible effect on the NGTA corridor screenline performance, even with the marginal increase in usage of the NGTA corridor. The screenline assessment indicates that the traffic operations in the NGTA study area would not be affected by the GTAW corridor.

**Exhibit 4-25** shows the inter-Regional AADT and PM Peak Hour V / C Ratios for NGTA 4-3 in combination with GTAW 4-3.

Exhibit 4–25: 2031 NGTA 4-3 with GTAW 4-3 Inter-Regional AADT and PM Peak Hour V / C Ratios



The combination of GTAW and NGTA alternatives was also assessed to determine the influence the connection would have on the people and goods movement criteria used to evaluate the NGTA alternatives.

Table 4-29 shows assessment of people and goods movement with and without the GTAW corridor connection.

Table 4–29: 2031 PM Peak Hour NGTA 4-3 with GTAW 4-3 Alternative - People and Goods Movement Assessment

Criteria	Base Case	NGTA 4-3	NGTA 4-3 with GTAW 4-3
% of Inter-regional roadway auto network better than LOS D (auto veh-km)	20%	45%	46%
% of local roadway auto network better than LOS D (auto veh-km)	66%	78%	77%
Auto delay on inter-regional roadway network (auto veh-hr)	30,091	19,634 (10,457)	19,755 (10,336)
Auto delay on local roadway network (auto veh-hr)	33,948	20,345 (13,603)	20,404 (13,544)

Criteria	Base Case	NGTA 4-3	NGTA 4-3 with GTAW 4-3
% of Inter-regional auto travel using local roads	53%	35%	36%
% of Inter-regional roadway truck network better than LOS D (truck-km)	17%	35%	36%
Truck delay on inter-regional roadway network (truck-hr)	8,993	4,381 (4,612)	4,371 (4,622)
% of Inter-regional truck travel using local roads	18%	14%	15%

(XXX): Reduction from the Base Case

The above results suggest that connection of the NGTA and GTAW corridors would not have a significant impact on the NGTA study area in terms of people and goods movement. The GTAW corridor would result in a marginal increase in the use of the NGTA corridor and slightly less usage of the existing highways – 407 ETR and QEW. Also, the local and regional roads in the NGTA study area would experience a marginal increase in demands, leading to slightly higher delays.

Based on the results of this test, it was also concluded that the evaluation of the NGTA corridor alternatives would not change if the GTAW 4-3 alternative was selected as the preferred.

### NGTA Corridor as Dedicated Truck Facility

One of the objectives for the NGTA study is to improve goods movement in the region linking the Niagara Frontier to the GTA. Currently, QEW experiences significant truck volumes throughout the day and even during the off peak periods. These demands are forecast to grow significantly by 2031 as suggested in the *NGTA Problems and Opportunities Report*. The study team considered the feasibility of a new NGTA corridor operating as a dedicated truck only facility. In addition to linking manufacturing and distribution related employment areas with a dedicated truck facility, this option would permit longer distance truck trips to avoid congested road segments during the peak periods. If enough truck traffic could be diverted from the existing highway facilities, this could also reduce congestion and provide travel time savings benefits to auto and transit travel.

An integrated GTAW and NGTA network was used for this test to examine the potential feasibility of truck only corridors in both study areas simultaneously. The network combination of the GTAW 4-3 and NGTA 4-3, which both connect to Highway 401 in the Milton area was chosen for this test since this alternative was considered to provide the most integrated goods movement corridor option available<sup>8</sup>. In addition to traversing through the majority of the two study areas, these two alternatives provide connectivity between Highway 400, Highway 401, and south to the border crossings in Niagara, making this an attractive route for long distance truck trips.

<sup>8</sup> This scenario was tested using the trip distribution patterns from the NGTA 3-1 GGH model run, as the new truck-only facility would not change the trip distribution patterns for commuter traffic.

The existing highways were assumed at similar configuration as under GTAW 4-3 with mixed traffic. Truck-only facility in the results discussed below refers to both NGTA and GTAW corridors as dedicated truck facilities, unless specified as a GTAW dedicated truck corridor.

**Table 4-30** shows the demands on the dedicated truck facility in the NGTA area.

**Table 4–30: 2031 PM Peak Hour Truck Volume (car equivalent) between Highway 401 in Halton and QEW in Niagara**

Corridor Segment	Traffic Volume	
	Eastbound	Westbound
Highway 401 (W. of Milton) to Highway 403 (Hamilton)	990 (1,980)	820 (1,640)
Highway 403 (Hamilton) to Hamilton-Niagara border	690 (1,380)	650 (1,300)
Hamilton-Niagara border to Highway 406	560 (1,120)	600 (1,200)
Highway 406 to QEW	330 (660)	320 (640)

The results suggest that truck demands would be equivalent to one highway lane in each direction. This level of demand alone does not justify a two-lane dedicated facility, except perhaps on the northern most portion of the corridor between Hamilton and Milton.

Since heavy trucks can have a significant impact on capacity when running in mixed traffic, a comparison of the screenline volume to capacity ratios was undertaken for the mixed traffic and truck only scenarios. **Table 4-31** shows the screenline results with the NGTA corridor as a mixed facility and as a dedicated truck facility.

**Table 4–31: 2031 PM Peak Hour Screenline Evaluation for NGTA 4-3 as Mixed Facility and Dedicated Truck Facility**

Screenline	NGTA 4-3 and GTAW 4-3 (Mixed Traffic)		NGTA 4-3 and GTAW 4-3 (dedicated truck facility)	
	Lanes on NGTA Corridor	Screenline V/C	Lanes on NGTA Corridor	Screenline V/C
6001: West of Highway 6 (WB)	4	0.86	4	0.75
6004: Burlington Skyway (EB)	-	0.89	-	0.88
7001: Hamilton East Boundary North (EB)	-	0.64	-	0.65
7002: Welland Canal North (WB)	-	0.84	-	0.85
7002: Welland Canal South (WB)	4	0.61	4	0.57
7001: Hamilton East Boundary South (EB)	4	0.43	4	0.33
6002: Highway 403 West (WB)	-	0.66	-	0.59
8001: Bronte Creek (WB)	-	<b>0.90</b>	-	0.87

Screenline	NGTA 4-3 and GTAW 4-3 (Mixed Traffic)		NGTA 4-3 and GTAW 4-3 (dedicated truck facility)	
	Lanes on NGTA Corridor	Screenline V/C	Lanes on NGTA Corridor	Screenline V/C
6006: South of Lincoln M. Alexander Parkway (WB)	-	0.56	-	0.56

XX – V / C ratio of 0.9 and above (LOS E or F)

The results show that the option of providing a truck only facility on the NGTA corridor would provide sufficient screenline capacity to accommodate the projected demands at a similar or better level than the scenario with a mixed use facility on most screenlines. The Welland Canal South, West of Highway 6, Hamilton East South, and Bronte Creek Screenlines all show noticeable capacity benefits from the truck only facility. The dedicated truck facility frees up capacity on existing inter-regional facilities by diverting a share of the truck demand. Since one truck is equivalent to more than one passenger car, even a smaller traffic volume on the truck only facility could result in comparable congestion relief.

**Table 4-32** shows the performance of the NGTA dedicated truck facility with respect to the people and goods movement criteria. The dedicated truck facility performs worse than the mixed use facility in terms of the share of travel on the inter-regional road network operating at LOS D or better. This is due to the fact that the auto demand is forced to use the existing corridors, many of which were not upgraded in light of the new corridor being implemented. This is most pronounced on the QEW through Niagara Region and Hamilton and on Highway 403 through Hamilton. As a result, there are expected to be slightly higher auto delays on the inter-regional network as a result of the dedicated truck facility, although truck delays are reduced by 33% compared to the mixed use scenario.

**Table 4–32: 2031 PM Peak Hour People and Goods Movement Assessment for NGTA 4-3 as Mixed Facility and Dedicated Truck Facility**

Criteria	Base Case	NGTA 4-3 and GTAW 4-3 as mixed traffic facilities	NGTA 4-3 and GTAW 4-3 as dedicated truck facilities
% of Inter-regional roadway network better than LOS D (auto veh-km)	20%	46%	39%
% of local roadway network better than LOS D (auto veh-km)	66%	77%	78%
Auto delay on inter-regional roadway network (auto veh-hr)	30,091	19,755 (10,336)	18,928 (11,162)
Auto delay on local roadway network (auto veh-hr)	33,948	20,404 (13,544)	20,965 (12,983)
% of Inter-regional auto travel using local roads	53%	36%	41%
% of Inter-regional roadway network better than LOS D	17%	36%	52%

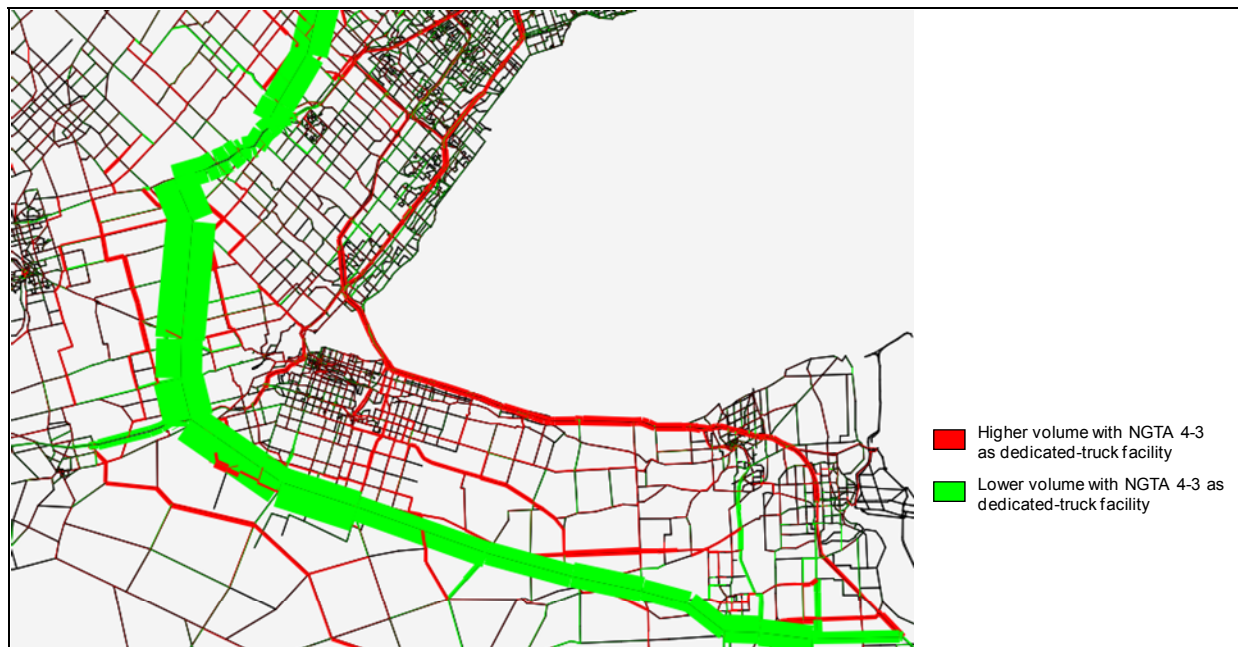
Criteria	Base Case	NGTA 4-3 and GTAW 4-3 as mixed traffic facilities	NGTA 4-3 and GTAW 4-3 as dedicated truck facilities
(truck-km)			
Truck delay on inter-regional roadway network (truck-hr)	8,993	4,371 (4,622)	2,934 (6,059)
% of Inter-regional truck travel using local roads	18%	15%	17%

(XXX): Reduction from the Base Case

Auto delays on the local road network are also increased slightly for the dedicated truck scenario and a higher share of inter-regional auto travel is forced onto the local network, particularly in areas adjacent to the truck only facility. Truck travel using the local roads is also higher for the dedicated truck facility due to the new routing patterns of trucks accessing the new corridor.

**Exhibit 4-26** shows the difference in traffic demands with NGTA corridor as a mixed traffic and dedicated truck facility. It can be seen that the total demand on the new corridor would drop as cars are not allowed, while demand on the existing highways would increase. Some of the demand would also spill on to local roads. This is confirmed by a higher percentage of inter-regional traffic using local roads metric.

**Exhibit 4-26: 2031 PM Peak Hour Total Traffic Demand Comparison for NGTA 4-3 as mixed traffic and dedicated truck facility**



Compared to this, **Exhibit 4-27** shows the difference in truck demands between the two scenarios to illustrate where the truck traffic is being diverted from. As can be seen, most of the truck demands using the dedicated facility are attracted from the existing highways, with QEW and Highway 401 showing the highest levels of diversion.

**Exhibit 4–27: 2031 PM Peak Hour Truck Traffic Demand Comparison for NGTA 4-3 as mixed traffic and dedicated truck facility**



Within the NGTA study area, the total demand on the existing highways increases with the conversion of the new corridor to a dedicated facility. While the screenline performance suggests that the truck only facility works as well as a mixed use new corridor, the overall movement of people criteria reveal that there does not appear to be enough truck demand that shifts to the new corridor to offset the increase in auto traffic and higher delays that occur on the existing inter-regional road network.

In addition, since the analysis presented above assumes a GTAW connection to be in place, the demands on the truck facility would likely be lower without a direct connection to the GTAW corridor.

The benefits of the dedicated truck facility would also need to be considered over the entire day. The results presented here represent forecasted conditions during the 2031 PM peak hour. Truck volumes are typically lower during the mid-day period, although the congestion on the existing inter-regional facilities is typically lower in the mid-day period as well.

In summary, while there is not sufficient demand or congestion relief associated with implementation of a truck only facility in the NGTA study area by 2031, the Ministry should investigate opportunities to incorporate truck only lanes, some other hybrid version of a truck only facility, and / or the potential for high speed rail when planning for this corridor in the future beyond 2031. A cost / benefit analysis could assist in determining the goods movement and auto travel benefits that may be achieved for these scenarios compared to the benefits that could be achieved with a new long term mixed use corridor.

## **4.8 COST AND CONSTRUCTABILITY**

### **4.8.1 Methodology**

The study team used the 2031 lane requirements for the various highway facilities as the primary input to evaluate constructability and cost. These lane requirements were

developed as part of the travel demand forecasting work for the various Group #3 and #4 transportation alternatives.

In order to assess and compare the alternatives, it was first necessary to complete sufficient design work to determine the 'footprint' of the various improvement scenarios. These footprints were also important inputs in determining natural environment, socio-economic, transportation and other impacts.

**Section 4.8.1** will focus on describing the methodology for the following: footprint identification; constructability and staging assessment; and cost estimation. The findings of the constructability and cost assessments will also be presented. Costs developed as part of this methodology represent construction and associated costs (e.g., engineering, construction administration, etc.); property costs are not included in the estimates. Further details of the methodology and results can be found under separate cover in the *Constructability and Cost Summary Technical Report* available on the study website ([www.niagara-gta.com](http://www.niagara-gta.com)).

It should be emphasized that the majority of this work has been prepared to a conceptual level of design, sufficient for confirming feasibility and assessing and comparing the alternatives. Furthermore, it should be noted that each design represents one of a number of design alternatives that would be developed and assessed during subsequent environmental assessment studies.

#### **4.8.1.1 Constructability and Staging Methodology**

The various Group #3 and #4 alternatives involve improvements to a large and complex network of highways, including dozens of interchanges, structures and other related facilities for over 200 kilometres of highways. In order to assess the impacts of the alternatives, it was necessary to identify a 'footprint' for each. The footprint reflects the required ROW to accommodate the improvements identified for a given alternative.

In general, the footprint includes property required for additional lanes, new interchanges, new structures, improved shoulders (where necessary), HOV facilities, realigned interchange ramps, realigned local / service roads and roadside drainage.

##### **Footprint Identification for Improvements to Existing Facilities**

Given the scale of the improvements, a generalized approach was taken for identifying the footprints of most mainline highway sections and interchanges. In simple terms, the footprints for these mainline sections were identified applying a linear template along the highway centreline. The template reflects the ROW width required for a given improvement scenario. At interchanges, a template is similarly applied, accounting for ramp relocations required to accommodate a wider highway.

It is understood that there are some elements of the transportation network under consideration that are highly complex and / or constrained, and that these require a greater level of detail in their evaluation. These 'special areas' include major freeway-to-freeway interchanges, major structures and other complex elements. For these areas, improvements were typically developed to the level of functional design. This approach yielded footprints that reflected the ROW required for the final design, and also for staging strategies. Furthermore, it addresses the major constraints of each special area that may require special design and / or construction techniques.

The six special areas identified as having particular challenges are:

- QEW / Highway 403 Oakville Interchange
- The QEW / Highway 403 / 407 ETR Interchange



- Highway 403 Hamilton
- Burlington Bay Skyway
- QEW / Red Hill Valley Parkway Interchange
- Garden City Skyway

### Generalized Approach

For mainline sections, cross-sections were developed for each highway under consideration, and for each of the possible improvement scenarios. Where widening was proposed, the cross section reflected the additional lanes, and assumed that the ultimate improvements would include full shoulders. General-purpose and HOV lanes were assumed to be 3.75 metres wide, while auxiliary lanes were assumed to be 3.5 metres wide. Where HOV facilities were proposed, an eight-metre median was assumed, as well as a 1.25-metre HOV buffer; this is consistent with the HOV design standards established by MTO (Central Region). A five-metre offset for drainage and other infrastructure was assumed at the edge of the ROW; this was appropriate in balancing the need for roadside drainage requirements and the tight property constraints of the urban environment. A sample cross-section showing a ten-lane freeway and an adjacent two-lane service road is shown in **Exhibit 4-28**.

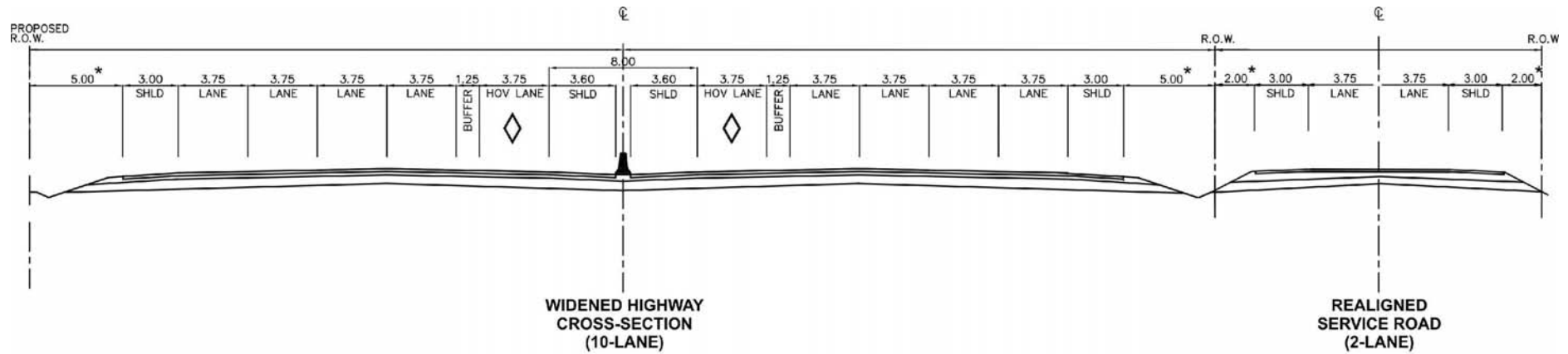
The mainline templates were applied to the highway centreline, with additional ROW for auxiliary lanes added to the outside as necessary. **Exhibit 4-29** shows a section of the QEW with a widening template applied to the existing cross section.

Where local / service roads were relocated, their templates included 3.75-metre lanes, three-metre shoulders, and two-metre for drainage. These templates were either added to the outside of the freeway template, or along a new alignment, as necessary.

For interchanges, ramps were shifted away from the highway by the same distance as the freeway's outside edge of pavement was shifted from the existing edge of pavement. An eight-metre offset was applied to the ramp edge of pavement to account for shoulders, drainage and grading. **Exhibit 4-30** shows an example of an existing interchange with a widening template applied.

The footprints for each element were created in GIS and then combined. This permitted the footprint for each alternative to be used, along with other GIS layers such as property fabric, as a template to determine specific impacts. **Exhibit 4-31** shows an example of property impacts identified by this method.

Exhibit 4-28: Sample Widened Mainline Freeway Cross Section with 2-Lane Service Road



\* Shoulder Rounding and Drainage

Exhibit 4-29: Sample Application of Mainline Widening Template



Exhibit 4-30: Sample Application of Interchange Widening Template

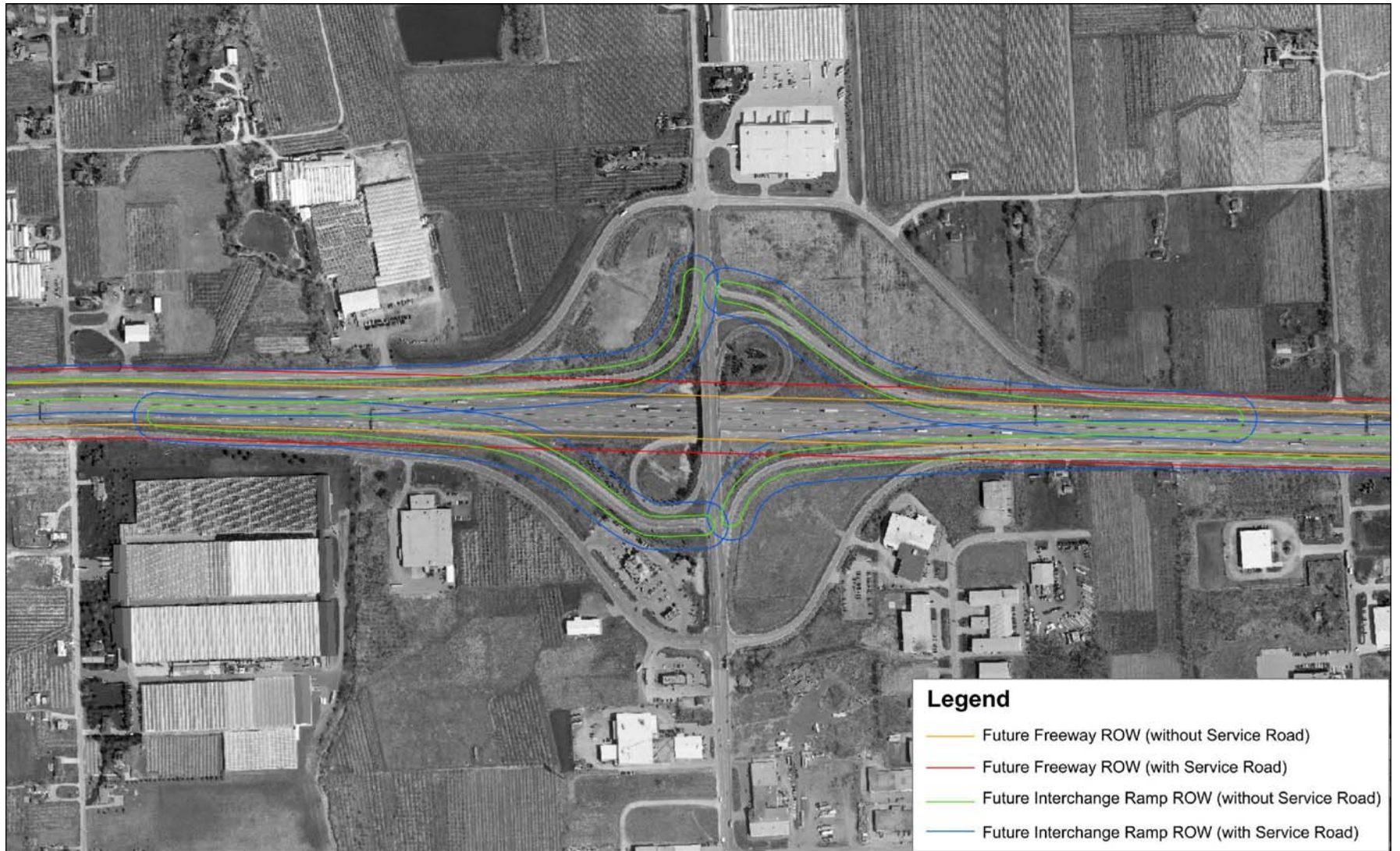


Exhibit 4-31: Sample Application of Interchange Widening Template



## Special Areas

Special areas required a context-sensitive approach to account for the unique design features of each area, the local constraints, and the specific staging needs and impacts.

Wherever possible, improvements were designed such that construction could be staged with minimal traffic disruption. This approach often involved identifying ramp, mainline and local road relocations. Where road or ramp closures were unavoidable, this was noted as an impact in the assessment of alternatives.

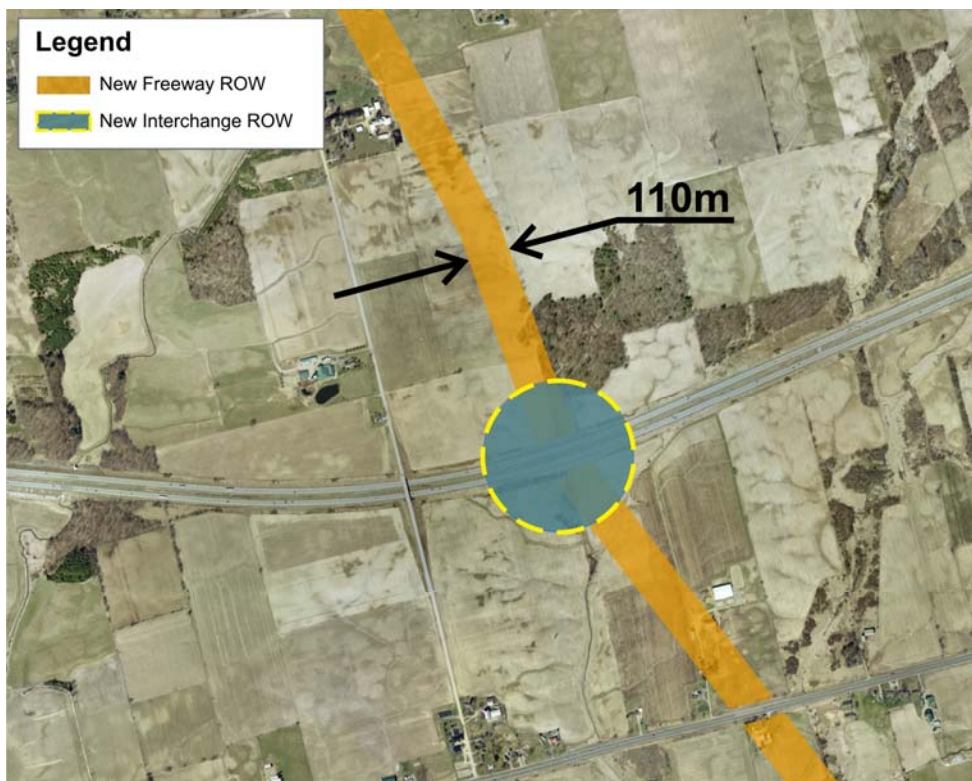
Assumptions regarding lane width, drainage offset, etc., were applied where appropriate for each of the special areas in order to generate the various cross sections required. Typically, the footprints for the special areas were developed by applying these cross sections to widened and / or relocated elements of the facility in order to identify the required ROW, with relocations generally resulting in the greatest footprint impacts. In some cases, the ROW was widened to reflect large grading requirements for large structures or in areas with challenging topography.

## Footprint Identification for New Freeways

To develop the footprint of new freeway sections, it was first necessary to generate conceptual horizontal alignments. While route planning is not currently within the scope of the project, these conceptual alignments were important in determining an approximate number of interchanges, structures and other freeway elements. This information was in turn used to identify a new freeway footprint by applying ROW and interchange templates along the conceptual alignment. In this case, a 110-metre ROW was applied per the *Draft Safety Standards for New Rural Highways*.

**Exhibit 4-32** shows an example of the 110-metre new corridor ROW shown in GIS, including an assumed 200-metre radius circular interchange footprint.

**Exhibit 4–32: Sample Application New Freeway ROW Template**








#### **4.8.1.2 Findings**

The cost and constructability findings are summarized through the following assessment of Area Transportation System Alternatives (**Table 4-33**). The subsequent sections will summarize the factors and key issues that lead to the development of the draft Strategy.

Table 4-33: Cost and Constructability Findings

Factor	Sub-Factor and Measure	Alternative 3-1	Alternative 4-2	Alternative 4-3	Alternative 4-4	Alternative 4-5
<b>6.0 Cost and Constructability</b>						
6.1 Constructability	<p><i>Measure:</i> Cost** (range)</p> <p><i>Feasibility of implementation (including interchange reconstruction requirements, impacts on existing schemes, etc.)</i></p>	<p>\$5.5- 6.5B</p> <ul style="list-style-type: none"> <li>- Numerous bridge replacements and ramp realignments required for the QEW / Highway 403 / 407 ETR Burlington Skyway requires new Toronto-bound bridge and new or widened Niagara-bound bridge – Major impact</li> <li>- Major reconstruction &amp; reconfiguration of QEW / RHVP interchange and Burlington St. interchanges required; challenging construction with possible major utilities impacts</li> <li>- Some reconstruction or modification of all arterial road interchanges on QEW from RHVP to Highway 420 (14-17 interchanges)</li> <li>- Widening of Garden City Skyway required</li> <li>- Highway 6 widening required</li> <li>- Reconstruction of Highway 403 / Highway 6 North IC</li> <li>- Challenging construction of Highway 403 widening; Cootes Paradise, etc.; reconstruction of King / Main / Aberdeen ICs; additional ROW and possibly cantilevered Highway required through Escarpment</li> <li>- New freeway construction required, including multiple interchanges (approximately nine), new Welland Canal crossing</li> <li>- Connection between new freeway and Highway 406 will be challenging due space constraints</li> <li>- Challenging construction of full freeway-to-freeway interchange at Highway 403 / QEW Oakville; several road / ramp realignments and basket weaves required</li> </ul>	<p>\$6.0-7.0B</p> <ul style="list-style-type: none"> <li>- Numerous bridge replacements and ramp realignments required for the QEW / Highway 403 / 407 ETR Burlington Skyway requires Niagara-bound new or widened structure. If HOV lanes, Toronto-bound HOV can be shifted to existing Niagara-bound structure and barrier-separated; otherwise, new Toronto-bound structure required – Moderate impact</li> <li>- Moderate impacts to RHVP / QEW interchange; no new structures required</li> <li>- No QEW reconstruction required from RHVP to Highway 420</li> <li>- No Garden City Skyway widening required</li> <li>- Highway 6 widening required</li> <li>- Reconstruction of Highway 403 / Highway 6 North IC</li> <li>- Challenging construction of Highway 403 widening; Cootes Paradise, etc.; reconstruction of King / Main / Aberdeen ICs; additional ROW and possibly cantilevered Highway required through Escarpment</li> <li>- New freeway construction required, including multiple interchanges (approximately nine), new Welland Canal crossing</li> <li>- Connection between new freeway and Highway 406 will be challenging due space constraints</li> <li>- Challenging construction of full freeway-to-freeway interchange at Highway 403 / QEW Oakville; several road / ramp realignments and basket weaves required</li> </ul>	<p>\$6.5-7.5B</p> <ul style="list-style-type: none"> <li>- Numerous bridge replacements and ramp realignments required for the QEW / Highway 403 / 407 ETR Interchange</li> <li>- Burlington Skyway requires Niagara-bound new or widened structure. If HOV lanes, Toronto-bound HOV can be shifted to existing Niagara-bound structure and barrier-separated; otherwise, new Toronto-bound structure required – Moderate impact</li> <li>- Moderate impacts to RHVP / QEW interchange; no new structures required</li> <li>- No QEW reconstruction required from RHVP to Highway 420</li> <li>- No Garden City Skyway widening required</li> <li>- No Highway 6 widening</li> <li>- Reconstruction of Highway 403 / Highway 6 North IC</li> <li>- Challenging construction of Highway 403 widening; Cootes Paradise, etc.; reconstruction of King / Main / Aberdeen ICs; additional ROW and possibly cantilevered Highway required through Escarpment</li> <li>- New freeway construction required, including multiple interchanges (approximately 14), new Welland Canal crossing</li> <li>- Connection between new freeway and Highway 406 will be challenging due space constraints</li> <li>- Challenging construction of full freeway-to-freeway interchange at Highway 403 / QEW Oakville; several road / ramp realignments and basket weaves required</li> </ul>	<p>\$6.0-7.0B</p> <ul style="list-style-type: none"> <li>- Numerous bridge replacements and ramp realignments required for the QEW / Highway 403 / 407 ETR Interchange</li> <li>- Burlington Skyway requires Niagara-bound new or widened structure. If HOV lanes, Toronto-bound HOV can be shifted to existing Niagara-bound structure and barrier-separated; otherwise, new Toronto-bound structure required – Moderate impact</li> <li>- Moderate impacts to RHVP / QEW interchange; no new structures required</li> <li>- No QEW reconstruction required from RHVP to Highway 420</li> <li>- No Garden City Skyway widening required</li> <li>- Highway 6 widening required</li> <li>- No impacts to Highway 403 / Highway 6 IC</li> <li>- Challenging construction of Highway 403 widening; reconstruction of King / Main / Aberdeen ICs</li> <li>- Single-lane Highway 403 widening through Escarpment can be done within existing ROW</li> <li>- New freeway construction required, including multiple interchanges (approximately 16), new Welland Canal crossing</li> <li>- New Escarpment crossing near Waterdown may require special design / construction techniques (e.g., tunnel) to minimize environmental impacts</li> <li>- Connection between new freeway and Highway 406 will be challenging due space constraints</li> <li>- Challenging construction of full freeway-to-freeway interchange at Highway 403 / QEW Oakville; several road / ramp realignments and basket weaves required</li> </ul>	<p>\$6.5-7.5B</p> <ul style="list-style-type: none"> <li>- Numerous bridge replacements and ramp realignments required for the QEW / Highway 403 / 407 ETR Interchange</li> <li>- Burlington Skyway requires Niagara-bound new or widened structure. If HOV lanes, Toronto-bound HOV can be shifted to existing Niagara-bound structure and barrier-separated; otherwise, new Toronto-bound structure required – Moderate impact</li> <li>- Moderate impacts to RHVP / QEW interchange; no new structures required</li> <li>- Widening of QEW from RHVP to Highway 406 required; Some reconstruction / modification of arterial road interchanges required (seven – ten interchanges)</li> <li>- No Garden City Skyway widening required</li> <li>- Highway 6 widening required</li> <li>- No impacts to Highway 403 / Highway 6 North IC</li> <li>- Challenging construction of Highway 403 widening; reconstruction of King / Main / Aberdeen ICs</li> <li>- Single-lane Highway 403 widening through Escarpment can be done within existing ROW</li> <li>- Minimal median widening of Highway 406 to QEW to new freeway required</li> <li>- New freeway construction required, including multiple interchanges (approximately 12), new Welland Canal crossing, and two new Niagara Escarpment crossings near Waterdown and east of Hamilton</li> <li>- New Escarpment crossing near Waterdown may require special design / construction techniques (e.g., tunnel) to minimize environmental impacts</li> <li>- Connection between new freeway and Highway 406 will be challenging due space constraints</li> </ul>



Factor	Sub-Factor and Measure	Alternative 3-1	Alternative 4-2	Alternative 4-3	Alternative 4-4	Alternative 4-5
	Potential transportation construction staging impacts	 <ul style="list-style-type: none"> <li>- Highway 6 North Interchange at Highway 403 Reconstruction – Major staging challenge</li> <li>- Highway 403 through Hamilton, including Escarpment– Major staging impacts</li> <li>- Red Hill Valley Parkway Interchange on QEW (including Burlington St. interchange) Reconstruction – Major staging impacts</li> <li>- QEW Garden City Skyway Reconstruction – Moderate staging challenge</li> <li>- Construction of Highway 403 / QEW Oakville interchange – Major staging challenge</li> </ul>	 <ul style="list-style-type: none"> <li>- Highway 6 North Interchange at Highway 403 Reconstruction – Major staging challenge</li> <li>- Highway 403 through Hamilton, including Escarpment – Major staging impacts</li> <li>- Red Hill Valley Parkway Interchange on QEW Reconstruction – Moderate staging impacts</li> <li>- Construction of Highway 403 / QEW Oakville interchange – Major staging challenge</li> </ul>	 <ul style="list-style-type: none"> <li>- Highway 6 North Interchange at Highway 403 Reconstruction – Major staging challenge</li> <li>- Highway 403 through Hamilton, including Escarpment – Major staging impacts</li> <li>- Red Hill Valley Parkway Interchange on QEW Reconstruction – Moderate staging impacts</li> <li>- Construction of Highway 403 / QEW Oakville interchange – Major staging challenge</li> </ul>	 <ul style="list-style-type: none"> <li>- Highway 6 North Interchange at Highway 403 : no improvements required</li> <li>- Highway 403 through Hamilton – Major staging impacts through King / Main; Moderate staging impacts elsewhere</li> <li>- Red Hill Valley Parkway Interchange on QEW Reconstruction – Moderate staging impacts</li> <li>- Construction of Highway 403 / QEW Oakville interchange – Major staging challenge</li> </ul>	 <ul style="list-style-type: none"> <li>- Challenging construction of full freeway-to-freeway interchange at Highway 403 / QEW Oakville; several road / ramp realignments and basket weaves required</li> <li>- Highway 6 North Interchange at Highway 403: no improvements required</li> <li>- Highway 403 through Hamilton – Major staging impacts through King / Main; Moderate staging impacts elsewhere</li> <li>- Red Hill Valley Parkway Interchange on QEW Reconstruction – Moderate staging impacts</li> <li>- Highway 406 Widening – Minor staging impacts</li> <li>- Construction of Highway 403 / QEW Oakville interchange – Major staging challenge</li> </ul>
<b>Summary</b>						
<p>Based on the above assessment, none of the alternatives are clearly preferred from a cost and constructability perspective. The following summarizes the major issues associated with each alternative.</p>	<p>As compared with the Group #4 alternatives, Alternative 3-1 has the greatest constructability and staging challenges at the Burlington Skyway, QEW / Red Hill Valley Parkway interchange, Garden City Skyway, QEW through St. Catharines, and Highway 403 through Hamilton.</p> <p>For Highway 403 through Hamilton, significant reconstruction of the Highway 6 North interchange and the King / Main / Aberdeen interchanges would be required. There would also be significant costs associated with widening through Cootes Paradise and the Niagara Escarpment.</p> <p>However, Alternative 3-1 avoids the need for new freeway construction and its associated impacts, and is the least costly alternative.</p>	<p>Alternative 4-2 has similar constructability and staging challenges to the other Group #4 alternatives. It avoids the significant challenges at the Red Hill Valley Parkway interchange and the Burlington Skyway that are required for Alternative 3-1, but still requires widening Highway 403 through Hamilton and the associated constructability issues.</p> <p>Alternative 4-2 is anticipated to be more costly than Alternative 3-1 but not as costly as some of the other Group #4 alternatives (i.e., Alternatives 4-3 and 4-5).</p>	<p>Alternative 4-3 results in similar constructability and staging challenges as Alternative 4-2, but requires more new freeway construction, and as such has a relatively higher cost.</p>	<p>Alternative 4-4 requires fewer additional lanes for the Highway 403 corridor through Hamilton as compared to Alternatives 3-1, 4-2 and 4-3. In comparison to these alternatives, there would be no impacts to the Highway 6 North Interchange or Cootes Paradise, and there would be significantly less impact to the Highway 403 Niagara Escarpment crossing, as the new lanes could be accommodated within the existing right-of-way. The Highway 403 widening would still require significant reconstruction of the King / Main / Aberdeen interchanges.</p> <p>As with the other Group #4 alternatives, impacts to the Burlington Skyway and QEW / Red Hill Valley Parkway interchange would be significantly less than those associated with Alternative 3-1.</p> <p>However, a new crossing of the Niagara Escarpment would be required near Waterdown, which may require special construction techniques (e.g., tunnel, long bridge, etc.).</p> <p>This alternative is anticipated to be comparable in cost to Alternative 4-2.</p>	<p>Alternative 4-5 requires substantially less new freeway construction than the other Group #4 alternatives, and results in similar reduced impacts through the Highway 403 Hamilton corridor as Alternative 4-4.</p> <p>As with the other Group #4 alternatives, impacts to the Burlington Skyway and QEW / Red Hill Valley Parkway interchange would be significantly less than those associated with Alternative 3-1.</p> <p>However, Alternative 4-5 requires two new Niagara Escarpment crossings, and is anticipated to have a relatively high cost in comparison to the other alternatives.</p>	

Among all alternatives, improvements to typical mainline highway sections and arterial interchanges were of similar complexity in terms of constructability and staging. Conversely, several of the special areas exhibited substantial differences in constructability and staging challenges across the various transportation alternatives; thus, these special areas were the primary input to the evaluation and comparison of alternatives for this criterion.

This section summarizes the conceptual design for each special area, and discusses constructability and staging challenges and impacts for each.

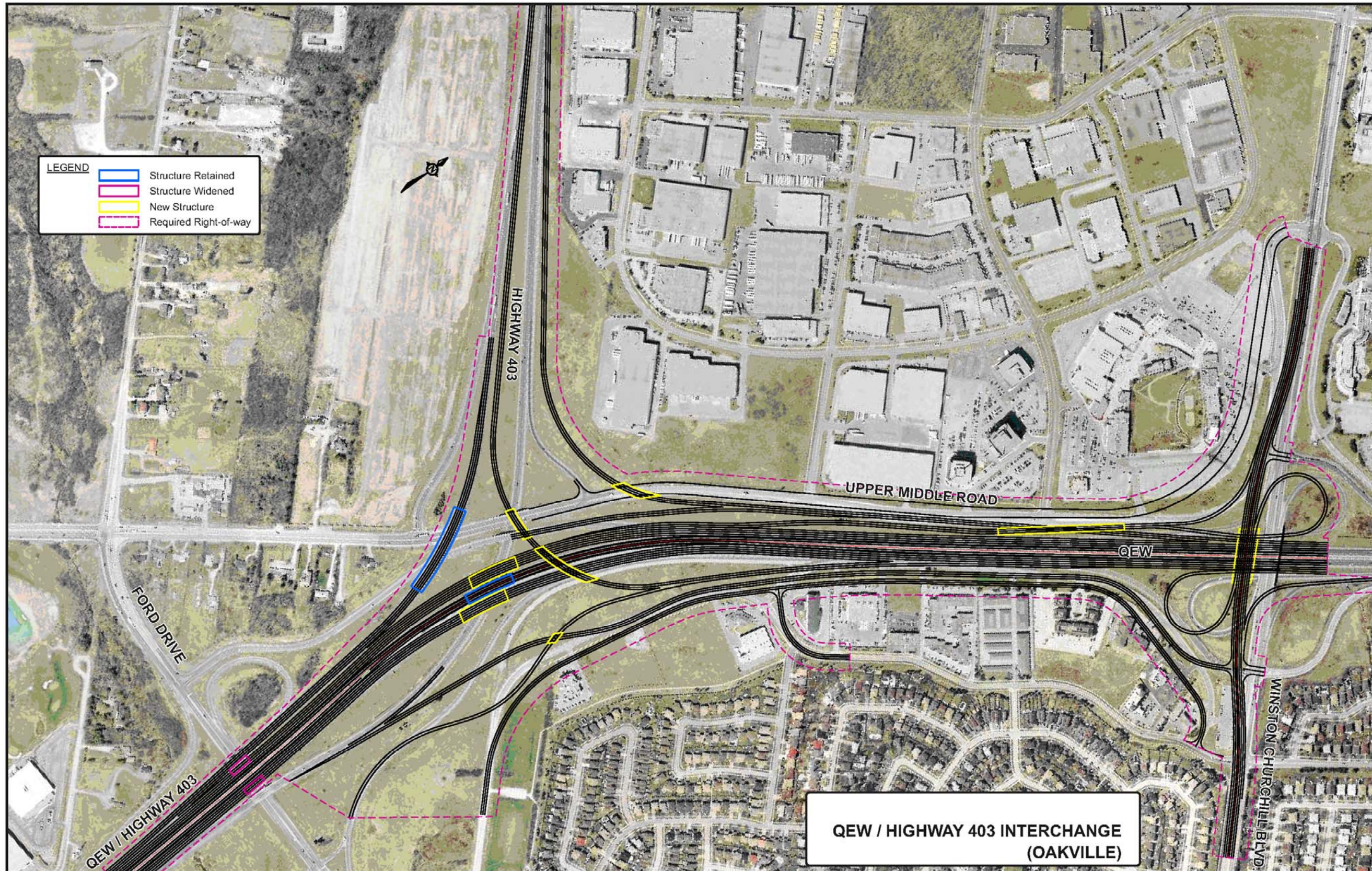
#### **QEW / Highway 403 Oakville Interchange**

The existing QEW / Highway 403 Oakville Interchange is a three-leg, partial freeway-to-freeway interchange. Currently, access between the QEW and Highway 403 is provided only to / from the west via directional ramps.

It was assumed that capacity improvements for the interchange area would also include an upgrade to a full-move interchange; this would allow access to Highway 403 from the QEW to / from the east. This would have the benefit of improving connectivity to the highway network, especially between the QEW and 407 ETR to the north.

A conceptual plan of the improvement scenario, common to all transportation alternatives, is shown in **Exhibit 4-33**.

Exhibit 4-33: QEW / Highway 403 Interchange (Oakville)



Mainline Constructability Issues: The existing east and westbound lanes of the QEW pass over the existing QEW / Highway 403 W-N ramp on a pair of curved, post-tensioned concrete bridges. The existing bridge cross-sections cannot accommodate additional lanes. Widening of these structures was not considered preferable, as this would require longitudinal expansion joints on both bridges. Such an arrangement is normally avoided, as these joints can cause traction problems, particularly in wet or snowy conditions. Thus, it was recommended that two new structures be provided over the QEW / 403 W-N ramp.

In order to minimize throw-away, it was assumed that one of the existing bridges would be retained to carry bi-directional HOV traffic. This would minimize the required total bridge width of the new structures, as they would each carry only four general purpose lanes.

Interchange / Ramp Constructability Issues: The QEW / Highway 403 Interchange is located between the existing QEW arterial road interchanges with Winston Churchill Boulevard to the east, and Ford Drive to the west. As these arterial interchanges are only 1.9 kilometres apart, basketweaves are required in order to avoid conflicts between the arterial interchange ramps and the freeway-to-freeway interchange ramps. Indeed, the existing N-W and W-N freeway-to-freeway ramps are basketweaved with the QEW-Ford Drive E-N / S and N / S-E ramps. In order to avoid significant weaving conflicts, a similar arrangement would have to be developed between the proposed E-N and N-E freeway-to-freeway ramps and the QEW / Winston Churchill Boulevard N / S-W and W-N / S ramps.

In order to stage construction so no closure of Winston Churchill Boulevard is required, a new Winston Churchill Boulevard structure over QEW would be constructed to the west of the existing structure.

The basketweaving of the new freeway-to-freeway and arterial interchange ramps, plus the widening of QEW requires a larger highway footprint than the current configuration. The larger footprint would require shifting both the north and south service roads away from the QEW. This will result in numerous property impacts and local road realignments.

Mainline Staging: In order to maintain traffic flow on the QEW during construction, the following staging sequence was assumed:

1. Construct new eastbound QEW bridge and shift eastbound traffic to new bridge.
2. Shift westbound traffic to the existing EB bridge.
3. Demolish existing WB bridge.
4. Build new westbound bridge (at same location as existing westbound bridge) and shift westbound traffic onto the new bridge.
5. Construct HOV facilities (e.g., median barrier, etc.) on existing eastbound bridge.
6. Shift HOV traffic to reconfigured bridge to allow for bi-directional HOV traffic.

#### **QEW / Highway 403 / 407 ETR Interchange**

The existing QEW / Highway 403 / 407 ETR Interchange is a large, complex, multi-level freeway-to-freeway interchange with adjacent QEW arterial road interchanges at Brant Street and Plains Road / Fairview Street.

The existing QEW ‘through’ lanes are at ground level, with QEW Niagara-407 ETR N ramp crossing above them. A third-level structure carrying the 403 W-QEW Toronto ramp crosses above the QEW-Niagara-407 ETR N ramp and the QEW through lanes.

The existing configuration can accommodate an additional QEW lane in each direction without replacing the structures; however, this would likely require reduced shoulder and / or lane widths on the QEW. If two or more additional QEW lanes are required in each direction, the existing QEW Niagara-407 ETR N structure would require replacement. In turn, this would require the replacement of the top-level 403 W-QEW Toronto ramp structure, in order to stage the construction without long-term ramp closures.

A plan of the proposed improvements for Alternative 3-1 is shown in **Exhibit 4-34**. It is assumed that, for each NGTA transportation alternative, two additional QEW ‘through’ lanes will be required in each direction; thus, a similar interchange configuration would be required for each alternative, with the only difference being the number of lanes on the approach / departure legs of the freeways.

Due to its required realignment, the existing QEW Niagara-407 ETR N ramp structures over the QEW Toronto-Highway 403 W ramp and North Service Road would also require replacement.

To avoid replacing the existing third-level 407 ETR N-403W and 403W-407 ETR N ramp structures over the QEW Toronto-403W ramp and 407 ETR N-QEW Niagara ramps, the existing QEW Niagara-403W loop ramp would be replaced by a new semi-directional ramp. This configuration allows the existing auxiliary lanes to be used for additional capacity on the QEW Toronto-403W ramp, eliminating the need to widen this ramp. If this ramp were to require widening, the third-level 407 ETR-403 structures would have to be replaced, which would be very costly and present significant staging challenges.

While the interchange is complex, its large available existing footprint is conducive to staging improvements without requiring substantial amounts of new ROW. Property requirements for the improvements will largely be limited to the northwest quadrant of the interchange, and no existing buildings will be impacted, based on the current plan.

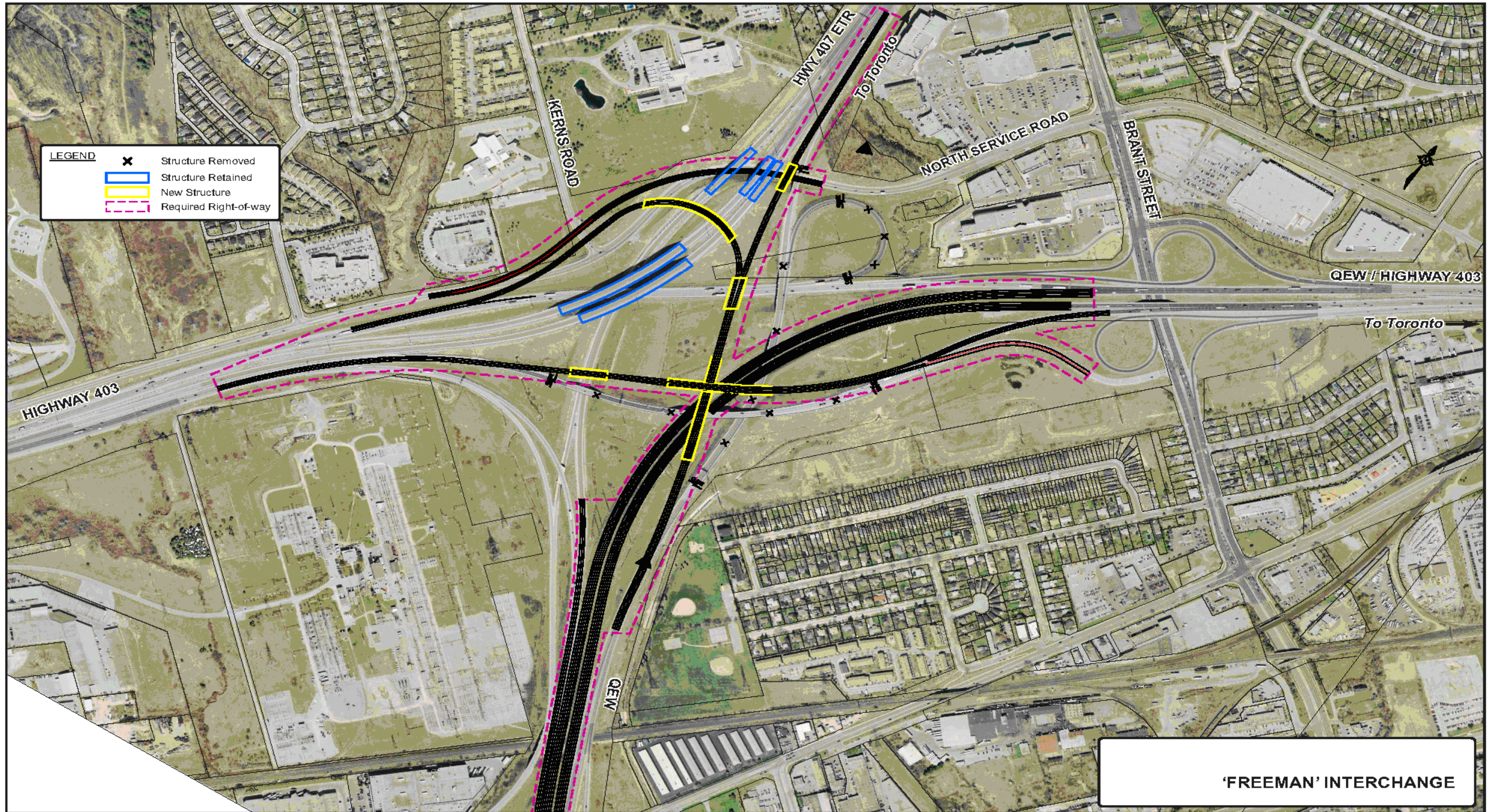
Staging: In order to maintain traffic flow on and access to each highway during construction, the following key activities were assumed:

1. Construct realigned 403W-QEW Toronto ramp, including new structure over the existing 407 ETR N-QEW Niagara ramp, and new third-level bridge over the future QEW Niagara-407 ETR N / 403W ramp, and QEW ‘through’ lanes. Note that the latter bridge would also have to span the existing QEW Niagara-407 ETR N / 403W ramp.
2. Construct realigned North Service Road.
3. Construct realigned QEW Niagara-407 ETR N / 403W ramp. This includes the following structures:
  - New second-level bridge over the QEW ‘through’ lanes (this bridge passes below the new 403W-QEW Toronto bridge).
  - New bridge over QEW Toronto-403W bridge.
  - New bridge for realigned QEW Niagara-403W ramp spanning the 407 ETR-403 ramps (both directions) and the 407 ETR N-QEW Niagara ramp.
  - New bridge for realigned QEW Niagara-407 ETR N bridge over North Service Road.

4. Demolish redundant structures, as appropriate.

Staging and constructability impacts for each transportation alternative are generally similar; however, the additional lane requirements for Alternative 3-1 make it the most challenging and costly.

Exhibit 4-34: QEW / Highway 403 / 407 ETR



## **Burlington Bay Skyway**

The Burlington Bay Skyway consists of two four-lane bridges spanning the entrance to Hamilton Harbour. The Toronto-bound bridge, constructed in 1958, is 2,500 metres long with a 325-metre steel through-truss main span. The approach spans include steel deck trusses on either side of the main span and steel girders near the abutments. The bridge has approximately 36 metres of clearance over the shipping channel. The Niagara-bound bridge, constructed in 1985, is of similar size and consists of a segmental concrete main span with steel box-girder approaches.

Previous studies have evaluated capacity expansion scenarios for the Burlington Bay Skyway; while the Niagara-bound bridge was built to accommodate an ultimate five-lane cross-section, the existing Toronto-bound main span cannot be widened beyond its current four lanes.

The existing Niagara-bound bridge can be widened to accommodate additional travel lanes; for the main span, this would effectively involve constructing a new bridge immediately adjacent to the existing bridge and joining the decks together. Prior to joining the new and existing main-span bridge decks, the new bridge would have to cure for a period of several months to allow for shrinkage and creep. Joining the decks for the steel box-girder approaches would be relatively straightforward, and would not require any additional curing time. The wide (4.5 metres) right shoulder on the existing Niagara-bound bridge would accommodate construction activities with minimal traffic disruption.

In the event that widening the existing Niagara-bound bridge is not preferable or feasible, the construction of a new Niagara-bound bridge would be required. A new bridge would require a larger footprint and would have a slightly higher cost; however, constructability and staging would be relatively straightforward.

For each alternative, a new Toronto-bound bridge would be required, and a new or widened Niagara-bound structure would be required. In particular, the 12-lane Alternative 3-1 would require a core-collector system, which would necessitate a wider bridge cross-section in order to accommodate additional barriers and shoulders. **Exhibit 4-35** shows the proposed Alternative 3-1 cross-section of the Burlington Bay Skyway. Note that an eight-lane cross-section is assumed in order to provide flexibility for future expansion and bridge rehabilitation staging. A plan view of the Alternative 3-1 improvements is shown in **Exhibit 4-36**.

For the Group #4 alternatives, all of which include widening to ten general-purpose lanes (GPLs), a similar strategy for the Burlington Bay Skyway would be required (i.e., new Toronto-bound structure, new or widened Niagara-bound structure); however, a core-collector system would not be required.

Constructability and staging are relatively straightforward for most of the Burlington Bay Skyway improvement scenarios, notwithstanding the fact that the sheer size of the structure(s) would require a long construction period. It is understood, however, that widening of the existing Niagara-bound bridge could be more complicated than constructing a new bridge, in terms of constructability and staging.



Exhibit 4-35: Proposed Burlington Bay Skyway Cross-Section for Alternative 3-1

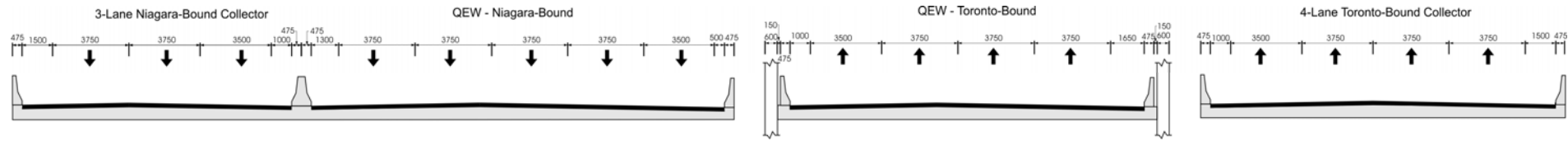
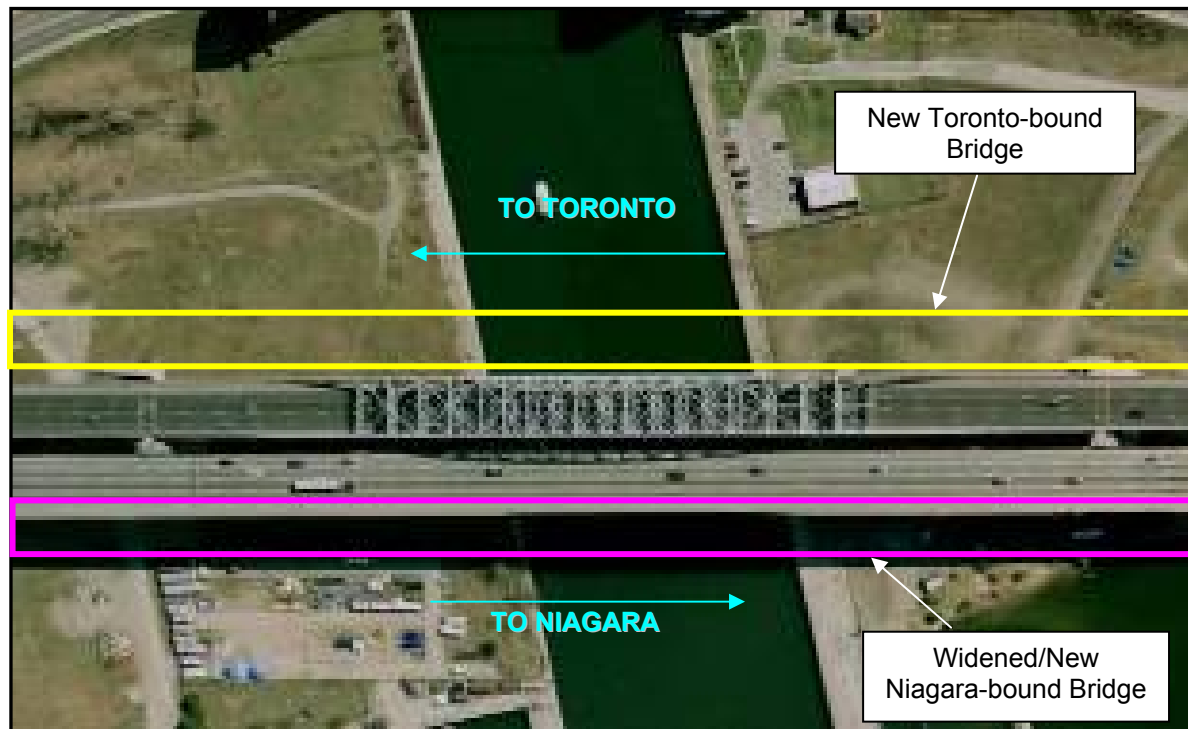


Exhibit 4-36: Proposed Burlington Bay Skyway for Alternative 3-1



### **QEW / Red Hill Valley Parkway Interchange**

The existing QEW / Red Hill Valley Parkway Interchange is a complex, tightly spaced, three-leg freeway-to-freeway interchange. Adjacent QEW arterial interchanges with Centennial Parkway to the east, and Burlington Street to the west, complicate the interchange configuration.

The immediate area of the interchange holds several significant constraints which introduce significant challenges to widening scenarios. In particular, Red Hill Creek runs along the south edge of the QEW, as does the environmentally sensitive Red Hill Marsh. To the north lie the environmentally sensitive Van Wagner's Ponds, and the Lake Ontario shoreline; the latter is a popular recreational area serviced by local roads. There is also significant utilities infrastructure in the area, including hydro transmission lines and a major City of Hamilton pumping facility.

Group #3 Alternatives: Most of the existing bridges in the area can accommodate an additional travel lane in each direction; however, the Alternative 3-1 12-lane requirement for the QEW west of the interchange cannot be accommodated by the existing structures, and the Group #3 alternative would require a major reconfiguration of the existing interchange, including the two adjacent arterial road interchanges. This would have significant impacts to the natural environment due to the enlarged footprint, and would also have major constructability and staging challenges. The proposed Group #3 improvements are shown in **Exhibit 4-37**.

It was assumed that QEW moves to the Red Hill Valley Parkway (RHVP) to / from the west would be widened to two lanes each from the existing one lane. The existing RHVP structure over the QEW cannot accommodate the additional ramp lane and additional QEW lanes; thus, a new semi-directional RHVP N-QEW W ramp was proposed, crossing over the QEW on a new bridge. The existing RHVP bridge over QEW would be maintained to accommodate the QEW E-RHVP N move, and also to allow travel from RHVP to Burlington Street. The latter is required because the existing QEW E-Burlington Street N ramp would have to be realigned and basketweaved with the new RHVP N-QEW W ramp due to tight spacing.

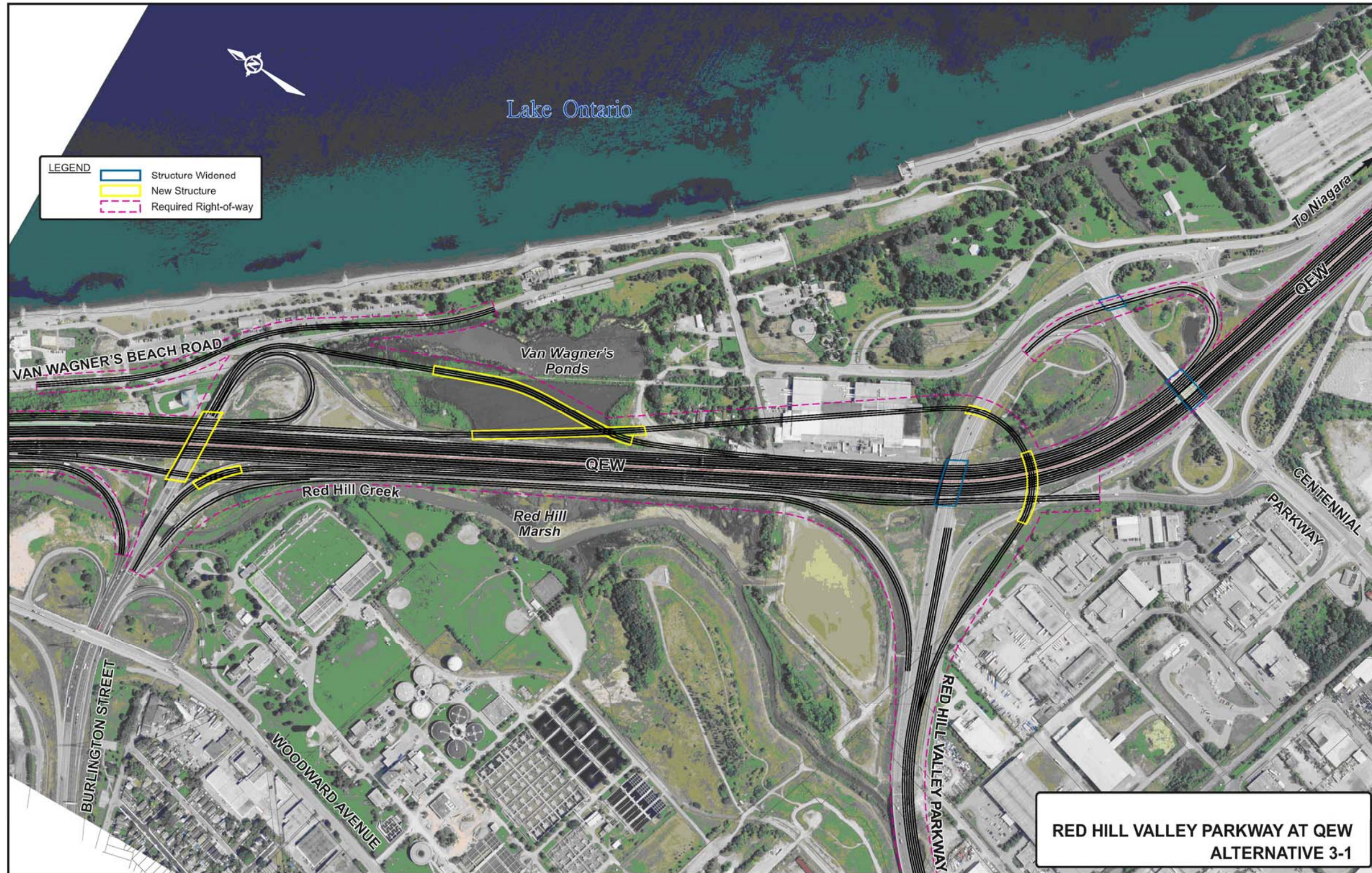
The new RHVP N-QEW W ramp and realigned QEW E-Burlington Street N ramp basketweave would require a significant direct impact to Van Wagner's Ponds. It was assumed that all crossings of the pond would be accommodated on structures, which adds to both the complexity of the construction (because of in-water construction in an environmentally sensitive area) and cost.

The existing Burlington Street bridge over the QEW cannot accommodate the proposed Group #3 lane requirements and would have to be widened. Given the nearby constraints – specifically, Van Wagner's Ponds and the pumping station – it is not possible to maintain traffic on the Burlington Street ramps to / from westbound QEW during construction without major environmental and utilities impacts. Thus, it was assumed that the Burlington Street bridge over QEW would be taken out of service during construction. This would result in negative traffic impacts.

Additional ramp realignments would be required for the eastbound QEW ramps with Burlington Street; given the close proximity of these ramps to Red Hill Creek, construction would have to be conducted such that impacts to the creek are minimized.

In summary, Alternative 3-1 involves a major reconfiguration of the QEW / RHVP interchange which will present significant constructability and staging challenges. Furthermore, the reconfigured interchange with its significant footprint impacts (affecting both the natural and socio-economic environments) will be very costly to build.

Exhibit 4-37: Red Hill Valley Parkway at QEW Alternative 3-1



Group #4 Alternatives: The reduced QEW lane requirements for the Group #4 alternatives require widening of only the westbound QEW lanes. This widening can be accommodated by the existing structures over QEW and a major interchange reconfiguration is not required. A slight realignment of the QEW E-Burlington Street N ramp would be required, and this, combined with the westbound QEW widening, would result in edge impacts to Van Wagner's Ponds. The proposed Group #4 improvements are shown in **Exhibit 4-38**.

As compared with Alternative 3-1, the Group #4 alternatives require a much smaller footprint, have far less natural and socio-economic impacts, few constructability and staging challenges, and a much lower cost.

### **Garden City Skyway**

The existing Garden City Skyway bridge is approximately 2,200 metres long, 35 metres high and spans the Welland Canal, which is part of the St. Lawrence Seaway. The bridge carries six lanes of traffic, and the existing bridge cross section cannot accommodate additional lanes.

As shown in the table above, capacity improvements for the Garden City Skyway are only required under the Group #3 scenario.

A Feasibility Study was undertaken in 1998 by MTO to evaluate bridge improvement alternatives. That study concluded that widening the existing structure was not feasible and thus any capacity expansion would require either twinning or replacement of the existing structure.

For the purposes of this evaluation, it was assumed that capacity improvements would be achieved by twinning the existing bridge to the north. A plan of the proposed Alternative 3-1 improvements is shown in **Exhibit 4-39**.

Twinning the bridge would require additional right-of-way, and would result in the realignment of several local roads and property acquisitions / displacements; however, constructability and staging should be relatively straightforward.

### **Highway 403 Hamilton**

Highway 403 through Hamilton, formerly known as the Chedoke Expressway, was considered as a 'special area' from Highway 6 North to Highway 6 South. This was due to the challenging constraints adjacent to the highway, including environmentally sensitive areas (including the Niagara Escarpment), highly variable topography, significant urban development near the highway, complex interchanges and other issues. In addition, the highway is highly curvilinear (with curvatures not designed to current standards) in the section between Highway 6 North and the Lincoln M. Alexander Expressway.

The existing Highway 403 section from Highway 6 North to Highway 6 South is approximately 13 kilometres long, and passes through the environmentally sensitive Cootes Paradise, the tightly constrained urban area with the King Street, Main Street and Aberdeen Ave. interchanges, and the steeply graded Niagara Escarpment. **Exhibit 4-40** shows the key issues and constraints in the area.

The overall improvement plan for this area is shown in **Exhibit 4-41** for Alternatives 3-1, 4-2 and 4-3; these alternatives represent the most significant impacts in terms of footprint, constructability challenges. It should be noted that a widening to eight lanes was initially assumed for this section of Highway 403 based on the screenline analysis described in **Section 4.7**. Subsequently it was determined that a widening to ten lanes would be necessary to address the 2031 travel demands in this area, which would result

in even greater constructability challenges and impacts through the area than are described in the following sections.

Given the large, complicated study area, it is necessary to address major items, such as interchanges, separately.

Exhibit 4-38: Red Hill Valley Parkway at QEW Group #4 Alternatives



Exhibit 4-39: Garden City Skyway Alternative 3-1 (North Twinning Scenario)

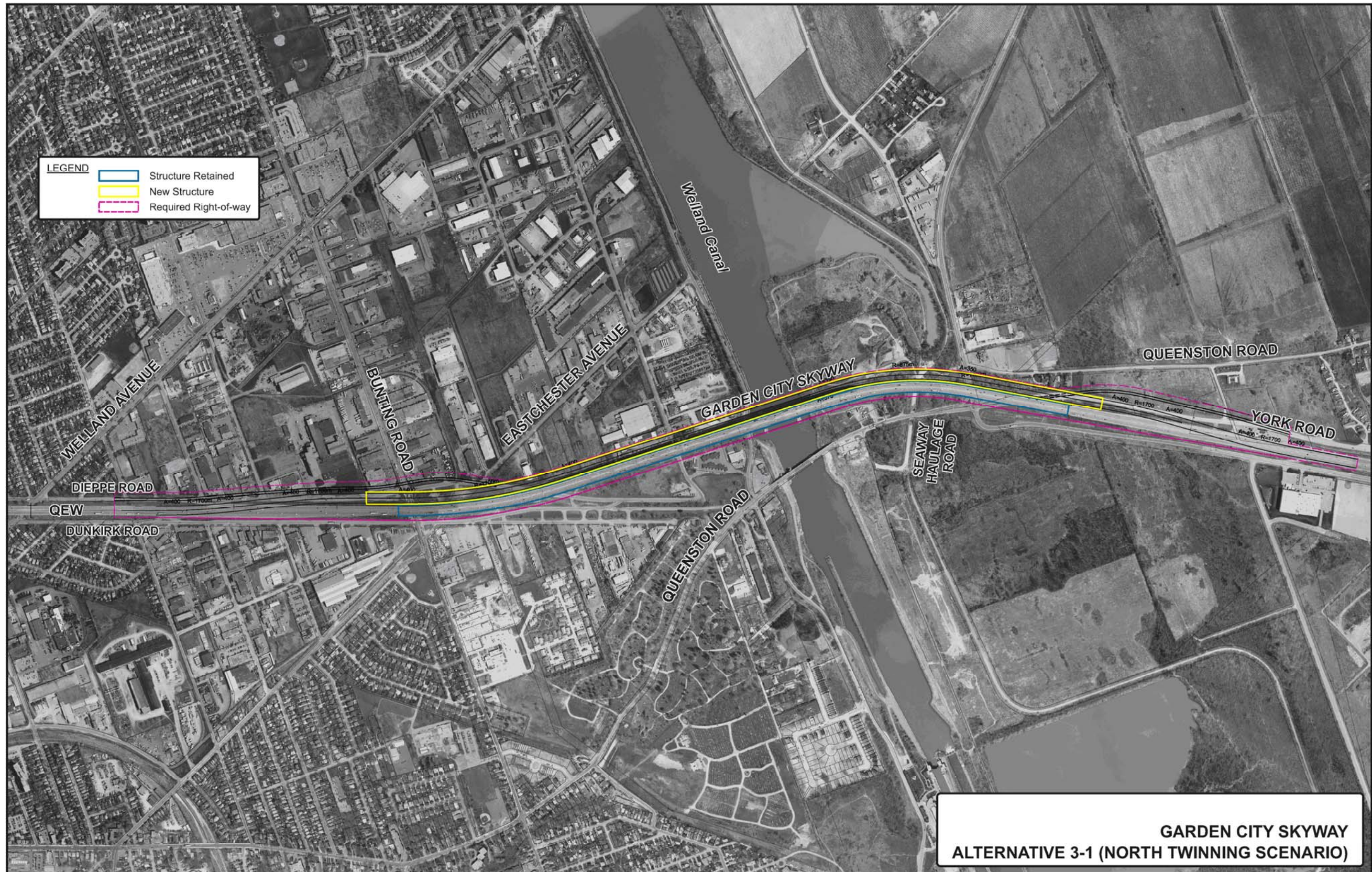


Exhibit 4-40: Highway 403 Hamilton and Highway 6 North to the Lincoln M. Alexander Parkway Key Features and Issues

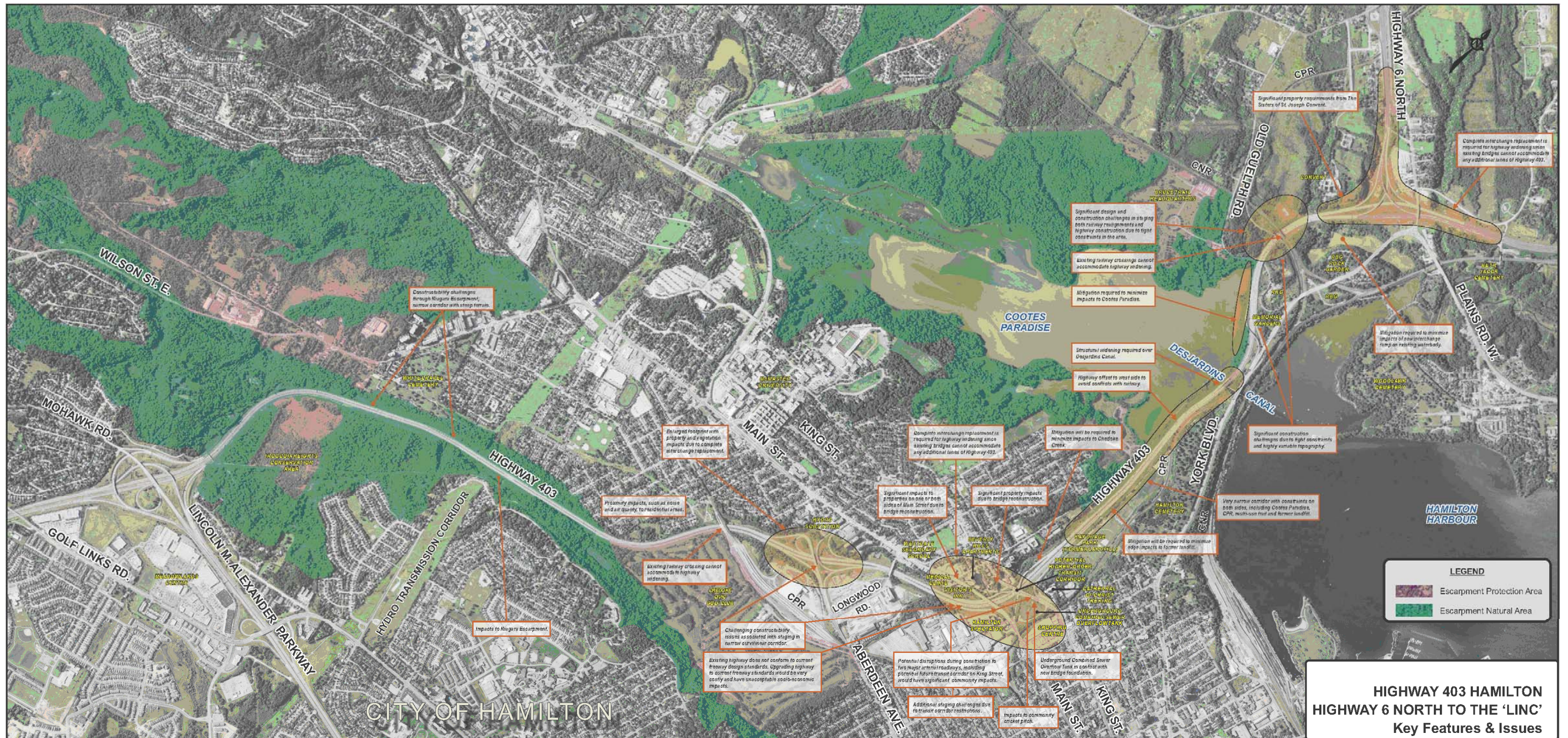
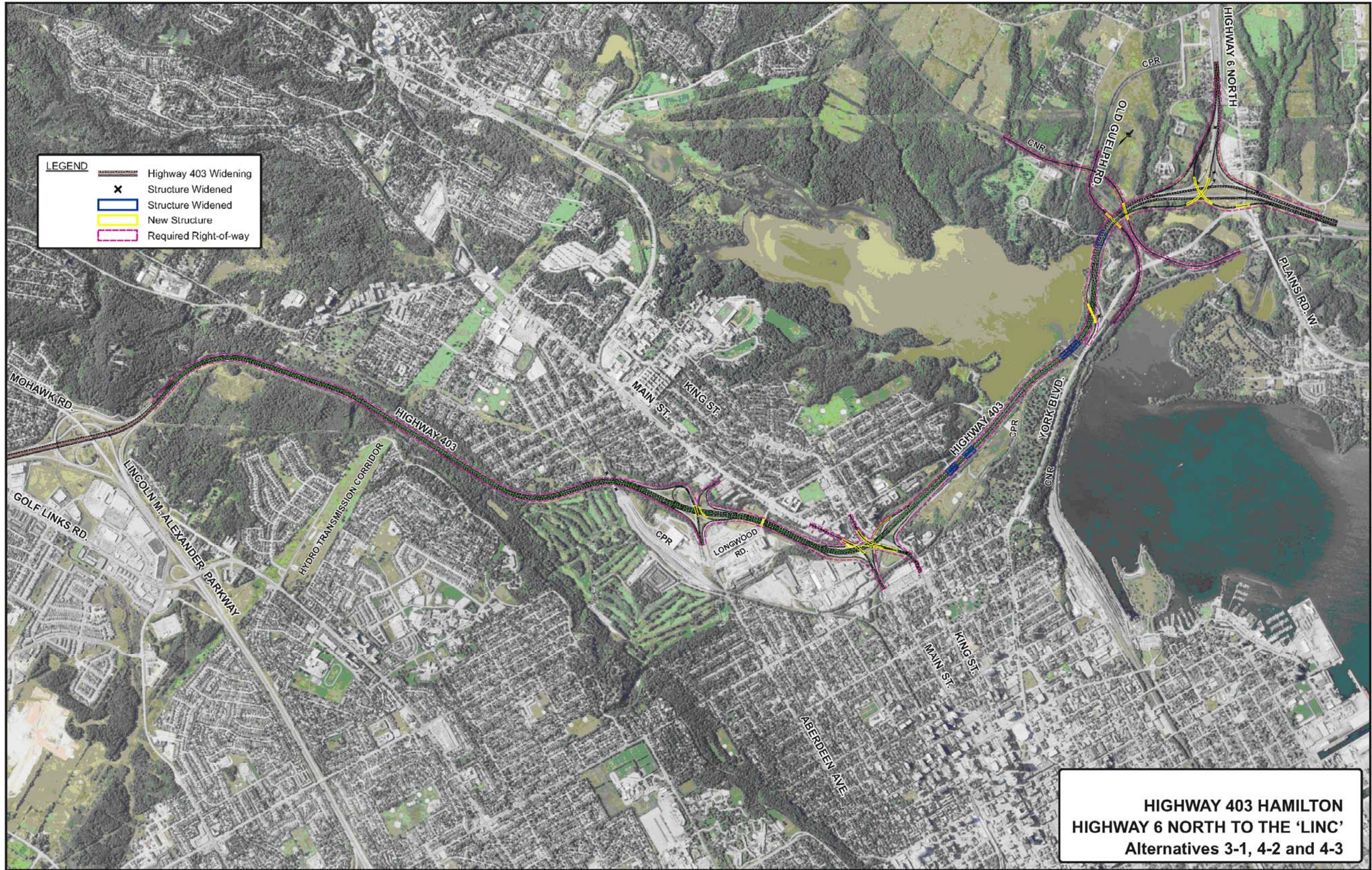




Exhibit 4-41: Highway 403 Hamilton and Highway 6 North to the Lincoln M. Alexander Parkway, Alternatives 3-1, 4-2 and 4-3



Highway 403 / Highway 6 North Interchange: The existing Highway 6 North interchange with Highway 403 is a three-leg, fully directional interchange. Of note, there are left-side Highway 6 on- and off-ramps along the Toronto-bound Highway 403. This configuration is not desirable, and all scenarios that involve widening Highway 403 through the interchange include a reconfiguration of these ramps to the preferable right-side facilities.

