

Halton-Peel Boundary Area Transportation Study



A M E N D E D
FINAL REPORT

May 2010



**Region of Peel, Halton Region,
City of Brampton, Town of Caledon,
and Town of Halton Hills**

**Halton-Peel Boundary Area
Transportation Study
Amended Final Report**

Peel, Halton

May 2010

Halton-Peel Boundary Area Transportation Study Amended Final Report

Peel, Halton

May 2010

HDR | iTRANS
100 York Blvd., Suite 300
Richmond Hill, ON L4B 1J8
Tel: (905) 882-4100
Fax: (905) 882-1557
www.hdrinc.com
www.itransconsulting.com

Project # 3957

EXECUTIVE SUMMARY

A. Study Background

The Halton-Peel Boundary Area Transportation Study (HPBATS) is a joint study undertaken by the Region of Peel, Halton Region, City of Brampton, Town of Caledon, and Town of Halton Hills. The study was initiated following a settlement reached with Halton Region subsequent to the City of Brampton's appeal to the Regional Official Plan Amendment 25 (ROPA 25).

The Study Area is located in Halton Region and Peel Region, and is roughly bounded by Trafalgar Road to the west, King Street to the north, Chinguacousy Road to the east, and Highway 401 and 407 ETR to the south. It encompasses the east part of Halton Hills, west Brampton, the northeast corner of Milton, the northwest corner of Mississauga, and the southwest corner of Caledon.

Exhibit A-1 illustrates the Study Area.

The objective of the study is to identify a long term transportation network solution that:

- Supports current and future municipal planning objectives
- Develops a coordinated interconnected roadway network near the Halton-Peel Boundary
- Identifies opportunities for travel demand management measures and increases to transportation mode choices, including public transit, carpooling / vanpooling, and High Occupancy Vehicle (HOV) lanes
- Identifies solutions to serve long-distance, cross-boundary truck traffic
- Identifies improvements that will serve inter-regional traffic
- Reviews the potential to improve connections with the existing and potential future Provincial 400-series highway network
- Minimizes vehicle emissions including greenhouse gases
- Encourages economic development while mitigating socio-economic impacts
- Provides cost effective transportation solutions
- Minimizes and mitigates impacts to natural environmental systems and habitats

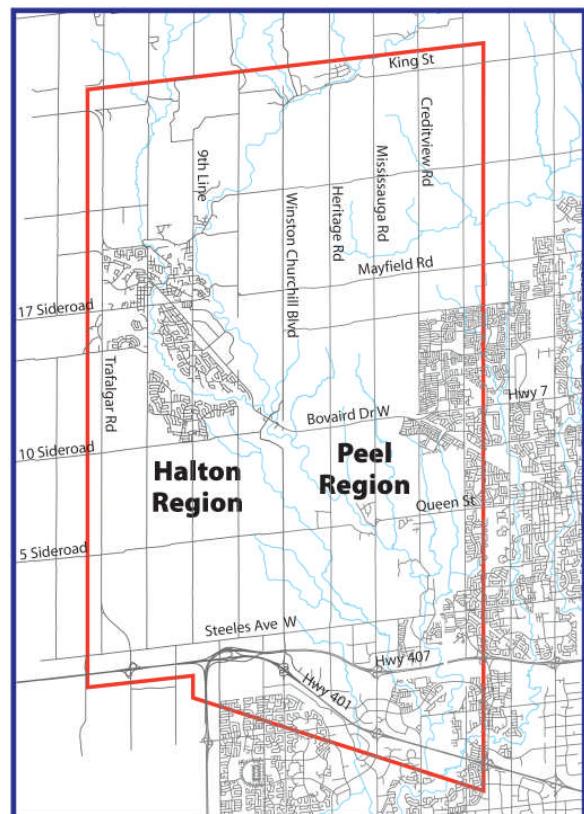


Exhibit A-1: Study Area

(Source: HDR | iTRANS)

The study addresses issues related to transportation network planning, long range land use planning, demand management, and corridor protection planning:

- Deficiencies in the existing east-west arterial cross-boundary road linkages
- The need, scope and timing of improvements to the transportation network for goods movement and aggregate haul routes
- The potential need, function and preferred corridor for a North-South Transportation Corridor (NSTC)
- The role, function and need for the proposed Bramwest Parkway
- The role, function and need for the East-West Connection near Norval and Highway 7
- The need for other east-west improvements
- Truck traffic needs and impacts on communities
- The need and potential for transit improvements (local and GO)
- Impacts of potential facilities on industrial development areas or other desirable land uses

B. Public Consultation

The public consultation process was an essential component of the study. Considering the population in the Study Area and the significant transportation issues, there was a high level of public interest.

As such, a comprehensive public consultation program was conducted for the Study. The public consultation program contained the following components:

- **Public Information Centres (PICs)** – Two formal meetings were held during the Study, consisting of public open houses with display panels and a formal presentation followed by a discussion session.
- **Stakeholders Group** – A Stakeholders Group was formed to allow individuals representing groups, agencies and organizations a special opportunity to provide feedback about the study.
- **Newsletters** – Three newsletters were produced over the course of the study period to inform stakeholders about any new developments
- **Newspaper Advertisements** – Advertisements were placed in local newspapers to announce the Notice of Study Commencement, PIC #1 and PIC #2. The newspaper advertisements invited the public to attend the meetings and to provide input. The advertisements provided information on contact names, telephone numbers, and addresses
- **Project Website** – Prior to PIC #1, a project website was launched to provide the public with an additional means to obtain information about the project, including background material, the process, upcoming events, and contact information. The website for this Study had the following address: <http://www.halton-peelbats.ca/>

Major events in the public consultation process are summarized below:

- Notice of Study Commencement – Published April 11, 2007
- Newspaper Advertisement notification of PIC #1 – September 9-11, 2009
- First Stakeholders Workshop – September 24, 2009
- PIC #1 – September 24, 2009

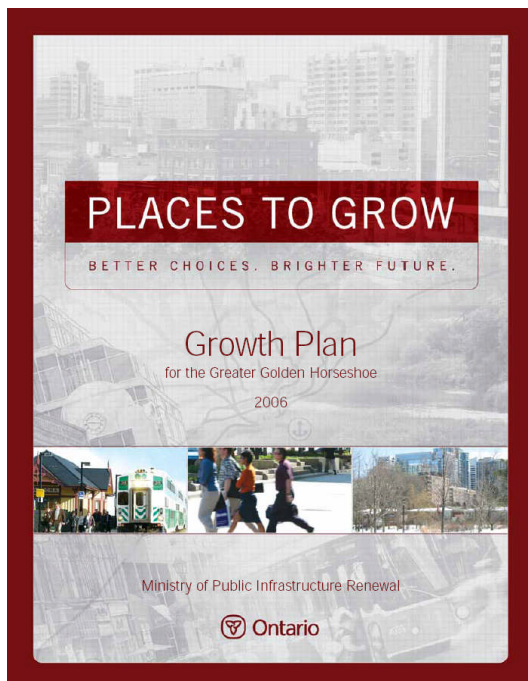
- Notice of PIC #2 sent out – November 2, 2009
- Newspaper Advertisement notification of PIC #2 – November 7-8, November 11, November 19-20, 2009
- Second Stakeholders Workshop – November 24, 2009
- PIC #2 – November 24, 2009
- Notice of Study Completion – April 2010

The public consultation process was designed to:

- Provide an open line of communication with the public, other municipalities and agencies
- Provide information to the public as a basis for engaging in active dialogue with the public and ensuring public participation
- Seek the public’s input on the identification of issues, the development of alternative solutions, and the selection of the preferred alternative
- Ensure that the plan has general support from the community

This study has been carried out through an open public process as a Master Plan study under the Municipal Class Environmental Assessment Guidelines (June 2007) so that the study results can properly serve as direct input to any subsequent EA studies that may be deemed appropriate. The study addresses Phases 1 and 2 of the Transportation Master Plan process in the Municipal Class EA guidelines. Phase 1 defines the problem and / or opportunity while Phase 2 identifies alternative solutions, considers environmental implications, and consults with the public and affected agencies.

C. Planning Context



One of the main objectives of the Halton-Peel Boundary Area Study is to provide a Master Plan for the Study Area in light of several new provincial and municipal planning documents.

The Provincial “Places to Grow” Growth Plan, released in 2006, provided several policies aimed at curbing urban sprawl, the consumption of agricultural lands, and increased traffic congestion. The Plan mandated that a minimum of 40% of new population growth be accommodated through intensification to existing urban areas and that new and existing developments be compact and support transit, cycling and walking.

The Plan also directed new growth to the Study Area, identifying significant lands south of Georgetown and in West Brampton as “Greater Golden Horseshoe Growth Plan Areas”.

This context for new growth provided direction for new municipal-level growth plan strategies, such as the Sustainable Halton planning process and the Bram-West Block 40-3 Environmental Study Report, both of which identified future land uses within the Study Area. A plan for new transportation infrastructure was necessary to complement the projected intensified land uses.

Other planning policies within and near to the Study Area also increased the need for a comprehensive analysis of transportation problems and opportunities near the Halton-Peel boundary.

Metrolinx's Regional Transportation Plan identified transit improvements in the Study Area and the Brampton Transportation and Transit Sustainable Update 2009 deferred the responsibility of addressing challenges and opportunities in West Brampton to the Halton-Peel Boundary Area Transportation Study.

The Province is currently conducting an Environmental Assessment for a potential GTA West Corridor whose Study Area overlaps with the HPBATS Study Area. The findings of this study could have significant impacts on the Halton-Peel boundary area. The GTA West Study Area is shown in **Exhibit C-1**.

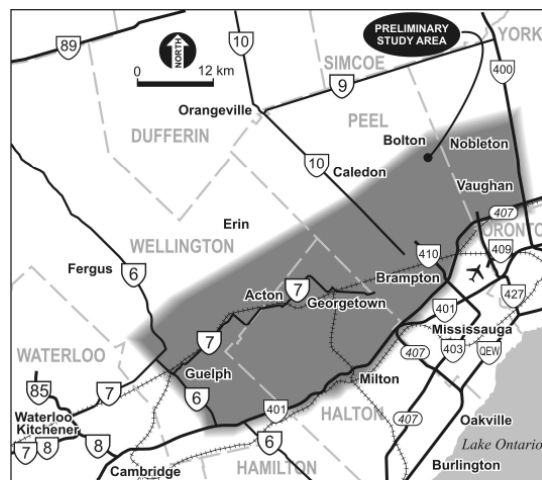


Exhibit C-1: GTA West Study Area
(Source: GTA West Corridor Environmental Assessment, 2007)

In light of the provincial, municipal and local planning and transportation studies directly impacting the Study Area, HPBATS was used to develop a cohesive transportation master plan that accounted for these plans and strategies.

D. Existing and Future Challenges

The Study Area faces significant transportation challenges. Existing transportation deficiencies, as identified by the study, include:

- High cross-boundary demand between Brampton and Georgetown
- Insufficient capacity to meet existing east-west travel demands
- Lack of direct east-west transportation arterial connections between Peel and Halton, particularly north of Norval
- North-south capacity deficiencies in Halton Hills and Brampton;
- Limited suitable routing options for truck traffic
- Need for more connections to the provincial highway network

Within the Study Area, traffic “bottlenecks” have been identified on Steeles Avenue west of Winston Churchill Boulevard, Winston Churchill Boulevard north of 5 Sideroad, Highway 7 through Norval, Winston Churchill Boulevard through South Norval, and Mississauga Road through Huttonville. Traffic bottlenecks have also been identified at the intersections of Bovaird Drive and Mississauga Road, Trafalgar Road at 5 Sideroad, and Highway 7 at Adamson Street.

In addition to transportation challenges, there are several environmental, social and economic features in the Study Area which need to be thoroughly considered. Through consultation with the public, the stakeholders and the Technical Advisory Committee, some important features in the Study Area were identified:

- Queen of Peace Croatian Franciscan Centre
- Upper Canada College Outdoor Recreation Centre
- TransCanada pipeline corridor
- Maple Lodge Farms
- Aggregate and shale resources in Peel and Halton
- Credit River Valley and Credit River Valley watershed
- Ontario Greenbelt

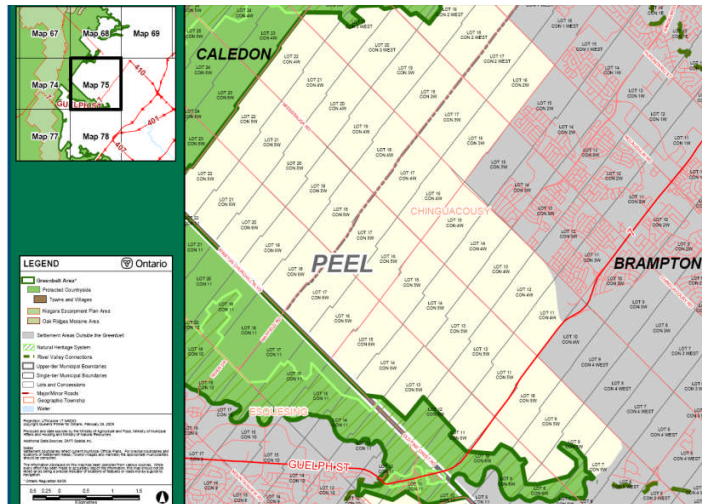


Exhibit D-1: Greenbelt Plan
(Source: Greenbelt Plan, 2005)

Impacts to these features were considered throughout the generation and evaluation of alternatives. The Greenbelt within the Study Area is illustrated in **Exhibit D-1**.

By 2031, the number of people living and working in the Study Area will almost triple. The Study Area population is forecast to increase from 91,200 in 2006 to 295,700 in 2031, while employment is estimated to increase from 36,800 in 2006 to 117,800 by 2031. Conversely, total travel during the afternoon 3-hour peak period in the Study Area is projected to triple, from 80,500 trips (auto and transit) in 2006 to 258,100 trips (auto and transit) in 2031.

Currently planned infrastructure is not sufficient to serve the planned growth as per the Provincial Growth Plan and Sustainable Halton. By 2031, southern parts of the Study Area will experience significant congestion. Overall network congestion will increase from 16.6% in 2006 to 26.8% in 2031. This high demand will translate into longer travel times, higher emissions and higher costs of driving for private citizens and businesses. By 2031, the annual hours of delay for auto drivers alone will triple, causing a doubling of traffic-related greenhouse gas production during the combined AM and PM peak periods of travel.

E. Problem and Opportunity Statement

Over the next 25 years, the number of people who live and / or work in the Study Area is forecast to triple. Even with planned transportation improvements, the transportation network will not be able to accommodate the increased travel demand. The consequences will be increased congestion and substantially longer travel times, especially during peak travel periods, and negative impacts to quality of life, businesses, and the environment.

In summary, the planned transportation network will not meet forecast travel demand generated by existing and future residents and employees in both Regions. The Study Area transportation network requires new transportation solutions that will:

- Support Provincial Growth Plan goals and Green Belt Plan
- Support planned growth in Halton (Sustainable Halton) and Halton Hills
- Support planned growth in Peel, Brampton and Caledon
- Address outstanding transportation deficiencies in cross-border travel, North Halton / Peel and Norval
- Provide for enhanced connectivity and continuity of the transportation system across the Halton-Peel boundary, and provide appropriate linkages to new and existing facilities
- Protect existing communities in the Study Area, including Georgetown, Norval, Hornby, Stewarttown, Ashgrove, Glen Williams and Huttonville
- Provide sufficient transportation infrastructure for planned communities in Georgetown, Norval, Bramwest and North West Brampton
- Limit and mitigate impacts of any new facilities on the natural environment
- Protect natural and agricultural resources
- Protect and enhance access to employment lands
- Design multimodal corridors to shift travel away from cars and toward transit, carpooling and active transportation
- Serve inter-regional transportation needs for the aggregate industry in Halton Hills and Brampton, and for goods movement

F. Foundations of a Long-Term Transportation Strategy

Given how significantly transportation affects the quality of life, the environment, and the economic well-being of a community, the transportation system for the Study Area needs to be cost-effective, multi-modal and accessible to all users. There has been a growing emphasis on improving the “sustainability” of transportation systems. This means an emphasis on reducing single occupant vehicle trips and shifting travel toward more sustainable modes such as public transit, walking, and cycling. This approach is consistent with current transportation planning by the municipalities participating in this study and the Ontario Government through Metrolinx.

Building on this philosophy, the long-term transportation strategy for the Study Area is developed on the following principles and is incorporated into all alternative transportation network options that have been examined in this study:

- **A “Transit First” Strategy** – Public transit has been identified by Metrolinx as a key strategy to serve and support future growth within the Study Area. The “Transit First” planning strategy developed by Brampton in combination with Halton’s planned Bus Rapid Transit (BRT) service on Trafalgar Road and an upgrade of Georgetown GO service to Regional Service status with all-day 2-way service will encourage a shift from cars to public transit.
- **Travel Demand Management (TDM)** – Can positively contribute to the reduction of peak period roadway congestion by promoting transit, walking and cycling as alternatives to private automobile travel. It is also the primary mechanism for promoting alternative travel modes and educating the public about the many travel choices. TDM initiatives and programs developed by Smart Commute Halton and Smart Commute Brampton-Caledon are a good starting point
- **Active Transportation** – The primary active transportation options are cycling and walking. These transportation modes are considered to be practical, cost-effective, environmentally-friendly and healthy. Active transportation means sidewalks and bike paths at the doorstep of each neighbourhood, providing for abundant, inter-connected, safe, well lit and well maintained walking and cycling facilities to stimulate the vitality of urban sections of the Study Area and reducing the need for making short distance trips by automobile
- **Transportation System Management (TSM)** – The increased travel time and reduced reliability caused by congestion has environmental, social, and economic consequences. Congestion directly impacts quality of life and reduces time available to spend with families or at work. TSM involves improving the efficiency of the transportation network. TSM can include an inter-connected network of high occupancy vehicle (HOV) lanes for transit and carpoolers, transit signal priority systems installed at key intersections within the area, real-time traffic information and coordinated traffic progression systems



G. Transportation Alternatives

Transportation network options were identified on the basis of providing sufficient multi-modal transportation capacity to accommodate north-south and east-west demand in the Study Area, enhancing road network continuity and connectivity, construction feasibility, improving existing constraints, and minimizing socio-economic and environmental impacts.

The alternatives identified in the HPBATS represent proposed transportation connections. They do not represent alignments or routings, which would be examined in detail in future environmental assessments. In the first stage of the generation of alternatives, east-west and north-south network options were generated separately. Due to the significant road network needs in the Study Area, it was necessary to consider these elements of transportation infrastructure first. Following the selection of the preferred north-south and east-west options, additional analysis was performed on the integrated preferred HPBATS road network. Transit, TDM, Active Transportation and TSM strategies to complement and enrich the road network were developed once the preferred options had been selected.

North-South Travel and Network Alternatives

Three families of options for the North-South Transportation Corridor (NSTC) evaluated by HPBATS include:

1. **Do Nothing** – The road and transit network is limited to improvements already planned by provincial and municipal agencies. The Bramwest Parkway is coded as 4 lanes from Heritage Road south of 407 ETR to Embleton Road, with an interchange at the 407. No Norval Bypass is included.
2. **Brampton Arterial** – An enhanced Bramwest Parkway operating as arterial road (up to 8 lanes wide) wholly located within Brampton between 407 ETR and Mayfield Road, with an interchange connection to 407 ETR. Other north-south arterials widened as planned
3. **Brampton Freeway** – The Bramwest Parkway operating as a freeway, with grade-separated interchanges, located entirely within Brampton between 407 ETR and Mayfield Road, with an interchange connection to 407 and parallel service roads in the Bram West Secondary Plan area. Other north-south arterials widened as planned
4. **Halton-Peel Freeway** – A freeway connecting to the Highway 401 / 407 ETR interchange in Halton Hills, crossing the Credit River in Brampton, and continuing north to at least Mayfield Road in Brampton. Bramwest Parkway provides arterial road capacity between 407 ETR and its northern terminus with the Halton-Peel Freeway. Other north-south arterials widened as planned

East-West and Norval Network Alternatives

The east west network alternatives and options for capacity improvements around Norval included:

1. **Do – Nothing** – The Do Nothing option assumes that current conditions at and around Norval remains unchanged. No new road investments are included. Bovaird Drive / Guelph Street remain a gateway to Norval / Georgetown
2. **East-West Connection to Bovaird / Highway 7 South** – A new link between 10 Sideroad and a Bovaird Drive crossing the Credit River south of Bovaird Drive. It would potentially offer good connectivity with the Brampton network, provide a desirable and efficient alternative truck route and a potential corridor for transit services that can enhance connectivity between Georgetown and Brampton (Mount Pleasant)
3. **East-West Connection to Williams Parkway** – A new link between 10 Sideroad and a Bovaird Drive crossing the Credit River. It will require a Credit River crossing and could

provide relatively good connectivity with Brampton's network, although it may adversely affect residential areas along Williams Parkway not designed to support large volumes of traffic and trucks

4. **East-West Connection to Bovaird / Highway 7 North** – A new link between Highway 7 and Bovaird Drive crossing the Credit River north of Bovaird Drive. It offers good connectivity with the Brampton network and is a desirable and efficient alternative truck route. This option is a potential corridor for transit services that enhance connectivity between Georgetown and Brampton (Mount Pleasant)
5. **Norval West Bypass** – The connecting link between 10 Sideroad and Highway 7 / Guelph Street located east of Silver Creek valley. It would provide convenient access to Guelph Street and a bypass to Adamson Road South and the residential sections of Norval fronting Highway 7
6. **Winston Churchill Bypass** – This new road would run diagonally between 10 Sideroad and existing Winston Churchill Boulevard, and also connect with Guelph Street via Norval West Bypass. This new corridor would provide a high capacity, high standard alternative to the existing Winston Churchill Boulevard, divert traffic from the existing Winston Churchill Boulevard, and redirect traffic away from Norval
7. **Adamson Road North Bypass** – This new roadway would provide a solution to traffic congestion in Norval and heavy traffic on Adamson Road north of Norval. An Adamson North Bypass would provide a new major road link between Bovaird Drive and Winston Churchill Boulevard, thus diverting traffic from Adamson Road and Highway 7 intersection. The Adamson Bypass could be incorporated into the Northwest Brampton road network
8. **Other Network Alternatives** – including Georgetown north connection, Georgetown west connection, improvements to Trafalgar Road and 10 Sideroad

H. Strategy Recommendations

A Sustainable Transportation Strategy

The HPBATS transportation strategy is a broad multi-modal strategy intended to manage the growth in travel demand, and encourage the use of active transportation modes. The objective of the HPBATS transportation strategy is to supply only essential infrastructure and modify trip-making choices by modifying travel behaviour. This is achieved by providing a viable roadway system that is capable of sustaining multi-modal trips, providing travel alternatives to the single-occupant vehicle (SOV), dispersing trip start times to non-peak periods, and reducing the need for travel. HPBATS strategy tools include enhancements to the transit and road networks, provision and accessibility of alternative modes, incentives for HOV travel, and employer-based trip reduction programs. The building blocks of the recommended transportation strategy for the Halton Peel Boundary Area consist of:

- **Public Transit** playing a significant role in demand management, serving and supporting future growth within the Study Area

- **Travel Demand Management (TDM)** as a way to reduce peak period roadway congestion by promoting carpooling, transit, walking and cycling as alternatives to private automobile travel
- **Active Transportation** as a practical, cost-effective, environmentally sensitive and healthy travel mode choice for short range trips
- **Traffic System Management (TSM)** with capabilities of improving roadway operations and decreasing travel time and congestion
- **Road Network** providing a network of multimodal corridors to serve multiple users – autos, trucks, public transit, pedestrians, and cyclists (where appropriate)

These building blocks, as the pillars of the comprehensive transportation strategy for the Halton-Peel Boundary Area, will form the foundation of a sustainable transportation network, capable of serving planned growth and development with enhanced mobility and accessibility, while balancing transportation needs with protection of the environment, community protection, and sustainability principles.

Travel Demand Management

Travel Demand Management (TDM) has been a prominent feature of the transportation plans and Official Plans of the HPBATS jurisdictions in recent years. The creation of subsequent programs of Smart Commute GTHA and its local branches such as Smart Commute Halton and Smart Commute Brampton - Caledon have advanced the popularity and success of TDM programs and measures.

Recognizing the encouraging progress of TDM programs in Peel, Brampton and Halton, the HPBATS recommends that the participating jurisdictions:

- Implement TDM measures already identified in the Halton TMP, the Brampton TTMP, Peel Region ROPA 22 and Peel Five Year TDM Work Plan
- Work collaboratively to deepen the planning and implementation of TDM measures already identified in TMP and Work Plan documents and expand TDM planning to 2031
- Include TDM measures in development planning and the development applications process for Bram West, Northwest Brampton, ROPA 37 and ROPA 38 areas within the Study Area
- Provide ongoing support for Smart Commute Halton and Smart Commute Brampton - Caledon, and develop joint programs

Active Transportation Strategy

To reduce reliance on automobile travel, agencies and stakeholders are encouraged to collaboratively promote and support walking and cycling. The HPBATS jurisdictions should continue to develop, support and implement the recommendations of their respective pedestrian and cycling policies and plans, giving further consideration to:

- Developing a coordinated north-south and east-west grid network of bicycle and pedestrian pathways with pathway spacing and pathway connectivity supportive to active transportation modes

- Extending pathway grid recommended by Brampton’s Pathway Master Plan to Halton and Halton Hills. Potential east-west cross-regional pathways may be placed along Financial Drive, Embleton Road and 5 Sideroad, Street A and Winston Churchill Bypass, Bovaird Drive-Highway 7 through Norval, future Adamson Road Bypass, Sandalwood Road and Wanless Drive, Mayfield Road to River Road and along the Credit River
- Ensuring pedestrian sidewalks and cycling paths are included in road design standards for urban collector and urban arterial roads within residential and employment sections of the Study Area
- Updating, where feasible, regional road standards for rural collector and rural arterial roads to include provision for on-road and off road bicycle paths
- Supporting urban design policies that promote pedestrian and cyclist friendly environments
- Working collaboratively to ensure connectivity and continuity of bicycle and pedestrian networks across the regional border
- Promoting live-work land use patterns and urban form conducive to walking and cycling
- Providing infrastructure to improve crossings of existing and proposed freeways and Provincial highways

Traffic System Management Strategy

Efficient and adaptable traffic operations are necessary to extend the lifetime of the system, increase the throughput of roadways, decrease congestion and travel time and cut down on emissions of greenhouse gases. The HPBATS agencies have in place appropriate policies and strategies to develop, implement and maintain traffic operation systems on their respective roads. However, with the Halton Peel boundary Study Area in mind, the responsible jurisdictions are encouraged to:

1. Implement Transportation System Management measures already identified in, the Brampton TTMP, the Halton TMP and the Peel Long Range Transportation Plan (currently being updated)
2. Provide transit priority measures and high occupancy vehicle lanes (HOV) where feasible
3. Ensure coordination between Halton, Halton Hills, Brampton, Peel and Caledon in constructing HOV lanes and implementing transit priority measures

Recommended Transit Network

The current and future road network in the Study Area is challenged by significant capacity deficiencies, a number of operational “pinch-points” and considerable environmental and socio-economic constraints. Improving roadway capacity, connectivity and continuity alone will not work; in addition to providing capacity for commuter auto travel, improvements to the transit network will also be necessary. The need, justification and the implementation phasing should be monitored by the regional and municipal planning agencies and adjusted accordingly.

Recommended Transit Services

The recommended transit system includes the following:

1. Steeles Avenue BRT service extension further west, from its currently planned western terminus at Lisgar GO station to possibly Milton GO station by 2031
2. Inter-regional transit service on the Guelph Street - Bovaird Drive corridor, connecting Brampton with Georgetown by 2021
3. 9th Line / Mountainview Road transit service by 2031
4. HOV lanes and transit service on the Halton-Peel Freeway synchronised with the construction and opening of sections of the Halton-Peel Freeway
5. Carpool lot implementation synchronised with the opening of sections of the Halton- Peel Freeway and the provision of transit service
6. Surface transit service in existing and planned development areas

The recommended transit network is presented in **Exhibit H-1**.

Road Improvements Necessary for Transit

The recommended transit services will require the following investments to roadway network:

Steeles Avenue – widening west of Winston Churchill Boulevard to Milton from the planned 4 lane to a 6 lane cross-section. The additional lanes should be planned for and constructed to standards sufficient to accommodate BRT services such as HOV lanes and transit priority measures and to provide for a seamless transition between jurisdictions

East-West Connection to Bovaird Drive and Highway 7 / Guelph Street. The East-West link connected to Bovaird Drive and Highway 7 / Guelph Street is essential for the provision of inter-regional transit between Brampton and Georgetown. The facility is recommended to provide at least four lanes of capacity with transit initially operating in mixed traffic. Facility planning should consider the addition of high-occupancy vehicle lanes and the potential conversion of HOV lanes to reserved bus lanes in the long term. Addition of HOV lanes and the conversion from HOV to RBL should be triggered by transit demand and transit operations needs.

Halton-Peel Freeway is required to provide infrastructure for inter-regional transit services connected to the 407 Transitway, Halton BRT services, Brampton BRT services and GO services. The Halton-Peel Freeway could also interlink with the GTA West multi-modal corridor in the north. This facility should be constructed to include HOV lanes and transit-priority measures.

Recommended Road Network

The recommended sustainable transportation system depends on a road system that includes a network of multi-modal corridors that provide accessibility and mobility options to all users

– public transit commuters, auto drivers, carpoolers, goods movement operators, pedestrians, and cyclists. The recommended transportation network solution to the Study Area is a complete and interdependent system capable of addressing the challenges presented in the Problem Statement only when implemented as a whole. For projects recommended in this study following the Municipal Class Environmental Assessment guidelines, future Environmental Assessments will determine the appropriate Schedule (Type A, B, or C) that will be followed in the Municipal Class EA process.

The recommended long-term road network is illustrated in **Exhibit H-2**.