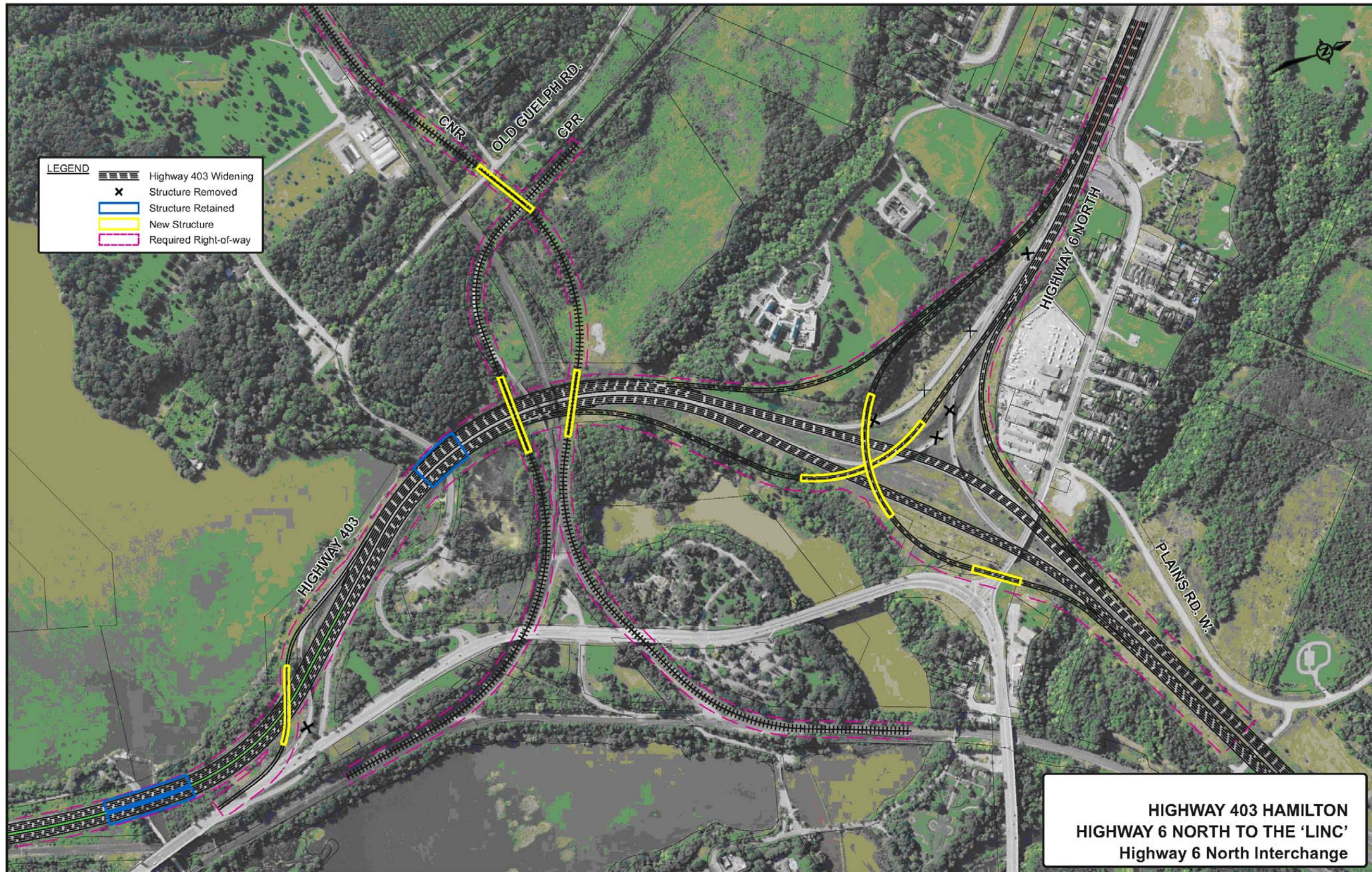
The existing W-N and N-E ramp structures over the Hamilton-bound Highway 403 lanes cannot accommodate any additional lanes. In order to stage improvements without traffic disruption (and to accommodate the 'right-side' reconfiguration) both ramps would require realignment. This would result in a significantly larger interchange footprint (as compared with existing), which would impact properties in the northwest quadrant of the interchange (including the Sisters of St. Joseph Convent) and the existing waterbody to the south. These realignments and footprint impacts are further complicated by the highly variable topography in the area, and present a significant challenge in terms of constructability. The proposed functional plan for replacement of the Highway 6 North Interchange is shown in **Exhibit 4-42**.

Adding to the constructability challenges, there are two existing grade-separated railway crossings over Highway 403 to the west. Neither crossing can accommodate additional Highway 403 lanes and would thus require reconstruction. Reconstruction of these two bridges would require realignments of both railways, and, given the variable topography, would present significant additional constructability challenges and would be very costly.

Highway 6 North Interchange to King Street Interchange: In addition to the required railway realignments and new structures, the existing Main Street interchange structure over Highway 403 would require replacement. Further to the west, there are a number of significant constraints immediately adjacent to the narrow highway corridor, including the environmentally sensitive Cootes Paradise, elements of Royal Botanical Gardens, Hamilton Cemetery, and a former landfill, which now accommodates a public park.

Significant elevation differences between the highway and adjacent lands are also a complicating factor. It is anticipated that numerous retaining walls or similar treatments will be required in order to limit footprint impacts from the highway improvements.

Exhibit 4-42: Highway 403 Hamilton and Highway 6 North to the Lincoln M. Alexander Parkway, Highway 6 North Interchange



King / Main / Aberdeen Interchanges: To the west of Cootes Paradise, Highway 403 enters a constrained urban area, including interchanges with King Street, Main Street, and Aberdeen Avenue. It should be noted that King Street and Main Street are opposite one-way streets. East of King Street (the easternmost interchange), Highway 403 has six lanes; however, this is reduced to four west of King Street. A westbound truck-climbing lane is added on Highway 403 west of Main Street to provide better operations up the long, steep Niagara Escarpment crossing to the west.

None of the existing eight structures in this section of Highway 403 can accommodate additional travel lanes for the highway; thus, all would require replacement if a Highway 403 widening were required.

No improvements to the existing highway geometric alignment are assumed, as this would require a major freeway alignment, which would result in severe socio-economic and environmental impacts to the surrounding area.

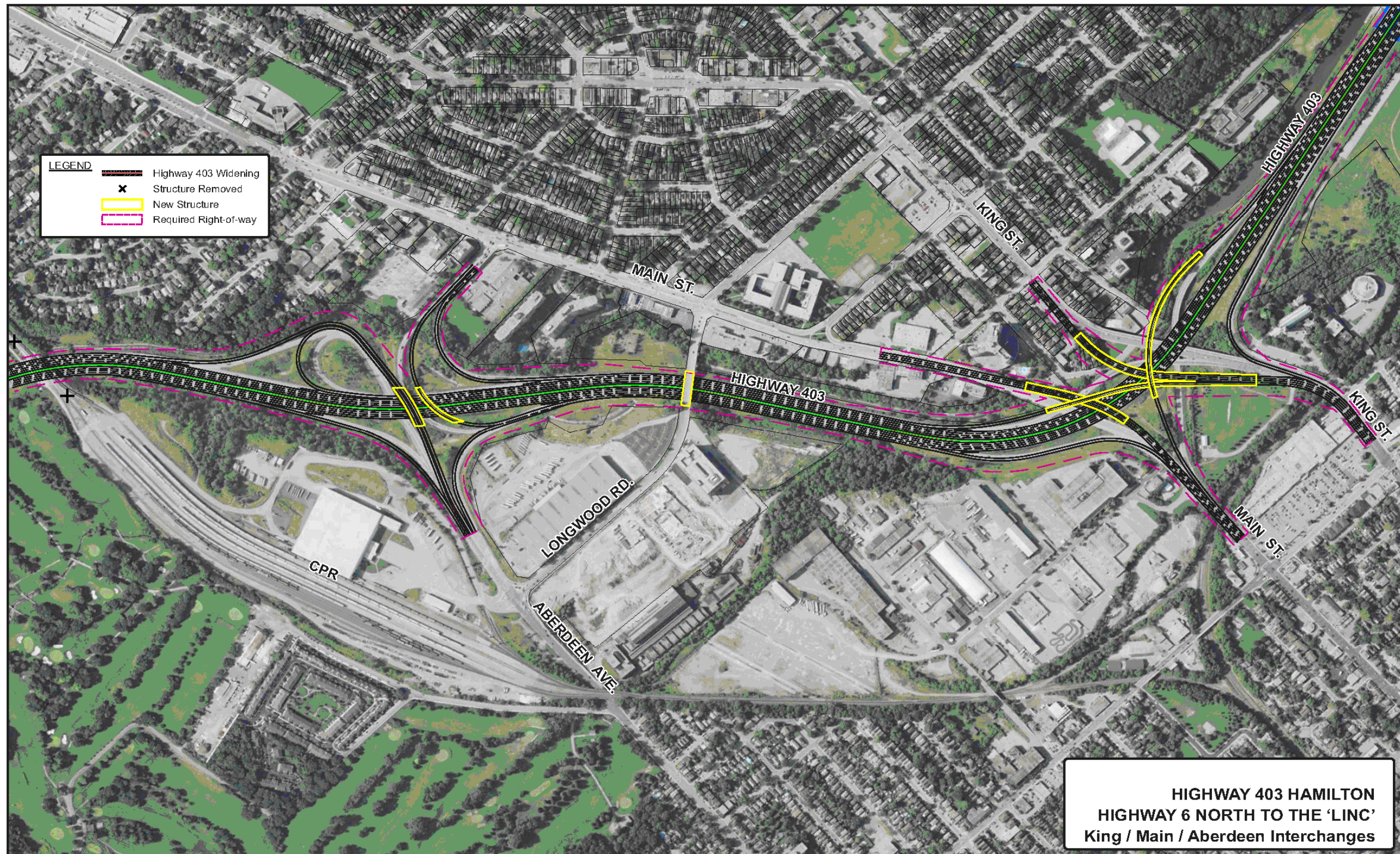
In developing concept design plans for Highway 403, it was assumed that construction would be staged such that no road or ramp closures would be required, with the exception of the Longwood Road and CP Rail crossing structures over Highway 403. This is reasonable, given the high traffic volumes in the area. The concept staging plan would require significant realignments of both King and Main Streets, resulting in property impacts on both sides of Highway 403. The proposed functional plan for replacement of the existing interchange structures is shown in **Exhibit 4-43**.

An existing underground combined sewer overflow tank would be impacted by construction of a new bridge for the King Street / King Street E-Highway 403 W bridge. This may require the construction of bridge piers through the tank and would displace the existing cricket pitch currently located above the tank.

In order to maintain traffic flow during construction, the following key staging activities have been assumed for the King Street / Main Street easterly interchange:

1. Construct new, realigned Main Street bridge over Highway 403. This bridge would also have to span the existing King Street E-Highway 403 W ramp.
2. Demolish existing Main Street Bridge.
3. Construct new, realigned King Street and King Street E-Highway 403 W bridges over Highway 403. Note that these would have to span the existing Highway 403 E-Main Street E ramp. The King Street E-Highway 403 W ramp would also have to span the new Main Street bridge over Highway 403.
4. Demolish existing King Street bridge over Highway 403 and existing King Street E-Highway 403 W ramp bridge.
5. Construct new, realigned Highway 403 E-Main Street E bridge. This would be a third-level structure spanning the King Street bridges and Highway 403.
6. Demolish existing Highway 403 E-Main Street E bridge.

Exhibit 4-43: Highway 403 Hamilton and Highway 6 North to the Lincoln M. Alexander Parkway, King / Main / Aberdeen Interchanges



It should also be noted that King Street is planned to be a future major high-order transit corridor potentially with LRT running on the structure over Highway 403. This will further complicate the staging to construct a new bridge.

At the Aberdeen Avenue / westerly Main Street interchange, the following sequence was assumed:

1. Construct new, realigned Highway 403 E-Main Street E / W ramp bridge.
2. Demolish existing Highway 403 E-Main Street E / W ramp bridge.
3. Construct new, realigned Aberdeen Avenue E-Highway 403 W ramp bridge and new Highway 403 E-Aberdeen Avenue E loop ramp.
4. Demolish existing Aberdeen Avenue E-Highway 403 W ramp bridge and new Highway 403 E-Aberdeen Avenue E loop ramp.

Non-interchange bridges in the area include the Longwood Road structure over Highway 403, located between the King / Main and Aberdeen Avenue interchanges, and to the west of Aberdeen Avenue, the existing CPR yard structure over the highway. Because the CPR tracks do not continue to the northwest of Highway 403, it was assumed that this structure would be removed and not replaced. This would be subject to negotiations with the railway.

Staging and constructability issues and impacts are similar for all transportation alternatives requiring widening through this area. Impacts include some residential displacements on the north side of Highway 403.

Niagara Escarpment Crossing: To the west of Aberdeen Avenue and the CP Rail crossing, Highway 403 traverses the Niagara Escarpment to the Lincoln M. Alexander Parkway and creates significant constructability challenges in this area of challenging topography.

On the south side of the highway, there are stretches where the rock face of the Escarpment runs in close proximity to the ROW. On the north side of the highway, there are sections where terrain drops sharply away from the highway.

Through most of this section, Highway 403 has five lanes, with two basic lanes in each direction, plus a westbound truck-climbing lane. The highway median width in this area is generally sufficient to accommodate a single additional lane.

Alternatives 3-1, 4-2 and 4-3 each require an ultimate eight-lane cross-section through the escarpment and this would require a widened Highway 403 ROW. It was assumed that all widening would occur to the north, in order to avoid cutting into the Escarpment face. Because of the steeply sloping terrain on the north side of the highway, any fills required for additional lanes would have large footprints and would result in serious environmental and socio-economic impacts. Thus, it was assumed that construction of these alternatives would require retaining walls and / or cantilevered bridge structures along the length of the Escarpment crossing. These alternatives would be both challenging and costly to construct.

Alternatives 4-4 and 4-5 require a six-lane cross-section through the Escarpment. This arrangement could be accommodated by adding an eastbound GPL to the median and converting the existing westbound truck-climbing lane to a GPL. This would have little or no footprint impacts and would be relatively straightforward to construct.

## Summary

Among all alternatives, improvements to typical mainline highway sections and arterial interchanges were of similar complexity in terms of constructability and staging. Conversely, several the special areas described above exhibited substantial differences in constructability and staging challenges across the various transportation alternatives; thus, these special areas were the primary input to the evaluation and comparison of alternatives.

In general, the Group #3 alternative exhibited more challenging constructability and staging issues than the Group #4 alternatives.

In particular, the Group #3 alternative would involve the most significant construction and staging issues for the Burlington Bay Skyway. The required core-collector system for Group #3 would require both a new Toronto-bound bridge and new or widened Niagara-bound bridge. By comparison, the Group #4 alternatives would, if HOV lanes were included in the improvements, require only a new or widened Niagara-bound bridge.

The Group #3 alternative required major reconstruction and reconfiguration of the QEW / Red Hill Valley Parkway Interchange, with numerous structural replacements, ramp relocations and possible major utilities impacts. Staging impacts were also much greater with the Group #3 alternative, requiring the closure of part of the Burlington Street interchange during construction. Furthermore, the identified footprint associated with the Group #3 improvements was very large, resulting in substantial natural and socio-environmental impacts. By comparison, the Group #4 alternatives would require relatively minor reconfiguration of the interchange and have a much smaller footprint with fewer environmental impacts.

The Group #3 alternative was the only scenario requiring widening of the Garden City Skyway; none of the Group #4 alternatives would require improvements to the bridge.

Highway 403 from the Highway 6 North Interchange to the Lincoln M. Alexander Parkway posed significant constructability and staging alternatives. The Group #3 alternative required the reconstruction of the Highway 6 North Interchange, as did the Group #4 Alternatives 4-2 and 4-3. The remaining Group #4 alternatives had little or no impact on the interchange. The Group #3 and #4 alternatives had substantial constructability and staging challenges for Highway 403 improvements from the interchange westerly. In particular, the King Street / Main Street / Aberdeen Avenue interchanges would require complete reconstruction and major road and ramp realignments in order to stage construction without major traffic impacts. The footprint of these improvements would have natural and socio-economic environmental impacts.

Further to the west, the Group #3 alternative had the greatest constructability challenges along the Highway 403 crossing of the Niagara Escarpment. These improvements would most likely require widening sections of the highway using structures, including overhangs and / or retaining walls. For Group #4, Alternatives 4-2 and 4-3 would require similar treatment; however, Alternatives 4-4 and 4-5 could accommodate most of the improvements within the median, resulting in much simpler construction and staging.

### 4.8.1.3 Cost Estimation Methodology

Given the large scale of the possible improvements and the high-level nature of the study, it was necessary to categorize the range of work into major items in construction cost estimation. This high level approach was based on several assumptions that are discussed in the *NGTA Constructability and Cost Summary Technical Memorandum* (available under separate cover).

It should be noted that costs developed as part of this methodology represent construction and associated costs in 2010 dollars (e.g., engineering, construction administration, etc.); property costs are not included in the estimates.

In addition to the major items, specific construction costs for each of the special areas were developed to reflect the unique nature of the constructability issues involved.

MTO's *Parametric Estimating Guide (2007)* provided a starting point for the development of unit costs. The *Parametric Estimating Guide (PEG)* provides unit costs for several items, including road reconstruction, major widening, new roadway construction and various structure types.

For certain items, such as structures, the PEG costs could be applied and adjusted for contingencies, staging, complexity, etc. Once the cost was adjusted for inflation to 2010 dollars, as appropriate, the unit cost was applied to the current study. Where appropriate, factors were applied to account for unique contingencies, complex staging, major utilities relocations / impacts, economy-of-scale efficiencies, construction locale (i.e., urban, rural, Greenfield) or other issues that could be expected for a given location.

In order to supplement the PEG, MTO's Highway Costing (HiCo) System was employed. HiCo is a database of relatively recent contract bids that typically provides users with the tender award, as well as the average of the three low bids.

In order to derive major item costs for the current assignment, several examples of recent projects of sufficient similarity to the improvements proposed for the NGTA alternatives were identified. Contracts were limited to those on 400-series highways (including the QEW) in MTO's Central, Eastern and Southwestern Regions. Once relevant contracts had been selected, the value of each was adjusted to a base year of 2010. Average unit costs were then derived for each item on the basis of per-kilometre (widening), per-square-metre (structures), per-interchange, etc.

Unit costs generated from both PEG and HiCo were compared. Where these costs were in significant disagreement, expert opinions from MTO and consultants, including contracts and construction administration personnel, were sought to provide further rationale for the selection a unit cost to be used for the NGTA Study.

In general, preference was given to the costs generated from HiCo, as these represent 'full-project' costs, and better account for staging, minor items, and other complexities that may not be fully captured within the confines of the PEG estimates.

As part of this work, advice was sought from MTO to determine if any additional factors should be applied to the derived unit costs to account for contingencies, staging, etc., where these are not sufficiently captured from the PEG, HiCo or other inputs. To that end, two meetings were held with the MTO Central Region Highway Engineering and Contracts Offices. This was documented in a memo *NGTA Constructability and Cost Technical Memorandum* (available under separate cover).

This information was used as the primary source for developing costs for the costing of special areas, which had been the subject of specific improvement feasibility studies (e.g., the Burlington Skyway). Where specific studies were unavailable, or did not provide suitable guidance, the PEG served as the primary input for costs. While the PEG has limitations for this application, as noted above, it was the best source for an objective, high-level cost estimate of this nature, and was used as a starting point. Costs were adjusted to the 2010 base year.

Costs for the new freeway components of the NGTA Group #4 alternatives were calculated on per-kilometre, per-interchange, per-structure, etc., basis, where possible;



however, there were some locations that required special attention to develop costs given their complexity.

Costs for engineering, project management, construction administration and other relevant items were applied to the PEG- and HiCo-based estimates. The initial sources for these costs were from recent planning projects; as with the other estimates, these values were adjusted based on professional judgment in consultation with MTO and others.

To account for inflation, costs obtained from the PEG and HiCo, were adjusted to 2010 dollars by direct application of MTO's Tender Price Index (TPI).

**Summary**

Results of the construction cost estimation for major cost items and special areas are shown in **Table 4-34**. Application of these costs to the various transportation alternatives yielded overall construction costs (adjusted to 2010) for each alternative, as follows:

**Table 4-34: Cost Estimation for Major Cost Items and Special Areas**

Group Alternative	Group #3	Group #4			
	3-1	4-2	4-3	4-4	4-5
<b>Construction Cost Range (billions, 2010 )</b>	5.5 - 6.5	6.0 – 7.0	6.5 – 7.5	6.0 – 7.0	6.5 – 7.5

It should be noted that a cost range was assumed for each alternative, because of the high-level nature of the analysis.

The Group #4 alternatives are generally more costly than the Group #3 alternative, primarily due to extensive new freeway and interchange construction. For a summary of the major cost items and individually assessed items, see **Table 4-35**.

**Table 4-35: Summary of Major Cost Items and Individually Assessed Items**

Reconstruction Impact/Cost Item	Cost Unit	Unit Price (\$M)
<b>Typical Interchange Side Road Overpass</b>		
Major impact - structure replacement and realignment of ramps	interchange	35
Minor impact - structure reconstruction and realignment of ramps	interchange	8
<b>Typical Interchange Mainline Overpass</b>		
Major impact - structure replacement and realignment of ramps	interchange	45
Minor impact - structure reconstruction and realignment of ramps	interchange	16
<b>Mainline Structure</b>		
Major impact 1 - large new structure	structure	12
Major impact 2 - large structure widening	structure	6.5
Minor impact 1 - small new structure	structure	2
Minor impact 2 - small structure widening	structure	1
<b>Crossing Road Structure</b>		
Major impact - structure replacement	structure	3
Minor impact - structure reconstruction	structure	1
<b>Freeway Sections - Additional Lanes</b>		
Mainline widening - additional six lanes	km	35.5
Mainline widening - additional four lanes	km	24.5
Mainline widening - additional two lanes	km	14
<b>Relocation of service road and / or other adjacent roads</b>	km	3

Reconstruction Impact/Cost Item	Cost Unit	Unit Price (\$M)
<b>Undivided Highway Widening</b>		
Widening from four to six lanes incl. intersection improvements	km	6.5
<b>Individually Assessed Cost Items</b>		
QEW / Highway 403 (Oakville)	lump sum	na
QEW / Highway 403 / 407 ETR Interchange		200
Burlington Skyway Bridge (Group #3)		275
Burlington Skyway Bridge (Group #4)		510
Red Hill Valley Parkway Interchange (Group #3)		240-260
Red Hill Valley Parkway Interchange (Group #4)		275
Garden City Skyway Bridge		95
QEW / Highway 420		300
407 ETR / 403 Interchange		50
403 Hamilton Special Areas Group 3-1,4-2,4-3		50
403 Hamilton Special Areas Group 4-4,4-5		1000
		560
<b>New Alignment</b>		
Four-lane divided freeway	km	14.5
Typical interchange	interchange	25
Freeway to Freeway Interchange	interchange	150
New Freeway Welland Canal Crossing		150
Major Structure	structure	12
Minor Structure	structure	2
Escarpment Crossing (Waterdown)	structure	100

#### 4.9 GROUP #3 (WIDENING) AND GROUP #4 (NEW CORRIDOR) ALTERNATIVES – ASSESSMENT SUMMARY

Although the “Reasoned Argument” assessment identified various trade-offs between the Group #3 (widening) and Group #4 (new corridor) alternatives, no clear preference was identified. Each of the alternatives resulted in undesirable impacts in various sections of the study area (as demonstrated through the assessment findings outlined in **Tables 4-2, 4-4, 4-5, 4-6, 4-16 and 4-33**).

Through the assessment findings, it was clear that there are distinct geographic regions in the study area, each with its own unique set of transportation, environmental, community and economic characteristics. The assessment identified that a more geographically based assessment would be required to appropriately characterize the relative advantages and disadvantages of widening and new corridor alternatives.

#### 4.10 GEOGRAPHIC SUB-AREA ASSESSMENT – DEVELOPMENT OF A HYBRID ALTERNATIVE

Based on the unique transportation, environmental, community and economic characteristics of the study area, three geographic areas (East, Central and West) were identified for assessing widening and new corridor alternatives (**Exhibit 4-44**). This exercise drew on the assessments completed for the Group #3 and Group #4 alternatives and additional analysis work was also undertaken (i.e., air quality, transportation analysis) to complete the assessment. This assessment was completed in the same manner as the overall assessment previously described. The findings of the assessment for each of the three geographic areas led to the development of a “Hybrid” alternative, shown in **Exhibit 4-45**.



The following sections outline a summary of the transportation and “Triple-Bottom Line” approach utilized for the geographically based (East, Central and West) assessment, as well as the conclusions that came about that led to the draft Strategy.

As described in more detail in the following sections, the geographic assessment allowed for a preferred recommendation in the Central and East Areas. In the West Area, given the demonstrated need for additional roadway capacity, the complexity and inter-relationship of the environmental, social, and economic factors in this area and in response to the stakeholder feedback received during and subsequent to the fourth round of PICs regarding these factors, it has been determined that more focused analysis and assessment should be undertaken to better understand and compare the relative advantages and disadvantages of the transportation options and corridor alternatives in the Halton-Hamilton area. An overview of the additional analysis work to be undertaken for the West Area alternatives is described in **Chapter 5**.

#### **4.10.1 East Area**

##### **4.10.1.1 Assessment Findings**

In the East Area, two alternatives were assessed including a new corridor to connect Highway 406 in Welland to the QEW in Niagara or widening the QEW, from Highway 406 interchange to Highway 420 interchange (refer to **Exhibit 4-50**).

##### Community

From a community perspective, further widening of the QEW through St. Catharines would result in significant residential displacements and impacts to businesses, which are avoided with a new corridor connecting Highway 406 to the QEW. Although the new corridor impacts agricultural lands, these impacts can be minimized through route selection and impacts are substantially less than widening the QEW. As such, a new corridor between Highway 406 and QEW is preferred from the community perspective.

##### Environment

From a natural environment perspective, the new corridor will result in more significant impacts than widening through the urban area of St. Catharines due to the undisturbed land in this corridor, but it eliminates the need for further widening of the QEW through the Niagara Escarpment. Given that the impacts associated with widening the QEW are in disturbed areas and impacts are at the edge of the existing right-of-way, widening QEW is preferred from an environmental perspective.

##### Economy

In the east portion of the study area, the widening alternative provides additional capacity to Niagara Falls and the tender fruit areas near QEW, and minimizes loss of agricultural lands that would be required for a new corridor. The widening alternative provides additional capacity to northern border crossings and north edge of the Gateway Economic Zone. Generally, the TREDIS analysis shows higher economic benefit associated with the widening alternative, as it serves existing employment areas along the QEW with additional capacity. However, the widening alternative does not serve the Gateway Economic Centre or provide capacity to south Niagara Region growth areas.

A new corridor between Highway 406 in Welland and the QEW will serve the Gateway Economic Zone and the Gateway Economic Centre in Niagara Region. This provides a measure of redundancy to the QEW for travellers destined to the Fort Erie border crossing. A new transportation corridor will support goods movement for potential employment growth in south Niagara Region growth areas, supporting the objectives of

the Niagara Region Growth Management Strategy. As such, a new corridor is preferred from an economic perspective.

#### Transportation

For the east end of the study area, the primary capacity and operational deficiency occurs on the QEW corridor through St. Catharines and across the Garden City Skyway. The assessment of the various corridor alternatives found that Alternative 3-1, which includes widening the QEW by an additional two HOV lanes through St. Catharines would address peak period capacity issues across the Welland Canal screenline. The Group #4 alternatives, which involved providing a new corridor between Highway 406 and QEW in the Welland area, also addressed this capacity deficiency to an acceptable level.

Based on the traffic growth rates estimated in the demand forecasting model, the study team estimated when the widening QEW from six to eight lanes would potentially be required if a new corridor were not provided, and also assessed when further widening may be needed beyond eight lanes in order to plan for transportation capacity needs beyond 2031. As described in more detail below, this analysis was undertaken based on simplified assumptions with regard to future growth rates and future transportation system performance, and is intended to provide a very cursory estimate of the future needs along QEW beyond 2031. Further detailed analysis will be required subsequent to this phase of the study to validate these preliminary findings.

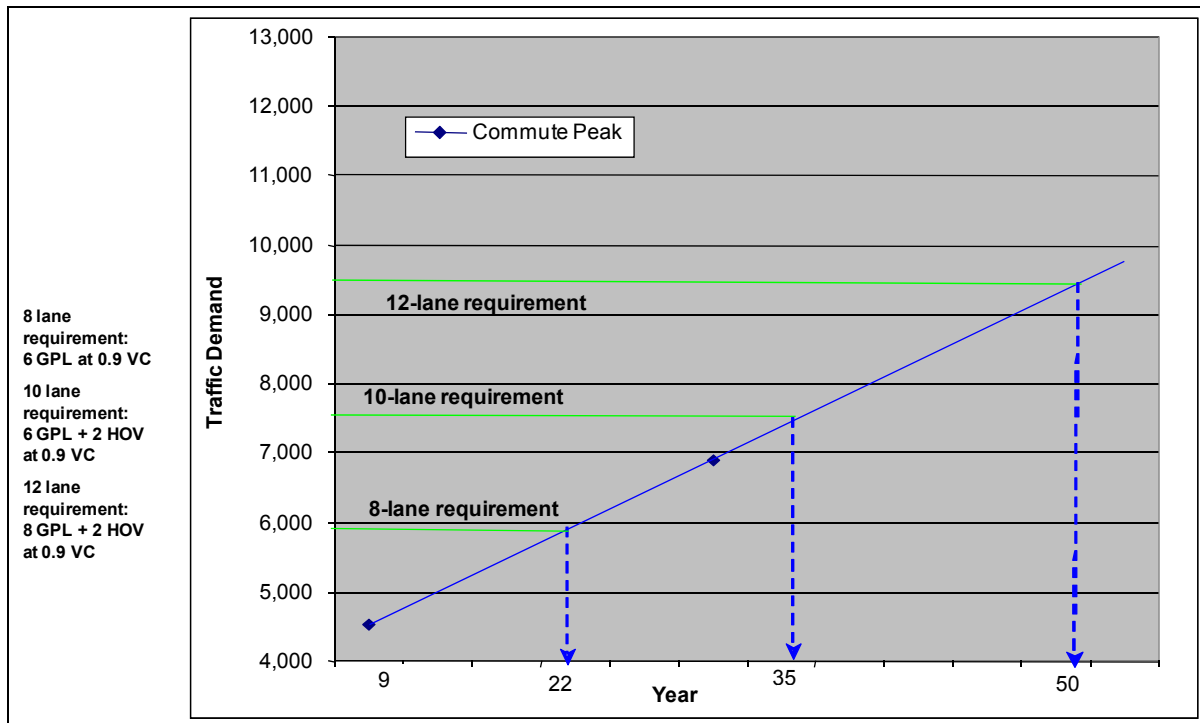
The need to widen beyond a certain lane configuration was assumed to be triggered when the volume to capacity ratio reached 0.9 (90% of available capacity), which is an indication of congested traffic conditions. Commuter peak conditions were considered in estimating the future widening horizons. Since the travel demand model only forecasts to the year 2031, both high and low growth rate scenarios were considered to estimate growth for travel demand growth beyond 2031. The high growth rate assumed growth beyond 2031 at the same annual growth rate as forecast for the 2006 to 2031 time period. The low growth rate scenario assumed a 1% annual growth rate beyond 2031.

**Exhibits 4-46** and **4-47** show the timeline forecast for widening of QEW through St. Catharines under the two growth scenarios, and assuming that a new corridor is not constructed between Highway 406 and QEW in the Welland area. The year when widening is required is plotted in on the horizontal X-axis. For example, nine denotes year 2009.

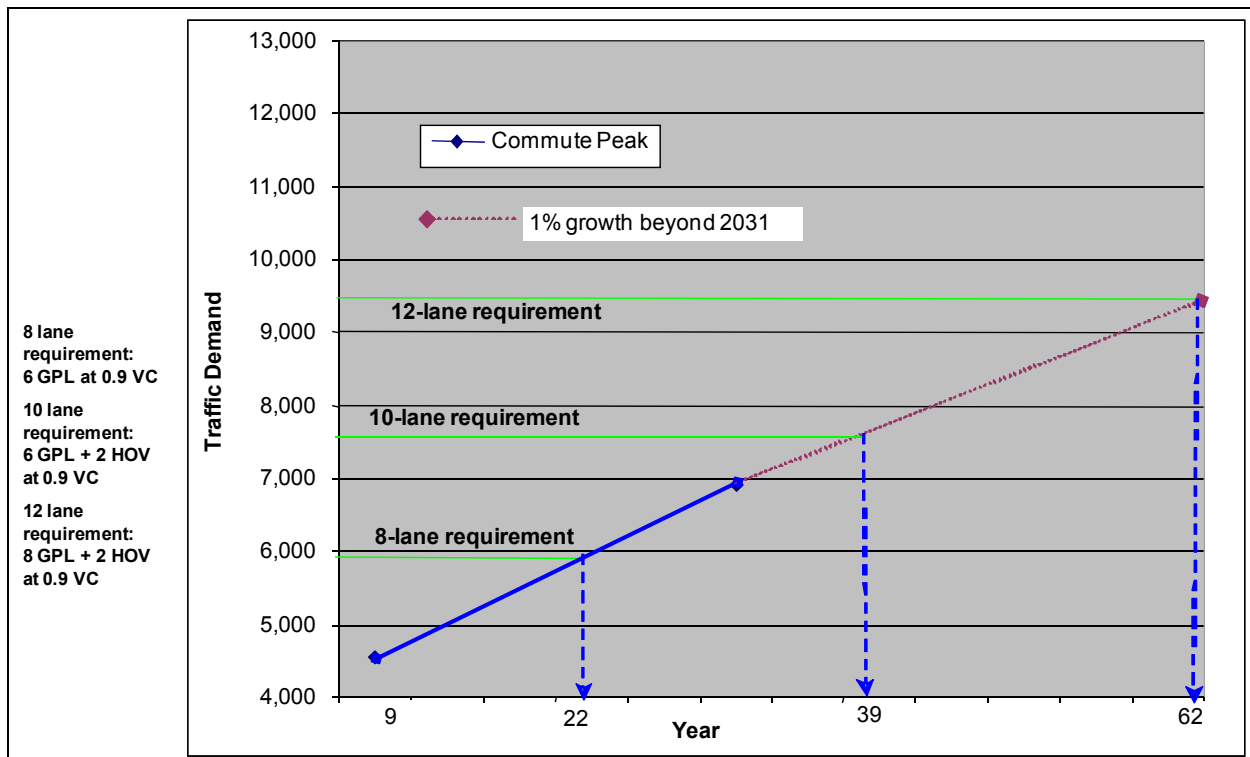
The plots suggest that QEW would need to be widened to eight lanes by 2022 based on commuter peak congestion. Additional widening of the QEW to ten lanes would likely be required by 2035-2039 based on the commuter peak demand. It should be noted that the influence of summer tourist traffic volumes may advance these timeframes, but this would be subject to further analysis as noted above.

In contrast, it was found that the construction of a new corridor between Highway 406 and QEW, would avoid the need to widen QEW to eight lanes by 2031, and would provide an alternate route across the Welland Canal.

**Exhibit 4–46: QEW Widening Needs through St. Catharines - Model Growth Rate Beyond 2031**



**Exhibit 4–47: QEW Widening Needs Through St. Catharines – 1% Annual Growth Rate Beyond 2031**



An assessment of the Highway 406 was also undertaken to confirm that sufficient capacity would be available to support the connection to a new NGTA corridor to the south.

**Table 4–36: Operation of Highway 406 through St. Catharines**

Highway 406 V / C Ratios 2031 PM Peak Hour		
Segment	Peak Hour Volume peak direction (pce)	V / C Ratio
QEW to 4th Avenue	1,860	0.42
4th Ave to Highway 58	3,987	0.91
Highway 58 and Highway 20	3,451	0.78

**Table 4-36** summarizes the capacity analysis undertaken for Highway 406 through St. Catharines. For the 2031 PM peak hour conditions, with the new corridor connection between Highway 406 and the QEW in place, Highway 406 is expected to continue to operate under its functional capacity. The segment through the 4th Avenue to Highway 58 area, where the cross section and alignment is most constrained, is forecast to operate at a V / C ratio of 0.91 or 91% of capacity. The segment to the north and south of this section are forecast to operate at acceptable levels of service.

In summary, the transportation assessment in East Area identified that:

- A new corridor would avoid the need for further widening through St. Catharines beyond the six lanes that are currently being constructed;
- A new corridor would accommodate long term growth beyond the 2031 horizon;
- A new corridor would provide network flexibility, redundancy and reserve capacity to address peak summer conditions and alternate routing to the border crossings in Niagara and / or Fort Erie – depending on the route chosen; and
- A new corridor would improve goods movement to the US border compared to widening of existing facilities.









Cost and Constructability

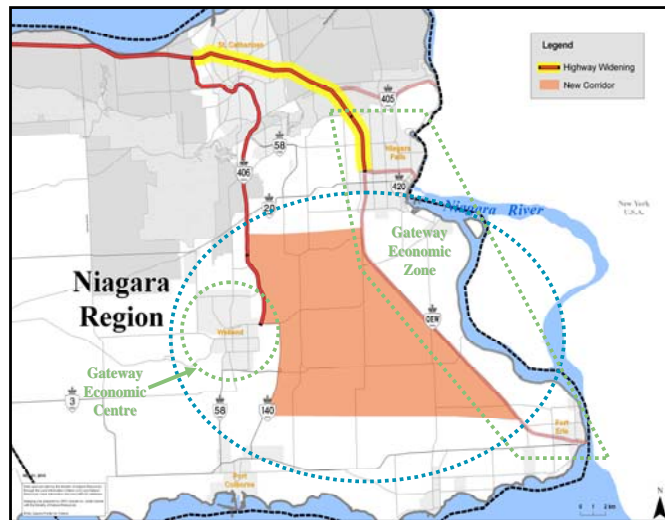
In the East Area, a new corridor avoids widening QEW through St. Catharines, including the Garden City Skyway bridge over the Welland Canal. However, a new corridor between QEW and Highway 406, would require a new crossing of the Welland Canal, as well as a connection between Highway 406 and the new freeway section. Given the limited space near the Welland Canal, this connection represents a significant constructability challenge.

**4.10.1.2 Overall Assessment**

**Exhibit 4-48** illustrates the assessment for the East Section. A larger circle represents more benefit / less impact and a smaller the circle represents lower benefit / more impact.

**Exhibit 4–48: EAST AREA – St Catharines / Niagara Falls / Welland / Fort Erie**

CRITERIA	ALTERNATIVES		COMMENTS
	Widen	New	
COMMUNITY			◆ Further widening of QEW through St. Catharines will result in significant residential and business impacts, which are avoided with a new corridor.
ECONOMY			◆ A new corridor provides an alternate route across the Welland Canal and improved access to the border. ◆ A new corridor provides a direct connection between the Gateway Economic Centre (Welland) and the Gateway Economic Zone (international border).
ENVIRONMENT			◆ A new corridor will result in more significant environmental impacts than widening through the urban area of St. Catharines, but eliminates the need for further widening of QEW through the Niagara Escarpment.
TRANSPORTATION			◆ A new corridor avoids the need for further widening through St. Catharines beyond the 6 lanes that are being constructed ◆ A new corridor provides network flexibility and reserve capacity.



***A new corridor connecting Highway 406 in the Welland area and QEW is preferred.***

At the east end of the study area, the overarching consideration is the community impacts that would be associated with further widening of QEW through the St. Catharines area beyond the six lanes that are currently being constructed. These impacts are expected to be very significant with well over 100 residences displaced and major impacts to a number of businesses and industrial areas. Providing a new corridor between Highway 406 in the Welland area and QEW would avoid the need for further widening of QEW through St. Catharines and across the Niagara Escarpment until beyond 2031. In addition, a new corridor will provide alternative access and flexibility for movement of goods and people to the border, along with the economic benefits of a



direct connection between the Gateway Economic Centre (in the Welland area) and Gateway Economic Zone along the Niagara River as defined in *The Growth Plan*. Moreover, a new corridor connection would allow opportunities for better border management by providing a higher order highway alternative to facilitate better distribution of traffic between the Niagara border crossings. Overall, the new corridor alternative provides the best overall balance of advantages and disadvantages from a triple bottom line and a transportation perspective. Therefore a new corridor connecting Highway 406 and the QEW is preferred.

## **4.10.2 Central Area**

### **4.10.2.1 Assessment Findings**

In the Central Area, the two main options considered include widening the QEW from Niagara to Hamilton or a new corridor that connects Highway 406 to Highway 403.

#### Community

From the community perspective, widening of QEW to eight lanes by adding HOV lanes can generally be accommodated within the existing right-of-way, thereby minimizing and avoiding community impacts.

Although a new corridor in the Central Area accommodates planned future growth aspirations in Niagara Region and the City of Hamilton (in the Hamilton AEGD), it results in extensive fragmentation and impacts to agricultural lands and rural communities in Niagara and east Hamilton. Given the extensive agricultural and rural community impacts associated with a new corridor and that significant community impacts can be avoided by widening the QEW to eight lanes, widening the QEW is preferred from the community perspective.

#### Environment

From an environmental perspective, widening would result in minimal footprint impacts as the addition of HOV lanes on the QEW can generally be accommodated within the existing ROW. In addition, widening can be reduced in sensitive environmental areas (i.e., Van Wagner's Pond) in order to minimize adverse environment effects in isolated locations.

With respect to a new corridor in the Central Area, there are several watercourses, provincially significant wetlands and areas of dense woodlands that support interior habitat. The west portion of this area is also located within the Greenbelt. Although there are gaps between many of these natural areas and impacts to the significant features (such as provincially significant wetlands) can likely be avoided or minimized through careful route selection, these potential environmental effects are significantly greater than the impacts of widening the QEW. As such widening the QEW is preferred from a natural environment perspective.

#### Economy

In the central portion of the study area, the widening alternative provides additional capacity from Hamilton to Niagara via QEW. Generally, the TREDIS analysis shows higher economic benefit, as this alternative serves existing employment areas along the QEW with additional capacity. This will support existing employment areas located along the QEW, including business parks in Hamilton, downtown Hamilton and the north part of Niagara Region. The widening of the QEW and Burlington Skyway will provide considerable additional capacity at a key bottleneck, easing goods movement between

the GTA and the US border. However, it does not serve the Hamilton AEGD or southern Niagara Region growth areas.

A new corridor in this area serves southern Niagara growth areas, and directly serves the Hamilton AEGD with an additional connection to southern Niagara growth areas and to the US border. While the new corridor better supports these growth areas, the amount of forecast employment growth in areas served by the corridor in Niagara Region is relatively low, which accounts for the findings of the transportation modelling that indicate that there would be relatively low traffic demand on a new corridor in this area during the forecast horizon. However, in the long term, it is anticipated that as growth occurs, demand will rise and a new corridor will be required beyond 2031.

The section of the new corridor in South / East Hamilton runs through the Greenbelt where policies prohibit development, and will likely not provide extensive opportunities to locate goods movement related industries along the new corridor. This link is therefore not anticipated to “open up” significant new employment areas along the corridor. In addition, this alternative does not provide additional capacity to existing employment areas in north Hamilton or Niagara, nor does it substantially address the congestion to existing employment areas or the primary route to the US, along the QEW.

Given that the widening the QEW and a new corridor each have different yet comparable economic benefits; they are equally preferred from an economic perspective.

#### Transportation

For the central portion of the study area, the primary capacity and operational deficiency occurs on the QEW corridor through the Stoney Creek area and into Hamilton. The assessment of the various corridor alternatives found that Alternative 3-1, which includes widening the QEW by an additional two HOV lanes between Hamilton and St. Catharines, would address peak period capacity issues for both commuter peak hour and summer peak period conditions.

Similar to QEW through the East Area, QEW in the Central Area was examined to determine the timeframe when widening would be required to 2031 and beyond if a new corridor is not provided. **Exhibits 4-49** and **4-50** show the timeline forecast for widening of QEW in the Central Area under the same two longer term (high and low) growth scenarios.

The plots suggest that QEW would not need to be widened to ten lanes by 2031 based on commuter peak congestion although widening may be required by 2033 for the high growth scenario or 2035 for the low growth scenario.

In summary, the transportation assessment in Central Area identified that:

- A new corridor would not divert enough traffic from QEW to significantly improve the performance of this facility compared to the Base Case and to alleviate the need to widen existing corridor. A significant share of the traffic using the new corridor would be drawn from parallel local roads such as Regional Road 20;
- Widening of QEW to eight lanes will incorporate HOV lanes, which support TDM and improved transit connections between Niagara Region and Hamilton and the GTA;
- In the long term, a new corridor will provide network flexibility and redundancy.

Exhibit 4-49: QEW Widening Needs – Hamilton to Niagara – Model Growth Rate Beyond 2031

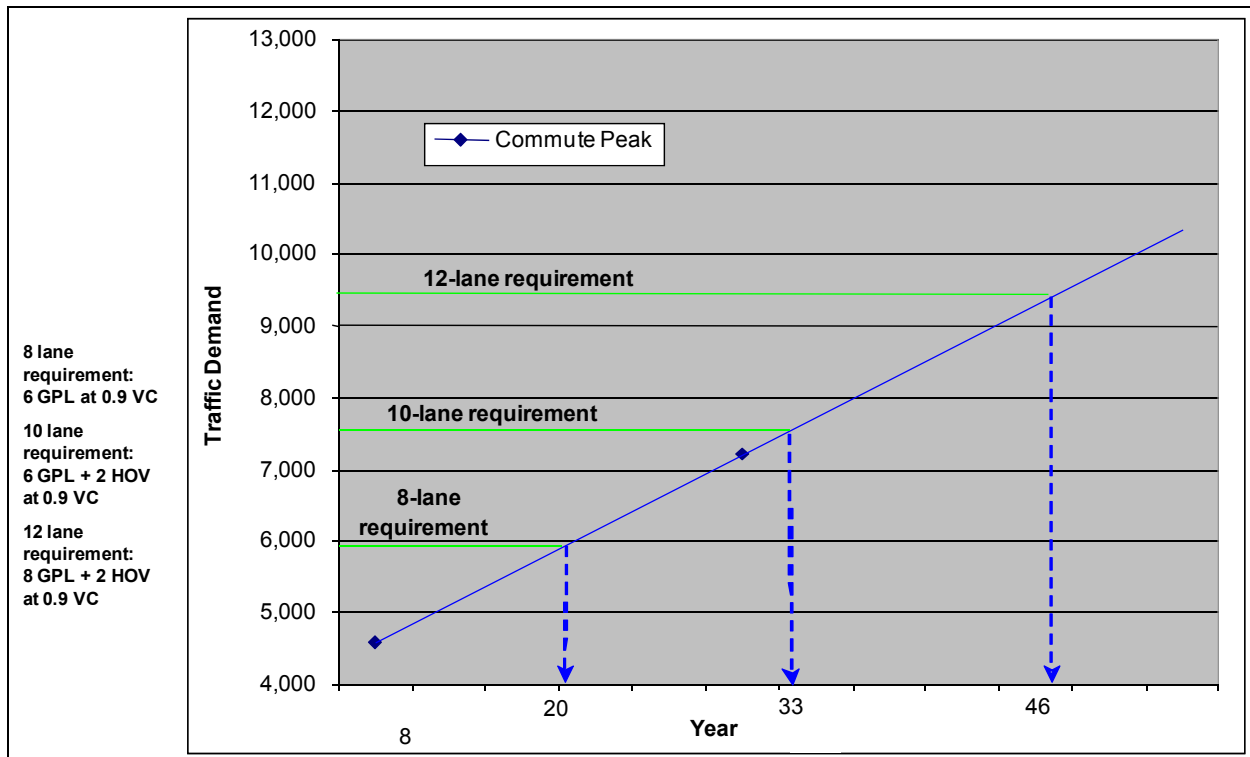
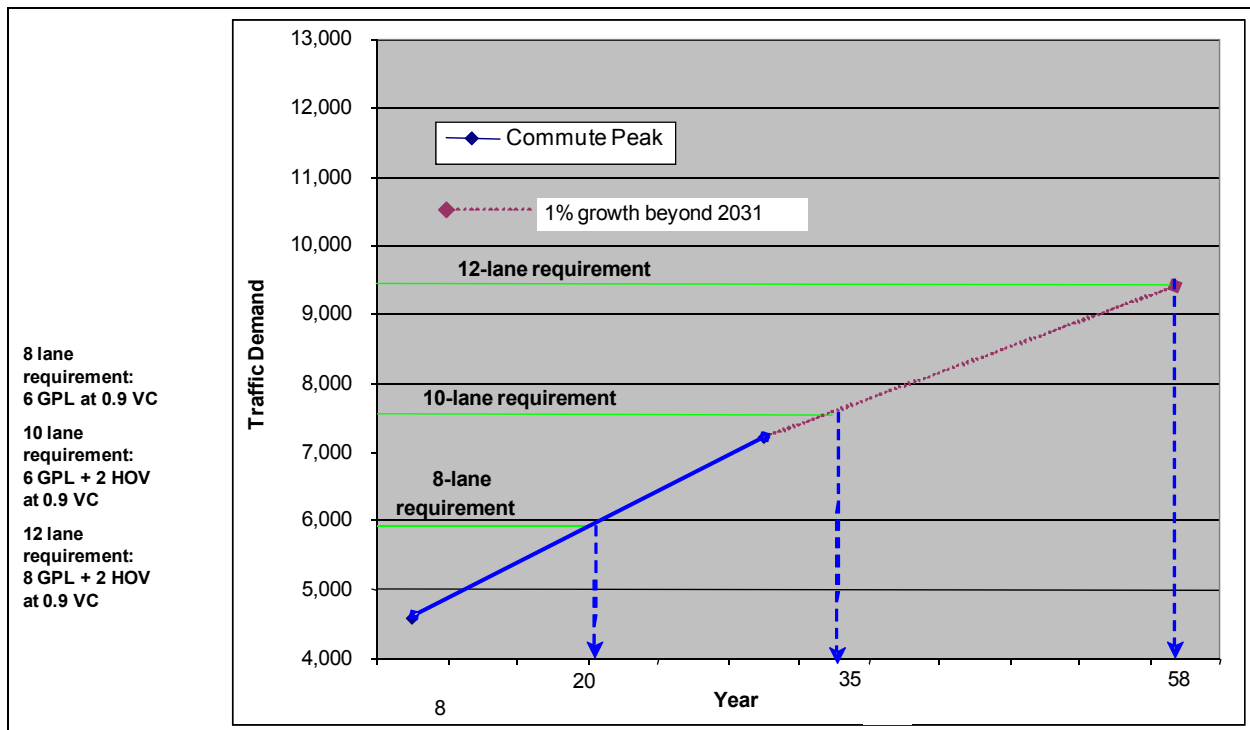


Exhibit 4-50: QEW Widening Needs – Hamilton to Niagara – 1% Annual Growth Rate Beyond 2031



Cost and Constructability









In the Central Area, widening of the QEW to eight lanes is sufficient to address the future travel demands to 2031, and therefore avoids the need for new freeway construction. In addition, widening of QEW to eight lanes avoids the substantial constructability and staging challenges at the QEW / Red Hill Valley interchange that would be required for a widening to ten lanes (as envisioned in Alternative 3-1).

At the Burlington Skyway, a widening to ten lanes would be required, but it is anticipated that a new Toronto-bound bridge would not be required, as the Toronto-bound HOV lane could be provided on the existing Niagara-bound structure. The Niagara-bound structure could then be widened (or a new structure constructed) to accommodate all Niagara-bound lanes, including HOV. The existing truss bridge would carry the four Toronto-bound GPLs.

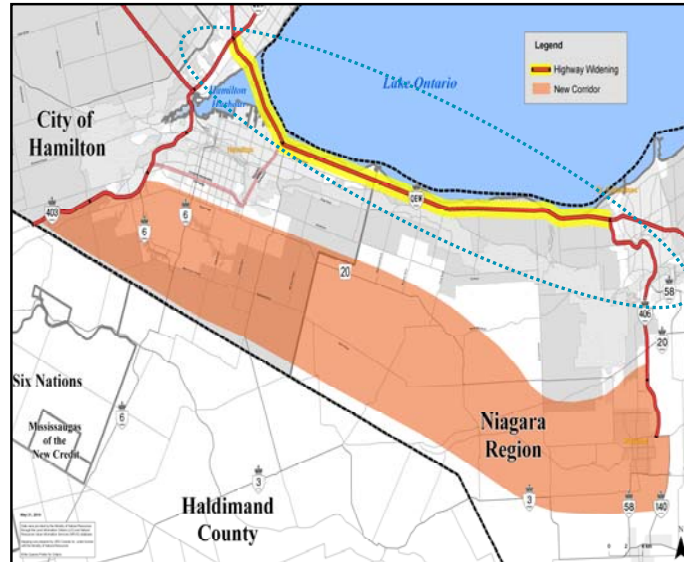
Should widening the existing Niagara-bound bridge not be preferable, a new Niagara-bound bridge could be constructed; in this case, the existing Niagara-bound bridge would carry the HOV lanes for both directions, and the four Niagara-bound GPLs would be carried by the new bridge.

**4.10.2.2 Overall Assessment**

**Exhibit 4–51: CENTRAL AREA – West Niagara to Stoney Creek / Hamilton Area**

CRITERIA	ALTERNATIVES		COMMENTS
	Widen	New	
COMMUNITY			<ul style="list-style-type: none"> <li>◆ Adding HOV lanes to QEW can generally be accommodated within the existing right-of-way.</li> <li>◆ A new corridor has the potential to fragment agricultural land and separate small communities.</li> </ul>
ECONOMY			<ul style="list-style-type: none"> <li>◆ Widening would not provide a redundant route to the border and does not directly serve the Hamilton Airport.</li> <li>◆ A new corridor does not serve some existing and future growth areas in Hamilton and Niagara.</li> </ul>
ENVIRONMENT			<ul style="list-style-type: none"> <li>◆ Minimal additional footprint impacts as the addition of HOV lanes on QEW can generally be accommodated within the existing right-of-way.</li> <li>◆ A new corridor is anticipated to impact numerous watercourses, provincially significant wetlands, significant woodlands, and the Greenbelt.</li> </ul>
TRANSPORTATION			<ul style="list-style-type: none"> <li>◆ A new corridor will not divert enough traffic from QEW to avoid the need to widen QEW.</li> <li>◆ Widening of QEW to 8 lanes will incorporate HOV lanes, which support TDM and transit.</li> <li>◆ Further widening of QEW to 10 lanes will not be required until beyond 2031.</li> <li>◆ In the long term, a new corridor will help to alleviate future congestion on QEW and provide network flexibility.</li> </ul>





***Widening of existing QEW is preferred. Continue to monitor growth needs for the long-term.***

In the Central Area, the over-arching consideration is that the anticipated growth in traffic volumes on this section of QEW can be accommodated with the addition of HOV lanes. Further expansion to ten lanes along this section of the QEW would not be required until beyond the planning horizon (2031). Much of the roadway platform for the HOV lanes is already constructed and can be accommodated generally within the existing ROW. In contrast, a new corridor through southern Niagara and south-eastern Hamilton would not divert enough traffic to avoid the need to widen QEW, and will have significant impacts to natural environmental features and agricultural communities. However, in the longer term, a new multi-use corridor may be desirable to divert future traffic growth in the developing areas in South Niagara and Hamilton and to provide network flexibility. Such a corridor could be used for a highway, high-speed rail, goods movement and / or transit. Therefore, widening of the QEW in the Central Area is the preferred alternative to the 2031 time period. It is also recommended that the ministry monitor growth patterns and transportation system performance to determine when a new transportation corridor between Hamilton and Welland will be required in the longer term. Planning for this new corridor will commence as determined by the monitoring.

#### **4.10.3 West Area**

##### **4.10.3.1 Assessment Findings**

In the West Area, two new corridor alternatives (connection from Highway 403 to 407 ETR and a connection from Highway 403 to Highway 401) as well as widening Highway 403 through Hamilton were examined. In addition, both alternatives included a widening of 407 ETR through Halton to provide two additional lanes, which can generally be accommodated within the existing ROW.

The original Group #3 and Group #4 alternatives also included a widening of QEW through Halton to ten lanes. However, a widening of this magnitude would require shifting of the adjacent service roads, which would result in major impacts to residences and businesses along this section of the QEW. As such, a widening of QEW to ten lanes was not contemplated in the West Area analysis described below. In future it is anticipated that the availability of enhanced high order transit service along the GO

Lakeshore corridor, and the completion of the QEW / Highway 403 interchange to provide access to / from the east is anticipated to result in better distribution of future travel demands between QEW and 407 ETR.

### Community

From a community perspective, the assessment initially examined the impacts associated with a widening of Highway 403 through Hamilton to eight lanes. The results of this assessment identified significant impacts to residences, businesses and community features, particularly for lands adjacent to Highway 403 between King Street and Main Street. Significant community impacts would also result from the widening and replacement of all of the structures along this section of Highway 403.

On the basis of the transportation analysis undertaken, the need has been identified to widen Highway 403 through Hamilton to ten lanes in order to satisfy the projected future travel demand by 2031. A widening of this scale would result in incrementally higher community impacts (severe property impacts and displacements) relative to the impacts of an eight-lane widening. Consideration would also be given to improving the existing alignment of Highway 403, which would further increase the magnitude of community impacts. In considering the alternative of widening Highway 403 through Hamilton in the long-term, any future expansion beyond ten lanes would require a core-collector freeway system, which would result in extensive negative community impacts.

From a community perspective, the impacts of both new corridor options are anticipated to be similar as they can avoid built up areas, although a 407 ETR connection has potential to be closer to some developed areas in the Waterdown area and has potential to impact Lake Medad Forest (a Niagara Escarpment Plan park). However, a new corridor connection to Highway 401 would still require widening of Highway 403 through Hamilton, and the associated impacts. These widening impacts are avoided with a new corridor connection to 407 ETR.

In summary, while both of the new corridor alternatives are anticipated to result in lower community impacts than a widening of Highway 403 through Hamilton, further analysis and assessment is required to better understand and compare the relative advantages and disadvantages of the transportation options and corridor alternatives in the Halton-Hamilton area. The scope of this work is described in more detail in **Chapter 5**.

### Environment

From an environment perspective, widening Highway 403 will impact the existing crossing of the Niagara Escarpment, as well as localized and significant impacts to important natural areas such as Cootes Paradise and the Royal Botanical Gardens. While the natural impacts associated with widening are severe, they are preferred relative to the impacts of either a new corridor connection to Highway 401 or 407 ETR.

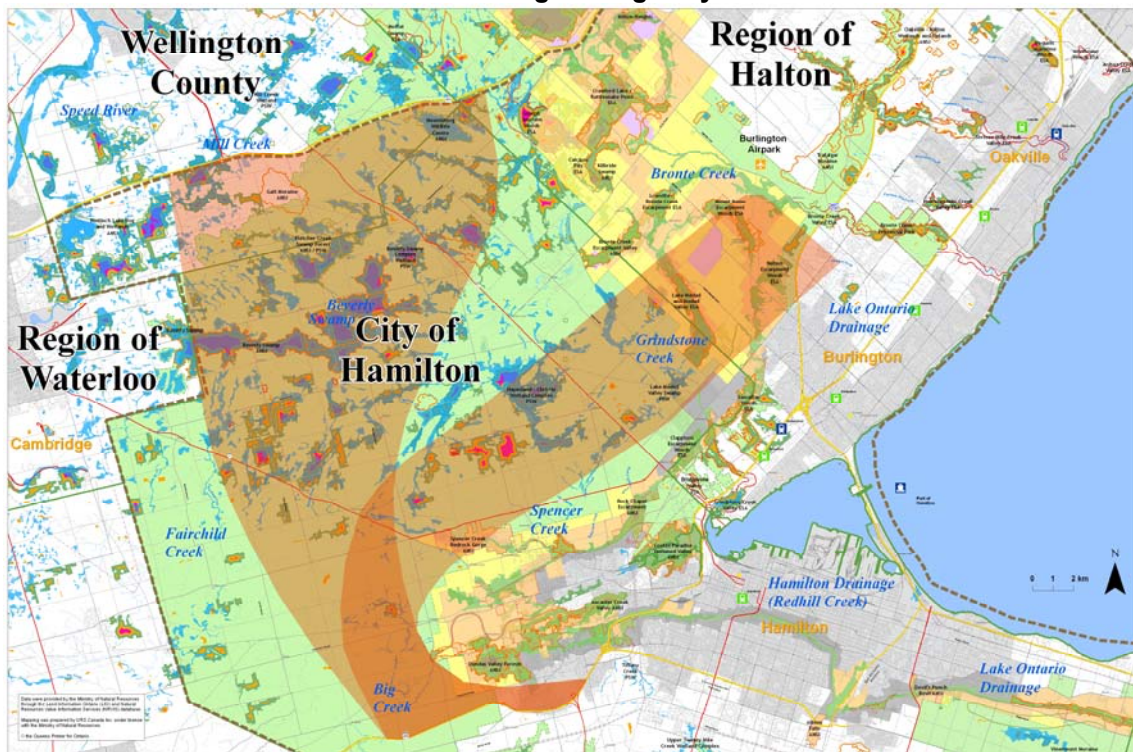
With respect to a new corridor connection to Highway 401, there is a higher density of significant natural features along this corridor such as the Beverly Swamp and its associated Provincially Significant Wetlands (Sheffield-Rockton and Fletcher Creek PSWs) (refer to **Exhibit 4-52**). These features contain a high diversity of habitat types and support a variety of flora and faunal Species at Risk as well as Provincially Significant Vegetation Communities. The density and extent of these wetlands across the corridor create significant routing challenges. These features coupled with the extensive area of groundwater discharge and groundwater / surface water interaction and associated ecological dependencies underscores the particular vulnerability of this area to impacts. Changes to the groundwater regime would be wide-reaching and could not be fully mitigated. These important wetland complexes are continuous though the

study area and fragmentation impacts to these important natural features may not be avoidable through route planning. A new corridor connection to Highway 401 would also require additional widening of Highway 401 and Highway 403 through the Niagara Escarpment.

A connection to 407 ETR requires a new crossing of the Niagara Escarpment, which is considered to be a significant environmental impact. However, the density and distribution of natural features within this corridor allows for more opportunity to avoid or mitigate removal and / or fragmentation of large natural areas. Although some features will be impacted, the extent of these impacts can be minimized through careful routing. While areas of groundwater discharge and groundwater / surface water interaction are present in a 407 ETR connection corridor, these areas are more discrete relative to a Highway 401 connection and it is anticipated that there are greater opportunities to minimize the extent of potential impacts to groundwater-dependent ecological communities.

In summary, widening of Highway 403 through Hamilton is anticipated to result in lower environmental impacts than either of the new corridor alternatives. Further analysis and assessment is required to better understand and compare the relative advantages and disadvantages of the transportation options and corridor alternatives in the Halton-Hamilton area. The scope of this work is described in more detail in **Chapter 5**.

**Exhibit 4-52: Natural Features along the Highway 401 and 407 ETR Corridors**



### Economy

The widening alternative in the West Area provides relief at significant bottlenecks in Hamilton, and can provide increased capacity to existing and future employment areas such as Downtown Hamilton. Generally, the TREDIS analysis shows higher economic benefit from widening alternatives due to the reduction of congestion and increased service to existing and future labour markets. This alternative more directly supports

economic growth in the Downtown Hamilton Urban Growth Centre than a potential new corridor.

However, this alternative does not provide a new connection to growth areas in Halton Region and does not relieve congestion affecting goods movement in the west GTA. Although widening of Highway 403 is possible, the disruption to businesses and the area economy would be substantial. Further, the widening alternative will not provide long-term economic benefit, as transportation modelling indicates additional capacity would be required on Highway 403 beyond 2031. Therefore, the widening may only provide a temporary economic benefit.

From an economic perspective, a 407 ETR connection better serves the population growth areas of Hamilton and Halton relative to a Highway 401 connection as it provides a more direct connection for the movement of people and goods to the major employment areas.

A 407 ETR connection provides relief to congested goods movement corridors (QEW / Burlington Skyway / Highway 403) and, importantly, connects the Hamilton AEGD to west GTA growth areas in Halton. It also increases labour market access to growth areas. This potential new corridor is anticipated to be well used and would support goods movement between the west GTA and Hamilton. However, both the Highway 401 and 407 ETR corridors are almost entirely through the Greenbelt where policies prohibit development, and will likely not provide extensive opportunities to locate goods movement related industries along the new corridor. This link is therefore a key economic connection, but not one anticipated to “open up” significant new employment areas along the corridor.

In summary while all of the alternatives are anticipated to provide economic benefits to various elements of the study area economy, further analysis and assessment is required to better understand and compare the relative advantages and disadvantages of the transportation options and corridor alternatives in the Halton-Hamilton area. The scope of this work is described in more detail in **Chapter 5**.

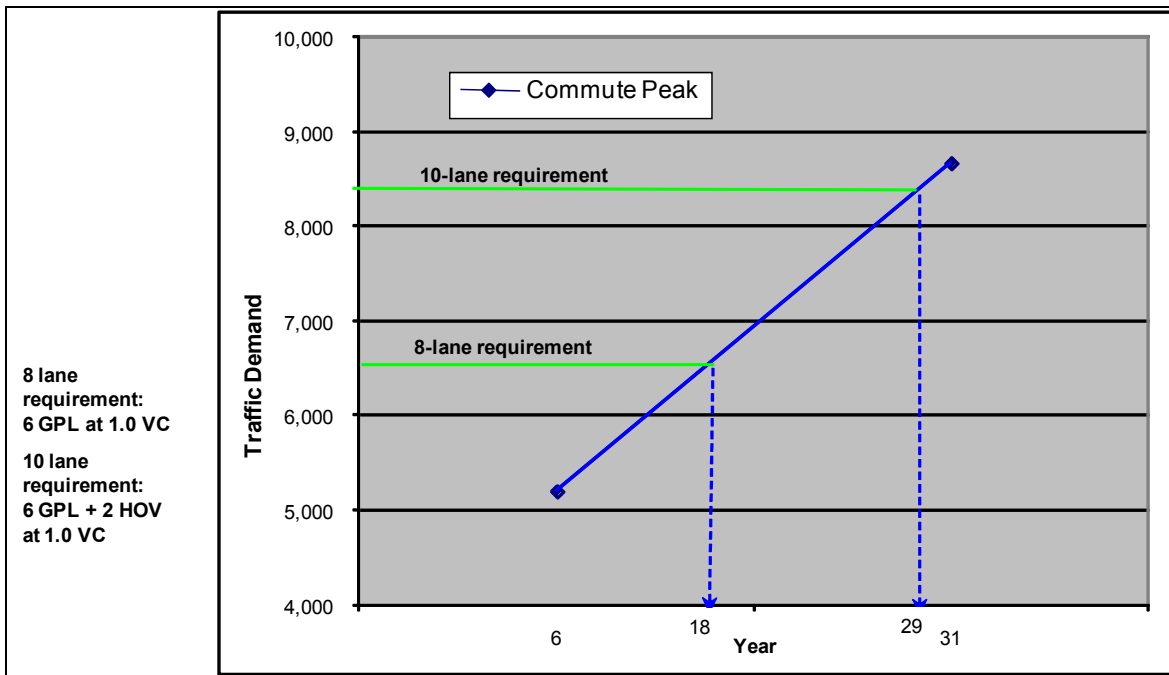
#### Transportation

For the west portion of the study area, the primary capacity and operational deficiencies occur on the Burlington Skyway section of the QEW and throughout Halton Region, and on Highway 403 through Hamilton. The assessment of the various corridor alternatives found that the Group #4 alternatives that include a new corridor between Highway 403 and Highway 401 or 407 ETR work better at addressing capacity deficiencies on Highway 403 through Hamilton than Alternative 3-1, which involves widening of Highway 403 through Hamilton.

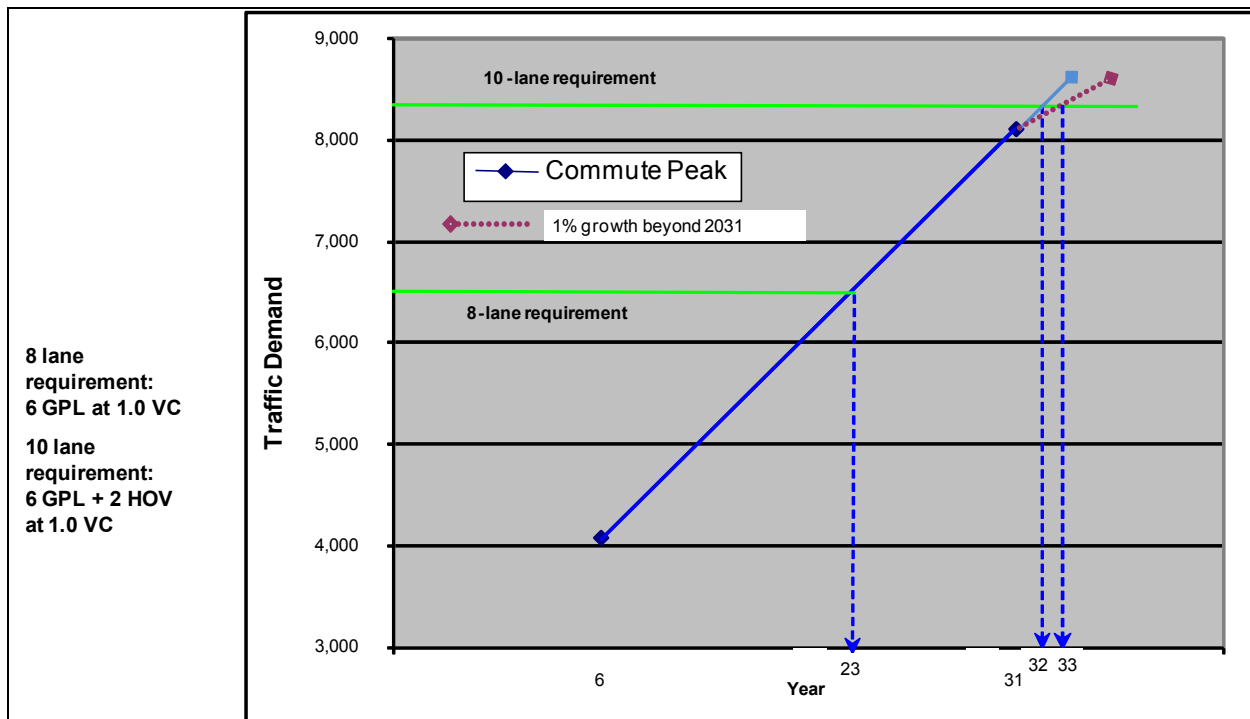
Similar to the approach used for the QEW through the East and Central Areas, Highway 403 in the West Area was examined to determine the timeframe when widening would be required to 2031 and beyond if a new corridor was not provided. **Exhibit 4-53** and **Exhibit 4-54** show the timeline forecast for widening of Highway 403, just west of Highway 6 and just north of the Lincoln M. Alexander Parkway under the same two longer term (high and low) growth scenarios.



**Exhibit 4-53: Highway 403 Widening Needs through Hamilton – West of Highway 6**



**Exhibit 4-54: Highway 403 Widening Needs through Hamilton – North of the Lincoln M. Alexander Parkway**



As demonstrated above, Highway 403 widening to eight lanes, would be required by 2018 through the constrained area west of Highway 6, and by 2023 on the existing escarpment crossing, based on commuter travel demands. Additional widening to ten lanes would be required to accommodate commuter demands by 2029 west of Highway 6, and the escarpment crossing would reach this threshold by 2032-2033, just beyond

the 2031 planning horizon. This analysis reveals that the widening original envisioned under Alternative 3-1, would not have sufficient longevity to eliminate the need for additional, more intrusive widening improvements within the 2031 planning horizon, even with significant investments in transit infrastructure in the Hamilton area.

The transportation assessment in West Area identified that:

- There is reserve capacity on 407 ETR under the Base Case Scenario. This will result in a rebalancing of traffic between the QEW and 407 ETR over time<sup>9</sup>, provided that routes used to access 407 ETR are not congested;
- A new corridor connecting to 407 ETR will divert a significant amount of traffic from Highway 403 in Hamilton and from the Burlington Skyway, by providing an alternative route;
- Without a new corridor, widening of Highway 403 through Hamilton to ten lanes is forecast to be required by 2031; and
- Beyond 2031 the ability to provide additional capacity in the Highway 403 corridor would be severely limited.

In summary, from a transportation perspective, a new corridor provides a long term solution that avoids the need for further widening of Highway 403 through the Hamilton area. However, in the short term, operational improvements to the Highway 403 corridor should be considered to improve the lane balance and provide a consistent six-lane cross-section through the King Street / Main Street interchanges and on the current escarpment crossing.

### **New Corridor Options**

The study team tested two different corridor options in the west end – one with a connection to Highway 401 and the other connecting to 407 ETR. These termination options represent the main differences between Alternatives 4-3 and 4-4.

To assess the connection alternatives, two hybrid networks were created utilizing the preferred transportation options for the East and Central Areas, combined with one of the respective West Area connection alternatives. To account for the potential benefits of integrating the NGTA corridor with the GTAW corridor, this refined analysis was undertaken assuming that the GTAW 4-3 alternative (featuring a connection to Highway 401 west of Milton) was in place.

The screenline evaluation results for the Hybrid network scenario are summarized in **Table 4-37**, for each of the new corridor termination alternatives. The results show that a connection to 407 ETR performs better than the connection to Highway 401 on two of the four key screenlines within the West Area, while the connection to Highway 401 performs better than the connection to 407 ETR on the Bronte Creek screenline. However, further to this, it should be noted that the Bronte Creek screenline does not extend to Highway 401, and as such, does not reflect the diversion of traffic volumes from QEW to Highway 401 east of Milton that result from the connection to Highway 401. When only inter-regional facilities are compared, the two options have very similar results, although the connection to Highway 401 continues to show a slight improvement on the Bronte Creek screenline. There is minimal change in the performance of the screenlines located in the East and Central sections of the study area, indicating that

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<sup>9</sup> Increased use of 407 ETR between Highway 401 and Highway 404 over the past few years indicates an increased willingness to use this facility once development occurs around the facility and congestion increases on parallel facilities.

there is no significant difference between the two connection options beyond the west portion of the study area.

**Table 4–37: Screenline Assessment of Connection Options – NGTA Hybrid + GTAW 4-3**

2031 PM Peak Hour		All Facilities		Inter-Regional Facilities		Summer Peak – Inter-Regional Facilities	
Subarea	Screenline	NGTA Hybrid (407)	NGTA Hybrid (401)	NGTA Hybrid (407)	NGTA Hybrid (401)	NGTA Hybrid (407)	NGTA Hybrid (401)
West	West of Highway 6 (WB)	0.84	0.89	<b>0.93</b>	<b>0.94</b>	<b>0.99</b>	<b>1.01</b>
	Burlington Skyway (EB)	<b>0.93</b>	<b>0.93</b>	<b>1.00</b>	<b>1.00</b>	<b>1.11</b>	<b>1.11</b>
	Highway 403 West (WB)	0.60	0.63	0.60	0.63	0.64	0.67
	Bronte Creek (WB)	<b>0.99</b>	<b>0.94</b>	<b>1.06</b>	<b>1.01</b>	<b>1.16</b>	<b>1.11</b>
	South of Lincoln M. Alexander Parkway (WB)	0.55	0.55	-	-	-	-
Central	Hamilton East Boundary North (EB)	0.69	0.68	0.83	0.83	<b>0.92</b>	<b>0.92</b>
	Hamilton East Boundary South (EB)	0.40	0.42	-	-	-	-
East	Welland Canal North (WB)	0.89	0.89	<b>0.91</b>	<b>0.91</b>	<b>1.10</b>	<b>1.10</b>
	Welland Canal South (WB)	0.57	0.57	0.58	0.58	0.70	0.70

XX – V / C ratio greater than 0.9 (LOS E or F)

**Tables 4-38 and 4-39** summarize the evaluation results for the people and goods movement criteria for the Hybrid alternative. The evaluation results have been shown on an overall NGTA study area basis and have also been summarized for the West, Central, and East Areas to highlight any localized differences in the performance of the two alternatives.

When the results of 407 ETR and Highway 401 connections were compared the following observations noted:

- The connection to 407 ETR results in better overall performance in terms for the percentage of inter-regional auto and truck travel operating at LOS D or better.
- On a facility specific basis, the connection to 407 ETR reduces the total auto vehicle-kilometres of travel on Highway 403 (through Hamilton) by about 8%; on the QEW crossing the Burlington Skyway by less than 1%. A 407 ETR connection increases the auto travel on QEW through Halton Region by 1%. These three key areas represent the most serious deficiency areas on the inter-regional road network in the west portion of the NGTA study area.
- A connection to 407 ETR results in lower auto and truck delays in the inter-regional road network compared to a Highway 401 connection. The NGTA corridor connection to 407 ETR would draw the equivalent of one freeway lane of traffic from

- Highway 403 corridor while the connection to Highway 401 only would draw half of a freeway lane of traffic from Highway 403.
- This reduction in traffic provides additional congestion relief in the western portion of the NGTA study area compared to the connection to Highway 401. PM peak period auto delay using the inter-regional road network in the western portion of the NGTA study area is approximately 800 veh-hours (6%) lower with a connection to 407 ETR than for a Highway 401 connection. This represents approximately \$52 million<sup>10</sup> in annual travel time savings for longer distance commuter traffic alone.
  - PM peak period truck delay using the inter-regional road network would be reduced by almost 250 veh-hours (7%) with a connection to 407 ETR due to the benefits of lower auto volumes on existing highways such as QEW and Highway 403. This represents approximately \$38 million<sup>11</sup> in annual travel time savings for commercial vehicles compared to a Highway 401 connection.
  - A Highway 401 connection performs marginally better than a 407 ETR connection in terms of benefiting travel on local roads. The percentage of travel on the local roadway network operating at LOS D or better is marginally better for auto trips and as a result, auto delays on the local road network are also reduced by about 8% compared to a 407 ETR connection. This reduction is primarily related to local trips being attracted off of parallel north-south municipal roads through the Flamborough area as a result of the new inter-regional facility.
  - Highways 6 and 8 and the connection to Highway 401 also results in slight improvement to the percentage of inter-regional auto and truck travel using local roads, which reflects some of the long distance traffic being attracted from parallel north-south roads (i.e., Millgrove Sideroad, Brock Road and Centre Road).
  - The Central and East Areas of the NGTA study area do not see an appreciable difference in performance results between the two corridor connection alternatives, which indicates the lack of demand for a new corridor to Welland.
  - The NGTA corridor connection to 407 ETR provides the best support for new inter-regional transit services by providing a significant length of new corridor (that can be used for new transit services) combined with the highest potential demand between urban growth centres directly served by the corridor. It also allows for future integration with the planned 407 ETR Transitway, which will better promote opportunities to introduce new inter-regional transit services and carpooling in the NGTA corridor over the longer term.

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<sup>10</sup> Based on 1.2 veh occupancy, 10% of daily demand in the PM peak, 260 work days per year, and an average value of time of \$21 / hr

<sup>11</sup> Based on 10% of daily demand during PM Peak, 260 weekdays per year, and an average value of time of \$59 / hr for commercial vehicles

**Table 4–38: 2031 PM Peak Hour Movement of People Assessment for NGTA Hybrid + GTAW 4-3**

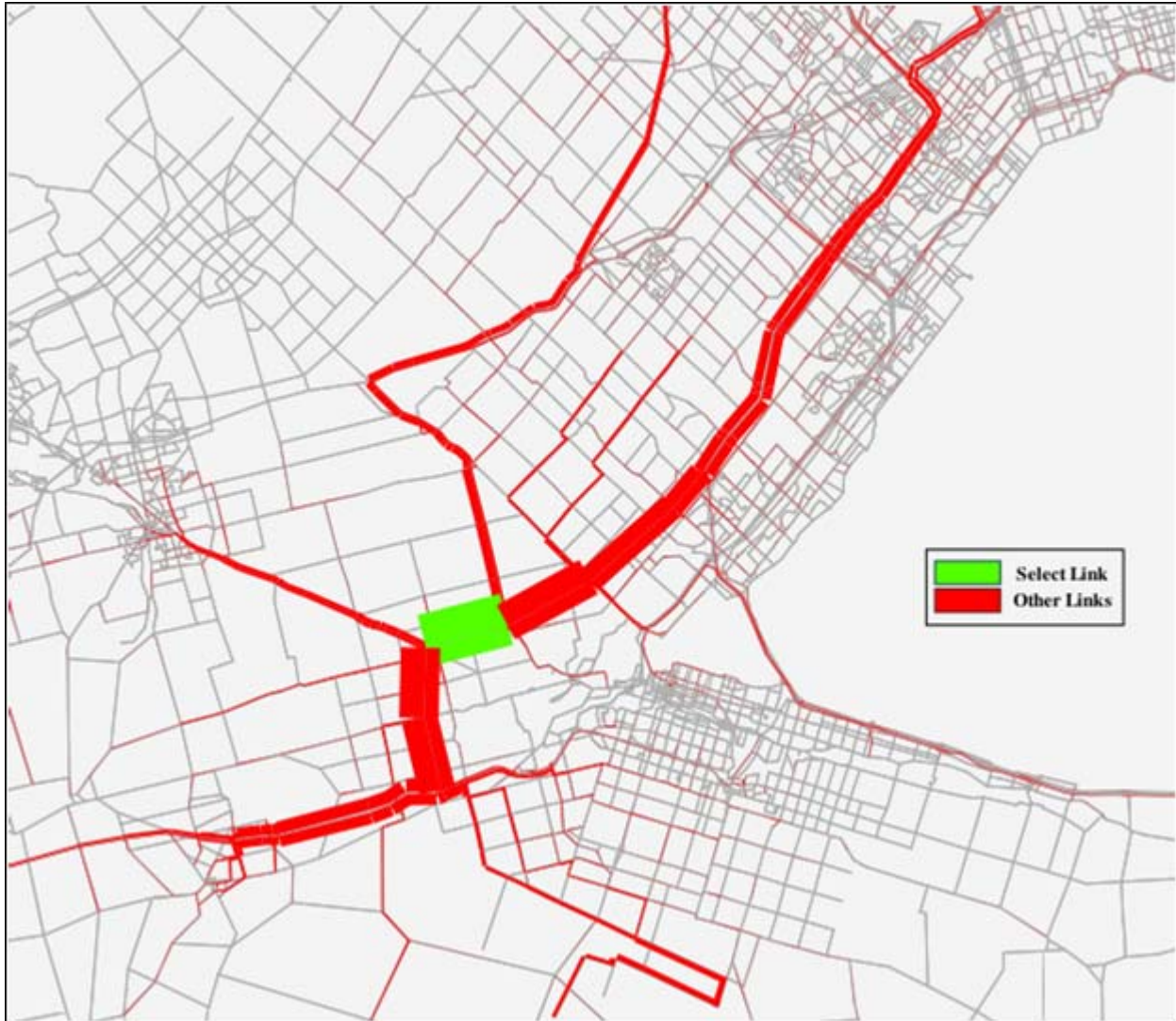
Criteria	NGTA Study Area		West Subarea		Central Subarea		East Subarea	
	NGTA Hybrid (407)	NGTA Hybrid (401)	NGTA Hybrid (407)	NGTA Hybrid (401)	NGTA Hybrid (407)	NGTA Hybrid (401)	NGTA Hybrid (407)	NGTA Hybrid (401)
% of Inter-regional roadway network better than LOS D (auto veh-km)	42%	40%	40%	38%	23%	22%	73%	71%
% of local roadway network better than LOS D (auto veh-km)	74%	75%	63%	64%	81%	82%	90%	90%
Auto delay on inter-regional roadway network (auto veh-hr)	19,490	20,341	13,039	13,830	4,346	4,414	2,105	2,097
Auto delay on local roadway network (auto veh-hr)	23,644	22,646	13,483	12,427	7,913	7,962	2,248	2,257
% of Inter-regional auto travel using local roads	42%	41%	35%	34%	61%	62%	33%	33%

Table 4–39: 2031 PM Peak Hour Goods Movement Assessment - NGTA Hybrid + GTAW 4-3

Criteria	NGTA Study Area		West Subarea		Central Subarea		East Subarea	
	NGTA Hybrid (407)	NGTA Hybrid (401)	NGTA Hybrid (407)	NGTA Hybrid (401)	NGTA Hybrid (407)	NGTA Hybrid (401)	NGTA Hybrid (407)	NGTA Hybrid (401)
% of Inter-regional roadway network better than LOS D (auto veh-km)	34%	32%	32%	29%	13%	14%	72%	70%
Truck delay on inter-regional roadway network (auto veh-hr)	4,448	4,698	3,349	3,594	809	817	289	287
% of Inter-regional Truck travel using local roads	21%	21%	14%	13%	45%	46%	15%	15%

A connection to Highway 401 would primarily serve traffic destined to the northern portion of Halton Region and Peel Regions and to Guelph, whereas a connection to 407 ETR serves traffic destined into the growing urban areas of Burlington, Oakville, Mississauga and into Toronto. This travel pattern is shown in **Exhibits 4-55** and **4-56** through a select link plot that shows where the trips using the corridor are coming from and going to. The width of the band on each of the network links is proportional to the amount of traffic on that link that will pass through the “select link” which is shown as green.

**Exhibit 4–55: Select Link of the Hybrid Alternative with Connection to 407 ETR**

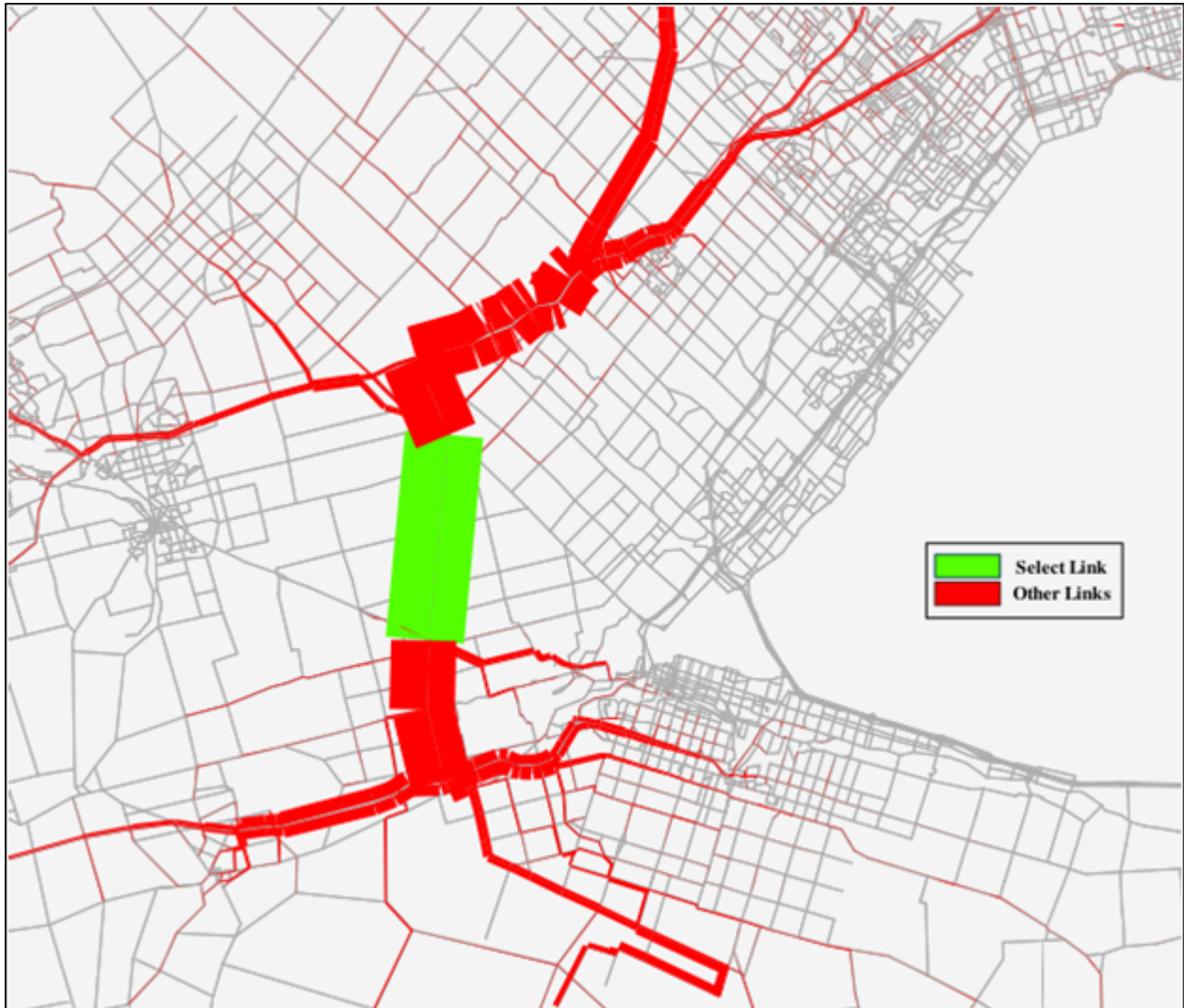


A connection to Highway 401 would result in some congestion relief provided to the QEW through Halton Region with reduced auto delays compared to the connection to 407 ETR. However, significant increases in the delays on Highway 401 are anticipated for a Highway 401 connection compared to a 407 ETR connection. As a result, additional widening of Highway 401 beyond ten lanes would be required between the NGTA connection and Milton, which also impacts the existing escarpment crossing.

A new corridor connection between Highway 403 west of Hamilton and Highway 401 would attract a similar amount of truck use during the PM peak as a connection between

Highway 403 and 407 ETR. Increased congestion in the Halton area by 2031 will attract more trucks to use 407 ETR during peak periods than currently. This trend is already beginning to appear on the central portion of 407 ETR through Peel and York Region today.

**Exhibit 4–56: Select Link of the Hybrid Alternative with Connection to Highway 401**



Cost and Constructability

In the West Area, a new corridor connecting Highway 403 to 407 ETR would require a new crossing of the Niagara Escarpment near Waterdown, which may require special construction techniques (e.g., a tunnel) to mitigate impacts to the feature.

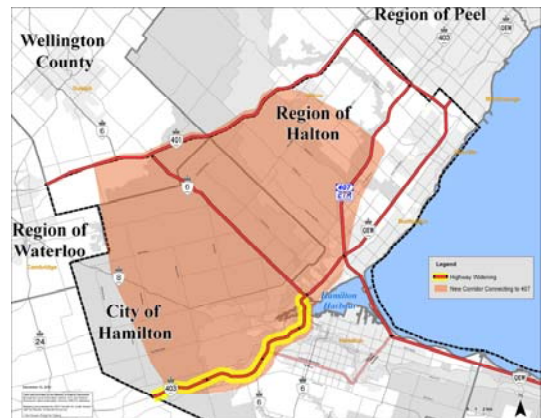
However, a new corridor connecting Highway 403 to 407 ETR avoids the need to widen Highway 403 through Hamilton to ten lanes, which would have significant construction and staging challenges along the Highway 403 corridor, particularly at the Highway 403 / Highway 6 North interchange, Cootes Paradise, the King / Main / Aberdeen interchanges, and at the existing Niagara Escarpment crossing.



4.10.3.2 Overall Assessment

Exhibit 4-57: WEST AREA – Hamilton to Burlington / Oakville

CRITERIA	ALTERNATIVES			COMMENTS
	Widening Highway 403	New Corridor to Highway 401	New Corridor to 407 ETR	
COMMUNITY				<ul style="list-style-type: none"> <li>Widening of Highway 403 through Hamilton will result in major impacts to residences, businesses and community features.</li> <li>A new corridor to Highway 401 and 407 ETR will result in similar impacts to rural and agricultural communities. The 407 ETR corridor will be closer to some developed areas in the Waterdown area.</li> <li>The Highway 401 corridor requires widening and associated community impacts along Highway 403, whereas a 407 ETR connection avoids widening in the constrained area of Highway 403.</li> </ul>
ECONOMY				<ul style="list-style-type: none"> <li>Widening Highway 403 provides capacity to key employment growth areas and HIA. However, widening does not provide a new connection to growth areas in Halton Region and does not relieve congestion affecting goods movement in the west GTA. Disruption to businesses with widening would be substantial and widening will not provide a long-term economic benefit.</li> <li>A 407 ETR connection better serves the major population growth areas of Hamilton and Halton relative to a Highway 401 connection.</li> <li>A 407 ETR connection provides relief to congested goods movement corridors (QEW / Burlington Skyway / Highway 403).</li> </ul>
ENVIRONMENT				<ul style="list-style-type: none"> <li>Widening of Highway 403 will impact an existing crossing of the Niagara Escarpment, as well as important features such as Cootes Paradise and the Royal Botanical Gardens. While localized, these impacts are severe.</li> <li>There is a higher density of continuous significant natural features along the Highway 401 corridor that can not be avoided such as the Beverly Swamp, Sheffield-Rockton and Fletcher Creek PSWs. Changes to the groundwater regime would be wide-reaching and could not be fully mitigated.</li> <li>A new corridor connection to Highway 401 would require additional widening of the Highway 401 and Highway 403 cuts through the Niagara Escarpment.</li> <li>A connection to 407 ETR requires a new crossing of the Niagara Escarpment. However, this corridor presents opportunities to avoid and / or mitigate impacts to natural areas. Mitigation measures such as bridges or tunneling can be examined to minimize impacts to the Niagara Escarpment.</li> </ul>
TRANSPORTATION				<ul style="list-style-type: none"> <li>Without a new corridor, widening Highway 403 through Hamilton to ten lanes will be required within the planning horizon.</li> <li>Beyond 2031, the ability to provide additional capacity in the Highway 403 corridor would be severely limited.</li> <li>A new corridor connecting to 407 ETR diverts nearly twice as much traffic away from the congested Highway 403 corridor as a new corridor connecting to Highway 401.</li> </ul>



In summary, all of the alternatives will address the future transportation needs to the 2031 planning horizon. However, both of the new corridor alternatives provide opportunities to divert future travel demands away from the Highway 403 corridor through Hamilton and may provide a better long term strategy in the West Area. Of the two new corridor alternatives, it is anticipated that the connection to the 407 ETR will divert more traffic away from Highway 403 through Hamilton than the connection to Highway 401, but the connection to Highway 401 may provide greater benefits in terms of reducing congestion on the local road network in the West Area. In terms of community and environmental considerations, while a widening of Highway 403 through Hamilton is anticipated to result in lower environmental impacts than either of the new corridor alternatives, the new corridor alternatives are anticipated to result in lower community impacts than a widening of Highway 403 through Hamilton.

Given the demonstrated need for additional roadway capacity, the complexity and inter-relationship of the environmental, social, and economic factors in this area and in response to the stakeholder feedback received during and subsequent to the fourth round of PICs regarding these factors, it has been determined that more focused analysis and assessment should be undertaken to better understand and compare the relative advantages and disadvantages of the transportation options and corridor alternatives in the Halton-Hamilton area. The scope of this work is described in more detail in **Chapter 5**.

#### **4.11 THE HYBRID ALTERNATIVE**

Based on the high level assessment of Group #3 and #4 alternatives, there was no clear solution. Through the geographic specific assessment described in **Section 4.10**, it was possible to identify the most desirable elements from the Group #3 and #4 alternatives in the East Area and the Central Area. In the West Area, further analysis and assessment is recommended to better understand and compare the relative advantages and disadvantages of the transportation options and corridor alternatives in the Halton-Hamilton area. The scope of this work is described in more detail in **Chapter 5**.

After arriving at the Hybrid alternative, the study team 'circled back' to compare the Hybrid alternative to the original Group #3 and Group #4 alternatives in the East and Central areas (refer to **Tables 4-40** and **4-41**). The findings illustrated in these tables suggest that from an overall perspective the Hybrid alternative is preferred to each of the Group #3 and Group #4 alternatives in the Central and East Areas. By incorporating the best elements of the Group #3 and Group #4 alternatives within each of the geographic sub areas, the Hybrid alternative represents the best possible balance of benefits and impacts from a triple bottom line perspective.

Table 4-40: Comparison of Hybrid to Group #3 and Group #4 Alternatives – East Area

CRITERIA	ALTERNATIVES						COMMENTS
	3-1	4-2	4-3	4-4	4-5	Hybrid	
COMMUNITY							<ul style="list-style-type: none"> <li>Alternative 3-1 requires a widening of QEW to 8 lanes through St. Catharines that will result in significant community impacts with well over 100 residents displaced and major impacts to a number of businesses and industrial areas.</li> <li>All of the Group #4 alternatives and the Hybrid alternative avoid these impacts as a further widening of QEW through St. Catharines is not required beyond the 6 lanes that are currently being constructed.</li> </ul>
ECONOMY							<ul style="list-style-type: none"> <li>Alternative 3-1 provides significant additional capacity on the QEW through St. Catharines which serves the numerous businesses adjacent to the highway, but does not provide an alternate connection to the US border or a direct connection between the Gateway Economic Centre in the Welland area and the Gateway Economic Zone along the Niagara River that have been identified in the Growth Plan.</li> <li>All of the Group #4 alternatives provide an alternate connection to the US border and a direct connection between the Gateway Economic Centre in the Welland area and the Gateway Economic Zone along the Niagara River that have been identified in the Growth Plan.</li> </ul>
ENVIRONMENT							<ul style="list-style-type: none"> <li>Alternative 3-1 requires a widening of QEW to 8 lanes through the existing Niagara Escarpment crossing in the vicinity of Highway 405. Alternative 4-5 requires a widening of Highway 406 to 6 lanes through the existing Niagara Escarpment crossing south of St. Catharines. Impacts associated with the highway widening will tend to be edge encroachment into adjacent natural areas and previously disturbed lands and therefore are considered preferable from a natural environmental perspective.</li> <li>The Group #4 alternatives and the Hybrid alternative result in similar environmental impacts associated with a new corridor in Niagara. These impacts include potential encroachment or removal of wetland and forest features, many of which MNR considers to be significant wildlife habitat. These features tend to be relatively small and discrete (i.e. not contiguous over broad areas) which may provide some opportunity for careful routing to avoid significant impacts to a broad area.</li> </ul>
TRANSPORTATION							<ul style="list-style-type: none"> <li>Alternative 3-1 provides sufficient capacity on the QEW through St. Catharines to address future travel demands to 2031 and beyond, but does not provide alternate routing to the US border or the network flexibility associated with a new corridor between Highway 406 and QEW in the Welland area.</li> <li>All of the Group #4 alternatives and the Hybrid alternative provide alternate routing to the US border and network flexibility and can divert sufficient future traffic volumes from the QEW through St. Catharines to avoid the need to widen QEW until beyond 2031.</li> </ul>
SUMMARY							The Hybrid alternative and Alternatives 4-2, 4-3 and 4-4 are similar in the East area. Overall, these alternatives are preferred to Alternative 3-1 because they avoid the significant community associated with Alternative 3-1 which requires widening QEW through St. Catharines to 8 lanes. In addition, Alternative 3-1 does not provide alternate routing to the US border, network flexibility and a direct connection between the Gateway Economic Centre (Welland) and the Gateway Economic Zone (along the Niagara River). Alternative 4-5 is slightly less preferred to the Hybrid alternative and the other Group #4 alternatives due to the environmental impacts associated with a widening of the existing crossing of Highway 406 through the Niagara Escarpment.



Table 4-41: Comparison of Hybrid to Group #3 and Group #4 Alternatives – Central Area

CRITERIA	ALTERNATIVES						COMMENTS
	3-1	4-2	4-3	4-4	4-5	Hybrid	
COMMUNITY							<ul style="list-style-type: none"> <li>Alternative 3-1 requires a significant widening of QEW to 10 lanes in the Grimsby area that will result in impacts to adjacent residences and businesses along QEW. However, Alternative 3-1 does not result in impacts to rural communities and agricultural lands that are associated with a new corridor in central and southern Niagara.</li> <li>Alternative 4-5 has a higher potential to impact tender fruit lands with a new corridor connection in the Grimsby area.</li> <li>Alternatives 4-2, 4-3 and 4-4 result in significant impacts to rural communities and agricultural lands in central and southern Niagara, but don't require a widening of QEW through Niagara and therefore don't result in the impacts to adjacent residential and commercial properties associated with Alternative 3-1.</li> <li>Both Alternative 4-5 and the Hybrid alternative require a widening of QEW to 8 lanes, which can generally be accommodated within the existing right-of-way and are therefore anticipated to result in minor impacts to adjacent lands. Neither alternative includes a new corridor in the Central area, and as such, impacts to rural communities and agricultural lands are avoided by both alternatives.</li> </ul>
ECONOMY							<ul style="list-style-type: none"> <li>Alternative 3-1 provides significant additional capacity on the QEW through Niagara which serves the numerous businesses adjacent to the highway, but does not provide a direct connection between the Hamilton Airport Employment Growth District (AEGD) and the US border and does not support the southern Niagara economic development objectives.</li> <li>All of the Group #4 alternatives with the exception of Alternative 4-5 provide a direct connection between the Hamilton AEGD and the US border, and support the economic development growth objectives associated with south Niagara, but do not provide any additional capacity on the QEW through Niagara.</li> <li>Both Alternative 4-5 and the Hybrid alternative provide some additional capacity on the QEW through Niagara, but not to the same extent as is provided by Alternative 3-1.</li> </ul>
ENVIRONMENT							<ul style="list-style-type: none"> <li>Alternatives 3-1 and the Hybrid alternative avoid the environmental impacts associated with a new corridor through east Hamilton and southern and central Niagara. Alternative 4-5 also avoids a new corridor through Niagara however, it includes a new crossing of the Niagara Escarpment near Grimsby (for a total of two new crossings with this alternative), therefore this alternative is less preferred than the Hybrid.</li> <li>Alternative 3-1 will result in localized impacts to natural features adjacent to QEW in the Grimsby area. The key issues and constraints associated with widening the QEW in Alternative 3-1 include Van Wagners Marsh Provincially Significant Wetland (PSW) and the Red Hill Creek (Red Hill Valley Parkway interchange). Significant local impacts are anticipated in this area, however, this is still preferred over impacts of a new crossing of the escarpment associated with Alternative 4-5.</li> <li>The Hybrid requires less widening of the QEW through the Red Hill Valley Parkway interchange, therefore it is anticipated that impacts to Van Wagners PSW and the Red Hill Creek would be less than Alternative 3-1.</li> </ul>
TRANSPORTATION							<ul style="list-style-type: none"> <li>Alternative 3-1 provides sufficient capacity on the QEW to address future travel demands to 2031 and beyond.</li> <li>Alternatives 4-2, 4-3 and 4-4 do not provide sufficient capacity on QEW to 2031, and it is not anticipated that sufficient traffic volumes will be diverted to the new corridor in these alternatives to avoid the need to widen QEW by 2031.</li> <li>Alternative 4-5 and the Hybrid alternative provide sufficient capacity on QEW to address the future travel demands by 2031.</li> </ul>
SUMMARY							<p>The Hybrid alternative and Alternative 4-5 are similar in the Central area, however Alternative 4-5 requires a crossing of the Niagara Escarpment in the Grimsby area and is therefore less preferred. The Hybrid alternative is preferred to the other alternatives in the Central area as it provides sufficient transportation capacity along the QEW to address the travel demands in 2031, with minor anticipated impacts to communities adjacent to QEW and no impacts to rural communities, agricultural lands and environmental features in central and southern Niagara. While Alternative 3-1 is slightly preferred to the Hybrid alternative from an economic perspective as a result of the significant additional capacity provided on the QEW in the Grimsby area, this benefit is outweighed by the significant community and environmental impacts associated with providing this increased capacity.</p>



## 5. Transportation Development Strategy

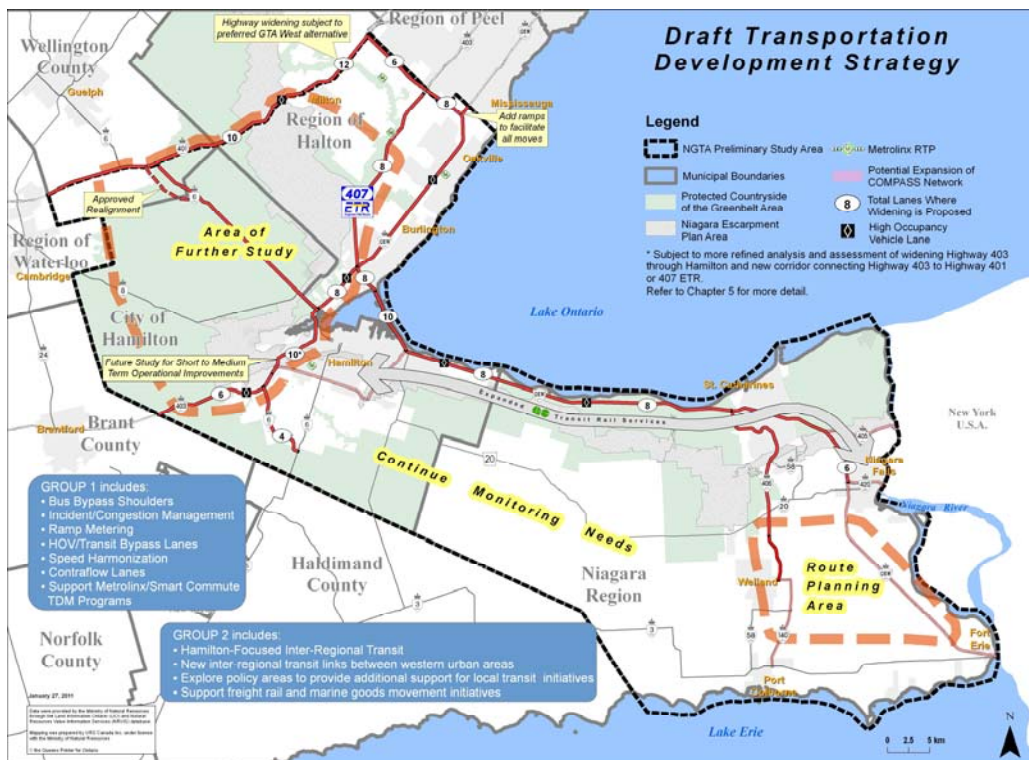
### 5.1 DRAFT TRANSPORTATION DEVELOPMENT STRATEGY

The draft Strategy (**Exhibit 5-1**) focuses first on optimizing existing transportation infrastructure and increasing transit ridership.

However, to fully realize the vision of a functional and efficient multi-modal transportation network that provides choice and promotes efficient movement of people and goods, planning for additional roadway capacity is required in the long term. The development of additional roadway capacity will also include planning for strategic highway widening at several locations as well as planning for a new corridor between Welland and the QEW. In the West Area, further analysis and assessment at a corridor level will be undertaken to better understand and compare relative advantages and disadvantages of the transportation options and corridor alternatives in the Halton-Hamilton area. The Ministry will undertake additional analysis to re-examine the future freight forecasts that have been developed for this study, and the recommendations in the draft Strategy will be reviewed in light of the findings of this additional analysis.

In addition to the above mentioned planning and further analysis, the Ministry will continue to monitor growth and transportation system performance to determine when planning should be initiated for a new corridor between Welland and Hamilton. While it is anticipated that a new corridor would not be required until after 2031, the planning would likely begin prior to that.

**Exhibit 5-1: Draft Transportation Development Strategy**



Some level of congestion is inevitable in urban areas and some may actually have a positive effect, as studies have shown that congestion will encourage travelers to get out of their cars and onto transit. The draft Strategy is structured to allow time for this important modal shift to occur. On the other hand, severe and prolonged congestion on

roadways or on transit can undermine economic growth, limit mobility, reduce safety conditions and damage quality of life.

The draft Strategy places the highest priority on optimizing the existing infrastructure and increasing transit ridership, while providing additional highway capacity in the mid- to long-term.

## 5.2 GROUP #1 – OPTIMIZE EXISTING TRANSPORTATION NETWORKS

This group of alternatives includes transportation initiatives that focus on improving the performance of the existing transportation system for all modes of travel and transport through strategies designed to reduce auto and truck demand and improve system operating efficiency.

The optimization measures embodied by Group #1 and discussed further on the following pages are most effective when applied in a combined and coordinated manner.

One of the key outcomes of this study and the foundation of the draft Strategy will be the development of an Active Traffic Management Plan that encompasses the majority of the recommended Group #1 elements.

The Active Traffic Management Plan will include the following key elements:

- The expanded use of bus bypass shoulders along sections of the provincial highway network forecast to experience recurring congestion.
- The development of an enhanced incident management and congestion management system which builds on the existing MTO COMPASS system. Enhancements to the system may also include the provision of real time traffic information to travellers via radio broadcasts, website updates, personal digital assistants (PDAs), etc.
- The expanded use of ramp metering at key interchange locations within the study area and consideration of ramp metering installations as part of the planning and design of all future interchanges.
- The implementation of transit / HOV bypass lanes at existing ramp locations to provide expedited access for transit and HOV vehicles to commuter parking lots as well as efficient access to highway facilities where ramp metering is present.
- Further study of the potential to introduce speed harmonization along applicable sections of the provincial highway network.
- Investigation of the feasibility of contra-flow lanes and moveable barriers.

This Active Traffic Management Plan will serve as the basis for integrating strong TDM and TSM principles in all future transportation planning initiatives. The MTO will undertake an Active Traffic Management Study in the near-term to identify locations where all Group #1 initiatives can be provided along existing provincial facilities to improve the performance of the transportation system by reducing demand and improving system efficiency.

In addition, the study team will identify mechanisms to support MTO, Metrolinx and Smart Commute in expanding their TDM program.

### **Expanded Use of Bus Bypass Shoulders**

Bus bypass shoulders (**Exhibits 5-2 and 5-3**) work by providing extra wide shoulders on the outside roadway shoulders to enable buses to bypass queues during times of heavy congestion. They are currently in operation on the QEW between Erin Mills Parkway

and Mavis Road in Mississauga. It is recommended that the application of bus bypass shoulders be expanded to include sections of the QEW, Highway 403 and Highway 401 in the Hamilton / Halton area where recurring congestion is experienced.

**Exhibits 5-2 and 5-3: Examples of Busy Bypass Shoulders**



Timeframe			Jurisdiction	RECOMMENDED ACTION
Near	Medium	Long		
✓			MTO	Active Traffic Management Study to identify locations where bus bypass shoulders should be provided along existing provincial facilities.

**Enhanced Incident / Congestion Management**

MTO's COMPASS system (**Exhibit 5-4**) utilizes sensors embedded in the pavement to transmit traffic data to the MTO Traffic Operations Centre. The COMPASS system performs both an incident management and a congestion management function.

For incident management (**Exhibit 5-5**), a detection algorithm reviews the traffic data and sends a warning to the traffic operator requesting confirmation of an incident when one is detected. The traffic operator at the operations centre uses COMPASS closed circuit television cameras to confirm the algorithm's warning. MTO is also working with the Ontario Provincial Police (OPP) to improve incident management through development of improved emergency response procedures.

For congestion management, the COMPASS signs provide real time information about prevailing traffic operations. On core / collector systems, these signs help to improve the distribution of traffic and improve the overall efficiency of the traffic flow.

The COMPASS system is currently employed on the QEW, as well as Highways 400, 401, 403, 404, 405 and 427. The COMPASS system could be enhanced on the QEW, Highways 400, 401, 403, 404, 405 and 427.

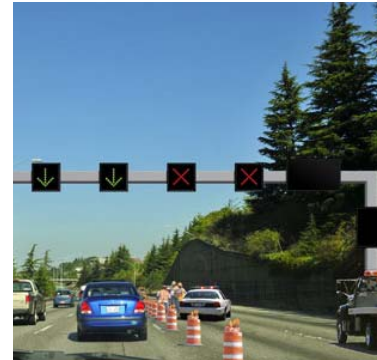
The NGTA Study recommends that the Active Traffic Management Study by the MTO include an assessment of the potential for further expansion of the COMPASS system beyond the current service area. In addition extending the current coverage of the COMPASS system, enhancements to the system such as the provision of real time

traffic information to travellers via radio broadcasts, website updates, personal digital assistants (PDAs), etc., will also be considered.

**Exhibit 5-4: Example of Application of COMPASS System**



**Exhibit 5-5: Example of Enhanced Incident Management**



Timeframe			Jurisdiction	RECOMMENDED ACTION
Near	Medium	Long		
✓			MTO	Active Traffic Management Study to assess the potential for further expansion of the COMPASS system beyond the current service area.

**Expanded Use of Ramp Metering**

Ramp metering (**Exhibits 5-6 and 5-7**) works by regulating vehicle access to the freeway through the use of traffic signals on interchange ramps. These computer-controlled signals allow vehicles onto the freeway at a specified rate to maintain optimum traffic flows. At the same time, end-of-queue detectors prevent backups on the access ramps from extending back to the adjoining municipal road. Ramp metering installations are currently in operation at six interchanges along the QEW (eastbound only) from Ford Drive to Cawthra Road in Mississauga.

It is recommended that the application of ramp metering be expanded to include sections of the QEW throughout the study area where recurring congestion is experienced. It is also recommended that the feasibility of ramp metering on Highway 401 and Highway 403 be explored.



**Exhibits 5-6 and 5-7: Examples of Ramp Metering**



Timeframe			Jurisdiction	RECOMMENDED ACTION
Near	Medium	Long		
✓			MTO	Active Traffic Management Study to identify areas where ramp metering can be installed at interchanges along existing provincial facilities.

**HOV / Transit Bypass Lanes**

Transit and high occupancy vehicles are permitted to use queue bypass lanes on freeway ramps to expedite access to commuter parking lots, transit stations, mobility hubs and to expedite access to freeways where ramp metering is present. While HOV / transit bypass lanes (**Exhibits 5-8 and 5-9**) have not been introduced in the GGH, provisions for HOV / transit bypass lanes should be considered at interchanges where ramp metering exists or is expected to be installed.

It is recommended that HOV / transit bypass lanes be incorporated at the existing interchanges along the QEW that utilize ramp metering and that further study of the potential to incorporate HOV / transit bypass lanes be explored for interchanges along all other provincial facilities.

**Exhibits 5-8 and 5-9: Examples of HOV / Transit Bypass Lanes**



Timeframe			Jurisdiction	RECOMMENDED ACTION
Near	Medium	Long		
✓			MTO	Active Traffic Management Study to confirm whether HOV / transit bypass lanes can be installed at interchanges along existing provincial facilities.

**Explore Use of Speed Harmonization**

Speed harmonization (**Exhibits 5-10, 5-11 and 5-12**) requires the use of a traffic management system similar to MTO’s COMPASS system to monitor travel data. Cameras or sensors below the roadway structure are used to sense vehicle presence to measure traffic flow. Speed limits are automatically adjusted when congestion thresholds are exceeded. Throughput is maximized by maintaining a constant flow vs. stop / go bottlenecks. Speed harmonization is a common practice in many European countries, e.g., Germany, Denmark, Scotland, etc. It is also currently being tested in several US states.

The Active Traffic Management Study by MTO will determine whether speed harmonization could be applied on facilities such as the QEW, Highway 403 and Highway 401 in the Hamilton / Halton area where recurring congestion is experienced. Furthermore, it is recommended that the experience in the US be monitored to determine if speed harmonization is viable in the GGH.

**Exhibits 5-10, 5-11 and 5-12: Examples of Application of Speed Harmonization**



Timeframe			Jurisdiction	RECOMMENDED ACTION
Near	Medium	Long		
✓			MTO	Active Traffic Management Study and monitoring of experience in US to determine if viable in GGH.

**Investigate Feasibility of Contra-Flow Lanes and Moveable Barriers**

Contra-flow lanes (**Exhibits 5-13, 5-14 and 5-15**) provide a lane in which traffic may travel in either direction, depending on traffic conditions. Moveable barriers can be provided to maintain a divided median that is moved from one side of a contra-flow lane to the other. Contra-flow lanes and moveable barriers have widespread use internationally. Although they are not used permanently on any provincial facilities, they have been used temporarily during construction on Toronto area freeways.

It is recommended that contra-flow lanes and / or moveable barriers be considered in areas with high directional splits in traffic volumes such as at the QEW through Niagara to address peak tourist travel and on Highway 403 through Hamilton to address peak commuter travel. An Active Traffic Management Study and feasibility review of implementing contra-flow lanes will need to be undertaken by the MTO.

**Exhibits 5-13, 5-14 and 5-15: Examples of Application of Contra-Flow Lanes and Moveable Barriers**



Timeframe			Jurisdiction	RECOMMENDED ACTION
Near	Medium	Long		
✓			MTO	Active Traffic Management Study and feasibility review of implementing contra-flow lanes.

**Identify Mechanisms to Support MTO, Metrolinx and Smart Commute in Expanding Their TDM Programs**

Metrolinx / SmartCommute is a partnership between Metrolinx and the cities and regions of the GTHA, which coordinates TDM services throughout the GTHA (including employer outreach, ride matching, emergency ride home, etc.). These services are premised on engaging employers to encourage their employees to participate in trip reduction programs.

There is an opportunity to support enhancements to the programs currently offered by Metrolinx / Smart Commute, to support new programs, and to support the expansion of these programs beyond the GTHA into Niagara Region, which currently coordinates TDM programs in the region.

The MTO is committed to the development of a balanced transportation system that offers choice and reliability for travelers. To support the development of this strategy, the MTO will explore opportunities to provide additional support for current programs, as well the potential to remove policy barriers.

Timeframe			Jurisdiction	RECOMMENDED ACTION
Near	Medium	Long		
✓			<b>Metrolinx</b>	<b>The Ministry of Transportation will explore opportunities to provide additional support as well as the potential for legislative changes to address current policy barriers.</b>

### 5.3 GROUP #2 – NEW OR IMPROVED NON-ROAD INFRASTRUCTURE

This group of alternatives builds upon the comprehensive suite of transit initiatives embodied in the *RTP* and includes initiatives that focus on improving and expanding existing non-road infrastructure as well opportunities to provide new non-roadway infrastructure, including:

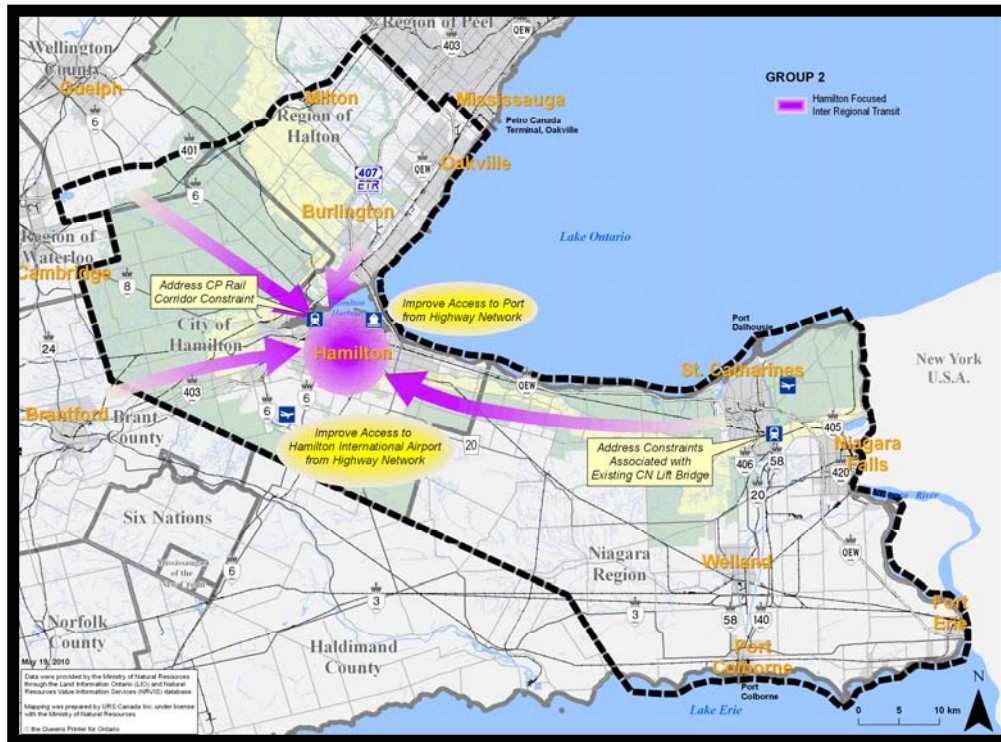
- Hamilton-Focused Inter-Regional Transit Service;
- Linking Urban Areas through Inter-Regional Transit;
- Support Rail Initiatives;
- Support Marine Goods Movement Initiatives; and

#### Hamilton-Focused Inter-Regional Transit Service

Currently there are no coordinated commuter transit services linking neighbouring cities and towns to downtown Hamilton. Given that Hamilton is expected to become a significant employment node in coming years, there is an opportunity to provide transit choice for commuters in the outlying municipalities with a service that focuses on bringing commuters to downtown Hamilton during the morning and evening rush hours.

It is recommended that Metrolinx initiate a study in the near-term to explore the potential for an inter-regional, Hamilton-focused transit service, illustrated in **Exhibit 5-16**. This study would involve forecasting the future commuter demands for travel to Hamilton from the surrounding municipalities and assessing whether there is sufficient future demand to warrant this service. If the demand exists, the study would recommend a “go forward” strategy that would involve identifying the appropriate service provider, i.e., GO Transit, private carriers, municipal transit, etc. as well as the mode of travel, i.e., bus versus rail.

**Exhibit 5-16: Hamilton-Focused Inter-Regional Transit Service**



Timeframe			Jurisdiction	RECOMMENDED ACTION
Near	Medium	Long		
✓			Metrolinx	Initiate a feasibility study to explore the potential for a Hamilton-focused inter-regional transit service.

**Linking Urban Areas through Inter-Regional Transit**

There are a significant number of auto trips between urban areas west of the study area due to a lack of transit options. Projected growth dictates a need to accommodate increased trips in the future. More transit options are needed and major rail infrastructure exists to enhance transit alternatives. There are many current initiatives that aim at:

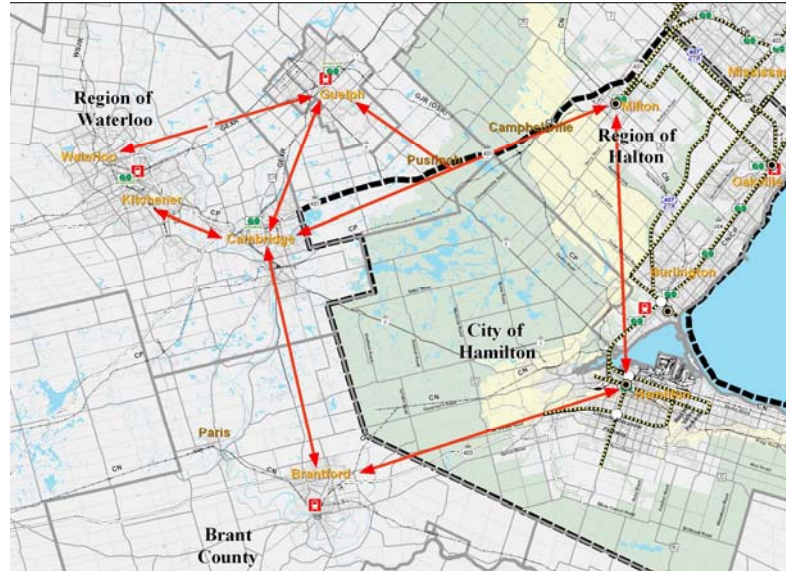
- Enhancing the “spine” network by connecting urban areas to Toronto;
- Developing a “web” network by connecting western urban areas to one another; and
- Identifying rural areas that warrant transit connections and links to the “spine” network through urban areas for access to Toronto.

An “Inter-Regional Transit Feasibility Study” is recommended to investigate transit options (primarily bus and rail) in the western web area, illustrated in **Exhibit 5-17**. The MTO will initiate this study and, pending the findings of the study, will work with transit providers to implement service where and when it is warranted.

The Ministry has already undertaken a preliminary rail investigation in the western web area to determine the feasibility of considering additional environmentally-friendly and

transit-supportive transportation options. The Ministry is dedicated to reducing the proportion of auto trips and increasing the transit modal split. The Ministry has already undertaken a preliminary rail investigation in the western web area to determine the feasibility of considering additional environmentally friendly transportation options. The Ministry is devoted to working with rail service providers and transit authorities to increase transit options and accessibility.

**Exhibit 5-17: Transit Options in the Western Web Area**



Timeframe			Jurisdiction	RECOMMENDED ACTION
Near	Medium	Long		
✓			MTO, Metrolinx, Rail Service	Initiate an “Inter-Regional Transit Feasibility Study” and work with transit providers to implement service where and when it is warranted.

**Support Rail Initiatives**

While the existing freight rail network has sufficient capacity to address future growth in goods movement by rail, there are numerous locations where conflicts exist between passenger and freight rail services when both services use the same tracks, as well as at-grade road / rail crossings where road traffic has to stop to let trains through. These locations have an adverse effect on current rail operations.

Removal of these constraints will have an overall positive effect on passenger and freight rail operations, allowing people and goods to be moved more efficiently, which may result in a higher efficiency of this mode to attract commuters and shippers. Road / rail grade separations will improve the efficiency of the local roads intersecting increasingly busy railway tracks and improve safety.

To support increased utilization of freight rail, the Ministry will coordinate with CN Rail, CP Rail and Metrolinx in the mid-term to identify the conflict points and will support

potential future initiatives aimed at removing freight rail / passenger rail conflicts and providing grade separations at road / rail crossings. Opportunities for high-speed rail on separate tracks will also be considered.

Timeframe			Jurisdiction	RECOMMENDED ACTION
Near	Medium	Long		
	✓		CN, CP, Metrolinx	The Ministry of Transportation will work with CN, CP and Metrolinx to identify and study potential solutions to resolve freight rail / passenger rail conflicts and to provide road / rail grade separations at strategic locations.

**Support Marine Goods Movement Initiatives**

While the Port of Hamilton and St. Lawrence Seaway have sufficient capacity to address future growth in goods movement by marine, the Port of Hamilton (**Exhibit 5-18**) has advised that improvements to the current access to the port from the provincial highway system via Burlington Street could result in improved efficiencies and increased utilization of the Port in the future.

In addition, current US legislation such as the US Harbor Maintenance Tax, the Cabotage Laws and the Environmental Ballast Water Regulations affect the competitiveness of the marine mode of transportation for goods movement as compared to the other modes of transportation.

The Ministry will work with the ports in the study area (Hamilton and Port Colborne – **Exhibit 5-19**) and the St. Lawrence Seaway Authority and relevant municipalities in the mid-term regarding the provision of improved access to port lands from the provincial highway system – where warranted by increased demand. This, along with potential changes to legislation positively affects the ability of the marine mode of transportation to compete for a larger share of the goods movement market. This may have an overall positive effect on the utilization of the marine transportation system by shippers.

**Exhibit 5-18: Port of Hamilton**



**Exhibit 5-19: Port Colborne**



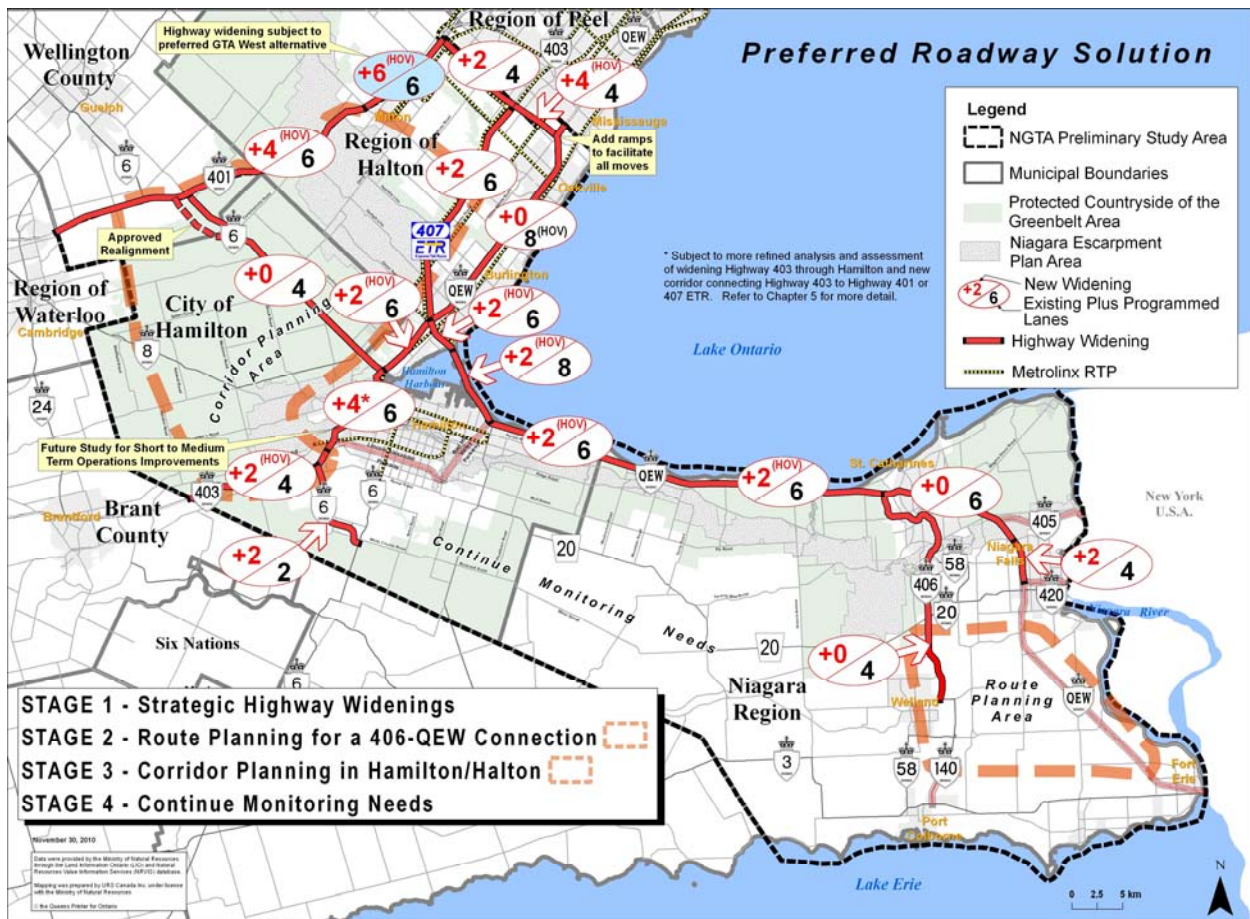
Timeframe			Jurisdiction	RECOMMENDED ACTION
Near	Medium	Long		
	✓		Port of Hamilton, St. Lawrence Seaway Authority	Identify potential access improvements for the Port of Hamilton and the potential for changes to current marine transport legislation.

### 5.4 PREFERRED ROADWAY STRATEGY

In addition to the first priority Group #1 and Group #2 elements, the balanced draft Strategy includes longer-term strategic highway widening and new transportation corridor route identification, which will provide opportunities for transit initiatives like those in the RTP and GO 2020 to be implemented.

The preferred roadway solution (Exhibit 5-20) includes a combination of widening existing facilities and new roadways.

Exhibit 5-20: Preferred Roadway Solution





As this study is planning to the year 2031, it is necessary to address forecasted congestion on the existing network through a staged approach:

- Highway widenings at strategic locations (Stage 1); and
- A new Welland-QEW connection (Stage 2).

Stage 3 will involve the implementation of the recommended transportation option in the Hamilton-Halton area, subject to more refined analysis and assessment of the transportation options and corridor alternatives in the West Area.

As described in **Section 4.10**, there are significant trade-offs to be contemplated in the West Area based on the complexity and inter-relationship of the environmental, social, and economic factors in this area. To identify the most appropriate longer term solution in this area, additional focused analysis and assessment should be undertaken to better understand and compare the relative advantages and disadvantages of the transportation options and corridor alternatives in the Halton-Hamilton area.

The assessment of all of the transportation options and corridor alternatives will be reviewed with the relevant municipalities, agencies and interest groups to obtain input and feedback prior to finalizing the recommendations in the West Area. This input will be factored into the evaluation of the alternatives, and a preferred alternative will emerge.

With regard to Stage 4, MTO will also continue to monitor growth patterns and transportation system performance to determine when a new transportation corridor between Hamilton and Welland will be required. Planning for this new corridor will commence as determined by the monitoring.

The following is a summary of the strategic highway widening and new corridor protection strategies that are recommended to balance the optimization, non-roadway and transit recommendations that are the foundation of the draft Strategy:

#### ***Highway Upgrades (required in the short-term)***

##### QEW / Highway 403 Interchange

Currently the QEW / Highway 403 interchange only provides access to and from the west. The MTO will commence a planning study to provide a full freeway-to-freeway interchange at the QEW / Highway 403 interchange from all directions.

##### Further Study in the West Area

MTO will undertake additional focused analysis to assess and evaluate the relative advantages and disadvantages of the transportation options and corridor alternatives in the Hamilton-Halton area.

#### ***Strategic Highway Widening, Realignment and Upgrades (required in the medium-to long-term)***

The Province has developed an ambitious plan to add over 450 kilometres of new HOV lanes on 400-series highways in the GGH – including some of the most heavily-congested highways in the province – over the next 25 years. To support this initiative, the NGTA Study is recommending widening for HOV lanes on QEW (Oakville to St. Catharines), Highway 403 (west of Hamilton) and Highway 401 (east and west of Milton).

MTO will undertake Class Environmental Assessment studies to investigate and confirm the need to widen the following provincial facilities within the NGTA study area:

### Highway 401

It is recommended that Highway 401 be widened to ten lanes (including two HOV lanes) between the east junction of Highway 6 and James Snow Parkway, and be widened to 12 lanes (including two HOV lanes) between the James Snow Parkway and 407 ETR.

### 407 ETR

It is recommended that 407 ETR be widened to eight lanes between the QEW / Highway 403 / 407 ETR Interchange and Highway 403. It is also recommended that 407 ETR be widened to six lanes between Highway 403 and Highway 401, as traffic growth occurs and subject to the existing legal agreements.

### Highway 403

It is recommended that Highway 403 be widened to eight lanes (including two HOV lanes) between 407 ETR interchange and QEW, as well as between the QEW / Highway 403 / 407 ETR Interchange and the east junction of Highway 6, and widened to six lanes (including two HOV lanes<sup>12</sup>) west of Highway 6.

### Highway 6

As part of the recommendations of this study, Highway 6 will be widened to four lanes from Highway 403 to the Hamilton International Airport.

### QEW

It is recommended that the QEW be widened as follows:

- Eight lanes (including two HOV lanes) between the QEW / Highway 403 / 407 ETR Interchange and the Burlington Skyway;
- Ten lanes (including two HOV lanes) over the Burlington Skyway to the Red Hill Valley Parkway;
- Eight lanes (including two HOV lanes) from the Red Hill Valley Parkway to Highway 406; and
- Six lanes between Highway 405 and Highway 420.

The ultimate widening requirements will be determined at an early stage of the subsequent Class EA studies based on traffic analysis that is conducted to support these studies. If the findings of the Class EA studies differ from the recommendations in this draft Strategy, the findings of the Class EA studies will govern.

### Operational Improvement Study along Highway 403 through the City of Hamilton

MTO will continue to seek opportunities to make strategic operational improvements to the section of Highway 403 through the City of Hamilton which may require Class EA to address existing operational issues during the morning and afternoon peak periods. Strategies that may be considered include widening into the median, widening through structures at interchanges by reconfiguring on-ramps to remove existing ramp lanes under structures, and contra flow lanes.

### Highway 6 – Freelon to Guelph

The Highway 6 Realignment – Freelon to Guelph was approved by the Minister of the Environment in 2009. MTO will commence design for converting Highway 6 South to a four-lane controlled access facility (lane capacity of 1,100 vehicles per hour) with a new

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<sup>12</sup> Represents an expansion of MTO's 2007 HOV Plan.

connecting road between Maddaugh Road and Campbellville Road, a new interchange north of Morriston, and modifications to the existing Brock Road interchange.

***New Multiuse Corridors (required in the long-term)***

Subject to the results of the additional corridor planning in the West Area (short-term recommendation) a route planning study or a Class EA study may be initiated in the medium term.

The other long term recommendation of this study is to commence Phase 2 of the EA Study to identify a preferred route for connecting Highway 406 in the Welland area to the QEW between Highway 420 and Fort Erie. Providing a new corridor between Highway 406 in the Welland area and QEW would avoid the need for further widening of QEW through St. Catharines and crossing the Niagara Escarpment until beyond 2031. In addition, a new corridor will provide alternative access and flexibility for movement of goods and people to the border.

***Monitor Growth and System Performance (required in the long-term)***

Lastly, the analysis has determined that the future growth in traffic volumes along the section of QEW from Niagara to Hamilton by 2031 can be accommodated with the addition of HOV lanes. If current population and employment growth patterns continue beyond 2031, a new multi-use corridor would be required to divert future traffic growth from the QEW, to take advantage of economic development opportunities in southern Niagara, and to provide an alternative route for long-distance cars and trucks destined to Niagara Region and the international border crossing in Niagara.

The recommendation of this study is to actively monitor how the transportation system performs with the strategy elements underway, and how population and employment growth rates and patterns develop, to determine when a new transportation corridor would be required between Welland and Hamilton. Planning for this new corridor will commence as determined by the monitoring. The corridor is expected to be a multi-use corridor that could also accommodate other services such as high speed rail, transit, utilities, etc.

## **5.5 MITIGATION MEASURES**

Several types of mitigation measures can be utilized to minimize adverse environmental effects to natural, community and cultural features associated with the widening of existing highways and the construction of new facilities:

- Tunnels to avoid sensitive features (**Exhibit 5-21**);
- Underpasses for animals (**Exhibits 5-22** and **5-23**);
- Below grade freeways (**Exhibit 5-24**); and
- Rural Cross-Sections (**Exhibit 5-25**).

Mitigation measures will be considered in detail during Phase 2.

### **Exhibit 5-21: Tunnels**



**Exhibits 5-22 and 5-23: Underpasses**



**Exhibit 5-24: Below Grade Freeway**



**Exhibit 5-25: Rural Cross-Section**



## **5.6 HIGHWAY DESIGNATIONS**

There are several existing proposed highway designations within the study area. It is recommended that existing highway designations in areas that are not being considered for new corridors and are not influenced by potential highway requirements adjacent to the study area, and therefore are no longer of provincial interest, should be revoked. The ministry will notify the applicable municipalities of the province's intention to revoke the designations, and if there is no municipal interest, they should be subsequently revoked. The affected highway designations are:

- Highway 20 – from west of the 420 terminus at the QEW to existing Highway 20 in the Pelham area (designated between 1966-1978);
- Highway 3 – crossing of the Welland Canal in Port Colborne (designated in 1974); and
- Highway 20 – Bypass of Smithville (designated in 1971).

## 6. Summary of Consultation Activities

The purpose of conducting consultation activities was to provide an opportunity for stakeholders to provide input, which assisted the study team in making informed decisions and recommendations throughout the study process. The consultation activities undertaken by the study team enabled the identification of potentially significant issues (i.e., environmental, social, economic, and transportation considerations) early in the decision making process and ensured that they were given appropriate consideration.

This chapter presents an overview of the consultation activities undertaken by the study team throughout the study process.

### 6.1 PUBLIC CONSULTATION

#### 6.1.1 Overview

Outreach and consultation with the general public and community interest groups was held throughout Phase 1. These groups included:

- Property owners in the study area;
- Members of the public who live and / or work within the study area;
- Potential users of the transportation network within the study area; and
- Interest groups who have a specific interest in the study area.

An extensive consultation program was undertaken to support the NGTA Study, including meetings with the following stakeholders:

- **Community Advisory Group (CAG)**

A Community Advisory Group (CAG) was established for the NGTA Study. The role of the CAG is to assist the study team by providing information and input relative to community interests and study issues.

- **Municipal Technical Advisory Group (MTAG)**

The Municipal Technical Advisory Group (MTAG) that was established during the ToR continued to participate in the NGTA Study. Municipalities (e.g., Halton Region, Town of Oakville, City of Burlington, Town of Milton, City of Hamilton, etc.) identified and confirmed representatives that would participate on the MTAG.

- **Regulatory Agency Advisory Group (RAAG)**

A Regulatory Agency Advisory Group (RAAG) was assembled, which included potentially affected provincial ministries, agencies and federal departments. This group provided valuable input related to compliance issues and other areas of concern within their jurisdiction.

- **Municipal Executive Advisory Group (MEAG)**

A Municipal Executive Advisory Group was established, consisting of two senior level staff representatives from each of the three Upper Tier Municipalities (Hamilton, Halton and Niagara) to provide information and feedback on inter-regional issues. In addition, Metrolinx (including GO Transit) was represented on the MEAG. Additional members from other municipalities were invited to meetings or added to the group as required.

- **Transportation Service Providers (TSP) / Business and Commercial Stakeholders (BCS)**

Transportation Service Providers (TSP) operating within the Niagara to GTA corridor were engaged in this study. The TSP stakeholders included municipal transit, inter-regional transit, freight rail service, marine service, air service, transportation associations / organizations, and trucking organizations.

The business and commercial section is an important stakeholder group to be engaged in this study. This group provided meaningful input on the overview of economic conditions in the study area, and area transportation system problems and opportunities. BCS stakeholders include large corporations / industries, business associations, logistics providers, shipping associations, and universities / colleges.

- **First Nations**

It was recognized that there may be a range of First Nations issues associated with this study and that the Provincial government has a duty to consult with First Nations when it has knowledge of the existence or potential existence of First Nations treaty rights or interests, which could be affected by an undertaking. The early focus of consultation with First Nations groups assisted in collecting data on the location of treaty right and traditional land use issues. Outreach and consultation has occurred and continues with the Mississaugas of the New Credit First Nation and the Six Nations of the Grand River Territory First Nation.

- **Members of the public** through Public Information Centres (PICs), website event notification and study progress, responses to comments sent via Canada Post, email, comment form, and fax.

Three general goals were developed to guide the consultation and outreach process:

1. To actively engage, involve and consult with government agencies, First Nations, municipalities, businesses stakeholders and members of the general public on all aspects of the Phase 1 of the EA;
2. To make certain that stakeholders receive effective and clear communications and information that will enable active and productive participation; and
3. To ensure that the consultation program is an open process, so that the basis for decision-making is fully transparent.

The following sections present an overview of the steps taken by the study team to ensure these three goals were achieved throughout the study process.

### **6.1.2 Newspaper Notifications**

Five Ontario Government Notices were published, including the “Notice of Study Commencement” and “Notice of Public Information Centre” for each of the four rounds of PICs. For each round, the notices were published once. PIC notices were published two weeks in advance of the event in local newspapers as follows:

- Ancaster News
- Burlington Post
- Dundas Star News
- Flamborough Review
- Fort Erie Times
- Grimsby Lincoln News
- Grimsby West Niagara News
- Niagara Falls Review
- Niagara News / Thorold edition
- Niagara This Week
- Oakville Beaver
- Oakville Today
- Pelham News
- Port Colborne in Port

- Halton Compass
- Hamilton Burlington L'Information (French)
- Hamilton Mountain News
- Hamilton Spectator
- London / Hamilton Le Regional (French)
- Milton Canadian Champion
- Niagara Advance
- St. Catharines Standard
- Stoney Creek News
- Tekawennake Six Nations and New Credit News
- Turtle Island News (Six Nations of the Grand River)
- Voice of Pelham
- Welland Tribune

### **6.1.3 Mailing List and Emails / Letters / Toll Free Calls**

The initial contact database of the members of the public, drawn from previous transportation studies in the area and the consultation conducted for the EA ToR, included over 2000 stakeholders. Letters of notification for study commencement and the PICs were distributed (via Canada Post and email) to individuals on the project contact list established during the ToR and maintained / updated throughout Phase 1 of the EA.

Telephone inquiries were received through a “1-800” number (1-866-890-6441) to encourage communication unhindered by long distance charges. The voice mailbox for the 1-800 number was routinely checked and messages were documented and transferred to the appropriate study team member, who provided a response.

### **6.1.4 Website**

A project website was established at [www.niagara-gta.com](http://www.niagara-gta.com). Interested individuals were encouraged to visit the website for up-to-date information on project activities and events. A comment form was made available on the website for stakeholders to voice their concerns. Comment forms and emails were routinely checked and documented. Responses were provided via the stakeholder's preferred method of contact by the appropriate study team representative.

### **6.1.5 Public Information Centres**

Four rounds of PICs were held for the NGTA Study. The PICs were informal, “open house” style events. Theme-based information boards were clustered throughout the meeting room, with assigned MTO and consultant staff available at each cluster to address questions and concerns. At PIC#4, two presentations (at 5:30 p.m. and 7:00 p.m.) were held to present an overview of the draft Strategy.

A CD containing all of the PIC display boards, a comment sheet and any other relevant materials was provided to each attendee, as well as a brochure (outlining the study's background, work completed to date, etc.). Comments sheets were available in hardcopy for attendees to fill in and a technical resource table was provided which contained hardcopies of all relevant documents and reports.

#### **6.1.5.1 Public Information Centre #1**

The first round of PICs was held as follows:



Tuesday June 12 <sup>th</sup> , 2007 4:00 p.m. to 8:00 p.m. Rockton World's Fairground 812 Old Highway 8 Rockton	Thursday June 14 <sup>th</sup> , 2007 4:00 p.m. to 8:00 p.m. Quality Hotel St. Catharines Chardonnay / Concord Ballroom 327 Ontario Street	Monday June 18 <sup>th</sup> , 2007 4:00 p.m. to 8:00 p.m. Holiday Inn Burlington Harvester Room 3063 South Service Road
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The purpose of PIC#1 was to present and obtain feedback on the findings of the initial data gathering exercise that was undertaken to obtain information about existing environmental and transportation conditions within the study area. In addition, the study team presented key aspects of the Study Plan that had been developed to outline the study background and policy context as well as the framework for the transportation needs assessment and consultation for Phase 1 of this study. Please refer to the *Study Plan* available on the project website ([www.niagara-gta.com](http://www.niagara-gta.com)) for more details.

The PIC also included an opportunity for attendees to apply for membership on the project Community Advisory Group (CAG). Please refer to the project website ([www.niagara-gta.com](http://www.niagara-gta.com)) and **Section 6.1.6** for additional details regarding the CAG.

A total of 219 members of the public chose to sign the visitors' register for the three PICs. Several additional members of the public attended the PIC but chose not to sign the register. It was estimated that 250 individuals attended the three events. A total of 22 written comments were submitted at the PICs and eight additional comments were received via email and mail in the weeks following the PICs.

The key comments received during PIC#1 are summarized under the following four headings:

#### **Multi-Modal Approach / Opportunities**

- A number of attendees were surprised to find out that the Project Team is considering all modes of transportation (not just a highway solution).
- The information presented at the PIC and the approach to developing a multi-modal draft Strategy was well received by attendees.
- Transit should be the top priority.
- Existing infrastructure should be used as opposed to any new infrastructure.
- Freight movement is too focused on trucks. This should be changed such that other methods of freight movement are considered (marine, rail, etc.).
- An inter-modal shipping industry across Lake Ontario would be cost effective and minimize impacts to the Niagara Escarpment and not adversely contribute to air quality.

#### **Timeframes and Methodology**

- Frustration regarding the length of time required to complete the EA.
- Clarification required on Phases 1 and 2 of this study.
- Inquiries regarding the management structure of the study team.
- Clarifications regarding this study relative to the corridor identified as part of the former Mid-Peninsula Corridor study.
- Inquiries about the relationship of *The Growth Plan* to this study.
- Inquiries on how environmental factors will be weighted.
- Inquiries on how truck traffic will be modeled.

### Concerns and Suggestions

- Material presented does not address transportation issues in the Cambridge, Kitchener-Waterloo, Guelph and Brantford area.
- Concerns regarding the accuracy of population projections presented in *The Growth Plan*.
- Concern regarding potential impacts to agriculture.
- Need to consider the health of citizens.
- Concern regarding safety on the QEW.
- There should be hard copies of the reports available at the PICs.

### Consultation and Involvement

- Inquiries about the necessity of a Community Advisory Group.
- Other organizations should be contacted (e.g., Ontario Sand and Stone Gravel Association, Port of Hamilton).
- The Federal government should be actively engaged in the process.
- Suggestion to hold PICs in more communities because they are very informative.
- Consider additional notification approaches for study (consultation) events.
- Suggest presentations to high schools to get them engaged.

#### 6.1.5.2 Public Information Centre #2

The second round of PICs was held as follows:

Tuesday February 24 <sup>th</sup> , 2009 4:00 p.m. to 8:00 p.m. Royal Canadian Legion <i>Upstairs Hall</i> 383 Morningstar Avenue Welland	Thursday February 26 <sup>th</sup> , 2009 4:00 p.m. to 8:00 p.m. Rockton World Fairgrounds 812 Old Highway 8 Rockton	Tuesday March 3 <sup>rd</sup> , 2009 4:00 p.m. to 8:00 p.m. Burlington Convention Centre <i>Emerald Hall</i> 1120 Burloak Drive Burlington
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The primary purpose of PIC #2 was to present and obtain feedback on the results of the recently completed transportation problems and opportunities exercise; specific to: goods movement, commuter travel, and tourism / recreation travel.