1. Planned road improvements to roads in Halton include:

- Widening of Steeles Avenue from 2 to 4 lanes, from Winston Churchill Boulevard to Milton
- Widening of Trafalgar Road from 2 to 4 lanes, from Steeles Avenue to Maple Avenue
- Widening of Winston Churchill Boulevard (boundary road) from 2 to 6 lanes (ultimately from Highway 401 to 5 Sideroad / Embleton Road
- Widening of 10 Sideroad from 2 to 4 lanes, from Trafalgar Road to Winston Churchill Bypass / Norval West Bypass

2. Planned road improvements to roads in Peel include:

- Widening of Mississauga Road from 2 to 6 lanes from 407 ETR to Sandalwood Parkway and from 2 to 4 lanes up to Mayfield Road
- Widening of Bovaird Drive from 2 to 6 lanes up to the Halton-Peel Freeway and from 2 to 4 lanes to access the North West Brampton Secondary Plan area (to be determined through future studies)
- Widening of Winston Churchill Boulevard from Highway 401 to 5 Sideroad/Embleton Road from 2 to 6 lanes
- Widening of Heritage Road from 2 to 4 lanes from Steeles Avenue to Mayfield Road
- Construction of Bram West road network including Financial Drive, New Road A and other roads planned and approved under the Bram West Secondary Plan
- Construction of Williams Parkway from the Halton-Peel Freeway to Creditview Road
- Construction of Sandalwood Parkway at 4-lanes from Creditview Road to Winston Churchill Boulevard
- Widening of Wanless Drive from Creditview Road to Winston Churchill Boulevard
- Widening of Mayfield Road from Chinguacousy Road to Mississauga Road

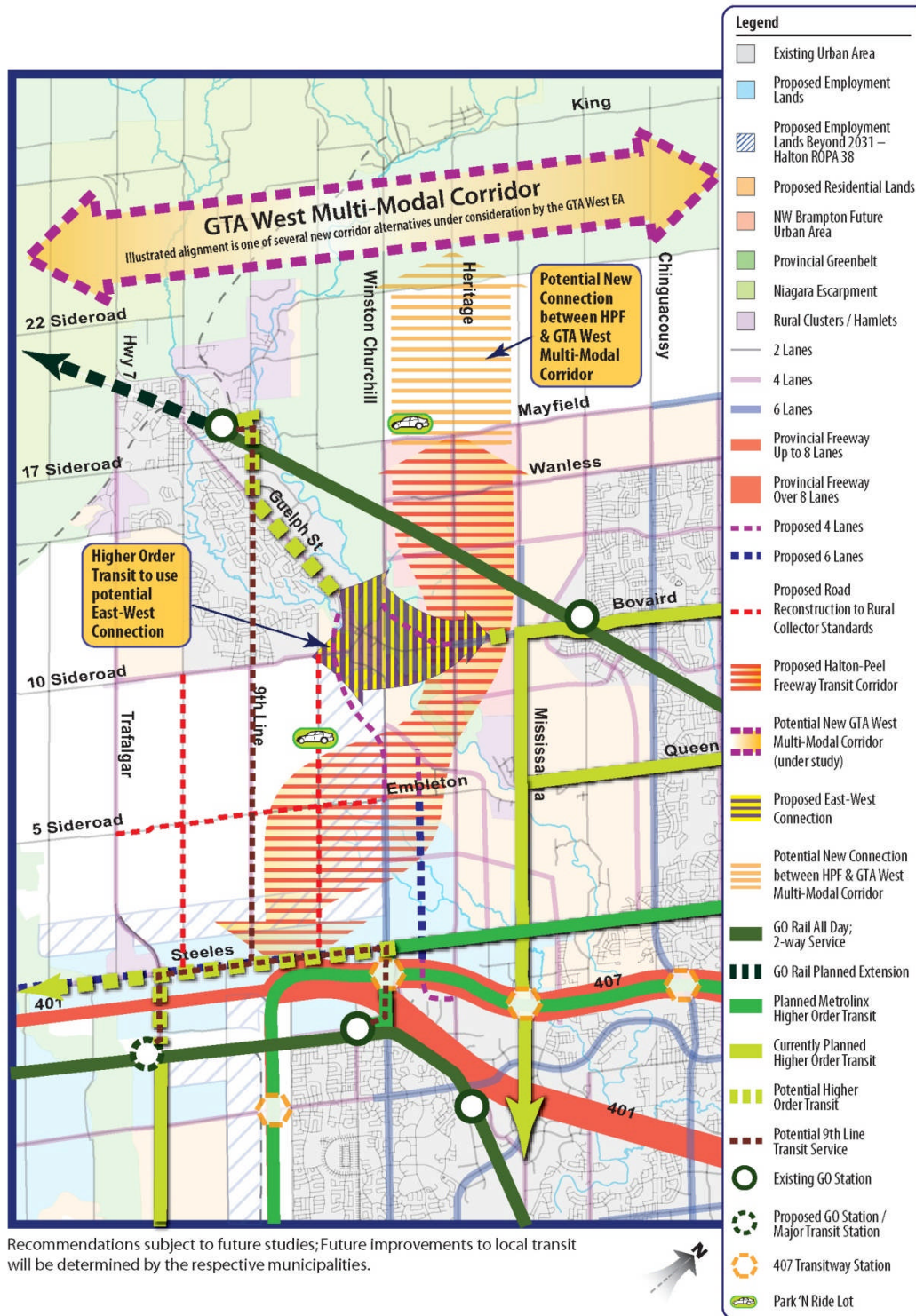
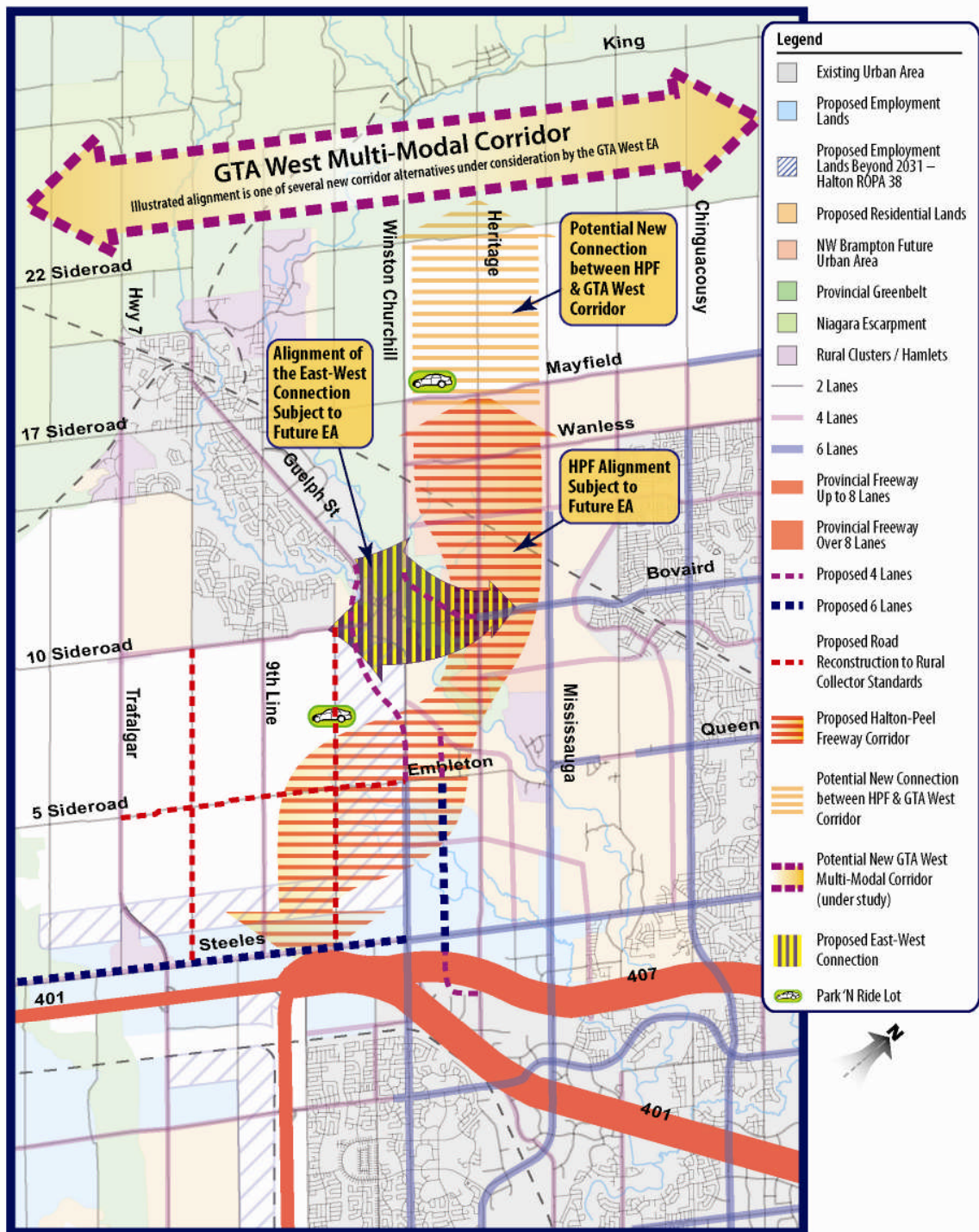


Exhibit H-1: HPBATS Recommended Transit Network, 2031



Subject to future Environmental Assessment studies

Exhibit H-2: HPBATS Recommended Road Network, 2031

3. Additional improvements in the Study Area as recommended by this study include:

- Construction of Bramwest Parkway at 4 lanes from Heritage Road to 407 ETR
- Construction of Bramwest Parkway at 6 lanes from 407 ETR to the Halton-Peel Freeway
- Extension of Bramwest Parkway at 4 lanes to New Road A in Bram West SP
- Halton-Peel Freeway at 8 lanes from Highway 401 / 407 ETR interchange west of Ninth Line in Halton to Bovaird Drive and at 6 lanes from Bovaird Drive to Mayfield Road
- Halton-Peel Freeway connection to the potential future GTA West Corridor
- Winston Churchill Bypass at 4 lanes from north of 5 Sideroad / Embleton Road to 10 Sideroad / Norval West Bypass
- Widening of Winston Churchill Boulevard from 5 Sideroad/Embleton Road to the junction with Winston Churchill Bypass from 2 to 4 lanes
- Norval West Bypass at 4 lanes from 10 Sideroad / Winston Churchill Bypass to Guelph Street
- Widening of Highway 7 west of the intersection with Norval West Bypass to provide consistent 4-lanes of capacity
- Adamson Road North Bypass from Bovaird Drive to Winston Churchill Boulevard (part of North West Brampton Secondary Plan network)
- East-West Connection from Bovaird Drive west of Halton-Peel Freeway to Georgetown (corridor to be determined by the EA)
- Road reconstruction to rural collector standards for Eight Line and Tenth Line from Steeles Avenue to 10 Sideroad in Halton Hills
- Road reconstruction to rural collector standards for 5 Sideroad
- Steeles Avenue widening from 4 to 6 lanes for transit, from Winston Churchill Boulevard to Milton

4. The following improvements planned by Peel Region are not required:

- Widening of Winston Churchill Boulevard from 2 to 6 lanes from north of the junction with the Winston Churchill Bypass to 10 Sideroad. This section should remain at a 2 lane cross-section serving local traffic only
- Widening of Bovaird Drive east of Adamson Road from 2 to 6 lanes. This section should provide no more than 2 lanes of through traffic capacity

In this report we are recommending a comprehensive, multimodal transportation network, with each element of the recommended network having an important role and function. To expedite the approval process we recommend that future EAs be initiated on an individual basis and be undertaken on a network-wide approach.

We recognize that at present neither municipality owns or operates any freeway facilities, as these are in the Provincial domain. This report addresses the need for a freeway facility, not the jurisdiction(s) that will be responsible for the funding, planning, design, and implementation of the freeway facility. Considering the inter-regional function of the proposed Halton-Peel Freeway, it can be argued that the Province of Ontario should have the lead role for the funding, planning, design, and implementation of the freeway. It is

suggested that discussions continue with the Province of Ontario on the jurisdiction and financing of the Halton Peel Freeway.

To expedite the Environmental Assessment process for Halton Peel Freeway we recommend that the HPBATS municipal partners:

- Submit the HPBATS recommendations to the Ministry of Transportation and request that the Ministry take on the proponentcy of the Halton-Peel Freeway, and that it initiate the EA process for the Freeway within a reasonably short time frame
- If MTO is unable at this time to satisfy the above, request that MTO participate in the HPF EA as a joint proponent with the municipal partners
- If MTO is unable at this time to satisfy either of the above, request that MTO participate in the HPF EA, not as a proponent, but as a partner to demonstrate provincial interest and active participation in the HPF EA. Communications with the public would state that the Province has a strong interest in the project, that MTO is an active participant in the EA through the project Steering Committee, and that MTO may elect to become a proponent of the project at a future date (depending on the findings of the GTA West Corridor Study)

The study has identified the growth in demand on the Highway 401 corridor and confirms the need to widen Highway 401 in Mississauga and Halton Region.

The study also confirms the need for east-west improvements between Halton and Peel Regions to accommodate the growth in travel.

As HPBATS did not assess land use scenarios or evaluate development staging options or urban structure plans, we recommend that future development and growth be aligned with the timing for planned infrastructure improvements to the road network, particularly the timing for the widening of Highway 401, the proposed Halton-Peel Freeway, and GTA-West Corridor.

Although the HPBATS recommendations are independent from the GTA West Corridor, it is recognized that the development of the HPBATS network and its main recommendation – the Halton-Peel Freeway – will have opportunities to connect with the proposed GTA West Corridor, currently being planned by the Ontario Ministry of Transportation. The potential connection between the Halton-Peel Freeway and GTA West Corridor is shown in **Exhibit H-2**.

The benefits of the GTA West Corridor to the HPBATS Study Area include:

- Greater access to the provincial highway network
- Improved inter-regional connectivity, for autos, transit, and goods movement
- Alternative goods movements corridor, including aggregate trucks

As the recommendations of HPBATS are implemented, ongoing coordination will be needed with the GTA West Corridor Study.

I. Implementation and Financing

The completion of HPBATS opens up the opportunity for Halton Region, Region of Peel, City of Brampton, Town of Halton Hills, and Town of Caledon to resolve outstanding transportation issues and, more importantly, to develop a comprehensive and coordinated approach by enhancing the HPBATS transportation strategy with land use information.

To implement the recommendations of HPBATS, the following actions are recommended:

- Official Plan Amendments – Following approval of HPBATS, develop and adopt an Official Plan Amendment (OPA) consisting of updated transportation policies, transportation schedules and corridor protection policies for Halton Peel Freeway, East-West Connection and other roads identified in HPBATS
- Development Charge Updates – Following approval of Official Plan Amendments, amend municipal capital plans and Development Charges By-Laws
- Confirm the results of this study through other major transportation strategy documents such as transportation master plans, and incorporate the findings
- Work cooperatively with the stakeholders and members of the public including but not limited to the Upper Canada College Outdoor Education Centre, Queen of Peace Croatian Franciscan Centre, Brampton Brick, Smart Centres, Maple Lodge Farms, individual land owners and land developer groups to further advance and implement the recommendations of the HPBATS
- Work cooperatively with other public agencies such as Hydro One for the planning of infrastructure projects to support population growth in the Study Area. Explore the use of joint use transportation and power transmission corridors where possible to provide services to the residents of the study area in a coordinated, efficient and cost effective manner.
- Nurture and preserve the spirit of cooperation and partnership established during the course of the HPBATS and use it as a platform for developing and implementing all aspects of the HPBATS transportation management strategy
- Subject to confirmation by municipal partners, initiate Environmental Assessment Phase 3 and 4 studies for the Halton-Peel Freeway, Bramwest Parkway, East-West Connection, Norval West Bypass, Winston Churchill Boulevard Bypass, and Steeles Avenue, and restart the Environmental Assessment process for Trafalgar Road
- Include the results and recommendations of the HPBATS in ongoing environmental assessment studies, including the Bovaird Drive widening EA and Mississauga Road widening EA
- Seek ways to accelerate the widening from four to six lanes of Steeles Avenue west of Winston Churchill Boulevard
- Undertake a comprehensive update and review of the needs and conditions in the Halton-Peel boundary area in five years

High level estimates of road construction costs for the recommended road improvements (beyond those already planned) identified in HPBATS amount to \$629 million. The costs include \$604 million for the construction of new roads and \$20 million for the widening and

reconstruction of existing roads. The construction of the Halton-Peel Freeway is the most significant item on this list, as it accounts for 76% of the total cost.

The construction of the Halton-Peel Freeway is necessary to meet the Provincial Growth Plan objectives, exceeds the financial capabilities of Halton and Peel and should be financed from other sources (presumably Provincial). The Freeway will serve not only Peel and Halton but also the GTA and the Golden Horseshoe and would provide connectivity with the GTA West Corridor identified by the Provincial Growth Plan. Understanding this, all Study Area agencies are encouraged to work co-operatively and with an open mind in order to determine the most appropriate method to finance the recommended projects.

TABLE OF CONTENTS

Executive Summary	i
1. Introduction	7
1.1 Background.....	7
1.2 Study Area	7
1.3 Study Scope and Objectives	9
1.4 Class Environmental Assessment Process.....	10
1.5 Study Organization	11
1.6 Report Structure.....	12
2. Public Consultation Process	14
2.1 Description of the Public Consultation Process.....	14
2.2 Stakeholder Workshops and Public Information Centres.....	15
2.2.1 Stakeholder Workshop #1 – September 24, 2009.....	15
2.2.2 Public Information Centre #1 – September 24, 2009.....	15
2.2.3 Stakeholder Workshop #2 – November 24, 2009	16
2.2.4 Public Information Centre #2.....	17
2.3 Comments Received and Project Team Responses	17
3. Study Context	18
3.1 Province of Ontario.....	18
3.1.1 “Places to Grow” Plan, 2006.....	18
3.1.2 Greenbelt Plan 2005, February 2005	19
3.1.3 Highway 7 Role and Function Study, March 2001.....	20
3.2 Metrolinx	21
3.3 GTA West Corridor	22
3.4 Halton Region.....	25
3.4.1 ROPA 37	25
3.4.2 ROPA 38 and Sustainable Halton, 2009	26
3.4.3 Halton TMP, June 2004	28
3.4.4 Halton Natural Areas Inventory, 2006.....	28
3.4.5 Class Environmental Assessment for the Proposed Extension of No. 10 Side Road and a Norval Bypass, 2000.....	29
3.5 Peel Region.....	29
3.5.1 Long Range Transportation Plan (LRTP), September 2005.....	29
3.5.2 Peel Region Transportation Demand Management Study Report, 2004 ...	31
3.5.3 EA Studies.....	31
3.6 City of Brampton	31
3.6.1 Transportation and Transit Master Plan Sustainable Update 2009, November 2009	31
3.6.2 Bram West Block 40-3, November 2009 – Environmental Study Report.	35
3.6.3 Northwest Brampton Transportation Infrastructure Review, April 2005 ..	36
3.7 Town of Caledon	37
3.7.1 Caledon Transportation Needs Study Update, 2009.....	37
3.8 Other Key Studies and Documents.....	38

4.	Existing Study Area Conditions.....	40
4.1	Socio-Economic Environment.....	40
4.1.1	Existing Land Uses	40
4.1.2	Development Activity	42
4.1.3	Agricultural Lands	42
4.1.4	Aggregate and Shale Resources	42
4.1.5	Socio-Cultural Heritage Environment.....	45
4.2	Natural Environment	46
4.2.1	Key Environmental Systems	46
4.2.2	Provincial Greenbelt Plan	48
4.2.3	Greenland Designations	49
4.2.4	Transportation Impacts to the Natural Environment.....	49
4.3	Transportation.....	50
4.3.1	Road Network	50
4.3.2	Transit Network	55
4.3.3	Existing Travel Demand	57
4.3.4	Goods Movement.....	59
5.	Needs and Opportunities	60
5.1	Halton-Peel Travel Model	60
5.1.1	Development of the Halton-Peel Travel Model	60
5.1.2	Model Validation	61
5.1.3	Model Limitations.....	62
5.2	Land Use Forecasts.....	64
5.3	Existing Transportation Needs and Opportunities.....	68
5.3.1	Transportation Issues	68
5.3.2	Existing Bottlenecks	70
5.3.3	Screenline Analysis.....	72
5.4	Future 2031 Transportation Needs and Deficiencies.....	73
5.5	Problem and Opportunity Statement	81
6.	Development of Planning Alternatives	82
6.1	Foundations of a Long-Term Transportation Strategy	82
6.2	Currently Planned Road and Transit.....	83
6.2.1	Public Transit Improvements by 2031	83
6.2.2	Road Widening and New Construction by 2031	85
6.3	Alternative Transportation Improvements.....	88
6.3.1	Context for Planning Alternatives.....	88
6.3.2	North-South Travel and Network Alternatives	89
6.3.3	East-West Travel and Network Alternatives	97
7.	Evaluation of Transportation Network Alternatives	104
7.1	Evaluation Methodology	104
7.2	North-South Alternatives.....	109
7.2.1	Do Nothing.....	109
7.2.2	Brampton Arterial Options.....	110
7.2.3	Brampton Freeway Options	118
7.2.4	Halton-Peel Freeway (HPF) Options	120

7.2.5 Preferred North-South Alternative	128
7.3 East-West and Norval Network Alternatives	135
7.3.1 Do Nothing.....	135
7.3.2 Norval Network Alternatives	136
7.3.3 East West Alternatives	138
7.4 The Preferred Road Network.....	151
7.5 Transit and Travel Demand Management	153
7.5.1 Steeles Avenue BRT	154
7.5.2 Guelph Street to Bovaird Drive High Order Transit.....	154
7.5.3 9 th Line Transit Service	155
7.5.4 Halton-Peel Freeway HOV lanes and Transitway	155
7.5.5 Recommended Road Network with the Preferred Transit and HOV	156
7.6 Phasing Analysis.....	158
7.7 Sensitivity Analysis of the Preferred Network	160
7.7.1 GTA West Corridor.....	160
7.7.2 Risk Analysis	164
8. Recommended Transportation Strategy	166
8.1 A Sustainable Transportation Strategy	166
8.2 Travel Demand Management	169
8.3 Active Transportation Strategy.....	169
8.4 Traffic System Management Strategy	170
8.5 Recommended Transit Network	171
8.5.1 Recommended Transit Services.....	171
8.5.2 Road Improvements Necessary for Transit.....	171
8.5.3 Other Transit Recommendations.....	172
8.6 Recommended Road Network.....	174
8.6.1 Halton-Peel Freeway.....	178
8.6.2 East-West Connection.....	179
8.6.3 Bramwest Parkway.....	180
8.6.4 Other Improvements.....	180
8.6.5 Other Road Recommendations	181
8.6.6 Summary of Recommendations and Timing	182
8.6.7 Coordination with GTA West Corridor EA Study.....	183
9. Implementation.....	184
10. Financing.....	185

Appendices

A. Consultation Process

- A-1 Public Information Centre #1 and Stakeholder Workshop #1 Summary Report
- A-2 Public Information Centre #2 and Stakeholder Workshop #2 Summary Report
- A-3 Public and Stakeholder Comments Received and Project Team Responses
- A-4 Input to the Draft Report from the Technical Advisory Committee

Tables

Table 4-1: HPBATS Existing Road Network.....	52
Table 4-2: Typical Condition and Spring Load Condition Haul Route Percentages.....	59
Table 5-1: Calibration Results, 2001 PM Peak Hour, Peak Direction of Traffic	61
Table 5-2: Land Use Forecast Sources	64
Table 5-3: Land Use Forecast Estimates	64
Table 5-4: Study Area Population and Employment Land Use, 2006, 2021 and 2031	66
Table 5-5: Study Area Combined Population and Employment Totals, 2006, 2021 and 2031	66
Table 5-6: Distribution of Trips Destined to HPBATS Study Area, PM Peak Period	75
Table 5-7: Distribution of Trips Originating from HPBATS Study Area, PM Peak Period ..	75
Table 5-8: Network Performance Indicators, 2006, 2021 and 2031 (as planned network), PM Peak Hour.....	77
Table 6-1: Major Transit Investments by 2031.....	83
Table 6-2: Planned Road Improvements within the Study Area by 2031	85
Table 6-3: NSTC Brampton Arterial Options.....	92
Table 6-4: NSTC Brampton Freeway Options	95
Table 6-5: NSTC Halton-Peel Freeway Options	96
Table 6-6: East-West Connection Options	102
Table 7-1: Evaluation Criteria and their Importance	104
Table 7-2: Criteria and Indicators	105
Table 7-3: Performance Measures	106
Table 7-4: Do Nothing Screenlines - Northbound Travel, 2031 PM Peak Hour, Volume to Capacity Ratios	109
Table 7-5: Do Nothing Screenlines - Westbound Travel, 2031 PM Peak Hour, Volume to Capacity Ratios	110
Table 7-6: Brampton Arterial Screenlines - Northbound Travel, 2031 PM Peak Hour, Volume to Capacity Ratios	112
Table 7-7: Brampton Arterial Screenlines - Westbound Travel, 2031 PM Peak Hour, Volume to Capacity Ratios	113
Table 7-8: Brampton Arterial Options Evaluation.....	114
Table 7-9: Brampton Arterial Options Evaluation Summary.....	117
Table 7-10: Brampton Freeway Screenlines – Northbound Travel, 2031 PM Peak Hour, Volume to Capacity Ratios	119
Table 7-11: Brampton Freeway Screenlines – Westbound Travel, 2031 PM Peak Hour, Volume to Capacity Ratios	120
Table 7-12: HPF Screenlines – Northbound Travel, 2031 PM Peak Hour, Volume to Capacity Ratios	122
Table 7-13: HPF Screenlines – Westbound Travel, 2031 PM Peak Hour, Volume to Capacity Ratios	123
Table 7-14: HPF Evaluation	124
Table 7-15: Evaluation Summary	127
Table 7-16: Evaluation of North-South Alternatives.....	131
Table 7-17: North-South Alternatives Evaluation	134

Table 7-18: East-West Connection – Northbound Travel, 2031 PM Peak Hour, Volume to Capacity Ratios	142
Table 7-19: East-West Connection – Westbound Travel, 2031 PM Peak Hour, Volume to Capacity Ratios	143
Table 7-20: East-West Options Analysis.....	146
Table 7-21: East-West Options Evaluation.....	148
Table 7-22 Preferred Road Network, Screenline Summary – Northbound, 2031, PM Peak Hour, Volume to Capacity Ratios	152
Table 7-23: Preferred Road Network, Screenline Summary – Westbound, 2031, PM Peak Hour, Volume to Capacity Ratios	152
Table 7-24: Preferred 2031 Network – Performance Indicators.....	152
Table 7-25: 2006 and 2031 PM Peak Period Modal Split	156
Table 7-26: Recommended Road and Transit Network, Northbound 2031 PM Peak Hour, Volume to Capacity Ratios	156
Table 7-27: Recommended Road and Transit Network, Westbound 2031 PM Peak Hour, Volume to Capacity Ratios	157
Table 7-28: Recommended Road and Transit Network 2031, Network Performance	157
Table 7-29: Recommended Network, Northbound 2021 PM Peak Hour, Volume to Capacity Ratios	158
Table 7-30: Recommended Network, Westbound, 2021 PM Peak Hour, Volume to Capacity Ratios	159
Table 7-31: Network Performance Measures, 2021, PM Peak Hour	159
Table 7-32: Impact of GTA West on the Recommended Network with Transit and HOV, Northbound 2031 PM Peak Hour, Volume to Capacity Ratios	162
Table 7-33: Impact of GTA West on the Recommended Network with Transit and HOV, Westbound 2031 PM Peak Hour, Volume to Capacity Ratios	163
Table 7-34: Screenline Analysis, HPBATS Recommended Transportation System with and without Halton Peel Freeway, Northbound Travel, 2031 PM Peak Hour Volume to Capacity Ratios	164
Table 7-35: Screenline Analysis, HPBATS Recommended Transportation System with and without the Halton Peel Freeway, Westbound Travel, 2031 PM Peak Hour Volume to Capacity Ratios	165
Table 7-36: Network Performance Summary, HPBATS Recommended Transportation System without the Halton Peel Freeway, 2031, PM Peak Hour	165
Table 8-1: Summary of Recommendations and Timing.....	182
Table 10-1: Summary of New Road Investments to the HPBATS Network by 2031	185

Exhibits

Exhibit 1-1: Study Area	8
Exhibit 1-2: Class Environmental Assessment Process, Phase 1 and 2.....	11
Exhibit 3-1: Growth Plan Places to Grow and the HPBATS Study Area	19
Exhibit 3-2: Greenbelt Plan and the HPBATS Study Area	20
Exhibit 3-3: Metrolinx The Big Move and HPBATS Study Area.....	22

Exhibit 3-4: GTA-West Study Area	23
Exhibit 3-5: ROPA 38 Future Land Use Forecast	27
Exhibit 3-6: Halton Natural Areas Inventory Areas in the Study Area	28
Exhibit 3-7: Peel Official Plan Major Road Network, November 2008.....	30
Exhibit 3-8: 2031 Brampton Transit Network	33
Exhibit 3-9: 2031 Brampton Road Network.....	34
Exhibit 3-10: Bram West Secondary Plan Spine Road Network.....	35
Exhibit 3-11: Potential Additional Improvements to Meet Transportation Needs	38
Exhibit 4-1: Socio-Economic Constraints Map	41
Exhibit 4-2: Aggregate Resources in Halton (ROPA 38, 2009).....	43
Exhibit 4-3: Aggregate Resources in Peel Region (Region of Peel Official Plan, 2008).....	44
Exhibit 4-4: Existing Environmental Constraints	46
Exhibit 4-5: Greenbelt Plan	48
Exhibit 4-6: Existing Road Network.....	50
Exhibit 4-7: Existing Transit Service.....	56
Exhibit 4-8: Travel by Mode to/from the Study Area, 2006 PM Peak Period.....	57
Exhibit 4-9: Trip Distribution, Study Area Destinations, PM Peak Period, 2006 TTS	58
Exhibit 4-10: Trip Distribution, Study Area Origins, PM Peak Period, 2006 TTS	58
Exhibit 5-1: Calibration Screenlines	63
Exhibit 5-2: Preferred Land Use Concept, Bram West Secondary Plan.....	65
Exhibit 5-3: ROPA 38 Map 1, Regional Structure	67
Exhibit 5-4: 2006 Conditions at the Screenline Level, PM Peak Hour	72
Exhibit 5-5: Population and Employment within the Study Area, 2006 to 2031	73
Exhibit 5-6: Total Study Area Trips in the PM Peak Period, All Modes, 2006 to 2031	74
Exhibit 5-7: Trip Distribution Destined to the Study Area, PM Peak Period, 2031	76
Exhibit 5-8: Trip Distribution Originating from the Study Area, PM Peak Period, 2031	76
Exhibit 5-9: 2021 Screenline V/C Ratios, WB PM Peak Hour	78
Exhibit 5-10: 2031 Screenline V/C Ratios, WB PM Peak Hour	78
Exhibit 5-11: 2021 Screenline V/C Ratios, NB PM Peak Hour	79
Exhibit 5-12: 2031 Screenline V/C Ratios, NB PM Peak Hour	79
Exhibit 6-1: Currently Planned Transit, 2031	84
Exhibit 6-2: Currently Planned Road Network, 2031.....	87
Exhibit 6-3: Development and Analyses of Planning Alternatives Flow Diagram	88
Exhibit 6-4: NSTC Alternatives.....	91
Exhibit 6-5: New Network Alternatives West of Winston Churchill Boulevard	98
Exhibit 6-6: Adamson Road North Bypass.....	99
Exhibit 6-7: North Georgetown Option	100
Exhibit 6-8: Early Concepts of the Norval Bypass	101
Exhibit 7-1: HPBATS East-West Evaluation Screenlines (for North-South Traffic)	107
Exhibit 7-2: HPBATS North-South Evaluation Screenlines (for East-West Traffic)	108
Exhibit 8-1: HPBATS Recommended Transit Network, 2031	173
Exhibit 8-2: HPBATS Recommended Road Network; Halton Hills, 2031	176
Exhibit 8-3: HPBATS Recommended Road Network, 2031.....	177

1. INTRODUCTION

The Halton-Peel Boundary Area Transportation Study (HPBATS) is a joint study undertaken by the Region of Peel, Halton Region, City of Brampton, Town of Caledon, and Town of Halton Hills. The study was initiated following a settlement reached with Halton Region subsequent to the City of Brampton's appeal to the Regional Official Plan Amendment 25 (ROPA 25).