A total of 270 members of the public chose to sign the visitors' register for the three PICs. Several additional members of the public attended the PIC but declined to sign in. It was estimated that 285 individuals attended the three events. A total of 21 written comments were submitted at the PICs and 14 additional comments were received via e-mail and mail in the weeks following.

The key comments received during PIC#2 are summarized under the following four headings:

#### Multi-Modal Approach / Opportunities

- Support for multi-modal approach; particularly, rail solutions; optimization of existing infrastructure; and the Highway H2O.
- Suggestions offered regarding potential new routes.

#### Methodology

- Disappointment that study has not advanced to "solutions" stage yet.

- Queries regarding identification and evaluation of transportation alternatives; and relationship between current and former (“Mid-Peninsula Highway”) study.
- Uncertainty regarding how the assumptions used (e.g., gas prices, currency rates) during development of the transportation alternatives will be documented.

#### **Stakeholder Consultation and Participation**

- Clear, informative and understandable displays.
- Appreciation for / frustration with the length of the study.

#### **General Comments, Concerns and Suggestions**

- Concern regarding economic outlook for the region; and potential impacts to agriculture.
- Need to allow for less growth than *The Growth Plan* specifies; and issues and effects related to peak oil.

#### **6.1.5.3 Public Information Centre #3**

The third round of PICs was held as follows:

Tuesday November 24 <sup>th</sup> , 2009	Thursday November 26 <sup>th</sup> , 2009	Tuesday December 1 <sup>st</sup> , 2009
4:00p.m. to 8:00p.m	4:00 p.m. to 8:00 p.m.	4:00 p.m. to 8:00 p.m.
Royal Canadian Legion	Ancaster Fairgrounds	Holiday Inn
Upstairs Hall	Marritt Hall	Halton Hall
383 Morningstar Avenue	630 Trinity Road	1120 Burloak Drive
Welland	Ancaster	Burlington

The primary purpose of PIC #3 was to present and obtain feedback on the generation and assessment of the Area Transportation System Alternatives or “Group Alternatives”:

1. Optimize Existing Transportation Network;
2. New or Improved Non-Road Infrastructure;
3. Widen or Improve Roads; and
4. New Transportation Corridors.

A total of 334 members of the public chose to sign the visitors’ register for the three PICs. Several additional members of the public attended, but declined to sign in. A total of 43 written comments were submitted at the PICs and 11 additional comments were received via e-mail and mail in the weeks following.

The key comments received during this consultation event are summarized under the following five headings:

#### **Multi-Modal Alternatives**

- Need for an increase in public transit services in the study area; specifically, in the Niagara region and Brantford area.
- Increase goods movement by rail; more opportunities to expand the rail system in the study area exist than identified.
- Concerns regarding the conflicting demand between freight and passenger rail.
- Important to educate the next generation about the importance of sustainable transportation practices (i.e., using transit, ride sharing, etc.).

### Roadway Alternatives

- General support to go beyond the Group #1 (Optimize Existing Infrastructure) and Group #2 (New / Improved Non-Road Infrastructure) alternatives.
- More details requested regarding the location of new highways under consideration.
- Concern regarding the potential impacts associated with widening existing highways in and around Hamilton; Hamilton bypass is a more desirable option.
- Acknowledgement of existing significant congestion and the need for improvements - sooner than later.
- Preference for building a tunnel to widening the Burlington Skyway bridges.

### Environmental Considerations

- Concern regarding potential impacts resulting from highway expansions and / or new highway(s).
- The potential significant loss of green space / important natural features highlighted – if new highway is preferred.
- Important to protect agriculture and source water areas.
- Air quality impacts and effects on climate change identified as important concerns.

### Consultation

- General appreciation for the amount and detail of information provided and the comprehensive multi-modal review of alternatives.
- Common acknowledgement that the displays were clear; availability of CD appreciated.
- Providing directions (driving and public transit) to PIC venues on the study website suggested.

### General Comments, Concerns and Suggestions

- Broad acceptance that a decision on a preferred alternative has not been made.
- Inquiry regarding timing of the implementation of the draft Strategy.
- Skepticism regarding the estimated growth in 2031; suggestion that *The Growth Plan* targets are too aggressive.
- In favour of a cost-benefit analysis for each group of alternatives.
- Questions regarding if / how the Highway 24, GTA-West and N-GTA studies are being coordinated; common belief that the GTA-West and N-GTA studies should be combined.

#### 6.1.5.4 Public Information Centre #4

The fourth round of PICs was held as follows:

Thursday June 17 <sup>th</sup> , 2010 4:00 p.m. to 8:00 p.m. Royal Canadian Legion Upstairs Hall 383 Morningstar Avenue Welland	Monday June 21 <sup>st</sup> , 2010-08-16 4:00 p.m. to 8:00 p.m. Ancaster Fairgrounds Marriott Hall 630 Trinity Road Ancaster	Wednesday June 24 <sup>th</sup> , 2010 4:00 p.m. to 8:00 p.m. Holiday Inn Halton Hall 1120 Burloak Drive Burlington
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The primary purpose of PIC #4 was to present and obtain feedback on the draft Strategy, which included elements of the following:

1. Optimize Existing Transportation Network;
2. New or Improved Non-Road Infrastructure;
3. Widen or Improve Roads; and
4. New Transportation Corridors.

A total of 218 members of the public chose to sign the visitors' register for the three PICs. Several additional members of the public attended, but declined to sign in. A total of 19 written comments were submitted at the PICs and 44 additional comments were received via e-mail / mail and telephone in the weeks following.

The key comments received during the PICs are summarized under the following four headings:

### **Study Process**

- Attendees were pleased with the effort taken by the study team to explore all modes of transportation and to obtain input from transportation service providers (i.e., CN, CP, Hamilton Port Authority, Metrolinx, GO Transit, etc.).
- Many attendees inquired about the timing for implementation of the recommendations.

### **Roadway Alternatives**

- A number of attendees requested further detail with regard to the location of new routes in areas where a new corridor is recommended.
- Some attendees questioned how much expansion in transit infrastructure / services would be provided before new roadway infrastructure is implemented.
- Some attendees were disappointed to see that no new roadway infrastructure was proposed between Hamilton and Welland.
- Many attendees suggested that the study team should reconsider widening Highway 403 rather than a new corridor connecting Highway 403 to 407 ETR, based on the significant environmental impacts associated with a new crossing of the Niagara Escarpment.
- Some attendees questioned the amount of traffic that a new corridor between Highway 403 and 407 ETR will be able to attract away from Highway 403 in the Hamilton area.
- Improvements on Highway 6 should be included in the draft Strategy to address operational and safety concerns.

### **Draft Transportation Development Strategy**

- Some attendees suggested that elements of the draft Strategy address travel patterns that are beyond the study area and should not be within the scope of this study.
- Some attendees inquired as to whether all elements of the draft Strategy would be warranted if the growth forecast by *The Growth Plan* does not occur.
- Many attendees provided positive feedback regarding the study team's draft Strategy. In particular, attendees were very supportive of the balanced nature of the draft Strategy and the building block approach that has been utilized in developing it.

- Some attendees felt that the draft Strategy lacks detail in regard to other modes of transportation, particularly with regard to rail.

**General Comments, Concerns and Suggestions**

- Some attendees were skeptical that the shift to transit that has been assumed can be realized.
- Some attendees questioned the projected growth proposed in *The Growth Plan* and suggested that it may not be realized by 2031.

**6.2 COMMUNITY ADVISORY GROUP (CAG)**

The CAG was established as a forum to provide ongoing advice and feedback to the study team. The CAG is comprised of members of the communities and organizations interested in or potentially affected by the project, including residents and ratepayers with representation throughout the municipalities of the NGTA study area, environmental and conservation NGO’s, business and agricultural sectors, and others such as academia and unique groups concerned about the local and natural features.

The following table summarizes all CAG meetings that took place throughout the study process:

**Table 6–1: Summary of Meetings Held with CAG**

Date	Purpose of Meeting
June 7, 2007	<ul style="list-style-type: none"> <li>• To orient CAG members to, and gather feedback on, the CAG Purpose and Workplan for Phase 1 of this study.</li> <li>• To provide an opportunity to obtain preliminary perspectives on the draft Study Plan, and draft working papers (the draft Overview of Environmental Conditions and Constraints Report and the draft Overview of Transportation and Economic Conditions Report). These reports are available on the project website (<a href="http://www.niagara-gta.com">www.niagara-gta.com</a>).</li> </ul>
September 20, 2007	Introduce and provide background to the study for new CAG members, and present the following: <ul style="list-style-type: none"> <li>• Phase 1 study process;</li> <li>• Overview of first round of consultation;</li> <li>• Draft documentation (Study Plan and Overview reports);</li> <li>• Process for identifying transportation problems and opportunities; and</li> <li>• Next steps.</li> </ul>
November 29, 2007	<ul style="list-style-type: none"> <li>• To provide a study update; present an overview of the problems and opportunities identification process; brainstorm a transportation system vision; and identify community-based transportation problems.</li> </ul>
February 27, 2008	<ul style="list-style-type: none"> <li>• To provide, at CAG’s request, an information seminar regarding the use of modeling and forecasting tools to identify transportation Problems and Opportunities in the corridor.</li> </ul>

Date	Purpose of Meeting
May 29, 2008	<ul style="list-style-type: none"> <li>To confirm CAG's transportation system vision; present the study's policy context; and review the proposed goals and objectives for a future NGTA Transportation System.</li> </ul>
January 22, 2009	<ul style="list-style-type: none"> <li>To provide a study update; a transportation Problems and Opportunities synopsis; and PIC #2 overview.</li> </ul>
June 25, 2009	<ul style="list-style-type: none"> <li>To provide a study update.</li> <li>To present and seek feedback on the process framework for developing and assessing transportation alternatives.</li> <li>Brainstorming session for generation transportation alternatives to supplement the study team's 'long list' of transportation alternatives.</li> </ul>
November 19, 2009	<ul style="list-style-type: none"> <li>To receive perspectives and input on the possible advantages and disadvantages of the four Groups of combination Transportation Alternatives, and to gain input regarding the third round of PICs.</li> </ul>
May 6, 2010	<ul style="list-style-type: none"> <li>To receive CAG perspectives on the proposed elements of the draft Strategy for Group #1 and Group #2; and</li> <li>To receive CAG perspectives on input on the results of the transportation, economic, natural and social assessments for Group #3 and Group #4 alternatives.</li> </ul>
October 6, 2010	<ul style="list-style-type: none"> <li>To provide CAG members with an update on the study;</li> <li>To receive CAG feedback on the draft Strategy; and</li> <li>To provide CAG with an update from the fourth round of PICs.</li> </ul>

Refer to **Appendix A** for copies of the CAG meeting summaries.

## **6.3 MUNICIPAL CONSULTATION**

### **6.3.1 Municipal Advisory Group**

#### **Municipal Technical Advisory Group (MTAG)**

A Regulatory Agency Advisory Group (RAAG) was assembled, which included potentially affected provincial ministries, agencies and federal departments. This group provided valuable input related to compliance issues and other areas of concern with their jurisdiction.

#### **Municipal Executive Advisory Group (MEAG)**

The MEAG was established to provide a forum for discussion of broad, strategic and inter-regional issues. Members include the Commissioners of Planning and Public Works from the Regions of Niagara and Halton, and the City of Hamilton. There is also representation from Metrolinx (including GO Transit).

The following table summarizes all MTAG and MEAG meetings that took place throughout the study process:

**Table 6–2: Summary of Meetings Held with MTAG and MEAG**

Date	Purpose of Meeting
March 27, 2007	The purpose of the orientation session with MTAG was to: <ul style="list-style-type: none"> <li>• Outline context for study;</li> <li>• Present approach to study since development of the ToR; describe key steps in the process;</li> <li>• Consult with municipal stakeholders on key elements of the Study Plan;</li> <li>• Consult with municipal stakeholders on the public consultation / outreach approach; and</li> <li>• Understand municipal stakeholders' information / participation requirements.</li> </ul>
June 4, 2007	The purpose of the joint MTAG / RAAG meeting was to present the following: <ul style="list-style-type: none"> <li>• Overview of the work completed to date;</li> <li>• Study documentation;</li> <li>• Roles of the MTAG and RAAG (Regulatory Agencies Advisory Group); and</li> <li>• Generation and Evaluating Transportation System Alternatives.</li> </ul>
September 25, 2007	The purpose of this MEAG meeting was to discuss: <ul style="list-style-type: none"> <li>• Role of the MEAG;</li> <li>• Provide a summary of the results of the first round of consultation;</li> <li>• Discuss broad-based interregional issues related to this project, including:                             <ul style="list-style-type: none"> <li>○ Land use allocation for transportation modeling;</li> <li>○ Municipal review timeframes for key study documents;</li> <li>○ Long-term strategies and plans; and</li> <li>○ Future meeting schedule.</li> </ul> </li> </ul>
December 13, 2007	The purpose of this joint MTAG / RAAG meeting was to present and discuss the following: <ul style="list-style-type: none"> <li>• The process for identifying transportation problems and opportunities;</li> <li>• Views and perspectives on transportation problems; and</li> <li>• A transportation vision for the corridor that links that GTA to the Niagara Frontier.</li> </ul>



Date	Purpose of Meeting
March 4, 2008	<p>The purpose of this joint MTAG / RAAG meeting was to present and discuss the following:</p> <ul style="list-style-type: none"> <li>• The process for identifying the existing and future transportation problems and opportunities in the Niagara to GTA Corridor;</li> <li>• The principles of modeling and forecasting; and</li> <li>• The Greater Golden Horseshoe Model and the Strategic Demand Forecasting Approach.</li> </ul>
April 10, 2008	<p>The purpose of the MEAG meeting was as follows:</p> <ul style="list-style-type: none"> <li>• To outline a context for study, including provincial / local policy context;</li> <li>• Present the approach to study since development of the ToR;</li> <li>• Describe key steps in EA process;</li> <li>• Consult with municipal stakeholders on key elements of the Study Plan;</li> <li>• Consult with municipal stakeholders on the public consultation / outreach approach, including the assembly of a CAG; and</li> <li>• Understand municipal stakeholders' information / participation requirements.</li> </ul>
June 9, 2008	<p>The purpose of this joint MTAG / RAAG meeting was to provide an update on identifying transportation problems and opportunities:</p> <ul style="list-style-type: none"> <li>○ Goals and objectives; and</li> <li>○ Factors driving need for additional transportation capacity.</li> </ul>
February 5, 2009	<p>The purpose of this joint MTAG / RAAG meeting was to provide a study update and obtain feedback on:</p> <ul style="list-style-type: none"> <li>• Transportation Problems and Opportunities Synopsis; and</li> <li>• PIC #2 overview.</li> </ul>
February 12, 2009	<p>The purpose of the MEAG meeting was to discuss the following issues:</p> <ul style="list-style-type: none"> <li>• Study background and provide a brief update;</li> <li>• The transportation problems and opportunities that have been identified by the study team;</li> <li>• PIC#2; and</li> <li>• Other strategic issues.</li> </ul>
August 21, 2009	<p>The purpose of this meeting with Niagara Region was to provide a status update on the work recently completed for the NGTA study and to gain the Region of Niagara's perspectives and ideas concerning the generation of alternatives.</p>

Date	Purpose of Meeting
September 15, 2009	The purpose of this meeting with the City of Hamilton was to provide a status update on the work recently completed for the NGTA study and to gain the City's perspectives and ideas concerning the generation of alternatives.
October 8, 2009	The purpose of this meeting with the Regional Municipality of Halton was to provide a status update on the work recently completed for the NGTA study and to gain the Region of Halton's perspectives and ideas concerning the generation of alternatives.
October 16, 2009	The purpose of this meeting with the City of Hamilton was to review the City's comments on the Transportation Problems and Opportunities Report.
November 20, 2009	The purpose of this joint MTAG / RAAG meeting was to provide an update on the study progress; and seek input on the development of combination alternatives as well as a preliminary identification of potential impacts and benefits of transportation alternatives.
January 18, 2010	The purpose of this MEAG meeting was to obtain feedback on the study team's assessment of the group alternatives as well as the material that was presented at the third round of PICs and the feedback obtained at PIC #3.
May 10, 2010	The purpose of the meeting was to provide a status update on the work recently completed for the NGTA study and to gain <b>Niagara Region's</b> perspectives with regard to the Group #1 and Group #2 alternatives. In addition the study team was seeking feedback on the assessment of the Group #3 and Group #4 alternatives.
May 10, 2010	The purpose of the meeting was to provide a status update on the work recently completed for the NGTA study and to gain the <b>City of Hamilton's</b> perspectives with regard to the Group #1 and Group #2 alternatives. In addition the study team was seeking feedback on the assessment of the Group #3 and Group #4 alternatives.
May 14, 2010	The purpose of the meeting was to provide a status update on the work recently completed for the NGTA study and to gain <b>Halton Region's</b> perspectives with regard to the Group #1 and Group #2 alternatives. In addition the study team was seeking feedback on the assessment of the Group #3 and Group #4 alternatives.
June 14, 2010	The purpose of this MEAG meeting was to provide a brief summary of the information to be presented at the fourth round of PICs.
July 21, 2010	The purpose of this meeting with the Region of Halton was to provide an overview of the draft Transportation Development Strategy and to discuss the Region's and the City of Burlington's comments on the draft strategy.
July 23, 2010	The purpose of this meeting with Niagara Region was to provide an overview of the draft Transportation Development Strategy and to discuss the Region's comments on the draft strategy.

Date	Purpose of Meeting
August 19, 2010	The purpose of this meeting with the City of Hamilton was to provide an overview of the draft Transportation Development Strategy and to discuss the City's comments on the draft strategy.

Refer to the **Appendix B** for copies of the MTAG and MEAG meeting minutes.

### 6.3.2 Council / Committee Presentations

The following table summarizes the council / committee presentations held throughout the study process:

**Table 6–3: Summary of Council / Committee Presentations**

Date	Purpose of Meeting
December 10, 2007	To discuss the following with <b>Halton Region</b> and the <b>City of Burlington</b> : <ul style="list-style-type: none"> <li>• Study purpose and need;</li> <li>• EA study area;</li> <li>• Multi-modal Strategy;</li> <li>• Forecasting / modeling work;</li> <li>• Data collection;</li> <li>• Consultation;</li> <li>• Review timelines for study reports;</li> <li>• Evaluation factors / criteria; and</li> <li>• Implementation and funding issues.</li> </ul>
July 17, 2008	<ul style="list-style-type: none"> <li>• To obtain the most current data for growth management exercise from the <b>Halton Region</b>, in order to discuss the current status of growth management exercise and assumptions for land use allocations.</li> </ul>
July 31, 2008	<ul style="list-style-type: none"> <li>• To obtain the most current data for growth management exercise from the <b>City of Hamilton</b>, in order to discuss the current status of growth management exercise and assumptions for land use allocations.</li> </ul>
September 5, 2008	<ul style="list-style-type: none"> <li>• To obtain the most current data for growth management exercises from the <b>Niagara Region</b>, in order to discuss the current status of growth management exercises and assumptions for land use allocations.</li> </ul>
August 21, 2009	<ul style="list-style-type: none"> <li>• To provide a study update to the <b>Niagara Region</b>.</li> <li>• To review the transportation alternatives and seek input as to the impact of these alternatives from a municipal perspective.</li> <li>• To explore the potential to supplement the study team's 'long list' of transportation alternatives.</li> </ul>

Date	Purpose of Meeting
September 15, 2009	<ul style="list-style-type: none"> <li>To provide a study update to the <b>City of Hamilton</b>.</li> <li>To review the transportation alternatives and seek input as to the impact of these alternatives from a municipal perspective.</li> <li>To explore the potential to supplement the study team's 'long list' of transportation alternatives.</li> </ul>
April 20, 2009	<p>To discuss the following with <b>City of Hamilton Public Works and Staff Advisory Committee</b>:</p> <ul style="list-style-type: none"> <li>Study background;</li> <li>Transportation problems and opportunities; and</li> <li>Consultation and next steps.</li> </ul>
October 8, 2009	<ul style="list-style-type: none"> <li>To provide a study update to <b>Halton Region</b>.</li> <li>To review the transportation alternatives and seek input as to the impact of these alternatives from a municipal perspective.</li> <li>To explore the potential to supplement the study team's 'long list' of transportation alternatives.</li> </ul>
October 13, 2009	<ul style="list-style-type: none"> <li>To present the findings documented in both the GTA West and NGTA Area Transportation System Problems and Opportunities Reports to the Halton Transportation Advisory Committee; to address any questions or comments on these reports.</li> </ul>
October 16, 2009	<ul style="list-style-type: none"> <li>To review the comments submitted by the <b>City of Hamilton</b> on the Problems and Opportunities Report.</li> </ul>
November 4, 2009	<ul style="list-style-type: none"> <li>Provided a study update to <b>provincial planning directors committee</b> including: study process, generation and assessment of alternatives, and consultation efforts with various modes of transportation.</li> </ul>
November 12, 2009	<ul style="list-style-type: none"> <li>To present the findings documented in both the GTA West and NGTA Area Transportation System Problems and Opportunities Reports to the <b>Halton Region Planning and Public Works Committee</b>; to obtain feedback on them.</li> </ul>
February 2, 2010	<ul style="list-style-type: none"> <li>To present study background, context, and process, combination alternatives, an overview of PIC#3, and next steps to <b>Niagara Transportation Strategy Steering Committee</b>.</li> </ul>
May 25, 2010	<ul style="list-style-type: none"> <li>To present GTA West Corridor Environmental Assessment's (EA) and NGTA Corridor EA's Area Transportation System Alternatives Reports and preliminary assessment findings related to the multi-modal transportation development strategy to the <b>Halton Transportation Advisory Committee</b>; and</li> <li>To receive Halton Region's comments on Area Transportation System Alternatives Reports for both the GTA West Corridor EA and NGTA Corridor Ea.</li> </ul>
June 16, 2010	<ul style="list-style-type: none"> <li>To provide a brief summary of the information to be presented at the fourth round of PICs to <b>Halton Planning and Public Works</b>.</li> </ul>

## 6.4 REGULATORY AGENCY CONSULTATION

### 6.4.1 Regulatory Agency Advisory Group (RAAG)

The RAAG was established as a means to consult with potentially affected provincial ministries, agencies and federal departments. The following table summarizes the meetings held with RAAG throughout the study process:

**Table 6–4: Summary of Meetings Held with RAAG**

Date	Purpose of Meeting
April 11, 2007	The purpose of this RAAG Orientation Session was to present the following: <ul style="list-style-type: none"> <li>• Study team structure;</li> <li>• Study overview;</li> <li>• Existing policy context;</li> <li>• Approved EA ToR;</li> <li>• Study process and objectives;</li> <li>• Study plan;</li> <li>• Function of the RAAG;</li> <li>• Stakeholder consultation and outreach; and</li> <li>• Process for generating and evaluation transportation system alternatives.</li> </ul>
June 4, 2007	The purpose of the meeting was to present the following: <ul style="list-style-type: none"> <li>• Overview of the work completed to date;</li> <li>• Study documentation;</li> <li>• Roles of the MTAG and RAAG (Regulatory Agencies Advisory Group); and</li> <li>• Generation and Evaluating Transportation System Alternatives.</li> </ul>
December 13, 2007	The purpose of this meeting was to present and discuss the following: <ul style="list-style-type: none"> <li>• The process for identifying transportation problems and opportunities;</li> <li>• Views and perspectives on transportation problems; and</li> <li>• A transportation vision for the corridor that links that GTA to the Niagara Frontier.</li> </ul>
March 4, 2008	The purpose of this meeting was to present and discuss the following: <ul style="list-style-type: none"> <li>• The process for identifying the existing and future transportation problems and opportunities in the Niagara to GTA Corridor;</li> <li>• The principles of modeling and forecasting; and</li> <li>• The Greater Golden Horseshoe Model and the Strategy Demand Forecasting Approach.</li> </ul>

Date	Purpose of Meeting
June 9, 2008	The purpose of the meeting was to provide the following: <ul style="list-style-type: none"> <li>• Update on Identifying Transportation Problems and Opportunities;</li> <li>• Goals and objectives; and</li> <li>• Factors driving need for additional transportation capacity.</li> </ul>
February 5, 2009	The purpose of this meeting was to provide a study update and obtain feedback on: <ul style="list-style-type: none"> <li>• Transportation problems and opportunities synopsis; and</li> <li>• PIC#2 overview.</li> </ul>
June 19, 2009	<ul style="list-style-type: none"> <li>• To provide a study update; and</li> <li>• To present and seek feedback on the process framework for developing and assessing transportation alternatives.</li> </ul>
November 20, 2009	<ul style="list-style-type: none"> <li>• To provide an update on the study progress; and seek input on the development of combination alternatives as well as a preliminary identification of potential impacts and benefits of transportation alternatives.</li> </ul>
May 7, 2010	<ul style="list-style-type: none"> <li>• To present study background and process, draft Strategy, and assessment findings and trade-offs.</li> </ul>

Refer to the **Appendix B** for copies of the RAAG meeting minutes.

#### 6.4.2 Other Agency Meetings

The following table presents an overview of the meetings held with other agencies throughout the study process:

**Table 6–5: Summary of Other Agency Meetings**

Date	Purpose of Meeting
January 28, 2009	To present the following to <b>Greenbelt Council</b> : <ul style="list-style-type: none"> <li>• Policy context for managing growth;</li> <li>• Study purpose, process and approach;</li> <li>• Evaluation factors and criteria;</li> <li>• Environmental constraint mapping;</li> <li>• Transportation system characteristics;</li> <li>• Consultation; and</li> <li>• Next steps.</li> </ul>
July 30, 2009	<ul style="list-style-type: none"> <li>• To present study background and update, transportation problems and opportunities, generation and assessment of transportation alternatives, and next steps to <b>Canadian Institute of Transportation Engineers</b>.</li> </ul>

Date	Purpose of Meeting
August 25, 2009	<ul style="list-style-type: none"> <li>To provide a study update to <b>Southern Ontario Gateway Council</b>; and</li> <li>To review the marine-related transportation alternatives and seek input on the alternatives as well as the potential to supplement the study team's 'long list' of transportation alternatives.</li> </ul>
September 25, 2009	<ul style="list-style-type: none"> <li>The purpose of the <b>agency workshop</b> was to update agency members on the work completed for NGTA and GTA West and to engage agency members in a discussion to encourage the members to provide comments and / or potential policy issues with the preliminary alternatives.</li> </ul>
October 14, 2009	<ul style="list-style-type: none"> <li>To provide a study update to <b>Metrolinx (including GO Transit)</b>; and</li> <li>To present and seek feedback on the group alternatives that had been generated.</li> </ul>
October 16, 2009	<ul style="list-style-type: none"> <li>MTO met with <b>Greenbelt Council</b> to provide an update on the project and obtain feedback.</li> </ul>
January 21, 2010	<ul style="list-style-type: none"> <li>To present the study background and process and an overview of the Area Transportation System Alternatives (Group #1, #2, #3, and #4) to <b>Niagara Escarpment Commission</b>.</li> </ul>
February 19, 2010	<ul style="list-style-type: none"> <li>To present study background and update, transportation problems and opportunities and an overview of the PIC#2 to <b>Regional Niagara Bicycling Committee</b>.</li> </ul>
April 22, 2010	<ul style="list-style-type: none"> <li>The purpose of this joint NGTA and GTA West <b>Agency Workshop</b> was to present study background and process, draft Strategy, and assessments and trade-offs.</li> </ul>
May 5, 2010	<ul style="list-style-type: none"> <li>MTO met with the <b>Greenbelt Council</b> to provide an update on the project and obtain feedback.</li> </ul>
June 17, 2010	<ul style="list-style-type: none"> <li>To provide a brief summary of the information to be presented at the fourth round of PICs to the <b>Niagara Escarpment Commissions</b>.</li> </ul>
July 22, 2010	<ul style="list-style-type: none"> <li>The purpose of the meeting was to provide an overview of the draft Strategy to the <b>Niagara Escarpment Commissions</b> and to discuss the NEC's comments on the draft Strategy.</li> </ul>

## 6.5 TRANSPORTATION SERVICE PROVIDERS AND BUSINESS AND COMMERCIAL STAKEHOLDERS CONSULTATION

### 6.5.1 Transportation Service Providers (TSP) / Business and Commercial Stakeholders (BCS) Meetings

TSP stakeholders include municipal transit, inter-regional transit, freight rail service, marine service, air service, transportation associations / organizations and trucking organizations. BCS stakeholders include large corporations / industries, business associations, logistics providers, shipping associations and universities / colleges.

The following table summarizes the meetings held with TSP and BCS throughout the study process:

**Table 6–6: Summary of Meetings Held with TSP and BCS**

Date	Purpose of Meeting
May 17, 2007	The purpose of the TSP Orientation Session was to present the following: <ul style="list-style-type: none"> <li>• Study background, policy context, scope and key milestones;</li> <li>• Role of stakeholders;</li> <li>• Approaches for engaging TSPs in the study process; and</li> <li>• Consultation and Outreach Plan.</li> </ul>
June 28, 2007	The purpose of the BCS Orientation Session was to present the discuss the following: <ul style="list-style-type: none"> <li>• Study background, policy context, scope and key milestones;</li> <li>• Study Plan;</li> <li>• Role of the BCS in this study;</li> <li>• Approaches for engaging BCS in the study process; and</li> <li>• Consultation and Outreach Plan.</li> </ul>
October 2007 – February 2008	<ul style="list-style-type: none"> <li>• BCS and TSP problems and opportunities interviews.</li> </ul>

### 6.5.2 Individual Technical Meetings

The following table summarizes some of the individual technical meetings held with TSP and BCS throughout the study process:

**Table 6–7: Summary of Individual Technical Meetings Held with TSP and BCS**

Date	Purpose of Meeting
March 26, 2009	To present the following to <b>Realtors Association of Hamilton and Burlington</b> : <ul style="list-style-type: none"> <li>• Study background and update;</li> <li>• Transportation problems and opportunities;</li> <li>• PIC #2; and</li> <li>• Strategic issues.</li> </ul>
May 25, 2009	<ul style="list-style-type: none"> <li>• To provide a study update to <b>Hamilton International Airport (HIA)</b>; and</li> <li>• To review the air-related transportation alternatives and seek input on the alternatives as well as the potential to supplement the study team’s ‘long list’ of transportation alternatives.</li> </ul>
May 29, 2009	<ul style="list-style-type: none"> <li>• To provide a study update to <b>Hamilton Port Authority</b>; and</li> <li>• To review the marine-related transportation alternatives and seek input on the alternatives as well as the potential to supplement the study team’s ‘long list’ of transportation alternatives.</li> </ul>



Date	Purpose of Meeting
June 1, 2009	<ul style="list-style-type: none"><li>• To provide a study update to <b>CP Railway</b> and <b>CN Railway</b>; and</li><li>• To review the freight rail-related transportation alternatives and seek input on the alternatives as well as the potential to supplement the study team's 'long list' of transportation alternatives.</li></ul>
July 5, 2010	<ul style="list-style-type: none"><li>• To present an overview of the draft Strategy to <b>Ontario Chamber of Commerce</b>.</li></ul>

## 6.6 FIRST NATIONS

The early focus of consultation with First Nations groups has assisted with the collection of data on the location and understanding of treaty rights and traditional land use issues, as well as other items that may be of interest to the First Nations. Outreach and consultation has occurred and continues with the Mississaugas of the New Credit First Nation and the Six Nations of the Grand River Territory First Nation.

**Table 6–8: Summary of Meetings Held with First Nations**

Date	Purpose of Meeting
May 30, 2007	<ul style="list-style-type: none"> <li>• <b>Six Nations</b> consultation seminar</li> </ul>
June 4, 2008	<p>The following is a summary of key questions which were addressed at the meeting with <b>Six Nations’ Lands and Resources</b>:</p> <ul style="list-style-type: none"> <li>• What will the draft Strategy include?</li> <li>• How specific will the recommendations from the draft Strategy be?</li> <li>• What feedback did the study team receive at the first round of PICs?</li> <li>• Can the evaluation factors developed by the study team be modified and / or supplemented?</li> <li>• Will the draft Strategy be ‘set in stone’ at the end of Phase 1 of the EA study?</li> </ul>
October 28, 2009	<ul style="list-style-type: none"> <li>• To provide a study update to <b>Mississaugas of New Credit First Nation</b>;</li> <li>• To present and seek feedback on the process framework for developing and assessing transportation alternatives; and</li> <li>• To present and seek feedback on the group alternatives that had been generated.</li> </ul>
April 7, 2010	<ul style="list-style-type: none"> <li>• To present study background, area transportation system problems and opportunities, development and assessment of transportation alternatives, combination alternatives and future work / next steps to <b>Six Nations of the Grand River Territory</b>.</li> </ul>
May 26, 2010	<ul style="list-style-type: none"> <li>• To present study background, development and assessment of transportation alternatives, Group #1, #2, #3 and #4 elements, and future work / next steps to <b>Mississaugas of the New Credit First Nation</b>.</li> </ul>
June 29, 2010	<ul style="list-style-type: none"> <li>• Met with <b>Mississaugas of the New Credit First Nation</b> to review draft Transportation Development Strategy and discuss framework for First Nations Existing Conditions document.</li> </ul>
June 30, 2010	<ul style="list-style-type: none"> <li>• Met with <b>Six Nations of the Grand River Territory</b> to review draft Transportation Development Strategy and discuss framework for First Nations Existing Conditions document.</li> </ul>
July 5, 2010	<ul style="list-style-type: none"> <li>• Met with <b>Six Nations of the Grand River Territory</b> to further discuss First Nations Existing Conditions document.</li> </ul>
September 20, 2010	<ul style="list-style-type: none"> <li>• Met with <b>Mississaugas of the New Credit First Nations Chief and Council</b> to review draft Transportation Development Strategy and discuss input to First Nations Existing Conditions document.</li> </ul>

**Niagara to GTA Corridor**  
**Planning and Environmental Assessment Study**

**TRANSPORTATION DEVELOPMENT  
STRATEGY  
APPENDICES**  
**Draft for Consultation**

February 2011

[www.niagara-gta.com](http://www.niagara-gta.com)



# APPENDIX A: MINUTES OF CAG MEETINGS



The preliminary meeting of the Community Advisory Group (CAG) commenced at 7:00 p.m., June 7<sup>th</sup>, 2007, in the Board Room at Liuna Station in Hamilton.

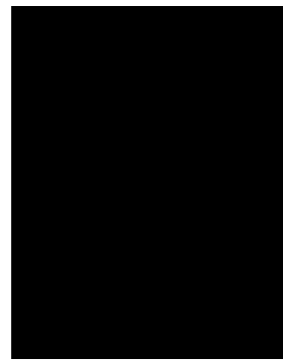
In attendance:

*Project Team:*

John Slobodzian, MTO  
Darlene Proudfoot, MTO  
Terri Hilditch, MTO  
Sandy Nairn, Ecoplans  
Michael Chiu, MRC

Tyler Drygas, URS  
Margie Gonzalez, URS  
Sally Leppard, Lura Consulting (facilitator)  
Mark Knight, Lura Consulting

*Community Members:*



### 1. Introductions and agenda review

Sally Leppard thanked all community members for coming, overviewed her role as the independent facilitator, and highlighted the orientation/procedural nature of the meeting. The meeting agenda was reviewed, and community members agreed to the content.

The Project Team members were introduced, and the community members provided a brief introduction as to why they decided to apply for the CAG.

John Slobodzian, MTO project coordinator, welcomed participants and thanked them for attending. He noted that their participation will be a crucial component of the exercise and of learning what is important to the community.

### 2. Background to the study

Sally Leppard noted that an introduction to the study would be presented, which may be familiar to those who attended one of the Stakeholder Orientation Sessions.

Darlene Proudfoot gave a presentation on:

- Phase 1 – Study Objectives
- Transportation Needs Assessment Process
- Our Stakeholders
- Principles of Consultation
- Roles in Decision Making

Michael Chiu gave a presentation on:

- Overview of Work Completed (focusing on the EA Terms of Reference)
- Overview of Work Completed (describing the Stakeholder Orientation Sessions)
- Overview of Work Completed (describing the opportunities to provide input)

Sally Leppard gave a presentation on:

- Orientation Sessions – Key Messages: Principles
- Orientation Sessions – Key Messages: Engagement Mechanisms, Outreach Mechanisms
- Orientation Sessions – Key Messages: CAG

Sally Leppard asked if community members could identify with the summary of Orientation Session key messages, and there was general agreement. She noted that the Public Consultation and Outreach Plan (PC&O) would incorporate these ideas to the extent possible, and that the PC&O Plan will be completed after the upcoming Public Information Centres.

Community members provided the following questions/comments regarding the presentations:

Q: What is the role of the Mayors and Chairs group? I have seen in the past where a decision has already been made.

A: The Minister has made it clear that there is a commitment to systems planning, and she wants it done in consultation with all stakeholders. She uses the Mayors and Chairs Advisory Group as a sounding board, to find out what they are hearing from their constituents.

Q: How will you weigh the input from all of the advisory groups?

A: No groups are weighted more than others.

C: Suggested a coordinated session with the respective Mayors and Chairs Advisory Group.

R: This is an issue for our upcoming discussion. Can we talk about it then?

C: Some councilors are under the impression that if you build it they will come, so they are positive for the highway because they think jobs are coming. This skews the results, as they will say the public wants jobs – but they are not getting the true picture.

Q: There may be a need for another advisory group, to connect this project with the Toronto GTA study.

A: The need for linkages has been recognized, and is being considered and determined.

- Q: How is this study integrated to other initiatives, such as the GTA-West Planning Study, Highway 24, and expansion of the Peace Bridge?
- A: There are many ways they are linked, and common tools. The Growth Plan provides population and employment figures that are used as the basic justification – the projects all share that context. The Ministry is also developing a Greater Golden Horseshoe forecasting model. Once the study looks at actual alternatives there will be overlap, and we will have to make sure we are coordinating, and examine if there are benefits to coordination.

It was agreed that the 'linkage' opportunities, between this Study and others, will be discussed in more detail at the first CAG working meeting.

### 3. Review of CAG Draft Charter

Sally Leppard outlined the purpose and work plan for the CAG. She suggested community member's comments and insights were welcome, and that advice from the Stakeholder Orientation Sessions have been included in the draft charter. She noted that the charter will be finalized by the next CAG meeting.

#### *Sections 1 and 2: Public Consultation and Outreach; Mandate*

No questions/comments were noted by community members.

#### *Section 3: Work Plan*

It was noted that the number of meetings will be decided by the CAG members themselves, after they review the study plan and identify which issues they would like to explore as a group. It was also noted that the next meeting will occur in September, and that at each meeting notice will be given of the next meeting date.

#### *Sections 4 and 5: Membership; Term of Membership*

A community member's question regarding final membership numbers was deferred to later in the meeting.

#### *Section 6 and 7: Meetings and Attendance; Meeting Times*

No questions/comments were noted by community members.

#### *Section 8: Decision Making, Roles and Responsibilities*

It was suggested that members might want decision-making by consensus, or they might want voting. It was noted that some groups function by consensus, and use voting to break log jams, but that the CAG can always simply say they did not reach consensus.

Community members were also reminded to come to meetings prepared, so they do not miss the nuances of the discussions.

*Sections 9 and 10: Meeting Management, Agendas and Reporting; Advisors and Experts*

It was noted that Lura Consulting will document meetings, and provide members with a draft before it is posted on the public website. In addition, everything discussed is in the public record, and affects the environmental assessment process. Personal names are not part of the public consultation record.

**4. CAG Operational Questions**

Sally Leppard opened the floor to a discussion of any outstanding operational questions regarding the CAG. Community members provided the following questions/comments:

- C: We need to have representation, and have the right mix of people, and thus need facts about who we are.
- C: The CAG needs to be more reflective in terms of stage of life – young children, etc...
- C: The CAG should be aware of conflicts of pecuniary interests, if somebody is involved in a certain area; so if we use voting that person should not vote.
- R: There could be a statement about that issue in the Charter, if you would like. We have seen in other groups that it is difficult to know if someone has a conflict of interest, and thus it will be incumbent on CAG members to declare any such conflicts. This does not mean that person cannot participate – it simply means everybody around the table knows.
- C: Biographies can characterize and create preconceived notions. Also, trust the study team to ensure the CAG is representative.
- C: Do not think personal information is privy to the group.
- R: To summarize: no biography, but share name, occupation, area of residency, and interest areas. [general nodding of approval by community members]
- C: Regarding recruiting, we may run into a problem if people get volunteered, as they are unlikely to have the same level of commitment.
- R: We will be going to the upcoming Public Information Centres, where there will be a station area that describes the CAG and provides application forms. The process so far tapped into the existing database of 2500 contacts, and the Stakeholder Orientation Sessions, but it has not been broadly broadcast, and that needs to be done.
- C: Found out about the CAG through the website, so there has been ample opportunity.
- C: Serious concerns about turning the CAG into a lecture hall, versus a working group, so need to watch the numbers.
- R: The Terms of Reference states a minimum of 21 (7 from each Region). From experience, people drop off and new people want to come in.
- Q: You use the word 'gaps' – what are they?
- A: Certain ages, interests, and members from the Halton Region.



- C: You are not going to find many bigger tables, but you need to ensure the CAG has an appropriate mix. Favour leaving it to the Project Team, but favour not growing much more.
- C: Prior to the last election, information became apparent in the election. And people in Flamborough did not know (although those in Niagara did). Therefore it is auspicious to think that because you are aware you have greater merit.
- R: We are hearing to leave the CAG open, fill gaps, reflect interests, but not get too big, and do not assume that if you are unfamiliar with the project you cannot come. Also, there is a selection process, at which point representation gaps will be closed.
- C: Based on the comments here, assumes dedication is here with these people, and so thinks there are very few gaps to close. Believes there is total commitment at this table.
- R: Agree, and would not be here otherwise. However, people will come to the Public Information Centres who have the right to participate. That is why we are still providing people with the opportunity to participate. The process needs to allow for this – because many will be just as dedicated, and we do not want to be exclusionary.

Sally Leppard discussed the frequency of meetings, and rotating locations. She opened the floor to comments on including community members from outside the study area. It was noted that there are several adjacent communities, and all would be viewed as equal in the eyes of the Study Team.

- C: There are two issues: trying to keep the CAG a manageable size, and the logistics would be much more difficult.
- C: Rather than expanding as CAG members, could have people address the CAG with their suggestions and expertise.
- C: The problem is corridors are channels from one place to another; and therefore everybody would have a stake. So maybe we need specific stakeholder meetings with geographic sectors, economic sectors, etc... Maybe have a softer zone, which is not as formal.
- R: We are hearing that if we get applications from outside of the study area do not automatically exclude them, but keep an eye on creating a manageable committee.
- R: There are opportunities for members of the public to come and watch, rather than be actual members.

### 5. Presentation: Draft Study Documents

Sandy Nairn gave a presentation on:

- Study Documentation: The Study Plan
- Study Documentation: Overview of Environmental Conditions and Constraints
  - Natural Heritage
  - Significant Wildlife Areas
- Study Documentation: Overview of Transportation and Socio-Economic Conditions
- Study Documentation: Availability

Community members were reminded to indicate on their comment forms in what format(s) they would like to receive the study documentation

It was noted that the dotted study area line on the map may appear to some as a corridor, so it should be made clear that the dotted line is not a corridor.

It was noted that the three draft study documents would be available in the upcoming weeks.

Community members provided the following questions/comments regarding the presentation:

Q: Do you have any idea where the highway will go?

A: There is no preconceived solution. We have a lot of work to do before we can come to a conclusion.

C: The opinion out there is that there will be a highway.

A: The Study Team is trying to reorient people, and inform that the process is open to any possible solution.

Q: Has the Mayor's and Chairs Advisory Group received the studies?

A: No.

Q: Transportation methods include the need for companion infrastructure. Is this too cumbersome to study, or is it implied?

A: The emphasis is more the movement of goods and services. The goal is to add capacity to the system in the area – but how the capacity is added is the point of this exercise. The idea is to come up with a recommendation, to make sure people and goods can move efficiently.

C: In terms of credibility, if you are proposing rail you would need a high voltage corridor. And if you are trying to allay concerns about a highway people may ask about ancillary items. Therefore you would be in a better position if that companion infrastructure information would be available.

### 6. Presentation: Next Steps

Tyler Drygas provided a presentation on:

- Next Steps: Public Information Centres
- Next Steps: Advisory Groups, Next CAG Meeting
  - PICs: June 12<sup>th</sup>, 2007 (Rockton), June 14<sup>th</sup>, 2007 (St. Catharines) and June 18<sup>th</sup>, 2007 (Burlington).
  - Participants to advise Lura if they do not want their e-mail address circulated to CAG members.
  - Participants to advise Lura if they do not wish to sit on the CAG.
  - Comments on the Draft documents would be appreciated by July 15<sup>th</sup>, 2007.
  - Next meeting: Third week in September.

The meeting adjourned at 9:00 p.m.

### Action Items

#### CAG Members

- Advise Lura if they do not want their email address circulated to CAG members;
- Advise Lura if they do not wish to sit on the CAG; and,
- Provide comments on the Draft documents by July 15<sup>th</sup>, 2007.

#### Project Team

- Update the draft Charter: include a section relating to Declaring Pecuniary Interest;
- Circulate CAG membership list, including contact information, to CAG members;
- Finalize CAG membership after the three upcoming PICs;
- Circulate a web-link to the Growth Plan to CAG members ([http://www.pir.gov.on.ca/English/growth/ggh\\_plan.htm](http://www.pir.gov.on.ca/English/growth/ggh_plan.htm)); and,
- Begin creating a CD containing all project-related documents, to be distributed to CAG members.

A Community Advisory Group (CAG) meeting was held regarding the Niagara to GTA Corridor Planning and EA Study on September 20<sup>th</sup>, 2007 at the Casablanca Winery Inn from 6:30 p.m. to 9:00 p.m.

### Attendance

A total of 48 members of the CAG attended the meeting; 34 chose to sign in.

Representatives from the Project Team included the Ministry of Transportation (Terry Hilditch, and Darlene Proudfoot), URS, MRC and Ecoplans. An independent facilitator from Lura Consulting, Sally Leppard, facilitated the meeting.

### Purpose

This was the first full CAG meeting (a preliminary CAG meeting was held in June 2007). The purpose of this meeting was to introduce and provide background to the study for new CAG members, and present the following:

- The Phase 1 study process;
- An overview of the first round of consultation;
- Draft documentation (Study Plan, Overview of Environmental Conditions and Constraints, and Overview of Transportation and Socio-Economic Conditions);
- Process for identifying transportation problems and opportunities; and
- Next steps.

In addition, the following elements of CAG logistics were discussed:

- Meeting record from the preliminary CAG meeting held in June 2007;
- The Draft CAG Charter; and
- CAG Work Planning (i.e., roles, responsibilities, meeting schedule and general logistics).

Question and answers were responded to throughout the meeting and after the presentation.

### Discussion Highlights:

Breakout discussions were conducted. Participants were asked to respond to three questions and report their findings. Highlights of those discussions are summarized in point-form below. (Note: Consensus on the responses to each question was not obtained.)

#### **1. Do you have any comment on the identification of Problems and Opportunities**

- Focus on Global Warming and Kyoto initiatives
- There are opportunities for technological advancement in efficient transportation
- Look outside of study area for information
- Opportunity for multi-modal transportation system
- Opportunity to enhance transit system (e.g., GO Train service)
- Opportunity to determine priorities 20-30 years from now
- Link to other plans (e.g., Growth Plan, GTTA project, GTA West)

**2. Additional comments on the Environmental and Transportation / Economic Overview reports? Are there any important features or information that you feel is missing?**

- Many participants requested an additional two weeks to review the above reports
- Some tables reported that the environmental overview is very comprehensive; others indicated that it is based on secondary data, and some municipalities may not have up-to-date environmental information. This is particularly the case in Hamilton. These gaps should be closed.
- Obtaining primary data should be a priority for this study
- Review similar studies conducted worldwide, what can we learn, what are the Best Practices
- The principles should be modified to identify areas that should be excluded from consideration (specifically in regard to Environmentally Sensitive Areas and the Niagara Escarpment)
- Suggest that integrated transportation modes are reviewed, specifically in regard to transferring from one mode to another
- Ensure trade and goods movement are addressed

**3. What are your views on the Alternatives and their Evaluation? In particular, the process for assessing area transportation system alternatives, and the methodology for their evaluation.**

- Cost
- Sustainability
- Air Quality needs to be assessed
- Review comparative studies completed by other regions and institutions
- Suggest that a Niagara-GTA “by pass” option is included.
- Suggest that all alternatives are evaluated
- The Phase 1: Transportation Needs Assessment Process seems comprehensive, but that the evaluation criteria approach needs further discussion and study
- Concern that roads and highways are still the principal solution being considered by MTO
- Ensure that the study includes jurisdictions responsible for other modes of transportation (e.g. rail)

**Additional Comments**

Additional comments raised by CAG members concerning the study and CAG work planning include:

- Need for adequate time to review study reports
- Suggestion to provide executive summaries of all documents prepared.
- Consider briefing sessions on study materials / findings
- Materials provided to the CAG should have a reference number / indexing
- Need for a briefing document on the scope and assumptions contained in the forecasting model and the overall process for identifying transportation problems and opportunities.
- Provide CAG members with a summary of each of the stakeholder groups input.

The meeting adjourned at 9:30 p.m.

## NIAGARA TO GTA CORRIDOR EA – Phase 1 Community Advisory Group Meeting #2 Summary Report

The **second Community Advisory Group (CAG)** meeting regarding the Niagara to GTA Corridor Planning and Environmental Assessment Study was held on November 29, 2007 at the Casablanca Winery Inn from 6:30 p.m. to 9:00 p.m. The purpose of the meeting was to:

- (a) Provide participants with an update on the Study's progress;
- (b) Introduce members to the process to identify area transportation problems and opportunities;
- (c) Brainstorm a Vision for a transportation system in the Niagara to GTA Corridor; and
- (d) Identify current problems from a community perspective.

### **Attendance:**

A total of 31 members of the CAG attended the meeting. Regrets were received from 8 members.

Representatives from the Project Team included the Ministry of Transportation (John Slobodzian, Terry Hilditch and Pat Boeckner), URS, MRC and Ecoplans. A team of independent facilitators from Lura Consulting, Sally Leppard, Barry Randall and Liz Nield facilitated the meeting.

The meeting agenda is attached as **Appendix A** and detailed participant feedback is found in **Appendix B**.

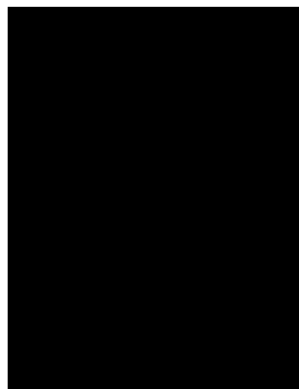
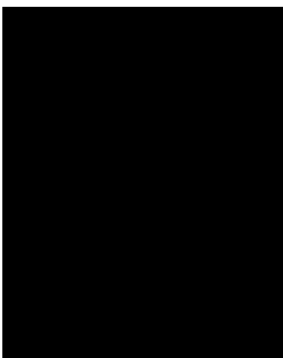
In attendance:

### *Project Team:*

John Slobodzian, MTO  
Pat Boeckner, MTO  
Terry Hilditch, MTO  
Michael Chiu, MRC  
Sandy Nairn, Ecoplans  
Tyler Drygas, URS

Jack Thompson, MRC  
Sally Leppard, Lura Consulting (Facilitator)  
Liz Nield, Lura Consulting (Facilitator)  
Barry Randall, Lura Consulting (Facilitator)  
Marina Saldana, Lura Consulting

### *Community Advisory Group Members:*



## 1. Welcome, Agenda Review and Review of Meeting Notes

Ms. Leppard reviewed the agenda with participants and received general acceptance of the agenda. CAG members reviewed and approved the record of the first CAG meeting held on September 20<sup>th</sup>, 2007, with no changes.

CAG members offered the following comments:

- C: It is important to provide executive summaries of reports for both the CAG members and the public participating in this process.
- C: Consideration should continue to be given to engaging participants from outside the corridor (e.g., Haldimand-Norfolk).
- C: Brock University would not be the best location for a CAG meeting.  
A: *CAG members had previously agreed to hold meetings at the Casablanca Inn due to its convenient location. (Note: This was re-confirmed at the Nov. 29<sup>th</sup> meeting.)*
- C: The assumptions behind the model and forecasting methodology should be discussed with interested CAG members.  
A: *A special technical session could be held on this topic, and other technical topics as needed/requested. CAG members are encouraged to contact the facilitator to suggest these meetings.*

## 2. Presentation

Mr. John Slobodzian provided a presentation on the following topics:

- An overview of the needs assessment process;
- The work completed since the last CAG meeting; and
- The proposed approach to identifying area transportation problems and opportunities.

Throughout, and after the presentation, participants asked questions and provided comments:

- Q: Railroads have operated for many years in many cities – however trucks are now the primary freight carrier. Is there any thought of putting the railway system back?  
A: *Throughout the study process (including the identification of problems/potential solutions stage) attempts will be made to engage the rail companies (e.g., CN, CP, short line rail owners, etc.).*
- Q: The line surrounding the map that includes the study area is “fuzzy”; not clear – does the study area end at a certain point?  
A: *The boundary of the Preliminary Study Area is intended to be “fuzzy” at this stage of the process (i.e., Phase 1). It broadly encompasses the Region of Niagara, the City of Hamilton, and the Region of Halton.*  
- *The Preliminary Study Area may be modified based on the identification of the area transportation system problems and opportunities.*

- *The study area will become more defined in Phase 2 of the study.*

Q: Given that MTO's jurisdiction does not address all transportation modes there is a need to engage/obtain commitments from other modes (e.g., rail - CP, CN) to ensure that a multi-modal plan can be implemented. Can the province expand MTO's jurisdiction?

A: *The Project Team is currently working with transportation service providers to identify problems and potential solutions. The Project Team is not aware of any proposed changes to MTO's mandate.*

C: Suggest that we need a plan for moving freight across the Welland canal -- concern that the QEW is already at full capacity. A suggestion was provided for a new highway route.

C: The new system should support industry in areas like Hamilton, Guelph and Brantford.

Q: How will growth and economic forecasts be addressed in the identification of transportation problems? The new Growth Plan is unproven in terms of its impact.

A: *Growth outlined in the Growth Plan (in conjunction with the municipal/Official Plan conformity exercise) along with projected economic conditions will be built into the forecasting exercise.*

Q: Need to be aware of the potential problems that a "solution" may create.

A: *These impacts will be examined in the process.*

Q: How does the newly announced Detroit to Windsor Gateway study affect this study?

A: *Information can be provided to the CAG about this study. The NGTA Project Team will attempt to keep abreast of the Gateway Project progress and utilize any recommendations and conclusions as appropriate.*

Q: It is important that other advisory groups to this process have the same opportunities as CAG. As well, CAG needs to hear from other transportation providers, such as rail. The question was raised whether some groups will have more influence than others.

A: *The only priorities are legal and policy. Everything else will be considered equally (e.g., the study will weight the options, and CAG can participate in this process).*

### **3. Facilitated Round Tables**

CAG members formed three groups. Each group discussed their vision for the transportation system in the Niagara to GTA Corridor and identified current problems in the area. Highlights from the round table discussions are summarized below.

#### **Vision 2031**

***What are some Vision elements for the transportation system in the Niagara to GTA Corridor in 2031?***

- Environmentally sustainable/beneficial
- Financially efficient and viable
- Recognize social equity
- Multimodal system
- Safe system



- Accessible
- Public transit
- Efficiency (i.e., live/work relationship)
- Better use of current corridor
- Accessible systems
- Environmentally sustainable – less impact than today
- World class model and brand for environmental and tourism sustainability
- Financially efficient and viable
- An efficient, seamless, environmentally friendly system
- High occupancy and mass transit system
- Include environmental full cost accounting in decision making process
- A multi modal system with accessible, socially equitable choices
- Include land use planning to encourage strong live/ work relationship
- Sustainable with new and present configuration of roads/rails/ waterways
- Easy to use; safe and utilized by many

### **Current Conditions**

**What problems do you feel are facing the current Transportation System in the Niagara to GTA Corridor today?**

**What problems currently affect people movement?**

- Lack of environmentally friendly, attractive, socially equitable transportation choices
- Our lifestyle choices include preferences for automobiles (including single occupant cars)
- Congestion (at peak periods), bottlenecks and mixed use of roads (trucks and cars), lack of capacity on roads
- Lack of alternative options, routes and methods for transit
- Lack of flexible hours for companies
- Lack of variety in transportation
- Urban sprawl
- Physical features of the land
- Planning and transportation not coordinated between/among municipalities
- Pollution e.g., smog

**What problems currently affect freight and goods movement?**

- Over reliance on trucks for the movement of freight and goods
- The mixed use of car and truck traffic on same highway
- Absence of mass transit options for goods
- Inequity in government support for alternatives to road transport
- Trucks using roads not built for them, lack of capacity for trucks
- Lack of investment in modernization of facilities, and investments/financing in transit and roadways
- Lack of options (truck focused)

- Just in time delivery (is a system promoting trucks and is an enemy of the environment)
- Pollution e.g., smog

Following the discussion about each group's Vision elements and identified problems, Ms. Leppard indicated that the team would draft a Vision based on the identified elements and would distribute it to CAG for their review.

#### 4. Other Business, Next Meeting and Adjourn

- **Media Relations:**

CAG members discussed how to deal with media inquiries regarding CAG's work. A number of options were discussed, including:

- Individual members of CAG should not attempt to represent CAG's opinions.
- Individual members of CAG could speak to the media from an individual perspective (i.e., not as a CAG representative).
- There could be one spokesperson designated (such as the Facilitator).

The results of this discussion will be forwarded to MTO's media representative who will assist the CAG to develop a protocol at the next CAG meeting.

Note: The Burlington contingent may approach the media prior to the development of a protocol.

- CAG members requested that the Project Team consider establishing an on-line forum for members (so that they can keep in contact and download material). *The study team indicated that they would consider an on-line option for the CAG.*

- **Next Meeting:**

The next full meeting is expected to be held in Spring 2008. A workshop on Travel Demand Forecasting and Modelling will be scheduled sooner; sometime over the next few months. This workshop will include a presentation on the approach that will be used to forecast the future travel demand within the Niagara to GTA Corridor. All members of the CAG will be invited to participate.

The meeting adjourned at 9:15 p.m.

## Appendix A: Agenda

**AGENDA**

November 29th, 2007  
6:30 p.m. – 9:00 p.m.  
Casablanca Winery Inn

**Purpose:**

- a) Information briefing: Study Needs Assessment Process; Update on Study Progress (including changes to the Study Plan, and progress report); technical approach to identifying problems and opportunities.
- b) Review of CAG work plan and integration with Study process
- c) CAG working session on Vision for the Future Transportation System for the Niagara to GTA Corridor
- d) CAG working session – scoping the problems and opportunities paper

**Desired outcomes:**

- **Collective Vision for the Future Transportation System for the Niagara to GTA Corridor**
- **CAG perspective on current constraints and issues**

**6:30      Networking**

**6:45      Welcome, Agenda Review and Review of Meeting Notes**

**7:00      Powerpoint presentation – John Slobodzian, MTO**

- Update on Study Progress
- Technical Approach to Identifying “Problems and Opportunities”
- Discussion

**7:15      Facilitated Round Tables:**

- Creating a Vision for the Niagara to GTA Transportation Corridor Planning and EA.
- Current Constraints and Issues – Community Perspective

**8:00      Ideas Round Up – Reports from round tables, common elements**

**8:45      Other Business, next meeting and adjourn**

- CAG approach to Media Relations
- Other business – CAG members
- Next Meeting - Topics

**9:00      Adjourn**

**Appendix B: Detailed Feedback**

**VISION 2031**

Each breakout group was asked to focus on envisioning a desired future state and identifying problems for the transportation system within the area.

Vision for the transportation system in the Niagara to GTA Corridor in 2031?

**Table 1**

- |  |  |
|--|--|
| <ul style="list-style-type: none"> <li>• High efficiency</li> <li>• Rail service, go train</li> <li>• Low emissions</li> <li>• Use container systems</li> <li>• Mass transit</li> <li>• Better land use planning (live – work)</li> <li>• Limit demand</li> <li>• Growth in non-traditional areas</li> <li>• Eliminate bottleneck</li> <li>• Multi modal (methods)</li> <li>• Environmentally friendly</li> <li>• Efficient use of corridor</li> <li>• Mass transit</li> <li>• High speed rail</li> <li>• Improve linkages</li> <li>• Air transport under used</li> <li>• Less congestion</li> <li>• Emission reduction, no oil</li> <li>• GO Transit</li> </ul> | <ul style="list-style-type: none"> <li>• Use full cost accounting (include environment)</li> <li>• Efficiency seamless</li> <li>• Address local economic development</li> <li>• Road networks key</li> <li>• Multi nodal but seamless</li> <li>• Mass transit</li> <li>• Compensate for lifestyle choices i.e. conservation</li> <li>• High occupancy</li> <li>• Continually refine the system</li> <li>• Demand management</li> <li>• User pay, full cost accounting</li> <li>• Reduce commute time</li> <li>• Socially equitable, affordable choices</li> <li>• Easier for tourists – more opportunities</li> <li>• Multi modal accessible system</li> <li>• Separate goods from people</li> </ul> |
|--|--|

**Table 2**

- |   |  |
|---|--|
| <ul style="list-style-type: none"> <li>• Easy movement of people to wherever they want to go;</li> <li>• Less environmental impact than the current system;</li> <li>• Most fuel efficient mode of transport will prevail, since the future of oil is uncertain/oil may be rare</li> <li>• Variety of modes</li> <li>• Greater use of public transportation (rail, buses, car pooling) will result in pollution reduction;</li> <li>• All trucks more than 5 tonnes in capacity will be converted to</li> </ul> | <ul style="list-style-type: none"> <li>train haulage at or near the border;</li> <li>• The system will promote economic growth and prosperity</li> <li>• Modelled on European examples – cherish what they have done/expertise, e.g. tunnel, rail, feeder lines; efficiency ensures throughput</li> <li>• Sustainable route that is least disruptive to the environment</li> <li>• Financially effective</li> <li>• Part of an integrated strategy to brand areas as green tourism destinations</li> </ul> |
|---|--|

- System seen as a world class model for environmental sustainability
- World class model, incorporates many different elements to address deficiencies
- More use of the seaway; e.g. hovercraft
- Build a bridge to St. Catharines to Mississauga
- Recognizes environmental and geographic constraints

**Table 3**

- Safe
- Better use of present corridor
- Communities working together to becoming self-sufficient
- Corporate industry costs
- Penalties for use of roads
- Reduced green house gases
- Reduced traffic on QEW and permit bypass to local residents
- Increased truck traffic on 407
- Effectively addresses the problem of traffic congestion – efficient movement of goods and people
- Options for travel and movement of goods (e.g. HOV lanes, bike system, use lake for commuting, mass transit)
- Readily accessible mass transit throughout area linked to Hamilton and Toronto (GO Train linking Niagara to GTA with node in Hamilton)
- Commuter train linking Niagara to GTA with node in Hamilton
- Expanded use of St. Lawrence Seaway and contain in rail system in the transport of goods
- Integrated transit system, environmentally friendly utilized by numerous passengers and utilities – capacity to move goods and people from point A to B
- Frequent usage of the transportation system through linkages other modes across municipalities
- Live/work atmosphere through a decentralization process that results in frequent usage of managed and much improved transit system

## CURRENT CONDITIONS

What problems do you feel are facing the current Transportation System in the Niagara to GTA Corridor today?

A) That affect people movement?

**Table 1**

- |   |   |
|---|---|
| <ul style="list-style-type: none"> <li>• Lack of choices</li> <li>• Individualism/consumerism</li> <li>• Lifestyle choices</li> <li>• Public transit not competitive and attractive</li> <li>• Bigger bathrooms</li> <li>• 20 years behind</li> <li>• Bad policy i.e., 407</li> <li>• Single use cars</li> <li>• No HOV lanes</li> <li>• Lack of mass transit</li> <li>• People need cars</li> <li>• Mass transit is too expensive</li> <li>• It is cheaper to drive</li> <li>• Aging population</li> <li>• Absence of social equity</li> </ul> | <ul style="list-style-type: none"> <li>• Absence of easy to use mass transit</li> <li>• No separation of vehicles i.e., trucks / cars</li> <li>• No choice but to use road networks</li> <li>• Congestion on roads and highways, especially during peak periods</li> <li>• Border security, and slow traffic flow at the border</li> <li>• Single occupancy vehicles</li> <li>• Land use development encourages car use</li> <li>• No seamless options</li> <li>• Model is outdated</li> <li>• Bottlenecks/congestion/gridlock</li> </ul> |
|---|---|

**Table 2**

- |   |  |
|---|--|
| <ul style="list-style-type: none"> <li>• Capacity problems on QEW</li> <li>• Congestion on QEW at certain locations and times (e.g. St. Catharines)</li> <li>• Current system lacks vision</li> <li>• Current routes indirect and inefficient</li> <li>• No GO train from Toronto to Fort Erie</li> <li>• Lack of flex hours in companies</li> <li>• Lack of variety/modes</li> <li>• Urban sprawl means people use roads more, low density</li> <li>• Neglected opportunities to encourage cycling, pedestrian modes</li> <li>• Lack of alternate routes during accidents; accident investigations too slow</li> <li>• Lack of planning by certain municipalities</li> </ul> | <ul style="list-style-type: none"> <li>• Physical constraints</li> <li>• Mass transit not cost effective or efficient the way it is currently implemented</li> <li>• Don't know how effective the new planning process will be – not proven</li> <li>• Lack of education in individuals; people don't understand the concept of effective transportation</li> <li>• Lack of transit continuity – different jurisdictions manage transit – lack of linkages and continuity between Cities</li> <li>• Growth is happening without infrastructure in place</li> <li>• Need more services on transit system – e.g. single tier in Niagara; amend policy and give it to the Region</li> </ul> |
|---|--|

**Table 3**

- |   |   |
|---|---|
| <ul style="list-style-type: none"> <li>• Lack of efficient and user friendly public transit system</li> </ul> | <ul style="list-style-type: none"> <li>• No GO Transit link from Hamilton to Niagara</li> </ul> |
|---|---|

- 401 influences on the Niagara to GTA Corridor system is not fully recognized
- Limited alternative routes other than roads
- Creating smog in fruit belt
- Toll road versus no toll road
- Environmentally unsustainable
- Border/Welland Canal is a "squeeze point"
- Lack of alternative modes of transportation
- Existing urban sprawl – lack of centralized communities
- Congestion
- Car mentality
- Lack of linkages with Municipalities
- Safety (cars using community roads rather than highways)

B.) That affect freight and goods movement?

**Table 1**

- |  |   |
|--|---|
| <ul style="list-style-type: none"> <li>• Lack of options</li> <li>• Truck/car interaction is not efficient</li> <li>• Seaway levels push more traffic on to roads</li> <li>• Inequity in support of alternative, mass container use</li> </ul> | <ul style="list-style-type: none"> <li>• Border crossing issues</li> <li>• Mixing of uses on same roads</li> <li>• Lack of rail options</li> <li>• No piggy back options on rail</li> </ul> |
|--|---|

**Table 2**

- |  |  |
|--|--|
| <ul style="list-style-type: none"> <li>• Just in time is an enemy of the environment</li> <li>• Lack of variety of freight handlers</li> <li>• Trillium rail – not replaced. This local issue is one example there are many others;</li> <li>• Large number of trucks using roads that aren't built for them</li> <li>• Lack of options (truck focused)</li> <li>• Current routs at capacity or can't be expanded</li> </ul> | <ul style="list-style-type: none"> <li>• Single track train routes</li> <li>• Lack of investment in modern facilities</li> <li>• Expensive tie ups, road closures, accidents results in spoiled goods</li> <li>• Trucks have to compete with cars</li> <li>• Too much focus on profit vs. environment</li> </ul> |
|--|--|

**Table 3**

- |   |   |
|---|---|
| <ul style="list-style-type: none"> <li>• Tolls or no tolls</li> <li>• Transports</li> <li>• Limited alternatives to trucks</li> <li>• Gridlock</li> <li>• Just in time delivery – system promotes truck only system</li> <li>• Pollution</li> </ul> | <ul style="list-style-type: none"> <li>• Congestion – conflicts between commuters and truck volumes</li> <li>• Lack of Linkages between US and Canada</li> <li>• No way of short circuit movement across Lake Ontario</li> <li>• Not spending enough on transportation including transit</li> </ul> |
|---|---|

## NIAGARA TO GTA CORRIDOR EA – Phase 1 Community Advisory Group – Minutes of Meeting

The **third Community Advisory Group (CAG)** meeting regarding the Niagara to GTA Corridor Planning and EA Study was held on February 27th, 2008 at the Casablanca Winery Inn from 6:45 p.m. to 9:15 p.m.

### **Purpose**

The meeting was held as an information seminar on Transportation Modelling and Demand Forecasting.

### **Attendance**

A total of 27 members of the CAG attended the meeting. Regrets were received from 5 members.

Representatives from the Project Team included the Ministry of Transportation (John Slobodzian, Terry Hilditch and Frank Williams), URS, TSH, MRC and Ecoplans. Independent facilitator from Lura Consulting, Sally Leppard facilitated the meeting.

The meeting presentation is attached as **Appendix A**.

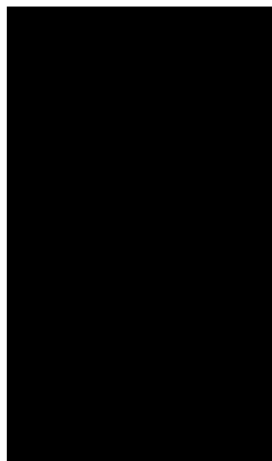
In attendance:

#### *Project Team:*

John Slobodzian, MTO  
Terry Hilditch, MTO  
Frank Williams, MTO  
Michael Chiu, MRC  
Sandy Nairn, Ecoplans

Patrick Puccini, URS  
Jack Thompson, MRC  
Paul Bumstead, TSH  
Sally Leppard, Lura Consulting (Facilitator)  
Liz Nield, Lura Consulting (Facilitator)

#### *Community Advisory Group Members:*





## 1. Welcome

Ms. Leppard welcomed participants to the session, and indicated that this information session is in response to a request from the CAG at the last meeting on November 29, 2007, and is intended to provide attendees with an understanding of basic transportation modelling principles, as well as the specific transportation modelling and demand forecasting approach that is being used for this study.

## 2. Presentation

Mr. Patrick Puccini (URS) provided a presentation on the overall transportation problems and opportunities process, transportation modelling and demand forecasting principles, and the transportation modelling and demand forecasting approach to be used for this study. This approach utilizes the Greater Golden Horseshoe Model and a Strategic Demand Forecasting approach that has been developed by the project team.

Participants provided comments at scheduled breaks in the presentation as well as after the presentation.

### Discussion

The following summarizes participant's questions (identified with 'Q') or comments (identified with 'C'), and responses from the project team in *italics* (identified with 'A') where provided.

### Basic Principles

Q: Author Jane Jacobs wrote in "The Coming Dark Age" a critique of Transportation Models. She maintained that transportation models are not scientifically sound because there are too many variables and assumptions. In addition, does the model account for the effects of congestion?

A: *Computer models are an important tool, but technical experts are also needed to analyze the model results and make any necessary adjustments to account for the assumptions used by the model. In terms of congestion, this is accounted for in the modelling process.*

Q: Does the Greater Golden Horseshoe (GGH) model use the Transportation Tomorrow Survey (TTS)? Can the model consider "what if" scenarios?

A: *The GGH Model uses data from the TTS. The strategic demand forecasting approach provides the flexibility to consider "what if" scenarios. This approach will be discussed in more detail during the presentation this evening.*

Q: Does the model take into account international traffic?

A: *The model includes 'gateways' to account for vehicles crossing the international border crossings and travelling through the Niagara Region and beyond.*

- Q: On slide 10 you indicated that population growth was part of the statistical analysis. In 1966 it was forecasted that Hamilton would have one million people – based on this analysis it was decided to build the Red Hill Valley Parkway, however the forecast was wrong. How do you test the model to make sure that the statistical analysis and assumptions are accurate?
- A: *All of the work being done for this study, including the transportation modelling and demand forecasting work is based on the future population and employment growth specified in the Growth Plan for the Greater Golden Horseshoe. This future population and employment growth is also being incorporated into municipal official plans. This enables coordination between future land use planning and transportation planning.*
- C: If you go to the Niagara Region's website, there is a document that is disputing the Growth Plan, and using the Mid-Peninsula Highway as a focus.
- A: *This project is being undertaken in accordance with the requirements of the Growth Plan, and is considering all modes of transportation in developing a future transportation development strategy for the Niagara to GTA corridor.*
- Q: Concern about trucks, using roads that were built 100 years ago and there are no safety features. Will this study focus on those roads?
- A: *As the scope of this meeting is to discuss the transportation modelling and demand forecasting approach being used for this study, it was suggested that this issue be discussed further at the next CAG meeting.*
- Q: In addition to using the Growth Plan as a basis, will the project team undertake any risk analysis regarding future land use assumptions?
- A: *This study is being undertaken in accordance with the requirements of the Growth Plan. The project team may look at a range reasonable future land use scenarios provided they are consistent with the Growth Plan.*
- Q: How will you overcome cross-correlation of parameters?
- A: *The generation of trips in the model is based on trip purpose to avoid cross-correlation of parameters.*
- C: Concerns expressed about impact of congestion.
- A: *The model and forecasting approach addresses congestion-related impacts.*

### **Greater Golden Horseshoe Model Trip Generation**

- Q: Is trip generation predictive? In regard to the Growth Plan, as communities grow and become self-sustaining, do the trip generation characteristics change in the model?

A: *The generation of trips is based on future population and employment growth that is consistent with the requirements of the Growth Plan. Municipalities are also basing their official plans on these requirements.*

Q: Concern about the models capability to manage/predict variables. Can the model consider “what if” scenarios and unknowns (e.g. emerging US position on NAFTA, Ontario may become a “have not” province)?

A: *The strategic demand forecasting approach will be used to test the sensitivity of the future transportation needs based on a range of future scenarios that will capture different economic conditions.*

Q: What is the role of the community advisory groups?

A: *It is envisioned that the Community Advisory Group will play a key role throughout this study. With regard to transportation modelling and demand forecasting, input provided by the CAG will be reviewed and incorporated as appropriate in the strategic demand forecasting process.*

Q: On Slide 29, there are six factors listed which affect trip production and six factors listed which affect trip attraction. Are there more factors?

A: *Yes, these are just a sample of some of the key factors that affect trip production and trip attraction.*

Q: Do demographic changes also affect the coefficients that you use in the mathematical equations described on Slide 30?

A: *The coefficients are defined on the basis of existing trip generation characteristics. However, the variables such as population, employment, etc. change based on the anticipated future growth or decline associated with each particular variable.*

### **Trip Distribution, Modal Split and Trip Assignment**

Q: Will the model look at the possible impact of congestion pricing (costs to travel at certain times of day) of these scenarios?

A: *The GGH model does provide the ability to predict the affect of congestion pricing on the use of the transportation system. Any testing of this type of policy-based alternative would be done during the "Review/Assessment of Alternatives" stage of the study.*

Q: In the Transportation Tomorrow Survey, how are the destinations defined, i.e. by the final destination, or are interim stops accounted for?

A: *The Transportation Tomorrow Survey obtains information about the entire trip, i.e. not just the final destination.*

Q: Questioned whether expert advice on traffic forecasts could suffice without the expenditure on modelling.

A: *Technical expertise is an important element, but a transportation model provides technical experts with the ability to perform the complex computations quickly and efficiently.*

### Strategic Demand Forecasting Approach

Q: The Niagara International Border Crossing Origin-Destination survey was undertaken during the summer. Should the winter period be considered as well?

A: *The survey was taken during the summer period to capture peak conditions. The border agencies can provide data for other times of the year, which can be incorporated into the modelling process.*

Q: Have any studies been done over a longer period than one weekend, what about a one week period?

A: *The Origin-Destination survey was conducted during one weekday and one weekend day and provided a significant database of information that is anticipated to be sufficient for the purposes of this study.*

Q: I have read that 80% of truck traffic crossing from US to Canada is using the QEW as the shortcut to get to Windsor. How was this accounted for in the O-D survey?

A: *The O-D survey was undertaken for passenger vehicles only. MTO's Commercial Vehicle Survey will be used to develop an understanding of existing commercial vehicle movements.*

Q: Will a comparable O-D survey for buses and trains be conducted as well?

A: *The project team is undertaking a comprehensive consultation program with Transportation Service Providers such as CN, CP, VIA, GO Transit, the Hamilton Port Authority, etc. to develop an understanding of existing transportation conditions for other modes of transportation, as well as the potential for increased utilization of other modes of transportation.*

Q: The Project Team was cautioned not to use the Wilbur Smith report, since data was generated to support a specific conclusion.

A: *Comment noted. However, the project team will review all relevant studies, such as the Wilbur Smith Report, and would use elements of these studies that would benefit our study.*

C: Concern that telephone surveys (e.g., Transportation Tomorrow survey) are not demographically representative (e.g. youth use cellular phones not land lines).

A: *It is recognized that cell phones numbers are not included in the telephone campaign. The project team will discuss this issue with the GGH Model Team and provide a response at the next CAG meeting.*

Q: On Slide 52 - demographic and economic analysis, is that the only data that you will use for freight forecasting?