The purpose of the study is to identify the long-term (2021 and 2031) transportation network required to support provincial and municipal planning goals, and to serve future transportation demands within the Study Area. Begun in April 2007, the Class Environmental Assessment process was suspended in July 2007 to allow the Region of Halton to complete its Sustainable Halton process, and reinitiated in June 2009.

HDR | iTRANS was retained to carry out this study.

1.1 Background

The Regional Municipalities of Peel and Halton are strategically located west of the City of Toronto and York Region and within the Greater Toronto Area (GTA).

The Region of Peel, bordered by Toronto and York to the east and Halton to the west, is home to Canada's busiest airport (Toronto Pearson International Airport), and is thus a hub of economic activity. Its two largest municipalities, Mississauga and Brampton, are almost fully developed. The Town of Caledon borders Brampton to the north.

Halton Region, bordered by the Region of Peel to the east, the City of Hamilton and Wentworth County to the southwest, and Wellington County to the north and northwest, is another growing region in the GTA. Its southern municipalities of Burlington and Oakville are highly developed, while the municipalities to the north, including Milton and Halton Hills, have large rural areas with growing urbanized areas.

1.2 Study Area

The Study Area is located in Halton Region and Peel Region, and is roughly bounded by Trafalgar Road to the west, King Street to the north, Chinguacousy Road to the east, and Highway 401 and 407 ETR to the south. It encompasses the east part of Halton Hills, west Brampton, the northeast corner of Milton, the northwest corner of Mississauga, and the southwest corner of Caledon. **Exhibit 1-1** illustrates the Study Area.

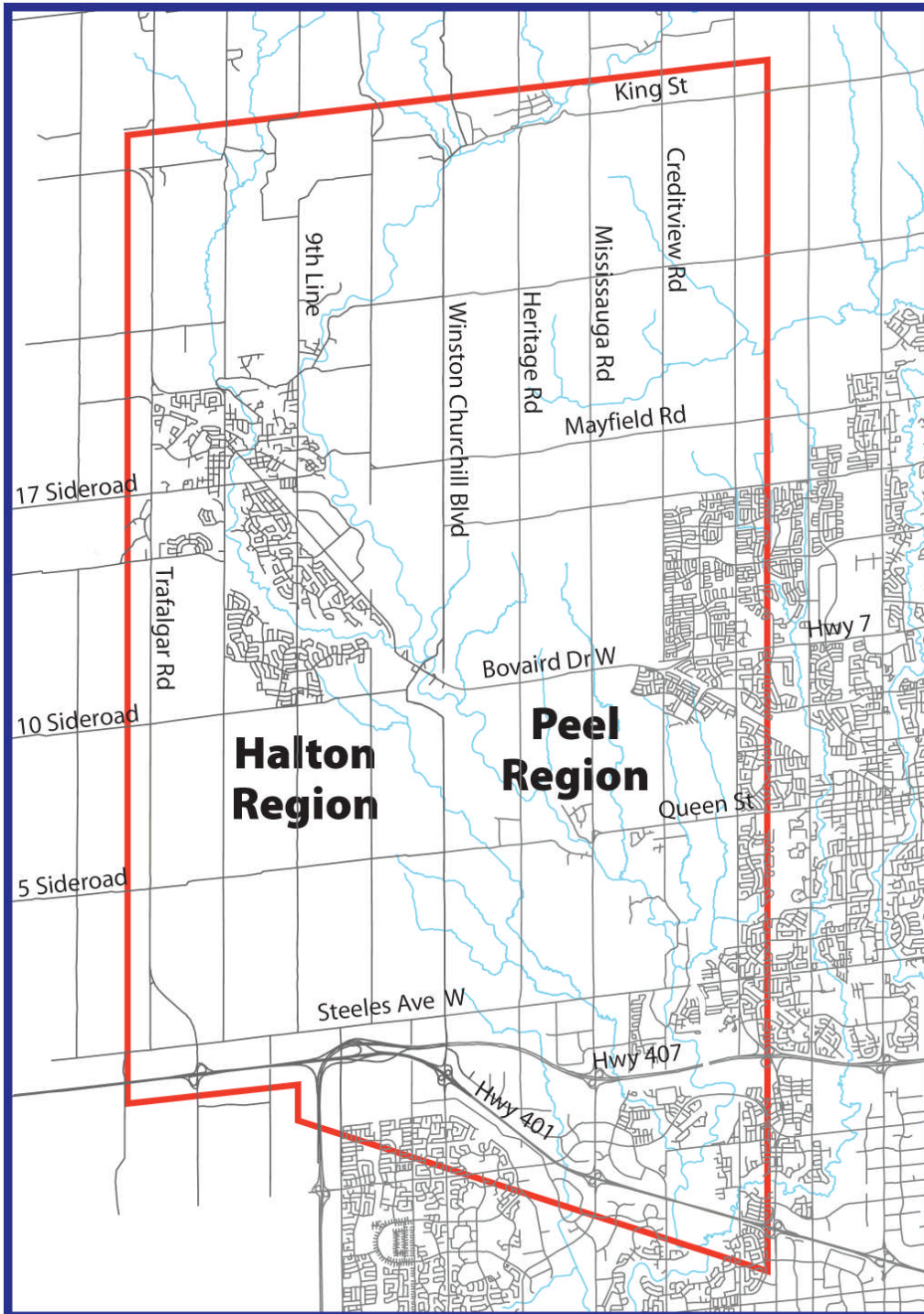


Exhibit 1-1: Study Area

1.3 Study Scope and Objectives

The objective of the study is to identify a long term transportation network solution that:

- Supports current and future municipal planning objectives by providing transportation capacity to accommodate future travel demands generated by planned growth in west Brampton and Halton Hills
- Develops a coordinated interconnected roadway network near the Halton-Peel Boundary
- Identifies opportunities for transportation mode choices, including public transit, carpooling/vanpooling, and High Occupancy Vehicle (HOV) lanes in the Study Area
- Identifies solutions to serve long-distance truck traffic travelling between Halton Region and Peel Region
- Identifies improvements that will serve inter-regional traffic including longer-distance, cross-boundary traffic from Halton Region (and areas west of Halton Region), travelling through west Brampton and southwest Caledon to destinations to the south and east in Peel Region, York Region, and Toronto
- Reviews the potential to improve connections with the existing Provincial 400-series highway network and possible future Provincial transportation facilities including the GTA West Corridor Planning and Environmental Assessment Study in support of the Province's growth objectives as set out in the Provincial Growth Plan for the Greater Golden Horseshoe
- Explores opportunities to reduce dependency on the automobile through Travel Demand Management (TDM) and transit supportive measures
- Minimizes vehicle emissions including greenhouse gases (as estimated through EMME/2 forecasts and cost of congestion methodology)
- Encourages economic development consistent with municipal objectives and minimizes and mitigates negative socio-economic impacts
- Provides cost effective transportation solutions allowing for logical and efficient staging of implementation
- Minimizes and mitigates impacts to natural environmental systems and habitats

The study addresses issues related to transportation network planning, long range land use planning, demand management, and corridor protection planning:

- Deficiencies and discontinuities in the existing east-west arterial road linkages between Halton Region and Peel Region
- The need, scope and timing of improvements to the overall inter-regional transportation network to serve long-distance travel and goods movement, including improvements to arterial road east-west linkages between Halton Region and the Region of Peel, arterial roads and high level aggregate haul routes within the project's Study Area
- The potential need, function and preferred corridor for a North-South Transportation Corridor (NSTC)
- The role, function and need for the proposed Bramwest Parkway
- The role, function and need for the East-West Connection near Norval and Highway 7
- The need for other east-west improvements

- Truck traffic needs and impacts on communities
- The need and potential for transit improvements (local and GO) to serve residents and employers
- GO Transit service improvements on the Milton and Georgetown GO line
- Impacts of potential facilities on industrial development areas or other desirable land uses
- Travel demand management strategy to reduce single-occupant auto use during the peak periods

HPBATS recommends a transportation system that:

- Supports planned growth within Halton and Peel regions (as established by Places to Grow, current available land use forecasts, and municipal official plans)
- Serves the transportation needs to 2031 at an acceptable level of service
- Develops an implementation plan for maintaining level of service thresholds for interim horizon years (2016 and 2021)
- Supports a road hierarchy with continuous arterial road connections to allow for goods movement between major centres and from major centres to the 400-Series highway network and possible future Provincial transportation facilities (i.e. GTA West Corridor)
- Develops a strategy for a balanced transportation system through multi-modal solutions and travel demand management initiatives
- Makes use of existing capacity and infrastructure for efficient transportation system management (TSM)
- Provides for interconnectivity of transportation service across the Halton – Peel Boundary
- Recognizes current transportation initiatives (provincial and municipal)
- Recognizes sensitivity to heritage communities and protection policies outlined in municipal secondary plans
- Recognizes sensitivity to the natural environment

1.4 Class Environmental Assessment Process

HPBATS was undertaken in accordance with the guidelines of the Municipal Engineers Association *Municipal Class Environmental Assessment, June 2000 (Amended 2007)* following of the Transportation Master Plan process.

HPBATS completes the first two phases of the five-phase Class EA Process, as shown in **Exhibit 1-2:**

- **Phase 1** – Identify the problem (deficiency) or opportunity
- **Phase 2** – Identify alternative solutions to address the problem or opportunity by taking into consideration the existing environment, and establish the preferred solution taking into account the input of the public and review agencies

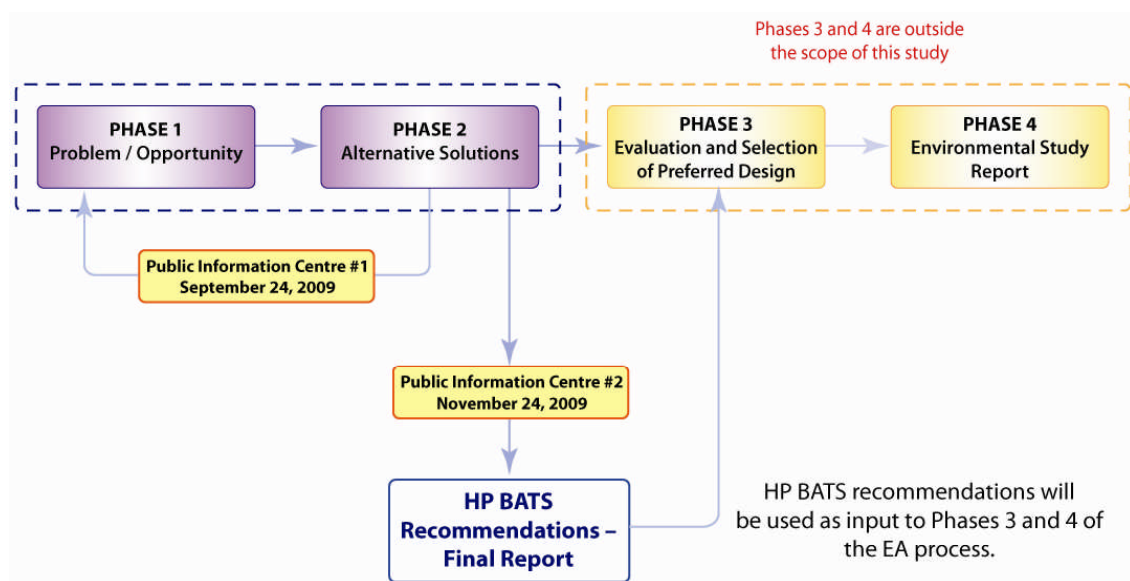


Exhibit 1-2: Class Environmental Assessment Process, Phase 1 and 2

The results of HPBATS Master Plan will constitute Phases 1 and 2 of the Environmental Assessment process and will be used as input into future environmental assessment studies for transportation projects arising from the recommendations of the study.

HPBATS provides the need and justification for the recommended transportation improvements (Phases 1 and 2). For these improvements, future environmental assessment studies could move to Phases 3 and 4 to identify and evaluate alternative alignments and designs, and select a preferred design based on the evaluation and consultation received during the future EA process.

1.5 Study Organization

HPBATS is a joint study of the Region of Peel, Halton Region, City of Brampton, Town of Halton Hills, Town of Caledon and the Ministry of Transportation. A Project Steering Committee with representatives from the participating municipalities provided overall direction to the study.

Ongoing advice was provided by a Technical Advisory Committee (TAC). The following agencies were invited to form the TAC:

- Region of Peel
- Halton Region
- City of Brampton
- Town of Halton Hills
- Town of Caledon
- Town of Milton

- City of Mississauga
- Ministry of Transportation
- GO Transit
- Metrolinx
- Ministry of the Environment
- Ministry of Natural Resources
- Ministry of Energy and Infrastructure
- Ontario Realty Corporation
- Niagara Escarpment Commission
- Credit Valley Conservation
- Hydro One
- Trans Canada
- Conservation Halton
- Canadian National Railway
- Canadian Pacific Railway
- 407 ETR
- Ontario Power Authority

1.6 **Report Structure**

Chapter 1 of this report (“Introduction”) introduces the study and provides background information about the study process and Study Area.

Chapter 2 (“Public Consultation Process”) provides a description of the public consultation process that took place throughout the study process.

Chapter 3 (“Study Context”) describes the provincial and municipal policy background for the study.

Chapter 4 of the report (“Existing Study Area Conditions”) describes existing conditions and key features in the area.

Chapter 5 (“Needs and Opportunities”) outlines the transportation needs and opportunities for improvement in the Study Area, summarized in a Problem and Opportunity Statement. This section also describes the transportation model developed for the study.

Chapter 6 (“Development of Planning Alternatives”) describes the development of the different planning alternatives that aim to resolve the transportation needs.

Chapter 7 (“Evaluation of Transportation Network Alternatives”) provides a description of the evaluation of the alternatives.

Chapter 8 (“Recommended Transportation Strategy”) provides a description of the transportation strategy for the Study Area.

Chapter 9 (“Implementation”) provides a list of recommended actions for implementation of the HPBATS recommendations

Chapter 10 (“Financing”) provides a breakdown of the estimated costs for the recommended transportation infrastructure.

2. PUBLIC CONSULTATION PROCESS

2.1 Description of the Public Consultation Process

The public consultation process was an essential component of the study. Considering the population in the Study Area and the significant transportation issues, there was a high level of public interest.

As such, a comprehensive public consultation program was conducted for the Study. The public consultation program contained the following components:

- **Public Information Centres (PICs)** – Two formal meetings were held during the Study, consisting of public open houses with display panels and a formal presentation followed by a discussion session. The PICs are described in greater detail in **Section 2.2**
- **Stakeholders Group** – A Stakeholders Group was formed to allow individuals representing groups, agencies and organizations a special opportunity to provide feedback about the study. Stakeholders meetings are described in greater detail in **Section 2.2**
- **Newsletters** – Three newsletters were produced over the course of the study period to inform stakeholders about new project developments
- **Newspaper Advertisements** – Advertisements were placed in local newspapers to announce the Notice of Study Commencement, PIC #1 and PIC #2. The newspaper advertisements invited the public to attend the meetings and to provide input. The advertisements provided information on contact names, telephone numbers, and addresses
- **Project Website** – Prior to PIC #1, a project website was launched to provide the public with an additional means to obtain information about the project, including background material, the process, upcoming events, and contact information. The website for this Study had the following address: <http://www.halton-peelbats.ca/>

Major events in the public consultation process are summarized below:

- Notice of Study Commencement – Published April 11, 2007
- Newspaper Advertisement notification of PIC #1 – September 9-11, 2009
- First Stakeholders Workshop – September 24, 2009
- PIC #1 – September 24, 2009
- Notice of PIC #2 sent out – November 2, 2009
- Newspaper Advertisement notification of PIC #2 – November 7-8, November 11, November 19-20, 2009
- Second Stakeholders Workshop – November 24, 2009
- PIC #2 – November 24, 2009
- Notice of Study Completion – April 2010

The public consultation process was designed to:

- Provide an open line of communication with the public, other municipalities and agencies

- Provide information to the public as a basis for engaging in active dialogue with the public and ensuring public participation
- Seek the public's input on the identification of issues, the development of alternative solutions, and the selection of the preferred alternative
- Ensure that the plan has general support from the community

2.2 Stakeholder Workshops and Public Information Centres

2.2.1 Stakeholder Workshop #1 – September 24, 2009

The Stakeholder Workshops took place immediately prior to the Public Information Centres. A “stakeholder” was generally an individual representing a group, agency or organization that has a particular interest in the Study Area. Government agencies, environmental groups, ratepayers' associations and land developers are examples of typical stakeholders who attended the PICs.

The first Stakeholder Workshop was held on September 24, 2009 between 2:00 PM and 4:30 PM. Poster boards about the project were displayed on easels and attendees were provided with the opportunity to examine them. HDR | iTRANS led a presentation describing the findings of the study and soliciting input from the group. Attendees were seated at tables and participated in interactive round-table discussions about the findings and recommendations of the study. The outcomes of these round-table discussions were recorded. Attendees also had the opportunity to provide feedback about the study by completing and submitting questionnaire workbooks.

Approximately 40 individuals attended Stakeholder Workshop #1 on Thursday, September 24, 2009 in a meeting room at the Mold-Masters Sportsplex in Georgetown. The following topics were covered at the workshop:

- Study Background
- Problem and Opportunity Statement
- North-South Transportation Corridor Options
- Georgetown-Norval Bypass Options (East-West Connection)
- Draft Evaluation Criteria

The same topics were presented at PIC #1 later that evening. A more detailed description of Stakeholder Workshop #1 is available in **Appendix A-1**.

2.2.2 Public Information Centre #1 – September 24, 2009

Approximately 100 people attended PIC #1. It took place on Thursday, September 24, 2009 in a meeting room at the Mold-Masters Sportsplex in Georgetown. Representatives from Peel

Region, Halton Region, the City of Brampton, the Town of Halton Hills and the City of Mississauga were present, in addition to staff from HDR | iTRANS.

PIC #1 was advertised on the Peel Region website, the Halton Region website, in *The Mississauga News*, *The Caledon Enterprise* and *The Brampton Guardian* on September 9, 2009, in *The North Halton Compass* and *The Acton Tanner* on September 10, 2009 and in *The Georgetown and Independent and Free Press* on September 11, 2009. Individuals who responded to the Notice of Study Commencement in 2007, identified stakeholders, and individuals who responded to the September 2009 PIC #1 advertisement were compiled onto a contact list and invited by email or phone call to the meeting.

Members of the public were asked to sign-in upon entry and were provided with comment forms and name tags. Between 6:00 PM and 7:00 PM, attendees were able to walk around and look at the PIC display panels. A presentation led by HDR | iTRANS started at 7:00 PM, and explained and elaborated upon the displayed PIC boards. Following the presentation, there was a group discussion facilitated by Sue Cumming. Attendees at the meeting were given the opportunity to ask questions and make comments, and the comments and questions were recorded by the team. Attendees were invited to either leave their completed comment forms in a drop-box or mail/fax them to HDR | iTRANS at a later time. The meeting ended at approximately 8:30 PM. The information presented at the meeting was made available on the project website.

The purpose of PIC #1 was to present the following topics to the public for their input and comments:

- Study Background
- Problem and Opportunity Statement
- North-South Transportation Corridor Options
- Georgetown-Norval Bypass Options (East-West Connection)
- Draft Evaluation Criteria

A more detailed description of Public Information Centre #1 is available in **Appendix A-1**.

2.2.3 Stakeholder Workshop #2 – November 24, 2009

Following the same format as Stakeholder Workshop #1, Stakeholder Workshop #2 was held on Tuesday, November 24, 2009 at the Rotary Glen Banquet Hall in Brampton.

Approximately 40 individuals attended Stakeholder Workshop #2. The following topics were covered in the workshop:

- Project Goals and Refined Problem Statement
- Overall Transportation Strategy
- Evaluation Criteria and Methodology
- Transit Network Improvements
- Review of Options Suggested by the Public
- North South Transportation Corridor Options
- East-West Connection/Norval Network Options

- Preferred Alternatives

The same topics were presented at PIC #2 later that evening. A more detailed description of Stakeholders Workshop #2 is available in **Appendix A-2**.

2.2.4 Public Information Centre #2

Approximately 70 people attended PIC #2. It took place on Tuesday, November 24, 2009 at the Rotary Glen Banquet Hall in Brampton. Representatives from Peel Region, Halton Region, the City of Brampton, the Town of Halton Hills, and the City of Mississauga were present, in addition to staff from HDR | iTRANS.

PIC #2 was advertised on the Peel Region website, the Halton Region website, in *The Mississauga News* on November 7, 2009, *The Brampton Guardian* on November 8, 2009, *The Caledon Enterprise* on November 7 and 11, 2009, *The Tanner* and *The North Halton Compass* on November 19, 2009 and *The Georgetown Free Press* on November 20, 2009. Stakeholders, attendees of PIC #1 and members of the public who responded to the Notice of Study Commencement or the September 2009 notice were compiled onto a contact list and invited by email or phone call to the meeting.

The purpose of PIC #2 was to present the following preliminary results to the public for their input and comments:

- Project Goals and Refined Problem Statement
- Overall Transportation Strategy
- Evaluation Criteria and Methodology
- Transit Network Improvements
- Review of Options Suggested by the Public
- North South Transportation Corridor Options
- East-West Connections and Norval Network Options
- Preferred Alternatives

PIC #2 followed a similar format as PIC #1. A more detailed description of Public Information Centre #2 is available in **Appendix A-2**.

2.3 Comments Received and Project Team Responses

All comments received from the public, stakeholders, and agencies throughout the study were recorded by the project team. **Appendix A-3** summarizes public and stakeholder comments received throughout the study, and the responses provided by the project team. **Appendix A-4** summarizes input to the Draft Report received from the Technical Advisory Committee.

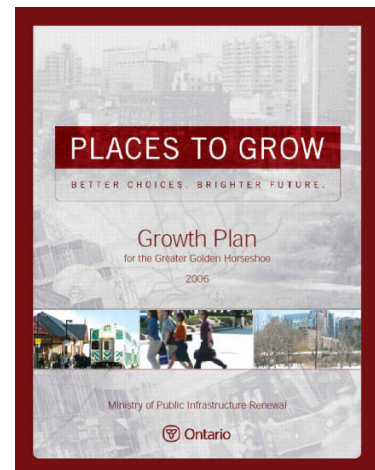
3. STUDY CONTEXT

This Chapter summarizes the key background documents and policies of relevance to the study. A list of all documents consulted during the course of the TMP study can be found in **Section 3.8**.

3.1 Province of Ontario

3.1.1 “Places to Grow” Plan, 2006

The Ontario Ministry of Public Infrastructure Renewal’s (MPIR) *Places to Grow Act* was adopted by the Provincial Parliament in 2006. The focus of the Act is on overcoming the problems of urban sprawl and gridlock in the Greater Golden Horseshoe (GGH) area to accommodate the additional 3.7 million people expected to be living in the area by 2031. The Act sets standards for growth and development: a minimum of 40% of new population growth is to be accommodated through intensification in existing urban areas and new and existing developments should be compact and support transit, cycling and walking.



The final *Growth Plan for the Greater Golden Horseshoe* was released in June 2006. The following objectives for municipal planning were highlighted in the press announcement: stimulating economic prosperity, revitalizing downtowns, encouraging more compact communities, with services, shops and businesses close to home, preserving greenspace and agricultural lands, curbing urban sprawl, reducing car dependency, contributing to better air quality, spurring transit investment, creating conditions favourable to public transit use and promoting a culture of conservation.

Important initiatives included providing \$838 million in 2007 for improving public transit in the GTA, transferring \$1 billion in gas tax revenues for transit across Ontario, establishing the Greater Toronto Transportation Authority (now Metrolinx) to plan and coordinate a transportation system consistent with the Growth Plan, providing \$7.5 billion for infrastructure including roads and bridges and creating a Greenbelt within the GGH to preserve agricultural land and greenspace.

The Places to Grow – Growth Plan for the Greater Golden Horseshoe document shows that the 401/407 area will be well connected to transit in 2031. Schedule 2 illustrates proposed Higher Order Transit between Oakville Centre and 401/407, and between Downtown Brampton and 401/407. **Exhibit 3-1** shows the HPBATS Study Area in the context of the Places to Grow Plan.

A future east-west transportation corridor north of the 407 ETR connecting to Guelph is identified in this document, which passes through the Halton-Peel Study Area.

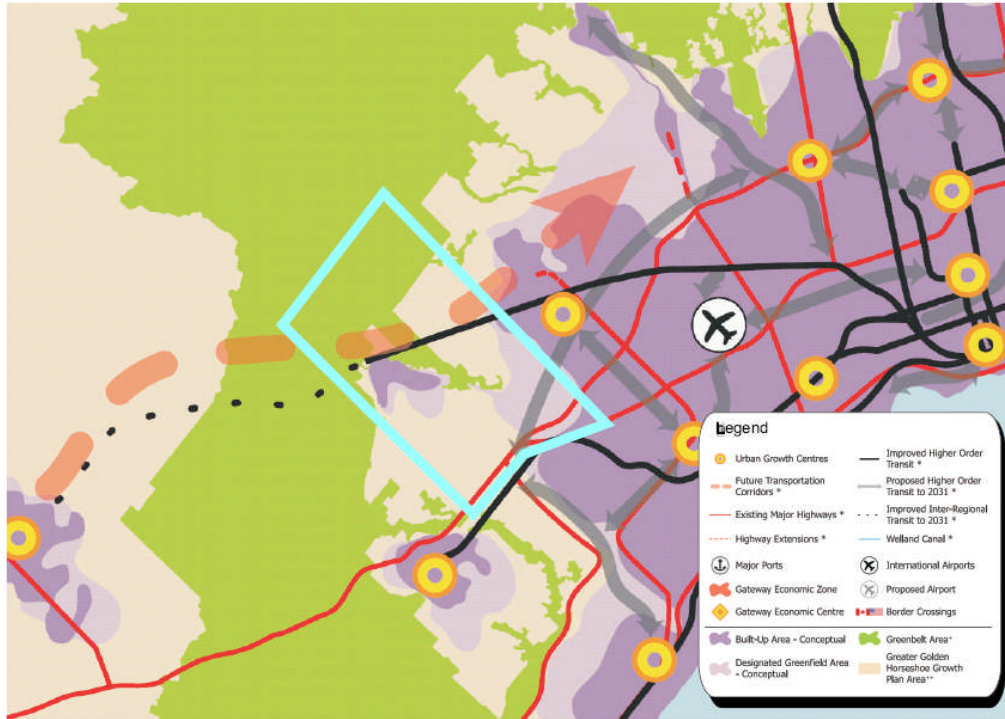


Exhibit 3-1: Growth Plan Places to Grow and the HPBATS Study Area

(Source: Growth Plan for the Greater Golden Horseshoe, 2006)

3.1.2 Greenbelt Plan 2005, February 2005

The Greenbelt Plan identifies where urbanization should not occur in order to provide permanent protection to the agricultural land base and the ecological features and functions in the Greenbelt, including lands within the Niagara Escarpment Plan and the Oak Ridges Moraine Conservation Plan.

The northern part of the HPBATS Study Area has been identified as protected greenbelt area. This greenbelt area stretches further south along the Credit Valley and Halton-Peel border, to just south of Highway 7. This protected area presents a significant constraint in the development of a future transportation network. The Greenbelt Plan and the HPBATS Study Area is shown below in **Exhibit 3-2**.

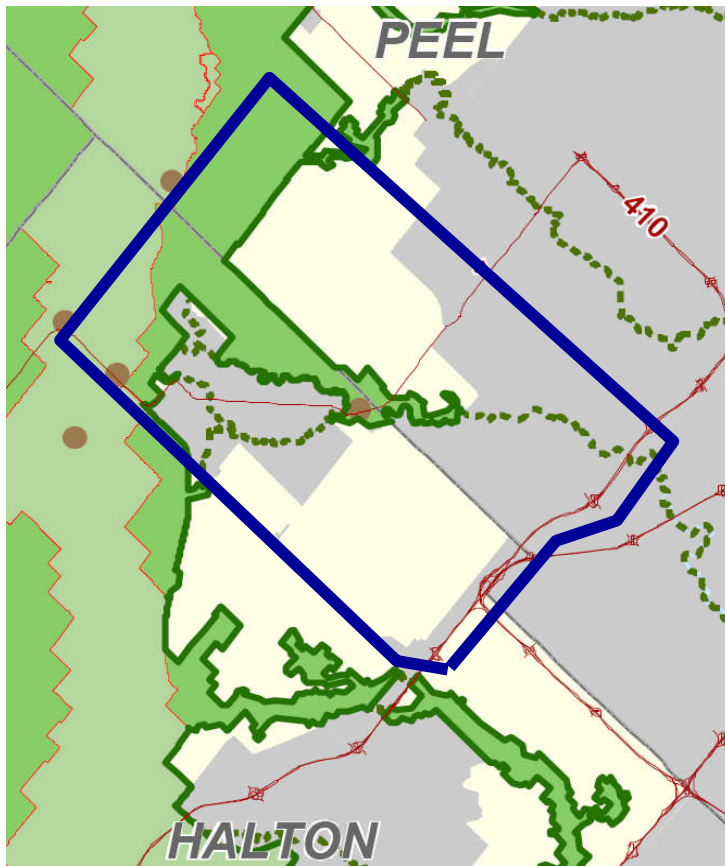


Exhibit 3-2: Greenbelt Plan and the HPBATS Study Area
(Source: Greenbelt Plan 2005)

3.1.3 Highway 7 Role and Function Study, March 2001

This study by the Ministry of Transportation assessed the present and future role and function of Highway 7 between Highway 6 in Guelph and Highway 410 in Brampton. It identifies a number of characteristics regarding the section of Highway 7 that runs directly through the Halton-Peel Study Area. Some of the key findings include:

- **Trip Length:** Average trip length on Highway 7 is in the range of 5 to 6 km; the highway is seldom used for longer trips (urbanized, indirect route)
- **Trip Times:** “End to end” travel time of 61.5 minutes; travel times will continue to increase with new development
- **Freeway Relief and Alternative Routing:** East-west alternative to Highway 401 in the event of a major incident, but not attractive if the 401 is flowing normally
- **Industry Usage:** Both the aggregate industry and general industry in and near the corridor use Highway 7 primarily for short distances to access north-south routes to Highway 401
- **Degree of Urbanization:** Approximately 50% is fully urban, 25% is rural and 25% is semi-rural, although the degree of urbanization is increasing

- **Linking Major Centres:** A regional commuting pattern occurs, linking Rockwood to Guelph; Georgetown to Brampton; and Acton to Guelph or Brampton. Guelph to Brampton trips do not occur very often
- **Transit:** Major corridor transit demand is for access to the GO train service linking Georgetown to Union Station
- **Safety:** Improvements in the Trafalgar Road area are underway; many conflicts arise because of the high level of urbanization in the corridor
- **Connecting Links and Bypasses:** Connecting link functions in providing through traffic are very limited with Guelph the least at 1 to 3%; Georgetown in the 10 to 20% range and Acton in the 30 to 40% range
- **Capacity of Municipal Jurisdictions:** All of the municipalities in the corridor manage large road networks with significant arterial roads which carry traffic volumes in excess of the current volumes along Highway 7 and which cross the municipal boundaries.
- **Road Network Connectivity:** The Highway 7 transportation function is primarily for short trip links to North-South roads for access to the Highway 401 corridor
- **North/South Arterials:** Guelph Line, Regional Road 25, Trafalgar Road, Mountainview, Winston Churchill and Mississauga Road are key transportation links from the Highway 7 corridor to Highway 401
- **Social and Community Impacts:** Highway 7 is a “Main St.” for the Acton, Norval and Rockwood communities and a major urban arterial in Brampton, Georgetown and Guelph. This will result in resistance to widenings, further reduced operating speeds and increased pressure for local bypasses. In the rural and semi-urban areas, however, efficient operation of Highway 7 is important
- **Natural Environment:** The Credit River Valley, the Eramosa River Valley and the Niagara Escarpment are important natural features in the corridor

3.2 Metrolinx

In November of 2008, Metrolinx adopted a Regional Transportation Plan, entitled *The Big Move: Transforming Transportation in the Greater Toronto and Hamilton Area (GTHA)*. The Plan calls for an integrated, multi-modal transportation system that takes into account all modes of transportation, makes use of Intelligent Transportation Systems, promotes the integration of local transit systems, works toward easing congestion and commute times, reduces the emission of greenhouse gases and promotes transit-supportive development.

Nine priority actions or Big Moves are identified in the Plan: a fast, frequent, and expanded regional rapid transit network, high-order transit connectivity to the Pearson Airport district from all directions, an expanded Union Station, complete walking and cycling networks with bike-sharing programs, an information system for travellers, a region-wide integrated transit fare system, a system of connected mobility hubs, a comprehensive strategy for goods movement and an investment strategy to provide immediate, stable, and predictable funding.

Metrolinx has planned some improvements for the HPBATS Study Area, including full-day, two-way regional rail to and from Georgetown GO Station, rapid transit on Steeles Avenue connecting Lisgar GO Station to Highway 427 and the implementation of the 407

Transitway. **Exhibit 3-3** shows the HPBATS Study Area within the context of the Metrolinx 25-year Regional Rapid Transit and Highway Network.

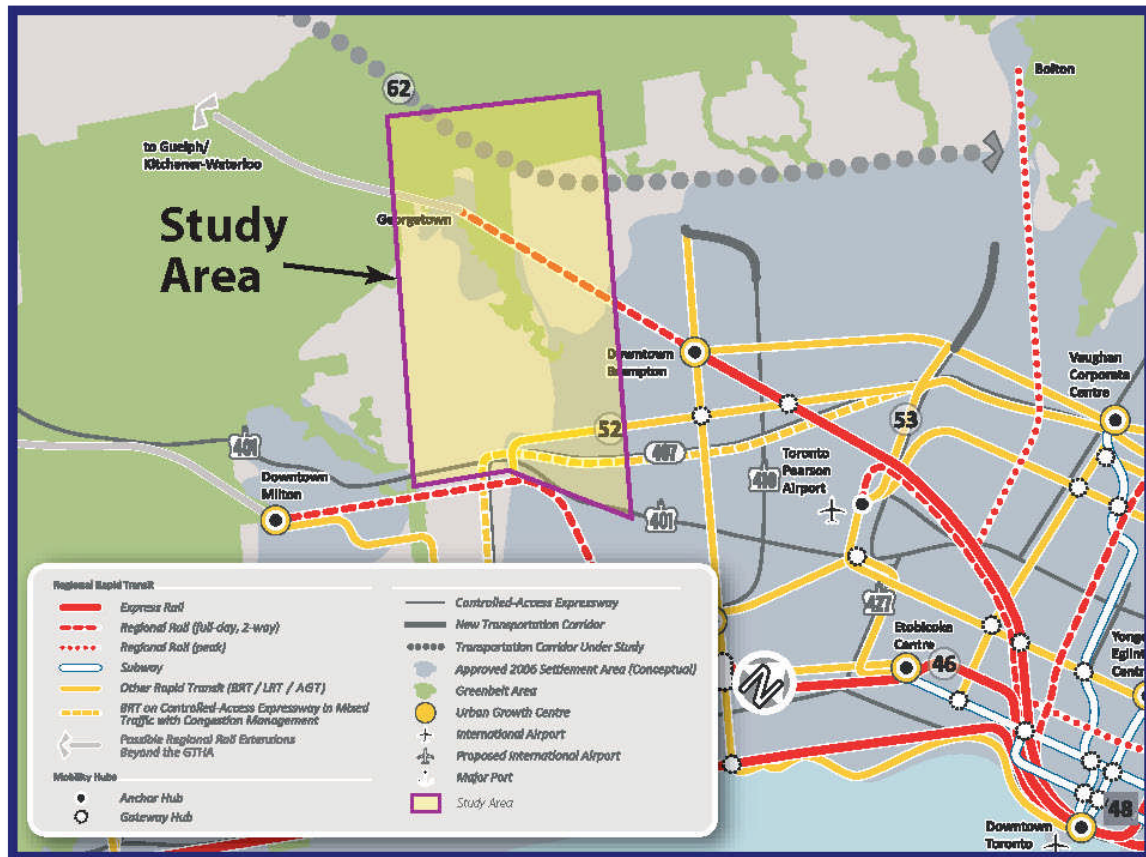


Exhibit 3-3: Metrolinx The Big Move and HPBATS Study Area
(Source: The Big Move, Metrolinx, 2008)

3.3 GTA West Corridor

The Ministry of Transportation has initiated an Individual Environmental Assessment process to study the long-term provincial transportation needs for a new GTA West Corridor. The GTA West Corridor could potentially provide east-west linkages to Highways 400, 410, 427, 401 and Highways 6 and 7. It could extend to Guelph and Kitchener / Waterloo to service the residential and commercial growth expected there. This corridor was identified in the Province’s Growth Plan, released in 2006, as an infrastructure improvement to support strategic growth between Highway 400 and the Guelph area. Metrolinx is also presently studying the area as a future transportation corridor.

From a municipal perspective, immediate steps need to be taken to protect portions of the GTA West Corridor that are under intense development pressures before the EA process is completed. The City of Brampton already has a corridor protection policy in place. The study

must also address impacts to the local road network, while considering relevant local planning and policy documents. Other major environmental constraints include the Greenbelt, Niagara Escarpment, Oak Ridges Moraine and several major rivers and watersheds. The GTA-West Study Area is shown in **Exhibit 3-4**.

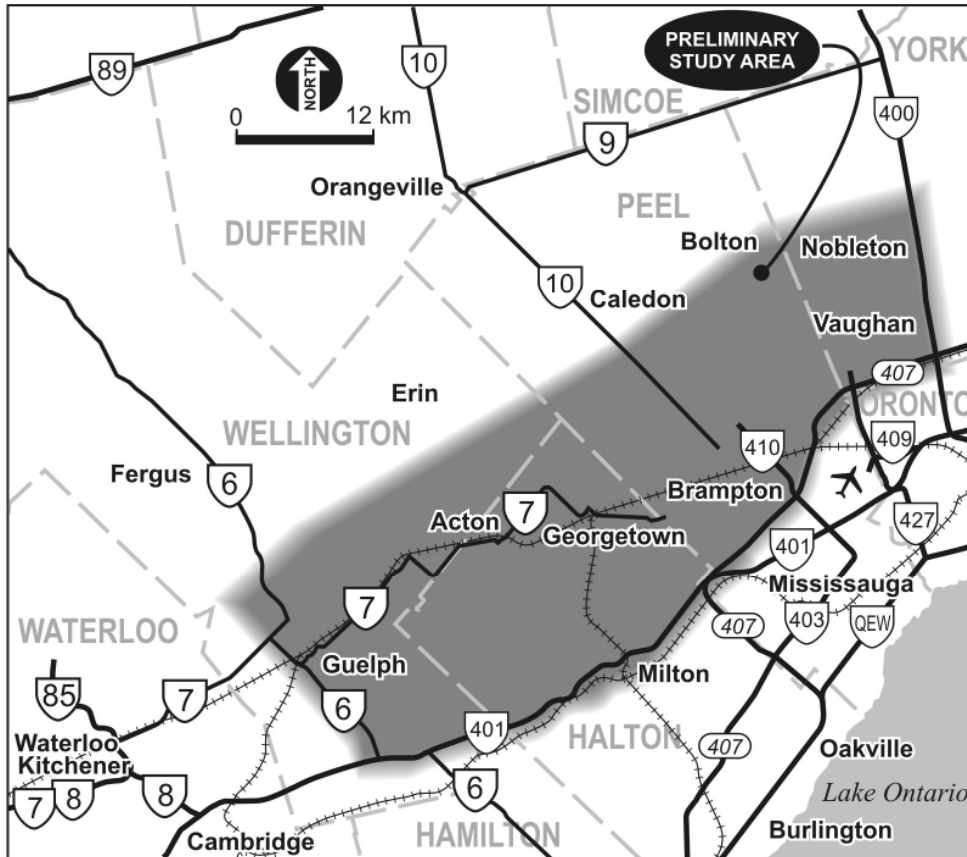


Exhibit 3-4: GTA-West Study Area
(Source: GTA West Corridor Environmental Assessment, 2007)

In November and December of 2009 the GTA WEST Corridor EA initiated the third round of Public Information Centres to present various transportation alternatives. Four separate groups of alternatives were presented:

Group #1: Optimize Existing Network

This group includes strategies that focus on maximizing the usefulness of existing transportation network. Some of the techniques include Transportation Demand Management (TDM) programs, speed harmonization, ramp metering systems, transit/high occupancy vehicle (HOV) bypass locations, improved incident management and detection, operational improvements at localized bottlenecks, improved transit service frequency, use of real time trip planning information technologies, fare integration, active transportation, improved access to transit stations and expanded use of roadway shoulders during peak travel times. The study team concluded that this set of solutions would not significantly improve the

efficiency of people or goods movement. Group #1 improvements were then carried forward for consideration in combination with Group #2 alternatives.

Group #2: New / Expanded Non-Road Infrastructure + Group #1

Group #2 is a combination of the Network Optimization strategies that comprise Group #1 with new non-road infrastructure improvements. Plans and initiatives include expanded and improved parking facilities at transit stations, freight rail, air and marine initiatives, rapid transit in corridors such as Steeles Avenue, Hurontario Street, 407 ETR, Finch Avenue, Highway 7 and Trafalgar Road / Main Street, Brampton Züm, expanded regional rail service, express rail service, new inter-regional transit hubs and new bus rapid transit links between Urban Growth Centres. The study team concluded that this set of solutions would not fully address the identified transportation Problems and Opportunities. Group #2 improvements were then carried forward for consideration in combination with Group #3 alternatives.

Group #3: Widen / Improve Roads + Group #2

Group #3 adds road widening / improvements to Network Optimization solutions (Group #1) and the Expansion of Non-Road Infrastructure initiatives (Group #2). It is comprised of three sub-groups:

1. Group #3-1 examines widenings to existing highways (401, 400, 427, 410 and 407 ETR) in the vicinity of the Study Area
2. Group #3-2 examines widenings to both existing highways (401, 400, 427, 410 and 407 ETR) and inter-regional (regional / county) roads (Highway 7, Trafalgar Road, Mayfield Road / Kirby Road, Reg Rd 24 / Highway 9) in the vicinity of the Study Area
3. Group #3-3 examines widenings to both existing highways (401, 400, 427, 410 and 407 ETR) and arterial (regional / county) roads (Mayfield Road / Kirby Road, Trafalgar Road) in the vicinity of the Study Area

The study team concluded that these alternatives merit further examination and evaluation.

Group #4: New Transportation Corridors + Elements of Group #3

Group #4 adds a new east-west transportation corridor to Network Optimization solutions (Group #1), Expansion of Non-Road Infrastructure initiatives (Group #2) and widenings of existing highways (401, 400, 427, 410 and 407 ETR). It is comprised of five separate sub-groups, each representing a slightly different conceptual alignment of the corridor:

1. Group #4-1 shows an east-west corridor between Highway 400 and Highway 410, north of Brampton
2. Group #4-2 shows a corridor that extends west from Highway 400, north of Brampton, and then swings down south through the HPBATS Study Area to the Highway 401 / 407 ETR interchange. In this case, it is possible that the same facility could be serving as a HPBATS and the GTA West corridor
3. Group #4-3 shows a corridor that extends west from Highway 400, north of Brampton, and then swings southwest to join Highway 401 west of Milton. This option intersects the HPBATS Study Area

4. Group #4-4 shows an east-west corridor between Highway 400 and north of Guelph. The corridor is north of Brampton and Georgetown. The HPBATS north-south corridor would complement this option by providing a connecting link to Highway 401 and 407 ETR

5. Group #4-5 shows an east-west corridor between Highway 400 and south of Guelph. It is generally north of Brampton and south of Georgetown. It diagonally intersects the HPBATS Study Area. The HPBATS north-south corridor would complement this option by providing a connecting link to Highway 401 and 407 ETR

The study team concluded that these alternatives merit further examination and evaluation.

The final recommendations of the GTA West study will be of significant importance to the recommendations of HPBATS and to HPBATS agencies. Widenings to 400-series highways will impact traffic coming to and leaving the Study Area and improvements to transit will influence the mode share. Some of the alternative GTA West new transportation corridors will have the opportunity and potential to connect to, or replace, the HPBATS north-south corridor. Such corridors would enhance the connectivity of the east-west corridor with the existing provincial and regional networks and improve the linkages between provincially-designated growth centres such as Brampton City Centre, Downtown Milton and Downtown Guelph.

3.4 Halton Region

3.4.1 ROPA 37

The purpose of ROPA 37 was to incorporate the basic requirements of the Provincial “Places to Grow” Act into the Regional Official Plan by the June 2009 conformity deadline. The Sustainable Halton process was undertaken after the release of “Places to Grow” in 2006 to bring the Regional Official Plan into conformity with Provincial Growth Plan. The Region consulted with the public extensively to obtain input about the best places for new development and intensification to occur. The basic requirements of the Growth Plan that were incorporated into the Official Plan through this amendment include:

- Population, employment and intensification targets for the Town of Oakville and the City of Burlington to 2031
- Minimum density and intensification targets
- Appropriate locations for urban growth centres, intensification corridors and major transit station areas
- The protection of employment lands
- Ensuring Local Municipalities develop and implement strategies to phase in and achieve intensification targets

The new Official Plan emphasizes directing new growth to built-up areas of the community through intensification, building compact, transit-supportive communities, reducing dependence on the automobile and improving access to transit. The future employment and

residential areas that were determined as a result of this process were very important to the future travel demand forecasts in the HPBATS Study Area.

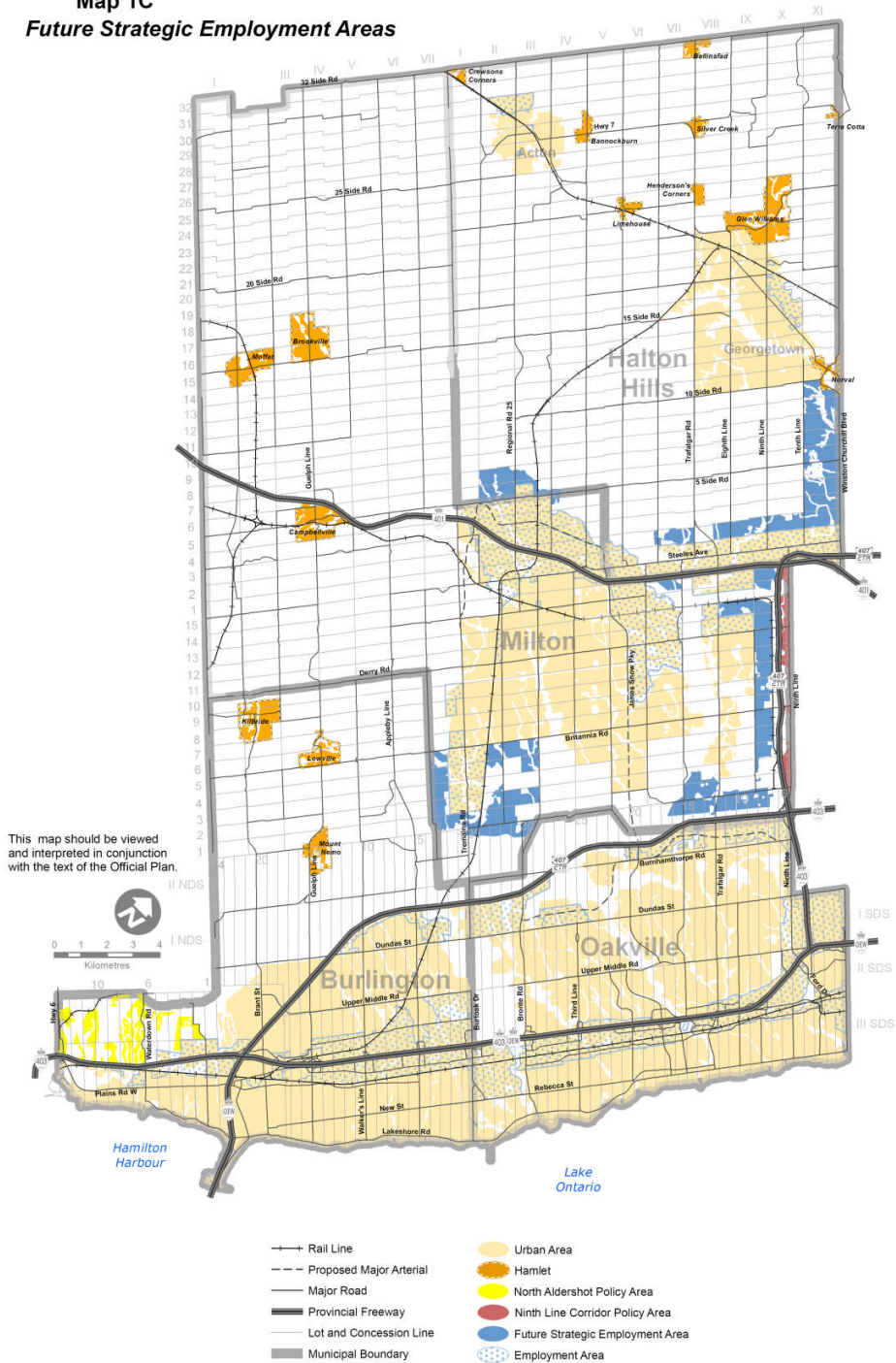
3.4.2 ROPA 38 and Sustainable Halton, 2009

As a response to Provincial targets that set Halton Region's population at 780,000 people and employment at 390,000 jobs by 2031, Halton Region has undertaken the Sustainable Halton Growth Management Plan to articulate a vision for the Region and guide this future growth. The policies introduced through ROPA 38, emphasize directing new growth to built-up areas of the community through intensification, building compact, transit-supportive communities, reducing dependence on the automobile and improving access to transit. Some primary objectives of the Sustainable Halton plan include reducing urban sprawl, ensuring greater protection of farmland and the natural environment, making best use of infrastructure and promoting healthier, more liveable communities. The plan aims to accommodate growth while making efficient use of infrastructure and protecting natural, cultural and heritage assets. Significant agricultural lands and mineral resources are special features within the Study Area. Nine distinct options for the growth plan were narrowed down to three main concepts. A preferred growth option for Halton Region was endorsed by Council in June 2009. The final location of the new urban boundary was identified on Map 1 – Regional Structure, through ROPA 38; it is shown in **Exhibit 5-3**.

Since Sustainable Halton locates new population and employment lands within the HPBATS Study Area, its findings are highly important to future travel demands and transportation network needs. In the HPBATS Study Area, the plan calls for mixed use / residential development in the following locations: the northeast quadrant of 10 Sideroad and Tenth Line, and the concession block between 10 Sideroad, 15 Sideroad, Trafalgar Road and Eighth Line. New employment lands are proposed along the Highway 401 corridor and in proximity to the 407 ETR corridor. Approximately 340 hectares of new employment lands are proposed north of Steeles Avenue, between Winston Churchill Boulevard and west of Trafalgar Road.

ROPA 38, adopted by Halton Regional Council on December 16, 2009, incorporates the results of a comprehensive review of Halton's Regional Official Plan and the results of Sustainable Halton. ROPA 38 identifies future strategic employment areas, some of which have direct impact on the HPBATS Study Area. One new area is located on the west side of Winston Churchill Boulevard, bounded by Steeles Avenue, Tenth Line and No.10 Sideroad. In the same area, additional lands north of Steeles Avenue in Halton Hills are also identified. At the time of the HPBATS technical analysis, this ROPA 38 land use forecast had not yet been released. Therefore, this additional employment area is not included in the HPBATS analysis. Future EAs should include the most up-to-date land use information available. The ROPA 38 future strategic employment areas are shown in **Exhibit 3-5**.

Map 1C
Future Strategic Employment Areas



December 16, 2009

Exhibit 3-5: ROPA 38 Future Land Use Forecast

(Source: Region of Halton, ROPA 38, 2009 retrieved from the regional website in December 2009)

3.4.3 Halton TMP, June 2004

The **Halton Region Transportation Master Plan Study** was completed in 2004, and subsequently updated in 2006. The TMP assesses the transportation needs and provides policy directions up to the horizon year of 2021. It has identified the need for various road network improvements in Halton Hills and transit service improvements along Trafalgar Road, Ninth Line and 407 ETR.

The Halton TMP is presently under review; the results of HPBATS will serve as input to the TMP review process.

3.4.4 Halton Natural Areas Inventory, 2006

The Halton Natural Areas Inventory was released in 2006, and serves as a comprehensive summary of the flora and fauna in Halton Region. The study measures the biodiversity of different natural areas within the Region. The Inventory includes chapters about the vascular plants, birds, herpetofauna (reptiles and amphibians), butterflies, dragonflies and damselflies, fishes and mammals of Halton Region. The Inventory provides a framework for the long-term monitoring of biological diversity in Halton.

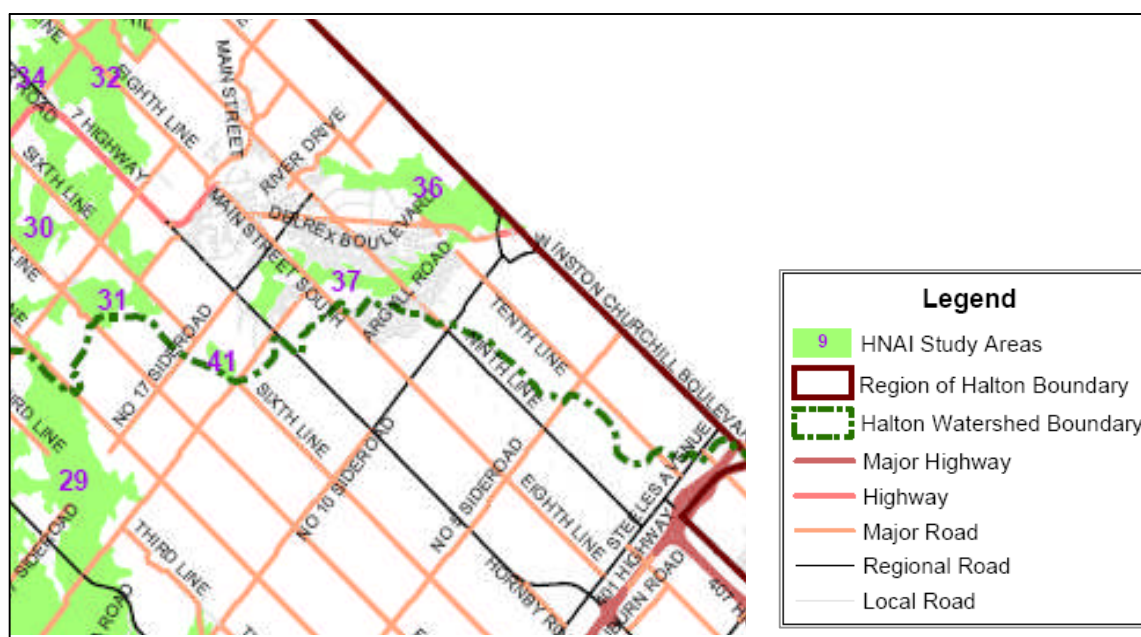


Exhibit 3-6: Halton Natural Areas Inventory Areas in the Study Area

(Source: Halton Natural Areas Inventory, Conservation Halton, 2006)

An important component of this project was the mapping of study results. The map in **Exhibit 3-6** shows natural areas and watercourses in the vicinity of Georgetown and Norval. In particular, Halton Natural Area Inventory Study Areas 36 and 37 fall within the HPBATS Study Area. The Natural Areas Inventory will serve as a useful and valuable resource for the

potential future phases of Environmental Assessments for the improvements recommended by this study.

3.4.5 Class Environmental Assessment for the Proposed Extension of No. 10 Side Road and a Norval Bypass, 2000

An initial attempt to study a Norval Bypass by Halton Region was deferred in 2000 pending the completion of the Ministry of Transportation's Highway 7 Role and Function Study and an analysis of the transportation needs in the Northwest Brampton Urban Boundary study. The outcomes of these studies would have a significant impact on a potential East-West Connection.

The early work of this environmental assessment is an important point of reference for HPBATS and any future EA work.

3.5 Peel Region

3.5.1 Long Range Transportation Plan (LRTP), September 2005

The Peel LRTP was created to identify and address the transportation challenges anticipated by the Region over the next 20-30 years and to develop appropriate policies, strategies, and a road improvement plan to address these challenges. This document acknowledges that there will be significant growth in travel demand to the Northwest Brampton Area and thus identifies road improvements to the Northwest Brampton area by 2021 – including widening Winston Churchill Boulevard to 6 lanes between 407 ETR and Bovaird Drive, and to 4 lanes between Bovaird Drive and Mayfield Road. Mayfield Road will be widened to 4 lanes between Winston Churchill Boulevard and Chinguacousy Road, and Bovaird Drive will be widened to 6 lanes between Winston Churchill Boulevard and Mississauga Road – it should be noted that some of these improvements are inconsistent with the City of Brampton TTMP (2004).

Travel trend data indicates that cross-boundary travel between Peel and Halton will increase steadily from 4% of all trips in 2001 to 7% of all trips by 2031. The report also outlines general policy directions for the Region's future transportation vision, including strategies for Transportation Demand Management (TDM) and goods movement.

Schedule E, shown in **Exhibit 3-7**, shows that a corridor has been protected for a potential North South Transportation Corridor.

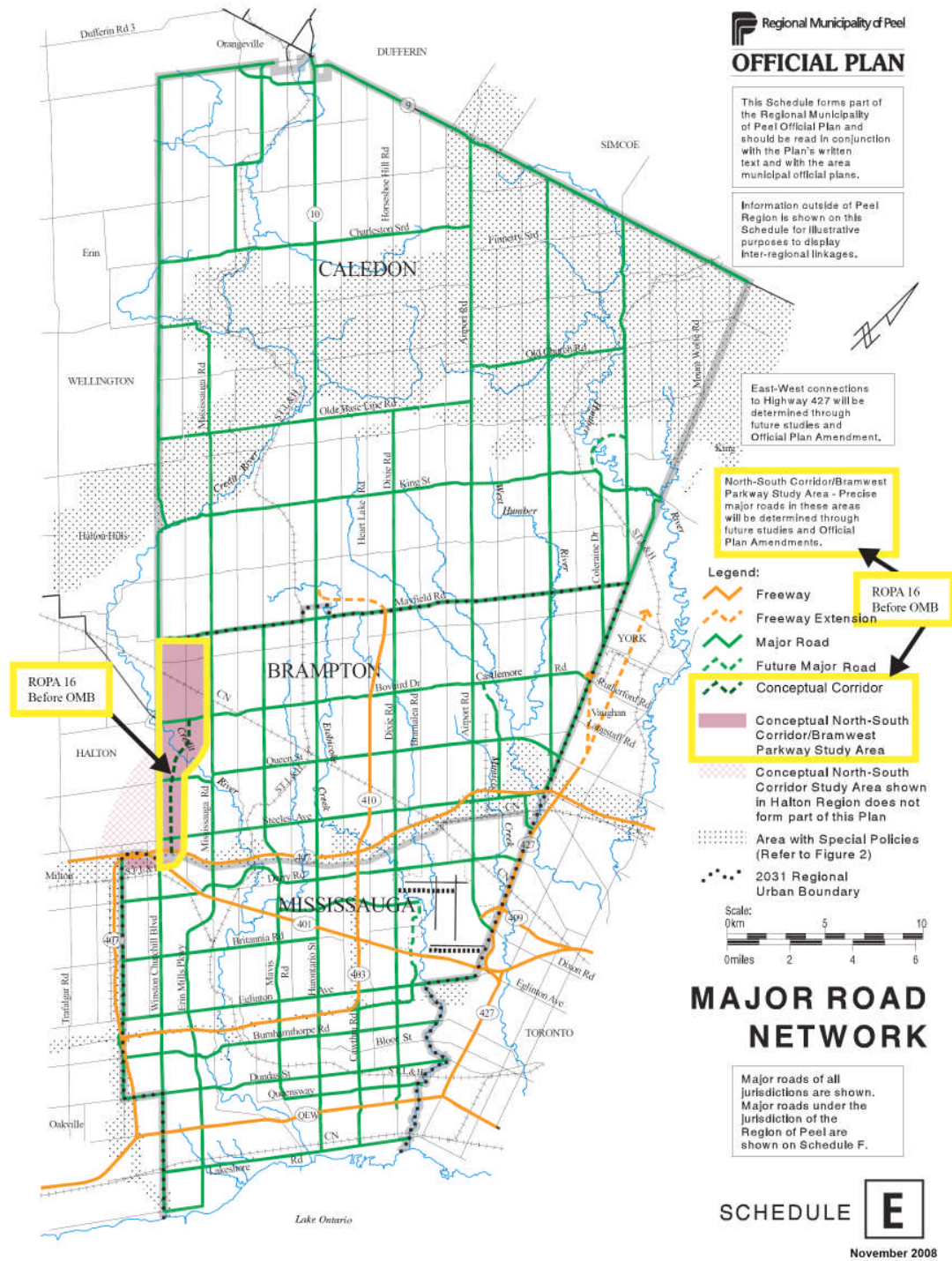


Exhibit 3-7: Peel Official Plan Major Road Network, November 2008
(Source: Schedule E, Regional Municipality of Peel Official Plan, 2008)

The Regional LRTP formed the basis for ROPA 16, which amended the Regional Official Plan objectives and policies, and Schedule E (Major Street Network), Schedule F (Right of Way Requirements) and Schedule G (High Order Transit Network). The Regional LRTP is currently being updated.