A: *This is a list of key sources. Other relevant sources of information will also be investigated and used by the project team.*

Q: Will you take into account trucks vs. rail in modal split?

A: *As part of the strategic process we look at potential diversion from truck to rail. This will be based to a large extent on our consultation with Transportation Service Providers (e.g. CN, CP, OTA, etc.) as well as discussions with Business and Commercial Stakeholders that use the existing transportation to move goods.*

Q: Originally, I thought of this as a long distance problem – after seeing the zones dawned on me that the short-term travel might be an issue. Is it in your mandate to look at intra-urban transportation? How much of a focus would be placed on urban transit – walking, cycling?

A: *The project team will consider local trips in terms of how they may affect long-distance interregional trips. While this study will not specifically investigate the need for improvements to intra-regional transportation, it is recognized that the effect of local trips on provincial facilities such as the QEW needs to be considered.*

Q: In the truck surveys, do you treat all trucks as equal units? A large truck versus a small truck – are they weighted the same way?

A: *As part of MTO's Commercial Vehicle Survey, the classification and size of trucks are recorded.*

C: Concern about the impact of intra-municipal congestion on inter-regional trip forecasting. Suggest that study should fund communities to do transportation master plans if those plans are not current (e.g. last St. Catharines Master Plan from 1964).

C: Some municipalities are not implementing sustainable community plans (e.g. City of Niagara Falls Study was rejected). Municipalities need to implement the Growth Plan.

Q: The GGH Model is based on mathematical algorithms. Please describe the Strategic Demand Forecasting approach in these terms.

A: *The Strategic Demand Forecasting approach uses the same four stage process that the GGH Model uses, but relies on existing data sources as well as consultation with Transportation Service Providers, Business and Commercial Stakeholders, and municipalities to forecast future transportation conditions.*

*The Strategic Demand approach is being used in parallel with the GGH Model to forecast future trips for modes of transportation that are not addressed by the GGH Model, as well as to provide a basis of comparison for modes that the GGH Model does address.*

Q: Can the transportation modelling and demand forecasting approach consider political policy issues such as tolling?

A: *Yes, these types of issues can be considered.*

Q: Do you obtain data from employers regarding number of employees that they have? For example, obtaining information about where those employees live in relationship to where they work? That approach might be helpful.

A: *The Transportation Tomorrow Survey focuses on the 'home end' of work trips, but information is obtained as to how employees travel to work.*

### Feedback

In addition to the various comments and concerns provided on the approach to the modelling and demand forecasting exercise, participants offered the following input on the presentation style and format of the information session:

- Participants felt that overall the presentation was excellent.
- Breaks throughout the presentation were appreciated.
- It was suggested that a 'sample' equation and/or complete list of variables also be presented (i.e., for illustrative purpose... to show the level of complexity).
- Suggested that it might be helpful to provide other project examples – where modelling and travel demand forecasting has been used.
- Provide an example of the trip patterns for a specific area (i.e., excerpt from actual trip table).

### Next Meeting

The next full meeting is anticipated to be held in Spring 2008. The meeting adjourned at 9:15 p.m.



**Appendix A: Presentation**

The **Fourth Community Advisory Group (CAG)** meeting regarding the Niagara to GTA Corridor Planning and Environmental Assessment Study was held on May 29, 2008 at the Casablanca Winery Inn from 6:30 p.m. to 9:00 p.m.

**Attendance:**

A total of 28 members of the CAG attended the meeting. Regrets were received from 12 members.

Representatives from the Project Team included the Ministry of Transportation (John Slobodzian, Terry Hilditch, Shelley Tapp, George Ivanoff), URS (Tyler Drygas), and Ecoplans (Sandy Nairn). A team of independent facilitators from Lura Consulting, Sally Leppard, Liz Nield, Barry Randall, Jean-Louis Gaudet, and Peter Seemann facilitated the meeting.

**Purpose:**

- (a) Review and confirm CAG Vision elements for a future NGTA Transportation System;
- (b) Briefing/discussion: Provincial Policy Context; and,
- (c) Review proposed Vision, Goals and Objectives Discussion Paper for a future NGTA Transportation System.

**Discussion Highlights**

Mr. Nairn provided an update on the Study Progress. Mr. Slobodzian provided a presentation on the Metrolinx Regional Transportation plan, a review of the CAG's vision and problems identification, the Project Team's proposed Vision, Goals and Objectives, and outlined the next steps of the study.

- One participant noted that the Goals and Objectives need a social category. Mr. Slobodzian noted that the Land Use category was intended to cover the social aspect, and reiterated that this is the type of feedback that the Project Team is hoping to receive as a result of CAG discussions this evening.

**Facilitated Round Tables**

CAG members formed five round tables to discuss the provincial policy context, and the proposed goals and objectives. The following discussion presents highlights of the discussion. Please consult the detailed CAG minutes for the full documentation.

**Review of Provincial Policy Documents*****Are there any policy documents missing?***

A number of gaps were identified:

- Agricultural protection policy
- Absence of a strong Provincial Transportation Policy
- Federal/Provincial Fisheries policies
- Provincial Emergency Preparedness Plan
- Environmental protection/conservation policies



- Air quality, climate change, biodiversity policies
- Consideration of Municipal Planning policies
- Studies such as Metrolinx, GTA West

Generally, the CAG requested the Project Team to consider a more comprehensive set of policies than the current list. In addition, the descriptions of the policies need to be more complete.

### **Review of Goals and Objectives**

Generally, CAG members identified the need to ensure that the goals and objectives are organized around the triple bottom line themes of Social, Economics and Environment; with tourism, agriculture, Niagara Escarpment and other key attributes recognized.

#### **Goals and Objectives CAG members wish to add**

##### *Transportation:*

- New technologies/pilot projects
- Affordability of transportation choices
- Equal focus on the movement of people and goods

##### *Land Use:*

- Impact on industry, agriculture, cost of infrastructure development
- Impact on isolated and secluded communities

##### *Economic:*

- Impact on industry, agriculture, cost of infrastructure development
- Impact and definition of tourism

##### *Environment:*

- Clarification needed on objectives and terms used
- More emphasis on air quality
- Mitigation measures such as replanting
- Specifics on wild life

##### *Other:*

- Social or socio-economic heading
- Attitudinal and behavioural-change goals and objectives
- Growth and population changes
- Hierarchy of CAG vision elements
- Consider “world class branding” as a goal

#### **Comments on the way that the goals and objectives are organized**

- They are well organized
- Would like to see the goals and objectives prioritized

Mr. Slobodzian thanked the CAG members for their feedback, which he noted, would be incorporated in a second version of the discussion paper that would be prepared. He also clarified that the adopted Triple Bottom Line approach reflects a balance among

categories, rather than identify priorities between categories. Prioritization of evaluation factors will occur at the transportation system alternatives assessment stage.

### Feedback on Opportunities for Future Transportation System based on existing Policy Content

- Hovercraft transportation in Lake Ontario
- Extension of 406
- More carpooling lots
- Trucks on trains
- More urban growth centers, encourage live/work communities
- Segregating heavy/light traffic for safety – cars during the day/trucks during the night
- Tourist train stopping at wineries
- Increase tourism
- Double deck QEW
- Pilot project of high technology, e.g. Hydrogen train
- Adding ability to close off off-ramps to cut down congestion on highway/metering
- More integrated cyclist pathways from Niagara to Toronto
- Connecting Hamilton airport to system
- Building a bridge over Lake Ontario connecting Hamilton to Toronto (added after the meeting)

#### 4. Other Business, Next Meeting and Adjourn

##### *Media Relations Policy*

Ms. Leppard noted that the Media relations policy the CAG members adopted was fully supported by the MTO. CAG members are free to speak to media and express their individual views as long as it is clear that their opinion does not represent the group's opinion.

##### *Linkages to other initiatives*

*This will be addressed at the next meeting. Members were encouraged to visit the GTA-West website.*

- It was suggested that a summary be provided to the CAG members about the other initiatives taking place in the summer.

##### *CAG e-Forum*

Two members expressed interest in creating a CAG e-Forum, but the Project Team is willing to consider it if more interest is expressed later in the study process.

##### *Next meeting*

The next full meeting is expected to be held in Fall 2008. The focus of the next meeting will be on reviewing the Goals and Objectives Paper (revised) and the Factors Influencing Transportation Paper.

The meeting adjourned at 9:05 p.m.

## NIAGARA TO GTA CORRIDOR EA – Phase 1 Community Advisory Group Meeting # 5 Short Summary Report

The fifth **Community Advisory Group (CAG)** meeting regarding the Niagara to GTA Corridor Planning and Environmental Assessment Study was held on January 22, 2009 at the Casablanca Winery Inn from 6:30 p.m. to 9:00 p.m.

### **Purpose:**

The purpose of the meeting was to provide:

- (a) a study update;
- (b) an overview of existing and future Transportation Problems and Opportunities; and
- (c) the key features and format of the upcoming round of Public Information Centres.

### **Attendance:**

A total of 29 members of the CAG attended the meeting. Regrets were received from 4 members.

Representatives from the Project Study Team included the Ministry of Transportation (John Slobodzian, Terry Hilditch, George Ivanoff.), URS and MRC. A team of independent facilitators from Lura Consulting - Sally Leppard, Liz Nield, Barry Randall and Jason Diceman facilitated the meeting.

### **Presentation Highlights:**

John Slobodzian began the meeting with an update on: the study progress; recent events and meetings, and Metrolinx's Regional Transit Plan (RTP). Jack Thompson of MRC provided an overview of the transportation problems in the NGTA corridor- specific to goods, commuters and tourism; and how the "community", "environment" and "economy" are affected as a result. The presentation ended with a discussion of the transportation "opportunities" (aka goals); an overview of the PIC format and "next steps" highlights.

### **Facilitated Round Tables:**

CAG members formed five (5) groups to discuss the transportation problems and opportunities presented. Highlights of those discussions are provided in point-form below. (A more detailed report will be available in the meeting minutes.)

## **Problem Statements**

### **General**

- More detail is required to fully understand the problem statements (e.g., future presentations, PIC display material, and P&O Report )
- The extent that "all trips" have been accounted for is unclear
- Growth and land use planning (i.e., "strong communities") must be integrated with transportation planning
- The "unpredictability" of future trends must be considered

- “Environmental” problems go beyond congestion; other factors should be considered (e.g., smog, number and type of vehicles, global warming etc.)
- The basis of the modelling and forecasting “assumptions” (i.e., current or future) are unclear
- Need to discuss trends and forecasts with more detail and provide information sources
- Need to continue to explain why Growth Plan is driving need for transportation infrastructure

### Specific:

#### 1. Goods

##### *Truck*

- Congestion is the biggest problem
- Too many trucks; use of other modes (e.g., rail, marine) is limited
- 407 is underutilized
- Existing infrastructure has deteriorated

##### *Rail*

- Lack of connections between rail and road (i.e., intermodal terminals)
- Lack of rail infrastructure; need for a “rail revolution” i.e., transportation system to consider and protect for rail services

##### *Marine*

- Marine is too slow
- Depths of watercourses should be addressed

#### 2. Commuters

##### *Road*

- Some existing systems are underutilized (e.g. 407 toll highway); others are too busy
- Conflicting modes (e.g., trucks vs. cars)

##### *Transit*

- Lack of focus on impacts to people and communities (e.g. accessibility, frequency, ease of use, etc.)
- Cost/frequency of service could be a deterrent
- Rail lines that have been converted to trails can be reclaimed

#### 3. Tourism

- Problems that apply to goods movement/commuters also apply to tourism
- Lack of “traveler information systems” for tourists (e.g., information kiosks, international symbols, etc.)
- Lack of multimodal and interregional connections
- Lack of priority on tourist systems; current systems are industry focused

- If system is improved for “goods and people movement”, then tourism problems are also solved

### Opportunities

- Build on the Metrolinx concept of a regional system
- Maximize existing infrastructure (e.g., 407)
- Create a double tiered transportation system – i.e., separate through traffic (i.e., long distance) and local traffic (i.e., short distance)
- Minimizing environmental impacts is not enough – more focus on “enhancements” to the environment is needed
- Reduce emissions
- Economic opportunities need to be fleshed out and explained further

### Feedback for upcoming PICs

- Direction and station titles will help avoid confusion when moving through the PIC venue
- “Problem statements” need to be more detailed
- Location of video should be considered (i.e., too close to entrance may be distracting)
- In addition to the PICs, consider soliciting “youth” at career fairs, etc.
- Suggest adopting Metrolinx’s approach of encouraging people to think about what can be implemented for “x” amount of money.

### Other Business, Next Meeting and Adjourn:

#### **Youth CAG**

The project team is working with University and Colleges to encourage youth involvement.

#### **Presentation**

The suggestion of a “Niagara International Transportation Technology Coalition (NITTEC) presentation (i.e., border crossing management and information) at a future CAG meeting was favourably received.

#### **Next Meeting**

The next CAG meeting has not been scheduled; likely spring/summer 2009. It will focus on the *Problems and Opportunities Report* and next steps.

The meeting adjourned at 9:05 p.m.

## NIAGARA TO GTA CORRIDOR EA – Phase 1 Community Advisory Group – Minutes of Meeting # 6

The **Sixth Community Advisory Group (CAG)** meeting regarding the Niagara to GTA Corridor Planning and Environmental Assessment Study was held on June 25, 2009 at the Casablanca Winery Inn from 6:30 p.m. to 9:00 p.m.

### Purpose:

The purpose of the meeting was to:

- (a) Provide a Study Update:
  - Public Information Centres – Problem and Opportunities
  - Problems and Opportunities Paper
  - Advisory Group Progress;
- (b) Present the Process Framework for Developing & Assessing Transportation Alternatives; and
- (c) Undertake a Brainstorming Session for Generating Transportation Alternatives.

### Attendance:

A total of 29 members (as per the sign-in sheet) of the CAG attended the meeting.

Representatives from the Project Study Team included the Ministry of Transportation (John Slobodzian and Frank Williams), URS and MRC. A team of independent facilitators from Lura Consulting (Sally Leppard, Liz Nield, Barry Randall, Jim Faught, Patricia Halajski and Olav Sibille) facilitated the meeting.

The meeting agenda is attached as **Appendix A** and detailed participant feedback is found in **Appendix B and C**.

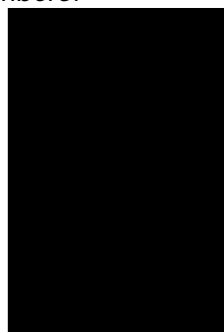
### In attendance:

#### *Project Team:*

John Slobodzian, MTO  
Frank Williams, MTO  
Tyler Drygas, URS  
Sandy Nairn, Ecoplans  
Patrick Puccini, URS  
Michael Chiu, MRC

Sally Leppard, Lura Consulting (Facilitator)  
Liz Nield, Lura Consulting (Facilitator)  
Barry Randall, Lura Consulting (Facilitator)  
Jim Faught, Lura Consulting (Facilitator)  
Olav Sibille (Facilitator)  
Patricia Halajski, Lura Consulting (Facilitator and Notetaker)

#### *Community Advisory Group Members:*



## NIAGARA TO GTA CORRIDOR EA – Phase 1 Community Advisory Group – Minutes of Meeting # 6

*Guest Speaker:*

Tom George, Niagara International Transportation Technology Coalition (NITTEC)

### 1. Welcome, Agenda Review, Review of CAG Meeting #5 Minutes and Review of CAG Charter

Ms. Sally Leppard introduced herself as the facilitator, reviewed the agenda with participants and received general acceptance of the agenda. Please consult *Appendix A* for the meeting agenda.

CAG members reviewed the minutes of the CAG meeting held on January 22, 2009. The following comment was made by a CAG member:

- C:** On page 2, under the topic of "Commuters", under the sub-topic "Transit", the rail bed is noted as a problem.
- A:** That was a problem identified by the CAG at that particular meeting during the round table discussion on the identification of problems.

The meeting minutes from January 22, 2009 were approved by CAG members.

Ms. Leppard provided a quick CAG Charter update. She noted that the Project Team has proposed an amendment to page 2 and 3, section 4, to allow for additional CAG meetings. Ms. Leppard indicated that the Project Team added Meeting #7 and Meeting #8 to the Charter, and additional meetings will be held if needed. Ms. Leppard asked for CAG approval of this administrative change to the Charter. This change was accepted by the CAG.

The following comments were made by CAG members regarding the additional meetings:

- Q:** We would like to review the recommended strategy going to the Minister at one of our meetings. Will we get a chance to do this?
- A:** The draft that you will see at Meeting #7 is the draft you will provide comments on. Meeting #8 will be a review of the final package going forward, it will include the final infrastructure improvements being put forward by the Project Team (the final deliverable for Phase 1 of the EA). Looking at the final document would not allow for any more changes following that meeting.
- Q:** Will we know what the other stakeholders have suggested, i.e. think tanks, other advisory committees?
- A:** We keep a comment record on the website, but if your meeting is at the beginning of the consultation period, we may not have met with other stakeholders.
- A2:** We can discuss that further at the end of our next meeting. We can put that on the agenda as a discussion point.
- C:** Some of us might not agree with the final document and might want to have the opportunity to create a written statement to the Minister as a group. We should be given that opportunity.

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- A:** That opportunity always exists. Even after that meeting you are absolutely free to get together and write such a statement.
- C:** I would like to schedule that opportunity.
- A:** We can schedule a 9<sup>th</sup> meeting.
- Q:** When will the next meeting be?
- A:** Meeting #7 will likely be scheduled for October 2009 and Meeting #8 will be in spring 2010.
- Q:** How long will we have to provide comments on the final draft?
- A1:** We are still in consultation mode when we come to you, you will be making comments and you will have a substantial amount of time.
- A2:** We can put this item on the agenda for our next meeting.
- C:** We want to have closure after being part of this group for 2 to 3 years. We want to be sure that our recommendations get moved forward, that is why we would like to see the final document before it goes to the Minister.

**2. Presentation on Niagara Border Initiatives**

Tom George, Niagara International Transportation Technology Coalition (NITTEC), provided a presentation about the role and responsibilities of NITTEC. Mr. George explained that NITTEC is a multi-agency coalition that consists of 14 member agencies in Canada and the USA, with 12 affiliated members. NITTEC operate a 24/7 traffic operation centre, with a focus on Buffalo and local border crossings. Mr. George noted that NITTEC physically manages traffic across the border, and meets once a month to discuss border related issues. He stated that NITTEC has standardized border wait times and messaging on overhead message signs. He noted that NITTEC is especially interested in integrated corridor management from the Buffalo Region to St. Catherines.

Following the presentation CAG members posed the following questions:

- Q:** Are you considering extending or widening bridges?
- A:** We are an operational entity only. We want to better manage our existing amenities. Our main focus is to integrate and manage what we already have in place.
- Q:** Is there an organization similar to yours that looks at the different ways of bringing goods to a border?
- A:** The whole issue is economically driven and businesses will always use the fastest and most efficient way to move their goods and services.
- Q:** Where do you fit into the NGTA corridor priority wise? We don't just deal with going across the border. We are looking for transportation that is suitable for the whole region.
- A:** We don't have one priority; we have to look at all the aspects. We are part of every alternative.



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**C:** Is there a gizmo that I can have that would provide me with all this real time information regarding border crossings?

**A:** A web enabled cell phone is all you need.

**Q:** How long have you been around?

**A:** NITTEC has been operating for 15 years.

**Q:** Does each area/region have an entity like yours?

**A:** We are the only entity like this and we are being used as a model in the northern USA. Ours is not a common system.

**3. Study Update and Discussion**

Tyler Drygas, URS, provided an update on the study progress; the following summarizes the main points.

- The Vision for this project can be defined as a an integrated, multi-modal transportation system that facilitates and enables the realization of approved provincial policies in support of:
  - Compact, vibrant and complete communities
  - A prosperous and competitive economy
  - A protected environment
- Draft Transportation Problems and Opportunities Reports will be distributed for public and agency review in July 2009. Contents will include:
  - Demand forecasting approach and assumptions;
  - Consultation findings – TSP / BCS, other groups;
  - Future demand forecasts;
  - Overview of transportation problems; and
  - Overview of opportunities for transportation improvements to support study objectives.
- The Transportation Problems and Opportunities Report will be finalized by late summer 2009.
- The development and assessment of alternatives will be undertaken at an increasing level of detail.
- Environmental considerations are being applied early in the study process based on secondary source information.
- The four (4) combination alternatives include:
  - Combo 1 – Optimize Existing Networks
  - Combo 2 – New / Expanded Non-Road Infrastructure
  - Combo 3 – Widen Roads
  - Combo 4 – New Road Infrastructure
- Factors for assessing combination alternatives include:
  - Transportation;
  - Community;
  - Economy; and
  - Environment.

## NIAGARA TO GTA CORRIDOR EA – Phase 1 Community Advisory Group – Minutes of Meeting # 6

Patrick Puccini, URS, provided an overview of the Think Tank Session and Next Steps. The following is a summary of the main points presented.

- The Think Tank session was held on June 8<sup>th</sup> and 9<sup>th</sup>, 2009.
- The purpose was to start the creative process early and to identify an initial long list of possible alternatives.
- The session was attended by over 30 Project Team specialists representing transit, rail, marine, air, TDM/TSM, intermodal, roads and highways.
- Attendees were divided into four groups corresponding to the combination alternatives.
- It was noted that many ideas were policy issues.
- Next steps include:
  - NGTA Community Advisory Group Meeting (June 25, 2009)
  - Draft Transportation Problems and Opportunities Report Review (July 2009)
  - Final Transportation Problems and Opportunities Report (late Summer 2009)
  - Consultation with Advisory Groups (Summer 2009)
  - Development of transportation system alternatives (Summer 2009)

CAG members provided the following questions/comments during and after the presentation:

- C:** With respect to the fragmentation of woodlots. I attended a Grand River Conservation Authority conference a couple years ago, and it was disturbing for me to see that a presenter had a slide showing a route through a natural area that was supposed to be protected by law.
- A:** That must have been before the legislation was implemented to protect those areas that would not be permissible now.
- C:** There is an elephant in the room and that is Highway 407. It is not on your list?
- A:** We have not forgotten it.
- C:** All of these presentation slides refer to roadways. There was no mention of alternatives such as rail, marine, air etc.
- A1:** The first number of slides discussed the alternatives.
- A2:** These were the suggestions brought forward by other groups and think tanks, that is why we are meeting with your today to get your input.
- C:** There is no mention of rail.
- A:** The key conclusion of this consultation shows that rail and marine do not have capacity restrictions and they do not need to build more infrastructure. We are doing long range planning up to 2031, whereas the private sector thinks of 3 years as their long term. Rail and marine are both underutilized and economic factors affect where certain goods are moving and how they are moving; many of these issues are policy issues. We can highlight that policy changes are needed, but we can't change these policies through our study.

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- Q:** What about the potential to electrify rail? Electrified rail systems could be an innovative solution. It should be noted.
- A:** That is a good idea and we can take that away from our discussion tonight.
- C:** I suggest that we add lessons learned, i.e. issue of roadblocks and safety, to the list of factors / criteria for assessing Combination Alternatives.

### 4. Facilitated Round Tables

CAG members formed four (4) groups to discuss the four combination alternatives presented by the Project Team. The following presents highlights of the discussions. Please consult *Appendix B* for the full documentation.

#### Combination 1: Optimize Existing Networks

##### *Highways and Roads*

- Repatriate Highway 407
- Implement more High Occupancy Vehicle (HOV) lanes
- Create dedicated truck lanes on highways
- Limit roadways usage during peak periods to certain vehicles
- Utilize speed harmonization
- Time shift trucks to nights and weekends
- Create a system for better incident management
- Utilize road pricing and tolls to relieve congestion and shift people to transit

##### *Public Transit*

- Encourage carpooling
- Consider a better modal split
- Add faster trains and express trains as part of GO Transit
- Create better intercity bus links

##### *Innovative Alternatives*

- Improve land use planning (e.g. increase transit share)
- Utilize Carbon Taxes to curve automobile use
- Price infrastructure to reduce demand (e.g. increase parking costs)

##### *Information and Communications*

- Use technologies for real time information (e.g. kiosk in shopping mall, overhead signage etc.)
- Allow for web access to existing traffic conditions by coordinating existing and new cameras
- Proper read outs over roadways regarding congestions and alternative routes

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**Combination 2: New/Expanded Non-Road Infrastructure**

*Marine*

- Open seaway 12 months of the year
- Create a marine hub at the Port of Hamilton for ferry services
- Link seaway ports in Lake Ontario via highway/rail to the port hub in Lake Erie
- Create freight barge canals
- Consider large year round hovercraft services (e.g. Toronto to Hamilton, Toronto to Niagara, Hamilton to Niagara)

*Air*

- Consider local helicopter services
- Better access and service to Hamilton Airport

*Rail*

- Implement high-speed rail for goods movement between Hamilton Airport / Hamilton Port to Port Dover
- Consider a rail line within or adjacent to the Queen Elizabeth Way (QEW) - possible private sector partnership with Wal-Mart, Costco, etc.
- Consider the electrification of rail corridors
- Create rail connections to airports and between airports
- Consider better use of freight lines for passengers

*Transit*

- Expand bicycle connections to transit
- Consider bus transit lanes in utility corridors and on highways
- Modernize and modify GO Train cars (i.e. comfortable seats)
- Better weather protection on GO Transit platforms and stations
- Expand GO Transit to Niagara and Brantford
- Consider electric Mini-GO service between towns
- Create dedicated bus lanes
- Consider Light Rail Service between cities

**Combination 3: Widen Roads**

- Put roads on two levels (i.e. two-tier)
- Widen King Road to Highway #5
- Widen Highway 407
- Widen the Queen Elizabeth Way (QEW) from Toronto to Hamilton
- Widen Dundas Street
- Widen Highway #6 between Hamilton and Guelph
- Widen Guelph Line and Walker's Line

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- Widen and upgrade Regional Road 20 and provide Smithville by-pass
- Add High Occupancy Vehicle (HOV) lanes along the entire length of the Queen Elizabeth Way (QEW)
- Improvements to inter-regional road system to facilitate access from outlying areas to urban centres for health services (i.e. getting patients to central hospitals)
- Twin bridges (i.e. Skyway) and all connecting roads
- Create a tunnel at Burlington Skyway
- Widely separate traffic (i.e. between eastbound and westbound) and add barriers between opposing traffic
- Close low traffic rural roads
- Create truck only lanes
- Widen and improve Highway 3 to create better link from Niagara to Windsor

### Combination 4: New Road Infrastructure

- Create a multimode system water/rail tied to new regional roads
- Tunnel under Burlington
  - Two options:
    1. Under the Ship Canal (Burlington Bay); or
    2. Under the Garden City Skyway
- New North/South access route through St. Kitts (off of Highway 406)
- Do not consider building any new roads until a policy on tolls is implemented and a new economic zone (Cambridge to Thorold) is established
- Build a new bridge over the Niagara River
- Ongoing conversation between Conservation Authorities and Municipalities is required
- Create a goods movement corridor from Hamilton to Fort Erie
- Build a by-pass around Hamilton and Waterdown
- Build a bridge across western Lake Ontario
- Create express only roads with no exits, possibly a link from Highway 403 to Highway 401 – west of Highway 6

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**5. Other Business, Next Meeting and Adjourn**

**Youth CAG**

The Project Team is working with Universities and Colleges in order to involve youth. Recruitment for Youth CAG members is ongoing.

**Meeting Format**

CAG members had a number of closing comments regarding CAG meeting format and agenda time allocation.

**C:** We should have more time for discussion; we are here to advise not to be spectators. We should have at least an hour for discussion.

**A:** We will take that under advisement.

**C:** We should be sent all the materials well ahead of time, we can read presentation slides at home, and we don't need to spend time on it during our meeting.

**A:** We can send packages out to you, but we want to touch base in person. You have time outside the meeting to provide information and feedback to the Project Team. Just because the meeting is over it doesn't mean the opportunity for comments and feedback is over. This type of study is very rare and I hope you provide as much feedback as possible.

**Q:** Is it possible to type up the ideas from the flipcharts and send them out to CAG members so we can think about what we discussed?

**A:** Yes, this will be done.

**Farewell from John Slobodzian**

John Slobodzian, Ministry of Transportation (MTO), thanked the CAG members for all their work, and stated that he will be moving on to another position and a new project coordinator, Roger Ward, will take his place. Mr. Slobodzian thanked the CAG members for dedicating their time and ideas throughout the CAG process, and noted that CAG input has been full of wisdom and local knowledge.

**Next Meeting**

There is not set date for the next CAG meeting. It will most likely take place in October 2009. Ms. Leppard reminded CAG members to provide comments to the Project Team on the criteria by July 27<sup>th</sup>, 2009.

The meeting adjourned at 9:05 p.m.

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**Appendix A: Agenda**

**AGENDA**

**Community Advisory Group Meeting #6**

Date: June 25, 2009

Time: 6:30 p.m. – 9:00 p.m.

Location: Casablanca Winery Inn

***Purpose:***

- a) Study Update
  - Public Information Centres – Problems and Opportunities
  - Problems and Opportunities Paper
  - Advisory Group Progress
- b) Approach to the Identification of Alternatives
- c) Framework for Assessing Alternatives

***Desired outcomes:***

- CAG perspective and input on the identification and evaluation of alternatives.

**6:30 Welcome**

- Agenda Review
- Review of Meeting Notes (Meeting #5 –January 22, 2009).
- Update to CAG Charter (Section 4.0 Work Plan)

**6:45 Presentation on Niagara Border Initiatives**

- Tom George, Executive Director - Niagara International Transportation Technology Coalition (NITTEC)

**7:00 Study Update and Discussion**

- Update on Study Progress and Stage in the Process
- Update on Related Studies
- Update on other Advisory Groups and Public Information Centres (March 2009)
- Problems and Opportunities Paper
- Presentation on Individual Alternatives and Framework for Assessing Alternatives

**7:30 Facilitated Round Tables**

- Identification of Individual Alternatives
- Framework for Assessing Alternatives – A Community Perspective

**8:15 Ideas Round Up – Reports from Round Tables, Common Elements**

**8:45 Other Business, Next Meeting and Adjourn**

- Youth Engagement – potential YCAG
- Other business – CAG members
- Next Meeting - Topics

**9:00 Adjourn**

**Appendix B: Detailed Feedback**

**Workshop Feedback**

**Table #1 (Facilitator: Barry Randall)**

**1. Optimize Existing Transportation Roads:**

- Carpooling
- Congestion pricing
- Using paved shoulder as High Occupancy Vehicle (HOV) lane
- Speed harmonization – Burlington Bridge
- Improved overhead signage (e.g. Highway 403/QEW)
- Lane optimization
- Better modal split
- Improved land use planning (i.e. increase transit share)
- Promote existing travel time differences
- Carbon Taxes to curbe automobile use
- Price infrastructure to reduce demand → increase parking costs
- Improve broadband (provincial initiative to encourage telecommuting)
- Toll existing roads
- Subsidized 407 use

**2. New / Improved Non-Roadway Infrastructure:**

- Electrification of rail corridors
- GO should purchase CN / CP lines to give transit priority
- Better use of freight lines for passengers
- Expand marine service at the Port of Hamilton
- Better access / service to Hamilton Airport
- Dedicates bus lanes

**3. Widen Existing Roads:**

- HOV lanes on QEW (Oakville to Stoney Creek)
- Twin bridges (Skyway) and all connecting roads
- Tunnel at Burlington Skyway
- Widely separate traffic (i.e. between east-bound and west-bound)
- Barriers between opposing traffic
- Turning lanes at intersections
- Better use of rural roads
- Close low traffic rural roads

**4. New Road Infrastructure:**

- *(No comments were made on this topic)*



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**Table #2 (Facilitator: Olav Sibille)**

**1. Optimize Existing Transportation Roads:**

- HOV lanes on QEW
- Limit roadways usage during peak periods to certain vehicles
- Web access to existing traffic conditions by coordinating existing and new cameras
- Standardize communication resources
- Flexibility to close on/off ramps along QEW to tunnel/traffic to certain I/C's
- Repatriate Highway 407

**2. New / Improved Non-Roadway Infrastructure:**

- Marine hub at Port of Hamilton for Ferry service
- Linking seaway ports in Lake Ontario (e.g. Hamilton) via highway/rail to port hub in Lake Erie
- High-speed rail for goods movement between Hamilton Airport (or Port) to Port Dover
- Rail line within or adjacent to QEW; possible private sector partnership (Wal-Mart, Costco, etc)
- Electric Mini-GO service between towns (purchased from German/Europeans to stop re-inventing the wheel)
- High-speed transportation modes along truck way

**3. Widen Existing Roads:**

- Upgrade Regional Road 20 and provide Smithville bypass
- Improvements to inter-regional road system to facilitate access from outlying areas to urban centres for health services (i.e. getting patients to central hospitals)

**4. New Road Infrastructure:**

- Goods movement corridor from Hamilton to Fort Erie

**Table #3 (Facilitator: Jim Faught)**

**1. Optimize Existing Roads:**

- Faster trains and express trains (i.e. GO Transit)
- Some truck-only lanes
- Time shift trucks to nights and weekends
- Better intercity bus links
- Road pricing and tolls – to relieve congestion and shift people to transit
- Better incident management

**2. New / Improved Non-Roadway Infrastructure:**

- High speed trains – improved rail infrastructure

**NIAGARA TO GTA CORRIDOR EA – Phase 1  
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- Rail/trains to airports and between airports
- Large year round hovercraft service: Toronto – Hamilton, Toronto – Niagara, Hamilton – Niagara
- Better connections to GO stations with municipal system (transit, bike, walk)
- Elevated trains – still within existing QEW corridor
- Light Rail Service between cities – not just GO or buses
- More and improved intermodal (train/truck)
- Helicopter service
- Freight barges canals

**3. Widen Existing Roads:**

- Widen strategic roads such as;
  - Highway 20
  - QEW – Toronto to Hamilton
  - Highway 6 north and south
  - Dundas Street
  - Add on truck only lanes
  - Add on more HOV lanes – entire length of QEW
  - Widen and improve Hwy 3 – to create better link Niagara to Windsor – include by-pass around towns

**4. New Road Infrastructure:**

- Build by-pass around Hamilton and Waterdown
- Bridge across western Lake Ontario
- Express only roads – no exits – such as link from 403 to 401 – west of Highway 6

**Table #4 (Facilitator: Patricia Halajski)**

**1. Optimize Existing Roads:**

- Repatriate Highway 407
- Lower truck fees on 407, make it comparable to U.S. tolls
- Use technologies for real time information (kiosk in shopping mall, etc)
- Proper overhead read outs about congestion
- Provide alternative routes on overhead read outs
- Consider ice problem areas - Hamilton may be simple
- Better coordination between buses and trains
- More HOV lanes
- Dedicated truck lanes
- Open Welland Canal 12 months of the year

**2. New / Improved Non-Roadway Infrastructure:**

- Expand Welland Canal

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- Open seaway 12 months of the year
- Expand bicycle connections to transit
- Shorter off – road routes\Modal transit tied to rail-hubs
- Bus transit lanes in utility corridor / on highways
- Modernize / modify GO train cars with better seats
- Weather protection at GO Transit stations and platforms
- Expand GO Transit to Niagara and Brantford

**3. Widen Existing Roads:**

- Put roads on two levels (e.g. two-tier)
- Widen King Road to Highway #5
- Dedicated bus lane
- Widen Highway 407
- Widen Highway #6 between Hamilton and Guelph
- Widen Guelph Line and Walker's Line

**4. New Road Infrastructure:**

- Bypass Waterdown along Highway #6
- Multimode system water/rail tied to new regional roads
- Tunnel under Burlington. Two options: under the Ship Canal (Burlington Bay) or under the Garden City Skyway
- New North/South access route through St. Kitts (off 406)
- Do not consider new roads until a policy on tolls is created and a new economic zone (Cambridge to Thorold) is established
- Build new bridge over Niagara River
- Ongoing conversation between Conservation Authorities and Municipalities needed

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**Appendix C: Detailed Feedback**

**Workshop Feedback**

**Comment Forms Feedback (ID#1-ID#2)**

Workbook #	QUESTION		
	<b>1.) Please provide your comments on each of the Alternatives presented</b>		
ID#1	<ul style="list-style-type: none"> <li>- Carpooling</li> <li>- Congestion pricing</li> </ul>		
ID#2	Group 3 widening section - What about Highway 52 – 403 Peter Commons - the advisability, practicality of re-instating as a “main” highway and extending to meet 401 in say the area of the “Hanlon” to accommodate traffic from Kitchener, Waterloo, Cambridge, Guelph to 403 and eventually New York.		
	<b>2.) Do you have any suggestions for additions, deletions or refinements?</b>		
ID#1	(blank)		
ID#2	<p>Group 4 – by-pass Hamilton from GTA to New York.            Burlington Skyway is at capacity and increasing lane numbers will not ease the situation. The longer it takes to decide what will be done the less place there will be to do it in – vis. – Hamilton does not really have a plan for growth.            Arrange for all direction access between #6 south by-pass and Garner Road.            Take back through roads that have been hi-jacked by Hamilton e.g. Trinity – Bismarck i.e. function of #52 and 53 to Bismarck.            Get rid of roundabouts on all roads except those in residential surveys.            Insist on rational speed limits and enforce them.            Waterdown desperately needs a by-pass for through traffic.            Get going with #6 from 4 lane section to 401.</p>		
	<b>3.) Please provide your comments on the 3-stage process for generating, analyzing and selecting inter-regional transportation alternatives.</b>		
ID#1	(blank)		
ID#2	(blank)		
	<b>4.) In regard to the evaluation criteria. Are there any missing? Do you have any suggested refinements?</b>		
ID#1	(blank)		
ID#2	(blank)		
	<b>Additional Comments</b>		
ID#1	<table style="width: 100%; border: none;"> <tr> <td style="vertical-align: top;"> <ul style="list-style-type: none"> <li>- Carpool</li> <li>- Congestion tax</li> <li>- Speed restrictions</li> <li>- Signage</li> <li>- Modal split</li> <li>- Vehicle restrictions</li> <li>- Fee policy</li> <li>- Real time information</li> <li>- Alternative routes</li> <li>- Ice problem areas</li> <li>- Intermodal corridor</li> <li>- Turning lanes</li> <li>- Widen Highway 5</li> </ul> </td> <td style="vertical-align: top;"> <ul style="list-style-type: none"> <li>- Electrification</li> <li>- GO purchase</li> <li>- Ferries</li> <li>- QEW rail (private)</li> <li>- Electric Mini-GO</li> <li>- Expand seaway</li> <li>- Increase GO comfort</li> <li>- HOV lanes</li> <li>- Twin bridges</li> <li>- Tunnel</li> <li>- Wide traffic separation</li> <li>- Two level roads</li> <li>- Widen Highway 407</li> </ul> </td> </tr> </table>	<ul style="list-style-type: none"> <li>- Carpool</li> <li>- Congestion tax</li> <li>- Speed restrictions</li> <li>- Signage</li> <li>- Modal split</li> <li>- Vehicle restrictions</li> <li>- Fee policy</li> <li>- Real time information</li> <li>- Alternative routes</li> <li>- Ice problem areas</li> <li>- Intermodal corridor</li> <li>- Turning lanes</li> <li>- Widen Highway 5</li> </ul>	<ul style="list-style-type: none"> <li>- Electrification</li> <li>- GO purchase</li> <li>- Ferries</li> <li>- QEW rail (private)</li> <li>- Electric Mini-GO</li> <li>- Expand seaway</li> <li>- Increase GO comfort</li> <li>- HOV lanes</li> <li>- Twin bridges</li> <li>- Tunnel</li> <li>- Wide traffic separation</li> <li>- Two level roads</li> <li>- Widen Highway 407</li> </ul>
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Workbook #	QUESTION
	- New international crossing
ID#2	Let's not have a repeat of the fiasco that has just been completed (almost) between 403 and 1 km north of #5 – the consultants got their way but the ideas and proposals of the “local peasants” were far superior in terms of safety, efficiency and ease of road maintenance and the smoother flow of traffic, i.e. #6 over York Road and #6 under #5 and #5 to have stayed as is with the total destruction of Clappison's Corner businesses.

The **Seventh Community Advisory Group (CAG)** meeting regarding the Niagara to GTA Corridor Planning and Environmental Assessment Study was held on November 19, 2009 at the Casablanca Winery Inn from 6:30 p.m. to 9:00 p.m.

### **Purpose:**

The purpose of the meeting was to:

- (a) Receive CAG member's perspectives and input on the possible advantages and disadvantages of the four (4) Groups of combination Transportation Alternatives:
  - o Group #1 – Optimize Existing Transportation Networks
  - o Group #2 – New / Improved Non-Roadway Transportation Infrastructure
  - o Group #3 – Widen Existing Highways, and
  - o Group #4 – New Transportation Corridor(s)
- (b) Gain input regarding Public Information Centre (PIC) round three (3).

### **Attendance:**

A total of 22 members of the CAG attended the meeting. With respect to the study team, Roger Ward, George Ivanoff and Terry Hilditch from the MTO attended the meeting. Representatives from the consultant team included Tyler Drygas, Jack Thompson, Sandy Nairn, and Michael Chiu. The team of independent facilitators from Lura Consulting included Jim Faught, Liz Nield, Barry Randall, Olav Sibille, Lisa Josephson and Jeff Garkowski.

### **Discussion Highlights:**

Jim Faught (Lura) reviewed previous meeting minutes, which were accepted by the CAG.

Roger Ward (MTO) briefly introduced himself as the new study coordinator for the MTO and thanked everyone for attending the meeting and noted that he looks forward to working with the CAG over the course of the study.

Jack Thompson initiated the presentation, outlining the study progress, and discussing the input received from CAG and other advisory groups regarding the creative process in generation of Transportation Alternatives. Mr. Thompson went over the study area and vision and reviewed the stage the study is currently at: assessing the alternatives. He followed up with a detailed review of the individual alternatives (rail, air, marine, transit, inter-modal, TDM and TSM) and then discussed the combination alternatives.

Sandy Nairn continued the presentation by highlighting and reviewing the four combination Transportation Alternatives and their assessment in detail. He concluded by reviewing next steps in the study, including a brief overview of the upcoming third rounds of PICs.

Following the presentation by the consulting team, a brief question and answer (Q & A) period addressed various questions and comments by the CAG.

**Facilitated Round Tables:**

Using break-out groups, a workshop session followed the presentation and Q & A. CAG members formed three groups to identify possible advantages and disadvantages of the four (4) Groups of Combination Alternatives. The following table presents highlights of the discussions. Please refer to the detailed CAG minutes for the full documentation.

**Comments on the Combination Transportation Alternatives**

**Group #1: Optimize Existing Transportation Networks**

Advantages

- Less impact
- Promotes increased density along routes
- Encourages transit
- Promotes new technologies
- Might not hurt the economy (taking into consideration congestion pricing and local traffic)
- Cost effective & supports Provincial Policy
- Politically acceptable

Disadvantages

- Limits to capacity without expansion
- Large dual trailers can be a safety hazard
- Implementation of guidelines challenging
- Short-term solution (doesn't solve the problem)
- Lacking in connections
- Concentrates on economic development in existing centres.

**Group #2: New / Improved Non-Roadway Transportation Infrastructure**

Advantages

- Positive improvement
- Frees up space on highways for goods movement
- Supports rapid transit
- Affordable for users (less cost/congestion)
- Timing
- Prevents urban sprawl
- Lower cost (in comparison to Groups 3 & 4)
- Efficient way of getting around
- Supports Provincial Policy

Disadvantages

- Needs vary and therefore hard to supply consistency
- Partnerships between multi-modal companies hard to establish
- Rail companies may not be willing to act as partner
- May not meet transportation needs
- Modes impact on capacity
- Supports lower density and urban sprawl
- Environmental impact (increased air traffic)
- Expensive

**Group #3: Widen Existing Highways**

Advantages

- Would like to see stacking and tunneling in addition to widening
- Cheaper and less impact than Group #4
- Takes care of projected growth (in relation to the Greenbelt and agricultural land)

Disadvantages

- Can significantly impact existing communities adjacent to the highway
- Impacts to air quality, community
- Lack of linkages to HOV lanes, toll roads
- Capacity will be met in the short term
- Promotes bedroom community, not live/work
- Limited space to expand
- Short-term benefits (local vs. regional)

Comment: Groups 1, 2 and 3 are sequential.

**Group #4: New Transportation Corridor(s)**

Advantages

- Allows for further thought about what can be done with existing conditions/elements
- Potential to create a separate corridor for freight/trucks – goods movement

**Disadvantages**

- Promotes urban sprawl
- Most expensive alternative
- Implementation timing
- Provides no linkages to toll roads
- Increases development pressure
- Not most efficient route between GTA and Niagara Frontier
- Major impact on land
- Will not decrease traffic on existing roads (e.g. QEW) therefore not enough positive effect
- No effect on tourism
- Missing links to airport

Comments: Can make better use of the Hydro Corridors. Need better integration of municipal and regional planning. Potential use of rail existing corridors instead of building new roads.

**Suggestions for Public Information Centre, round three**

- Show examples of Group 4 corridors on maps
- Presentation slide #31 should be emphasized
- Demonstrate that this is still a thinking process, with no decision yet made
- Have the consulting team available to ensure feedback is taken into consideration

**Other Business, Next Meeting and Adjourn:**

Final questions and comments from the CAG were addressed, and Jim Faught reviewed next steps, including the upcoming third round of PICs. He requested that CAG members provide their comments from the meeting and PIC's by January 8, 2010 and mentioned that the next CAG meeting will take place in Spring, 2010.

Attendees requested that one additional CAG meeting be included prior to the fourth round of PICs to discuss the Transportation Development Strategy. The study team will consider the need and timing for this meeting.

Roger Ward thanked participants for their work, and restated that the key message resulting from round table discussions acknowledged that Groups 1 and 2 only partially address the transportation problems and opportunities and that the strategies found in Groups 3 and 4 need to be explored to address the future transportation needs of the area.

The meeting adjourned at 9:15 p.m.



## NIAGARA TO GTA CORRIDOR EA – Phase 1 Community Advisory Group – Minutes of Meeting # 8

The **Eighth Community Advisory Group (CAG)** meeting regarding the Niagara to GTA Corridor Planning and Environmental Assessment Study was held on May 6, 2010 at the Casablanca Winery Inn from 6:30 p.m. to 9:30 p.m.

### Purpose:

The purpose of the meeting was to:

- (a) Receive CAG perspectives on the proposed elements of the Transportation Development Strategy for Group #1 (Optimize Existing Networks) and Group #2 (New/Expanded Non-Road Infrastructure)
- (b) Receive CAG perspectives and input on the results of the Transportation, Economic, Natural and Social Assessments for Group #3 (Widen/Improve Roads) and Group #4 (New Transportation Corridor) alternatives

### Attendance:

A total of 20 members of the CAG attended the meeting. Representatives from the Project Study Team included the Ministry of Transportation (Roger Ward, Frank Williams, and Terri Hilditch), URS, MRC, Ecoplans, MKI, and AECOM. The meeting was facilitated by a team of independent facilitators from Lura Consulting.

The meeting agenda is attached as **Appendix A** and detailed participant feedback is found in **Appendix B**.

### In attendance:

With respect to the study team, Roger Ward, Frank Williams and Terry Hildith of MTO attended the meeting. Representatives from the Consultant Team included Tyler Drygas (URS), Sandy Nairn (Ecoplans), Michael Chiu (MRC), Jeff Lehman (MKI), and Kevin Jones (AECOM). The team of independent facilitators from Lura Consulting included Jim Faught, Liz Nield, and Jeff Garkowski.

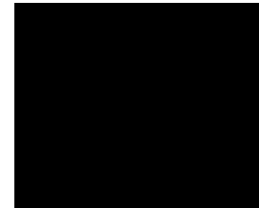
#### Study Team:

- Roger Ward, MTO
- Terri Hilditch, MTO
- Tyler Drygas, URS
- Kevin Jones, AECOM
- Frank Williams, MTO
- Michael Chiu, MRC
- Jeff Lehman, MKI

#### Facilitators:

- Jim Faught, Lura Consulting (Lead Facilitator)
- Liz Nield, Lura Consulting (Facilitator)
- Jeff Garkowski, Lura Consulting (Notetaker)

#### Community Advisory Group Members:



## NIAGARA TO GTA CORRIDOR EA – Phase 1 Community Advisory Group – Minutes of Meeting # 8

### 1. Welcome, Agenda Review, Review of CAG Meeting #7 Minutes

Mr. Jim Faught welcomed everyone and introduced himself as the facilitator and introduced the newest member of the CAG: [REDACTED] from Burlington who will be replacing [REDACTED]. Mr. Faught reviewed the approach for this evenings meeting and introduced Mr. Roger Ward (MTO), the NGTA Project Coordinator.

Roger Ward (MTO) welcomed everyone and explained that at this stage of the study some analysis has been done but no decisions have been made regarding the draft Transportation Development Strategy. Mr. Ward explained that this meeting is different than the others in that the Study Team will present findings rather than decisions and are looking for CAG input before finalizing the analysis work and proceeding with a recommended strategy.

Jim Faught confirmed that participants have all the meeting materials at hand (CAG package and copy of presentation).

CAG members reviewed the minutes of the CAG meeting held on November 19, 2009. The following comments were made by CAG members:

Jim Faught (Lura) reviewed the previous meeting minutes.

- C:** A minor addition was requested under the Group #4 Disadvantages section to expand on “major impact on land” to include the broader discussion that occurred around impacts to the natural environment and agriculture.
- Q:** At the last meeting an additional CAG meeting was requested to see the final recommendations before the final round of PICs, is that still the plan?
- A:** Yes, that is the plan, a ninth meeting will happen this fall.

The meeting minutes from November 19, 2009 were approved by CAG members, noting the above mentioned comments.

### 2. Study Update and Presentation

Tyler Drygas, URS, provided an update on the study progress and reviewed the Group # 1 (Optimize Existing Networks) and Group # 2 (Add/Expand Non-Road Infrastructure) elements.

CAG members provided the following questions/comments regarding Group #1 and Group #2 during the presentation:

- C1:** What is being discussed is very vague, such as supporting local transit (e.g. Niagara Region transit).
- A:** The Study Team has met with Niagara Region to discuss regional transit issues. Public transit in Niagara is focused on the urban areas and it is difficult to build inter-regional transit ridership.
- C2:** Local transit should be supported and upgraded.

## NIAGARA TO GTA CORRIDOR EA – Phase 1 Community Advisory Group – Minutes of Meeting # 8

- C1:** What you presented here tonight is the point that we are trying to get out: a variety of options should be considered.
- Q1:** On page 6 of the presentation, it shows two interchanges, is one at Fifty Road?  
**A1:** One is at Waterdown and one is at Red Hill, not Fifty Road.
- Q2:** What work has been done in Group #2 since the last meeting?  
**A2:** More work has been done on feasibility and ability to implement, ensuring we have support and buy-in from the Ministry of Transportation and other pertinent government agencies.
- Q3:** When you get to June will there be recommendations?  
**A3:** The Study Team is currently finalizing the assessment work and consulting with all advisory groups. The Draft Transportation Development Strategy is expected to be announced in June 2010.
- C2:** More dialogue is needed with Halton roads department, specifically regarding the treatment of regional roads separately from local roads.  
**A2:** The Study Team has met with Halton Region and will continue to meet with them regarding issues related to their regional / local road network.
- Q4:** With non-road transportation systems, will interface between them and existing highways be included in the assessment of Group #3 and Group #4?  
**A4:** Group #1 and #2 elements have been assumed in the assessment of Group #3 and #4 alternatives. The details regarding the integration of specific transportation elements will be addressed through further studies.
- C3:** St. Lawrence Seaway has operational issues (e.g. winter operation) and will probably not happen.  
**A3:** Yes, the St. Lawrence Seaway Corporation has noted that winter operations in the seaway are unlikely to occur. We recognize there are feasibility issues with some options, however, it is important to keep considerations/dialogue open as a means of identifying opportunities for cooperation / coordination.
- Q5:** On slide 16 of the presentation, on population growth, there is little difference between the numbers in the presentation and in the Growth Plan. Have you done checks on the accuracy of these projections?  
**A5:** Growth projections used for analysis are those provided by the Growth Plan and through municipal growth planning exercises.
- Q6:** Municipalities are not using the same numbers as the Growth Plan.

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**A6:** Municipal growth projections are developed to be consistent with the Growth Plan.

Kevin Jones, AECOM, provided an overview of the Transportation Analysis for Group # 3 (Widen Existing Networks) and Group # 4 (New Transportation Corridors); the following summarizes the main points:

- Comprehensive modeling of all the Group # 3 and Group # 4 alternatives carried forward for study includes:
  - Most recent population and job projections from the Growth Plan for the Greater Golden Horseshoe and municipal updates as municipalities go through more detailed growth projection exercises
  - Comprehensive modeling approach including transit demands, transit uses, auto and truck traffic
  - Assumes all work currently proposed (e.g. Big Move, Go2020) will be completed including a 4% reduction in auto demand and an estimated 10% reduction in long distance truck traffic (shift to rail, etc.)
- Alternative 3-1 includes upgrades already planning and new widenings with HOV lanes
- Alternative 4-2 includes a new corridor connecting to Highway 403 with widening and improvements to many existing highways in the Hamilton / Halton area
- Alternative 4-3 includes a new corridor connecting to Highway 401 with some limited widening in the Hamilton / Halton area
- Alternative 4-4 includes a new corridor connecting to Highway 407 with some limited widening in the Hamilton / Halton area
- Alternative 4-5 includes new by-passes around Hamilton and St. Catherines with some limited widening in the Hamilton / Halton area as well as the QEW in Niagara
- Key findings include:
  - Increasing capacity with Group #3 and Group #4 alternatives will create some new auto demand; very little difference in the Hamilton-Niagara area
  - Group #3 and Group #4 alternatives perform similarly
  - New corridors (Group #4 alternatives) provide minor capacity benefits
  - New corridors do not solve localized congestion problems; even with new corridors, widening of existing infrastructure will be required
  - New corridors create redundancy in routes and lessen impact from incidents on existing highways

CAG members provided the following questions/comments regarding the Transportation Assessment for Group #3 and Group #4 during the presentation:

**Q1:** Where does the link to the Hwy 403 occur in Alternative 4-4 and 4-5?

**A1:** The maps shown are conceptual. A link would occur somewhere around the bend (general location indicated on large display map).

**Q2:** Why is there no discussion of how the Red Hill Expressway will connect?

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**A2:** Hamilton has recommended an arterial connection, which has not been excluded in analysis. An interchange connecting to this areas has been assumed for modeling purposes.

**Q3:** It is not shown that the Red Hill Expressway will relieve congestion?

**A3:** The model shows that the Red Hill Expressway will be able to handle projected traffic volumes.

Jeff Lehman, MKI, provided an overview of the Economic Analysis for Group # 3 (Widen Existing Networks) and Group # 4 (New Transportation Corridors); the following summarizes the main points:

- Economic analysis included quantitative - transportation and economic benefits - (e.g. increase in output, jobs, travel time savings, costs, etc.) and qualitative (e.g. impacts on municipalities, service to economic growth areas)
- Analysis shows a greater economic benefit from Group # 3 (Widen Existing Highways) alternatives than Group # 4 (New Transportation Corridor) alternatives:
  - New corridors do not divert that much traffic off existing corridors (population and jobs located close to existing highway network)
  - New corridors through the Green Belt do not allow development opportunity and therefore much less economic benefit

CAG members provided the following questions/comments regarding the Economic Assessment for Group #3 and Group #4 during the presentation:

**C1:** Based on the economics, you should wipe out the new corridor option. I applaud the study findings.

**Q1:** A recent newspaper article reported that Niagara Region plans to widen Highway 406 and build a new east-west corridor. Have you seen the article and where does that fit in?

**A1:** There are a number of projects that are being undertaken in the study area and the Ministry is consulting with study proponents to determine how those studies may interact with this study. The Study Team has met with Niagara Region to discuss the status of their East-West corridor study. The MTO is looking at extending Highway 406.

**Q2:** Considering that the Group #4 alternatives could open up connections to Kitchener/Waterloo, why are there no projection numbers for those areas?

**A2:** The economic modeling looked at all of the Greater Golden Horseshoe, but only the numbers for the area displayed in the map are displayed. Guelph has a projection of 23,000 jobs in 30 years and Waterloo has 140,000 jobs projected.

**Q3:** I thought that the thrust of provincial policy was to direct growth to existing centers not trying to connect existing areas better?

**A3:** The Growth Plan speaks to supporting growth centres with transportation connections.

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**C2:** The biggest supporters of the original Niagara corridor were the Hamilton airport. The province recognizes that the Green Belt is not the place to grow.

Sandy Nairn, Ecoplans, provided an overview of the Natural Environment and Community Assessment for Group # 3 (Widen Existing Networks) and Group # 4 (New Transportation Corridors); the following summarizes the main points:

- Natural Environment Assessment:
  - Overall assessment of the natural environment indicates greater impacts from Group #4 (New Transportation Corridor) alternatives than Group #3 (Widen Existing Highways) alternative given new Niagara Escarpment crossings, new Greenbelt impacts, and high potential for species at risk impacts from Group #4 alternatives
  - Alternative 3-1 has high localized impacts on the natural environment in certain areas
- Community Assessment:
  - Overall assessment of community impacts indicate a greater impact from Group #3 (Widen Existing Highways) alternative than Group #4 (New Transportation Corridor) alternatives given the proximity to built-up areas
  - Group #4 alternatives result in greater potential to fragment agricultural lands
  - Relatively similar air quality impacts for all alternatives

CAG members provided the following questions/comments regarding the Natural Environment and Community Assessment for Group #3 and Group #4 during the presentation:

**Q1:** On page 46 of the presentation it says that the Beverly Swamp will be impacted around Highway 6. Can you explain where Beverly Swamp comes in? What does Beverly Swamp have to do with Highway 6?

**A1:** These are Provincially Significant Wetland complexes that span Highway 6 to the east and west.

**Q2:** Wouldn't widening (Alternative 3-1) have impacts in the Burlington area?

**A2:** Based on the modeling work, an additional two lanes would be required on the QEW through Halton. These localized impacts are less than the new corridor alternatives.

**Q3:** Is this net impact? What about localized air impacts in Burlington?

**A3:** There is no discernable difference in air quality impacts in the Burlington area.

**Q4:** On page 51 of the presentation, it says that there will be no air impacts from new corridors on the surrounding areas. How can this be true?

**A4:** Local air quality impacts are projected to be concentrated within the corridor right of way.

**C1:** I cannot imagine that there would not be a tremendous amount of pollution from 10 lanes.

**C2:** The impacts of salt spray have been overlooked.

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- C3:** On page 48 of the presentation regarding potential impacts to areas of woodlots, there are large gaps between Provincially Significant Wetlands (PSW). The Ministry of Natural Resources (MNR) upgraded their classification/criteria and there may be a lot more PSWs in the area. I have seen an updated map and there are a lot more PSWs than indicated in the assessment.
- C4:** On page 47 of the presentation it shows 400 properties will be affected and 120 homes displaced from the Group #3 scenario. The number of properties impacted for new corridors (Group #4) is not shown and should be considered for comparison.

Michael Chiu, MRC, provided an overview of cost and constructability for Group # 3 (Widen Existing Networks) and Group # 4 (New Transportation Corridors); the following summarizes the main points:

- Alternative 3-1 results in significantly more complex constructability issues than the Group #4 alternatives
- Group #3 is expected to cost approximately \$5 to \$6 billion and Group #4 alternatives are estimated to cost approximately \$6 to \$7 billion

Tyler Drygas, URS, wrapped up the presentation with comments on the overall assessment. He indicated that based on the assessments conducted, Group #3 (Widen Existing Networks) alternatives work until 2031, but beyond that planning horizon, it is questionable whether the expansion of the existing transportation system can address the future transportation needs. Mr. Drygas also indicated that a hybrid solution is a potential option, taking the best elements of both groups of alternatives.

### 3. Plenary Discussion

CAG members discussed the assessments presented by the Project Team as a plenary discussion. The following are the questions and comments discussed.

#### Group # 1 and Group # 2 Elements

- C1:** Since this is a big picture, long-term strategy, Group #2 (New/Expanded Non-Road Infrastructure) should be considered further (e.g. funding for Metrolinx, funding for local transit systems). I am concerned about how much weight of some aspects of Group # 2 are given if this study is led by MTO.
- C2:** What other Group #1 and Group #2 improvements could be made if this \$6 or \$7 billion were spent on them instead? If willing to spend this much money on highways we should also consider spending it on Group #1 and Group #2.

#### Transportation Assessment (Group # 3 and Group #4)

- C1:** Would like to see more explanation of how the Red Hill Expressway will affect or not affect these options.

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- C2:** Alternative 4-4 connects into Highway 407. I do not understand how this will not also require widening Highway 403 because people will still want to take the free route (particularly trucks).
- C3:** Already shown that people avoid Highway 407, especially the big trucks (which are the focus of this study).
- Q1:** Does the transportation model consider road tolls?  
**A1:** The model does account for tolls, for both cars and trucks. It considers the cost of tolls (time penalty/cost penalty) in overall assessment. The impact of tolls on existing highways is only considered on Highway 407; as congestion grows the probability of using the 407 increases.
- C4:** The study should consider tolls as a financing option.  
**A4:** Tolling is not being considered at this stage of the study as it is an implementation issue. The model can account for tolls if policies are put in place.
- Q2:** How do you split the car and truck proportions in the models?  
**A2:** Each corridor varies. The MTO has a process that looks at the type of products shipped and where they are going. The models use this process for projections. With higher densities people will chose to work more local/home; this is built into the modeling.
- Q3:** Why are we talking about an eastern end for Group #4 alternatives and growth in Milton? What happened to the Niagara component?  
**A3:** There are a number of ways to connect to a new facility. Defining in the Niagara area has been left open to allow opportunity to look at the best solution that would serve different sets of demands and can test different alternatives.
- C5:** Cost of Group #4 alternatives difficult to analysis until it is decided which tunnel under the Welland Canal will be used (north or south).
- Q4:** Group #4 alternatives, new corridors, attract growth. Is that accounted for or is only the reduction in congestion accounted for?  
**A4:** The difference between now and what was happening 20-30 years ago is that the Growth Plan and the Green Belt are now in place which have a profound impact on development patterns.
- C6:** It is very difficult to project traffic patterns. Developers are building houses and promoting them by saying the drive is worth the price difference.
- Q:5** Group # 4 alternatives are only proposed as 2 lanes in each direction. Would it encourage more trucks to use it if it was built as 3 lanes in each direction to begin with?  
**A5:** That is something that can be looked at. Some sections could be 3 lanes upfront, depending on the timing of implementation. If implemented later in the planning



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horizon, it could be wider. The right of way would be acquired to accommodate some future expansion as the need arises.

**C7:** 60% of trucks are driving empty 60% of the time.

**C8:** No highway in Ontario is ready to accommodate truck trains at this point in time, but they are being allowed now.

### Economic Assessment (Group # 3 and Group #4)

**C1:** I do not have confidence in the economic assessment since there is no decision yet on how the project will be funded. How are we going to pay for all this? Toll or no toll? Should not look at alternative decisions if do not know how they will be funded.

**Q1:** Are the job projections accurate? With all these jobs projected, how can I work more locally? What government approaches get people to work from home?

**A1:** Projections are approved numbers in the Growth Plan and from municipalities' growth planning exercises. Projection numbers are given to the Study Team.

**C2:** Growth rates are dictated by the Province. We have to work off of assumptions.

**Q2:** If growth projections are off, will it impact these plans?

**A2:** Some assumptions have to be made, and documented in the study.

**C3:** Projections in the presentation show 700,000 people in Hamilton by 2031. Would like to see those numbers checked out. Niagara Region has still not reached its population projections for the year 2000.

### Natural Environment and Community Assessment (Group # 3 and Group #4)

**C1:** Disappointed in the lack of details in the assessment of the natural environment. What about square area of wetland, impacts of fragmenting wetland, total footprint of Group #4 alternatives (home displaced), loss of food producing land, ecosystem services? The natural environment seems to be underweighted and a more detailed analysis should be factored in.

**C2:** New corridor can have less impact than widening existing highways (e.g. salt impacts on pipelines, hydro corridors, etc.).

**C3:** Designers should listen to the locals to lessen impacts (e.g. Highway 403 north of Dundas, the entire natural area has been wiped out). Sometimes it makes more sense to look at the radical (local knowledge can have more impact than engineers).

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- C4:** Bias in the analysis with 120 houses in St. Catherines identified but no property impacts report for the new corridors.
- C5:** Would like to see the number of landowners impact by a new corridor.

### Additional Comments/Suggestions

- C1:** Impressed that the study acknowledges that many of the Group #3 widenings will have to take place for Group #4 alternatives. There must be some overlap in terms of cost, where some of the costs of Group #4 are disguised in Group #3.
- C2:** One graph shows all the costs for each alternative. There needs to be something that shows a lot more information and more detail.
- C3:** We have seen more information tonight than at all other meetings. I am pleased to see the CAG's input integrated and that there has been communication with others involved (not just roadway), such as marine, local municipalities. I am very pleased with the process and hope we continue on this straightforward path with opportunity to voice out opinions.
- C4:** So much information was presented tonight, there is not enough time to discuss and there are a number of issues raised today that need to be addressed before we can discuss these options. Suggest another CAG meeting.
- C5:** Many older people attend these meetings. How many young professionals that commute (aged 30-40) provide input? We need to engage these people.
- Q1:** How long would it take to build the expansion of Highway 403?  
**A1:** At least 5 years of study and then construction after that.
- C5:** 2031 is not that far away. It seems that a short and long term plan is needed.
- C6:** What is the total cost for Group #4 alternatives?  
**A6:** Total for new highways is between \$6 and \$7 billion.
- C7:** Group #4 routes are not defined yet, so we cannot specifically compare until a route is selected.  
**A7:** We can comment on the general concepts and areas (in a range).
- Q2:** Does Group #3 cost and feasibility estimates consider bridges or tunneling of the Burlington Bay and Welland Canal?  
**A2:** Assumption is bridges.
- C8:** New capacity should be located within existing right of ways instead of new ones.
- C9:** If there is ever a Hamilton port access, road access will be required. Suggest Burlington Street as an alternative to Skyway Bridge.

## NIAGARA TO GTA CORRIDOR EA – Phase 1 Community Advisory Group – Minutes of Meeting # 8

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### 4. Other Business, Next Meeting and Adjourn

Jim Faught (Lura) indicated that the request for an additional CAG meeting will be considered.

Roger Ward thanked everyone for their active participation and asked them to keep in mind that tonight's presentation was a summary of the extensive technical assessment work that has been undertaken over the past several months. Additional details on the assessment will be provided at the PICs and in study documentation.

The meeting adjourned at 9:35 p.m.

**NIAGARA TO GTA CORRIDOR EA – Phase 1  
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**Appendix A: Agenda**

**AGENDA**

**Community Advisory Group Meeting #8**

Date: May 6, 2010

Time: 6:30 p.m. – 9:00 p.m.

Location: Casablanca Winery Inn

The **Ninth Community Advisory Group (CAG)** meeting regarding the Niagara to GTA Corridor Planning and Environmental Assessment Study was held on October 6, 2010 at the Casablanca Winery Inn from 6:30 p.m. to 9:00 p.m. The purpose of the meeting was to: a) Provide CAG members with an update on the Study; b) Receive CAG feedback on the Draft Transportation Development Strategy; and, c) to provide CAG with an update from the fourth round of PICs.

**Attendance:**

A total of 22 members of the CAG attended the meeting. Representatives from the Project Study Team included MTO (Roger Ward, Terry Hilditch, Frank Williams and George Ivanoff), Consultant Team: Tyler Drygas, Sandy Nairn, and Kevin Jones. The team of independent facilitators from Lura Consulting: Jim Faught, Liz Nield, and Mark van der Woerd.

**Discussion Highlights:**

Jim Faught (Lura) reviewed the previous meeting minutes. Tyler Drygas (URS) provided a study update presentation.

**Discussion:**

Following the presentation, a plenary discussion addressed various questions and comments by the CAG. The following presents highlights of the discussions.

- Like the building block approach and that the draft TDS represents a balanced solution
- Concern about affect on natural features associated with highway widening and new corridor alternatives including Beverly Swamp, Spencer Creek, Cootes Paradise, Niagara Escapement, tributaries and headwaters
- Questions about mitigating impacts to the Niagara Escarpment associated with a new corridor connecting Highway 403 to Highway 407
- Question the assessment of community impacts between the new corridor and widening Highway 403 alternatives
- Questions about economic advantages of selecting which west corridor (401 vs. 407)
- Inquiries regarding linkages to the Brantford to Cambridge EA and GTA West Study
- There is the need to focus on further multi-modal options to reduce the need for roadway solutions
- Question about whether there might be flexibility in the future for more rail
- Suggest that inter-regional / inter-municipal transit in Niagara Region should be incorporated (or considered), currently getting from one region to another is very difficult, expensive and time-consuming
- Inquiries about the consideration of a ferry service between Niagara and Toronto
- Questions about the word “staged”, timing of west corridor planning area and east route planning area, and terminology of “corridor” vs. “route” planning areas
- Concern that dividing the study area into three sections appears to lose overall focus for the entire study area
- Need more detailed information on the assessment work undertaken – very difficult to see how the process has evolved from the last CAG meeting to the draft Strategy
- Consistency of information (e.g. envelope of the new corridors are different shapes throughout the presentation, it is difficult to see where the potential impact could be)

- Questions about municipal pressures from each Region and how they may influence this study
- Concern that if “political winds” change, this EA could be put on the shelf
- Questions about Metrolinx funding for the ‘Big Move’
- Concern that development in the west area could limit the opportunities for new transportation corridors
- Concern that trucks may not use a new corridor connecting to Highway 407
- Suggestion / inquiry if widening Highway 6 would address the problem as well as a new corridor in the west end
- Suggestion that regardless of tolling considerations, new transportation corridors should not be privatized
- Consider pipelines when in the design phase
- Request for commitment to provide CAG with the Strategy and provide adequate time for review

**Other Business and Adjourn:**

Roger Ward thanked the CAG for their active participation throughout the process and requested CAG to provide the Study Team with feedback about the CAG process overall and what recommendations they have for future CAGs.

The meeting adjourned at 9:00 p.m.

## APPENDIX B: MINUTES OF MTAG, MEAG, AND RAAG MEETINGS





## NIAGARA TO GTA CORRIDOR PLANNING AND EA STUDY – Phase 1

Meeting: Municipal Technical Advisory Group (MTAG)  
Location: Casablanca Winery Inn, Grimsby Meeting No. 1  
Purpose: **MTAG Orientation Session** Date: March 27, 2007  
Chair: Glenn Pothier (facilitator) Time: 1:00 PM - 4:00 PM

Present: **NGTA Project Team**

John Slobodzian, MTO	Terry Hilditch, MTO
Frank Pravitz, MTO	Darlene Proudfoot, MTO
Sam DiFelice, MTO	Sandy Nairn, Ecoplans Ltd.
Michael Chiu, MRC	Glenn Pothier, GLPi
Paul Hudspith, URS	Tyler Drygas, URS
Margie Gonzalez, URS	

**MTAG Representatives**

Mary Lou Tanner, Halton Region	Joanne Warner, Town of Milton
Scott McMillan, Town of Oakville	David Wong, Town of Oakville
Tom Eichenbaum, City of Burlington	
Christine Lee-Morrison, City of Hamilton	
Corwin Cambray, RM Niagara	Karl Dren, City of Niagara Falls
Tim Stuart, City of Port Colborne	Marzenna Carrick, City of Niagara Falls
Rudy Warkentin, Township of Wainfleet	Stephen Bedford, NOTL
Edward Soldo, County of Haldimand	Bob Wheildon, Township of Puslinch
Steve Miller, Niagara Peninsula Conservation Authority	
Darren Kenny, Hamilton Conservation Authority	
Hal Morse, Greater Buffalo-Niagara Regional Transportation Council	



<u>Items</u>	<u>Description</u>	<u>Action by:</u>
1	<p><b><u>Introductions</u></b></p> <p>J. Slobodzian introduced the MTO members of the Study Team and P. Hudspith introduced the Consultant representatives of the Study Team. MTAG members present introduced themselves.</p> <p>G. Pothier, independent facilitator for the Study Team, presented the meeting agenda. It was noted that a summary of the meeting would be prepared and distributed to the Study Team and MTAG members.</p>	URS
2	<p><b><u>MTAG Orientation Session Presentation</u></b></p> <p>J. Slobodzian, P. Hudspith, and M. Chiu presented the following study topics (refer to the attached presentation):</p> <ul style="list-style-type: none"> <li>▪ Study Team Structure</li> <li>▪ Study Overview</li> <li>▪ Existing Policy Context</li> <li>▪ Approved EA ToR</li> <li>▪ Study Process and Objectives</li> <li>▪ Study Plan</li> <li>▪ Function of the Municipal Technical Advisory Group (MTAG) and Municipal Executive Advisory Group (MEAG)</li> <li>▪ Stakeholder Consultation and Outreach</li> <li>▪ Process for Generating and Evaluating Transportation System Alternatives</li> </ul> <p>Subsequent to the presentation, breakout sessions were conducted to workshop the consultation and outreach approach, the CAG, and consultation with municipalities.</p> <p>G. Pothier started the presentation by discussing the ground rules for the meeting.</p> <p><i>Summary of Questions and Issues Raised</i></p> <p>The following outlines the comments and suggestions provided during the presentation:</p> <p>Tom Eichenbaum (City of Burlington) inquired about coordination with the Ministry of Public Infrastructure Renewal (MPIR) and how their input will be incorporated in this study. J. Slobodzian responded that MTO formally requested that MPIR participate on the Project Team but they declined. They have agreed however to participate on the Regulatory Agency Advisory Group (RAAG). MTO will also be working with MPIR during the development of the Integrated Greater Golden Horseshoe Multi-Modal Transportation model (a.k.a. GGH Model).</p>	

<u>Items</u>	<u>Description</u>	<u>Action by:</u>
	<p>Corwin Cambray (Regional Municipality of Niagara) asked when the decision point in Phase 1 occurs. P. Hudspith responded that the decision point would be reached in Summer 2009.</p> <p>C. Cambray inquired how federal agencies are being represented in the process including border authorities. P. Hudspith responded that the federal government comes into the process in a number of ways: RAAG, First Nations consultation and other Transportation Service Providers (TSP), including the border authorities. J. Slobodzian added that this study is being undertaken as a joint federal/provincial EA coordinated process.</p> <p>T. Eichenbaum inquired whether the MEAG has been selected/established? P. Hudspith replied that it has not been established and that selection criteria would be a topic of the workshop/breakout session.</p> <p>Tim Stewart (City of Port Colborne) inquired about the planning horizon for this study. P. Hudspith replied that the study would respond to a 25-year planning horizon (i.e., 2031).</p> <p>T. Stewart asked whether the estimated dates for PIC 2 (Winter 2008) and PIC 3 (Spring 2008) were correct. D. Proudfoot clarified that 'winter' refers to a period from December to March and 'spring' from April to June (approximately).</p> <p>C. Cambray inquired how transportation solutions under the jurisdiction of others would be addressed given that they are not under MTO's control? J. Slobodzian replied that the Study Team would invite all appropriate transportation service providers to participate throughout the study. As such, the study recommendations will be based, in part, on the input that they provide (i.e., short and/or long term business plans). It is also anticipated that this stakeholder group will advise what they would require from the government in order to make certain recommendations work.</p> <p>Bob Wheildon (Township of Puslinch) inquired about coordination with other studies (e.g., Highway 24 and GTA West). P. Hudspith replied that there is a strong level of coordination and overlap among the consulting firms conducting these studies. J. Slobodzian also added that there is coordination in terms of the baseline data being used (e.g., GGH model); and the application of the same process, factors and criteria for the generation, assessment and evaluation of transportation alternatives. The relationship and overlap of potential solutions between or among projects will also be considered.</p>	

<u>Items</u>	<u>Description</u>	<u>Action by:</u>
3	<p><b><u>Workshop/Breakout Group Discussion</u></b></p> <p>Subsequent to the presentation, the attendees separated into two working groups to discuss the questions provided in a workbook (copy attached). A spokesperson from each group presented the results of their discussion.</p> <p>The following outlines the comments and suggestions provided based on the workshop/breakout group discussion:</p> <p><b>Breakout Session #1</b></p> <p><b>Question A:</b> <i>What are your perspectives on the public consultation and outreach approach? What enhancements or additional consultation tools/approaches do you think should be considered?</i></p> <p>MTAG representatives reported the following:</p> <ul style="list-style-type: none"> <li>▪ The consultation approach appears adequate/comprehensive but they would like more information provided.</li> <li>▪ First round of consultation should be more than Public Information Centres (PICs) - it should also include newsletters, advertisements, and website.</li> <li>▪ Information should be user-friendly and simple.</li> <li>▪ There should be more bi-national stakeholders (e.g., Customs, NITTEC, U.S. municipalities, Bridge Authorities).</li> <li>▪ Newsletters to Council should be considered as well as breakout sessions at PICs on specific regional issues.</li> </ul>	

<u>Items</u>	<u>Description</u>	<u>Action by:</u>
	<ul style="list-style-type: none"> <li>▪ CAG representatives should participate in the PICs to show the public that citizens are involved.</li> <li>▪ Presentations should be available on the Internet with a feedback form.</li> </ul>	
	<p>P. Hudspith added that the study’s notification/ad campaign contains all ideas mentioned by the breakout groups, including websites, ads, notifications, newsletters, etc.</p>	
	<p><b>Question B:</b> <i>What are your thoughts on the approach for recruiting and selecting the Community Advisory Group (CAG) membership? What enhancements or additional factors should be considered?</i></p>	
	<p>MTAG representatives reported the following:</p>	
	<ul style="list-style-type: none"> <li>▪ 30 CAG members are adequate.</li> <li>▪ If the study affects open, rural areas, those individuals should be included, as well as special needs groups (e.g., tourism, local heritage).</li> <li>▪ Subgroup meetings with common concerns should be considered where necessary.</li> <li>▪ Specific groups established by the respective municipalities should be considered.</li> <li>▪ Concern regarding disagreements between the public members of the CAG and policymakers in the CAG (i.e., Business Improvement Areas).</li> <li>▪ Alternative representatives should be selected should CAG members be unable to attend.</li> <li>▪ The CAG should consist of part community (e.g., landowners) and part knowledgeable citizens (e.g., academia).</li> <li>▪ The CAG should consider transportation service providers; grape growers; and agricultural, tourism, and development representatives.</li> <li>▪ The CAG should not be dominated by any particular group and should cover all issues.</li> <li>▪ For the selection process, the Study Team should consider a lottery for each region or municipality, or each region could select its representatives.</li> <li>▪ Look at the approach used by other studies (e.g., 407 East).</li> <li>▪ Representatives from outside Niagara, Hamilton,</li> </ul>	

<u>Items</u>	<u>Description</u>	<u>Action by:</u>
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and Halton should be considered. How do we get communities in the outer ring involved in the CAG?