3.5.2 Peel Region Transportation Demand Management Study Report, 2004

The Travel Demand Management Study Report is one of the five projects under the Long Range Transportation Planning Exercise. This report recognizes that increases to the supply of transportation infrastructure will not be sufficient to resolve transportation challenges in the Region; policies to manage the amount of demand must also be enacted. TDM measures aim to maximize the utility of existing transportation infrastructure by increasing the number of occupants per vehicle, maximizing the use of underutilized travel times and reducing the frequency and length of trips.

Core TDM strategies include carpooling, vanpooling, transit, cycling, walking and the promotion of teleworking. TDM support strategies, that extend the effectiveness of the core strategies, include parking management and parking fees, rideshare matching, incentives and subsidies, marketing and promotions, guaranteed ride home programs, the use of Intelligent Transportation Systems (ITS), TDM friendly site design, High Occupancy Vehicle (HOV) lanes, Bus Rapid Transit routes, transit priority measures and carpool parking lots, among others.

The study was undertaken with the view that the Region of Peel can have a role in promoting and developing a balanced, multi-modal transportation system that provides commuters with choices and discourages single occupant vehicle travel.

3.5.3 EA Studies

Peel Region is currently involved with a number of Environmental Assessment studies for sections of Bovaird Drive and Mississauga Road within the HPBATS Study Area. The results of HPBATS will serve as input to these studies.

3.6 City of Brampton

3.6.1 Transportation and Transit Master Plan Sustainable Update 2009, November 2009

The City of Brampton's Transportation and Transit Master Plan Sustainable Update was completed in November 2009. The Updated TTMP is a platform to move forward with the implementation of the transportation vision defined by the previous 2004 Brampton TTMP. The vision embraces compact communities, sustainable development, protection of the

natural environment, economic vitality and healthy communities, while providing safe, affordable, and efficient transportation for people and goods.

The plan recommends improvements to Brampton's transit network (transit priority measures, bus rapid transit (BRT)) and road network (roadway capacity improvements, new road construction, road extensions). **Exhibit 3-8** shows the proposed 2031 Transit Network, and **Exhibit 3-9** shows the proposed 2031 Road Network for Brampton.

With respect to the HPBATS study, the 2009 TTMP study also reconfirms the need for a North-South Transportation Corridor. A significant amount of growth is forecast for west Brampton (Northwest Brampton and the Bram West Secondary Plan Area) and the eastern part of Halton Region.

The TTMP report stated that a Norval Bypass is not required to accommodate planned development and growth in Brampton alone. The Brampton TTMP acknowledges that the need for east-west connections and alternative network improvements would be examined through the HPBATS.



Exhibit 3-8: 2031 Brampton Transit Network
(Source: Transportation and Transit Master Plan Sustainable Update 2009, City of Brampton)

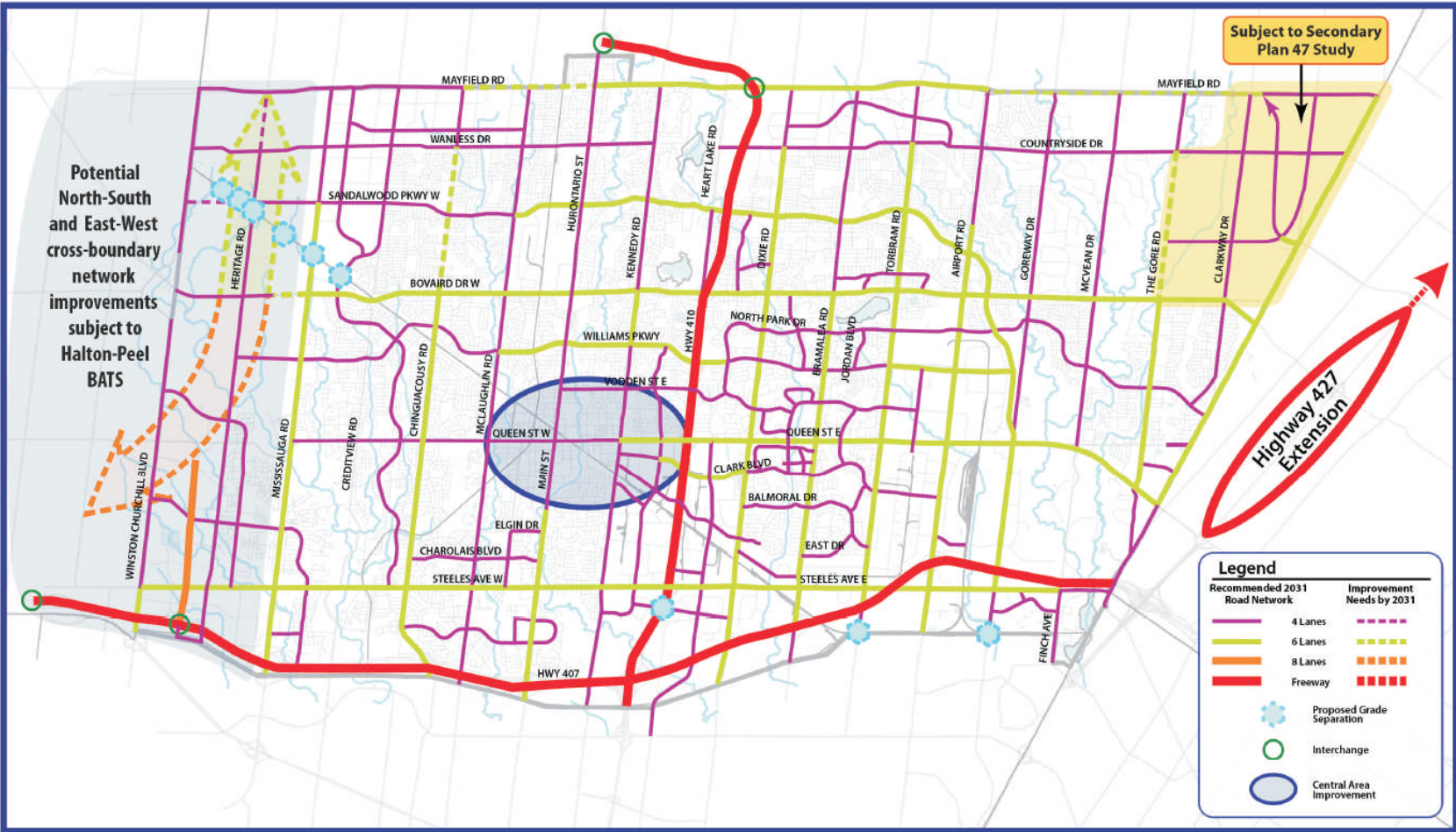


Exhibit 3-9: 2031 Brampton Road Network
(Source: Transportation and Transit Master Plan Sustainable Update 2009, City of Brampton)

3.6.2 Bram West Block 40-3, November 2009 – Environmental Study Report

This study was undertaken for the City of Brampton to review the transportation servicing needs that would be required for the development of Block 40-3 within the Bram West Secondary Plan Area. This block is bounded by Heritage Road to the west, Mississauga Road to the east, Steeles Avenue West to the south, and the Credit River Valley to the north. It is of significant importance to the HPBATS study, as it is not only located in an area where transportation improvements may be planned, but is also a potential source of many trips within the Study Area.

This plan does not examine the potential need for the Bram West Parkway or a future north-south multi-modal corridor. This plan references the HPBATS study as an opportunity to investigate the need for and potential alignments of a north-south transportation corridor.

The final recommendations of this report propose a Spine Road Network for the study block (see **Exhibit 3-10**):

- A north-south collector will intersect with Steeles Avenue at a mid block location, run north through Embleton Road, and turn west to intersect with Heritage Road and then eventually connect with a north south corridor and Winston Churchill Boulevard
- Financial Drive will intersect with Mississauga Road, veer north within the study block to avoid a woodlot and intersect with Heritage Road
- An additional east-west collector will run north of Financial Drive

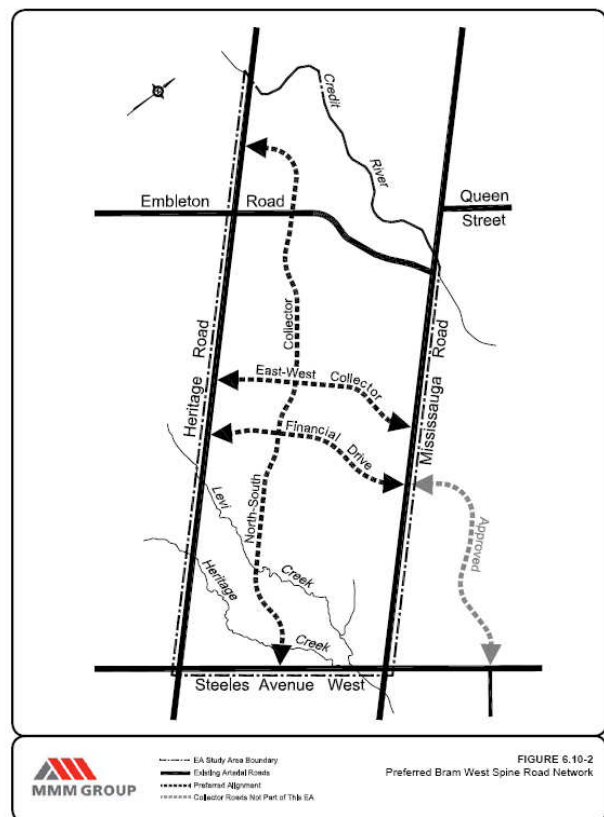


Exhibit 3-10: Bram West Secondary Plan Spine Road Network

(Source: Environmental Study Report, Class Environmental Assessment for Bram West Block 40-3, 2009)

The report also notes that, with this new road network, Heritage Road will not need to be widened beyond 2021. New capacities will be carried by the proposed north-south collector and the eventual North-South corridor.

3.6.3 Northwest Brampton Transportation Infrastructure Review, April 2005

Initiated by the City of Brampton, the Northwest Brampton Transportation Infrastructure Study (Part 1) determined the transportation infrastructure and preliminary servicing needs required to support the development of proposed urban expansion in the northwest part of Brampton, while considering overall planned growth in Halton and Peel Regions. The study examined improvements to the arterial road network in Brampton and the eastern part of Halton Region, together with expansions of existing provincial freeways (401, 407, and 410) and improved public transportation. Although development in west Brampton is expected to generate high traffic growth, a large portion of total traffic growth will come from longer-distance, cross-boundary traffic from Halton Region (and areas west of Halton Region), travelling through west Brampton to destinations to the south and east in Brampton, Mississauga, York Region, and Toronto.

Part two of the study identified the need for a North-South Transportation Corridor. It also recommended that the Norval Bypass connect Highway 7 in Georgetown to Winston Churchill Boulevard, to divert traffic from Highway 7 south towards Highway 401.

Key elements of the preferred road network included:

- New North-South multi-modal corridor (6 lanes) between 401/407 and Mayfield Road. Interchanges to be confirmed during a future environmental assessment
- Bramwest Parkway at minimum 6 lanes between 407 and North-South Corridor
- Partial Norval Bypass (4 Lanes) connecting Highway 7 in Georgetown to Winston Churchill Boulevard
- Highway 7 at 4 lanes through Norval
- Bovaird Drive at 6 Lanes between North-South Corridor and Main Street
- Mississauga Road and Chinguacousy Road at 6 lanes through the Study Area
- Heritage Road at 4 lanes with an eastern bypass of the proposed village core in the Bram West Secondary Plan Area (at Embleton Road)
- Mayfield Road at 4 lanes between Winston Churchill Boulevard and McLaughlin Road
- Connection of Williams Parkway to Heritage Road (at 4 lanes) and N-S Corridor
- Sandalwood Parkway Extension at 4 Lanes between Winston Churchill Boulevard and Creditview Road

Key elements of the future transit network:

- GO Station at Mount Pleasant – Will function as major intermodal transit station for Northwest Brampton with a bus terminal, commuter parking, and passenger drop-off and pick-up facilities
- Potential new GO station at the intersection of Sandalwood extension and Georgetown line for Northwest Brampton – Requires further study
- Full two-way all-day service on the Georgetown GO line
- 407 Transitway inter-regional transit service, stations serving Northwest Brampton at Mavis / 407, Mississauga Road / 407, WCB/Bramwest Parkway / 407, Milton GO line / 407

- Local surface transit service throughout the new residential and employment areas in Northwest Brampton, connecting with transit routes / services in the rest of Brampton and also focusing on the Mount Pleasant GO Station
- Potential HOV / RBL / BRT service on the North-South corridor and Bramwest Parkway
- Extension of HOV / RBL / BRT service on Bovaird Drive and Steeles Avenue to the North-South Corridor
- Potential commuter train service along Orangeville Railway line

Travel Demand Management measures recommended in the study include:

- Carpool lots along proposed North-South freeway to intercept commuter trips
- Carpool lots along 407 ETR (perhaps using property protected for future 407 Transitway stations)
- Expansion of commuter parking planned at Mount Pleasant GO Station
- Commuter Parking lots at the other proposed GO station in Northwest Brampton
- Network of HOV lanes on the arterial road network
- HOV lanes on the proposed North-South Corridor or Bramwest Parkway

3.7 Town of Caledon

3.7.1 Caledon Transportation Needs Study Update, 2009

The Caledon Transportation Needs Study Update, 2009 is an update to the Caledon Area Transportation Study completed in 2004. Important developments since 2004 include provincial plans to extend Highway 427 to the vicinity of Major Mackenzie Drive, Metrolinx transit initiatives, and the Provincial “Places to Grow” Plan which led Caledon to set its 2031 population target at 108,000 persons. Existing transportation needs include excessive through traffic, excessive traffic on rural roads, congestion around Bolton and Mayfield Road, and dependence on single occupant vehicle travel.

Proposed solutions include working with Peel Region and others to develop travel demand management measures, supporting inter-regional public transit services, improving the arterial road network, working with MTO to improve the provincial highway network, managing truck traffic, investigating traffic calming measures and organizing more comprehensive transportation master plans. Potential improvements to meet Caledon’s transportation needs are shown in **Exhibit 3-11**.

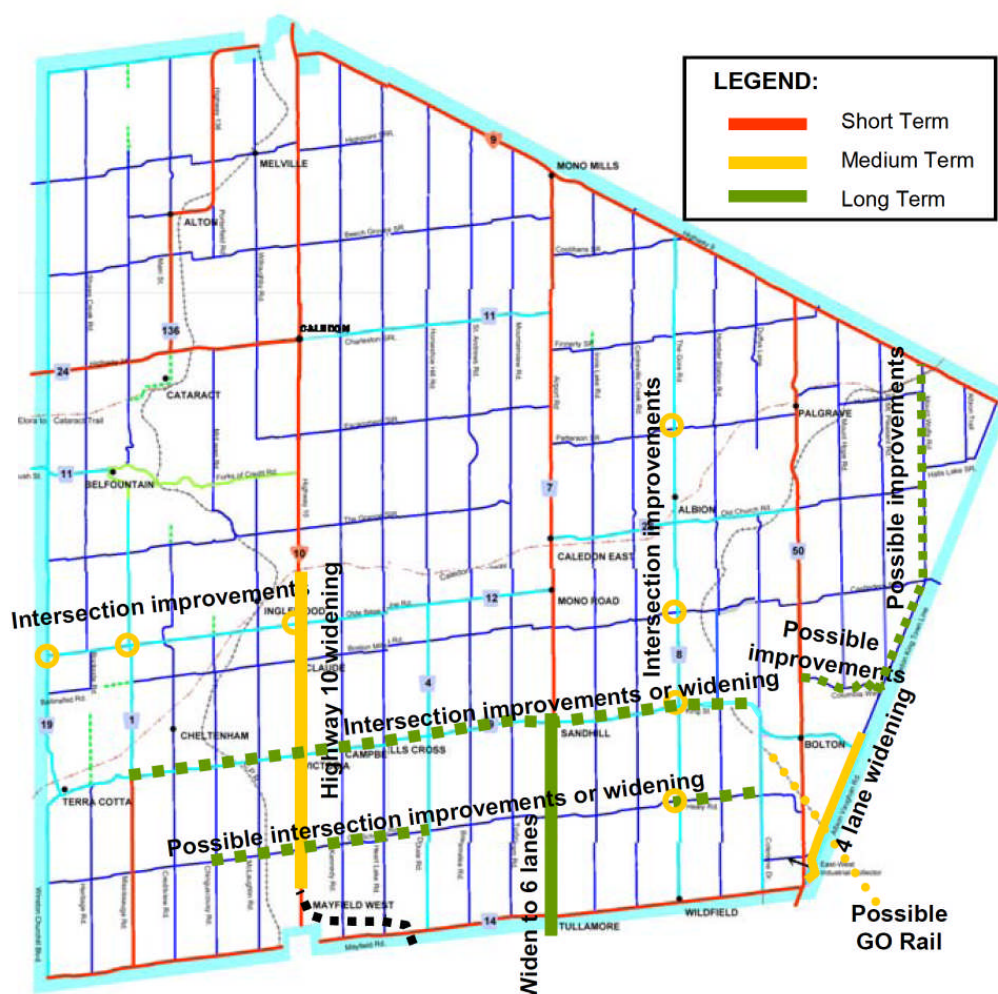


Exhibit 3-11: Potential Additional Improvements to Meet Transportation Needs
(Source: Caledon Transportation Needs Study Update, 2009)

3.8 Other Key Studies and Documents

- Strategic Transportation Directions Study, MTO, 2002
- Halton Transportation Master Plan, Halton Region, June 2004
- Halton Functional Road Network and North Halton Transportation Study, Halton Region, 1999
- Town of Halton Hills Official Plan, Town of Halton Hills, September 2006
- Official Plan Amendment No. 113 – the Hamlet of Glen Williams Secondary Plan, Town of Halton Hills, May 2006
- Official Plan Amendment No. 104 – The Hamlet of Norval Secondary Plan, Town of Halton Hills, August 2003

- West-Central Peel Transportation Study, Peel Region, 2002
- The Glen Williams Integrated Planning Project Background Planning Study Update and Scoped Subwatershed Plan, Town of Halton Hills, 2003
- Halton Hills Urban Design Study, Town of Halton Hills, 2002
- Improvements to No. 10 Sideroad Environmental Study Report (ESR) Addendum, Halton Region, 2002
- Class Environmental Assessment Study for improvements to Winston Churchill Boulevard from Embleton Road / 5 Sideroad to Mayfield Road / River Drive, Regional Municipality of Peel with Halton Region, 2005
- Silver Creek Subwatershed Study, Town of Halton Hills, 2003
- Maple Avenue (RR11) Improvements Class EA Study, Trafalgar Road to Mountainview Road, Georgetown, Halton Region, 2005
- Steeles Avenue Improvements, Class Environmental Assessment, Halton Region, 2004
- 401 Corridor Integrated Planning Project, Town of Halton Hills, Scoped Subwatershed Plan, Town of Halton Hills, 2000
- Town of Halton Hills Zoning By-laws Consolidation, Town of Halton Hills, 1992

4. EXISTING STUDY AREA CONDITIONS

4.1 Socio-Economic Environment

4.1.1 Existing Land Uses

Existing land uses in the Study Area are summarized in **Exhibit 4-1**. The major existing uses in the area include:

- Georgetown community
- Urban development in Brampton in the east part of the Study Area
- Meadowvale business park and residential development in the south part of the Study Area
- Rural uses

The greater part of the Study Area is agricultural / rural residential mingled with commercial uses, the rural hamlets of Norval, Glen Williams, Stewarttown, and Huttonville, rural clusters of South Norval, Ashgrove, Henderson's Corner, Terra Cotta and Hornby, natural areas, urban sections of Georgetown, and areas of Brampton east of Creditview Road. Other notable features include hydro corridors, a TransCanada Pipeline corridor, CN Rail tracks, business parks along Steeles Avenue and commercial uses along Winston Churchill Boulevard north of Steeles Avenue including the Maple Lodge industrial complex. Other prominent commercial uses include Sheridan Nurseries and the Upper Canada College Outdoor Education Centre. A major cultural feature of note is the Queen of Peace Croatian Franciscan Centre church and community centre, located at 9118 Winston Churchill Boulevard. **Exhibit 4-1** illustrates existing land uses and related constraints.

Georgetown is the most populated community in the Town of Halton Hills, home to approximately 37,000 people and a vibrant business centre. New housing developments are prevailing in Brampton with new residential subdivisions constructed east of Mississauga Road and new employment centres developing along Steeles Avenue.

In 2006, there were 91,200 residents living in the Study Area (38,600 in Halton and 52,600 in Peel) and 36,800 people working in the Study Area (11,800 in Halton and 25,000 in Peel).

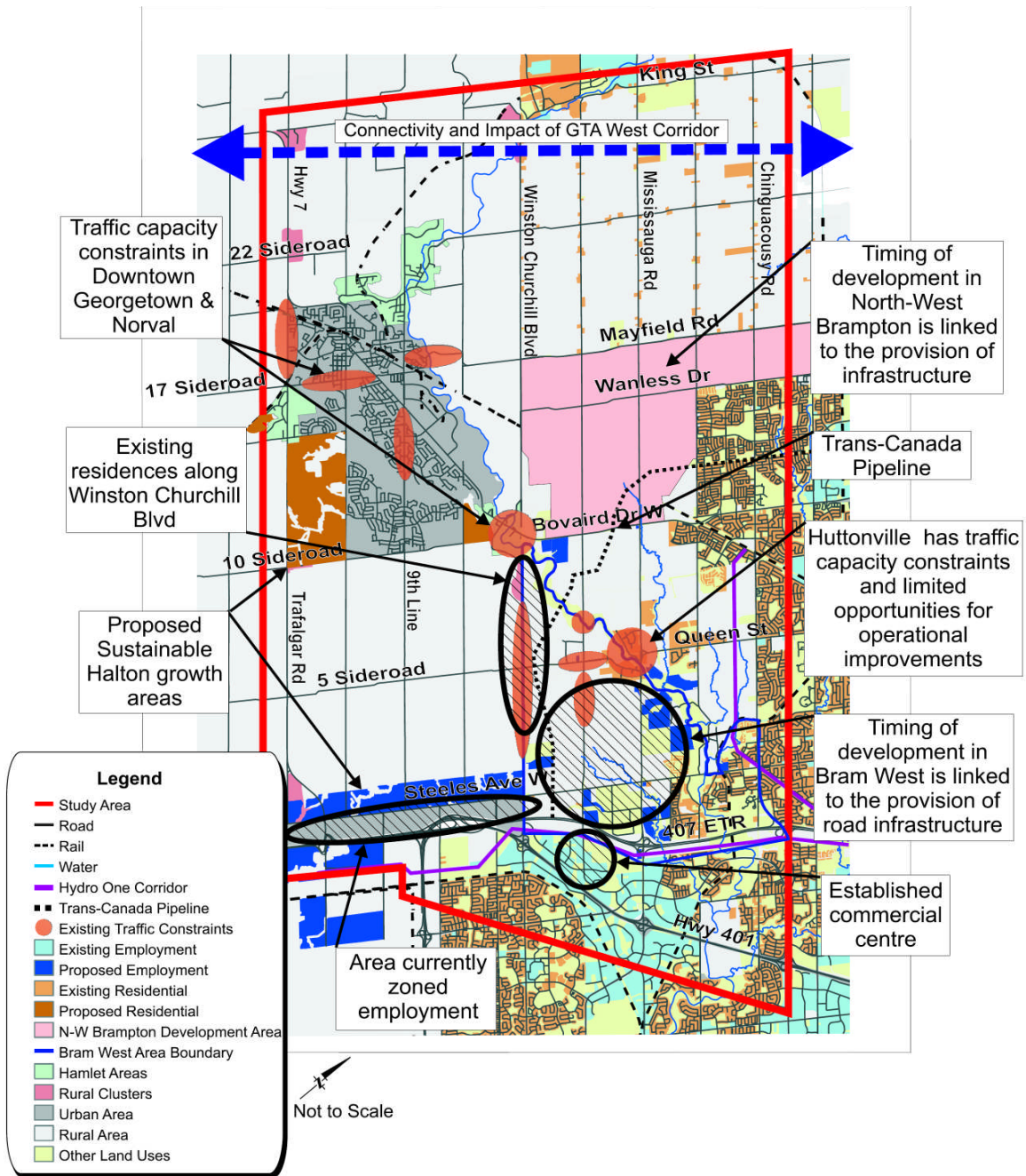


Exhibit 4-1: Socio-Economic Constraints Map
(Source: HDR | iTRANS, 2010)

4.1.2 Development Activity

Major individual development applications have come forward for development of various industrial uses along Steeles Avenue in Halton Hills; for a re-zoning amendment to extract shale resources east of Winston Churchill Boulevard and north of Bovaird Drive by Brampton Brick Limited; and for development of residential, industrial, commercial and retail uses in the Bramwest Secondary Plan area by various groups of developers and land owners. The Mount Pleasant Community Secondary Plan is in the approval process and the North West Secondary Plan for future residential and employment uses in North West Brampton is being considered.

4.1.3 Agricultural Lands

The preservation of valued agricultural lands is of concern to the Regions of Halton and Peel. Policies for the protection of agricultural land are documented in Official Plans of each Region. The Prime Agricultural Area within the Study Area includes lands north of Steeles Avenue and west of Winston Churchill Boulevard in Halton, and north of Mayfield Road in Peel.

4.1.4 Aggregate and Shale Resources

Halton Hills is rich in aggregate shale resources. The largest extraction area in Halton Hills is located outside the HPBATS Study Area in Limehouse, southwest of Acton. Three inactive extraction pits are located north-west and north-east of the hamlet of Glen Williams. New and substantial shale resources have been identified by Halton ROPA 38 in areas south of Tenth Sideroad and west of Winston Churchill Boulevard in Halton Hills. The Region of Peel Official Plan has identified high potential aggregate extraction resource areas in North-West Brampton.

The location of aggregate resources in Halton is illustrated in **Exhibit 4-2** and the location of aggregate resources in Peel is illustrated in **Exhibit 4-3**.

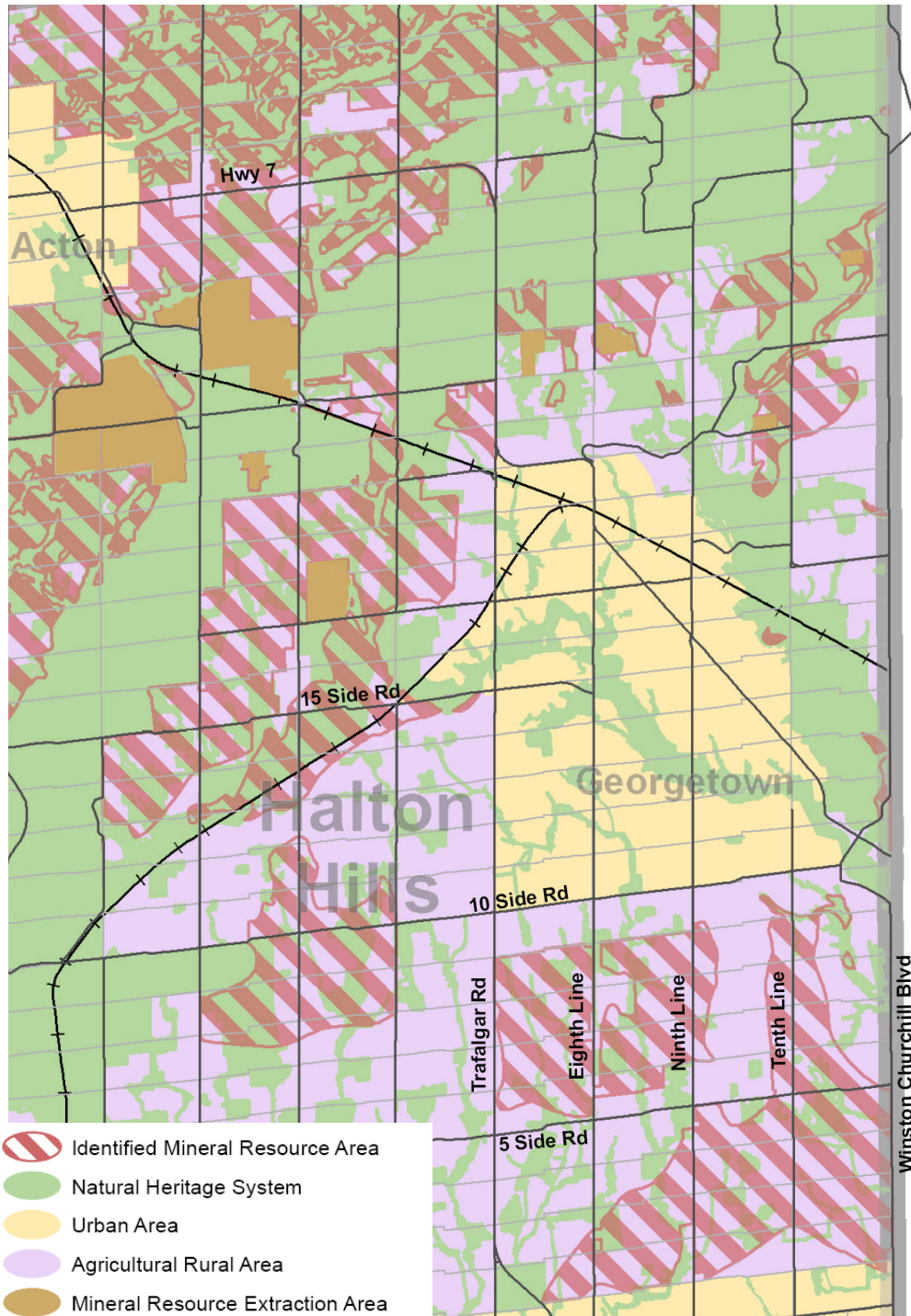


Exhibit 4-2: Aggregate Resources in Halton (ROPA 38, 2009)

(Source: Region of Halton, ROPA 38, 2009 retrieved from the regional website in December 2009)



Exhibit 4-3: Aggregate Resources in Peel Region (Region of Peel Official Plan, 2008)
(Source: Schedule C, Regional Municipality of Peel Official Plan, 2008)

4.1.5 Socio-Cultural Heritage Environment

A number of sites within the Study Area have been registered in the Town of Halton Hills Heritage Register (December 2008) and in the City of Brampton Official Plan, and have been identified as having heritage value or interest by other studies. There is a concentration of heritage sites in the Norval, Norval South, Glen Williams and Huttonville communities.