**Breakout Session #2:** *How can the Study Team most effectively engage Municipalities in a manner that promotes effective two-way communication?*

**Question A:** *What is needed for the MTAG to effectively participate in this study?*

MTAG representatives reported the following:

- Be provided with materials ahead of meetings.
- Have meetings scheduled well in advance on a regular basis.
- The Study Team should communicate their expectations of the MTAG.
- At some point, all advisory groups should interact to gain others' perspectives.
- If interaction is not possible, the other groups' perspectives should be circulated to the MTAG.

**Question B:** *How best can the Study Team exchange study information with the MTAG?*

MTAG representatives reported the following:

- Put information on a secure (password protected) website and send email to notify members when information has been posted.
- More time for data collection. Presently the amount of time given for the data required has been insufficient. Three to four weeks would be helpful for large amounts of data.
- The Study Team should also send information to one individual per municipality to avoid duplication of work.
- Periodic quick summaries of other advisory group meetings would be beneficial.
- Question: What would be the best method to get information to the Study Team? M. Chiu replied that he would be the point of contact for all MTAG enquiries. J. Slobodzian added that emailing the Study Team email (project\_team@niagara-gta.com) is also an option. Provide "attention to" name so that the email is properly directed.

**Question C:** *Do you feel it would be beneficial to hold*

<u>Items</u>	<u>Description</u>	<u>Action by:</u>
	<p><i>“geographic” MTAG meetings? If so, when should these meetings be held and how should they be structured?</i></p> <p>MTAG representatives reported the following:</p> <ul style="list-style-type: none"> <li>▪ The central location of Grimsby is fine for MTAG meetings.</li> <li>▪ Very specific geographic issues could be addressed at a geographic MTAG meeting that should be scheduled regularly and separately from general MTAG meetings.</li> </ul> <p><b>Question D:</b> <i>Do you feel it would be beneficial to hold technical/working group meetings (with technical municipal staff) in addition to the regularly scheduled MTAG meetings? If so, at what stages in the study should these meetings be held?</i></p> <p>MTAG representatives reported the following:</p> <ul style="list-style-type: none"> <li>▪ Technical/working group meetings (with technical municipal staff) in addition to the regularly scheduled MTAG meetings would be beneficial at key points.</li> <li>▪ This issue should be reviewed after more information is provided regarding the study schedule.</li> <li>▪ The GTTA and local transit providers should provide on-going input.</li> </ul> <p><b>Question E:</b> <i>When in the study process would it be most effective to engage Municipal Councils? What approach should be employed to engage Municipal Councils?</i></p> <p>MTAG representatives had conflicting opinions on when would be the most effective time to engage Councils. They reported the following:</p> <ul style="list-style-type: none"> <li>▪ The most effective time to engage Municipal Councils during the study process would be at regular intervals before PICs so Council is aware of what is happening when they receive questions from citizens regarding the study. Also, Council meetings should be televised.</li> <li>▪ Provide an information presentation to Councils (upper tier) after each of the PICs because they like to hear what the public had to say.</li> <li>▪ Invite lower tier Councils to attend as well.</li> <li>▪ Have an Open House so all can attend.</li> </ul>	

<u>Items</u>	<u>Description</u>	<u>Action by:</u>
5	<p><b>Question F:</b> <i>What do you feel should be the role and function of the Municipal Executive Advisory Group (MEAG)?</i></p> <p>MTAG representatives reported the following:</p> <ul style="list-style-type: none"> <li>▪ The role and function of the MEAG should be relaying Council input back to the Study Team, and provide feedback on local technical issues.</li> <li>▪ The role and function of the MEAG should be to provided inter-regional advice, flag specific issues, and inform municipalities.</li> </ul> <p>J. Slobodzian added that the MTAG members are welcome to bring additional staff to meetings, based on what is being presented. Advance notice of additional staff should be provided so as to accommodate the appropriate number of attendees.</p> <p><u>Next Steps</u></p> <p>P. Hudspith provided the following, regarding next steps in the study:</p> <ul style="list-style-type: none"> <li>▪ April 11<sup>th</sup>, 2007: Regulatory Agency Advisory Group Orientation Session.</li> <li>▪ Late April 2007: Stakeholder Orientation Sessions.</li> <li>▪ First round of PICs will take place in June 2007.</li> </ul>	



## NIAGARA TO GTA CORRIDOR PLANNING AND EA STUDY – Phase 1

Meeting: Regulatory Agencies Advisory Group (RAAG)

Location: Ministry of Transportation, Downsview

Purpose: **RAAG Orientation Session**

Meeting No. 1

Date: April 11, 2007

Time: 1:00 PM - 4:00 PM



Present: **NGTA Project Team**

John Slobodzian, MTO  
Sam DiFelice, MTO  
Cindy Mitton-Wilkie, MTO  
Mike Delsey, TSH  
Paul Hudspith, URS

Terry Hilditch, MTO  
Darlene Proudfoot, MTO  
Sandy Nairn, Ecoplans Ltd.

**RAAG Representatives**

Mike Kim	Ministry of Public Infrastructure Renewal
Tracey Desjardins	Ministry of Tourism
Mike Eckersley (teleconference)	Ministry of Natural Resources
Marion Plaunt	Niagara Escarpment Commission
Michelle Moretti	Ministry of Municipal Affairs and Housing
Drew Crinklaw	Ontario Ministry of Agriculture and Food
Dave Bell	Canadian Environmental Assessment Agency
Solange Desautels	Ministry of the Environment
Cora Sheppard	Ministry of the Environment
Barb Ryter	Ministry of the Environment
Denise Fell	Environment Canada
Liz Duval	Ministry of Citizenship and Immigration / Ministry of Culture / Ministry of Health Promotion, Sports and Recreation Branch
Lorraine Hogan	Ministry of Citizenship and Immigration / Ministry of Culture / Ministry of Health Promotion, Sports and Recreation Branch

<u>Items</u>	<u>Description</u>	<u>Action by:</u>
1	<p><b><u>Introductions</u></b></p> <p>J. Slobodzian introduced the MTO members of the Study Team in attendance. RAAG members present introduced themselves.</p> <p>It was noted that a summary of the meeting would be prepared and distributed to the Study Team and RAAG members.</p>	URS
2	<p><b><u>RAAG Orientation Session Presentation</u></b></p> <p>J. Slobodzian, P. Hudspith, and M. Delsey presented the following study topics (refer to the attached presentation):</p> <ul style="list-style-type: none"> <li>▪ Study Team Structure</li> <li>▪ Study Overview</li> <li>▪ Existing Policy Context</li> <li>▪ Approved EA ToR</li> <li>▪ Study Process and Objectives</li> <li>▪ Study Plan</li> <li>▪ Function of the Regulatory Agency Advisory Group (RAGG) and other Stakeholder groups</li> <li>▪ Stakeholder Consultation and Outreach</li> <li>▪ Process for Generating and Evaluating Transportation System Alternatives</li> </ul> <p><i>Summary of Questions and Issues Raised</i></p> <p>The following outlines the comments and suggestions provided during the presentation:</p> <p>Dave Bell (CEAA) inquired whether the study area included all of the Niagara Peninsula. J. Slobodzian responded that the presentation slide identifies more of an “influence area” than a study area, although the Region of Niagara is included in this general area. It was noted that both Fort Erie and the Bridge Authorities at the international crossings in Niagara are involved. Reference was made to a Bi-National Transportation Group and J. Slobodzian confirmed MTO is participating on this group.</p> <p>Marion Plaunt (Niagara Escarpment Commission) asked if the Transportation Service Providers (TSPs) will be integrated into any other stakeholder groups and if the TSPs will be providing the project team existing information on their networks and their future expansion plans. J. Slobodzian noted that the project team prefers a separate forum to address the TSPs, therefore they will not be meeting with the RAAG or Municipalities, however the project team will consider the logistics of cross-communication between stakeholder groups at strategic points in the study where it may be beneficial. The logistics</p>	

<u>Items</u>	<u>Description</u>	<u>Action by:</u>
	<p>of hosting such an event are challenging given the large number of stakeholders represented throughout the large geographical area. J. Slobodzian noted that the project team will find a way to provide this opportunity and suggestions are welcomed from the RAAG to accommodate this.</p>	
	<p>In answer to M. Plaunt’s second question, Mike Delsey noted that the project team is going to try and obtain as much information as we can from the TSPs, however they are not obligated to provide the project team with all relevant information as some information may be proprietary or confidential.</p>	
	<p>Tracey Desjardins (Ministry of Tourism) noted that Niagara is contemplating formation of a Tourist/Economic group specifically related to transportation issues in the fall of 2007. She indicated that she would keep the project team apprised on any further progress in regards to this.</p>	Ministry of Tourism
	<p>M. Plaunt inquired whether the Greater Golden Horseshoe Transportation Model being developed will consider the goal of reducing urban sprawl. J. Slobodzian noted that the model will reflect the provincial Growth Plan objectives for population and employment targets as well as its sustainability objectives related to containment of urban sprawl. The GTA West study will also be using the same model and approach.</p>	
	<p>J. Slobodzian requested that in addition to technical comments, RAAG also consider and provide comments on the study’s consultation program.</p>	
	<p>M. Plaunt asked if the project team is addressing climate change under the objectives and problems for this study. J. Slobodzian noted that alternatives will be assessed in regards to air quality and emissions which in turn are related to climate change. Climate change itself is not a stated objective of this study as this is a global issue more appropriately addressed at a larger policy level.</p>	
	<p>Denise Fell (Environment Canada) inquired whether the project team could consider assessing environmental impacts of the long list of combination alternatives. J. Slobodzian indicated the project team will assess alternatives from the perspective of their ability to address the problems and opportunities. Alternatives that do not address the problem or opportunities will be screened out from further, detailed consideration. It is important to note that multiple combinations will be carried forward for more detailed evaluation against environmental factors.</p>	
	<p>M. Plaunt asked if air quality will be considered part of the problems to be addressed for this study. J. Slobodzian</p>	

<u>Items</u>	<u>Description</u>	<u>Action by:</u>
	<p>noted that alternatives will be addressed in regards to air quality, although air quality is not a stated objective of this study.</p> <p>T. Desjardins asked whether we are still collecting data (e.g. Tourism data). S. Nairn confirmed the project team is still collecting data and data from the Ministry of Tourism could be provided to him.</p> <p>D. Fell suggested adding “stakeholder support and buy-in” as a goal for measuring EA success. D. Bell noted CEAA has a post-environmental assessment questionnaire for coordinated EAs. He will send a copy of this to Darlene Proudfoot and Terry Hilditch.</p> <p>J. Slobodzian noted that as part of the project, the project team will identify the policy issues that are potentially limiting certain TSPs from pursuing recommended options. J. Slobodzian noted that this is a partnership exercise and highlighted the need to have the Federal team on board with respect to recommendations that fall within their regulatory jurisdiction.</p> <p>M. Delsey noted there is a project website for this project (<a href="http://www.niagara-gta.com">www.niagara-gta.com</a>) and an office in St. Catharines at Totten Sims Hubicki (36 Hiscott Street, Suite 200 St. Catharines, Ontario L2R 1C8, Tel: 905-682-0212 • Fax: 905-682-4495).</p>	CEAA
3	<p><u>Next Steps</u></p> <p>P. Hudspith provided the following, regarding next steps in the study:</p> <ul style="list-style-type: none"> <li>▪ Late April and early May 2007: Stakeholder Orientation Sessions.</li> <li>▪ First round of PICs will take place in June 2007.</li> </ul>	



# NIAGARA TO GTA CORRIDOR PLANNING AND EA STUDY – Phase 1

Meeting: Municipal Technical Advisory Group (MTAG) and Regulatory Agencies Advisory Group (RAAG)

Location: Holiday Inn Burlington Hotel and Conference Centre Meeting No. 1  
3063 South Service Road, Burlington

Purpose: **Joint MTAG & RAAG Meeting** Date: June 4, 2007

Chair: Glenn Pothier (GLPi) (facilitator) Time: 1:30 PM - 4:00 PM

Present: **NGTA Project Team**

- |                        |                             |
|------------------------|-----------------------------|
| John Slobodzian, MTO   | Paula Neto, TSH             |
| Darlene Proudfoot, MTO | Michael Chiu, MRC           |
| Terry Hilditch, MTO    | Sandy Nairn, Ecoplans Ltd.  |
| Paul Hudspith, URS     | Margaret Pak, Ecoplans Ltd. |
| Mike Delsey, TSH       | Glenn Pothier, GLPi         |

**MTAG Representatives**

- |                                |                                   |
|--------------------------------|-----------------------------------|
| Paul Allen, City of Burlington | Andrew Head, Region of Halton     |
| David Wong, Town of Oakville   | Steve Robichaud, Region of Halton |
| Bill Mann, Town of Milton      |                                   |

Christine Lee-Morrison, City of Hamilton

- |   |                                       |
|---|---------------------------------------|
| George Nicholson, Niagara Region - Planning | Kris Jacobson, City of St. Catharines |
| Eric Flora, Niagara Region - Transportation | John Grubich, City of Niagara Falls   |
| Tim Stuart, City of Port Colborne           | Ian Izzard, Town of Fort Erie         |
| David Ferguson, City of Welland             |                                       |

Betty Matthews Malone, Haldimand County Edward Soldo, Haldimand County

Bob Wheildon, Township of Puslinch

**RAAG Representatives**

Denise Fell	Environment Canada
Cora Sheppard	Ministry of the Environment (MOE)
Mike Eckersley (teleconference)	Ministry of Natural Resources (MNR)
Mike Stone (teleconference)	Ministry of Natural Resources (MNR)
Drew Crinklaw (teleconference)	Ministry of Agriculture, Food and Rural Affairs (OMAFRA)
Janet Lo (teleconference)	Ministry of Public Infrastructure Renewal (MPIR)
Marion Plaunt	Niagara Escarpment Commission (NEC)
Darren Kenny	Hamilton Conservation Authority
Jennifer Lawrence	Conservation Halton

<b><u>Items</u></b>	<b><u>Description</u></b>	<b><u>Action by:</u></b>
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1

**Introductions**

T. Hilditch (MTO) thanked the attendees for coming to the Joint meeting. Members of the Project Team, the MTAG and the RAAG introduced themselves.

G. Pothier (GLPi), independent facilitator for the Project Team, presented the meeting agenda. It was noted that a summary of the meeting would be prepared and distributed to all attendees.

2

**MTAG Orientation Session Presentation**

T. Hilditch (MTO), S. Nairn (Ecoplans Ltd.), and M. Delsey (TSH) presented the following agenda items (refer to the attached presentation and handout):

- Why a Joint MTAG / RAAG Meeting?
- Overview of the Work Completed to Date
- Study Documentation
- Roles of the MTAG and RAAG
- Generating and Evaluating Transportation System Alternatives

Subsequent to each section of the presentation, there was a question and answer period.

G. Pothier started the presentation by discussing the ground rules for the meeting.

<u>Items</u>	<u>Description</u>	<u>Action by:</u>
	<p><i>Summary of Questions and Issues Raised</i></p> <p>The following outlines the comments and suggestions provided throughout the presentation:</p>	
	<p><b><u>First part of the presentation</u></b></p> <p>G. Nicholson (Niagara Region) inquired if a hard copy of the Transportation Working Paper could be obtained. <b>[Post Meeting Note: a copy of all three reports including the Overview of Transportation and Socio-Economic Conditions Working Paper was provided to all MTAG and RAAG attendees.]</b></p> <p>T. Hilditch (MTO) advised that the Community Advisory Group (CAG) membership would be finalized after the first round of PICs. As well, the public can interact with the Project Team through the web feedback form located on the project website: <a href="http://www.niagara-gta.com">www.niagara-gta.com</a>. Also, information, including the website, can be accessed at the project office - located in St. Catharines.</p> <p>J. Lawrence (Conservation Halton) inquired about the attendance of the Public Orientation Sessions. G. Pothier (GLPi) replied that attendees at public orientation sessions were by invitation only (invitations were sent to all individuals and groups on the project stakeholder list). In total, approximately 170 people attended. T. Hilditch (MTO) added that one of the key purposes of the orientation sessions was to solicit input regarding the development of the public consultation program.</p>	URS/TSH
	<p>M. Plaunt (NEC) inquired as to who was represented at the May 17<sup>th</sup> Transportation Service Provider (TSP) meeting. G. Pothier (GLPi) replied that the attendance list would be made available to the group. M. Delsey (TSH) mentioned that while 40 TSP representatives were invited, only about 12-15 attended. He also noted that although representatives from CP and CN did not attend; there was representation from GO Transit. J. Slobodzian (MTO) acknowledged that the attendance at the TSP meeting was disappointing, speculating that conflicting schedules and priorities might be the reason. Consideration is therefore being given to the development of a customized consultation program for this stakeholder group. It was also noted that a follow-up questionnaire was sent to all of the TSP meeting invitees.</p>	URS
	<p>M. Plaunt (NEC) and E. Flora (Niagara Region) requested a copy of the minutes from the TSP meeting. E. Flora (Niagara Region) commented that Niagara Specialized Transit (NST) was not invited to attend the Transportation Service Provider meeting. The Project Team is to invite the NST to the next meeting and to place them on the TSP mailing list.</p>	

<u>Items</u>	<u>Description</u>	<u>Action by:</u>
	<p><b><u>Second Part of the Presentation</u></b></p> <p>C. Lee-Morrison (City of Hamilton) inquired about the timelines for document review. S. Nairn (Ecoplans Ltd.) replied that the Project Team would like feedback by July 18<sup>th</sup>.</p> <p>S. Nairn (Ecoplans Ltd.) stated that the Project Team is looking for this group to provide feedback on the draft reports – particularly with respect to accuracy and completeness. D. Proudfoot (MTO) commented that agency mandates should help determine, what reports or sections of reports should be reviewed, if time and resources are an issue. J. Lawrence (Conservation Halton) inquired as to the difference between the NGTA Corridor Environmental Assessment Terms of Reference (EA ToR) and the Study Plan, and if the Project Team could highlight/specify the changes. S. Nairn (Ecoplans Ltd.) replied that the Study Plan provides more detail than the EA ToR. J. Lawrence (Conservation Halton) requested that Conservation Halton be sent hard copies of all reports to be reviewed. C. Sheppard (MOE) requested that MOE be sent multiple copies of all documents too.</p> <p>M. Plaunt (NEP) requested further clarification regarding the Study Plan. J. Slobodzian (MTO) replied that the EA ToR is a generic process document in support of the need for additional transportation capacity within the Niagara to GTA Corridor. S. Nairn (Ecoplans Ltd.) added that the Study Plan builds upon the information provided in the ToR; specifically with respect to the overall approach, schedule, consultation and deliverables. P. Hudspith (URS) stated that the Transportation Working Paper looks at existing transportation conditions only, it does not examine future transportation issues. M. Delsey (TSH) added that a highway is not necessarily the solution; the Project Team is taking an overall transportation master plan approach for the Niagara to GTA Corridor.</p>	<p>URS</p>
<p>3</p>	<p><b><u>Other Comments and Questions</u></b></p> <p>J. Slobodzian (MTO) provided an update on consultation activities with First Nations, including the recent community meeting with the Six Nations of the Grand River. Six Nations has indicated their preference for community-based meetings with the Project Team, whereas the Mississaugas of the New Credit have requested that MTO meet with their Elected Council. J. Slobodzian (MTO) acknowledged that traditional land use information is currently a data gap; MTO is discussing with Six Nations the possibility of undertaking a Traditional Knowledge Study.</p> <p>G. Pothier (GLPi) took the opportunity to ask the MTAG and</p>	



<u>Items</u>	<u>Description</u>	<u>Action by:</u>
	<p>RAAG for their input regarding how to actively involve them more; particularly the municipalities. He inquired if there were any perceived barriers to participation/ communication, and what the Project Team could do to make improvements. J. Lawrence (Conservation Halton) mentioned that a 30-day review period is not sufficient as a realistic timeframe for the commenting agencies to review documents; a minimum 60-90 day review period was requested. J. Slobodzian (MTO) stated that the ToR commits to a 90-day review period for Milestone documents; it does not however apply to Working Papers. C. Sheppard (MOE) mentioned that Regulatory Agencies do not have the time/resources to review documents in detail and that it would be helpful if the Project Team could outline the section(s) that impacts/affects each MTAG and RAAG. T. Stuart (City of Port Colborne) mentioned the need for the opportunity to negotiate timelines, including the name of a contact person.</p>	
	<p>T. Stuart (City of Port Colborne) stated that municipalities are currently updating/modifying their transportation network plans. G. Nicholson (Niagara Region) added that the Niagara Region is busy working on a Regional Growth Strategy and inquired as to whether the Strategy will be included in the MTO study. J. Slobodzian (MTO) replied that project documentation is not considered to be final until the EA Report is approved. As such, as new municipal (land use) information etc. becomes available, it will be incorporated as appropriate. To facilitate this, it important that the Project Team be notified.</p>	
	<p>T. Stuart (City of Port Colborne) requested that the Project Team be very specific about the type and detail of information required when making requests for municipal data.</p>	
	<p>J. Lo (MPIR) inquired if the directives of the <i>Growth Plan</i> for land use have been factored into this study. M. Delsey (TSH) confirmed that the <i>Growth Plan</i> and its land use directives are included in this study and is noted in the Study Plan. M. Delsey (TSH) added that the study would also take tourism travel and international trade into consideration because of the Niagara to GTA Corridor proximity to the US border.</p>	
	<p>S. Robichaud (Region of Halton) mentioned that MTO had recently requested traffic information from the Region of Halton - to feed into the GGH Modeling project. He also indicated that a 2-week turn-around timeline is not adequate. In addition, the Halton Region 2021 analysis exercise – to conform to the Growth Plan, may take up to 2 years to complete. He cautioned that the Region would likely have difficulty supporting output from the GGH model if MTO chooses not to wait for the revised data. M. Delsey (TSH) responded that the Project Team understands</p>	

<u>Items</u>	<u>Description</u>	<u>Action by:</u>
	<p>municipal concerns and challenges related to <i>Growth Plan</i> conformance, and noted that traffic information provided by municipalities will be used in the GGH as it becomes available.</p>	
	<p>E. Flora (Niagara Region) inquired if Niagara Region could obtain a copy of the minutes from the Transportation Service Providers (TSP) meeting. M. Plaunt (NEC) inquired if minutes from other meetings could also be made available. J. Slobodzian (MTO) stated that the Project Team would examine the requirements of the Freedom of Information and Protection of Privacy (FIPP) Act legislation and then provide a response regarding distribution of meeting minutes.</p>	MTO
	<p>G. Nicholson (Niagara Region) inquired as to how membership of the Community Advisory Group (CAG) will be determined. G. Pothier (GLPi) replied that people who are interested in participating must apply; applications are currently available on the project website. In addition, the Project Team will actively be soliciting interest/applicants at the upcoming PICs. The total membership is expected to range between 25 and 40 people. If there is an overwhelming response, criteria and/or interviews may be used to aid with final selection. G. Pothier (GLPi) also clarified that the CAG is intended to be an advisory body, not a decision-making body; they will provide advice and share perspectives - as citizens representing a diversity of interests, knowledge and concerns within the NGTA Corridor.</p>	
	<p>T. Stuart (City of Port Colborne) inquired as to what will be provided/presented to the Minister’s Advisory Group meeting on June 7<sup>th</sup>. J. Slobodzian (MTO) replied that it would be a simplified version of the information presented to the MTAG/RAAG. He also clarified that the NGTA Project Team is not leading the Minister’s meetings; the Minister and her staff organize them.</p>	
	<p>B. Matthews Malone (Haldimand County) requested that the MTAG members be given advance notice of the next meeting date. Also, a meeting during the summer months should not be scheduled due to vacation-related absences.</p>	
	<p>E. Flora (Niagara Region) inquired about how the Project Team will examine economic impacts within the Niagara to GTA Corridor. J. Slobodzian (MTO) replied that economic impacts are part of the current study and that alternative approaches for adding transportation capacity to the corridor would be assessed in terms of their economic advantages and disadvantages.</p>	

<u>Items</u>	<u>Description</u>	<u>Action by:</u>
4	<p><b><u>Next Steps</u></b></p> <p>T. Hilditch provided the following, regarding next steps in the study:</p> <ul style="list-style-type: none"><li>▪ First round of PICs will be held on June 12<sup>th</sup> (Rockton), June 14<sup>th</sup> (St. Catharines) and June 18<sup>th</sup> (Burlington). All MTAG and RAAG members are invited to attend.</li></ul>	

The Niagara to GTA Corridor Municipal Executive Advisory Group (MEAG) met on September 25, 2007 at the Casablanca Winery Inn (Reflections Room) from 1:30 p.m. to 4:15 p.m.

The following individuals attended the meeting:

Mary Lou Tanner	Director –	Planning and Transportation Services, Regional Municipality of Halton
Peter Crockett	Commissioner –	Planning and Public Works, Regional Municipality of Halton
Christine Lee-Morrison	Manager –	Environmental Planning, City of Hamilton
Neil Everson	Director –	Economic Development and Real Estate, City of Hamilton
Joe Cousins	Director –	Transportation Services, Regional Municipality of Niagara
George Nicholson	Associate Director –	Policy Information, Regional Municipality of Niagara
John Howe	Executive Lead –	Greater Toronto Transportation Authority
Patricia Boeckner	Director –	MTO Transportation Planning Branch
John Slobodzian	NGTA PM Board –	MTO Provincial and Environmental Planning Office
Terry Hilditch	NGTA PM Board –	MTO Provincial and Environmental Planning Office
Paul Hudspith	NGTA PM Board –	URS Canada
Patrick Puccini	NGTA PM Board –	URS Canada

**Purpose of the Meeting**

This was the first meeting with this group. The purpose of the meeting was to discuss the role of the MEAG, provide a summary of the results of the first round of consultation, and discuss broad-based interregional issues related to this project. These issues included: land use allocation for transportation modelling, municipal review timeframes for key study documents, long-term strategies and plans, and the future meeting schedule.

**Summary of Discussion and Action Items:**

It was agreed that the Municipal Executive Advisory Group would play an essential role on this project by providing a forum to discuss and resolve key interregional and strategic issues.

The following points and questions summarize the key issues and actions:

**Study Process**

- Question: What is the representation of the Municipal Technical Advisory Group (MTAG)?

*Response: The representation of this group has been selected by each participating municipality and consists largely of planning and public works staff.*

- Question: Given that this project is following a coordinated EA process, what types of federal triggers may become relevant?

*Response: At this stage of the project the federal EA process has not been formally triggered. However, federal agency representatives are participating in this project throughout the entire process. There are several possible triggers. Typically for MTO planning studies the federal process is triggered by the need for a federal permit, e.g. fisheries authorization, navigable waters permit, etc. It is important to note that these types of issues will be investigated during later phases of this project, once the Transportation Development Strategy has been developed and there is more certainty with regard to the types of infrastructure improvements that are envisioned.*

- Question: Can the Project Team provide a list of Community Advisory Group (CAG) members to the MEAG?

*Response: Yes (Action Required).*

- Question: Will minutes for CAG meetings be posted on the project website?

*Response: The Project Team will post a meeting summary on the project website after each CAG meeting.*

- Question: The recently completed PICs utilized an open house format and grouped display materials into themes. Will the other PICs follow this format?

*Response: Yes, the Project Team believes that this format facilitates a better understanding of the issues and promotes open communication between the stakeholders and the Project Team.*

- In response to the Project Team's previous response it was suggested that consideration be given to holding small group sessions during future PICs that focus on particular issues. The team will consider this suggestion.

- Question: Is the Project Team consulting with U.S. transportation agencies?

*Response: Yes. Consultation is occurring with both the New York State Department of Transportation as well as the Greater Buffalo Niagara Regional Transportation Council (GBNRTC). The GBNRTC has been asked to participate on the Municipal Technical Advisory Group (MTAG).*

- Question: Will the GGH model that is being developed by MTO as part of a separate initiative consider a wide range of transit opportunities? Significant focus should be placed on developing modal split assumptions that realistically forecast the potential for transit to play a significant role in addressing travel demand in the GGH.

*Response: Transit will be an integral component of the GGH model. Further to this, during the development of the area transportation system alternatives for this project, the approach will be to first maximize existing infrastructure, then to look at opportunities to incorporate non-roadway based transportation alternatives (e.g. transit), and finally to*

*consider roadway based alternatives to address residual travel demand. This approach is in keeping with the principles of the Growth Plan.*

- Question: Can MEAG representatives obtain advance notice of all CAG meeting including copies of presentation meetings?

*Response: Yes (Action Required)*

Land Use Allocation for Transportation Modelling

- Options for incorporating municipal land use allocations into the GGH model were discussed.
- Municipalities are currently reviewing land use allocations to ensure conformity with the Growth Plan figures and policies. This conformity exercise is not yet complete. MTO is scheduled to use the land use allocations to complete the modelling and forecasting this fall.
- It was agreed that interim land use allocations would have to be used to run the NGTA modeling exercise.
- The municipal representatives noted that it would not be possible to provide land use allocation information at the “traffic zone” level at this time. However, it may be possible to provide information based on a breakdown by municipality within each Region.
- MTO agreed to discuss this possibility with the GGH Model Project Team. **(Action Required)**
- It was suggested that the GGH Model Project Team may wish to consult with the LRPO (Long Range Planners of Ontario) or the RPCO (Regional Planning Commissioners of Ontario) organizations.
- MEAG representatives agreed to keep the Project Team apprised of the status of their land use conformity efforts.

Municipal Review Timeframes for Key Study Documents

- The Project Team noted that the municipal review of the Study Plan and the Overview papers had in some cases exceeded the requested timeframes. This presents a concern to the Project Team on the basis of potential implications to the overall schedule for this project.
- Municipal representatives noted that one of the key factors are the significant timeframes required to move staff comments through Council. However, it was agreed that staff comments on reports can be provided within 60 days. If Council endorsement is required, confirmation of municipal comments can be provided within 90 days.
- It was also agreed that the Project Team will consider other measures to facilitate a more efficient review of study material by municipal staff such as:
  - Providing draft material to staff in advance of meetings to facilitate informed discussions.

- Providing an executive summary for key study documents.
- Identifying key areas within study documents, where it is anticipated that feedback from municipal staff will be most beneficial.

#### Long-Term Municipal Strategies/Plans

- The municipalities agreed to keep the Project Team apprised of relevant municipal initiatives such as the updates to their OPs, the development of transportation master plans, etc.
- The GTTA noted that their draft plan will be issued in Spring 2008, and finalized in the Summer of 2008.

#### MEAG Meeting Schedule

- It was agreed that meetings with the MEAG should be held in advance of key project milestones, and generally on a quarterly basis.
- The next meeting is tentatively scheduled for March 2008 (in advance of PIC #2).

Meeting: Municipal Technical Advisory Group (MTAG) and Regulatory Agencies Advisory Group (RAAG)

Location: Casablanca Winery Inn, Reflections Room (4 Windward Drive, Grimsby, Ontario L3M 4E8) Meeting No. 2

Purpose: To inform participants of project status and provide a project update. Date: December 13, 2007

Chair: Glenn Pothier (GLPi) (facilitator) Time: 1:30 P.M. - 3:30 P.M.

Present:

**NGTA Project Team**

John Slobodzian, MTO	Mike Delsey, TSH
Susan Sieradzki, MTO	Michael Chiu, MRC
Terry Hilditch, MTO	Paul Hudspith, URS
Frank Pravitz, MTO	Tyler Drygas, URS
Frank Williams, MTO	Patrick Puccini, URS
Glenn Pothier, GLPi (facilitator)	

**MTAG Representatives**

David Wong	Town of Oakville
Peter Vujic	Niagara Region
Tyson Haedrich	Haldimand County
Lloyd Rollinson	Haldimand County
Christine Lee-Morrison	City of Hamilton
Bob Wheildon	Township of Puslinch
Brent Bouteiller	Township of Puslinch
Tom Eichenbaum	City of Burlington
Melissa Green-Battiston	Region of Halton
Steve Robichaud	Region of Halton
David Ferguson	City of Welland
Sal Iannello	City of Port Colborne
Angela Janzen	Town of Milton
Brian Treble	Township of West Lincoln (Niagara Region)



**RAAG Representatives**

Denise Fell	Environment Canada
Solonge Desautel	Ministry of the Environment (EAAB)
Tracey Desjardins	Ministry of Tourism
Marion Plaunt	Niagara Escarpment Commission (NEC)
Michelle Moretti	Ministry of Municipal Affairs & Housing
David Berardi	Canada Border Services Agency
Kellie McCormack	Conservation Halton
Michael Kim	Ontario Growth Secretariat
Suzanne Young	Grand River Conservation Authority

**Items      Description      Action by:**

1

**Introductions**

G. Pothier (GLPi) thanked the attendees for coming to the meeting. Members of the Project Team, the MTAG and the RAAG introduced themselves.

G. Pothier (GLPi), independent facilitator for the Project Team, provided a session overview and presented the meeting agenda. It was noted that a summary of the meeting would be prepared and distributed to all attendees.

2

**Joint MTAG & RAAG Meeting**

The agenda items for the meeting were explained (refer to attached presentation and handout) and included:

- Study Overview
- Overview of Recent Work
  - Study Plan and Existing Conditions Overview Reports
  - Consultation Record
- Process for Identifying Transportation Problems & Opportunities
- Group Discussion
  - Views and Perspectives on Transportation Problems
  - Transportation Vision for the Niagara to GTA Corridor
- Other Business
- Next Steps

<u>Items</u>	<u>Description</u>	<u>Action by:</u>
	<p><i>Summary of Questions and Issues Raised</i></p> <p>The following outlines the key presentation items, as well as the comments and suggestions provided throughout the presentation:</p> <p><b><u>Study Overview Presentation</u></b></p> <p>P. Hudspith provided an overview of the study purpose and process as well as an update on the Study Plan, Overview of Transportation and Socio-economic Conditions Report, and Overview of Environmental Conditions and Constraints Report. It was noted that although various refinements were made to reflect the comments provided by all stakeholders, no significant changes were made to the format or content of these documents.</p> <p>P. Hudspith noted that a Consultation Record has been prepared to document the stakeholder comments provided, the Project Team’s response and the actions taken by the Project Team (if any).</p> <p>In general, changes to the Study Plan focused on evaluation factors, details regarding the Preliminary Study Area, the process for identifying transportation problems and opportunities and the consultation plan.</p> <p>A question and answer period followed the Study Overview presentation. A summary of the questions and responses are as follows:</p> <p>Q – Has the Project Team consulted with New York State transportation authorities?</p> <p><i>R – The Greater Buffalo Niagara Regional Transportation Council (GBNRTC) is a member of the Municipal Technical Advisory Group. In addition, Canada Border Services Agency (CBSA) is involved and has contacts with U.S border agencies. An extensive O-D survey of Niagara bridges has been undertaken to update the 2000 survey and there is ongoing consultation as part of the Bi-National Transportation Strategy.</i></p> <p>Q- How will the Study Plan evolve throughout the course of the study? Will addendums be prepared as the study progresses?</p> <p><i>R- The Study Plan is an overview process document and does not provide a detailed description of the technical work that will be undertaken. These details will evolve as the study progresses. Rather than continuing to update the Study Plan, the Project Team will issue information and undertake consultation at each study stage.</i></p>	<p>URS/TSH/ECoplans</p>

<u>Items</u>	<u>Description</u>	<u>Action by:</u>
	<p>Q – Given that municipalities are still in the process of developing future land use allocations that conform to the Growth Plan, what level of detail with regard to future land use is required by the Project Team to continue their work for this study?</p> <p><i>R – The Project Team recognizes that municipalities are in the process of developing their future land use allocations and that this information will not be available until 2009. This was a key discussion point at the meeting with the Municipal Executive Advisory Group in September 2007.</i></p> <p><i>The Project Team is of the opinion that there is enough technical information available to proceed. As the future land use allocations are updated this information will be reviewed to see whether it is necessary to undertake further modeling/forecasting work.</i></p>	
	<p><b><u>Process for Identifying Problems and Opportunities Presentation</u></b></p>	
	<p>M. Delsey presented the Problems and Opportunities Framework and explained the details of each of the seven steps for identifying problems and opportunities. He reiterated that this study is looking at the potential and limitations of all modes to address capacity needs in the Niagara to GTA Corridor and noted that the Project Team is currently conducting meetings with Transportation Service Providers and Business and Commercial Stakeholders to obtain their input on these issues. It was noted that a follow-up meeting would be arranged in Spring 2008 to present and discuss the details of modelling/forecasting exercise.</p>	
	<p>The following summarizes the questions raised regarding the Problems and Opportunities identification process.</p>	
	<p>Q –The traffic modelling work should account for future planned infrastructure as well as existing infrastructure.</p> <p><i>R – We will incorporate planned improvements along with existing infrastructure and will be forecasting future economic, land use and tourism conditions.</i></p>	URS/TSH/Ecoplans
	<p>Q – How will the Project Team account for the potential to shift future trips to a different mode of transportation in the traffic modelling work? This potential should be based on desirable scenarios, as opposed to historical information.</p> <p><i>R – We will be looking at a range of possible future scenarios including different modal assignment assumptions. We will take the vision of the Growth Plan and develop specific goals and objectives. We will also ask the</i></p>	URS/TSH/Ecoplans

<u>Items</u>	<u>Description</u>	<u>Action by:</u>
	<p><i>Transportation Service Providers about what is possible and what could be achieved if barriers were removed. Assumptions used in the forecasting exercise must be realistic and credible. We will be able to provide more information about the modeling/forecasting work at the next meeting.</i></p> <p>Q – How much change is reasonable?</p> <p><i>R – J. Slobodzian (MTO). The vision and goals are provided by the Growth Plan. We will talk to the Transportation Service Providers to determine their ability to accommodate additional capacity. We will not arbitrarily determine modal allocations. As part of this exercise, our Team needs to be able to show all stakeholders where the assumptions came from (i.e., approved planning policies, input from the Transportation Service Providers).</i></p> <p>Q – The preliminary results of the Greater Golden Horseshoe Model (GGH Model) are not acceptable to the Regional Municipality of Halton. It is premature for the Project Team to begin the identification of Transportation Problems and Opportunities. Particularly given the status of the Growth Plan conformity exercise.</p> <p><i>R – MTO acknowledges this concern. Municipalities have until 2009 to conform to the Growth Plan. There is no mandate for MTO to wait until 2009. As such, the Project Team is moving forward and will do the best we can with available information, and new information will be reviewed as we move forward. We will compare the final allocations to what we used, and will determine whether it is necessary to undertake further modelling/forecasting work.</i></p> <p>Q - Work on developing other modes of transportation and determine future plans and possible limitations. There should be a unique approach for each mode.</p> <p><i>R – Determining opportunities and limitations for other modes is dependant upon the Information that the Transportation Service Providers are willing to provide to the Project Team.</i></p> <p>Q - Coordination with other initiatives such as Metrolinx and the GTA-West Corridor Planning and EA Study is essential for the study.</p> <p>R – Agreed. There is integration and coordination amongst these initiatives.</p>	
3	<p><b><u>CAG’s Vision for the NGTA Corridor</u></b></p>	
	<p>The following outlines the comments provided by MTAG and RAAG representatives regarding the CAG’s transportation</p>	

<u>Items</u>	<u>Description</u>	<u>Action by:</u>
	<p>vision for the Niagara to GTA Corridor and their perspectives on transportation problems and opportunities (refer to handout “Creating a Transportation Vision for the Niagara to GTA Corridor” and presentation slide “Transportation Problems”).</p> <p><b>Building on the CAGs Vision:</b></p> <p>G. Pothier (GLPi) provided an overview of the CAG vision for the NGTA Corridor and the transportation problems and opportunities that were identified at the CAG meeting on November 29<sup>th</sup>, 2007.</p> <p>The transportation vision developed by the CAG seems reasonable. However, this vision should include the following:</p> <ul style="list-style-type: none"> <li>▪ Change the “car culture” attitude through public education programs.</li> <li>▪ Consolidate/focus infrastructure improvements to promote economic growth.</li> <li>▪ The effect of greenhouse gases/climate change should be given more emphasis in the transportation vision.</li> <li>▪ Opportunities to make elements of the Transportation Development Strategy more environmentally sustainable should be included in the transportation vision. The Red Hill Valley Parkway project should be reviewed in this regard.</li> <li>▪ The transportation vision should include the concept of improving human health along with environmental health.</li> </ul>	URS/TSH/ECoplans
	<p>The Transportation Problems identified by the CAG appear reasonable. However, the following should be added:</p> <ul style="list-style-type: none"> <li>▪ Emergency response times need to be improved when incidents occur on the transportation network (e.g. train derailments, highway accidents, etc.).</li> <li>▪ Environmental constraints should be included.</li> </ul>	URS/TSH/ECoplans
5	<p><b><u>Next Steps</u></b></p> <p>The next steps are as follows:</p> <ul style="list-style-type: none"> <li>• Technical work and consultation to support the identification of Transportation Problems and Opportunities</li> </ul>	URS/TSH/ECoplans

<u>Items</u>	<u>Description</u>	<u>Action by:</u>
	<ul style="list-style-type: none"><li>• Follow-up meetings regarding the Modelling/Forecasting Exercise</li><li>• Preparation of “Area Transportation System Problems and Opportunities” Report.</li></ul>	
	After discussing next steps, participants offered the following comments:	
	<ul style="list-style-type: none"><li>• The Project Team should prepare a “fact sheet” on transportation demand forecasting.</li><li>• Meeting materials should be provided in advance to promote enhanced discussion.</li></ul>	
6	<b><u>Closing Remarks</u></b>	
	G. Pothier (GLPi) and the Project Team thanked participants for their participation at the meeting.	



# NIAGARA TO GTA CORRIDOR PLANNING AND EA STUDY – Phase 1

Meeting: Municipal Technical Advisory Group (MTAG) and Regulatory Agencies Advisory Group (RAAG)

Location: Casablanca Winery Inn, Reflections Room  
4 Windward Drive, Grimsby, Ontario L3M 4E8

Purpose: Modelling and Demand Forecasting Information Session      Date: Tuesday March 4, 2008

Chair: Glenn Pothier (GLPi) (facilitator)      Time: 1:30 P.M. – 4:00 P.M.

Present: **NGTA Project Team**

John Slobodzian, MTO	Glenn Pothier, GLPi (facilitator)
Terry Hilditch, MTO	Michael Chiu, MRC
Paul Hudspith, URS	Jack Thompson, MRC
Patrick Puccini, URS	

**MTAG Representatives**

Steve Robichaud	Region of Halton
Andrew Head	Region of Halton
Mary K. Cichocki-Beaudry	Region of Halton
Rick Hein	Dillon Consulting
Christine Lee-Morrison	City of Hamilton
Ohio Ajayi	City of Hamilton
Jill Stephen	City of Hamilton
Karl J. Huyge	Haldimand County
Lloyd Rollinson	Haldimand County
Barbara Mugabe	Haldimand County
Matt Grabau	Greater Buffalo-Niagara Regional Transportation Council
Steve Szopinski	Greater Buffalo-Niagara Regional Transportation Council
Phil Bergen	Region of Niagara
Rich Miller	Region of Niagara
George Nicholson	Region of Niagara
Karl Dren	City of Niagara Falls
Marzenna Carrick	City of Niagara Falls
Tom Eichenbaum	City of Burlington
Ryan Grodecki	City of Burlington
Vi Bui	Region of Waterloo
David Ferguson	City of Welland

**RAAG Representatives**

Solange Desautels	Ministry of Environment, Environmental Assessment Approvals Branch
Mike Kim	Ministry of Public Infrastructure Renewal, Ontario Growth Secretariat
Neil Hester	Niagara Escarpment Commission

<b><u>Items</u></b>	<b><u>Description</u></b>	<b><u>Action by:</u></b>
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1                    **Introductions**

G. Pothier (GLPi), independent facilitator, provided a session overview and thanked the attendees for coming to the meeting.

G. Pothier noted that the presentation material had not been circulated in advance of this meeting due to the technical and informational nature of the material, and the need for an accompanying commentary.

Members of the Project Team, the MTAG and the RAAG introduced themselves.

J. Slobodzian briefly discussed the issue of future land use allocations. He noted the following:

- MTO recognizes that future land use allocations are currently being developed by municipalities and will not be available until 2009 or later.
- The schedule for completion of Phase 1 of the NGTA study is Fall 2009.
- While the Project Team cannot wait until 2009 to obtain the final future land use allocations from municipalities, the Project Team would like to consult with the municipalities to develop a realistic set of future land use assumptions for this study.

2                    **Joint MTAG & RAAG Modelling and Demand Forecasting Information Session**

P. Puccini presented the following information to attendees:

- The process for identifying the existing and future transportation problems and opportunities in the Niagara to GTA Corridor;
- The basic principles of transportation modelling and



<u>Items</u>	<u>Description</u>	<u>Action by:</u>
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forecasting; and,

- The transportation modelling and demand forecasting approach that is being used for this study. This approach utilizes the Greater Golden Horseshoe Model as well as a Strategic Demand Forecasting approach that is being developed by the Project Team.

*Summary of Questions and Issues Raised*

Questions and comments were taken during scheduled breaks in the presentation and after the presentation. The following outlines the comments and questions raised by attendees, as well as the Project Team’s response:

**Segment #1 (Slides 1 to 23)**

C – Interest regarding a link between NGTA and Guelph or Kitchener-Waterloo.

*R – Comment noted.*

C – As shown in Slide 21, land use is a key starting point in the modelling process. How will the Project Team address the lack of final future land use allocation information from municipalities?

*R – The Project Team cannot wait until future land use allocations are finalized by municipalities in 2009 but would like to consult with the municipalities to develop a future land use allocation for interim use for the travel demand forecasting component of the study.*

Q – What is the difference between the techniques for truck freight and other freight? (Slide 3)

*R – Future truck freight movements will be modelled using the GGH model. In addition, a strategic demand forecasting approach, which relies on consultation with transportation service providers, business and commercial stakeholders, existing data sources and other relevant studies will be used to forecast future truck freight movements. This approach will also be used to forecast other types of freight movements (air, rail and marine).*

Q - How does the Area of Influence impact the study area? (Slide 4)

*R – The Area of Influence encompasses the NGTA Preliminary Study Area, and includes southwestern Ontario and the northeastern United States. A significant portion of future trips occurring within the Preliminary Study Area will be external trips that originate from or be destined to a location outside of the Preliminary Study Area, i.e. within the*

<u>Items</u>	<u>Description</u>	<u>Action by:</u>
	<p><i>Area of Influence.</i></p> <p>Q – How does the Project Team forecast commercial vehicle trips?</p> <p><i>R – Future commercial vehicle trips are being forecasted as part of the GGH model using a three-step approach that includes trip generation, trip distribution and trip assignment. In addition, a growth model approach will be used for the strategic demand forecasting approach, using data from MTO’s Commercial Vehicle Survey, other municipal goods movement studies, and information obtained from consultation with Transportation Service Providers and Business and Commercial Stakeholders.</i></p> <p>Q – What year is the base data</p> <p><i>R – 2006.</i></p> <p>Q – How is the Project Team accounting for the effects of tourism?</p> <p><i>R – The Project Team includes tourism experts that will provide the transportation modelling experts with an appreciation of future tourism trends and outlooks.</i></p> <p><b>Segment #2 (Slides 25 to 33)</b></p> <p>Q – Is there a factor, which considers students living within different zones during different times of the year?</p> <p><i>R – There is not a specific factor to account for students, but ‘ground’ counts are used to calibrate the flow of trips crossing screenlines.</i></p> <p>Q – Does the most recent GGH model use the 2006 zones from the Transportation Tomorrow Survey?</p> <p><i>R – Yes.</i></p> <p>Q – How are international borders incorporated into the modelling?</p> <p><i>R – International borders are treated as gateways to the modelling area. Travel volumes are available at all of these gateways from the border agencies.</i></p> <p><b>Segment #3 (Slides 35 to 45)</b></p> <p>Q – Will the Project Team consider “active” modes of transportation?</p> <p><i>R – Yes, the model does forecast these trips. While this</i></p>	

<u>Items</u>	<u>Description</u>	<u>Action by:</u>
	<p><i>study is focused on long distance inter-regional transportation movements, it is recognized that the use of 'active' transportation may reduce local congestion issues, which may help to alleviate existing provincial facilities, e.g. the QEW through St. Catharines.</i></p> <p>Q – How does assigning trips by mode to the transportation network relate to the 2700 zones in the GGH model?</p> <p><i>R – The existing transportation network illustrated on Slide 42 corresponds to the Preliminary Study Area, which represents a portion of the GGH Model study area. As such, a portion of the 2700 zones comprising the GGH Model study area would correspond to the Preliminary Study Area. Trips will be assigned to all 2700 zones, but 'gateways' will be used to account for trips that are external to the Preliminary Study Area.</i></p> <p>Q – How does the Team know if the numbers from the massive model are correct?</p> <p><i>R – One of the objectives of the Strategic Demand Forecasting approach is to provide a basis of comparison with the results of the GGH Model.</i></p> <p>Q – Could sub-area analysis be used?</p> <p><i>R – Sub-area analysis will not be used for this study, but zonal aggregation could be used to understand certain factors e.g. interregional transit markets.</i></p> <p>Q – Are VIA and GO the only transit markets being studied?</p> <p><i>R – Through consultation with the Transportation Service Providers stakeholder group, the Project Team is consulting numerous transit agencies, including municipal and private transit service providers.</i></p> <p><b>Segment # 4 (Slides 47 to 53)</b></p> <p>Q – Did the origin-destination (O-D) survey only include passenger vehicles?</p> <p><i>R – Yes, the MTO Commercial Vehicle Survey will be used to understand existing commercial vehicle movements.</i></p> <p>Q – Is the date of the Origin-Destination (O-D) survey (i.e., July 2007) indicative seeing as the dollar was high?</p> <p><i>R – This will be accounted for using sensitivity analysis as part of the Strategic Demand Forecasting approach.</i></p> <p>Q – The future passport requirements may affect travel, is</p>	

<u>Items</u>	<u>Description</u>	<u>Action by:</u>
	<p>this accounted for?</p> <p><i>R – Yes, these types of issues are being accounted for as part of the analysis of future tourism trends and outlooks.</i></p> <p><b>Segment # 5 (Slides 55 to 59)</b></p> <p>Q – How will Metrolinx findings be incorporated into the NGTA Study?</p> <p><i>R – This study will coordinate with all relevant planning studies, such as the Metrolinx study. Further to this, the Metrolinx study is also using the GGH Model, and as such, the basis of their findings are anticipated to be consistent with this study.</i></p> <p>Q – If Municipalities break zones up further will GGH model accommodate this?</p> <p><i>R – The model process is flexible. This issue can be addressed through further consultation with the municipalities.</i></p> <p>Q – The City of Burlington requested more information with regard to the three-stage model being used to forecast future commercial vehicle trips as part of the Strategic Demand Forecasting approach.</p> <p><i>R – This information will be obtained from the GGH Model team and provided to the City of Burlington as soon as possible.</i></p> <p><i>(Note: a document, which provides this information, is appended to these minutes).</i></p> <p>Q – Has the Project Team met with the Ontario Trucking Association (OTA)?</p> <p><i>R – Yes.</i></p> <p>Q – Can the information gathered from the consultation with Transportation Service Providers be shared with the MTAG/RAAG?</p> <p><i>R – Yes, we are currently completing the minutes, interviews and the documentation. The results will be available on the NGTA website in the coming weeks.</i></p> <p>Q – Municipal staff requested further information with regard to the population and employment densities assumed in the GGH Model.</p> <p><i>R – This information can be discussed with municipalities as</i></p>	<p>Project Team</p> <p>Project Team</p> <p>Project Team</p>

<u>Items</u>	<u>Description</u>	<u>Action by:</u>
	<i>part of future consultation.</i>	
	Q – Did the Project Team speak with Greycoach and Trentway –Wager /Coach Canada?	
	<i>R – The Project Team has consulted with the Ontario Motor Coach Association and intends on consulting with individual service providers.</i>	
	Q – When and how will the Problems and Opportunities report be available?	
	<i>R – The Project Team plans to consult with the MTAG/RAAG on the findings of this report as part of the second round of public consultation and prior to the second round of Public Information Centres.</i>	Project Team
3.	<b><u>Closing Remarks</u></b>	
	G. Pothier (GLPi) and the Project Team thanked attendees for their participation at the meeting.	
	<b><i>Meeting adjourned at 4 p.m.</i></b>	

The following provides an overview of the approach that is being employed to forecast future commercial vehicle trips as part of the Greater Golden Horseshoe Model project:

### **1. Commercial Vehicle Model Overview**

- “Quick Response” 3-stage model that generates, distributes and assigns commercial vehicle trips by truck type for the 12.5 hour daytime period and distributes trips to the a.m. and p.m. peak periods using time of day factors from available traffic count data.

### **2. Phase I Commercial Vehicle Model**

- Phase I – 3 stage “Quick Response” model includes:
  - Representation of inter-city and intra-urban truck flows
  - Representation of external gateway trips entering/exiting GGH
  - Region of Peel Commercial Travel Survey trip generation rates
  - Calibration of trip generation and trip distribution parameters to 2001 cordon count data and Region of Peel travel survey

### **3. Phase II Commercial Vehicle Model**

- Phase II – Model Development Ongoing:
  - Special generators of truck flows in the GGH
  - Peak period truck trip distribution
  - Ongoing development of a multi-class equilibrium assignment of both passenger vehicles and commercial vehicles

### **4. CV Model Development – Traffic Zones and Road Network**

- Traffic zone coverage same as GGHM Passenger Model – 3170 zones
  - Upwards of 1250 zones have CV productions and / or attractions
- 2001 road network coverage – GGHM (Arterials and Freeways)
  - Nodes: 21,150 and Links: 65,430
- External gateways include:
  - Peace Bridge – QEW
  - Queenston Lewiston – Hwy 405
  - Highway 24 – South of Brant County
  - Hwy 403 – East of Hwy 401 Junction
  - Highway 401 – West of Waterloo
  - Highway 7&8 – New Hamburg
  - Highway 9 – West of Wellington County
  - Highway 6 – North of Wellington County
  - Highway 10 – North of Dufferin County
  - Highway 27 – Collingwood
  - Highway 400 – Port Severn
  - Highway 11 – Washago
  - Highway 35 – Minden
  - Highway 20 – Bancroft

- Highway 7 – Marmora
- Highway 401 – Trenton

#### **5. CV Model Development – Data Sources**

- MTO Commercial Vehicle Survey
  - 1999-2002 province wide survey – captures longer distance & intercity travel
  - MTO Survey included 150 road side directional sites in Ontario with 37 survey sites being located in GGH
  - CV survey focus on truck activity characteristics
    - Trip routing (O-D)
    - Driver & Carrier
    - Commodity hauled
    - Vehicle Characteristics
  - 7 day – hourly vehicle classification counts
- National Roadside Survey of Canada
  - 1998 Canada wide survey – targeting domestic and cross-border truck activity
  - 148 sites were surveyed across Canada
- Region of Peel Commercial Travel Survey
  - Mail survey undertaken between October 2006 & May 2007
  - Sample size of 600 shippers and their respective drivers
  - Survey focus on:
    - Commodity hauled
    - Mode choice
    - Commercial vehicle trips
    - Fleet characteristics
- Greater Toronto Area Cordon Counts
  - 2001 cordon counts data in GTA are 12.5 hr. person and vehicle classification
    - Trucks are classified into light, medium and heavy vehicles

#### **6. CV Model Development – Socio-Economic Data**

- Statistics Canada employment and population information
  - 2001 industry classifications include:
    - Agricultural, Construction and Mining
    - Manufacturing, Transportation, Communications, Utilities and Wholesale Trade
    - Retail Trade
    - Offices and Services

#### **7. CV Model – Trip Generation**

- Trip Generation – determines number of trips made

- 24-hour trip rates by business classification and truck classification based on Peel Survey and reviewed in context with other CV models undertaken such as Phoenix Arizona
- Final 12.5 Hour Trip rates were developed for rural, suburban, urban and CBD areas
- Example of “Urban” CV trip rates by employment category is shown below:

<b>Urban Employment Category</b>	<b>Light Truck</b>	<b>Medium Truck</b>	<b>Heavy Truck</b>
Agriculture, Construction, Mining	0.014	0.007	0.010
Manufacturing, Transportation, Communications, Utilities and Wholesale Trade	0.035	0.031	0.038
Retail Trade	0.058	0.014	0.006
Office and Services	0.021	0.005	0.001
Total Households	0.039	0.015	0.005

- The trip generation rates were calibrated to available cordon counts resulting in the calibrated parameters that are different than the base Peel Survey generation rates that were used as a starting point.

**8. CV Model – Trip Distribution of Non Commercial Survey Trips**

- Trip Distribution – determines the origin-destination pattern of trips
  - Non Commercial Survey trip distribution is based on a gravity model formulation that considers the magnitude of trips at the originating and destination ends with consideration for travel time and a trip distribution parameter established from validation to cordon counts

**9. CV Model – Trip Assignment**

- Trip Assignment – assigns CV trips to the road network
  - All or nothing assignment to base road network
  - Time of day factors applied to obtain peak period and peak hour flows

**10. CV Model Validation**

- CV Model is validated to available cordon count and traffic data at screenlines
  - Globally the CV model validates well as total simulated truck flows across all screenlines are within 2% of observed counts
  - Specific screenlines require further investigation to improve the simulated to observed comparison



## 11. CV Model Application

- Future forecast model to be sensitive to:
  - Growth in value of commodities and trade (inter-provincial and international)
  - Growth in households and employment by industry classification
  - Improvements to GGH road network
  - Changes in passenger travel and congestion
  - Changes in network service characteristics that influence modal diversion for long distance goods movement
- Future trip table development
  - Fratar inter-city CVS trip table by growth in industrial classification
  - Apply CV trip generation rates to forecast population and employment to obtain urban CV trips
  - Forecast CVS inter-city trips are subtract from forecast urban trip ends calculated with trip generation in order to reduce double counting of CV trips
  - Urban CV trip table developed from trip distribution process
  - Inter-city CVS trip table added to urban CV trip table to obtain a total CV trip table
- Future trip assignment
  - Assign total CV trip table to road network using a multi-class user equilibrium traffic assignment (Note: Assignment module is being developed)

The Niagara to GTA Corridor Municipal Executive Advisory Group (MEAG) met on April 10, 2008 at the Casablanca Winery Inn (Vintages Room) from 1:30 p.m. to 3:30 p.m.

The following individuals attended the meeting:

Peter Crockett	Commissioner –	Planning and Public Works, Regional Municipality of Halton
Andrew Head	Manager –	Planning and Transportation Services, Regional Municipality of Halton
Christine Lee-Morrison	Manager –	Environmental Planning, City of Hamilton
Kenneth Brothers	Commissioner –	Public Works, Regional Municipality of Niagara
David Farley	Director –	Planning Services, Regional Municipality of Niagara
Leslie Woo	General Manager –	Policy and Planning, Metrolinx
Patricia Boeckner	Director –	MTO Transportation Planning Branch
John Slobodzian	NGTA PM Board –	MTO Provincial and Environmental Planning Office
Terry Hilditch	NGTA PM Board –	MTO Provincial and Environmental Planning Office
Paul Hudspith	NGTA PM Board –	URS Canada
Patrick Puccini	NGTA PM Board –	URS Canada

### **PURPOSE OF THE MEETING**

The purpose of the meeting was to discuss:

- The study process and schedule;
- The approach to be used for incorporating future municipal land use allocations into the transportation modelling and demand forecasting process;
- The project goals and objectives;
- The transportation modelling and demand forecasting approach that is being used to identify future transportation problems and opportunities; and,
- The Project Team's consultation with the Transportation Service Providers (TSPs) and Business and Commercial Stakeholders groups.

**SUMMARY OF DISCUSSION AND ACTION ITEMS:**

The following summarizes the key issues and actions:

QUESTION/COMMENT	RESPONSE/RESOLUTION	ACTION
<b><u>Study Process and Schedule</u></b>		
<p>The City of Hamilton inquired as to whether the <i>Area Transportation System Problems and Opportunities Report</i> could be provided to municipalities for review in advance of the second round of consultation?</p>	<p>The Project Team will meet with the MTAG and MEAG prior to the second round of consultation to present the key findings of the report. The report will be issued as <i>"Draft for Consultation"</i> and all stakeholders will have an opportunity to review the report before it is finalized.</p>	<p>Project Team</p>
<b><u>Future Land Use Allocation</u></b>		
<p>The Regional Municipality of Niagara inquired as to whether the Fall 2009 schedule for study completion corresponds to the deadline for the Growth Plan conformity exercise for municipalities?</p>	<p>The schedule for this study is not related to the schedule for the Growth Plan conformity exercise.</p> <p>The Project Team has a mandate to continue with Phase 1 of this Planning and EA study with project completion scheduled for the end of 2009.</p> <p>The Project Team will work with municipalities to explore reasonable future land use scenarios.</p> <p>The Project Team is also committed to re-evaluating the Transportation Development Strategy that results from this study on the basis of the final municipal land use allocations when available.</p>	<p>Project Team</p>
<p>The Halton Region also noted that they will be releasing alternative future land use allocation scenarios in mid-May for public review, which could be used by the Project Team as part of a sensitivity analysis.</p>	<p>The Project Team will consider Halton's land use alternatives as they become available.</p>	<p>Halton Region and Project Team</p>

<p>Niagara noted that they would be willing to provide general direction with regard to future land use assumptions, but this direction would not constitute final approval of a future land use allocation.</p>	<p>It was agreed that the Project Team will meet with each municipality separately to discuss the assumptions to be made with regard to future land use. Land use allocations utilized for the purposes of modeling and forecasting will not be presented as final or approved.</p> <p>Further to this, the Project Team will consider undertaking a sensitivity analysis based on considering various future land use scenarios.</p> <p>The Project Team will need to discuss this approach with its transportation modelling team and MPIR to confirm feasibility.</p>	<p>Project Team and Municipalities</p>
<p>Metrolinx noted that the timing for their final Regional Transportation Plan (RTP) is September 2008. It will be important to coordinate the two studies.</p>	<p>MTO noted that the NGTA Project Team will review the RTP for implications to this study.</p>	<p>Project Team and Metrolinx</p>
<p>Niagara noted that they will be commencing an economic gateway study to develop a strategy with regard to the Niagara economic gateway.</p>	<p>The Project Team requested any information that could be provided by the Region and offered to meet with the Region and their consultants if appropriate.</p>	<p>The Region of Niagara and the Project Team</p>
<p>MTO noted that it will be important for the Region's consultants to understand that the intent of the NGTA study is to develop a multi-modal Transportation Development Strategy, which may or may not involve a new highway.</p>	<p>Comment noted.</p>	<p>Niagara</p>

<b><u>Transportation Goals and Objectives</u></b>		
The City of Hamilton noted that municipal studies such as goods movement studies and Transportation Master Plans should be considered in developing the goals and objectives, as these studies have received Council approval.	Agreed.	Project Team
Halton suggested that the provincial HOV strategy should also be considered in developing the transportation goals and objectives.	Agreed.	Project Team
The attendees suggested the addition of air quality and cultural heritage considerations.	Agreed. These items are included in the long-list of factors. The slides presented include a representative sample only and air quality/cultural heritage are important considerations.	Project Team
<b><u>Transportation Modelling and Demand Forecasting</u></b>		
Niagara inquired whether the proposed modelling and demand forecasting approach can respond to “what if” scenarios such as rising fuel prices.	The Project Team can undertake sensitivity analysis to test different scenarios corresponding to external market forces such as fuel price, the changing currency values, etc.	N/A
Metrolinx inquired whether the transportation modelling and demand forecasting approach will address road pricing? Metrolinx is considering this issue in developing their RTP.	The modelling and demand forecasting approach has the flexibility to address this issue. The Project Team will reflect policy directions and context on this as it emerges during the Metrolinx planning process, and/or from any government policy development.	N/A

Metrolinx noted that the Southern Ontario Gateway Council is undertaking a goods movement study.	The Project Team has a contact on the SOGC and will seek to obtain data with respect to this study.	Project Team
<b><u>Consultation with Transportation Service Providers and Business and Commercial Stakeholders and Next Steps</u></b>		
Niagara noted that they are commencing a port study related to existing airports within the Region and are considering expanding this to include marine ports as well.	The Project Team would appreciate further information on this study.	Niagara
Halton noted that the Hamilton Port Authority undertook an economic study. The approach used by this study may be of benefit to this study.	The Project Team will contact the Hamilton Port Authority to inquire about obtaining this study.	Project Team
Hamilton inquired whether the Project Team will be updating the project schedule on the project website.	The Project Team will be updating this schedule and has designed a consultation strategy for Spring 2008 aimed at maintaining the profile of the project leading to the second round of consultation in the Fall. This strategy includes the circulation of a notice of schedule change and project newsletter, meetings with each of the stakeholder groups, and updates to the project website.	Project Team
The attendees discussed the options for presenting the NGTA project to Upper Tier Municipal Councils.	The Project Team is available to make council presentations at milestones throughout this project. It was agreed that municipal staff should request/arrange these presentations as required.	All



## NIAGARA TO GTA CORRIDOR PLANNING AND EA STUDY – Phase 1

Meeting: Municipal Technical Advisory Group (MTAG) and Regulatory Agencies Advisory Group (RAAG)

Location: Casablanca Winery Inn, Reflections Room  
4 Windward Drive, Grimsby, Ontario L3M 4E8

Purpose: Study Goals and Objectives and Factors Influencing Future Transportation Demand      Date: Monday June 9, 2008

Chair: Glenn Pothier (GLPi) (facilitator)      Time: 1:30 P.M. – 4:00 P.M.

Present:

**NGTA Project Team**

John Slobodzian, MTO	Paul Hudspith, URS
Terry Hilditch, MTO	Patrick Puccini, URS
George Ivanoff, MTO	Michael Chiu, MRC
Glenn Pothier, GLPi (facilitator)	Sandy Nairn, Ecoplans
Mike Delsey, TSH	

**MTAG Representatives**

Mary K. Cichocki-Beaudry	Region of Halton
Christine Lee-Morrison	City of Hamilton
Natasha D'Souza	City of Hamilton
Tyson Haedrich	Haldimand County
Steve Szopinski	Greater Buffalo-Niagara Regional Transportation Council
Eric Flora	Region of Niagara
Rich Miller	Region of Niagara
Karl Dren	City of Niagara Falls
Marzenna Carrick	City of Niagara Falls
Paul Allen	City of Burlington
Vi Bui	Region of Waterloo
Thomas DeSantis	City of Niagara Falls, New York
Angela Janzen	Town of Milton
Ian Izzard	Town of Fort Erie
Sal Iannello	City of Port Colborne
Brian Treble	Township of West Lincoln
David Wong	Town of Oakville

**RAAG Representatives**

Drew Crinklaw (Teleconference)	Ministry of Agriculture and Food
Mike Kim (Teleconference)	Ministry of Public Infrastructure Renewal, Ontario Growth Secretariat
Henry Turner (Teleconference)	Ministry of Tourism
Duck Kim	Canadian Environmental Assessment Agency
Michelle Moretti	Ministry of Municipal Affairs and Housing
Darren Kenny	Hamilton Conservation Authority
Kathy Pounder	Niagara Escarpment Commission

<b><u>Items</u></b>	<b><u>Description</u></b>	<b><u>Action by:</u></b>
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1/2	<b><u>Introductions and Review of Previous Meeting Minutes</u></b>	
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G. Pothier (GLPi), independent facilitator, provided a session overview and thanked the attendees for coming to the meeting.

G. Pothier also briefly reviewed the minutes of the last meeting on March 4, 2008. No errors or omissions were identified, and there were no outstanding action items.

3	<b><u>Overview of Work Completed Since Last Meeting</u></b>	
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J. Slobodzian discussed the work completed since the last meeting with the MTAG/RAAG in March 2008.

He also discussed the status of the Metrolinx study, and the need to defer the transportation modelling and demand forecasting work for the NGTA study in order to allow for the relevant components of the Metrolinx Regional Transportation Plan (RTP) to be adequately reflected.

The draft RTP is anticipated to be released in late July/August. As such, the second round of consultation will be deferred to Fall 2008.

4	<b><u>Update on Transportation Problems and Opportunities Process</u></b>	
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Study Goals and Objectives:

M. Delsey presented an update of the work that had been completed as part of the overall process for identifying transportation problems and opportunities.

The first part of the presentation provided an overview of the material from the *Study Vision, Purpose, Goals and Objectives Discussion Paper* that had been circulated to



<u>Items</u>	<u>Description</u>	<u>Action by:</u>
	<p>attendees in advance of the meeting.</p> <p>He noted that a second, revised version of the discussion paper had been circulated to attendees shortly before the meeting, which reflected feedback received from the Community Advisory Group (CAG) at their meeting with the Project Team on May 29, 2008.</p> <p>At the end of this portion of the presentation, attendees were provided with an opportunity to ask questions of clarification or provide comments with regard to the material presented. The following comments were provided:</p> <ul style="list-style-type: none"> <li>• On Slide 8, the list of policies should include the Parkway Belt West Plan.</li> <li>• Although the discussion paper acknowledges the importance of municipal official plans and transportation master plans, it should provide a brief summary of the key policy directions from these documents as has been done for the approved provincial policies.</li> </ul>	<p>Project Team</p> <p>Project Team</p>
	<p><u>Factors Influencing Transportation Demand in the NGTA Corridor</u></p> <p>The second part of the presentation focused on the factors influencing Transportation Demand in the NGTA Corridor. These include:</p> <ul style="list-style-type: none"> <li>• Policy;</li> <li>• Economic and Land Use;</li> <li>• Tourism; and,</li> <li>• Trade.</li> </ul> <p>The Project Team advised that slides 52 and 57 contained information received at the 2008 Multimodal Gateway conference held on Wednesday, June 4th, 2008 in Hamilton. This information was inserted without being properly vetted as to its source and accuracy. The digital copy of the slides that will be distributed to attendees will be revised accordingly.</p> <p>At the end of this portion of the presentation, attendees were provided with an opportunity to ask questions of clarification or provide comments with regard to the material presented. The following comments were provided:</p> <ul style="list-style-type: none"> <li>• With regard to forecasting of future tourist trips, it will be important to account for trips that pass through the Study Area, but do not necessarily begin or end in the Study Area.</li> </ul> <p><i><u>Project Team Response: Agreed.</u></i></p>	

<u>Items</u>	<u>Description</u>	<u>Action by:</u>
	<ul style="list-style-type: none"> <li>The Regional Municipality of Niagara noted that the population and employment growth that they are anticipating may be higher than the Growth Plan requirements.</li> </ul>	
	<p><i><u>Project Team Response:</u> Comment noted.</i></p>	
	<ul style="list-style-type: none"> <li>Canada has not yet obtained approved destination status with China. This is still pending.</li> </ul>	
	<p><i><u>Project Team Response:</u> Comment noted.</i></p>	
	<ul style="list-style-type: none"> <li>The Provincial Government is developing an action plan outlining what the public and private sector can do to enhance tourism in Ontario. This report should be available by Spring 2009.</li> </ul>	
	<p><i><u>Project Team Response:</u> Comment noted.</i></p>	
	<ul style="list-style-type: none"> <li>Is the Project Team planning to incorporate the effects of climate change in forecasting future transportation demand?</li> </ul>	
	<p><i><u>Project Team Response:</u> We have looked at using 'sensitivity analysis' to consider these types of external factors. The Project Team is still working on developing a suitable approach for undertaking this analysis and would appreciate any input from MTAG/RAAG with regard to the approach and/or factors to be considered.</i></p>	
	<ul style="list-style-type: none"> <li>On Slide 41, which discusses the mode of travel by tourists, does the train travel component reflect future potential?</li> </ul>	
	<p><i><u>Project Team Response:</u> The graphic on this slide illustrates the existing utilization of train travel by tourists.</i></p>	
	<ul style="list-style-type: none"> <li>Does the Metrolinx study area end at Hamilton?</li> </ul>	
	<p><i><u>Project Team Response:</u> Yes. However, Niagara Region is being considered as a 'gateway' to the GTA and Hamilton. As such, it is possible that the Metrolinx RTP may include recommendations in this area as well. This is why it is important for the Project Team to wait until the draft RTP is available.</i></p>	
	<ul style="list-style-type: none"> <li>Will the Project Team be identifying barriers to expansion of alternative modes of transportation?</li> </ul>	
	<p><i><u>Project Team Response:</u> The Project Team's recommendations will be for infrastructure that can move forward. However, the Project Team will also highlight barriers to further infrastructure improvements.</i></p>	
	<ul style="list-style-type: none"> <li>Niagara Region is undertaking a study to consider expansion of the runway for the Niagara Regional</li> </ul>	Niagara Region

<u>Items</u>	<u>Description</u>	<u>Action by:</u>
	<p>Airport, and is also considering governance issues and roles for other Niagara Region airports. Niagara Region will provide the Terms of Reference for this study to the Project Team.</p> <p><i>Project Team Response: Comment noted.</i></p> <ul style="list-style-type: none"> <li>• Has the Project Team determined the cost/kilometre for the movement of goods via different modes of transportation?</li> </ul> <p><i>Project Team Response: Through our consultation with Transportation Service Providers (TSP) and Business and Commercial Stakeholders (BCS), we understand that these costs are variable and are dependent on a number of factors including the types of goods being shipped, the distance that the goods are being shipped and the timeframe required for shipment. However, the Project Team will be developing a general understanding of the cost effectiveness of various modes of transportation in order to estimate the opportunity for future shifts in modal utilization.</i></p> <ul style="list-style-type: none"> <li>• Will the transportation modelling and demand forecasting work consider travel demand management strategies such as HOV lanes?</li> </ul> <p><i>Project Team Response: Yes.</i></p> <ul style="list-style-type: none"> <li>• How will the transportation modelling and demand forecasting work account for the westward trend of population and employment growth?</li> </ul> <p><i>Project Team Response: The population and employment growth allocations will be based on the requirements of the Growth Plan.</i></p>	
5	<p><b><u>Next Steps</u></b></p> <p>The next steps for the study include the development of a discussion paper to summarize the factors influencing transportation demand in the NGTA corridor, reviewing the draft Metrolinx RTP when available, and meeting with Hamilton, Halton and Niagara to discuss future land use allocation scenarios. When the Project Team arranges these meetings, we will request that a member of the MTAG be invited to attend the meeting as well.</p> <p>The next joint meeting of the MTAG/RAAG will likely be in late September or October. The specific date/time/location will be forwarded when available.</p>	Project Team

<u>Items</u>	<u>Description</u>	<u>Action by:</u>
6	<p><b><u>Other Business</u></b></p> <p>The Project Team will circulate a digital copy of the presentation material for this meeting to all attendees.</p> <p><b><u>Meeting adjourned at 3:45 p.m.</u></b></p>	Project Team

Meeting: Municipal Technical Advisory Group (MTAG) and Regulatory Agencies Advisory Group (RAAG)

Location: Holiday Inn Burlington, Halton A  
3063 South Service Road, Burlington

Purpose: Transportation Problems and Opportunities      Date: Thursday February 5, 2009

Chair: Glenn Pothier (GLPi) (facilitator)      Time: 1:30 P.M. – 4:00 P.M.