Aside from rural hamlets and clusters, some other valuable social and cultural heritage community resources include:

- Queen of Peace Croatian Franciscan Center
- Upper Canada College Outdoor Recreation Centre
- Hillcrest Cemetery
- Future cemetery on the property owned by the Catholic Cemeteries Archdiocese of Toronto in the northeast corner of Heritage Road and Wanless Drive
- Lionhead Golf and Country Club
- Georgetown Golf and Country Club

4.2 Natural Environment

4.2.1 Key Environmental Systems

Key natural environment features are illustrated in **Exhibit 4-4**.

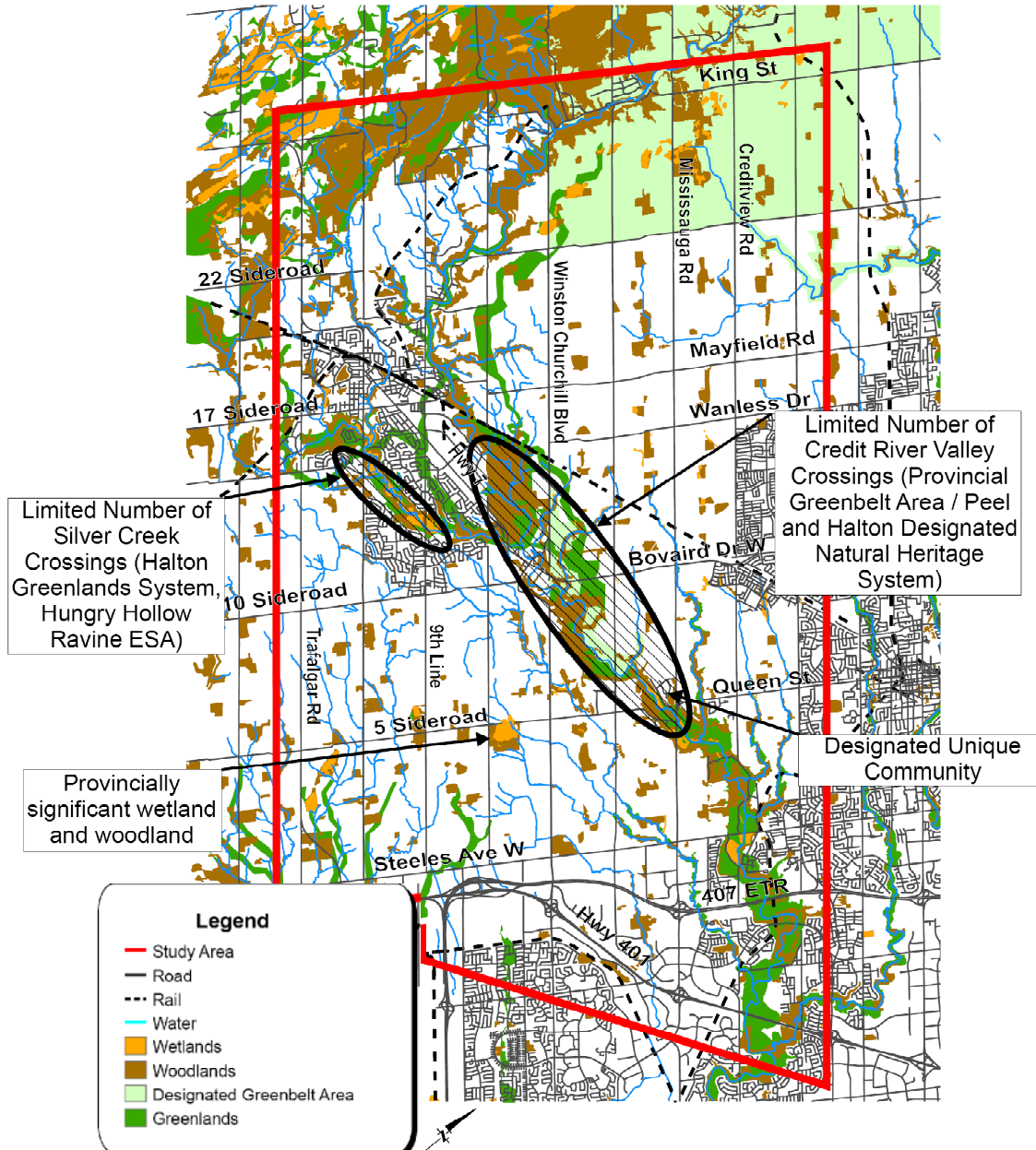


Exhibit 4-4: Existing Environmental Constraints

(Source: HDR | iTRANS, 2010)

The Study Area is intersected diagonally by the Credit River Valley. The valley, its flood plains, tributaries, wetlands and woodlots are the most prominent natural heritage features in the area. The Credit River Valley and its ecological features have been identified and protected at the provincial, regional and local levels by Greenbelt Plan legislation, and by Greenland systems established and adopted by the Official Plans of all Study Area jurisdictions.

The Credit River watershed covers close to 1,000 square kilometres and extends from Orangeville and Mono south to Lake Ontario and from Acton to Caledon East. Based on information obtained from the Credit Valley Conservation Authority website, the watershed has been under considerable stress caused by development in the Greater Toronto Area. Significant protection and habitat restoration efforts, however, have made progress in stabilizing ecology of the area. The Credit River, Silver Creek and other water bodies in the area have been classified as mixed cool/cold water fisheries. Development is discouraged within 30 meters of the bank of the watercourse.

The Credit Valley Conservation Authority (CVCA) and Ministry of Natural Resources (MNR) have responsibility for the assessment and management of environmental impacts within the Credit River watershed and specifically within areas protected by the Provincial Greenbelt Plan. The CVCA has participated in the HPBATS study as a member of the Technical Advisory Committee and provided input to the master plan process. The MNR was invited to participate and was informed about the study's progress throughout its course. The analysis of the existing natural environment as it pertains to the Credit River watershed is based on a review of secondary information available from the Ministry of Natural Resources (MNR), the CVC websites and sources provided by the Regional Municipality of Halton, the Regional Municipality of Peel, the City of Brampton, the Town of Halton Hills and the Ontario Ministry of Transportation.

Conservation Halton lands also fall within Study Area. Lands to the south and west of Georgetown are a part of the Sixteen Mile Creek watershed. Conservation Halton participated in the study as a member of the Technical Advisory Committee, and also provided feedback about the possible impacts of new infrastructure projects on the natural environment within the Study Area.

The Niagara Escarpment Commission (NEC) is responsible for the assessment and management of environmental impacts within the Niagara Escarpment area. The NEC has participated in the HPBATS study as a member of the Technical Advisory Committee and provided input to the master plan process. The analysis of the existing natural environment within the Niagara Escarpment section of the Study Area is based on a review of secondary information available from the NEC, the Regional Municipality of Halton, the Regional Municipality of Peel and the Town of Halton Hills.

The Regions of Peel and Halton are responsible for managing areas designated as Environmentally Sensitive Areas (ESA), Special Policy Areas, and Greenlands A and B, and for being in compliance with the Provincial Greenbelt Plan and Niagara Escarpment Plan.

The Study Area lies primarily within the Credit River watershed. Watercourses located within the Study Area are shown in **Exhibit 4-4**.

4.2.2 Provincial Greenbelt Plan

The Credit River Valley, land directly adjacent to the Credit River watercourse and agricultural land west of Winston Churchill Boulevard and north of Bovaird Drive / Highway 7 are designated as Provincial Greenbelt. Under the policies of the Greenbelt Plan (2005) the area:

- Is protected against the loss and fragmentation of the agricultural land base and supports agriculture as the predominant land use
- Provides permanent protection to the natural heritage and water resource systems that sustain ecological and human health and that form the environmental framework around which major urbanization in south-central Ontario will be organized
- Provides for a diverse range of economic and social activities associated with rural communities, agriculture, tourism, recreation and resource uses

Greenbelt policies set protection goals to enhance environmental, agricultural, cultural and social resources of the Protected Countryside. The Greenbelt Plan protection area along the Credit River Valley is illustrated in **Exhibit 4-5**.

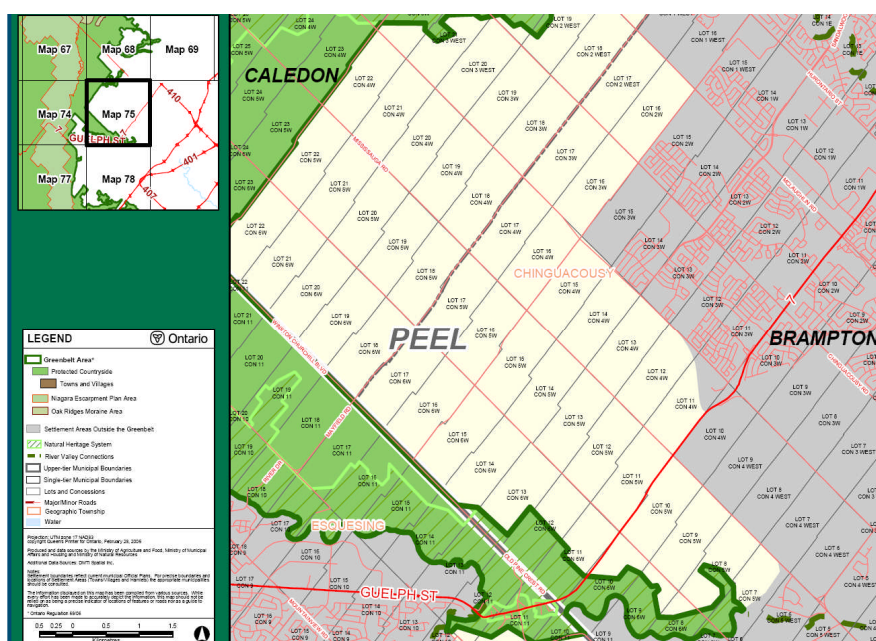


Exhibit 4-5: Greenbelt Plan

(Source: Greenbelt Plan 2005)

4.2.3 Greenland Designations

Greenland designations identified in the Official Plans of Halton, Peel, Brampton and Halton Hills conform to Greenbelt Plan designations. The Credit River watercourse and its aquatic and terrestrial features are designated as Greenland A. Credit River tributaries such as Silver Creek and other minor tributaries such as Levi's Creek are designated, on both sides of the municipal border, as Greenland A or Greenland B. Minor tributaries such as Unnamed tributary, Huttonville Creek or Springbrook Creek have various levels of protection under Official Plans or under the authority of the Credit River Conservation Authority. Numerous woodlots and wetlands of various sizes are present in the Study Area.

Significant woodlots and wetlands located outside of the Credit River valley have been identified in the Halton and Peel Official Plans. Credit and Silver Creek Valley north and south of Highway 7, the Hungry Hollow Ravine Environmentally Sensitive Area and the Georgetown Credit River Valley Regional Life Science Area are all important natural environmental systems in this area.

The environmental assessment undertaken for Winston Churchill Boulevard from 5 Sideroad / Embleton to Mayfield / River Drive and covering the core of the Credit River Valley system including its tributaries found that no rare or endangered species, as defined by the Committee on the Status of Endangered Wildlife in Canada (COSEWIC), Ministry of Natural Resources (MNR) / Committee on the Status of Species at Risk in Ontario (CASSARO), or the National Heritage Information Centre (NHIC), are found within the project area¹. However, based on information received from Credit Valley Conservation, Silver Creek is considered Redside Dace habitat in the vicinity of Norval. Redside Dace and its habitat are protected under the Endangered Species Act. Detailed assessment of environmental heritage, aquatic and terrestrial habitats will be undertaken in future Environmental Assessment Studies required for individual transportation improvements.

4.2.4 Transportation Impacts to the Natural Environment

Transportation emits significant quantities of substances that directly impact the health of humans and are responsible for climatic changes. Transportation is the second largest cause of greenhouse gas emissions (GHGs). GHGs such as carbon dioxide (CO₂), methane (CH₄) and nitrous oxide (N₂O) exist naturally in the atmosphere, trapping heat and warming the air in much the same way glass warms the inside of a greenhouse. Transportation and other human activities release these gases as well and further contribute to the warming trend. The most significant GHG in the context of climate change and impact on human health is carbon dioxide, and therefore the contributions by the other greenhouse gases are usually expressed as CO₂ equivalents. In 2006, PM peak hour congestion in the Study Area attributed to auto travel alone produced an estimated 86,800 tonnes/year or 0.268 tonnes/year per capita of CO₂ emissions.

¹ Class Environmental Assessment Study Report (Schedule C) for improvements to Winston Churchill Boulevard from Embleton/5 Sideroad to Mayfield/River Drive, Regional Municipality of Peel and Halton, September 2005, pgs 20, 29

4.3 Transportation

4.3.1 Road Network

The existing road network in the HPBATS Study Area is illustrated in **Exhibit 4-6**.

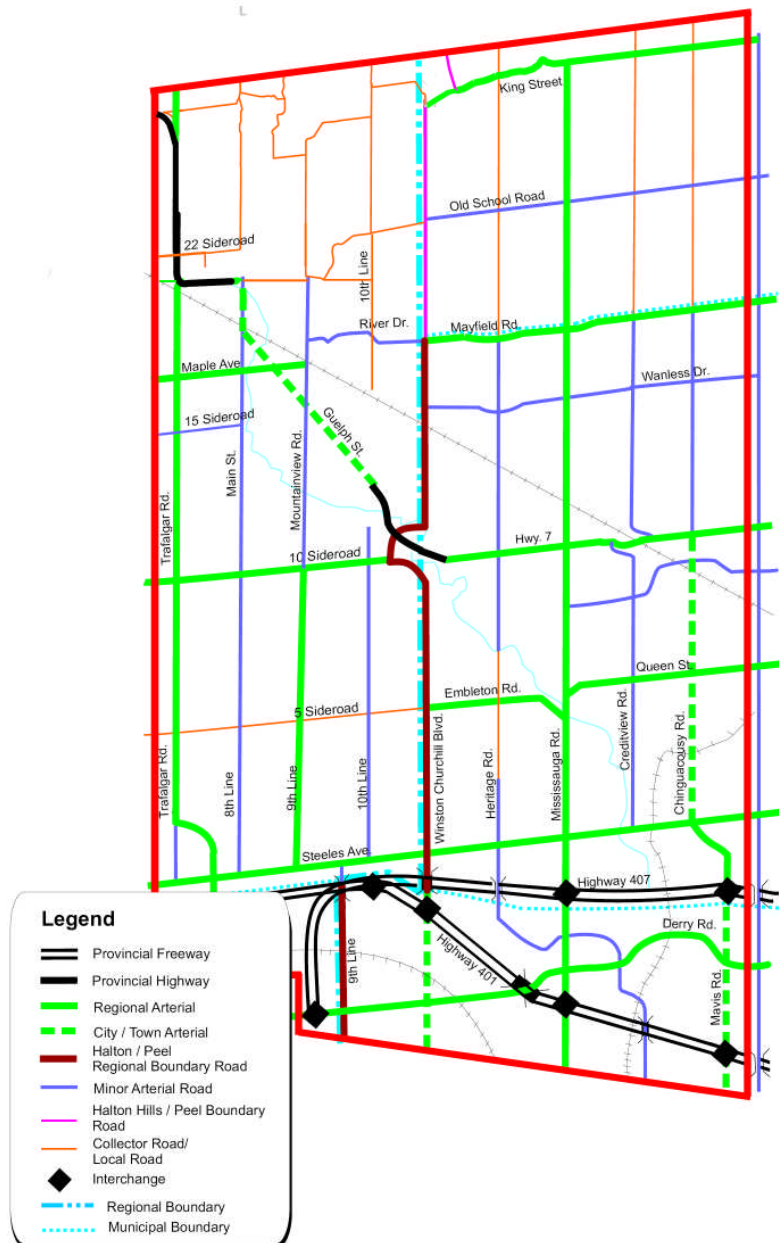


Exhibit 4-6: Existing Road Network

(Source: HDR | iTRANS, 2010)

As will be described later, the major environmental constraints and physical features in the Study Area limit the existing road network, and also constrain opportunities for improvements to the road network. The major constraints include (but are not limited to):

- Credit River valley
- Provincial Greenlands
- Niagara Escarpment
- Existing communities
- Existing institutions

Provincial Highway Network

The southern section of the Study Area is served by two major east-west provincial highways – Highway 401 and 407 ETR.

Highway 401 is the main east-west provincial highway between the U.S. border in Windsor and the Quebec border. It serves as the primary goods movement corridor in the Greater Toronto Area and in Ontario. In the HPBATS Study Area, Highway 401 has interchanges at Trafalgar Road, 407 ETR, Winston Churchill Boulevard, and Mississauga Road.

The 407 ETR is a toll highway that currently runs between Hamilton in the west and Pickering in the east. In the Study Area, it has interchanges at Highway 401 and Mississauga Road. At the interchange of Highway 401 and 407 ETR, there are full connections between the two highways to permit movements in all directions.

Municipal Road Network

In the HPBATS Study Area, the municipal road network is characterized by a grid. The spacing of the east-west and north-south municipal roads reflects historical concession spacing. Typically, there is approximately 3 to 4 km separation between east-west roads and 1 to 2 km separation between north-south roads.

East-west arterial connections that serve travel between Halton and Peel Regions are limited to Highway 7 through Norval and Steeles Avenue, due to the constraints of the Credit River valley, the Niagara Escarpment, topography, agricultural uses, established communities and institutions, and environmental constraints.

The availability of only two arterial connections over the 11 km length of the Halton-Peel boundary (between 407 ETR and Mayfield Road) is much less than the typical 2 km spacing found elsewhere in the GTA. The limited number of east-west arterial connections contributes to excess traffic demands through Norval where Highway 7 is only 2 lanes wide and limits travel options for people and trucks traveling in the area.

The arterial and major collector road network is summarised in **Table 4-1**.

Table 4-1: HPBATS Existing Road Network

Road from/to	Road class	Jurisdiction	No. of lanes	Observations
Highway 401	Freeway	MTO	6	Reaching capacity in peak hour, peak direction of traffic; Delays at junction with 407 ETR
407 ETR	Freeway	MTO / 407 ETR	6	Toll highway; operates well
Steeles Avenue, Chinguacousy Road to Winston Churchill Boulevard	Arterial	Peel	2-4	High AM / PM peak direction volumes, peak period congestion.
Steeles Avenue to Winston Churchill Boulevard	Arterial	Halton	2	Stop-and-go conditions and significant delays in peak periods, peak direction of traffic west of Winston Churchill Boulevard. Inability to access properties located along Steeles due to excessive queuing.
Queen Street, Chinguacousy Road to Mississauga Road	Arterial	Peel	2	High AM / PM peak direction volumes, peak period congestion.
Embleton Road, Mississauga Road to Winston Churchill Blvd	Collector	Peel	2	Low speed / low capacity rural collector; high unidirectional volumes of commuter travel in peak periods.
5 Sideroad, Winston Churchill Boulevard to Trafalgar Road	Collector	Halton Hills	2	Low speed / low capacity rural collector; high unidirectional volumes of commuter travel in peak periods.
Bovaird Drive, Chinguacousy Road to Winston Churchill Boulevard	Arterial	Peel	2-4	Built to provincial standards, high volume of 24-hour traffic; main truck route, delays and congestion in peak direction of traffic
Highway 7 / Guelph Street, west of Winston Churchill Boulevard	Arterial	MTO, Halton Hills	2-4	Built to provincial standards, high volume of 24-hour traffic; main truck route, delays and congestion in peak direction of traffic. Major bottleneck in Norval.
Wanless Drive, east of Winston Churchill Boulevard	Minor arterial	Brampton	2	Rural in character, peak period volumes operate at good level of service. Discontinued at Winston Churchill Blvd

Road from/to	Road class	Jurisdiction	No. of lanes	Observations
Mayfield Road	Arterial	Peel	2	Rural in character, peak period volumes operate at good level of service. Truck route
Old School Road, west of Winston Churchill Boulevard	Collector	Caledon	2	High volumes of commuter travel in peak period direction of traffic.
22 Sideroad, East of Winston Churchill Boulevard	Collector	Halton Hills	2	Rural road, steep gradients. Unidirectional volumes of commuter travel in peak periods. Not accessible to trucks. Discontinued, connected to 20 Sideroad.
River Drive, West of Winston Churchill Boulevard	Arterial	Halton	2	Connected to RR13, discontinued west of RR13. Carries commuter and truck traffic; known community concerns.
Maple Avenue / 17 Sideroad, Mountainview Road to Trafalgar Road and 4 th Line	Minor arterial	Halton Hills	2	Maple Ave east of Trafalgar functions as urban arterial, carries auto and truck traffic. Known community concerns about aggregate truck traffic. 17 Sideroad is the main access route to/from Acton Aggregate quarry.
10 Sideroad, West of Winston Churchill Boulevard	Arterial	Halton	2	Rural arterial; discontinued at Winston Churchill Blvd; provides connectivity to RR25.
Trafalgar Road	Arterial	Halton	2	Major north-south route extending from Lake Ontario, past Highway 401 and over to Orangeville. Road carries high volume of commuter and truck traffic. Lack of left turn lanes at the intersection with 5 Sideroad causes excessive delays to SB traffic in the AM.
8 th Line	Collector	Halton Hills	2	Rural collector, high unidirectional peak direction traffic. Persistent blockage of 8 th Line intersection with Steeles by traffic queued on Steeles Avenue.
9 th Line	Arterial	Halton	2	Important north-south route to/from Georgetown. Discontinued south of Steeles Avenue. Carries commuter and truck traffic. Intersection delays at Steeles.
10 th Line	Collector	Halton Hills	2	Rural collector, high unidirectional peak direction traffic. Persistent blockage of 8 th Line intersection with Steeles Avenue by traffic queued on Steeles.
Winston Churchill Boulevard / Adamson Road	Arterial	Halton/Peel	2	Boundary road, an important north-south route to Georgetown. Carries mostly commuter traffic and some trucks to/from Maple Lodge Farms.

Road from/to	Road class	Jurisdiction	No. of lanes	Observations
Steeles Avenue to Highway 7				Major congestions and delays at the intersections with 10 Sideroad and Highway 7 in Norval.
Winston Churchill Boulevard / Adamson Road north of Highway 7	Collector	Halton Hills/Peel	2	Boundary road. Road recently transferred from Halton to Halton Hills to reflect its rural character.
Heritage Road	Minor arterial	Brampton	2	Rural collector, high unidirectional peak direction traffic.
Mississauga Road	Arterial	Peel	2	Major north-south route extending from Lake Ontario, past Highway 401 and over to Caledon. Road carries high volume of commuter and truck traffic. Currently under EA for widening to 4 and 6 lanes. Excessive delays and congestion through Huttonville and at the intersection with Queen Street.

4.3.2 Transit Network

Currently, there is no existing municipal transit service in Georgetown. Mississauga Transit and Brampton Transit service routes in the southern and eastern sections of the Study Area.

Transit service in the Study Area is mainly provided by GO Transit with the Georgetown GO train and bus service, with stations at Georgetown and Mount Pleasant, and the Milton GO train service with stations at Meadowvale, Lisgar and Milton. Four GO trains depart Georgetown for Union Station in Toronto weekday mornings, and four GO trains depart Union Station for Georgetown GO weekday afternoons.

GO Bus services operate throughout the day. GO Route 33 and its sub-routes operate through Brampton and Georgetown along Highway 7. There are GO Bus stops at Mount Pleasant in Brampton, Main and Wesleyan, Georgetown GO Station, Georgetown Market, and Highway 7 and King in Norval. Route 33 runs between the Guelph Bus Terminal and the York Mills Bus Terminal in Toronto. Route 33b runs between the York Mills Bus Terminal and Georgetown. During off-peak periods, some routes run between Georgetown and the Brampton Bus Terminal or Bramalea GO Station. According to GO Transit, it carries approximately 191,500 passengers per year and an average of 760 passengers per day.

Existing transit services are illustrated in **Exhibit 4-7**.



Exhibit 4-7: Existing Transit Service
(Source: HDR | iTRANS, 2010)

4.3.3 Existing Travel Demand

In 2006, people who live and work in the Study Area generated approximately 80,500 trips during the weekday PM peak period.

Auto driver and passenger trips account for over 91% of all trips, as illustrated in **Exhibit 4-8**.

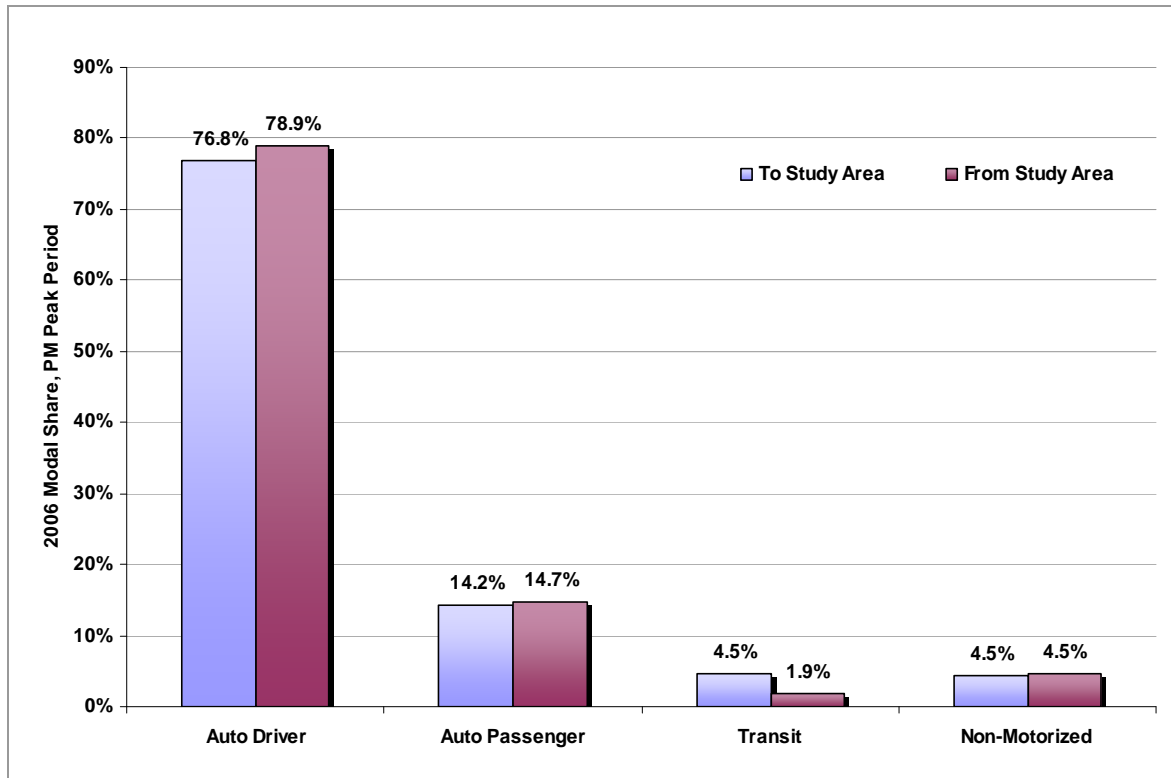


Exhibit 4-8: Travel by Mode to/from the Study Area, 2006 PM Peak Period

(Source: 2006 Transportation Tomorrow Survey)

With respect to travel patterns, 36% to 40% of traffic is self-contained, meaning that it starts and ends within the HPBATS Study Area. For trips traveling outside the Study Area, over 25% of area residents commute to work in Mississauga and 17% commute to Brampton. Origin-destination patterns from the 2006 Transportation Tomorrow Survey for the Study Area are illustrated in **Exhibit 4-9** and **Exhibit 4-10**.

Highway 7 and Steeles Avenue are the primary east-west arterial corridors, with daily volumes in excess of 9,500 to 10,500 vehicles. Peak hour, peak direction volumes are approaching the capacity of a 2 and 4-lane roadway, respectively, and additional east-west capacity will be required in the short-term. Traffic volumes on north-south roads within the Study Area are within the range typically associated with two-lane roads.