Present: **NGTA Project Team**

John Slobodzian, MTO	Paul Hudspith, URS
Terry Hilditch, MTO	Margie Gonzalez, URS
Frank Pravitz, MTO	Jack Thompson, MRC
Frank Williams, MTO	Sandy Nairn, Ecoplans
Glenn Pothier, GLPi (facilitator)	

**MTAG Representatives**

Rudy Warkentin	Township of Wainfleet
Marzenna Carrick	City of Niagara Falls
Karl Dren	City of Niagara Falls
Ron Hanson	City of Port Colborne
Dan Ozimkovic	City of Burlington
Gary Witulski	City of Buffalo
Tom Villella	Town of Fort Erie
Kyle Plas	Haldimand County
Paul Smithson	City of Burlington
Geoffrey Keyworth	Region of Waterloo
Tara Buonpensier	Town of Halton Hills
Eric Flora	Niagara Region
Ted Dreulo	Town of Halton Hills
Margaret Fazio	City of Hamilton
Brian Treble	Township of West Lincoln
Tom DeSantis	City of Niagara Falls, NY
Stephanie Jarvis	Town of Milton
David Wong	Town of Oakville
David Cukezic	Halton Region

**RAAG Representatives**

Sondra Meis	Ministry of Small Business and Entrepreneurship
Liz Duval	Ministries of Citizenship & Immigration, Culture, & Health Promotion
Jennifer Lawrence	Conservation Halton
Darren Kenny	Hamilton Conservation Authority
Denton Miller	Ministry of the Environment (EAAB)
Drew Crinklaw	OMAFRA
Geoff Woods	Ontario Realty Corporation
Jeremy Fredrickson	Ministry of Municipal Affairs and Housing
Carlene Whittingham	Ministry of Municipal Affairs and Housing
Kathryn Pounder	Niagara Escarpment Commission
Kathy Milberry	Canada Border Services Agency
Andrew Theoharis (via teleconference)	Ministry of Energy and Infrastructure

**Items**

**Description**

1 & 2

**Introductions and Review of Previous Meeting Minutes**

G. Pothier (GLPi), independent facilitator, provided a session overview and thanked the attendees for coming to the meeting.

G. Pothier also briefly reviewed the minutes of the last meeting held on June 9, 2008. No errors or omissions were identified, and there were no outstanding action items.

3

J. Slobodzian provided opening remarks on the upcoming Transportation Problems and Opportunities Report to be issued in Spring 2009, including the review and feedback process.

G. Pothier provided direction in terms of the type of feedback that was anticipated at this meeting: higher level preliminary thoughts, and refinements to materials.

4

**Study Update**

P. Hudspith provided an update on study progress, the recent events and meetings, and integration of the Metrolinx Regional Transportation Plan (RTP) as well as municipal land use allocations into this study.

5

**Transportation Problems**

J. Thompson provided an overview of the modelling and forecasting work that was completed as part of the overall process for identifying transportation problems in the corridor.

The remainder of the presentation focused on the transportation problems identified as a result of the demand forecasting and modeling work completed; and categorized

**Items****Description**

according to three (3) travel market sectors: goods movement, people movement/commuter (auto and transit), and tourism and recreation.

The transportation problems for each mode of travel were summarized; the implications then categorized according to economical, community and environmental outcomes (collectively referred to as the “triple bottom line”).

At the end of this portion of the presentation, attendees were provided with an opportunity to seek clarification or provide comments with regard to the material presented. The discussion was organized by travel market sector (i.e., goods movement, commuting, and tourism).

**QUESTIONS & ANSWERS / COMMENTS****Goods Movement**

Q: Will this project focus primarily on roads? (i.e., Slide 10 indicates that to varying degrees, all modes are dependent on the road system).

**A: *The Project Team remains committed to examining multi-modal options to add capacity to the corridor. Consultation with other service providers, in conjunction with the results of the demand forecasting and modelling work, suggest that roads are and will continue to be an important element of a multi-modal system.***

C: If a road is recommended as part of this study, hopefully it will be fully utilized (i.e., unlike the 407 that is tolled and generally void of truck traffic).

Q: The City of Hamilton is undergoing a transportation study. Will the NGTA study examine planned city highways and the connectivity of truck routes between municipalities?

**A: *Connectivity will be a criterion used at the alternatives evaluation and assessment stage.***

Q: Have inter-modal connection problems been identified?

**A: *Pinch-points have been identified through discussion with the Transportation Service Providers (TSP) and Business and Commercial Stakeholders (BCS). Specific discussions with the Hamilton Port Authority and the Hamilton Airport Authority indicated issues with the existing transportation system to efficiently link these transportation hubs with the Provincial transportation system.***

C: The value of BCS and TSP discussions is limited since only past experiences are reflected.

***Transportation service providers, as well as business owners/operators realize that an inter-modal network is beneficial to current and future commerce. For example, Hamilton International Airport representatives***

***acknowledge the importance of new and enhanced multi-modal connections to facilitate future growth in passenger and cargo services.***

<u>Items</u>	<u>Description</u>
	<p>Q: The disincentive created by toll roads like Highway 407 should be addressed in both the modelling exercise, and the development of alternatives (i.e., travel patterns on a “free” vs. “tolled” highway are different).</p> <p><b>A: <i>If a new freeway is identified as a component of the Transportation Development Strategy, toll sensitivity analysis will be conducted; however, a definitive decision on tolling will not be made in Phase 1.</i></b></p> <p>Q: There is the possibility that the trends used to forecast future transportation problems will dramatically change over time (e.g., the manufacturing sector will recover from its current state of decline; interest in the use of rail - by some companies in particular, is already on the rise, etc.).</p> <p><b>A: <i>To compensate for the difficulty in obtaining an accurate prediction, a forecasting range (i.e., high and low) was inputted to the model. The draft Transportation Problems and Opportunities report will provide more information regarding the demand forecasting and modelling work conducted, including the range of data used.</i></b></p>

**People Movement / Commuters (Auto and Transit)**

- Q: Have transit technology changes been factored into the model (e.g., double-decker buses that have twice the capacity)?
- A: *Consideration of transit technology options is better suited at the transportation system alternatives stage. However, the GGH Model used in the demand analysis does reflect transit technology improvements such as the electrification of GO and LRT / BRT services on dedicated rights-of-way.***
- C: The “travel times” map for transit indicates that times were unavailable in Niagara Region due to the lack of inter-regional transit. This is inaccurate; Coach Canada has regular inter-regional service.
- Q: Will this project consider the provision of full-time transit service to Niagara, particularly in the summer months? Is NGTA coordinating with the GO Feasibility Study?
- A: *The NGTA Project Team continues to coordinate our corridor planning efforts with the ongoing feasibility studies being undertaken by GO Transit. Any decisions to extend GO service into Niagara Region will be included in the key deliverable for the NGTA project ~ a Transportation Development Strategy for the corridor that links the Niagara frontier to the GTA.***
- Q: Shared tracks between freight and commuter uses will continue to be a problem.
- A: *Freight and commuter rail companies have made necessary adjustments to their operations to alleviate track sharing issues (e.g., passenger service in the day and freight service at night). GO Transit did not identify track sharing as a problem. They did, however, acknowledge a specific section of single track, west of Hamilton that presents a challenge.***



**Items**

**Description**

Q: It is important that inter-regional transit service like GO or VIA accommodate active transportation (e.g., bike racks on trains and buses).

**A: *We acknowledge that active transportation problems and opportunities have not yet been included in our analysis. We will be incorporating active transportation issues after a planned meeting with the Region of Niagara Bicycling Committee. Active transportation may be a more limited consideration as the study is focused on inter-regional trips.***

C: Active transportation is impacted by the inter-regional system. For instance, in response to highway congestion, cars are more likely to divert to municipal roads thereby creating potentially dangerous conditions for cyclists. Further, there are instances of inter-regional travel via bicycles, such as trips between Hamilton and Burlington.

C: Cycling as an additional mode to model is not being suggested; rather, through the inter-regional NGTA study, there is the opportunity to promote active transportation hubs (e.g., bike racks to promote cycling at the “origin” and “destination” of a trip).

Q: Reliability on the inter-regional transit system is a key issue.

**A: *The issue of reliable transit times is addressed in the Metrolinx RTP. Further, GO Transit has identified improvements to timing of services as a priority.***

**Tourism**

C: The key issue regarding active transportation and inter-regional travel is the need to optimize the existing/planned system for the movement of bicycles (i.e., origin/destination).

C: In terms of coordination with other studies, cycling Master Plans (e.g. Hamilton Cycling Master Plan) should be considered. Also, it should be noted that tourism “cycling tours” are well established within and between some regions, and that the marketing of “cycle friendly areas” do help to promote tourism.

Q: Private transit is not being accounted for.

**A: *Although the demand forecasting and modeling work conducted for the NGTA study focused primarily on public transit services, representatives from the private transit sector (e.g., Coach Canada) were consulted regarding their perception of current and future transportation problems and opportunities. Responses were factored into the strategic forecasting work undertaken.***

Q: Has VIA Rail been consulted?

**A: *Attempts were made to connect with VIA regarding perceived transportation problems and opportunities in the corridor – with no success. The Project Team continues to be open to the possibility of soliciting VIA’s feedback.***

Q: Coach Canada is a large organization with hourly service to Toronto and a recently expanded fleet (including 90 double-decker buses). They need to be considered.

**A: *Representatives from the private transit sector, including Coach Canada, were***

- | <u>Items</u> | <u>Description</u>  |
|--------------|---|
|              | <p><i>consulted regarding their perception of current and future transportation problems and opportunities. Service provided by Coach Canada will be reflected in the Transportation Problems and Opportunities Report.</i></p> <p>C: The suggestion was made that the regulatory agencies in collaboration with the NGTA and GTA West Project Teams approach VIA Rail for a joint meeting.</p> <p><b>A: <i>The NGTA Project Team will continue to pursue a meeting with VIA Rail.</i></b></p>  |
| 6            | <p><b><u>Transportation Opportunities</u></b></p> <p>The second part of the presentation focused on the transportation opportunities. P. Hudspith discussed the opportunities (stating that the opportunities were aligned with project goals) and provided examples for each. The project's next steps and an outline of the PIC #2 format, etc. were summarized, followed by a questions and answer period.</p> <p>C: Environmental opportunities should also include improving air quality and reducing the carbon footprint.</p>  |
| 7            | <p><b><u>Next Steps</u></b></p> <p>The next steps for the study include the development of the draft Transportation Problems and Opportunities Report to be issued in Spring 2009 for review.</p> <p>Members expressed interest in attending an "optional" joint MTAG/RAAG meeting in June 2009 where the process, criteria, and approach to the evaluation of alternatives will be discussed. The next formal joint MTAG/RAAG meeting will likely be in Fall 2009; preliminary transportation alternatives to be presented at this time.</p>   |
| 8            | <p><b><u>Open Forum</u></b></p> <p>Additional comments or questions were solicited by Glenn Pothier.</p> <p>Q: Interest was expressed in knowing how the GTA-West, Niagara-GTA, and Brantford to Cambridge corridor studies are being coordinated:</p> <p><b>A: <i>The three studies are following a similar approach to identifying problems and opportunities; and generating and evaluating transportation system alternatives. Potential linkages among preferred solutions can only be considered after each project selects components of a Transportation Development Strategy.</i></b></p> <p>Q: Is coordination really possible, given that it will be at least another year before the Brantford-Cambridge study will be at transportation system alternatives stage?</p> <p><b>A: <i>NGTA is in its initial stage where the outcome is a set of recommendations. The timelines for completing both studies does allow for consideration of potential linkages prior to design and implementation phases.</i></b></p> |

**Meeting adjourned at 3:50 p.m.**

The Niagara to GTA Corridor Municipal Executive Advisory Group (MEAG) met on February 12, 2009 at the Casablanca Winery Inn (Vintages Room) from 1:30 p.m. to 4:00 p.m.

The following individuals attended the meeting:

Andrew Head	Manager –	Planning and Transportation Services, Regional Municipality of Halton
Anita Fabac (for Ho Wong)	Chief Planning Official –	Legislative and Planning Services, Regional Municipality of Halton
Christine Lee-Morrison	Manager –	Environmental Planning, City of Hamilton
Jill Steven	Acting Director–	Capital Planning and Implementation, City of Hamilton
Sylvia Renshaw	Business Development Consultant	Planning and Economic Development Department, City of Hamilton
Kenneth Brothers	Commissioner –	Public Works, Regional Municipality of Niagara
Patrick Robson	Commissioner –	Integrated Community Planning, Regional Municipality of Niagara
Leslie Woo	General Manager –	Policy and Planning, Metrolinx
Patricia Boeckner	Director –	MTO Transportation Planning Branch
Shelley Tapp	Manager –	MTO Provincial and Environmental Planning Office
John Slobodzian	NGTA PM Board –	MTO Provincial and Environmental Planning Office
Terry Hilditch	NGTA PM Board –	MTO Provincial and Environmental Planning Office
Paul Hudspith	NGTA PM Board –	URS Canada
Patrick Puccini	NGTA PM Board –	URS Canada

**PURPOSE OF THE MEETING**

The purpose of the meeting was to discuss:

- Study background and provide a brief update;
- The transportation problems and opportunities that have been identified by the Project Team;
- Public Information Centre #2; and,
- Other strategic issues.

**SUMMARY OF DISCUSSION AND ACTION ITEMS:**

The following summarizes the key issues and actions:

QUESTION/COMMENT	RESPONSE/RESOLUTION	ACTION
<b><u>Study Background and Update</u></b>		
<p>In developing their Growth Management Strategy, Niagara Region has been exposed to numerous interpretations as to the intent of the NGTA study and its ultimate recommendations. These interpretations have typically been based on the conceptual corridor shown in Schedule 2 of the Growth Plan.</p>	<p>Comment noted. The Project Team will continue to emphasize to stakeholders that no decisions have been made and that the ultimate recommendation will be a multi-modal Transportation Development Strategy that may not include a new highway.</p>	<p>Project Team</p>
<p>It was suggested that the Study Area graphic depict all modes of transportation (transit, air, rail, marine, and road) to illustrate the range of transportation modes that are being considered.</p>	<p>Agreed. One of the key displays at the PIC will be a map of the Study Area that illustrates all existing inter-regional modes of transportation (e.g. rail lines, GO Stations, VIA Stations, ports, etc.).</p>	<p>Project Team</p>
<b><u>Transportation Problems and Opportunities</u></b>		
<p>Given the significant interest among stakeholders in reaching a final recommendation for this study, the PIC should include some discussion on the alternatives stage of the project.</p>	<p>Comment noted. There will be a PIC display that describes Next Steps and illustrates the approach to generating the alternative transportation solutions. This approach considers a new provincial highway as the last step in the evaluation process; after all other modes and improvements to existing infrastructure have been incorporated.</p>	<p>Project Team</p>
<p>It was suggested that one of the key messages at the PIC should be that a combination of solutions will be required to address the identified problems.</p>	<p>Agreed. It will be emphasized that this study will ultimately culminate in the development of a multi-modal Transportation Development Strategy.</p>	<p>Project Team</p>

<p>It was noted that incorporation of Active Transportation in the study could include consideration of the Waterfront Trail in Niagara.</p>	<p>Agreed. The Project Team will consider how best to incorporate this suggestion.</p>	<p>Project Team.</p>
<p>It was suggested that this project should be positioned as “a single piece of the puzzle” in addressing the broader inter-regional transportation needs of Southwestern and Central Ontario.</p>	<p>Agreed. The Project Team will consider how best to incorporate this suggestion.</p>	<p>Project Team</p>
<p>Niagara noted that they are undertaking a regional transportation study focused on managing their existing infrastructure assets and developing a macro-transportation plan which integrates regional transit services and other transportation services with the existing regional road system.</p> <p>This work will be undertaken in the coming months. The findings of this work will be very useful to the NGTA study, particularly during the development and assessment of alternative solutions.</p>	<p>Comment noted. The Project Team would be very interested in obtaining access to the information that is gathered and the findings of this study as it becomes available.</p>	<p>The Region of Niagara and the Project Team</p>
<p>It was noted that the road system, which ties together other modes of transportation, also has a transit element, i.e. it is not used only by cars and trucks. This needs to be made more apparent in the figure on Slide 10. In addition, the Project Team should consider modifying this slide so that it doesn't appear that Roads are the focus.</p>	<p>Comment noted. While the context of this figure on the PIC displays will be different, the Project Team will consider ways to reconfigure the illustration to address these issues.</p>	<p>Project Team</p>

<p>It was noted that there is a transit component to the marine mode of transportation, which should be acknowledged in the PIC displays given that nothing has been eliminated at this stage.</p>	<p>Comment noted. While the PIC will focus on transportation problems and opportunities, there will be a component which discusses next steps, i.e. consideration of alternative solutions. The Project Team will consider incorporating the concept of marine transit into the display material, and will also incorporate this issue into the Problems and Opportunities Report to be released subsequent to the PIC.</p>	<p>Project Team</p>
<p>With regard to the assumptions incorporated into the Greater Golden Horseshoe Model, the assumption that transit fares won't increase was questioned.</p>	<p>The representative from Metrolinx responded that this assumption is designed to reflect an aggressive focus on transit integration. Ultimately, future transit fares will be a function of utilization.</p>	
<p>It was noted that the Metrolinx RTP is focused in the Halton/Hamilton portion of the NGTA Study Area, and doesn't specifically address the issues of Niagara Region, particularly in terms of goods movement. How will these issues be addressed?</p>	<p>These issues will be considered by the NGTA study, along with the issues in the Halton/Hamilton area. The NGTA study is incorporating the Metrolinx RTP into its base transportation network, and assessing needs over and above those addressed by the Metrolinx RTP.</p>	<p>Project Team</p>
<p>Niagara Region noted that while there may not be a significant congestion issue in the portion of the Study Area that falls within Niagara Region, opportunities to facilitate the growth of the economic gateways in Niagara Region should also be a consideration of this project.</p>	<p>Agreed. This will be one of the key considerations of this project, and will fall within the scope of the transportation opportunities component of the study.</p>	<p>Project Team</p>
<p>It was noted that the trucking mode of goods movement is subsidized to the extent that it is able to use provincial infrastructure, while other modes of goods movement are responsible for their own infrastructure. How are these types of issues addressed by this study?</p>	<p>The NGTA study is being completed within the context of existing policy (including approaches to subsidizing transportation infrastructure). As such, changes to subsidization policy will be included in the "solutions" component of the study. However, policy barriers that may be affecting mode splits will be identified as issues requiring further examination.</p>	<p>Project Team</p>

<p>In describing the implications of the transportation problems and opportunities on the environment, community and the economy (Slide 23) it was suggested that the Project Team distinguish between the various modes of transportation. Two examples were given:</p> <ul style="list-style-type: none"> <li>• Of all modes of goods movement, the trucking sector is the fastest growing sector of GHG emissions.</li> <li>• There is a trend towards larger and larger footprints for logistics centers, which will have a significant effect on future land use patterns.</li> </ul>	<p>Agreed. The Project Team will provide a further breakdown of the "implications" on a modal basis in the PIC display material and/or the Transportation Problems and Opportunities Report.</p>	<p>Project Team</p>
<p>The Metrolinx representative noted that they will be initiating a goods movement study for the GTHA. A draft report is anticipated in early 2010. This work should be coordinated with the NGTA study and the GTA West study.</p>	<p>Agreed.</p>	<p>Project Team and Metrolinx</p>
<p>When describing existing transit service in the study area, include private transit service (e.g. Canada Coach, Greyhound, etc.).</p>	<p>Agreed. The display at the PIC which illustrates existing inter-regional modes of transportation will display the terminals used by these operators.</p>	<p>Project Team</p>
<p>On Slide 18, which describes transportation problems associated with people movement, the problems should be characterized as problems with the road system and the rail system, rather than the transit system, as transit operates on both the road network and the rail network.</p>	<p>Agreed. This comment will be addressed in the PIC display material and/or the Transportation Problems and Opportunities Report.</p>	<p>Project Team</p>

<p>On Slide 19, it was suggested the first bullet be re-worded to “Even with the more compact land use that is embodied in the provincial Growth Plan, there will be an increase in commuter demand in the future”.</p>	<p>Agreed. This comment will be addressed in the PIC display material and/or the Transportation Problems and Opportunities Report.</p>	<p>Project Team</p>
<p>Niagara Region noted that many of the vendors that cater to tourists have described instances where tourists have expressed frustration at weekend congestion and the significant proportion of trucks on the QEW and are looking for an alternate route.</p> <p>On this basis, it was suggested that the third bullet on Slide 21 under “Road System” be re-worded to express that the perceived conflicts between tourists and trucks deter tourist trips.</p>	<p>Agreed. This comment will be addressed in the PIC display material and/or the Transportation Problems and Opportunities Report.</p>	<p>Project Team</p>
<p>It was noted that the Project Team has done a good job in characterizing the potential effect of the project on the environment (Slide 26). We need to be up front that any new infrastructure recommendations will have an effect on the environment, and that our focus will be to minimize and mitigate these effects where possible.</p>	<p>Agreed.</p>	
<p>It was suggested that the opportunity to improve quality of life, e.g. by reducing travel times, be considered as a transportation opportunity under the “community” component (Slide 27).</p>	<p>Agreed. This comment will be addressed in the PIC display material and/or the Transportation Problems and Opportunities Report.</p>	<p>Project Team</p>
<p>How is this study coordinating with the Ontario-Quebec Continental Gateway study.</p>	<p>We are coordinated with that study, and will continue to maintain contact, but it is currently in an early stage, and is focused on information gathering and research.</p>	<p>Project Team</p>



<p>It was suggested that Project Team review the “Ontario Tourism Competitiveness Study” which has been chaired by the former Minister of Tourism – Greg Sorbara.</p>	<p>Comment noted.</p>	<p>Project Team</p>
<p>It was agreed that municipal staff will identify the need to meet with Council, as well as the appropriate channels. To facilitate this, the Project Team will need to provide municipal staff with study information at an early enough stage that they can inform their Council in advance and determine whether a meeting would be beneficial.</p>	<p>Comment noted.</p>	<p>Project Team</p>
<p><b><u>Public Information Centre #2</u></b></p>		
<p>The Project Team distributed the news advertisement for Public Information Centre #2 which is being published in local newspapers within the study area. The PIC will be held at the following locations:</p> <ul style="list-style-type: none"> <li>• Royal Canadian Legion in Welland on Tuesday February 24<sup>th</sup>, 2009;</li> <li>• Rockton Fairgrounds in Rockton on Thursday February 26<sup>th</sup>, 2009; and,</li> <li>• Burlington Convention Centre in Burlington on Tuesday March 3<sup>rd</sup>, 2009.</li> </ul> <p>All attendees were encouraged to attend the PICs.</p>		

Meeting: **Joint Regulatory Agencies Advisory Group (RAAG)  
Niagara to GTA Corridor and GTA West Corridor  
Planning and Environmental Assessment Studies**

Location: Holiday Inn Burlington, Burlington NC Room  
3063 South Service Road, Burlington

Purpose: Process Framework for Developing & Assessing Transportation Alternatives      Date: Friday June 19, 2009

Chair: Glenn Pothier (GLPi) (facilitator)      Time: 1:30 P.M. – 4:00 P.M.

Present: **NGTA and GTA West Project Team**

John Slobodzian, MTO	Sandy Nairn, Ecoplans
Terry Hilditch, MTO	Mike Delsey, AECOM
Heide Garbot, MTO	Karin Wall, AECOM
Frank Pravitz, MTO	Patrick Puccini, URS
Steve Baczyk, MTO	Glenn Pothier, GLPi (facilitator)

**RAAG Representatives**

Randy Marsh	CPR
Jennifer Lawrence	Conservation Halton
Kathryn Pounder	NEC
Carlene Whittingham	MMAH
Marc Magierowicz	MMAH
Steven Strong	MNR, Aurora
Solange Desautels	MOE
Barb Slattery	MOE
Les Koch	Hydro One
Steve Woolfenden	CEAA
Dave Gibson	DFO
Drew Crinklaw	OMAFRA
Jamie Ferguson	Grand River Conservation Authority
Karla Barboza	Ministry of Culture
Dave Marriott	MNR
Denise Fell	Environment Canada
Beth Williston	TRCA

<u>Items</u>	<u>Description</u>
1	<p><b><u>Opening Remarks</u></b></p> <p>G. Pothier (GLPi), independent facilitator, provided a session overview and thanked the attendees for coming to the meeting.</p>
2 & 3	<p><b><u>NGTA and GTA West Study Updates and Transportation Problems and Opportunities Reports</u></b></p> <p>M. Delsey provided a brief overview of the status of the NGTA and GTA West studies. He described the study areas for both studies, the study process that both studies are following, as well as a summary of recent events, including the second round of Public Information Centres.</p> <p>He also noted that the Transportation Problems and Opportunities Report for both studies is in the process of being finalized and will be available for stakeholder review later this summer.</p>
4	<p><b><u>Process Framework for Developing and Assessing Transportation Alternatives</u></b></p> <p>S. Nairn presented the process framework that has been developed by the Project Team to guide the development and assessment of the transportation alternatives.</p> <p>He also discussed the environmental and transportation criteria that the Project Team has developed for assessing the alternatives at a broad level.</p> <p>The presentation handout package containing this information has been appended to these minutes for ease of reference.</p> <p>The following summarizes the items discussed during and after the presentation:</p> <ul style="list-style-type: none"> <li> <p>• Question: Will the Transportation Problems and Opportunities Report for both studies be available for review?</p> <p><i>Response: Yes.</i></p> </li> <li> <p>• Comment: The alternatives for the NGTA and GTA West studies should be considered in a coordinated fashion.</p> <p><i>Response: Agreed. The studies are closely coordinated, and will continue to be throughout the "Alternatives" phase of the project.</i></p> </li> <li> <p>• Question: In developing the transportation alternatives, will improvements in a north-south orientation be considered as well as improvements in an east-west orientation?</p> <p><i>Response: Yes, we will be considering alternatives in both the north-south and east-west orientation for both studies.</i></p> </li> <li> <p>• Question: In favour of the building block approach that has been developed for generating the transportation alternatives. Does this mean that in the scenario that Combination #2 addressed all of the transportation problems and opportunities the Project Team would not proceed to Combination #3?</p> <p><i>Response: Yes, if it was found that the improvements corresponding to a Combination alternative (in this case Combo #2) could fully address the</i></p> </li> </ul>

**Items**

**Description**

*transportation problems and opportunities, the Project Team would not proceed to Combination #3.*

- Question: Will the RAAG agencies be given the opportunity to review the process of generating the transportation alternatives?

*Response: Yes, the process will be presented at the third round of Public Information Centres, and will be fully documented in the Area Transportation System Alternatives Report at the end of this phase of both studies.*

- Comment: The Project Team should base the assessment of land use impacts on approved Official Plans.

*Response: Agreed, however, the Project Team will also consider potential impacts based on proposed Official Plans.*

- Question: How will impacts to First Nations be assessed? Will they be consulting with First Nations on this assessment?

*Response: The Project Team has been consulting with First Nations throughout the study, and will continue to seek their feedback as the project moves forward into the generation and assessment of transportation alternatives.*

- Question: Will the transportation alternatives be further refined as the assessment process proceeds?

*Response: Yes. If in going through the assessment of the transportation alternatives, it becomes apparent that certain refinements to some of the alternatives would result in a better set of alternatives, these refinements will be incorporated and assessed accordingly.*

- Comment: Concerned that key decisions will be made based on the high level assessment that the Project Team will be conducting before the next round of consultation, and that these decisions may be affected by issues that don't emerge until the alternatives are assessed at a more detailed level.

*Response: This is a common concern on large scale Individual EAs. The Ministry's position is that if a critical issue emerges during later stages that wasn't apparent during earlier stages, it is incumbent on the proponent to determine the significance of the issue and update the recommendations as appropriate.*

*It should be noted that there will be a more detailed assessment of the transportation alternatives subsequent to PIC #3 based on more specific environmental and transportation criteria, which will be presented to the RAAG agencies at a future meeting.*

*In addition, following this phase of the EA study, route planning will be undertaken for any recommendations that fall within the jurisdiction of the Ministry. A detailed assessment of the route alternatives would also be undertaken at that stage.*

- Comment: Many of the environmental criteria that have been presented focus on impacts to specific types of environmental features rather than focusing on environmental systems. It would be more appropriate to use a systems based approach.

**Items**

**Description**

*Response: Agreed. We are seeking the RAAG agencies assistance in identifying the most appropriate process for assessing the broad level transportation alternatives. Assistance in identifying the types of systems impacts that should be considered would be very beneficial to the Project Team.*

- Comment: The Project Team should consider a sensitivity and function based approach in assessing the transportation alternatives. As an example, differentiate between edge impacts and core impacts for woodlots.

*Response: Agreed. Assistance in identifying criteria where this type of approach should be utilized would be very beneficial to the Project Team.*

- Comment: The Project Team should remain cognizant of the provincial priorities embodied in each of the relevant approved provincial policies as they undertake the assessment of the transportation alternatives.

*Response: Agreed.*

- Question: How will the effect of the transportation alternatives on Greenhouse Gases be assessed? Would it be a regional assessment, or would it be possible to differentiate between the affects of alternatives in certain areas.

*Response: This issue has been discussed with the air quality experts on the Project Team. While we will attempt to be as specific as possible, the level of detail that can be achieved will depend on some extent on the nature of the alternatives.*

- Comment: Consideration should be given to the potential impacts of the transportation alternatives during the construction phase, e.g. noise impacts.

*Response: Comment noted. This issue will be further considered by the Project Team.*

**5 Next Steps and Open Forum**

It was agreed that the material presented at this meeting would be distributed to all members of the RAAG (including those unable to attend) with these meeting minutes.

The meeting attendees agreed to provide further comments and advice to the Project Team with respect to the assessment of the transportation alternatives subsequent to the meeting within a four week timeframe.

**6 Closing Remarks**

J. Slobodzian provided closing remarks and noted that the Project Team greatly appreciates all of the feedback that has been provided by RAAG agencies for both the NGTA and GTA West studies to date and looks forward to their assistance in identifying the criteria to be assessed as well as the findings of the assessment of the transportation alternatives.

He also noted that he has taken another position within the Ministry and will no longer be the Project Coordinator for the NGTA Study. He thanked attendees for their support on both projects and noted that Roger Ward will be assuming the role of Project Coordinator in mid-July.

**Meeting adjourned at 3:30 p.m.**

Meeting: Niagara Region

Location: Corporate Services Boardroom Niagara Regional Headquarters 2201 St. David's Road, Thorold, Ontario      Date: Friday August 21<sup>st</sup>, 2009

Purpose: Generation of Alternatives      Time: 9:30 A.M. – 11:00 A.M.

Present: **NGTA Project Team**

Roger Ward, MTO	Paul Hudspith, URS
Frank Williams, MTO	Patrick Puccini, URS
	Tyler Drygas, URS

**Region of Niagara Representatives**

Eric Flora	Peter Colosimo
Joe Cousins	Alan Gummo
Kumar Raujam	

**Items      Description      Action by:**

1/2      **Introductions and Objectives of the Meeting**

Attendees introduced themselves and R. Ward provided a meeting overview and thanked the attendees for coming to the meeting.

R. Ward noted that the purpose of the meeting was to provide a status update on the work recently completed for the NGTA study and to gain the Region of Niagara's perspectives and ideas concerning the generation of alternatives.

3      **Overview of Recently Completed Work**

Since the last Municipal Technical Advisory Group (MTAG) Meeting, the Project Team has undertaken the following key tasks:

- Prepared the Problems and Opportunities Report, which was made available for stakeholder review in late July 2009. The core findings of this report were presented at a round of PIC's held in February / March 2009.
- Embarked on the process of examining and developing multi-modal transportation alternatives.

P. Hudspith provided an overview of the "Three-Stage Process for Generating, Assessing and Selecting Transportation Alternatives":

- Stage 1 includes the examination of the ability of Individual Alternatives to address the identified problems and opportunities. It is anticipated that no single mode can address the transportation needs in the corridor and therefore the examination

<u>Items</u>	<u>Description</u>	<u>Action by:</u>
	<p>of combination alternatives is required.</p> <ul style="list-style-type: none"> <li>▪ Stage 2 involves the development and examination of combination alternatives, which are grouped under the following categories:               <ul style="list-style-type: none"> <li>▪ Optimize the Existing Transportation Network</li> <li>▪ New / Improved Non-road Infrastructure</li> <li>▪ Widen Existing Roads</li> <li>▪ New Road Infrastructure</li> </ul> </li> <li>▪ Stage 3 involves “Preliminary Planning” to examine the most promising combination alternatives at a greater level of detail.</li> </ul>	
4	<p><b><u>Transportation Studies and Related Initiatives in Niagara Region</u></b></p> <p>E. Flora provided an overview of recent / current transportation studies being undertaken as well as other relevant transportation initiatives in Niagara Region:</p> <ul style="list-style-type: none"> <li>▪ Niagara East-West Corridor Study is examining alternatives for a new road corridor between Highway 406 and the QEW. The Study is expected to be complete in 2011. The Region expressed interest in engaging the NGTA Project Team in this exercise.</li> <li>▪ The Region is also examining multi-modal transportation solutions:               <ul style="list-style-type: none"> <li>▪ The Region recently conducted a study of the Niagara District and Niagara Central Airports to examine their role and function.</li> <li>▪ Niagara will be undertaking an inter-municipal transit study in the near future.</li> <li>▪ The Region is initiating a TDM Study to examine possible TDM options in the urban communities of Niagara.</li> </ul> </li> <li>▪ A Class EA is being undertaken for a new interchange in St. Catharines to accommodate new hospital access.</li> <li>▪ E. Flora to contact the NGTA Project Team to provide available documents regarding the above noted studies.</li> </ul> <p><i><u>Implementing the Growth Plan – Gateway Economic Zone and Centre</u></i></p> <ul style="list-style-type: none"> <li>▪ The Region’s work to address Provincial Growth Plan targets is ongoing.</li> <li>▪ Local municipalities will be articulating their vision for the Gateway Economic Zone and Centre as well as the Urban Growth Centre (St. Catharines) targets as part of their Official Plan review process.</li> </ul>	Niagara Region
5.	<p><b><u>Generation of Alternatives</u></b></p> <p>The second part of the presentation focused on the generation of alternatives. The Project Team presented some of the preliminary</p>	

<u>Items</u>	<u>Description</u>	<u>Action by:</u>
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ideas identified through an internal working team session and requested Niagara staff to provide their comments as well as any other ideas that should be considered in each combination alternative. The following summarizes the highlights of comments made by Niagara Region staff during the discussion:

Combination 1 Alternatives – Optimize Existing Transportation Networks

- Niagara Region is developing a TDM policy.
- The Region of Niagara Bicycling Committee is looking at installing bike racks on municipal buses.
- ITS initiatives for local municipal roads to be studied by the Region
- The Region is examining inter-municipal transit initiatives to improve the efficiency of people movement through the Region.

Combination 2 Alternatives – New / Improved Non-Road Infrastructure

- Niagara Region noted that there may be opportunities to expand Niagara District Airport and that discussions have been held with Porter Airlines concerning services to Toronto Island Airport.
- There are limited opportunities for inter-regional transit. Existing inter-regional services are primarily focused on servicing universities and colleges.
- It was noted that there has been significant use of the weekend GO Service to Niagara Falls.
- GO Bus Service to Niagara is needed and is scheduled to commence this Fall.
- Coach Canada is rescheduling their service based on new GO initiatives. Future services depend largely on the extent of inter-regional transit services. Niagara Region is working with Coach Canada regarding services and future opportunities.
- BRT should be considered along the QEW and Hwy 406 in Welland.
- Hamilton based GO bus service would help service western Niagara Region (as Hamilton is the employment base for these communities).

Combination 3 Alternatives – Widen Existing Roads

- Consider widening the QEW to Fort Erie.
- Concerns with widening the QEW through St Catharines and Garden City Skyway were noted.
- Niagara Region noted that widening of rural arterials may have promise, but connections to the provincial transportation system (i.e. QEW), is an issue due to escarpment crossings. Commercial traffic using arterial roads is also a concern.
- Regional Road 20 expansion would present issues at Fonthill and



<u>Items</u>	<u>Description</u>	<u>Action by:</u>
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- Smithville.
- The Region is examining capacity issues across the Welland Canal, including the possibility of a tunnel south of Allensburg.

Combination 4 Alternatives – New Road Infrastructure

- A new corridor would help focus the Regions Growth South Strategy for lands between the QEW and Highway 406
- Highway 406 should be considered as a connection point for a new corridor.

6. Q & A

At the end of this portion of the presentation, attendees were provided with an opportunity to ask questions of clarification or provide comments with regard to the material presented. The following questions and comments were provided:

- Niagara staff noted that they agreed with the approach for examining alternatives.

Project Team Response: *Comment noted.*

- Niagara questioned whether the Provincial High Speed Rail Link initiative was looking at connections to Niagara Region.

Project Team Response: *It was noted that the Ontario Gateway Study has involved preliminary research focused on the Windsor to Quebec City corridor and is not currently contemplating a Niagara connection.*

- Niagara staff inquired as to when the next Municipal Executive Advisory Meeting (MEAG) meeting would be held.

Project Team Response: *The next MEAG meeting will be held in the fall, in advance of PIC#3.*

- Will MTO participate in the Growth Plan review?

Project Team Response: *Yes, MTO will be providing input to the Growth Plan review process.*

- The Region inquired as to the data source for the traffic forecasts.

Project Team Response: *It was noted that the forecasting is based on the Greater Golden Horseshoe Model, which has been developed to support the Growth Plan targets.*

- J. Cousins inquired if marine improvements were being explored.

Project Team Response: *It was noted that there is sufficient capacity in the existing seaway system to accommodate additional movement of goods. The feedback*

NGTA  
Project  
Team

<u>Items</u>	<u>Description</u>	<u>Action by:</u>
	<p><i>the Project Team has received suggests that shippers make business decisions for the transport of goods. If there were business case for enhanced marine shipping, it would have already been pursued.</i></p> <ul style="list-style-type: none"> <li>• It was noted that MNR is updating the natural features database for Niagara.</li> </ul> <p><u>Project Team Response:</u> <i>Comment noted.</i></p>	
7.	<p><b><u>Next Steps</u></b></p> <p>The next steps for the study include:</p> <ul style="list-style-type: none"> <li>▪ The development of the combination alternatives (summer / fall 2009);</li> <li>▪ The analysis of combination alternatives (fall 2009);</li> <li>▪ PIC#3 (early winter 2009)</li> </ul> <p>The next MTAG meeting will be held in late fall. The specific date / time / location will be forwarded when available.</p>	<p>NGTA Project Team</p>
8	<p><b><u>Other Business</u></b></p> <p>The Project Team will circulate a digital copy of the presentation material for this meeting to all attendees.</p> <p style="text-align: center;"><b><u>Meeting adjourned at 11:15 a.m.</u></b></p>	<p>NGTA Project Team</p>

Meeting: City of Hamilton  
 Location: Hamilton City Centre, Room 320A      Date: Tuesday September 15<sup>th</sup>, 2009  
 Purpose: Generation of Alternatives              Time: 1:00 P.M. – 3:00 P.M.

Present: **NGTA Study Team**

Roger Ward, MTO	Paul Hudspith, URS
Frank Williams, MTO	Mike Delsey, AECOM
	Patrick Puccini, URS

**City of Hamilton Representatives**

Christine Lee-Morrison	Trevor Horzelenberg
Natasha D'Souza	Ric Martins
Sylvia Renshaw	Melanie Jajko
Alison Bochsler	Gary Kirchknopf
Hart Solomon	

<b><u>Items</u></b>	<b><u>Description</u></b>	<b><u>Action by:</u></b>
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**1      Opening Remarks**

Attendees introduced themselves and R. Ward provided a meeting overview and thanked the attendees for coming to the meeting.

R. Ward noted that the purpose of the meeting was to provide a status update on the work recently completed for the NGTA study and to gain the City's perspectives and ideas concerning the generation of alternatives.

**2      NGTA Study Update**

Since the last Municipal Technical Advisory Group (MTAG) meeting, the NGTA study team has undertaken the following key tasks:

- Prepared the Problems and Opportunities Report, which was made available for stakeholder review in July 2009. The core findings of this report were presented at a round of PIC's held in February / March 2009.
- Embarked on the process of examining and developing multi-modal transportation alternatives.

P. Hudspith provided an overview of the "Three-Stage Process for Generating, Assessing and Selecting Transportation Alternatives":

- Stage 1 includes the examination of the ability of individual transportation alternatives to address the identified problems and opportunities. It is anticipated that no single mode can address the transportation needs in the corridor and therefore the

<u>Items</u>	<u>Description</u>	<u>Action by:</u>
3	<p>examination of combination alternatives is required.</p> <ul style="list-style-type: none"> <li>▪ Stage 2 involves the development and examination of combination alternatives, which are grouped under the following categories:               <ul style="list-style-type: none"> <li>▪ Optimize the Existing Transportation Network</li> <li>▪ New / Improved Non-Road Infrastructure</li> <li>▪ Widen Existing Roads</li> <li>▪ New Road Infrastructure</li> </ul> </li> <li>▪ Stage 3 involves “Preliminary Planning” to examine the most promising combination alternatives at a greater level of detail.</li> </ul> <p><b><u>Transportation Problems and Opportunities Report (P&amp;O Report)</u></b></p> <p>The City noted that they have had internal discussions with regard to the NGTA P&amp;O Report:</p> <ul style="list-style-type: none"> <li>▪ There are no fundamental issues, but there are several areas where clarification is required.</li> <li>▪ The City is currently consolidating their comments and will provide a complete set of comments to the study team by the end of September.</li> <li>▪ A follow-up meeting will be scheduled so that the NGTA study team can discuss and respond to the areas of clarification identified by the City.</li> </ul> <p><i>(Post Meeting Note: The follow-up meeting was scheduled for October 16, 2009)</i></p>	City of Hamilton
4. /5.	<p><b><u>Generation of Alternatives</u></b></p> <p>The second part of the presentation focused on the generation of alternatives. The NGTA study team presented some of the preliminary ideas identified through an internal working team session and requested City staff to provide their comments as well as any other ideas that should be considered. The following summarizes the highlights of the discussion:</p> <ul style="list-style-type: none"> <li>▪ The City asked about the future implementation approach given that the study recommendations are anticipated to be multi-jurisdictional.               <p><i>This phase of the EA will culminate in the development of a multi-modal Transportation Development Strategy (TDS). The recommendations included in the TDS will be further explored during Phase 2 of the EA. Implementation of these recommendations will be further considered at this stage, in consultation with the other relevant agencies.</i></p> </li> <li>▪ It was suggested that the assumptions regarding the future transportation network as well as the potential of some of the Combo #1 ideas (e.g. TDM/TSM) be subjected to sensitivity testing to see what effect they have on future travel demands.</li> </ul>	

<u>Items</u>	<u>Description</u>	<u>Action by:</u>
	<p><i>Comment noted. Future monitoring will be undertaken in conjunction with implementation to assess the degree to which these types of future assumptions are realized.</i></p>	
	<ul style="list-style-type: none"> <li>▪ What level of support is anticipated from the agencies responsible for the other modes of transportation, e.g. CN/CP, the Hamilton Port Authority, etc. <i>The study team has undertaken an extensive consultation program with these agencies to identify opportunities for improved utilization of these modes of transportation for people and goods movement. The Transportation Development Strategy will serve to inform these agencies as well as decision makers of the opportunities that we have identified.</i></li> </ul>	
	<ul style="list-style-type: none"> <li>▪ It was suggested that a monitoring strategy be developed during future phases to monitor the implementation of recommendations that are outside of MTO’s jurisdiction. <i>Suggested noted.</i></li> </ul>	<p>NGTA Study Team</p>
	<ul style="list-style-type: none"> <li>▪ Consideration should be given to road pricing? <i>This concept is being considered, but as more of a policy issue.</i></li> </ul>	
	<ul style="list-style-type: none"> <li>▪ Consideration should be given to increasing gasoline tax, and using the revenue to subsidize other forms of transportation.</li> </ul>	
	<ul style="list-style-type: none"> <li>▪ Increase the number of commuter parking lots, and increase the size of existing lots.</li> </ul>	
	<ul style="list-style-type: none"> <li>▪ Agree with consideration of active transportation through secure storage at transit terminals, allowing bicycles on buses, etc.</li> </ul>	
	<ul style="list-style-type: none"> <li>▪ It was noted that transit can have both roadway (e.g. buses) and non-roadway (e.g. rail) components. This needs to be clearly conveyed.</li> </ul>	
	<ul style="list-style-type: none"> <li>▪ The City would be supportive of the concept of Hamilton-focused GO Bus service.</li> </ul>	
	<ul style="list-style-type: none"> <li>▪ Suggested that consideration be given to increased utilization of short-sea shipping. <i>This idea has been investigated in consultation with the marine authorities. This idea is seen as having good potential, but the ability to have a substantial impact on goods movement is limited by the changing economy, border issues/restrictions, and the extent of handling required at ports, which make it difficult to compete with trucks for short distance shipping of goods.</i></li> </ul>	
	<ul style="list-style-type: none"> <li>▪ Need to be careful how the concept of improving existing municipal roads is conveyed. The City would object to the use of</li> </ul>	<p>NGTA</p>

<u>Items</u>	<u>Description</u>	<u>Action by:</u>
	<p>municipal facilities to convey over flow traffic, as they are intent on moving long distance traffic off of municipal facilities and on to provincial facilities. In addition, it would be necessary to demonstrate that the usage of municipal roads would not adversely affect safety and air quality conditions in the municipality. The City would not object to municipal facilities being utilized in emergency situations or as a detour facility. <i>Comment noted.</i></p>	Study Team
	<ul style="list-style-type: none"> <li>▪ Will the study team be considering widening of Highway 403 through Hamilton? <i>Yes, this idea will be considered and compared to other possible alternatives.</i></li> </ul>	
	<ul style="list-style-type: none"> <li>▪ If a widening of Highway 403 through Hamilton is considered, the potential health effects need to be considered as well. <i>These types of issues will be considered as part of the triple bottom line assessment of the combination alternatives.</i></li> </ul>	NGTA Study Team
	<ul style="list-style-type: none"> <li>▪ Is the study team coordinating with the Ontario-Quebec Continental Gateway and Trade Corridor study? <i>Yes, we are coordinated with that study. They are at an earlier stage and a higher level, but the messages and themes emerging from that study are consistent with the findings of this study.</i></li> </ul>	
6.	<b><u>Next Steps</u></b>	
	<p>The next steps for the study include:</p> <ul style="list-style-type: none"> <li>▪ The development of the combination alternatives (fall 2009);</li> <li>▪ The analysis of combination alternatives (fall 2009);</li> <li>▪ PIC#3 (late fall 2009)</li> </ul>	
	<p>The next MTAG meeting will be held in late fall. The specific date / time / location will be forwarded when available.</p>	
7.	<b><u>Other Business</u></b>	
	<p>The study team will circulate a digital copy of the presentation material for this meeting to all attendees.</p>	NGTA Study Team
	<p>The City will consolidate their comments on the Transportation Problems and Opportunities Report and forward to the study team.</p>	City of Hamilton
<b><u>Meeting adjourned at 3:00 p.m.</u></b>		

Meeting: Region of Halton

Location: Community Services Boardroom Date: Thursday October 8, 2009  
 1151 Bronte Road, Oakville

Purpose: Generation of Alternatives Time: 1:30 p.m. – 3:00 p.m.

Present: **NGTA Study Team**  
 Roger Ward, MTO Paul Hudspith, URS  
 Frank Williams, MTO Mike Delsey, AECOM

**Halton Region Representatives**  
 Stephanie Jarvis, Town of Milton Ron Glenn, Halton Region  
 Andrew Head, Halton Region Steve Burke, Town of Halton Hills  
 Paul Smithson, City of Burlington Tim Dennis, Halton Region  
 Dan Ozimkovic, City of Burlington  
 Mary K. Cichocki-Beaudry, Halton Region

**Items**    **Description**

1    **Opening Remarks**

Attendees introduced themselves and R. Ward provided a meeting overview and thanked the attendees for coming to the meeting.

R. Ward noted that the purpose of the meeting was to provide a status update on the work recently completed for the NGTA study and to gain the Region’s perspectives concerning the generation of alternatives.

2    **NGTA Study Update**

Since the last Municipal Technical Advisory Group (MTAG) Meeting, the NGTA study team has undertaken the following key tasks:

- Prepared the Problems and Opportunities Report, which was made available for stakeholder review in late July 2009. The core findings of this report were presented at a round of PIC’s held in February / March 2009.
- Embarked on the process of examining and developing multi-modal transportation alternatives.

P. Hudspith provided an overview of the “Three-Stage Process for Generating, Assessing and Selecting Transportation Alternatives”:

- Stage 1 includes the examination of the ability of Individual Alternatives to address the identified problems and opportunities. It is anticipated that no single mode can address the transportation needs in the corridor and therefore the examination of combination alternatives is required.
- Stage 2 involves the development and examination of combination alternatives, which are grouped under the following categories:

**Items**    **Description**

- Optimize the Existing Transportation Network
- New / Expanded Non-road Infrastructure
- New / Expanded Road Infrastructure
- Stage 3 involves “Preliminary Planning” to examine the most promising combination alternatives at a greater level of detail.

3.    **Generation of Alternatives**

The second part of the presentation focused on the generation of alternatives. The NGTA study team presented some of the preliminary ideas identified through an internal working team session and requested Halton staff to provide their comments as well as any other ideas that should be considered in each combination alternative. The following summarizes the highlights of the discussion:

- What is the assumed modal split?  
*Project Team Response: As per the Metrolinx RTP, Halton is currently at 2.5% and is forecasted to increase to 8%.*
- It was noted that even with the RTP fully implemented, congestion in 2031 is worse than today.
- Is there consideration made for the future beyond 2031?  
*Project Team Response: 2031 is the planning horizon and this aligns with the Growth Plan.*
- It was noted that roads can be paid by development charges, while transit improvements cannot.
- It was suggested that the feasibility of recommendations should not be limited to funding realities.
- It was noted that access from Hamilton International Airport to Burlington / Milton, etc. needs to be improved and there is no existing transit link from Pearson International Airport to Halton.
- Metrolinx RTP does not have an Oakville / Milton / Georgetown link. The alternatives should consider a north – south transit connection.
- It was noted that Hwy 401 will become more congested as Milton grows.
- There is a need to evaluate the funding mechanism to realize the objectives of the Growth Plan and the Metrolinx RTP.  
*Project Team Response: Funding is beyond the scope of this study.*
- There is a need for improved local transit and networks to the linkages at regional hubs.
- Local municipalities do not have the funding available to build locally supportive infrastructure.
- Consider multi-use corridors.
- A truck only corridor would improve traffic within Halton and encourage the



- | <u>Items</u> | <u>Description</u>   |
|--------------|--|
|              | trucks to move off of the QEW. <ul style="list-style-type: none"><li>• How does NGTA coordinate with other agencies e.g., OGS, MEI, Metrolinx, NEC and MNR?<br/><i>Project Team Response: Team members have met with and continue to consult with agencies throughout the study process.</i></li></ul>   |
| 4.           | <b><u>Next Steps</u></b> <p>The next steps for the study include:</p> <ul style="list-style-type: none"><li>▪ The development of the combination alternatives (Fall 2009);</li><li>▪ The analysis of combination alternatives (fall 2009);</li><li>▪ PIC #3 (November 2009).</li></ul> <p>The next MTAG meeting will be held in late fall. The specific date / time / location will be forwarded when available.</p> |
| 5.           | <b><u>Other Business</u></b> <p>The Project Team will circulate a digital copy of the presentation material for this meeting to all attendees.</p>   |

**Meeting:** City of Hamilton – Problems & Opportunities Report Comments

**Location:** City of Hamilton

**Date/Time:** October 16 2009, 930AM

**Present:** Melanie Jajko, City of Hamilton – Environmental Planning  
Alison Bochster, City of Hamilton – Public Health  
Ray Lee – City of Hamilton - Industrial Parks & Airport Development  
Al Kirkpatrick – City of Hamilton – Strategic Planning, Public Works  
Gary Kirchknopf – City of Hamilton – Traffic Engineering, Public Works  
Roger Ward – MTO  
Frank Williams – MTO  
Jack Thompson – MRC  
Mike Delsey – AECOM  
Nadine Navarro – AECOM

### Notes

- The intent of this meeting is to review the Problems and Opportunities (P&O) Report comments received from the City of Hamilton (the City).
- Most comments can be addressed but some will need to be taken back and discussed further.
- The meeting and meeting notes follow the City's list of comments (see attached).
- (1) MTO will work with other agencies, ministries, Transportation Service Providers and other stakeholders and groups (e.g., MAAG) and engage in dialogue within the Ministry as the project moves forward
- The City is undertaking a Truck Route Master Plan study, estimated for completion in the 1<sup>st</sup> quarter of 2010. The NGTA study team will work to incorporate this study as much as possible and results will be forwarded by the City as available. Four PICs are scheduled for December; dates will be forwarded to the Study Team
- *Post meeting note: dates have been published on the City's web site: November 5<sup>th</sup>, November 12<sup>th</sup>, December 2<sup>nd</sup> and December 10<sup>th</sup>.*
- (2) The current study is a fresh perspective on the NGTA Corridor and references to the 2001 study were included as historical background only. Staged deliverables are released through the study to keep stakeholders informed. The "Backgrounder" is a supplement to the P&O Report; much of its contents are included in the P&O Report. Comments are welcome on the Backgrounder.
- An addendum to the P&O Report will address input received and responses to comments; an update will be prepared at end of the study

- (3-4) A current study on the City's AEGD has identified a preferred alternative. A presentation was circulated and information is available on the City's website. The employment figures and size of industrial park have been restated in two phases of development. Stage 1 includes approximately 800 ha; changes are due to the types of forecast employment, which include fewer manufacturing jobs. The City is working to meet employment growth projections.
- A draft of the AEGD Master Plan is anticipated in November and will be circulated to the study team.
- The NGTA study will need to revisit Growth Plan conformance issues post-PIC #3.
- The City is looking to schedule meeting with the Province regarding the AEGD. A consensus has been reached that development will happen around airport, but levels are still to be determined
- (5) Clarification is required from the City whether "80,000" refers to population, units, etc. MJ to clarify and the P&O Report will be amended as needed.
- *Post meeting note: M. Jajko confirmed that the Hemson forecast refers to 80,000 projected "households".*
- (6) Alternatives to address the transportation problems and opportunities include TDM, including the Smart Commute program. Details of the alternatives identification are to emerge at PIC#3 and in the report to follow. TDM and other Metrolinx measures are included in the model and post-model adjustments.
- (7-8) Additional contributions of TDM are reviewed in the next step after the P&O Report. Issues such as funding are to be determined at a later stage of the study; current focus is on developing the best transportation strategy.
- (9) Information from the Metrolinx Regional Transportation Plan (RTP) indicates that the GTHA transit mode share is to increase to approximately 26%. This shift is mostly to be achieved with rapid transit and a smaller shift is anticipated outside of GTHA. Transit mode share in Niagara is approximately 2%. Different issues and infrastructure exist in the NGTA study area than in the GTHA. New GO train services to Niagara are taken into account, but their focus is on downtown Toronto; therefore these services have a limited catchment.
- (10) The apparent contradiction between the Growth Plan's self containment objective and the model's forecast for less self containment to 2031 indicates the reality that increased transit increases travel options and could potentially change self containment. Some change appears in the model but these are huge numbers; they show realistically nominal changes reflecting expected travel patterns.
- (11-12) The BAU (Business as Usual) scenario reflects today's travel characteristics and presents a different scenario to the RTP. The BAU was checked against the RTP and a range of forecasts was reviewed. There is no "correct" number in forecasts and minor

differences between scenarios were noted; even with a huge shift to transit, road volumes are still expected to increase. The RTP is in the expected range of future forecasts. The ALU (Alternate Land Use) showed a minor shift that did not make major impact on inter-regional travel. Numbers from the model, including regarding mode split, will be reviewed moving forward.

- (13) Instead of adding lack of rail connections to airports as a problem, pg 125 will be changed to read “no transit links” for people movement. New linkages to HIA will be clarified.
- (14) The GTA and Niagara are identified as the main tourism destinations in the study area. A reference to increasing tourism in City of Hamilton can be added to the document.
- (15) The study team will review legibility of maps and figures.
- (16) Regarding municipal roads, the Linc and RHVP are included in the analysis of the alternatives as they are important links. Typically only higher order inter-regional facilities are included as the focus of this study is inter-regional travel at a high level and over a large study area.
- (17) Opportunities for inter-modal connection improvements are recognized; infrastructure needs are assessed in the next step. The main issue regarding all modes is road connections.
- (18) Transportation opportunities were extracted from the policy direction and elements of the Provincial Policy Statement (PPS), Growth Plan and other provincial documents. This study also seeks to relate to the Official Plans of area municipalities.
- (19) The alternatives assessment includes environment, social, economy and transportation factors. The study’s Terms of Reference includes a base list of factors.
- (20) Tourism travel includes some higher level rural facilities (e.g. RR 20), but there is no specific congestion analysis in rural areas. The City emphasized that tourism could become more important in Hamilton.
- (21) Regarding toll roads, Metrolinx is studying options to reduce the funding gap. Within the existing policy framework, no existing highways will be tolled. Potential policy changes are reviewed as part of the NGTA study moving forward.
- (22) In the next step considering transportation alternatives, the study team looks to TDM/TSM and transit before looking to new infrastructure and road alternatives.
- (23-24) Indirect issues are considered where possible. The population structure in the model includes aging profiles, which are important for forecasting travel patterns such as

those for tourism. The model assumes significant increases in fuel costs. New energy sources are unknowns.

- (25) As discussed (9, 11-12), increased transit use is primarily from RTP initiatives.
- (26-27) Economic specialists reviewed business trends and economic trends as part of the study, which includes an element of inter-community commuting.
- (28) Funding review is not included in this part of the study and will follow as work progresses.
- (29) Solutions to address the transportation problems and opportunities are part of the next step of the study
- (30) No actions have been identified as part of the P&O Report, including regarding health and environment. This is part of the transportation alternatives step.
- (31-34) Health is included in the environment, transportation and social objectives of the study. Regarding active transportation, it must be recognized that this study addresses inter-regional travel; however, active transportation is included at trip ends, e.g. at transit terminals. Health is implicitly included
- (35) Demographic data (e.g. age) is included in the model analysis as much as possible to address differing travel patterns.
- (36) The word “accident” will be replaced with “collision” in the P&O Report.
- (37) Support for active transportation’s role in the NGTA transportation network is addressed in the next step following the P&O Report.
- (38) Use/expansion of the waterfront trail fulfills a different objective than that of this study; it can be considered as an option but is not expected to have a major impact on the problems and opportunities. However, this study can raise awareness of active transportation issues.
- The City’s cycling Master Plan has been completed and includes data on cycle users.
- (39-40) The concept of complete communities and providing local amenities for residents will need to involve discussion between ministries, including the Growth Plan objective for self containment. MTO to take back issues regarding school closures, etc., to OGS.
- (41) See active transportation discussion (37-38).
- (42) As discussed, PM peak hour transit trips were obtained from the model. The study team will check this information.

- (43) The use of TSM/ TDM with technology is considered as part of addressing transportation alternatives.
- (44) Local transit is included in model. The team will check that Hamilton's rapid transit system is included in documentation and will consider use of the term "BRT" as in the Metrolinx plans vs. "LRT".
- (45) Connecting goods by inter-modal transportation is included in the study and addressed in greater detail in the alternatives stage.
- (46) The transportation alternatives step addresses the 3-pillars and "trade offs" in more detail.
- (47) The City is to clarify the comment regarding stakeholder involvement and new ways of doing business.
- (48) The City's model corrections were noted and will be included in next model run.
- (49) Significant consultation and meetings with stakeholders, agencies, etc., has occurred as part of this process. There are some competing interests among stakeholders; it is not possible to completely please everyone. There are many issues to address as part of this study. Consultation is documented as part of the study.
- Revisions to the P&O Report will be in the form of an addendum

### City of Hamilton Problems & Opportunities Report Comments

The City of Hamilton, Staff Advisory Committee has reviewed the Niagara to GTA Corridor, Draft Area Transportation System Problems and Opportunities Report. Please review our preliminary comments for discussion at our upcoming meeting below:

(1) Pg 1-3 - Includes references to the 2001 draft Niagara Peninsula Transportation Needs Assessment Study. Furthermore the Terms of Reference for the N to GTA project (pg 3) indicates that the needs assessment must be revisited/updated as part of the EA process. Generally, the process of updating the needs assessment should be clarified. For example, we understand that a Draft Overview of Forecasting Travel Demand Analysis has been posted on the project web site. It is unclear why stakeholders were not asked to comment on this report as well and what the relationship between the 2 studies is. Pg. 3 of the Problem and Opportunity report indicates that the Transportation Development Strategy, once developed, will be documented in the NGTA Corridor Transportation Needs Assessment. It is unclear, how the project team intends on updating the Transportation Needs Assessment Study. Does the Overview of Forecasting Travel Demand Analysis provide the update? Also, why would the Needs Assessment report be prepared after the Transportation Development Strategy is developed?

(2) Pg. 3 - Indicates that some transportation modes lie outside of MTO's jurisdiction and will be forwarded to the appropriate authority for review and action. We recognize MTO's jurisdictional limitations; however, this approach has previously been identified as an issue. As the success of the strategy will rely on more than one mode, there needs to be some overall coordination and monitoring of the implementation of the multi-modal strategy developed.

(3) Pg. 25 - last sentence, 2nd paragraph refers to the need to support employment growth in the regions of Halton, Peel and York. Why not Hamilton (e.g. airport employment growth district)?

(4) Pg. 53 - should make reference to the Secondary and Infrastructure Master Planning processes now underway in Hamilton for the airport employment growth district.

(5) Pg. 53 - The reference to 80,000 population is actually units and not population. Part of that 80,000 units includes lands that were not approved for urban expansion so it should be adjusted. Somewhere in the NGTA report it should note that these figures are from a staff report that may have been approved by Council but contains information that does not reflect what the province has approved.

(6) Section 2.6 - Other Initiatives - Consideration should be given to include more on travel demand management (TDM) initiatives, such as the Smart Commute Initiative for the GTA and Hamilton.

(7) While TDM measures such as HOV lanes are discussed in section 6.6, there should be additional TDM measures reviewed. For example the study could evaluate opportunities to have more work from home opportunities to avoid trips in the first place. Similarly, an increase in jobs closer to where people live can reduce inter-regional travel affecting provincial infrastructure. Reduced commuting for employment will assist in reducing congestion for goods movement.

(8) Pg 85 Other Assumptions - What is the expected contribution of TDM, such as the Smart Commute?

(9) Pg. 86 refers to 2031 Metrolinx transit mode split target of 26.2%. Pg. 105 states that PM peak period transit mode is expected to increase from 4% in 2001 to only 7% in 2031. We understand from the project team that the Metrolinx targets represent the starting point, or base case, for forecasting. Recognizing that the Metrolinx target is an overall forecast and the N to GTA study is focused on inter-regional transportation, how is the 7% mode split justified when the Metrolinx forecast is 26.2 %?

(10) Pg. 88 - Indicates that self containment in the study area's upper tier municipalities is expected to decrease between 2006 and 2031. Whereas pg. 106 states that the inter-regional transit market could be limited due to the Growth Plan objective toward more self-contained urban centres. These statements are contradictory.

(11) Pg. 92 - speaks to the business as usual (BAU) scenario and the GGH model establishing a range of future travel demands. How is this range used in the problem identification and forecasting? For example, Table 3-12 clearly includes RTP, ALU (alternative land use) and BAU scenarios. However, it is unclear how this translates to the highway lane deficiencies and capacity shortfalls. Are lane deficiencies based on the RTP forecasts? Should ranges also be shown for lane deficiencies, capacity shortfalls and highway congestion (e.g. tables 3-16, 17 & 18, figures 3-19 & 20, Ex. 4-6, Ex 4-12)? If ranges are not shown then consider clarifying which scenario is used (RTP?).

(12) Pg. 113, section 4.2.2, 1st paragraph, see comments above regarding justification of transit mode split, Places to Grow Growth Plan and objectives for more self contained communities and TDM measures (e.g. Smart Commute). Please provide clarification regarding the automobile modal split reduction from 78% to 74%.

(13) Pg. 127 - consider adding lack of rail connection to airports (from discussion pg 125).



- (14) Generally, Hamilton seems to be left out of the discussions related to tourism opportunities.
- (15) Maps generally are not very legible. Legibility of figures pg 101-102 is poor.
- (16) There was no mention of municipal road infrastructure such as the LINC and the Red Hill Valley Parkway, should these municipal highways be part of the analysis? If existing Provincial infrastructure becomes increasingly overloaded, will municipal infrastructure also become more congested?
- (17) Section 1 - Where there is sufficient capacity in the system (rail, air, marine) will there be enough connectivity between modes? Who should provide these facilities, private sector, public sector (which level)? What kind of infrastructure is needed? Who will build it?
- (18) Section 1 - The report should flush out how the identified items are opportunities. e.g. “improved multi-modal connections to the GTA and areas west of the corridor” explain how this is an opportunity – because there is excess capacity? Access to new markets?
- (19) Section 2 - Among the listing of “Other Factors” that should be considered, the list should include “placing greater priority on the environment and energy use”. These two related factors should play a more dominant role in the assessment of the corridor.
- (20) Section 3 - The forecasted increase in tourism traffic, is this primarily on major highways such as the QEW more dispersed such as travel on rural roads? Is the travel demand from tourist traveling to major centres or creating congestion in rural areas such as those traveling to wineries, farms etc.?
- (21) Section 3 - Metrolinx has contemplated road tolls, how will they impact travel demand if any? Would this be an opportunity to reduce road congestion and make public transportation more attractive?
- (22) Additional consideration (more emphasis) should be given to the constraint of new infrastructure passing through the rural areas of Hamilton. Impacts to consider include development and impacts within the Greenbelt area as well as potential for disruption of rural communities and use of prime agricultural land for roads. The study should completely max out use of transit, TDM, and avoiding trips to begin with before new infrastructure that must go through the rural areas are considered.
- (23) Indirect issues should also be taken into consideration when addressing the NGTA problems and opportunities report such as : fuel costs/availability, trucking insurance costs, aging population, new forms of energy, and their affect on the NGTA since we are planning to 2031

(24) Often modeling has assumed a continuation of existing travel patterns and behaviour. If energy and fuel costs rise dramatically, will that affect demand in commuter travel patterns, modes for goods movement etc? While the modeling of continuing travel patterns may be beneficial, there should be alternative modeling predicting travel demand changes as a result of dramatically increasing fuel costs or even other factors such as introducing road tolls.

(25) An increase in transit ridership is indicated with no justification included

(26) The Growth Plan speaks to live, work and play within communities yet the NGTA Corridor report speaks to a growth in inter-community commuting - does not align with the policy

(27) There needs to be a sense of what the future business trends are and where they will grow geographically - this may be difficult given that the NGTA plan is for travel support to 2031

(28) There is no indication of who is paying for the NGTA i.e. not even a high level financial plan has been mentioned - funding will affect key components of the NGTA implementation since many aspects are not under the control of MTO or the Province

(29) There does not seem to be any creative out of the box solutions or combination of typical plus non-typical solutions

(30) Other than motherhood statements, there does not appear to be any concrete health and environment actionable items

(31) The triple bottom line approach is mentioned however the supporting data is not there

(32) How does health fit in the study goals and objectives for the transportation system in the study area?

(33) It appears that the purpose of the plan is for efficient movement of people and goods, but how is personal health and health of the environment going to be captured?

(34) In forecasting demographics until 2031, did the study group factor in an aging population, their needs, and how that will affect mode choice for inter-region travel?

(35) Older adults (age 65 and older) and retired persons represent a growing proportion of both Ontario's and Hamilton's population, as baby boomers move into their senior years and as life expectancy increases. Older adults' travel choices may impact transportation systems because Niagara and Toronto are major tourist destinations for older adults from various

locations in Ontario. Older adults are most likely to choose car transportation for inter-region trips. There may also be increased demands for access to networks for walking and cycling trails and access to the waterfront from this large cohort.

(36) Please replace the word ‘accident’ in the document (on pages 127 and 134), with the word ‘collision’. Injury prevention practitioners use the word collision instead of the word accident because an accident is viewed by the public as an event outside of their control. Evidence supports that most vehicle collisions and vehicle /pedestrian collisions are both preventable and predictable.

(37) Since the purpose of the plan is a, “multi-model transportation system that offers choices for efficient movement of people and goods”, active transportation needs to play a larger role than what is currently highlighted in the document. Safe and supportive connections and infrastructure for walking, cycling, and other forms of active transit, need to be part of the plan (secure bike storage, bikes on board of transit- bus and rail, etc.) in connection with public transit.

(38) How can the waterfront trail, or an expansion of the trail, fit into the inter-regional transportation plan (connections to transit terminals)? Is there an opportunity for a bike network linking various cities, via existing trails or pathways between the cities?

(39) Complete communities are crucial to reducing road congestion and improving health for all- homes, schools, workplaces, libraries, parks, services, and amenities are needed within communities to reduce the dependence on motor vehicles and provide more options for active transportation. Complete communities are also a priority for older adults, children, youth, people with various levels of ability, etc., as many of these individuals will choose to walk to nearby amenities and may no longer drive or not drive at all. How does this concept (including road safety) fit into the plan for the NGTA?

(40) Are there discussions with other Ministries, including the Ministry of Education to discuss keeping schools within communities so that school travel can occur on foot, by bike, or other forms of active transportation?

For Consideration:

(41) Todd Litman from the Victoria Transport Policy Institute has written an interesting paper entitled, Economic Value of Walkability, September 14, 2009, looking at a variety of benefits of walking and walkability. He examines benefits such as basic mobility, consumer cost savings, efficient land use, community livability, economic development, improved public healthy and support for equity. He suggests that walking should receive an appropriate share of transportation resources. [www.vtpi.org/walkability.pdf](http://www.vtpi.org/walkability.pdf)

(42) Clarification on Table 1 regarding the PM Peak Hour Transit trips increase by 189% - how and where do they justify this?

(43) Increased use of technology to provide information, feed the communications network and allow for informed decisions by users.

(44) Increased local transit to support inter-regional transit. Include reference to the LRT system proposed for Hamilton.

(45) Great to encourage Goods Movements via containers and rail/marine, but consideration for infrastructure within the community to then transport the material to destinations (Truck Routes)

(46) The plan talks about 3-pillars and balancing the economic, environment, natural heritage, social, etc. The plan can't be all things to all solutions. What will/could give in order for the plan to be implemented (What are the "trade-offs")?

(47) Stakeholder involvement, what are the new realities for doing business in the future - some of this appears to be business-as-usual, whereas the way of doing business will/could significantly change in the future.

(48) Comments on the Overview of Forecasting and Travel Demand Analysis: The following corrections should be made on Table 2-5; page 17 of the Draft overview of forecasting and travel demand analysis:

1. Change Waterdown new E-W Road (new road); 2031 # of lanes to 2
2. Change Waterdown new E-W Road (new road) N-S on E of Upcountry Boundary; 2031 # of lanes to 2
3. Change Dundas Street; Existing # of lanes to 4 and 2031 # of lanes to 6
4. Change Upper Mount Albion Road Segment to; from South of Mud Street to Rymal Street and it is proposed to be closed at Rymal Road
5. Change Hwy 8 road segment to; from Dewitt Road to Hamilton Boundary
6. Add Trinity Church Arterial Corridor (New); from Stone Church Road to Twenty Road and 2031 # of lanes is 4.

(49) The report identified numerous improvements that involved many outside agencies & stakeholders but did not advise if these groups were contacted for input or already onboard and support the project? It would be beneficial to know that these stakeholders (i.e. federal government agencies) are also part of the study team and will also work to assist the local & provincial governments in the project?

Meeting: Municipal Technical Advisory Group (MTAG) and Regulatory Agencies Advisory Group (RAAG)

Location: Casablanca Winery Inn, Grimsby

Purpose: Assessment of Alternatives Date: November 20, 2009

Chair: Glenn Pothier, GLPi (facilitator) Time: 1:30 p.m. – 4:00 p.m.

Present: **NGTA Study Team**

Roger Ward, MTO	Paul Hudspith, URS
Terry Hilditch, MTO	Patrick Puccini, URS
Shelley Tapp, MTO	Mike Delsey, AECOM
Frank Williams, MTO	Sandy Nairn, Ecoplans

**MTAG Representatives**

Rudy Warkentin	Township of Wainfleet
Caroline Polgrabia	Ministry of Tourism
Melanie Jajko	City of Hamilton
Andrew Head	Halton Region
Mary K. Cichocki-Beaudry	Halton Region
Matt Grabau	Greater Buffalo-Niagara Regional Transportation Council
Marzenna Carrick	City of Niagara Falls
David Ferguson	City of Welland
Tom Sliwinski	City of Welland
Dan Ozimkovic	City of Burlington
Tom Villella	Town of Fort Erie
Kyle Plas	Haldimand County
Geoffrey Keyworth	Region of Waterloo
Chris Mills	Town of Halton Hills
Eric Flora	Niagara Region
Brian Treble	Township of West Lincoln
Stephanie Jarvis	Town of Milton
David Wong	Town of Oakville

**RAAG Representatives**

Sondra Meis	Ministry of Economic Development & Trade
Jennifer Lawrence	Conservation Halton
Darren Kenny	Hamilton Conservation Authority
Denton Miller (via teleconference)	Ministry of the Environment
Drew Crinklaw (via teleconference)	Ministry of Agriculture & Food
Carlene Whittingham	Ministry of Municipal Affairs and Housing
Mike Eckersley (via teleconference)	Ministry of Natural Resources
Mike Stone (via teleconference)	Ministry of Natural Resources
Mike Kim (via teleconference)	Ministry of Energy and Infrastructure
Henry Turner (via teleconference)	Ministry of Tourism
Solange Desautels (via teleconference)	Ministry of the Environment

**Items**      **Description**

1. & 2.      **Introductions and Review of Previous Meeting Minutes**  
 G. Pothier (GLPi), independent facilitator, provided a session overview and thanked the attendees for coming to the meeting.  
 G. Pothier also briefly reviewed the minutes of the last Joint MTAG / RAAG meeting held on February 5, 2009 and the RAAG meeting held on June 19, 2009. No errors or omissions were identified, and there were no outstanding action items.

3.      **Study Update**  
 P. Hudspith and P. Puccini provided an update on the study progress, including the individual alternatives, combination alternatives and the assessment of the alternatives.

4.      **Identification and Assessment of Individual Transportation Alternatives**

**QUESTIONS (Q), ANSWERS (A) & COMMENTS (C)**

Q: What transit mode split has been assumed?

A: A 26% transit mode split has been assumed on the basis of the Metrolinx *RTP*.

<u>Items</u>	<u>Description</u>
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Q: What transit mode split has been assumed in the NGTA study area?

A: Currently there is a 2-3% transit mode split in the study area. Based on the Metrolinx *RTP*, it is expected that this will increase to as much as 7-8% (Halton area).

Q: Is the reference to Goods Movement at the Hamilton International Airport Air/Rail or Air/Truck?

A: The reference is to both rail and truck.

C: To the extent possible, the study team should take into account the degree to which manufacturers shift modes based on emerging manufacturing trends.

5. Identification and Assessment of Combination Alternatives

P. Puccini presented an overview of the combination alternatives that have been developed.

Q: Has a GTA West corridor been assumed in developing lane requirements for the Group #3 alternatives?

A: At this stage no assumptions have been made based on the GTA West corridor. Coordination between the two studies will continue.

Q: If there is a GTA West, would there be a connection to the NGTA?

A: It is not possible to predict this as the need for a new corridor has not been identified in either study.

P. Hudspith presented an overview of the high level assessment that has been completed for the combination alternatives.

C: Overall agreement with the bubble sizes on environment, however Group #3 may have significant impacts depending on the specific improvements entailed. Do not understate the environmental impacts of Group #3.

Q: Does MTO consider what is meant on Slide 31 by the term “significant congestion”. Is the highway network significantly congested today?

A: Yes, in some locations, and in the future it gets significantly worse than today. Group #3 or Group #4 gets us back to approximately where we are today in terms of congestion.

C: A new 400 series highway would have significant environmental impacts on agricultural areas which should be considered.

G. Pothier discussed the POWER method and encouraged a discussion on the information presented based on the following categories:

**Items****Description**

P = Positives

O = Objections

W = What Else?

E = Enhancements

R = Remedies

**POSITIVES**

The team appears to have maximized the use of existing infrastructure e.g., speed harmonization.

Good job of contextualization of goods movement.

Agree with the stepped approach to assembling combination alternatives.

**OBJECTIONS**

Skeptical that a new highway will alleviate congestion.

If future transit ridership embodied in the Metrolinx *RTP* is overly optimistic, what does it mean if it is not fully realized?

There appear to be limited opportunities to move goods from truck to rail.

Assumptions with regard to the effectiveness of TDM may be overly optimistic.

**WHAT ELSE?**

Q: How do the GTA West and NGTA studies link in the public process?

A: The display material has been coordinated. While both projects are distinct, it is recognized that the recommendations that emerge for both studies need to be coordinated.

C: A stronger emphasis on goods movement is needed to comply with the vision of the *Growth Plan*.

**ENHANCEMENTS**

C: A big dots vs. small dots assessment is needed for Group #1 and Group #2.

A: It was noted that this has been completed, but is not included in the slides.

**REMEDIES**

C: A consistent level of detail should be used for all environmental assessment criteria e.g., the agricultural factors on Slide 35.



<u>Items</u>	<u>Description</u>
	<p>Q: Will the study team be addressing phasing in the final Transportation Development Strategy?</p> <p>A: Yes, the intent is to present phasing improvements in the final strategy.</p> <p>C: A new highway never resolves the problem. Preference would be to invest in what we have (Group #3) however it is recognized that there are environmental impacts with Group #3. Impacts and benefits vary by geographic location for Groups #3 and #4.</p> <p>C: In the assessment of Group #3 vs. Group #4, it should be noted that a new corridor would attract development.</p> <p>C: A new corridor is needed near Hamilton as there is less opportunity to widen the existing roads.</p>
6.	<p><u>Other Business</u></p> <p>C: In the upcoming phase of the project, please consider timelines i.e., sufficient time for municipal staff and council to review reports.</p> <p>Q: Can displays be made available for this group?</p> <p>A: The displays (and all other information) are available on the project website. The link will be included with the distribution of the meeting minutes.</p>

**Meeting adjourned at 4:00 p.m.**

The Niagara to GTA Corridor Municipal Executive Advisory Group (MEAG) met on January 18, 2010 at the Casablanca Winery Inn, Vintages Room from 10:00 a.m. to 12:45 p.m.