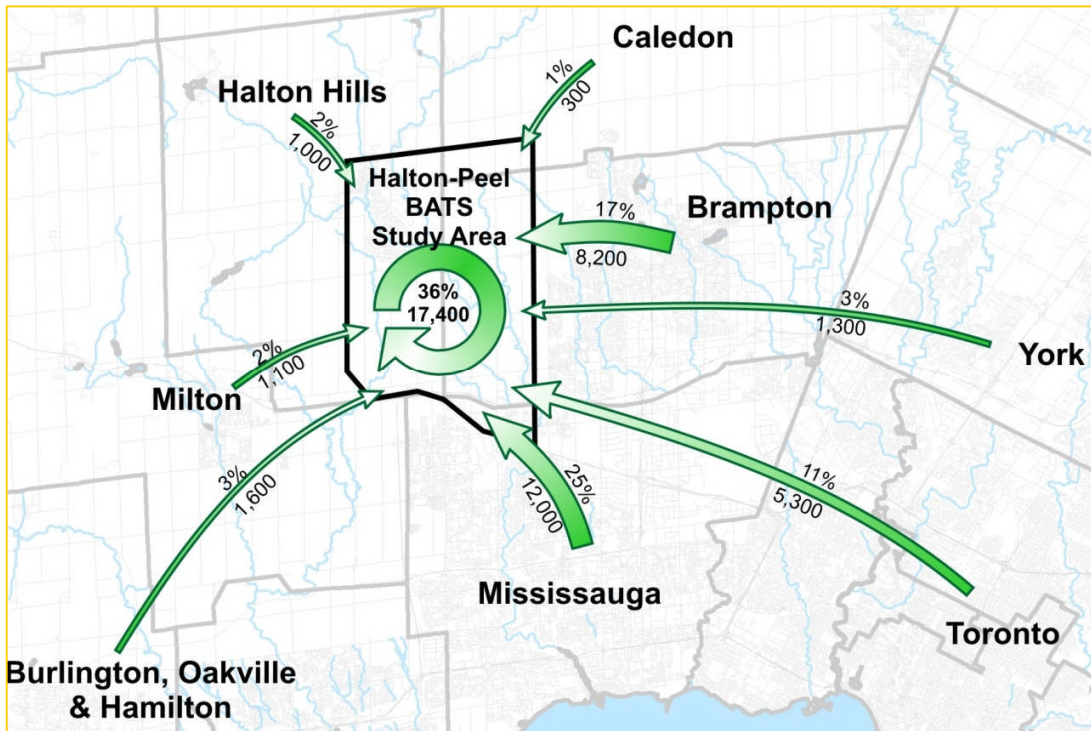


Exhibit 4-9: Trip Distribution, Study Area Destinations, PM Peak Period, 2006 TTS

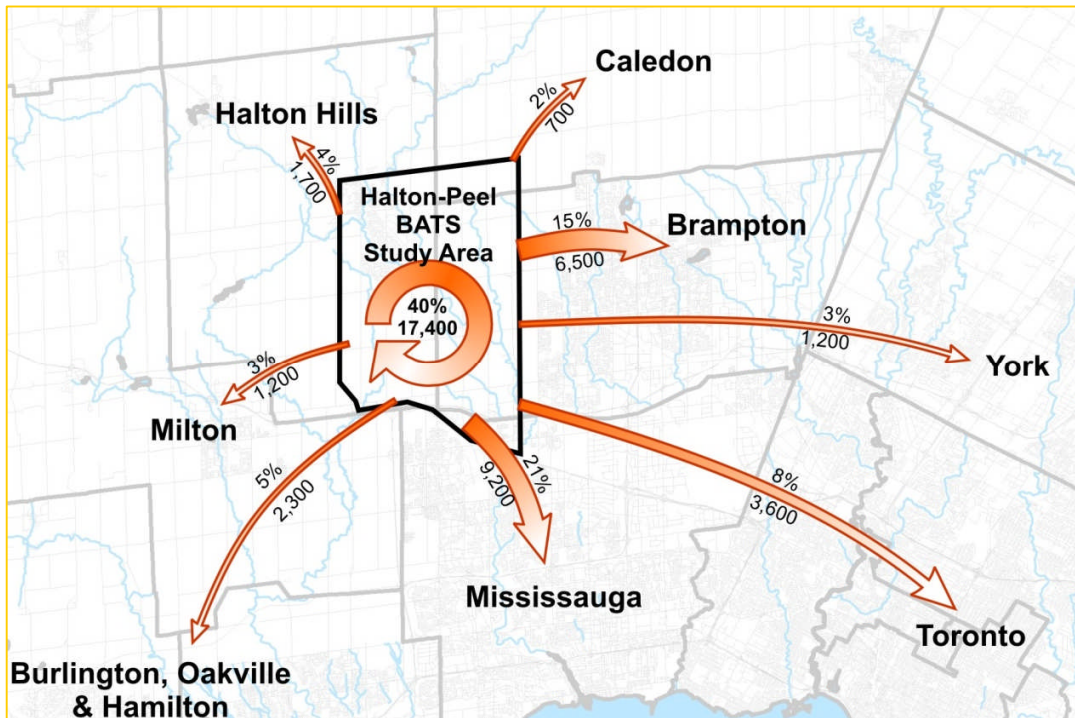


Exhibit 4-10: Trip Distribution, Study Area Origins, PM Peak Period, 2006 TTS
(Source: 2006 Transportation Tomorrow Survey)

4.3.4 Goods Movement

There is significant truck traffic in the Study Area. The major truck generators and attractors include:

- Aggregate industry
- Acton industrial area
- Georgetown industrial area along Armstrong Drive
- The commercial / retail area along Guelph Street in Georgetown
- Industrial uses in Brampton in the Bram West area
- Industrial uses in Milton
- Meadowvale Business Park
- Agricultural operations in Halton Hills

In addition to Highway 401 and 407 ETR, other major truck routes are Highway 7 (Guelph Street and Bovaird Drive), Trafalgar Road and Steeles Avenue.

Halton Hills is a major producer of aggregates. To reach destination markets in Brampton and other parts of Peel or the GTA, aggregate trucks travel on different routes. The routes also depend on the season: during the spring, all trucks must take Regional Road 25, as there is a half-load restriction on 4th Line. **Table 4-2** below shows the typical load and spring load (March-April) haul route percentages:

Table 4-2: Typical Condition and Spring Load Condition Haul Route Percentages

To / From	Percentage (Typical Condition)	Percentage (Spring Load Condition)
Regional Road 25 to / from the south	7%	100%
Trafalgar Road to / from the north	1%	0%
Trafalgar Road to / from the south	55%	0%
Guelph Street to / from the south	5%	0%
River Drive to / from the east	32%	0%

Source: Traffic Impact Assessment, Proposed Acton Quarry Extension, MMM Group, January 2009

Truck traffic on Guelph Street / Bovaird Drive through Norval accounts for 6% of peak period vehicular traffic and 19% of off-peak total traffic.

The proportion of truck traffic on Steeles Avenue at Winston Churchill Boulevard ranges from 17% - 24% in the off-peak period to 3% - 9% in the peak period of travel.

With its interchange connection with Highway 401, the proportion of truck traffic on Trafalgar Road north of Steeles Avenue ranges from 20% to 25% in the off-peak period to 2% to 16% in the peak period of travel. This data was obtained from existing traffic counts.

5. NEEDS AND OPPORTUNITIES

5.1 Halton-Peel Travel Model

5.1.1 Development of the Halton-Peel Travel Model

The transportation modeling approach for this study was developed in consultation with Halton Region, Region of Peel, and City of Brampton.

The transportation model used is the GTA Simplified Model developed by Peter Dalton for the City of Brampton. The model is a four-stage (generation, distribution, mode split and assignment) PM-peak one-hour model, calibrated to the 2001 Transportation Tomorrow Survey (TTS). It splits travel into three primary modes – auto, local transit (including GO Bus) and GO Rail.

Peel Region, Halton Region, and the City of Brampton maintain their own respective travel demand forecasting models. The City of Brampton and Halton Region models are customized versions of the GTA Simplified Model developed by Peter Dalton. The Peel Region model has been developed and maintained over the years in-house by Peel Region staff.

While the Brampton model is used as a starting point, the model (now called the Halton-Peel EMME model) was further calibrated to reasonably conform to Peel and Halton Region model forecasts. Further to that, the model has been modified to better reflect socio-economic conditions in Halton Hills and Caledon through additional traffic zone disaggregation. Road network representation in Halton and Peel has been modified to account for local roadway characteristics governed by the condition of roadway, its location and the surrounding land use.

The Halton-Peel model has considered the strengths of all three models and the travel behaviour for each area that has been calibrated into the models, in order to produce results that are reasonably compatible with the results of the individual models to avoid any compatibility problems late in the study. Forecasts generated by the model are compatible and in-line with forecast generated by Peel and Brampton².

The Halton-Peel model incorporates Peel, Halton and MTO's planned road network improvements and major transit system improvements planned by Metrolinx. The model was based on the 2001 GTA traffic zone system in Halton and Peel supplemented with extra zones in Georgetown and Caledon to provide additional detail. Traffic zone system designed for the study was endorsed by modellers from Peel, Halton, Brampton and the representative staff from Caledon.

² Forecast results generated by Halton model were not available at the time.

There are a few differences between the traffic zones used in the base and horizon years. Traffic zones along Steeles Avenue in ROPA 38 section of the Study Area were disaggregated in 2031 horizon year to account for the planned development.

Land use values are initially aggregated to 1996 GTA zone levels (in the cases of Halton and Hamilton, this requires an initial conversion from local zone systems) and then split into the zone system described above before being input to the model.

A global 5% decrease in work trips destinations in 2021 and 2031 has been maintained to account for Travel Demand Management measures and an aging population.

5.1.2 Model Validation

The model and its trip generation rates were tested against screenline data in the vicinity of the Study Area from 2001 Cordon Counts and against peak-hour trips from the 2001 TTS, to check its accuracy for this specific area. The volumes simulated by the model at key screenlines for the PM peak hour are shown in **Table 5-1** and compared with the modelled volumes and the modelled capacity of the screenlines.

Observed data along screenlines from the 2001 Cordon Count program were obtained from the Regional Municipalities of Halton and Peel. This data was then compared to the traffic assignment from the Halton-Peel EMM model with 2001 land use inputs.

Exhibit 5-1 illustrates the location of screenlines used for calibration while **Table 5-1** below summarizes the calibration results.

Table 5-1: Calibration Results, 2001 PM Peak Hour, Peak Direction of Traffic

Screenline	Observed	Modeled	Percent Difference	Absolute Difference
NORTHBOUND SCREENLINES				
Georgetown North / South of Mayfield NB	1,900	2,400	26%	500
South of 10 Sideroad / Highway 7 NB	4,000	4,000	0%	0
South of Steeles NB	5,300	5,200	-2%	-100
South of Highway 401 and 407 ETR NB	5,300	5,400	2%	100
WESTBOUND SCREENLINES				
West of Winston Churchill Boulevard WB	9,300	10,900	17%	1,600
East of Winston Churchill Boulevard WB	9,900	10,900	10%	1,000
West of Chinguacousy Road WB	13,200	15,200	15%	2,000
NORTHBOUND	16,500	17,000	3%	500
WESTBOUND	32,400	37,000	14%	4,600

The calibration table above shows that all screenlines except Georgetown North / South of Mayfield NB are within 20% of observed data, with overall differences of 3% in the northbound direction and 14% in the westbound direction.

Northbound traffic levels north of Georgetown and south of Mayfield Road cover the road network in the rural area; north-south roads are used predominantly as secondary commuter routes or collector roads for local traffic. The differences between “observed” and simulated volumes are reasonable; for low-volume roads, we would expect larger percentage differences.

In general, the simulated volumes compare reasonably well with actual traffic, with percentage differences low at high volumes in both peak and off-peak direction. Based on the validation results, the model is acceptable as a suitable tool to forecast future travel demand within the Study Area for the growth pattern forecasts for 2011, 2021, 2026 and 2031 horizon years.

5.1.3 Model Limitations

The Halton-Peel model, like any macro-level forecasting tool, has its limitations that should be considered while discussing and interpreting its results. The factors discussed in the following paragraphs should be considered.

The model is a macro scale, regional forecasting tool based on a high-level representation of the existing and future socio-economic conditions projected for the Study Area. It consists of 1877 traffic zones. Traffic zones in most of the HPBATS area were kept at a large scale which is sufficient for establishing strategic planning objectives, but too coarse to provide details at a local level. Large scale representation tends to under-simulate traffic levels and interaction between zones within the area.

The model is based on trip rates and directional distribution as observed in 2001 and reported by the 2001 Transportation Tomorrow Survey. Although the model has certain built-in mechanisms to account for future potential changes in trip distribution, these mechanisms may be insufficient to fully reflect future traffic volumes between Halton and Peel; in particular, the attractiveness of the new employment centres in Halton Hills, Bram West and North West Brampton may not be fully reflected.

Macro scale modelling based on existing travel patterns will make the model biased in favour of transit travel. Although future population and employment densities in the Study Area are predicted to increase, the traffic zone fabric employed in the model is too large to properly capture this change.

The model is based on a number of assumptions, aggregations, averaging to the mean and simplifications of individual behaviour, and is therefore prone to error.

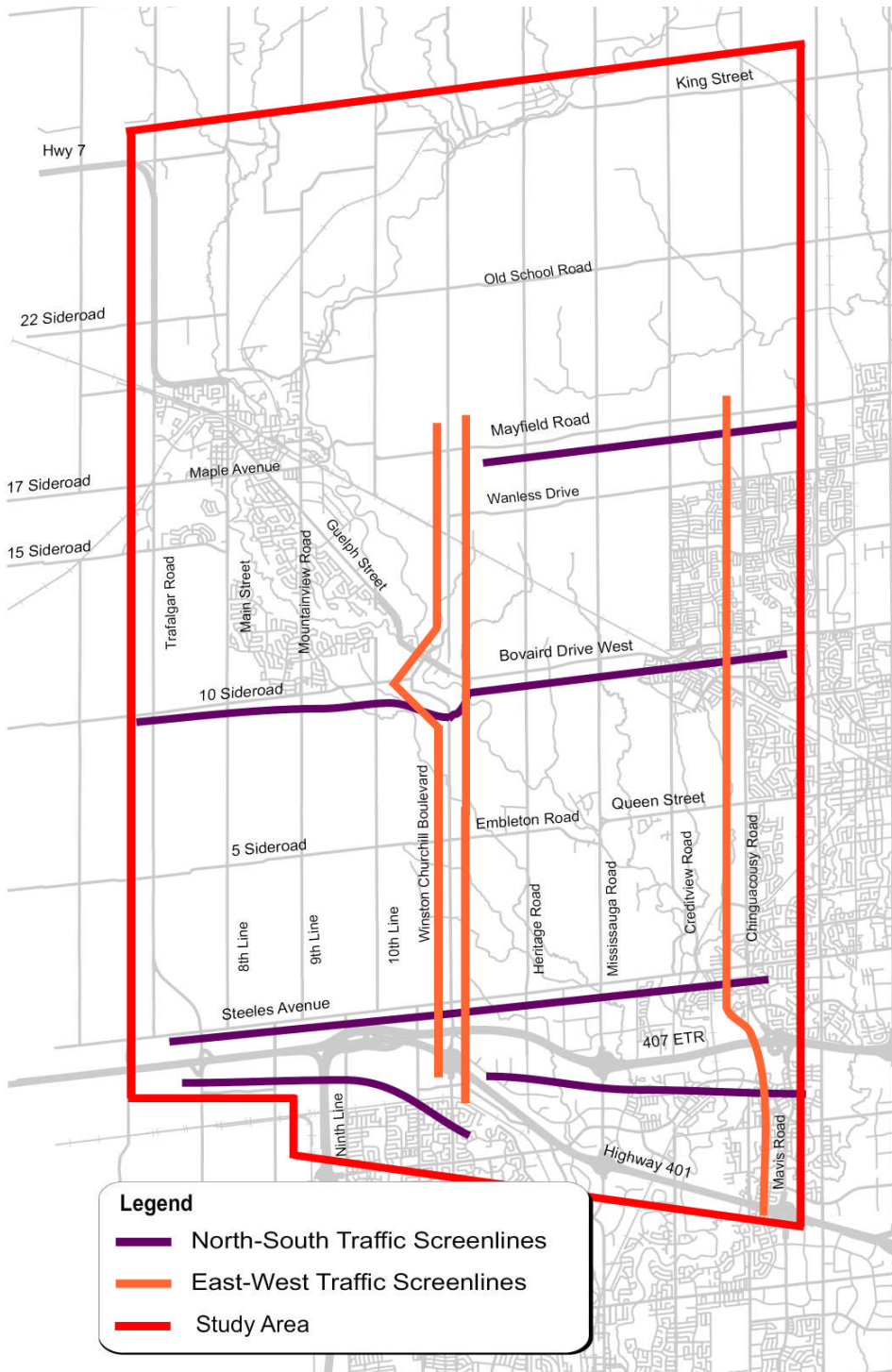


Exhibit 5-1: Calibration Screenlines

5.2 Land Use Forecasts

The land use forecasts for the Study Area conform to the regional growth totals set by the Growth Plan legislation, Peel's ROPA 24 and Halton's ROPA 38. Sources of land use estimates and estimates are presented in **Table 5-2** and **Table 5-3**.

Table 5-2: Land Use Forecast Sources

Population and Employment Forecasts for:	Source
Brampton	City of Brampton, June 2008
Caledon	Region of Peel, July 2009
Mississauga	Region of Peel, July 2009
Halton	Region of Halton, September 2009

The 2031 population and employment forecasts are summarized below:

Table 5-3: Land Use Forecast Estimates

Municipality	2031 Population	2031 Employment
Brampton*	758,300	320,000
Caledon	116,000	48,700
Mississauga	784,000	504,400
Peel Total	1,658,300	873,100
Halton Hills	90,000	42,500
Halton Total	750,100**	390,000

*The figures used here are the latest available; however, they are subject to change pending the completion of the conformity exercise

**The Population figure used is total population including Census undercoverage. The current Halton Official Plan population figures are in Census population. In order to compare the two sources, the Official Plan population figures need to account for an approximate 4 percent Census undercoverage. For further information, please contact Halton Region Planning Services

Growth in Brampton will be concentrated in Bram West and in Northwest Brampton. The Secondary Plan for Brampton West, illustrated in **Exhibit 5-2** shows planned population increase of 47,700 and an employment increase of 33,800. Development forecasts for Northwest Brampton are still in draft format; however, based on the data provided by the City and used in HPBATS, this area is expected to house 89,900 residents and some estimated 20,400 jobs.



Exhibit 5-2: Preferred Land Use Concept, Bram West Secondary Plan

Land use forecasts for the Region of Halton were derived from the employment and population estimates for the Regional Official Plan Amendment (ROPA) No. 38. ROPA 38 established new growth and intensification areas in conformance with the Places to Grow Plan.

Through the Sustainable Halton process, future growth areas to 2031 were identified and incorporated into the Regional Official Plan through ROPA 38. It is illustrated in **Exhibit 5-3**. It allocates new residential growth of 20 000 to Halton Hills and employment growth in east Milton and along the Highway 401 corridor in Halton Hills. The plan for Concept 2 has been used in HPBATS. Halton Region staff provided directions to the growth allocation to areas. Allocation to individual traffic zones was completed by HDR | iTRANS.

The Study Area encompasses only part of Halton and Peel Regions. By 2031 the current population and employment base will triple. Growth in Peel (predominantly Brampton) is expected to account for 71% of total population and employment growth, and growth in Halton for 29% of total growth in the Study Area and for areas in Milton adjacent to the southern boundary line of the Study Area. The 2006 and 2031 population and employment estimates for the Study Area are presented in **Table 5-4** and **Table 5-5**.

Table 5-4: Study Area Population and Employment Land Use, 2006, 2021 and 2031

Area	2006 Population	2006 Employment	2021 Population	2021 Employment	2031 Population	2031 Employment
Brampton	36,000	7,700	134,300	42,800	199,400	67,400
Mississauga	16,200	17,200	17,100	20,600	17,600	21,400
Caledon	400	200	2,100	400	11,200	900
Halton Hills	38,600	11,800	46,500	19,700	67,400	28,100
Milton*	2,800	2,400	4,100	24,100	29,100	41,000
PEEL	52,600	25,000	153,500	63,800	228,200	89,700
HALTON	41,400	14,200	50,600	43,800	96,500	69,100
Study Area Total	91,200	36,800	200,000	83,400	295,700	117,800
Total including Milton*	94,000	39,200	204,100	107,600	324,800	158,800

*Note: growth in areas immediately adjacent to the Study Area

Table 5-5: Study Area Combined Population and Employment Totals, 2006, 2021 and 2031

Area	2006 Total	2021 Total	2031 Total	Growth, 2006 -2031
Brampton	43,700	177,100	266,800	223,100
Mississauga	33,400	37,700	39,000	5,600
Caledon	600	2,500	12,100	11,500
Halton Hills	50,400	66,200	95,500	45,100
Milton*	5,200	28,200	70,100	64,900
PEEL	77,600	217,300	317,900	240,300
HALTON	55,600	94,400	165,600	110,000
Study Area Total	128,000	283,400	413,500	285,500
Total including Milton*	133,200	311,700	483,600	350,400

*Note: growth in areas immediately adjacent to the Study Area

**Map 1
Regional Structure**

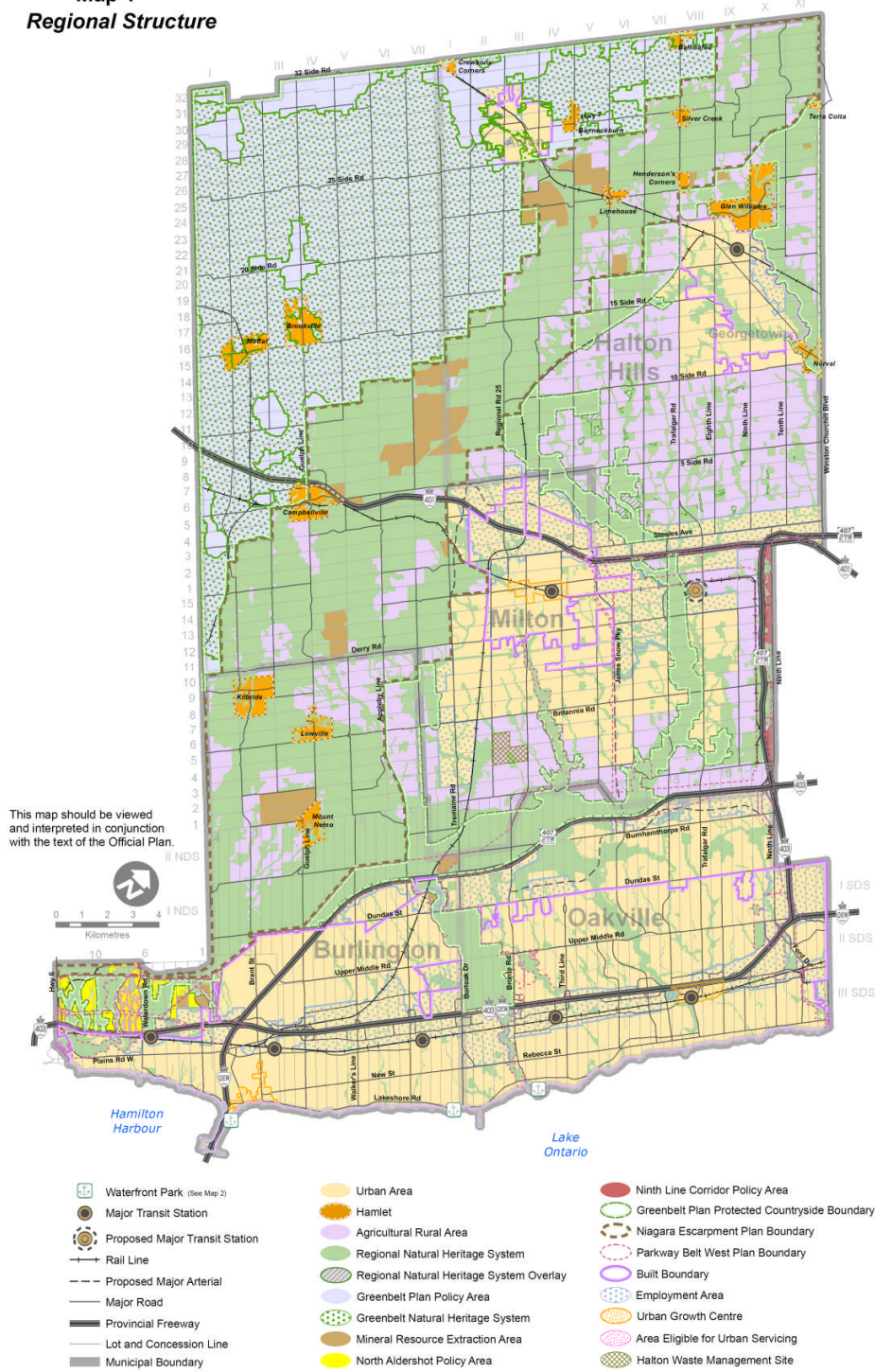


Exhibit 5-3: ROPA 38 Map 1, Regional Structure
(Source: ROPA 38, December 2009)

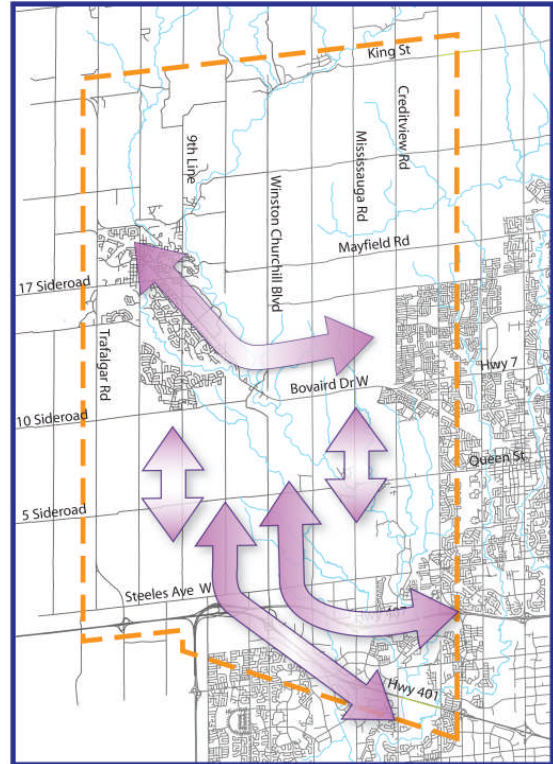
5.3 Existing Transportation Needs and Opportunities

5.3.1 Transportation Issues

The existing transportation network faces numerous challenges including:

- High cross-boundary demand between Brampton and Georgetown
- Insufficient capacity to meet existing east-west travel demands
- Lack of direct east-west transportation arterial connections between Peel and Halton, particularly north of Norval
- North-south capacity deficiencies in Halton Hills and Brampton
- Limited suitable routing options for truck traffic
- Need for more connections to the provincial highway network

The existing and future transportation challenges for the Halton Hills / West Brampton area have been well documented in several recent studies undertaken by the City of Brampton, Region of Peel, Region of Halton and the Ontario Ministry of Transportation.



Previous reports have identified the following transportation issues:

- Highway 7 serves significant local traffic in Brampton, Guelph and Halton Hills (including Georgetown and Acton). The highway also serves longer trips, as it provides a link between Guelph, Wellington County, Halton Region, and Peel Region
- Existing east-west deficiencies on Highway 7 through Norval and a future north-south deficiency on Winston Churchill Boulevard south of Highway 7. Halton Region had initiated the Norval Bypass Study (currently on hold) to examine alternatives for increasing east-west capacity between Halton and Peel
- In the Mississauga Road Environmental Study Report from 407 ETR to Queen Street completed in 2002 by iTRANS on behalf of the Region of Peel, a bypass of the village of Huttonville was assessed as a planning alternative to the existing and future traffic capacity deficiencies within the Mississauga Road corridor. It was determined that there would be limited traffic benefits relative to cost, property impacts, and environmental impacts. As a result, a bypass was not recommended at that time
- The Highway 7 and Adamson Street intersection will not operate under acceptable conditions by 2016, even with the implementation of all reasonable geometric improvements and an assumed widening of Highway 7
- A fully-expanded arterial road network in Brampton and the eastern part of Halton Region, together with expansions of existing provincial freeways (401, 407, and 410) and

improved public transportation, may not provide sufficient capacity to accommodate the combined growth in cross-boundary through traffic and new traffic generated by future development in west Brampton (including the Northwest Brampton Expansion Area)

- A new GTA east-west, multi-modal transportation corridor between the Guelph area and Highway 400, north of Highway 401 / 407 ETR is being planned by the Province through the GTA West Corridor Study

The MTO **Highway 7 Role and Function Study, March 2001** found that a significant portion of Halton cross boundary trips travel on the arterial road and provincial road network through Brampton. The Highway 7 Role and Function Study also concluded that truck traffic from both the aggregate and general industry cross the Halton / Peel boundary to travel short distances to Brampton and long distances to the rest of the GTA. The long distance trips primarily travel along Highway 7 to Mississauga Road or Winston Churchill Boulevard to head south to Highway 401 or 407 ETR.

The **Strategic Transportation Directions Study** (Draft 2002) by the Ministry of Transportation identified strategic directions for the development of the provincial transportation system for Central Ontario, including building system capacity to meet future travel demands. This strategy includes undertaking a preliminary needs assessment for a new GTA east-west, multi-modal transportation corridor between the Guelph area and Highway 400, north of Highway 401 and 407 ETR.

To provide connectivity with the provincial transportation network, the new east-west corridor would require north-south links with other 400-series corridors such as Highway 401 and 407 ETR. Therefore, as part of the east-west corridor, the Strategic Directions study identified a possible north-south, multi-modal transportation corridor in the west Brampton / east Halton area, linking the proposed GTA east-west corridor with Highway 401 and 407 ETR. The **GTA West Corridor Environmental Assessment** is presently underway, and the results of this study will have impacts on travel within the Study Area.

The Final Report of the Central Ontario Smart Growth Panel, *Shape the Future* (April 2003), recommended the east-west, multi-modal corridor between the Guelph area and Highway 400, with a north-south connection to Highway 401 / 407 ETR.

The **Northwest Brampton Transportation Infrastructure Study (Part 1)** was completed to determine the transportation infrastructure and preliminary servicing needs required to support the development of the proposed urban expansion in the northwest part of Brampton. The study examined improvements to the arterial road network in Brampton and the eastern part of Halton Region, together with expansions of existing provincial freeways (401, 407, and 410) and improved public transportation. In addition, the City of Brampton and Halton Region have recently completed or are in the process of completing transportation master plans: The **2009 Transportation and Transit Master Plan Sustainable Update** (City of Brampton) and the **Halton Region Transportation Master Plan Study Update** completed in March 2008. The Halton Region Transportation Master Plan Study Update assessed up to

the horizon year of 2021 while the Brampton Transportation and Transit Master Plan Study assessed up to 2031.

The conclusions of the Halton Region analysis did not identify the need for a freeway or higher-order multi-modal arterial link within the 2021 horizon year in the Halton Hills area, or the need for six lanes on Trafalgar Road or Winston Churchill Boulevard. The infrastructure improvements currently identified in the Halton Region Transportation Master Plan are required to accommodate transportation demands associated with 2021 population and employment projections for the current urban boundaries, and do not consider additional traffic demand that would be generated by the expansion of the Georgetown urban boundary or elsewhere in the Region.

Therefore this study must take into consideration provincial needs, inter-regional travel, the different transportation needs / issues of Halton Region and Peel Region, and the different needs / issues of the Town of Halton Hills and City of Brampton. The study must provide a comprehensive, inter-regional and intra-regional analysis and follow a traceable environmental assessment process that rationalizes the differences in base modeling parameters and other model assumptions and inputs to allow for comparative results that can be measured against the goals and objectives of each of the respective municipal Official Plans.