The following individuals attended the meeting:

Tim Dennis	Director -	Transportation Department, Halton Region
Haiqing Xu	Manager -	Long Range Planning, Halton Region
Christine Lee-Morrison	Manager –	Environmental Planning, City of Hamilton
Neil Everson	Director–	Planning and Economic Development Department, City of Hamilton
Patrick Robson	Commissioner –	Integrated Community Planning, Regional Municipality of Niagara
Leslie Woo	General Manager –	Policy and Planning, Metrolinx
Patricia Boeckner	Director –	MTO Transportation Planning Branch
Joe Perrotta	Manager –	MTO Provincial and Environmental Planning Office
Roger Ward	NGTA PM Board –	MTO Provincial and Environmental Planning Office
Frank Williams	NGTA PM Board –	MTO Provincial and Environmental Planning Office
Paul Hudspith	NGTA PM Board –	URS Canada
Margie Gonzalez	NGTA Environmental Planner –	URS Canada

### **PURPOSE OF THE MEETING**

The purpose of the meeting was to discuss:

- Study background and provide a brief update;
- Process for generating and assessing transportation alternatives;
- Individual alternatives;
  - ◆ Rail, Air, Marine, Transit, Inter-modal, TDM and TSM
- Combination alternatives;
  - ◆ Group #1 – Optimize Existing Transportation Networks
  - ◆ Group #2 – New / Improved Non-Roadway Transportation Infrastructure
  - ◆ Group #3 – Widen Existing Highways
  - ◆ Group #4 – New Transportation Corridor(s)



## NIAGARA TO GTA CORRIDOR EA – Phase 1 MEAG Meeting Summary

January 18, 2010

- Assessment of combination alternatives;
- Public Information Centre #3; and,
- Summary and next steps.

**SUMMARY OF DISCUSSION AND ACTION ITEMS:**

The following summarizes the key issues and actions:

QUESTION/COMMENT	RESPONSE/RESOLUTION	ACTION
For transit components, after Phase 2, would transit elements have to be conducted within six months?	Any elements outside of MTO's jurisdiction would have their own process to follow e.g. transit in six months.  New corridors would follow EA Phase 2 Route Planning under individual EA process.	
Does the current work take us to the end of Phase 2?	The current work takes us to the end of Phase 1. Between Phase 1 and Phase 2, decisions are made as to which elements will be carried forward to Phase 2.	
Do you anticipate approval between Phase 1 and Phase 2 at the end of this year?	Phase 1 will be complete by end of this year. Selection of System Alternatives signifies a pause where decisions are being made.  The study team will have to consider how municipal and provincial elections will impact decisions.	Study Team
Have you met with private transportation service providers?	The study team has met with private transportation service providers.	
Is "inter-modal" strictly for goods movement? If so, this should be made explicit.	Agreed. In this study, "inter-modal" refers to goods movement, although we have examined the integration of modes for commuters and tourists.	
With regard to goods movement, is there any discussion of cost factor e.g., trucking is subsidized, where rail is not.	There are policy and jurisdictional realities that we acknowledge. The province is contemplating providing subsidies to rail.	
Rail corridors have limits and performance of transit is affected by increased freight traffic.	Comment noted.	

QUESTION/COMMENT	RESPONSE/RESOLUTION	ACTION
When CN/CP say they have sufficient capacity, it refers to the present goods movement load. Are we aware of the future limitations?	It is difficult to get specific numbers from private companies.	
What do you mean by a 10% shift?	<p>By improving linkages to inter-modal facilities, there's an ability to shift 10% of long distance trucks off of the road.</p> <p>The eastern end of the seaway has a greater concern with extending the seaway operations. Northern states are working on expanding short sea operations that the study team can research.</p>	
Inter-modal slide, which rail-line would connect to HIA?	The CP line would connect to the HIA.	
GO forecasting seems really low in terms of ridership.	Realistically speaking the numbers are low, but the total picture is high and Metrolinx is trying to be very aggressive however, they will not invest in an area where the returns will be low.	
The City of Hamilton is trying to promote the 50 Road area, but the province will not support this initiative with corresponding transit.	NGTA is modelling the most optimistic land use.	
Local initiatives do not seem to affect provincial supporting initiatives.	Comment noted.	
Not getting a sense that there is recognition from Metrolinx that there is an interface between Canada and the U.S. i.e., the Gateway Economic Zone.	P. Boeckner will look into a high speed rail connection between Ontario and the United States.	Study Team

QUESTION/COMMENT	RESPONSE/RESOLUTION	ACTION
Important to look at United States initiatives as a marker for progress.	Comment noted.	
What does 26% represent?	It is an average and an indicator.	
Targets should be applied locally. If targets are not met then congestion falls on the road network. The EA process should address differences between municipalities.	The model breaks targets by upper tiers. The target of 26% (30%) is an average of all targets.	
If the average is assumed in the model, then it reduces the need for new roads where some areas cannot meet the target.	Even with those aggressive assumptions from Metrolinx, we are finding that there is a need for additional highway capacity. The government has a commitment to promote transit and this 26% is necessary.	
The NGTA modelling had a lower target than 26%?	Shift varies from region to region.	
<p>How has the RTP been taken into account into an extended study area? What infrastructure was used?</p> <p>Be careful how the RTP is used.</p> <p>The previous model run did not include infrastructure in Niagara.</p>	<p>GGH Model will be re-opened and run with alternatives.</p> <p>26% is modal output, 30% is the target.</p> <p>Hwy 406 extension and future plans may impact the need for a new roadway.</p>	
What is the current level of TDM in the study area?	TDM cannot be identified. 4% reduction from TDM is on top of what Metrolinx is forecasting.	

QUESTION/COMMENT	RESPONSE/RESOLUTION	ACTION
Does the modelling assume that the travel demand characteristics of today will be the same in 2031?	The model makes conservative assumptions for demographics.  Metrolinx considers 25 years as a goal. If it is 27 or 35 years, that is still okay. The goals should still be achieved regardless.	
What is radial service at HIA?	Similar to Union Station as a transit hub, HIA would be a hub potentially for Brantford, Burlington, Niagara, etc. Discussions will continue with Metrolinx.  Connecting western edges of both NGTA & GTA West study is a new initiative arising from stakeholder comments.	Study Team & Metrolinx
Growth Plan intends to create complete communities, therefore trips should reduce?	Trips will be the same, but the travel time will be reduced (this should be more explicit). Transit is also very disproportionate in the region and a large majority of trips are made via TTC.	
After Group #1 and #2, what is the deficiency?	Page 30 of the presentation addresses this.	
Where is the capacity need to justify these widenings? What are you measuring?	Volume to capacity (congestion today).	
What about local roads?	Without these Group #3 improvements in place, there will be a lot of local infiltration. Also, based on local TMPs being fully implemented.	
Did Metrolinx include GTA West / NGTA into modelling?	Leslie Woo, Metrolinx will have to check and respond to Haiqing Xu, Region of Halton.  There is no modelling for new infrastructure in GGHM.	Metrolinx

QUESTION/COMMENT	RESPONSE/RESOLUTION	ACTION
How did they treat the two EAs when developing the GGH model?	MTO to check.	Study Team
Not reflecting Hwy 406 in Group #3.	Comment noted.	
Statements were made that the current programmed QEW improvements were the limit.	Group #3 is conceptual and unconstrained, but there are serious limitations to implementing parts of Group #3.	
Why do some roads? not have HOV?	These are in the HOV plan.  Netherby interchange in Fort Erie to Welland EA is currently being undertaken (east-west).  People are headed toward Niagara Falls, goods are headed towards Fort Erie.	
Hamilton Bypass entails what roads?	RHVP, local roads.	
Hamilton is concerned when the province considers using local roads to accommodate provincial traffic.	The approach is to explore all options regardless of the constraints in order to see the impacts. The next step will consider constraints. Further discussion will take place in developing and evaluating the alternatives.  Christine Lee-Morrison to verify whether there is any allowance for additional lanes on the RHVP.	Study Team & City of Hamilton
How does GTA West and NGTA assume for each other in the modelling?	Both studies are in the same phase and jointly running models. No assumptions were made for either. Both studies will be moved forward in parallel.	
What is the timeframe for PIC #4?	The draft Transportation Demand Strategy (TDS) should be available in June 2010. The MEAG will meet prior to the TDS being available for review.	



QUESTION/COMMENT	RESPONSE/RESOLUTION	ACTION
Will there be an Alternatives Report for comment?	Content of PIC #3 will be included in an Alternatives Report which will be available in late February 2010.  Council's will need to comment before June ideally, but by June at the latest due to elections.	
When will a more detailed evaluation be available? Methodology?	Reasoned argument approach will be used. Evaluation will be focus of PIC #4, so it will be available before June 2010.	
Will the RHVP be considered as a new corridor?	GTA West used many local roads as a part of the widenings. RHVP will be considered a new corridor since the purpose of facility changes.	
Would NGTA be willing to meet with City of Hamilton, Public Works Committee before PIC #4?	Yes, the study team would like to meet with the committee closer to PIC #4 when new information is available. NGTA will also need to meet with technical staff.	Study Team & City of Hamilton
Mapping is helpful, NGTA should consider broad swaths.	PIC #4 will have mapping. Alternatives Report will not include mapping.	
Halton Region will arrange a committee meeting with the NGTA study team.	NGTA will meet with Halton Region committee(s).	Halton Region & Study Team

Location: Burlington Holiday Inn, Harvester North      Date: Friday May 7, 2010  
 Purpose: NGTA & GTA West RAAG Meeting      Time: 9:30 a.m. – 3:00 p.m.  
 Chair: P. Hudspith / N. Ahmed

Present: Project Team

Roger Ward, MTO  
 Joe Perrotta, MTO  
 Jin Wang, MTO  
 Frank Williams, MTO  
 Frank Pravitz, MTO  
 Glenn Pothier, GLPi  
 Neil Ahmed, MRC  
 Michael Chiu, MRC  
 Katherine Jim, MRC  
 Mike Bricks, BPE  
 Sandy Nairn, Ecoplans  
 Paul Hudspith, URS  
 Patrick Puccini, URS  
 Margie Gonzalez, URS  
 Jeff Lehman, MKI

Agencies

Paul Carey, CP  
 Sheryl, TRCA  
 Dan, MOE  
 Heidi, MTO  
 Julia, Metrolinx  
 Karen, MMAH  
 Robbie, Ontario Power Auth  
 Jennifer, CH  
 Mike, NEC  
 Eva, Tourism, Health, Citizenship  
 Sue Morrison, Tourism, Health,  
 Citizenship  
 Sondra, Ministry Economic  
 Development and Trade  
 Tracey, Ministry of Tourism &  
 Culture  
 Mag, Continental One  
 Mike, OGS

cc: Pat Boeckner, MTO  
 Terry Hilditch, MTO  
 George Ivanoff, MTO  
 Howard Anders, MTO  
 Will Mackenzie, MTO  
 Sam Di Felice, MTO  
 Leslie Currie, MTO  
 Sarah De Decker, MTO  
 Bill Denning, MTO  
 Robin Ashdown, MTO  
 Mark Darovny, MTO  
 Pat Griepsma, MTO  
 Teresa Marando, MTO  
 Elizabeth Pires, MTO  
 Chris Burke, MTO (Transit Policy)  
 Joseph Lai, MTO  
 Rob Tardiff, MTO  
 Chris Burke, MTO  
 Bill Denning, MTO (Transportation  
 Economics Office)

James Pettula, MTO (Goods  
 Movement Policy)  
 Tyler Drygas, URS  
 Leslie Leamen, URS  
 Ilya Sher, URS  
 Mike Delsey, AECOM  
 Kevin Jones, AECOM  
 Nadine Navarro, AECOM  
 Naveen Juvva, AECOM  
 Paula Neto, AECOM  
 Brent Gotts, MRC  
 Christine Spano, Ecoplans  
 Sally Leppard, Lura  
 Liz Nield, Lura  
 Jim Faught, LURA  
 Mike Lepage, RWDI  
 Steve Landau, MKI  
 Jim Dymont, Meridian Planning

**Items**    **Description**

**MORNING SESSION**

**NGTA Study**

1.        **STUDY BACKGROUND & PROCESS**

P. Hudspith provided a brief introduction on the study background and process being used by the study. Purpose of workshop: 1) presenting findings; and 2) discuss findings as they relate to current government policy. We measure success by ensuring that we follow a good process, consult along the way, and are passionate about doing great planning. Groups #1 and #2 were modeled and found to not be enough for 2031 and beyond. Roadway expansion is necessary – leading to Groups #3 and #4. Further assessment is still being conducted to determine the best recommendation.

2.        **TRANSPORTATION DEVELOPMENT STRATEGY**

*Optimize Existing Networks & Add / Expand Non-Road Infrastructure*

P. Puccini provided an overview of Groups #1 and #2 elements of the Transportation Development Strategy (TDS). These are the foundation of the TDS and the MTO is very committed to implementing these strategies and build on current initiatives such as *The RTP* and *GO 2020*. Some of these recommendations can be implemented right away. It is important to note that the study teams are providing limited detail on Groups #1 and #2 maps as there is still a lot of study that needs to be undertaken to determine the viability of these improvements.

Discussion:

- *Question from Metrolinx:* How did the team assess that Group 1 and 2 don't address the demand? What assumptions were made about the use of marine and rail?
- *Answer:* It was dealt with at a high level. We ran the GGHM and derived the demands on the transportation system. We assumed reductions of 4% on the network for Group #1. And a 10% reduction of inter-regional trucks shifting to rail/marine/air.
- *Question from OGS:* Slide 17 – Would the feasibility study be part of this study? And how would the findings impact this study?
- *Answer:* We will develop a framework for the feasibility study but it will be undertaken as part of the next stage of work and would not be factored into the results of this study.
- *Answer:* There were typos to the population and employment table that

**Items**    **Description**

are still in the handout.

- *Question from Tracey Ministry of Tourism & Culture:* Were there any projections for Niagara or connections to Niagara?
- *Answer:* As part of the feasibility study, we will look at how we can connect this web to Toronto and to Niagara Region? How do you tie them into the existing services outside of the study area?

3.    **ASSESSMENT FINDINGS & TRADE-OFFS**

*Widen / Improve Roads / New Transportation Corridors*

P. Hudspith introduced the assessment findings and trade-offs section. If any stakeholders want to discuss the findings in more detail, the study team is welcome to discussing offline. Transportation analysis was presented by P. Hudspith, environment analysis by S. Nairn, cost / constructability analysis by M. Chiu, and economy analysis by J. Lehman. Groups #3 (Alternative 3-1) and #4 (Alternative 4-2, 4-3, 4-4, and 4-5) were presented.

Transportation Analysis Key Findings:

- Trip containment and modal split is essentially retained through all alternatives.
- Groups #3 and #4 perform similarly in addressing deficiencies.
- New freeway alternatives do not fully eliminate the need for widenings and there is still severe congestion on existing facilities. A combination of widenings and new corridors will be necessary if the team proceeds with Group #4.
- New corridors provide network flexibility and reserve capacity.

Environment / Community Analysis Key Findings:

- Alternative 3-1 has high localized natural environmental impacts.
- Group #3 community impacts are high through built up areas (e.g. St. Catharines).
- Agricultural impacts at edge of tender fruit areas along QEW Niagara.
- Group #4 alternatives result in new crossings of the Niagara Escarpment, new Greenbelt impacts and high potential for species at risk impacts.
- Overall, the alternatives are relatively similar in terms of air quality and GHG's.
- Business and residential impacts of Group #4 approximately 50% lower than Group #3.
- Overall greater natural environment impacts with Group #4 alternatives

**Items**    **Description**

compared to Group #3 alternatives.

Cost / Constructability Analysis Key Findings:

- Alternative 3-1 results in significantly more complex constructability issues than Group#4.
- All alternatives are anticipated to have similar costs, with Group #4 anticipated to be slightly more costly.

Economic Analysis Key Findings:

- There is not a substantial difference between Group #3 and #4 from an economic perspective.
- Widenings may stimulate more employment in terms of transportation cost savings and industry impacts. Group #3 serves key employment nodes in Hamilton and Halton.
- Group #4 provides new corridor in Niagara, serving the south part of the region. As a redundancy route, it would likely need to be close enough to the QEW to divert traffic.

4.    **CONCLUDING REMARKS**

P. Hudspith summarizes the overall strategy. First priority is on Group #1 and #2. Additional roadway capacity is required and we are still exploring the best way to provide that capacity. Next steps are to refine Groups #1 and #2, finalize the assessment for Groups #3 and #4, and continue to meet with stakeholders to be in a position to finalize the TDS.

Discussion:

- *Metrolinx:* Did you look at road tolls and truck-only facilities?
- *Answer:* Have not looked at tolling as it is an implementation issue. We have examined truck-only facilities. The assessment is not complete at this point but it is being examined and modeled as part of this phase of work.
- *Ministry of Tourism and Culture:* Group #3 seems to have been identified as the optimum route; however, in high season the congestion is remarkable. How did you determine the job growth (32, 000) in Niagara in the modeling? And Group #3 is not conducive to the growth strategy in Niagara Region.
- *Answer:* We're bound by The Growth Plan and the Niagara growth conformity exercise. Job numbers (only full time jobs) are the Region's and the Province's. Updates have been within the last few months.
- *Ministry of Tourism and Culture:* Need to factor in seasonal employment,

**Items**    **Description**

as it would be much higher, otherwise you're not accurately reflecting the job growth in Niagara.

- *Ministry of Tourism and Culture:* How does routing align with US transportation infrastructure and facilities? Was it factored in the analysis?
- *Answer:* We're talking to them on a regular basis. No, talks have been conceptual but it wasn't factored into the analysis.
- *Ministry of Economic Development and Trade:* Last point on page 66 of handout – Does not divert enough traffic. Comes back to the importance of other modes to divert traffic from the QEW. More emphasis on those different alternatives.
- *Ministry of Tourism and Culture:* There are some proposed large scale investments that may have not been factored in Niagara, such as the Nasqar track, Peace Bridge expansion, etc.
- *Ministry Economic Development and Trade:* Do not understand the importance of activities below and above the escarpment. The value of lands below the escarpment isn't reflected in the analysis. Also implications of peak oil. Think outside the box.
- *Metrolinx:* Be cautious about messaging and Metrolinx would like to work with the team regarding messaging. Metrolinx would hate to see the road component leap frog the non-road components. Message to decision makers that this is a package, road components rely on other initiatives being in place, such as transit and rail initiatives.
- *OGS:* Where is the cost / constructability analysis reflected in the overall summary?
- *Answer:* It's included as part of the transportation grouping.
- *OGS:* Does it include maintenance?
- *Answer:* No, just initial construction costs.

**LUNCH BREAK (12:00-1:00 p.m.)**

**AFTERNOON SESSION**

**GTA West Study**

***Meeting adjourned at 3:00p.m.***

*The foregoing represents the writer's understanding of the major items of discussion and the decisions reached and/or future actions required. If the above does not accurately represent the understanding of all parties attending, please notify the undersigned within 48 hours of receiving these minutes at 905-882-4401.*

Submitted by: M. Gonzalez (URS) / K. Jim (MRC)

Distribution: Study Team and RAAG

Meeting: Niagara Region

Location: Niagara Regional Headquarters 2201 St. David's Road, Thorold, Ontario - Room CE307      Date: Monday May 10<sup>th</sup>, 2010

Purpose: Assessment of Alternatives      Time: 8:30 A.M. – 10:30 A.M.

Present: **NGTA Study Team**

Frank Williams, MTO	Tyler Drygas, URS
Paul Hudspith, URS	Kevin Jones, AECOM
Patrick Puccini, URS	

**Region of Niagara Representatives**

Patrick Robson	Kumar Rajuan
Eric Flora	Peter Colosimo

<b><u>Items</u></b>	<b><u>Description</u></b>	<b><u>Action by:</u></b>
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1/2      **Introductions and Objectives of the Meeting**

Attendees introduced themselves and F. Williams provided a meeting overview and thanked the attendees for coming to the meeting.

F. Williams noted that the purpose of the meeting was to provide a status update on the work recently completed for the NGTA study and to gain Niagara Region's perspectives with regard to the Group #1, and Group #2 alternatives which focus on optimizing existing transportation networks and expanding or providing new non-roadway infrastructure. In addition, the study team is seeking feedback on the assessment of the Group #3 (widening existing highways) and Group #4 (new transportation corridor) alternatives.

3      **Group #1 and Group #2 Overview**

P. Puccini presented an overview of the Group #1 and Group #2 concepts which the study team is planning to incorporate into the Transportation Development Strategy (TDS). These include:

- Bus bypass shoulders;
- Improved congestion/incident management;
- Ramp metering;
- HOV/Transit bypass lanes;
- Speed harmonization; and,
- Support for Metrolinx and Smart Commute in expanding TDM programs.

The following summarizes the key discussion points:



<u>Items</u>	<u>Description</u>	<u>Action by:</u>
	<ul style="list-style-type: none"> <li>The Region noted that they have received Council approval for their TDM framework. It is expected that elements of this framework will also be adopted into the municipal official plans of the lower tier municipalities.</li> </ul>	
	<ul style="list-style-type: none"> <li>Expansion of the COMPASS system should involve extending it through St. Catharines along the QEW to the Niagara border crossings, and along Highway 406 to Welland.</li> </ul>	URS
	<ul style="list-style-type: none"> <li>The Region is planning to undertake infrastructure improvements at the Niagara District Airport. They have committed funding of \$11.6 million and are in the process of confirming governance.</li> </ul>	
	<ul style="list-style-type: none"> <li>The Niagara District Airport should be shown on the slide that illustrates the Group #2 alternatives.</li> </ul>	URS
	<ul style="list-style-type: none"> <li>Niagara Region would be interested in an expansion of the Smart Commute program to Niagara.</li> </ul>	
	<ul style="list-style-type: none"> <li>The study team should maximize the application of the Group #1 and Group #2 concepts in Niagara Region.</li> </ul>	URS
	<ul style="list-style-type: none"> <li>Niagara is supportive of GO Transit expansion, and is reviewing inter-municipal transit service between St. Catharines, Welland and Niagara Falls.</li> </ul>	URS
	<ul style="list-style-type: none"> <li>The future potential for a high-speed rail line extending from Buffalo should be acknowledged as part of Group #2.</li> </ul>	

**4 Assessment of Group #3 and Group #4 Alternatives**

P. Hudspith presented an overview of the assessment of the Group #3 and Group #4 alternatives based on the Environment, Community, Economy and Transportation considerations. The following summarizes the key discussion points:

- The Region is currently undertaking two EAs that may be relevant. One is for a new interchange on Highway 406 between Fourth Avenue and Third Street Louth in St. Catharines. The second is for a new east-west arterial in south Niagara between Highway 406 and QEW.
- In the graphic of Alternative 3-1, the widening of QEW should be shown as extending to East Main Street in Welland. URS
- The two crossings of the Niagara Escarpment associated with Alternative 4-5 will result in a major constructability issue (an Escarpment crossing in West Lincoln was previously studied by Niagara Region).
- The Region noted that their South Niagara Strategy aligns well with Alternative 4-5, and asked whether the study team has considered a link between Highway 406 and QEW that connects

<u>Items</u>	<u>Description</u>	<u>Action by:</u>
	<p>to QEW in the vicinity of Highway 420?  <i>Study Team Response: It was noted that a connection at Lion’s Creek just south of Highway 420 has been considered, and would attract significant demand.</i></p>	
	<ul style="list-style-type: none"> <li>▪ The Region noted that increased focus in the future on the Niagara Gateway Economic Centre would further improve the utilization of a Highway 406/QEW link in south Niagara.</li> <li>▪ With regard to the alternatives that feature an end-to-end new corridor through Niagara Region (e.g. Alternative 4-2, 4-3 and 4-4) the degree of support for local economic development will be contingent on the level of access provided to the new facility and the types of economic development that it would service.</li> </ul>	
	<ul style="list-style-type: none"> <li>▪ When referring to the crossing of the Niagara Escarpment in the Grimsby area, this area should be referred to as West Niagara or West Lincoln.</li> </ul>	URS
	<ul style="list-style-type: none"> <li>▪ The Region noted that the objectives of the Growth Plan in terms of connecting Urban Growth Centres versus providing compact and complete communities are at odds with each other to some extent.</li> </ul>	
	<ul style="list-style-type: none"> <li>▪ The Region inquired as to whether the province is considering a cross-lake bridge.  <i>Study Team Response: It was noted that a cross-lake bridge has been considered, but that the varied origins and destinations within the study area would limit its utilization.</i></li> </ul>	
	<ul style="list-style-type: none"> <li>▪ The Region noted that Alternative 3-1 appears to be an “all or nothing” alternative, whereas the Group #4 alternatives with reduced widening requirements would provide flexibility in terms staging and sequencing.</li> </ul>	
	<ul style="list-style-type: none"> <li>▪ The Region inquired as to the location of the PIC #4 venue in Niagara.  <i>Study Team Response: The study team noted that the Royal Canadian Legion in Welland has historically been very well attended, so the plan is to hold the Niagara PIC at this venue.</i></li> </ul>	
	<ul style="list-style-type: none"> <li>▪ The Region noted that they are currently in the process of developing corridors for the east-west arterial between Highway 406 and QEW and will be presenting these at an upcoming PIC on May 20<sup>th</sup>, and will circulate a copy of the PIC material to the study team.</li> </ul>	Niagara Region
	<ul style="list-style-type: none"> <li>▪ The Region noted that Port Colborne is viewed as an important trade port in the Growth Plan.</li> </ul>	
	<ul style="list-style-type: none"> <li>▪ The Region would be supportive of the component of Alternative 4-5 between Highway 406 and QEW. With regard to an end-to-end corridor, there would be benefit to keeping this option open in the long term, potentially combined with a future high-speed rail</li> </ul>	

<u>Items</u>	<u>Description</u>	<u>Action by:</u>
	<p>corridor.</p> <ul style="list-style-type: none"> <li>▪ Further widening of QEW through St. Catharines beyond 6 lanes would be a significant concern.</li> <li>▪ The Region inquired as to the whether RR20 was still being considered as a widening option. <i>Study Team Response: The study team noted that the RR 20 option was screened out given that the conversion to a controlled access freeway would require the facility to be on a new alignment (which is addressed under Alternative 4-2).</i></li> <li>▪ The Region noted that the City of Niagara Falls is currently in the process of developing a tourism model, which may be of benefit to this study.</li> </ul>	
5	<p><b><u>Next Steps</u></b></p> <p>The next steps for the study include:</p> <ul style="list-style-type: none"> <li>▪ Consultation with municipalities and regulatory agencies</li> <li>▪ PICs in late June to present the Draft Transportation Development Strategy (TDS)</li> <li>▪ Revisions to the TDS based on stakeholder input received</li> <li>▪ Finalize and document the TDS by the end of 2010</li> <li>▪ Implementing and monitoring the TDS</li> </ul>	
6	<p><b><u>Other Business</u></b></p> <p>The study team will circulate a digital copy of the presentation material for this meeting to all attendees.</p> <p style="text-align: center;"><b><u>Meeting adjourned at 10:30 a.m.</u></b></p>	

Meeting: City of Hamilton

Location: Hamilton City Centre, 77 James Street North, Room 400 E      Date: Monday May 10<sup>th</sup>, 2010

Purpose: Assessment of Group 3 and 4 Alternatives      Time: 1:30 P.M. – 3:30 P.M.

Present: **NGTA Study Team**

Roger Ward, MTO	Patrick Puccini, URS
Frank Williams, MTO	Tyler Drygas, URS
Paul Hudspith, URS	

**City of Hamilton**

Christine Lee-Morrison	Gary Kirchknopf
Alison Bochsler	Sylvia Renshaw
Ric Martins	Raymond Lee
Alan Kirkpatrick	

**Items      Description      Action by:**

1/2      **Introductions and Objectives of the Meeting**

Attendees introduced themselves and R. Ward provided a meeting overview and thanked the attendees for coming to the meeting.

R. Ward noted that the purpose of the meeting was to provide a status update on the work recently completed for the NGTA study and to gain the City’s perspectives with regard to the Group #1, and Group #2 alternatives, which focus on optimizing existing transportation networks and expanding or providing new non-roadway infrastructure. In addition, the study team is seeking feedback on the assessment of the Group #3 (widening existing highways) and Group #4 (new transportation corridor) alternatives.

3      **Group #1 and Group #2 Overview**

P. Puccini presented an overview of the Group #1 and Group #2 concepts, which the study team is planning to incorporate into the draft Transportation Development Strategy (TDS). These include:

- Bus bypass shoulders;
- Improved congestion/incident management;
- Ramp metering;
- HOV/Transit bypass lanes;
- Speed harmonization; and,
- Support for Metrolinx and Smart Commute in expanding TDM

<u>Items</u>	<u>Description</u>	<u>Action by:</u>
	<p>programs.</p> <p>The following summarizes the key discussion points:</p> <ul style="list-style-type: none"> <li>▪ The City asked what the intent would be for policies to support municipal transit and whether it would be focused on funding. It was noted that policy support may relate to funding, but may also relate to ways of improving the integration between transit services.</li> <li>▪ The City offered to provide the study team with a contact from the Hamilton Gateway study team (McMaster University). <i>(Subsequent to the meeting, A. Kirkpatrick provided contact information for Dr. Pavlos Kanaroglou)</i></li> <li>▪ The City asked what service providers would be involved in the Hamilton-focused inter-regional transit service that is proposed as part of Group #2. It was noted that this and other logistical issues have not yet been determined, but would be further considered subsequent to this phase of the study.</li> </ul>	
4	<p><b><u>Assessment of Group #3 and Group #4 Alternatives</u></b></p> <p>P. Hudspith presented an overview of the assessment of the Group #3 and Group #4 alternatives based on the Environment, Community, Economy and Transportation considerations. The following summarizes the key discussion points:</p> <ul style="list-style-type: none"> <li>▪ Consideration should be given to private sector scheduling for trucks as a potential Group #1 concept. This would involve prohibiting trucks from using certain facilities during certain timeframes.</li> <li>▪ Has the study team has considered potential groundwater effects? <i>Study Team Response: Potential groundwater impacts have been examined at a broad level and focused on groundwater recharge and discharge areas, as well as source water and wellhead protection areas.</i></li> <li>▪ In considering the impacts to the Niagara Escarpment associated with Group #4, has consideration been given to the impacts of the associated highway widenings where they cross the Niagara Escarpment as well as new corridor crossings? <i>Study Team Response: It was noted that impacts to existing crossings of the Niagara Escarpment have been considered for both the Group #3 and Group #4 alternatives as appropriate.</i></li> <li>▪ Has the study team considered the effects of alternatives on the viability of farming operations? <i>Study Team Response: The study team has considered impacts to agricultural lands and operations in the assessment, however</i></li> </ul>	Study Team

<u>Items</u>	<u>Description</u>	<u>Action by:</u>
	<p>for new transportation corridor alternatives, specific areas/impacts have not been identified, as a specific route has not been identified.</p>	
	<ul style="list-style-type: none"> <li>How were noise impacts incorporated into the assessment? <i>Study Team Response: The study team identified the number of potential receptors anticipated to be affected by each alternative, but did not undertake modelling of noise impacts, as there is not a specific route for any of the Group #4 alternatives.</i></li> </ul>	
	<ul style="list-style-type: none"> <li>Were airborne contaminant impacts on agricultural areas considered in the assessment? <i>Study Team Response: The air quality assessment looked at local and regional air quality impacts as well as GHG emissions associated with the Group #3 and #4 alternatives. Issues related to site specific impacts would be considered during subsequent stages of the study when more detailed information is available.</i></li> </ul>	
	<ul style="list-style-type: none"> <li>Was consideration given to a marine crossing of Lake Ontario as an alternative to a new corridor or widening of existing highways? <i>Study Team Response: This was considered during the previous stage when the study team developed a long list of alternatives for each group. The concept was not carried forward on the basis of the vast origins and destinations of travellers from Niagara to the GTA and vice versa.</i></li> </ul>	
	<ul style="list-style-type: none"> <li>Has tolling been considered in the study? <i>Study Team Response: No, this is considered to be an implementation issue and is not consistent with the government's current policy context.</i></li> </ul>	
	<ul style="list-style-type: none"> <li>Has consideration been given to a truckway, potentially connecting to Highway 401? <i>Study Team Response: The study team has modelled a truckway alternative in conjunction with the GTA West study, and is in the process of reviewing the results.</i></li> </ul>	
	<ul style="list-style-type: none"> <li>Why are the costs for Group #3 and Group #4 similar if Group #4 involves constructing a new corridor in a "greenfield" area? <i>Study Team Response: The cost for Group #4 also includes the costs for the associated highway widenings.</i></li> </ul>	
	<ul style="list-style-type: none"> <li>Will the alternatives be evaluated on the basis of all of the assessment criteria described in the NGTA EA Terms of Reference (ToR)? <i>Study Team Response: Yes, detailed assessment tables will be available for stakeholder review at the PICs, and will be incorporated into the study documentation after the PICs.</i></li> </ul>	Study Team
	<ul style="list-style-type: none"> <li>The City noted concerns regarding fragmenting communities with the Group #4 alternatives. <i>Study Team Response: The study team noted that opportunities to avoid built up communities as well as measures to mitigate any</i></li> </ul>	

<u>Items</u>	<u>Description</u>	<u>Action by:</u>
	<p><i>potential effects on community cohesions would be addressed at subsequent study stages (i.e. route planning).</i></p> <ul style="list-style-type: none"> <li>▪ The City noted that they would have concerns with a recommendation involving construction of a new highway corridor in the Hamilton area in conjunction with widening of Highway 403 through Hamilton.</li> <li>▪ The City noted that a new corridor south of Hamilton may provide some support for the Airport Employment Growth District (AEGD), but that this corridor would likely be too far south. The City will be developing a Transportation Masterplan to ensure that there is adequate infrastructure to support this area.</li> <li>▪ The City noted that if congestion pricing is implemented on other facilities in the future, this could help to address future congestion issues by making Highway 407 a more attractive option.</li> <li>▪ The City noted that they may wish to have the study team present the draft Transportation Development Strategy to their Council during the upcoming round of consultation. The City will advise whether it is possible to include our study on the agenda of an upcoming Council meeting.</li> </ul>	<p>City of Hamilton</p>
5	<p><b><u>Next Steps</u></b></p> <p>The next steps for the study include:</p> <ul style="list-style-type: none"> <li>▪ Consultation with municipalities and regulatory agencies</li> <li>▪ PICs in late June to present the Draft Transportation Development Strategy (TDS)</li> <li>▪ Revisions to the TDS based on stakeholder input received</li> <li>▪ Finalize and document the TDS by the end of 2010</li> <li>▪ Implementation and monitoring of the TDS</li> </ul>	
6	<p><b><u>Other Business</u></b></p> <p>The study team will circulate a digital copy of the presentation material for this meeting to all attendees.</p>	
<p><b><u>Meeting adjourned at 3:30 p.m.</u></b></p>		

Meeting: Region of Halton

Location: Halton Region Offices, 1151 Bronte Road, Nelson Room      Date: Friday May 14<sup>th</sup>, 2010

Purpose: Assessment of Group 3 and 4 Alternatives      Time: 1:00 P.M. – 3:30 P.M.

Present: **NGTA Study Team**

Roger Ward, MTO	Mike Delsey, AECOM
Frank Williams, MTO	Patrick Puccini, URS
Paul Hudspith, URS	Sandy Nairn, Ecoplans

**Halton Region Representatives**

Maureen Van Ravens, Halton Region	Tom Eichenbaum, City of Burlington
Andrew Head, Halton Region	Paul Smithson, City of Burlington
Haiqing Xu, Halton Region	Neil Bryson, NGTA Community Advisory Group
David Lukezic, Halton Region	

<b><u>Items</u></b>	<b><u>Description</u></b>	<b><u>Action by:</u></b>
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1/2      **Introductions and Objectives of the Meeting**

Attendees introduced themselves and R. Ward provided a meeting overview and thanked the attendees for coming to the meeting.

R. Ward noted that the purpose of the meeting was to provide a status update on the work recently completed for the NGTA study and to gain the Region’s perspectives with regard to the Group #1, and Group #2 alternatives, which focus on optimizing existing transportation networks and expanding or providing new non-roadway infrastructure. In addition, the study team is seeking feedback on the assessment of the Group #3 (widening existing highways) and Group #4 (new transportation corridor) alternatives.

3      **Group #1 and Group #2 Overview**

P. Puccini presented an overview of the Group #1 and Group #2 concepts, which the study team is planning to incorporate into the draft Transportation Development Strategy (TDS). These include:

- Bus bypass shoulders;
- Improved congestion/incident management;
- Ramp metering;
- HOV/Transit bypass lanes;
- Speed harmonization; and,
- Support for Metrolinx and Smart Commute in expanding TDM



<u>Items</u>	<u>Description</u>	<u>Action by:</u>
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programs.

The following summarizes the key discussion points:

- T. Eichenbaum noted that expedited emergency response procedures are a key issue.
- T. Eichenbaum reiterated the City’s support for the building block process that has been utilized by the study team to develop the alternatives.
- N. Bryson noted that there was a speaker at one of the CAG meetings from the Niagara International Transportation Technology Coalition (NITTEC) that provided a presentation about the role and responsibilities of NITTEC. NITTEC physically manages traffic across the border, and meets once a month to discuss border related issues.

4 **Assessment of Group #3 and Group #4 Alternatives**

P. Hudspith presented an overview of the assessment of the Group #3 and Group #4 alternatives based on the Environment, Community, Economy and Transportation considerations. The following summarizes the key discussion points:

- Has a decision been made as to where a potential new corridor would connect to QEW in the Niagara area?  
*Study Team Response: No decisions have been made as the study team is still looking at new corridors from a broader perspective.*
- All of the new corridor alternatives encroach on Greenbelt lands in the Niagara/Hamilton area. To address this, it was suggested that consideration be given to expanding the study area to include Haldimand County.  
*Study Team Response: The study team agreed to consider this, but noted that based on the traffic analysis completed to date, the utilization of the new corridor is significantly influenced by its proximity to the QEW.*
- Will the provision of additional roadway capacity in the form of widened highways and potentially new corridors reduce the transit mode split in the study area?  
*Study Team Response: None of the alternatives result in a significant decrease in transit mode split.*
- Does the transportation model that is being used (the Greater Golden Horseshoe model) differentiate between goods movement and passenger vehicle movement, and does it account for tolls on Highway 407.  
*Study Team Response: Yes, the model considers trucks and passenger vehicles separately, and has accounted for tolls on*

<u>Items</u>	<u>Description</u>	<u>Action by:</u>
	<p>Highway 407.</p>	
	<ul style="list-style-type: none"> <li>How have the alternatives from the GTA West study been incorporated into this study?  <i>Study Team Response: Both studies are proceeding in parallel and are informing one another. Both study teams have undertaken combined model runs that reflect either Group #3 or Group #4 in the other study area. This analysis has demonstrated that the two study areas are relatively independent. With regard to the widening of Highway 401, this is more heavily influenced by the GTA West alternatives than by the NGTA alternatives.</i> </li> </ul>	
	<ul style="list-style-type: none"> <li>Has tolling been considered for other existing highways aside from Highway 407 or for the new corridor alternatives?  <i>Study Team Response: No, this is considered to be an implementation issue and is not consistent with the government's current policy context.</i> </li> </ul>	
	<ul style="list-style-type: none"> <li>It was suggested that any recommendations involving new corridors should be characterized as mixed use corridors that could potentially incorporate a future high speed rail corridor.</li> </ul>	Study Team
	<ul style="list-style-type: none"> <li>How was the GGH model calibrated for the areas not included in the Transportation Tomorrow Survey?  <i>Study Team Response: It is our understanding that additional surveys were undertaken by the team that developed the GGH model.</i> </li> </ul>	
	<ul style="list-style-type: none"> <li>Is it possible that the recommendations of this study could undermine the Regional Transportation Plan?  <i>Study Team Response: No, the government is committed to the building block approach, which recommends optimization of our existing infrastructure, and a focus on increasing transit ridership as the first steps - ahead of providing additional roadway capacity.</i> </li> </ul>	
	<ul style="list-style-type: none"> <li>With regard to the Group #4 alternatives, the study team should acknowledge that there will be impacts to agricultural lands, as opposed to a potential for impacts.  <i>Study Team Response: Agreed. In general, the impacts associated with new corridors are described as potential impacts as there is not a particular route upon which to assess impacts, but it is acknowledged that new corridors will result in some level of impacts to agricultural lands.</i> </li> </ul>	Study Team
	<ul style="list-style-type: none"> <li>It was noted that a new corridor will result in pressure on municipal urban boundaries.  <i>Study Team Response: The comment was acknowledged, but it was suggested that the Greenbelt Plan would help to mitigate this in many areas.</i> </li> </ul>	
	<ul style="list-style-type: none"> <li>A more detailed breakdown of the cost estimates was requested.  <i>Study Team Response: It was noted that more detailed</i> </li> </ul>	

<u>Items</u>	<u>Description</u>	<u>Action by:</u>
	<p><i>information on all elements of the assessment of the alternatives will be documented in the Needs Assessment Report to be prepared subsequent to PIC #4.</i></p>	
	<ul style="list-style-type: none"> <li>Will the Transportation Development Strategy (TDS) be more refined than the information that is being presented at this meeting? <i>Study Team Response: Yes, to an extent, but the recommendations of the TDS will still be high level.</i></li> </ul>	
	<ul style="list-style-type: none"> <li>Burlington staff noted that inclusion of Alternative 4-4 (which provides a new corridor connecting to Highway 407 in the Burlington area) will be a non-starter for Burlington Council and COPE.</li> </ul>	
	<ul style="list-style-type: none"> <li>Is this study being coordinated with the Ontario-Quebec Continental Gateway study? <i>Study Team Response: Yes, members of our study team are involved and are coordinating with members of the Ontario-Quebec Continental Gateway study team.</i></li> </ul>	
	<ul style="list-style-type: none"> <li>There are currently significant freight rail and passenger rail conflicts in the Burlington area, which affect the passenger rail service that is provided by GO Transit.</li> </ul>	
	<ul style="list-style-type: none"> <li>Will the Transportation Development Strategy carry forward a number of roadway alternatives or are we trying to identify the preferred roadway alternative? <i>Study Team Response: The intent is to identify the best combination of the Group #3 and Group #4 alternatives.</i></li> </ul>	
	<ul style="list-style-type: none"> <li>The study team has heard that the Region has concerns in terms of the viability of meeting the requirements of the Growth Plan and the objectives of the Regional Transportation Plan. At the same time it is understood that the provision of a new transportation corridor to address future congestion issues is not supported by the Region.</li> </ul>	
	<ul style="list-style-type: none"> <li>There was a brief discussion about the upcoming presentation to the Halton Transportation Advisory Committee on May 25, 2010. It was agreed that the focus of the presentation should be on the recent work that has been undertaken to identify the Group #1 and Group #2 recommended strategies and to assess the Group #3 and Group #4 alternatives, and that a brief update on the Alternatives Report will be sufficient.</li> </ul>	Study Team
	<ul style="list-style-type: none"> <li>The Region will forward a copy of the comments provided by their peer review team on the NGTA Alternatives Report.</li> </ul>	Halton Region
	<p><b>Post Meeting Note:</b> Subsequent to the meeting, T. Eichenbaum contacted the study team to further emphasize the City's perspective on the study. He noted the following in an email dated June 1, 2010:</p>	
	<ul style="list-style-type: none"> <li>None of the alternative Corridor areas between the Welland area</li> </ul>	

<u>Items</u>	<u>Description</u>	<u>Action by:</u>
	<p>and Hamilton extended into the Haldimand County area. As such, the corridors run longitudinally in the Green Belt area. This is going to pose a significant issue in our opinion as it is a general goal to try and minimize highway and major infrastructure encroachments into the Greenbelt area.</p> <ul style="list-style-type: none"> <li>▪ The connectivity of the NGTA and GTA West continues to be a major aspect in our view that is being underestimated and not adequately addressed by the Province.</li> <li>▪ Alternative Corridor 4-4 will generate almost unanimous opposition from Burlington Council and from the community given the need for a new escarpment crossing and encroachment into Burlington’s rural area.</li> <li>▪ We agreed fully with the comment that any new corridor should plan to accommodate freight rail corridor opportunities and a potential high speed commuter rail on the Corridor.</li> </ul>	
5	<p><b><u>Next Steps</u></b></p> <p>The next steps for the study include:</p> <ul style="list-style-type: none"> <li>▪ Consultation with municipalities and regulatory agencies</li> <li>▪ PICs in late June to present the Draft Transportation Development Strategy (TDS)</li> <li>▪ Revisions to the TDS based on stakeholder input received</li> <li>▪ Finalize and document the TDS by the end of 2010</li> <li>▪ Implementation and monitoring of the TDS</li> </ul>	
6	<p><b><u>Other Business</u></b></p> <p>The study team will circulate a digital copy of the presentation material for this meeting to all attendees.</p>	
<p><b><u>Meeting adjourned at 3:30 p.m.</u></b></p>		

The Niagara to GTA Corridor Municipal Executive Advisory Group (MEAG) met on June 14, 2010 at the Casablanca Winery Inn, Vintages Room from 1:00 p.m. to 3:30 p.m.

The following individuals attended the meeting:

Ron Glenn	Director – Planning Services and Chief Planning Official, Halton Region
Maureen Van Ravens	Manager – Transportation Planning and Roads Operations, Halton Region
Alan Kirkpatrick	Acting Manager – Strategic Planning, City of Hamilton
Neil Everson	Director – Planning and Economic Development Department, City of Hamilton
Lisa Salsberg	Manager – Strategic Policy and Systems Planning, Metrolinx
Patricia Boeckner	Director – MTO Transportation Planning Branch
Joe Perrotta	Manager – MTO Provincial Planning Office
Roger Ward	NGTA PM Board – MTO Provincial Planning Office
Frank Williams	NGTA PM Board – MTO Provincial Planning Office
Patrick Puccini	NGTA PM Board – URS Canada

### **PURPOSE OF THE MEETING**

The purpose of the meeting was to provide a brief summary of the information to be presented at the fourth round of Public Information Centres in June 2010, including:

- Study background and process;
- Overview of Group #1 (Optimize Existing Networks) and Group #2 (New/Improved Non-Roadway Infrastructure) alternatives ;
- Assessment of Group #3 (Widen Existing Highways) and Group #4 (New Transportation Corridors) alternatives;
- The draft Transportation Development Strategy;
- Public Information Centre #4; and,
- Next steps.

**SUMMARY OF DISCUSSION AND ACTION ITEMS:**

The following summarizes the key issues and actions:

QUESTION/COMMENT	RESPONSE/RESOLUTION
<p>What is the difference between the Group #1 and Group #2 alternatives?</p>	<p>The Group #1 alternatives are focused on techniques that optimize the existing transportation network and make best use of the existing infrastructure, whereas the Group #2 alternatives may include the provision of new non-roadway infrastructure.</p>
<p>What is the scope of the Hamilton-focused inter-regional transit service concept?</p>	<p>It is envisioned that this would be an inter-regional transit service (bus or rail) that would focus on the City of Hamilton from a scheduling perspective and serve commuters working in Hamilton and living in the outlying areas. The recommendation of this study is to initiate a feasibility study to look at potential ridership volumes, type of service, etc.</p>
<p>What does the study team mean by a “multi-use” corridor?</p>	<p>The new corridor elements of the draft Transportation Development Strategy are envisioned as multi-use corridors, which in addition to providing roadway service, could also support other services, e.g. high speed rail, transit, utilities, etc.</p>
<p>What happens if the transit mode splits that are envisioned by Metrolinx are not realized?</p>	<p>The study team has assumed that all of the transit recommendations embodied in the Metrolinx Regional Transportation Plan (RTP) will be in place by 2031 and that the shift to transit that is envisioned by Metrolinx based on the provision of greater travel choice together with the population and employment intensification envisioned in the Growth Plan will occur.</p>

<p>The Region of Halton noted a concern that the roadway components of the draft Transportation Development Strategy may not be sufficient if the transit mode split assumed in the RTP is not realized.</p> <p>It was further noted that the Region has endorsed a transit mode split of 20% in their Official Plan, but recognize that this may not fully materialize.</p>	<p>Comments noted.</p>
<p>How is this study linked to the GTA West study?</p>	<p>Both studies are proceeding in parallel and are integrated from both an MTO and consultant perspective. While the two study teams are distinct, several of the technical specialists are involved in both studies, and regular coordination meetings are held.</p>
<p>What assumptions have been made with regard to regional infrastructure, given that some of the new corridor alternatives may result in travel patterns that require improvements to regional facilities?</p>	<p>All of the planned improvements in each of the municipal transportation master plans have been assumed as part of the base roadway network in the modelling and forecasting that has been undertaken.</p> <p>While the focus of the draft Transportation Development Strategy is on improving inter-regional facilities, one of the measures of effectiveness in comparing widening and new corridor alternatives has been the ability to reduce the number of inter-regional trips on regional facilities.</p>
<p>Is the government still committed to the RTP, or is it possible that the roadway recommendations of this study may proceed ahead of some of the RTP recommendations?</p>	<p>The government is committed to the RTP, and in general, the intent will be for the optimization and non-roadway recommendations in the draft Transportation Development Strategy to happen first. The roadway widening and new corridor elements are envisioned as being implemented in the longer term.</p>
<p>It was noted that a key to encouraging a modal shift to transit will be to make it as affordable, reliable and convenient as the automobile.</p>	<p>Agreed.</p>

<p>The City of Hamilton noted that a widening of Highway 403 to 10 lanes (as would be required without a new corridor in the western portion of the study area) is not likely practical or feasible. It was suggested that the messaging be strengthened to be clear that expansion of Highway 403 is not included in the draft Transportation Development Strategy.</p>	<p>Agreed.</p>
<p>Metrolinx noted that they have identified their top 15 initiatives, and will be looking at prioritizing these initiatives as part of the development of their 10 year capital plan.</p> <p>It was also noted that Metrolinx is in the process of prioritizing all GO Transit investments, and that the GO Lakeshore West corridor into Halton is a top priority.</p> <p>It was agreed that these initiatives should be a key aspect of the material presented at the PIC.</p> <p><i>(Subsequent to the meeting, arrangements were made for representatives from Metrolinx to attend and participate in each of the PICs).</i></p>	<p>Comments noted.</p>
<p>What transportation conditions are anticipated in the future if the draft Transportation Development Strategy is fully implemented?</p>	<p>Based on full implementation of the draft Transportation Development Strategy in combination with other initiatives (e.g. the RTP, GO 2020 Strategic Plan, etc.), it is anticipated that future congestion levels will be similar to what we experience today.</p>



<p>The City of Hamilton noted that a new corridor between Highway 403 and Highway 407 may support the Airport Employment Growth District. It was also noted that improved access to the Port of Hamilton is an important component of the draft Transportation Development Strategy.</p> <p>The City noted that they are looking at strategies to improve the existing conditions in the port area, such as relocating some of the slag piles, which is anticipated to significantly reduce the number of trucks on Burlington Street.</p>	<p>Comments noted.</p>
<p>It was suggested that the draft Transportation Development Strategy for the GTA West study be integrated on a display board with the NGTA strategy and presented at the PICs.</p>	<p>Agreed.</p>
<p>With regard to next steps, it was noted that a Needs Assessment Report will be prepared after the PICs to summarize the entire study. It is anticipated that a draft Needs Assessment Report will be completed in Fall 2010, and the final strategy will be available for stakeholder review in late 2010.</p> <p>The Region of Halton noted that their last Council meeting before the municipal elections is scheduled for September 15, 2010.</p> <p>The City of Hamilton noted that there will not be an opportunity to present the strategy to their Council until early January 2011.</p>	<p>Comments noted. The study team will review the schedule based on these key dates.</p>

Meeting: Region of Halton

Location: Halton Region Offices, 1151 Bronte Road, Nelson Room      Date: Wednesday July 21<sup>st</sup>, 2010

Purpose: Draft Transportation Development Strategy      Time: 1:00 P.M. – 3:00 P.M.

Present: **NGTA Study Team**  
 Roger Ward, MTO  
 Frank Williams, MTO  
 Patrick Puccini, URS

**Halton Region Representatives**  
 Tim Dennis, Halton Region      Tom Eichenbaum, City of Burlington  
 Maureen Van Ravens, Halton Region      Bruce Zvaniga, City of Burlington  
 Andrew Head, Halton Region  
 David Lukezic, Halton Region

**Items      Description      Action by:**

**1      Introductions and Opening Remarks**

Attendees introduced themselves and R. Ward provided a meeting overview and thanked the attendees for coming to the meeting.

R. Ward noted that the purpose of the meeting was to provide an overview of the draft Transportation Development Strategy and to discuss the Region’s and the City of Burlington’s comments on the draft strategy.

**2/4      Review of Transportation Development Strategy**

P. Puccini reviewed the presentation slide deck that was used for the fourth round of Public Information Centres to provide an overview of the draft Transportation Development Strategy (TDS). In addition, attendees were provided with a copy of the PIC handout package and brochure, as well as the detailed assessment tables for the Group #3 and Group #4 alternatives that were available at the technical resource table at the PIC.

Attendees were encouraged to ask questions during the presentation. The following summarizes the key discussion points:

- T. Eichenbaum noted that the representatives from the Town of Milton may be interested in attending future meetings. Halton staff to confirm with Milton staff in advance of future meetings. Halton
- The Region asked whether the inclusion of the Metrolinx RTP and GO 2020 strategic plan in the Base Case for the GGH Model

<u>Items</u>	<u>Description</u>	<u>Action by:</u>
	<p>reflects the Ministry’s position.</p> <p><i>Study Team Response: The Ministry is supportive of the recommendations of the Metrolinx RTP and GO 2020 Strategic Plan, and has assumed that these improvements will be in place by 2031.</i></p>	
	<ul style="list-style-type: none"> <li>The City asked whether the GTA West corridor had been assumed in the model runs.</li> </ul> <p><i>Study Team Response: Yes, the several model runs were undertaken to model various scenarios for combined NGTA/GTA West widening and new corridor alternatives.</i></p>	
	<ul style="list-style-type: none"> <li>The City commented that given the future travel demands that are anticipated, the draft Transportation Development Strategy may not be sufficient to address all of the future demands. It was suggested that a broader corridor extending from Niagara to the GTA that is outside of the Greenbelt and encompasses both the NGTA and GTA West corridors would be a better solution. This corridor could be utilized for other transportation modes, such as high speed rail, in addition to a new highway. It was also suggested that the 2031 planning horizon is not sufficient to adequately plan for future transportation needs.</li> </ul> <p><i>Study Team Response: The study team has received similar input from others regarding the planning horizon, but it is important to recognize that the study is being conducted in support of the Growth Plan which is currently based on a 2031 planning horizon.</i></p>	
	<ul style="list-style-type: none"> <li>The Region and City indicated that they were surprised that a new corridor was not recommended in the central area between Hamilton and Welland within the 2031 horizon, and asked whether the team has discussed this with Niagara Region.</li> </ul> <p><i>Study Team Response: The study team met with Niagara Region during the assessment of the alternatives, and will be meeting with them again this week to discuss their comments on the draft strategy.</i></p>	
	<ul style="list-style-type: none"> <li>The Region asked why there would be so much traffic on Highway 403 through Hamilton, if there is not anticipated to be a significant amount of traffic on the QEW through Niagara by 2031.</li> </ul> <p><i>Study Team Response: It is anticipated that the traffic on Highway 403 and QEW in the Hamilton/Halton area will be heavily influenced by the significant employment growth and associated commuter trips into and out of the City of Hamilton and the Region of Halton. While there will also be significant traffic volumes on QEW through Niagara, many of these trips will not necessarily be destined for the U.S., and a widening of QEW to accommodate two additional HOV lanes is anticipated to address the future</i></p>	

<u>Items</u>	<u>Description</u>	<u>Action by:</u>
	<p><i>demands on this section of QEW.</i></p> <ul style="list-style-type: none"> <li>Have there been any assumptions with regard to tolling on other highways (aside from Highway 407) and/or the new corridors? <i>Study Team Response: The only facility that has been modelled as being tolled is existing Highway 407.</i></li> <li>All attendees were supportive of the concept of optimizing Highway 403 through Hamilton as part of the early stages of implementing the draft Transportation Development Strategy. <i>Study Team Response: Comment noted.</i></li> <li>The Region and City noted that further work is required from their perspective to further investigate whether a new corridor is a better long term solution than widening of Highway 403 in the west area. Further to this, if a new corridor is recommended it was also suggested that the terminus of a new corridor at Highway 401 or Highway 407 should be investigated at a greater level of detail as well. <i>Study Team Response: The study team will review this suggestion, but it is anticipated that even at a more detailed level, the same trade-offs would emerge that are being contemplated by the team now.</i></li> <li>The Region noted that more information with regard to proposed timeframes for the new corridor elements of the draft strategy would be beneficial. <i>Study Team Response: Further details will be available in the Needs Assessment Report that is currently being prepared.</i></li> <li>The Region and City inquired as to when formal comments are required by the study team. It was noted that formal comments that are endorsed by Council will not be available until early 2011. <i>Study Team Response: Any preliminary comments from staff would be appreciated as soon as possible. The study team is currently preparing a draft Needs Assessment Report, and anticipates that the draft report will be available for review in late September 2010. The study team is planning to finalize the report in late 2010 based on comments received on the draft report, but recognizes that further discussions and presentations to Council may be required in early 2011. The study team will strive to accommodate municipal staff and Councils to the extent possible, while at the same time moving the project forward.</i></li> <li>The Region indicated that they will provide preliminary staff comments in early September and at that time will also confirm the anticipated timeframes that the study team can expect to receive formal comments that are endorsed by Council. <i>Study Team Response: Understood and appreciated.</i></li> </ul>	<p>Study Team</p> <p>Halton</p>

<u>Items</u>	<u>Description</u>	<u>Action by:</u>
	<ul style="list-style-type: none"> <li>▪ The City noted that while they acknowledge the comprehensive nature of the work done to date, they intend to undertake a peer review of this work, and requested technical information with regard to the modeling work that has been completed to facilitate this process.</li> </ul> <p><i>Study Team Response: The study team is in the process of documenting the work that has been completed and will try to provide this information in advance of the draft Needs Assessment Report if possible.</i></p>	Study Team
	<ul style="list-style-type: none"> <li>▪ Halton staff noted the following key issues that were discussed at Councilor Taylor’s ward meeting in June 2010:               <ul style="list-style-type: none"> <li>○ Not enough importance has been put on the potential impacts to agricultural lands associated with the new corridor alternatives.</li> <li>○ There is a need to balance economic development opportunities provided by a new corridor with the loss of agricultural lands.</li> <li>○ More information is needed with regard to the timing for implementation of the various components of the draft Transportation Development Strategy.</li> </ul> </li> <li>▪ It was suggested that a component of the Transportation Development Strategy should be a commitment to review the elements of the strategy based on the actual growth and future transportation conditions.</li> </ul> <p><i>Study Team Response: The study team will review this suggestion.</i></p>	
	<ul style="list-style-type: none"> <li>▪ The Region requested information as to the anticipated timing for commencement of the corridor planning studies.</li> </ul>	Study Team
	<p><i>Study Team Response It is envisioned that many of the optimization strategies such as the operational study for Highway 403 through Hamilton will commence in the near term. The Ministry’s Central Region may also look into commencing a study to develop an Active Traffic Management Strategy in the near term as well. In the near to mid term it is likely that Class EAs for the proposed highway widenings will be initiated subject to Ministry priorities. Planning for the new corridors will likely begin sometime after the operational study on Highway 403 is completed.</i></p>	
3	<p><b><u>Review of Public Information Centre #4</u></b></p>	

P. Puccini provided a brief overview of the fourth round of Public Information Centres. He noted the following:

<u>Items</u>	<u>Description</u>	<u>Action by:</u>
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- The PICs were held on:
  - June 17 Welland Royal Canadian Legion
  - June 21 Ancaster Fairgrounds
  - June 23 Burlington Holiday Inn
  
- Attendance at the PICs was as follows:
  - Welland - 45
  - Ancaster – 75
  - Burlington – 98
  - Total - 218
  
- A total of 28 comment sheets have been received to date.
  
- Some of the comments received included:
  - Pleased with effort of attendees to explore all modes and consult with TSPs.
  - Very supportive of the building block approach – felt that this is a balanced strategy.
  - Timing for implementation of various components?
  - Will the assumed shift to transit ever be fully realized? What if it's not?
  - Will the assumed growth happen? What if it's not?
  - Will Group 1 and 2 components be provided before roadway components?
  - Concerns with potential environmental impacts, including a new crossing of Niagara Escarpment.

5 **Other Business**

The study team will circulate the minutes of this meeting to all attendees.

**Meeting adjourned at 3:00 p.m.**

Meeting: Regional Municipality of Niagara  
 Location: 2201 St. David’s Road West, Thorold Date: Friday July 23<sup>rd</sup>, 2010  
 Purpose: Draft Transportation Development Strategy Time: 9:30 A.M. – 11:00 A.M.  
 Present: **NGTA Study Team**  
 Roger Ward, MTO  
 Frank Williams, MTO  
 Patrick Puccini, URS  
**Niagara Region Representatives**  
 Joe Cousins  
 Peter Colosimo  
 Alan Gummo  
 Eric Flora

**Items      Description      Action by:**

1      **Introductions and Opening Remarks**  
 Attendees introduced themselves and R. Ward provided a meeting overview and thanked the attendees for coming to the meeting.  
 R. Ward noted that the purpose of the meeting was to provide an overview of the draft Transportation Development Strategy and to discuss the Region’s comments on the draft strategy.

2/4      **Review of Transportation Development Strategy**  
 P. Puccini reviewed the presentation slide deck that was used for the fourth round of Public Information Centres to provide an overview of the draft Transportation Development Strategy (TDS). In addition, attendees were provided with a copy of the PIC handout package and brochure, as well as the detailed assessment tables for the Group #3 and Group #4 alternatives that were available at the technical resource table at the PIC.

Attendees were encouraged to ask questions during the presentation. The following summarizes the key discussion points:

- Can a widening of QEW through Niagara to accommodate HOV lanes be accommodated within the existing right-of-way? Further widening of QEW through St. Catharines would be of significant concern to the Region.

*Study Team Response: There may be localized areas where widening outside of the right-of-way is required but in general it is anticipated that sufficient roadway platform exists along QEW*

<u>Items</u>	<u>Description</u>	<u>Action by:</u>
	<p><i>through Niagara to accommodate widening for HOV lanes. It should be noted that further widening of QEW through St. Catharines and easterly is not recommended.</i></p>	
	<ul style="list-style-type: none"> <li>The Region noted that it will be very important to clearly convey in the Needs Assessment Report that although a new corridor is not warranted between Hamilton and Welland by 2031, the Ministry envisions that a new corridor will be required in this area beyond 2031 and will monitor needs to determine when the new corridor is required.</li> </ul>	Study Team
	<p><i>Study Team Response: Agreed.</i></p>	
	<ul style="list-style-type: none"> <li>Staff understand the technical rationale for not recommending a new corridor between Hamilton and Welland, but noted that many stakeholders are likely to be concerned about the potential for development pressures on the tender fruitlands in the future if a new corridor is not recommended in the central area.</li> </ul>	
	<p><i>Study Team Response: Comment noted.</i></p>	
	<ul style="list-style-type: none"> <li>The Region noted that they would like to further discuss partnering opportunities with MTO with regard to the new corridor between Highway 406 and QEW. It was suggested that the work that the Region has done in looking at a new east-west arterial in this area would be of benefit to the Ministry.</li> </ul>	
	<p><i>Study Team Response: The Ministry would like to further discuss opportunities in this regard, but noted that the role and function of the new corridor that is proposed by the Ministry may be significantly different than that of the east-west arterial that the Region is studying. It is anticipated that the new corridor proposed by this study is likely to be a staged freeway with access control, whereas the arterial corridor that the Region is studying would generally be based on providing greater access opportunities. This may affect some of the design characteristics as well as the preferred location for the corridor.</i></p>	
	<p><i>MTO offered to facilitate a meeting with the Region and MTO's Central Region if requested once the TDS has been finalized.</i></p>	MTO
	<ul style="list-style-type: none"> <li>The Region noted that a Committee of the Whole meeting will be held in the coming months and that staff will report on the meeting today and the draft TDS that has been presented. While staff expects that Council will be receptive to many elements of the strategy, it is anticipated that Council will express some level of disappointment with regard to the lack of a new corridor in the central area by 2031.</li> </ul>	
	<p><i>Study Team Response: Comment noted.</i></p>	
	<ul style="list-style-type: none"> <li>The Region asked the study team for suggestions on how best to address the proposed new corridor (east area) and the monitoring for a new corridor (central area) in their Official Plan update.</li> </ul>	



<u>Items</u>	<u>Description</u>	<u>Action by:</u>
	<p><i>Study Team Response: It was suggested that the messaging that is included in the Needs Assessment Report may be beneficial in this regard.</i></p>	
	<ul style="list-style-type: none"> <li>The Region noted that a number of existing corridors such as Regional Road 20, Highway 3, etc. have designations that should be reviewed in light of the recommendations in the TDS.</li> </ul>	
	<p><i>Study Team Response: R. Ward noted that MTO has begun reviewing the designations in the study area to determine if there are any that can be removed. Further review will be undertaken once the TDS is finalized.</i></p>	
	<ul style="list-style-type: none"> <li>The mechanism(s) for a new corridor in the central area should be described in more detail in the Needs Assessment Report to give the Region a better understanding of the potential timeframe for the corridor.</li> </ul>	
	<p><i>Study Team Response: It was noted that there will likely be several mechanisms, including future congestion levels on QEW, future land use and economic conditions, etc.</i></p>	Study Team
	<ul style="list-style-type: none"> <li>There was discussion about the potential for the new corridors to be multi-use corridors.</li> </ul>	
	<p><i>Study Team Response: It was noted that the new corridors may be utilized for other services including high speed rail, and that this would be subject to the outcomes of studies such as the Continental 1 and Ontario-Quebec Inter-Continental Gateway studies.</i></p>	
	<ul style="list-style-type: none"> <li>The Region noted that one benefit of the east-west arterial study is that it may help to expedite designation of a new corridor, which will help to guide future development plans in the area.</li> </ul>	
	<p><i>Study Team Response: Further discussions are required with MTO's Central Region to discuss how the work and findings of the Region's study can be incorporated into future studies for a new controlled access corridor between Highway 406 and QEW.</i></p>	Niagara Region/ MTO
	<ul style="list-style-type: none"> <li>Has an economic analysis been undertaken to consider the economic development opportunities associated with a new corridor through Niagara?</li> </ul>	
	<p><i>Study Team Response: Yes, a comprehensive economic analysis was undertaken that utilized a quantitative modeling tool, as well as qualitative assessment by economic specialists on the team. This analysis will be documented in the Needs Assessment Report.</i></p>	
	<ul style="list-style-type: none"> <li>When will the Needs Assessment Report be available for stakeholder review?</li> </ul>	
	<p><i>Study Team Response: The study team is currently preparing the draft Needs Assessment Report. It is anticipated that this report</i></p>	

<u>Items</u>	<u>Description</u>	<u>Action by:</u>
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*will be available for stakeholder review in late September 2010. The study team will work towards finalizing the Needs Assessment Report based on the input received on the draft report by the end of this year. It is recognized however that this schedule may be influenced by the ability of the study team to obtain formal municipal input that is endorsed by Council, and that such input may not be available until early 2011.*

- What will the next steps be after the TDS is finalized?

*Study Team Response: It is envisioned that many of the optimization strategies such as the operational study for Highway 403 through Hamilton will commence in the near term. The Ministry’s Central Region may also look into commencing a study to develop an Active Traffic Management Strategy in the near term as well. In the near to mid term it is likely that Class EAs for the proposed highway widenings will be initiated as well as route planning studies for the new corridors in the east and west areas. The timing of these studies will be subject to Ministry priorities at that time. Route planning for a new corridor in the central area will also commence at some point based on the ongoing monitoring of the need for this corridor by the Ministry.*

3 **Review of Public Information Centre #4**

P. Puccini provided a brief overview of the fourth round of Public Information Centres. He noted the following:

- The PICs were held on:
  - June 17 Welland Royal Canadian Legion
  - June 21 Ancaster Fairgrounds
  - June 23 Burlington Holiday Inn
- Attendance at the PICs was as follows:
  - Welland - 45
  - Ancaster – 75
  - Burlington – 98
  - Total - 218
- A total of 28 comment sheets have been received to date.
- Some of the comments received included:
  - Pleased with effort of attendees to explore all modes and consult with TSPs.
  - Very supportive of the building block approach – felt

<u>Items</u>	<u>Description</u>	<u>Action by:</u>
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that this is a balanced strategy.

- Timing for implementation of various components?
- Will the assumed shift to transit ever be fully realized?  
What if it's not?
- Will the assumed growth happen? What if it's not?
- Will Group 1 and 2 components be provided before roadway components?
- Concerns with potential environmental impacts, including a new crossing of Niagara Escarpment.

5 **Other Business**

The study team will circulate the minutes of this meeting to all attendees.

**Meeting adjourned at 11:00 a.m.**

Meeting: City of Hamilton  
Location: 320-77 James Street North Room: 320 B Date: Thursday August 19<sup>th</sup>, 2010  
Purpose: Draft Transportation Development Strategy Time: 1:30 P.M. – 3:30 P.M.  
Present: **NGTA Study Team**  
Roger Ward, MTO  
Frank Williams, MTO  
Patrick Puccini, URS  
**Hamilton Representatives**  
Alan Kirkpatrick Syeda Banuri  
Ric Martins Linda Godin  
Sylvia Renshaw Tanya McKenna

**Items**      **Description**      **Action by:**

1      **Introductions and Opening Remarks**

Attendees introduced themselves and R. Ward provided a meeting overview and thanked the attendees for coming to the meeting.

R. Ward noted that the purpose of the meeting was to provide an overview of the draft Transportation Development Strategy and to discuss the City’s comments on the draft strategy.

2/4      **Review of Transportation Development Strategy**

P. Puccini reviewed the presentation slide deck that was used for the fourth round of Public Information Centres to provide an overview of the draft Transportation Development Strategy (TDS). In addition, attendees were provided with a copy of the PIC handout package and brochure, as well as the detailed assessment tables for the Group #3 and Group #4 alternatives that were available at the technical resource table at the PIC.

Attendees were encouraged to ask questions during the presentation. The following summarizes the key discussion points:

- Is the practice of speed harmonization successful in Europe?  
*Study Team Response: Yes, based on the study team’s review speed harmonization is used widely in various European countries and has resulted in positive outcomes in terms of safety and congestion management. The United States is also initiating pilot projects to test the feasibility of implementing this practice on some of their inter-regional facilities. The study team is*

<u>Items</u>	<u>Description</u>	<u>Action by:</u>
	<p><i>recommending that these pilot projects be closely monitored by MTO in the coming years.</i></p> <ul style="list-style-type: none"> <li>With regard to improved access to the Port of Hamilton, the City noted that the port has expressed interest in increasing the amount of larger project cargo such as oversized windmill blades. They are also interested in making improvements to the rail/marine interface at the port. It is the City’s understanding that the port is no longer pursuing a perimeter road network in the west area.</li> </ul> <p><i>Study Team Response: This information is appreciated. The study team has had several meetings with staff from the Port Authority and the St. Lawrence Seaway Authority, and is planning to meet with all Transportation Service Providers this fall to review and obtain feedback on the draft Transportation Development Strategy.</i></p> <ul style="list-style-type: none"> <li>What is the assumed number of lanes for New Highway 6 in the draft Transportation Development Strategy. The City has assumed that the facility will ultimately be widened to six lanes.</li> </ul> <p><i>Study Team Response: The study team has assumed that New Highway 6 will be widened to 4 lanes by 2031, but further widening beyond 2031 would still be possible. The widening of New Highway 6 will be reviewed and prioritized by the Ministry’s Central Region.</i></p> <ul style="list-style-type: none"> <li>Is the study team coordinating with the Continental Gateway Study?</li> </ul> <p><i>Study Team Response: Yes, the study team has consulted with the Continental Gateway alliance to discuss relevant issues.</i></p> <ul style="list-style-type: none"> <li>City staff noted that some members of their Council are in support of a new corridor in the Central area.</li> </ul> <p>It was also noted that the City may be concerned with either of the new corridor alternatives in the West area. The impacts of a new corridor connecting Highway 403 to Highway 401 would be a concern from the perspective of impacts through the Flamborough area (including the Beverley Swamp), and a connection to Highway 407 would be a concern from the perspective of impacts to the Niagara Escarpment and associated natural features.</p> <p>At the same time, the City would also be concerned with a significant expansion of Highway 403 through Hamilton. City staff noted that they have been in contact with staff from Halton Region and share similar concerns.</p> <p><i>Study Team Response: Comments noted.</i></p> <ul style="list-style-type: none"> <li>Is it envisioned that a new corridor connecting Highway 403 to Highway 407 would be significantly utilized given the lower utilization of Highway 407 through Halton in comparison to the</li> </ul>	

<u>Items</u>	<u>Description</u>	<u>Action by:</u>
	<p>QEW?</p> <p><i>Study Team Response: The traffic analysis has shown that Highway 407 will be more highly utilized in the future on the basis of future planned improvements to the QEW/403 interchange which will provide access to Highway 407 from westbound QEW. In addition, it is anticipated that congestion and delays on QEW through Halton will also result in a further shift in traffic from the QEW to Highway 407.</i></p>	
	<ul style="list-style-type: none"> <li>What is the mechanism for protecting the new corridors recommended in the draft Transportation Development Strategy?</li> </ul> <p><i>Study Team Response: The outcome of Phase 2 of the EA will be a preferred route for each of the new corridor elements. If EA approval for these routes is obtained, the Ministry will be in a position to protect these routes.</i></p>	
	<ul style="list-style-type: none"> <li>The City will send the study team a copy of the Garner neighbourhood Secondary Plan.</li> <li>The City is very supportive of the Group #1 and Group #2 recommendations, and in particular the Hamilton-focused inter-regional transit service.</li> </ul> <p><i>Study Team Response: Comment noted.</i></p>	Hamilton
	<ul style="list-style-type: none"> <li>The City has prepared a staff report on the study which will be presented to Committee of the Whole on September 14, 2010 by city staff. The study team will be asked to present to Council at some time later this fall, likely October or November. City staff will confirm the date for this meeting.</li> </ul> <p>The staff report describes the anticipated affects of the draft Transportation Development Strategy on the AEGD, as well as the City's concerns with the new corridor in the West area and the lack of a new corridor in the Central area that would provide an alternate connection from Hamilton to the Niagara frontier. The report also acknowledges correspondence received from the Ontario Chamber of Commerce and Southern Ontario Gateway Council which express similar concerns.</p> <p><i>Study Team Response: The study team would appreciate if the City could clearly indicate in the staff report that a new corridor in the Central area is envisioned as being required beyond the current planning horizon (2031), and while the need for the new corridor cannot be justified by 2031, it is anticipated that the planning for this new corridor will commence before 2031.</i></p>	Hamilton
	<ul style="list-style-type: none"> <li>What are the proposed widening requirements on Highway 401 through the study area.</li> </ul> <p><i>Study Team Response: The draft TDS recommends widening of Highway 401 to 10 lanes west of Milton. East of Milton, the widening requirements for Highway 401 are contingent on the new</i></p>	

<u>Items</u>	<u>Description</u>	<u>Action by:</u>
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*corridor alternative that is recommended by the GTA West study team. If the GTA West study team recommends a new corridor connecting to Highway 401 west of Milton, it is anticipated that a 10 lane cross-section would be sufficient on Highway 401 in this area. If the GTA West study team recommends a new corridor connecting to Highway 401 east of Milton, a 12 lane cross-section on Highway 401 would be required east of and through Milton.*

- When does the Ministry envision commencing the highway widening and interchange improvement components of the draft Transportation Development Strategy?

*Study Team Response: These improvements will be subject to future Class EA studies. The timing for these studies and the ultimate implementation of the study recommendations will be reviewed and prioritized subsequent to approval.*

- Will the Transportation Development Strategy Report address monitoring requirements for the new corridor in the Central area as well as other elements of the strategy?

*Study Team Response: Yes, the report will include a section describing the Ministry’s intent to monitor future transportation conditions and growth to determine the timing for implementation of the various components of the TDS.*

**3 Review of Public Information Centre #4**

P. Puccini provided a brief overview of the fourth round of Public Information Centres. He noted the following:

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- Some of the comments received included:
  - Pleased with effort of attendees to explore all modes and consult with TSPs.

<u>Items</u>	<u>Description</u>	<u>Action by:</u>
	<ul style="list-style-type: none"><li>• Very supportive of the building block approach – felt that this is a balanced strategy.</li><li>• Timing for implementation of various components?</li><li>• Will the assumed shift to transit ever be fully realized? What if it's not?</li><li>• Will the assumed growth happen? What if it's not?</li><li>• Will Group #1 and #2 components be provided before roadway components?</li><li>• Concerns with potential environmental impacts, including a new crossing of Niagara Escarpment.</li></ul>	
5	<b><u>Other Business</u></b>  The study team will circulate the meeting notes to all attendees.	Study Team
	<b><u>Meeting adjourned at 3:30 p.m.</u></b>	