5.3.2 Existing Bottlenecks

Traffic “bottlenecks” have been identified at:

- **Steeles Avenue west of Winston Churchill Boulevard** – Stop-and-go conditions in peak periods, peak direction of travel resulting in significant delays and blockage of intersections and private driveways
- **Winston Churchill Boulevard north of 5 Sideroad** – Excessively congested in peak direction of travel with excessive delays and queues observed for the northbound direction in the PM peak period at the approach to the Highway 7 / Adamson Street intersection; reported intersection blockage and access obstructions to / from private properties located along the road
- **Highway 7 through Norval** – The signalized intersection of Adamson Street and Highway 7 is prone to excessive peak period delays, since there is only one through traffic lane in each direction. In the PM peak period, northbound queues extend to 10 Sideroad, cross the intersection of 10 Sideroad and Winston Churchill Boulevard, and can extend an additional 1.5 to 2 km south. The north and south approaches to Highway 7 on Adamson Road provide left turn and through-right lanes; however, with the high demand for northbound left turns, left turning vehicles spill-over to the through lane and block through traffic
- **Highway 7 through Norval** is a Provincial Highway with access restrictions. It carries high volumes of auto and truck traffic and in the AM and PM peak hours is approaching the top limits of its capacity. In the off-peak hours, the volume of truck traffic is very high with trucks accounting for over 19% of all traffic. The only marked pedestrian crossing is located at the signalized intersection with Adamson Street; no other pedestrian

crossing is provided in Norval. Stop-controlled intersections with local roads within Norval are consistently blocked in the AM and PM peak periods by vehicle queues on Highway 7

- **Winston Churchill Boulevard through South Norval** – Excessive delays at the stop-controlled T-intersection of Winston Churchill Boulevard and 10 Sideroad are causing stop-and-go conditions and lengthy queuing on Winston Churchill Boulevard. Both north and south approaches to the intersection provide one lane of traffic. The northbound direction is experiencing a very high volume of PM peak period traffic, with over 260 vehicles attempting to turn left into 10 Sideroad and 400 vehicles attempting to continue north to Highway 7. The combined volume of traffic handled daily in the PM peak hour by two intersections along Winston Churchill Boulevard / Adamson Street at 10 Sideroad and Highway 7 adds up to over 570 left-turning vehicles and 560 through vehicles. Insufficient capacity is provided by the single northbound left turn lane and single through-right lane at Highway 7, and the single shared left turn-through lane at 10 Sideroad
- **Trafalgar Road at 5 Sideroad** – Has been identified as a bottleneck in the AM peak period. This signalized intersection has no exclusive turn lanes. In the AM peak period, the southbound left turning vehicles attempting to reach the elementary school site located in the south-east corner of the intersection frequently block and obstruct the high volume of southbound through traffic, causing undue delays
- **Bovaird Drive and Mississauga Road** – This intersection is experiencing delays in the peak periods of travel. The intersection is provided with separate left, through and right turn lanes in the eastbound and westbound directions but with only shared left-through-right lanes in the northbound and southbound directions. This lack of capacity is causing delays to northbound and southbound traffic. The Region of Peel is currently undertaking Environmental Assessment studies for Bovaird Drive and Mississauga Road in preparation for the widening of these two arterials scheduled to be complete by 2016 – 2018 for Mississauga Road and 2015 for Bovaird Drive
- **Mississauga Road through Huttonville** – Mississauga Road has four lanes of capacity through Huttonville. During the course of HPBATS the construction of a watermain corridor along Mississauga Road was causing major delays to traffic; however, this temporary situation will improve once construction has been completed in 2010. The Region of Peel is currently undertaking Environmental Assessment studies for Mississauga Road in preparation for a widening that is scheduled for completion by 2016-2018

5.3.3 Screenline Analysis

A screenline analysis is a broad tool used to assess the overall conditions, and it does not rule out the existence or severity of the spot congestion locations discussed in **Section 5.3.2**. The 2006 screenline conditions are shown in **Exhibit 5-4**.

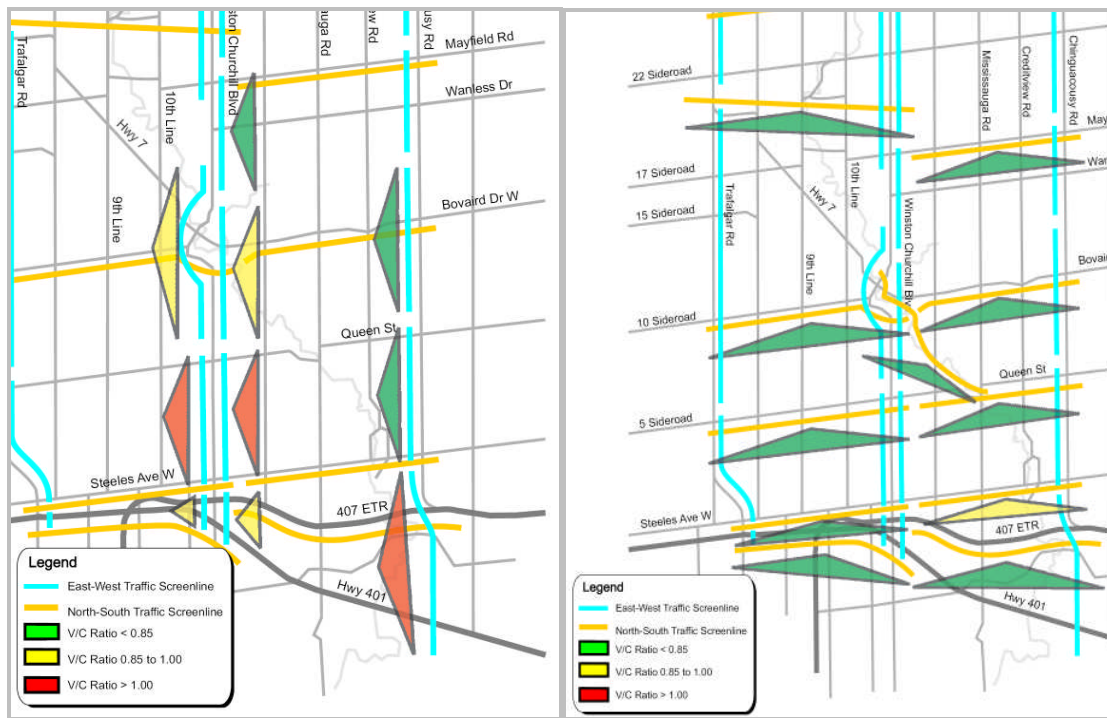


Exhibit 5-4: 2006 Conditions at the Screenline Level, PM Peak Hour

For the weekday PM peak hour, the screenline analysis for 2006 conditions indicates congestion problems northbound in the southern part of the Study Area in Peel Region, and westbound across the Halton-Peel boundary.

5.4 Future 2031 Transportation Needs and Deficiencies

By 2031, the number of people living and working in the Study Area will almost triple. The Study Area population is forecast to increase from 91,200 in 2006 to 295,700 in 2031, while employment is estimated to increase from 36,800 in 2006 to 117,800 by 2031. Bar graphs illustrating population and employment forecasts are shown in **Exhibit 5-5**.

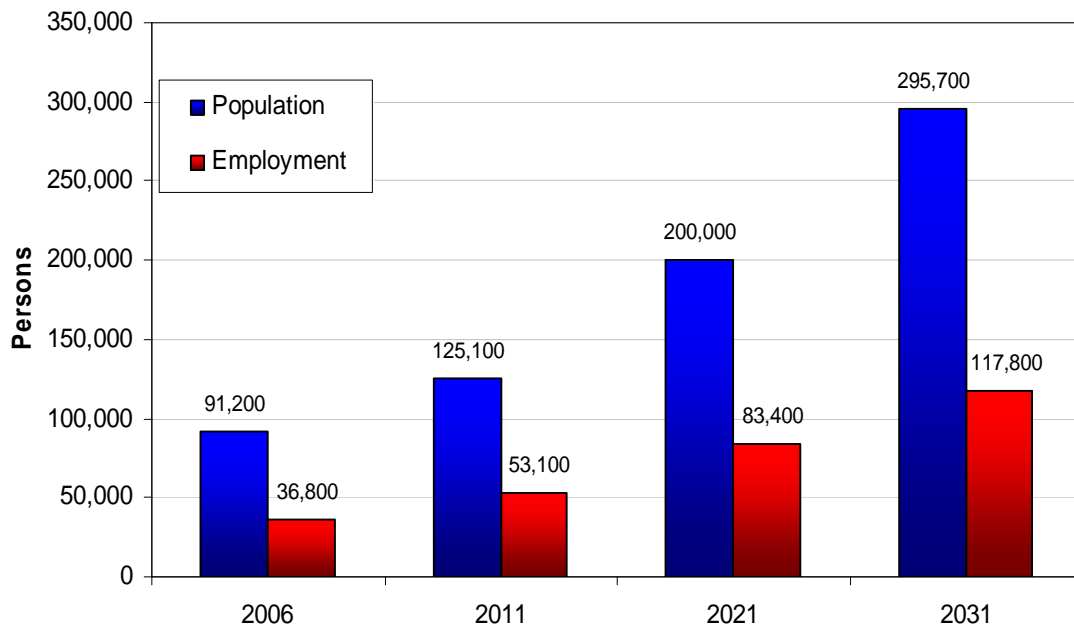


Exhibit 5-5: Population and Employment within the Study Area, 2006 to 2031

Total travel during the afternoon 3-hour peak period in the Study Area is projected to triple, from 80,500 trips (auto and transit) in 2006 to 258,100 trips (auto and transit) in 2031. This trend is illustrated in **Exhibit 5-6**.

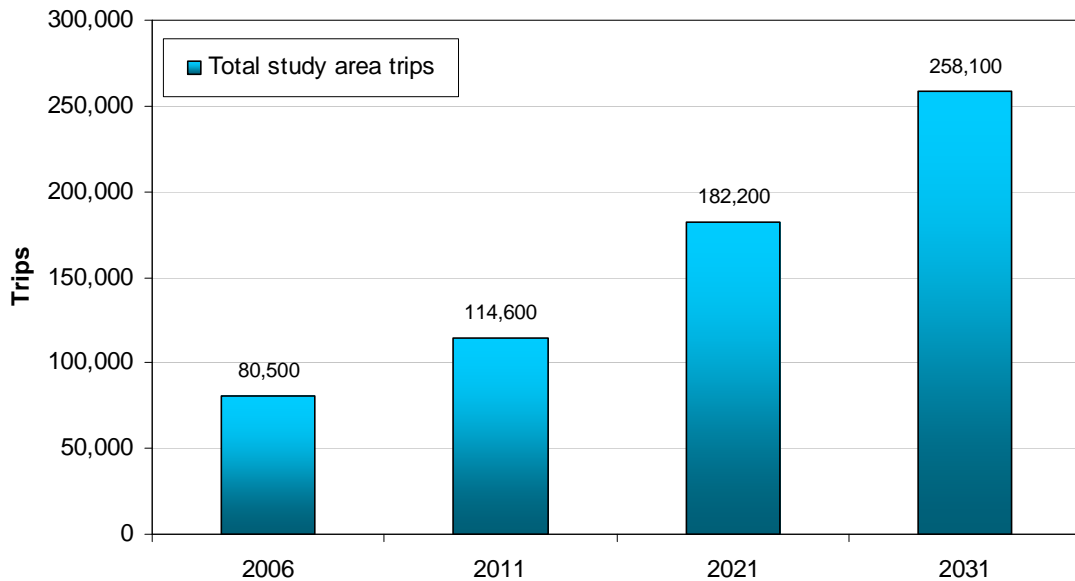


Exhibit 5-6: Total Study Area Trips in the PM Peak Period, All Modes, 2006 to 2031

Intensification and growth within the Study Area planned for by the Places to Grow plan will have an impact on trip distribution patterns. In 2006, the area is characterised by a relatively high percentage of self-contained travel (36% origins and 40% destinations). This reflects a high percentage of internal travel characteristic to Georgetown. By 2031 Peel and Halton's sections of the Study Area will intensify and further integrate with other parts of their respective regions, located outside of the Study Area. Even though this integration will cause a decrease of internal travel in the Study Area, it will strengthen work-live relationships with the rest of Brampton, Halton Hills and Milton and decrease travel to Mississauga and external regions. **Table 5-6** and **Table 5-7** compare the distribution patterns of trips destined to and originating from the Study Area in 2006 to the patterns expected in 2031. Future origin-destination patterns for the Study Area are presented graphically in **Exhibit 5-7** and **Exhibit 5-8**.

Compared to the current OD patterns, the proportion of trips leaving and entering the Study Area will increase significantly. Trips to Brampton increase from 15% to 27% and trips from Brampton increase from 17% to 29%. Smaller increases are seen in zones in Milton, with trips to Milton increasing from 3% to 6% and trips from Milton increasing from 2% to 4%.

In this same time frame, road lane-kilometres and network capacity resulting from the implementation of road improvements planned by MTO, Halton Region, Region of Peel, City of Brampton, Town of Halton Hills and Town of Caledon will increase by 85%.

The City of Brampton, GO Transit and Metrolinx plan to enhance the transportation system within the Study Area with additional investments into transit services including high-order transit on Mississauga Road, Bovaird Drive and Steeles Avenue, the development of a Mount Pleasant mobility hub, an increase in service frequency on the Milton and Georgetown GO lines, the introduction of two-way, all day trains on the Georgetown GO line and expansion of primary, secondary and community services to new growth areas in Brampton. Brampton's TTMP defines primary corridors as arterial transit routes with 5-10 minute peak period headways, secondary corridors as routes on minor arterials and local collectors with 10-15 minute peak period headways and community services as routes that respond to local demand with 15-30 minute peak period headways.

Details on planned road and transit improvements are provided in **Section 6.2**.

Table 5-6: Distribution of Trips Destined to HPBATS Study Area, PM Peak Period

Trips to HPBATS Study Area from:	2006 Trips	Origin %	2031 Trips	Origin %
Toronto	5,300	11%	10,400	8%
York	1,300	3%	5,000	4%
Caledon	300	1%	3,000	2%
Brampton	8,200	17%	39,400	29%
Mississauga	12,100	25%	26,800	20%
Halton Hills	1,000	2%	2,500	2%
Milton	1,100	2%	5,500	4%
Burlington, Oakville & Hamilton	1,600	3%	3,600	3%
Study Area	17,400	36%	37,800	28%
Total	48,400	100%	133,900	100%

Table 5-7: Distribution of Trips Originating from HPBATS Study Area, PM Peak Period

Trips from HPBATS Study Area to:	2006 Trips	Destination %	2031 Trips	Destination %
Toronto	3,600	8%	5,600	5%
York	1,200	3%	3,300	3%
Caledon	700	2%	3,100	3%
Brampton	6,500	15%	29,200	27%
Mississauga	9,300	21%	16,000	15%
Halton Hills	1,700	4%	2,600	2%
Milton	1,200	3%	6,700	6%
Burlington, Oakville & Hamilton	2,300	5%	3,700	3%
Study Area	17,400	40%	37,800	35%
Total	44,000	100%	107,900	100%

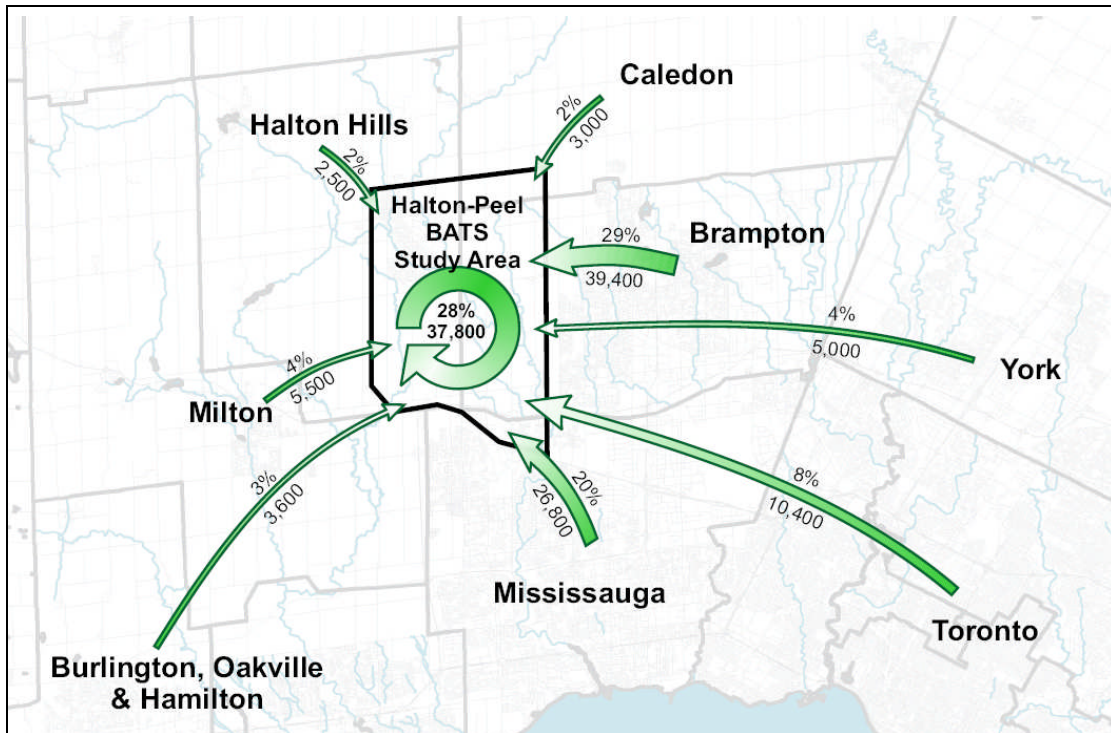


Exhibit 5-7: Trip Distribution Destined to the Study Area, PM Peak Period, 2031

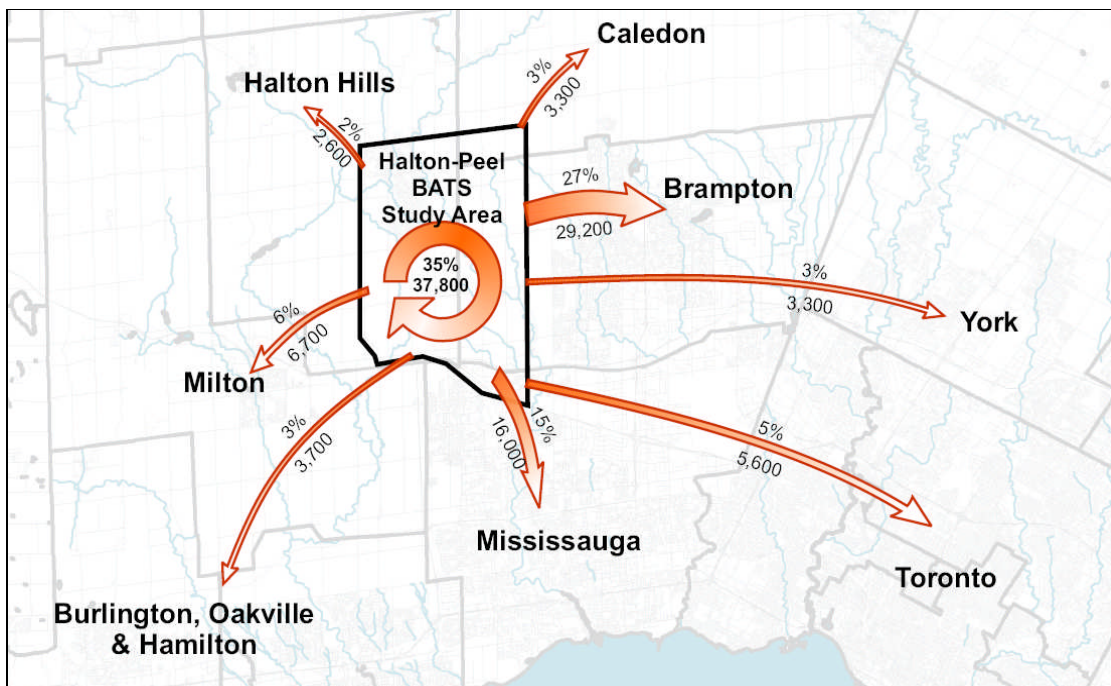


Exhibit 5-8: Trip Distribution Originating from the Study Area, PM Peak Period, 2031
(Source: Halton-Peel forecasting model; HDR | iTRANS)

Currently planned infrastructure investments (presently only forecast to 2021 in Halton and 2031 in Peel) are not sufficient to serve the planned growth as per the Provincial Growth Plan and Sustainable Halton. By 2031, southern parts of the Study Area will experience significant congestion. Overall network congestion will increase from 16.6% in 2006 to 26.8% in 2031. The results of the screenline based network performance assessment for the 2021 and 2031 horizon years based on planned road and transit improvements, are illustrated in **Exhibit 5-9** and **Exhibit 5-10** for westbound travel and **Exhibit 5-11** and **Exhibit 5-12** for northbound travel.

This high demand will translate into longer travel times, higher emissions and higher costs of driving for private citizens and businesses. By 2031, the annual hours of delay for auto drivers alone will triple, causing a doubling of traffic-related greenhouse gas production during the combined AM and PM peak periods of travel. **Table 5-8** summarizes network performance for the HPBATS Study Area from 2006 to 2031.

Table 5-8: Network Performance Indicators, 2006, 2021 and 2031 (as planned network), PM Peak Hour

Performance Measures			
HPBATS Study Area	2006	2021	2031
Total lane km	505	1,188	1,233
% network congested (by lane km)	39.2%	38.3%	49.0%
% network V/C > 0.9	16.6%	18.9%	26.8%
Cumulative total vehicle hours travel (vht)	5,939	13,394	19,179
Average travel speed on free-flow network (km/hr)	77	78	76
% Free flow speed	61%	62%	55%
Cumulative total Vehicle-kilometres travelled (vkt)	280,370	646,270	800,960
Cumulative Annual hours of congestion	2,438,330	5,431,050	9,717,690
Annual cost of congestion (\$ per capita of population + employment)	104	232	415
Greenhouse gas emissions due to congestion per capita of population (tonnes/year) peak periods auto travel only*	0.268	0.537	0.629

*Note: Future GHG estimates account for improvements in vehicle emissions. The 24% GHG decrease by 2021 and 2031 is based on the average 0.94% per annum decreased in GHG emissions observed in Canada in transportation sector (small and large cars only) between 1997 and 2006 and reported by Natural Resources Canada (<http://oe.nrcan.gc.ca/corporate/statistics>).

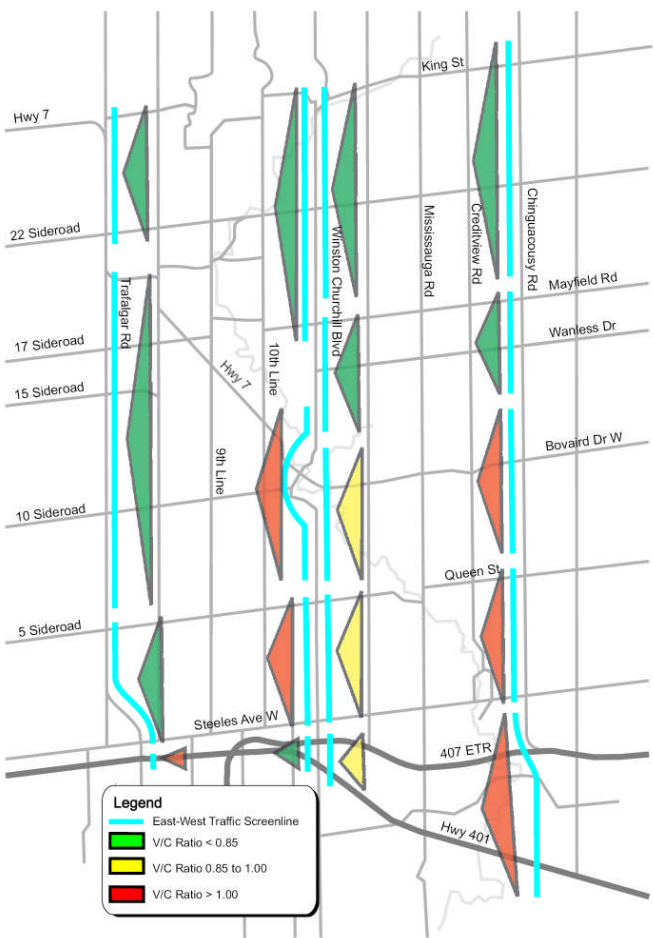


Exhibit 5-9: 2021 Screenline V/C Ratios, WB PM Peak Hour



Exhibit 5-10: 2031 Screenline V/C Ratios, WB PM Peak Hour

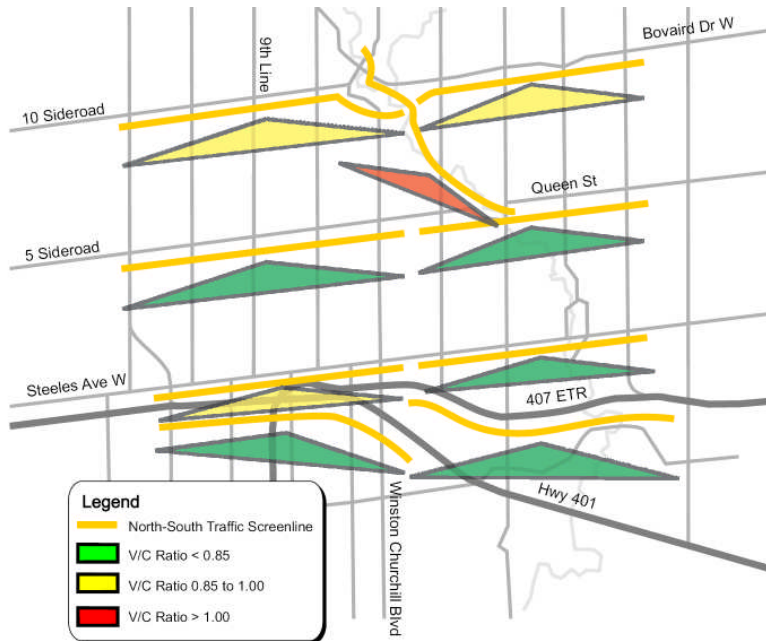


Exhibit 5-11: 2021 Screenline V/C Ratios, NB PM Peak Hour

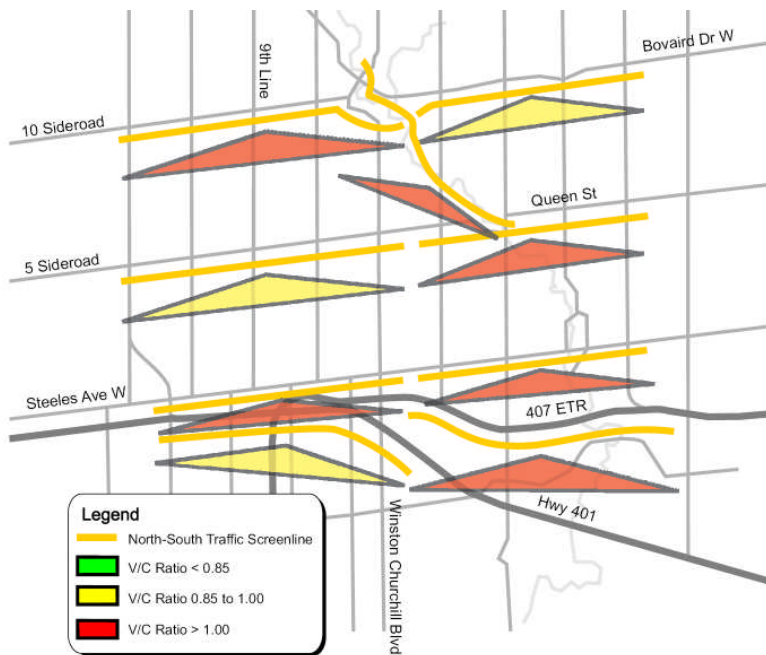


Exhibit 5-12: 2031 Screenline V/C Ratios, NB PM Peak Hour

In summary:

- The existing rural hamlets and rural clusters of Norval, Glen Williams, Stewarttown, Huttonville, South Norval, Ashgrove, Henderson’s Corner, Terra Cotta and Hornby are now exposed to increased traffic volumes, congestion and operational limitations of the network. Residents of those rural communities are worried about the impact of new growth and increased traffic on the environment, their quality of life and the protection of the unique community character of which they are very proud
- Sustainable Halton and ROPA 38 have identified the potential locations for new growth and intensification, and have allocated large proportions of the growth to Milton and Halton Hills. This new growth will require additional capacity and transportation investments beyond those identified in Halton’s TMP Update (2008)
- Planned new growth in west Brampton is equally large. Strong development pressure must be accompanied by a comprehensive, efficient and long term plan of transportation investments. The 2009 Brampton TTMP Sustainable Update study concluded that the transportation network identified in the earlier TTMP (2004) will not be sufficient to support development in Northwest Brampton and further intensification in Bram West and Mount Pleasant
- Despite transit and road improvement strategies developed by the City of Brampton, GO Transit and Metrolinx, traffic congestion within the Study Area will continue to worsen unless new strategies are developed. Although traffic congestion will not be eliminated, it can and should be better managed
- Transportation requirements are closely related to economic activity. In economic terms, however, transportation is a “diseconomy” factor, meaning that an increase in the cost of transportation is directly related to increases in the cost of purchasing goods and services, which are subsequently passed on to the consumers. Traffic congestion and delays will negatively affect the economic well-being and competitiveness of businesses, including the aggregate industry, located within the Study Area

5.5 Problem and Opportunity Statement

Over the next 25 years, the number of people who live and / or work in the Study Area is forecast to triple. Even with planned transportation improvements, the transportation network will not be able to accommodate the increased travel demand. The consequences will be increased congestion and substantially longer travel times, especially during peak travel periods, and negative impacts to quality of life, businesses, and the environment.

In summary, the planned transportation network will not meet forecast travel demand generated by existing and future residents and employees in both Regions. The Study Area transportation network requires new transportation solutions that will:

- Support Provincial Growth Plan goals and Green Belt Plan
- Support planned growth in Halton (Sustainable Halton) and Halton Hills
- Support planned growth in Peel, Brampton and Caledon
- Address outstanding transportation deficiencies in cross-border travel, North Halton / Peel and Norval
- Provide for enhanced connectivity and continuity of the transportation system across the Halton-Peel boundary, and provide appropriate linkages to new and existing facilities
- Protect existing communities in the Study Area, including Georgetown, Norval, Hornby, Stewarttown, Ashgrove, Glen Williams and Huttonville
- Provide sufficient transportation infrastructure for planned communities in Georgetown, Norval, Bramwest and North West Brampton
- Limit and mitigate impacts of any new facilities on the natural environment
- Protect natural and agricultural resources
- Protect and enhance access to employment lands
- Design multimodal corridors to shift travel away from cars and toward transit, carpooling and active transportation
- Serve inter-regional transportation needs for the aggregate industry in Halton Hills and Brampton, and for goods movement

6. DEVELOPMENT OF PLANNING ALTERNATIVES

6.1 Foundations of a Long-Term Transportation Strategy

Given how significantly transportation affects the quality of life, the environment, and the economic well-being of a community, the transportation system for the Study Area needs to be cost-effective, multi-modal and accessible to all users. There has been a growing emphasis on improving the “sustainability” of transportation systems. This means an emphasis on reducing single occupant vehicle trips and shifting travel toward more sustainable modes such as public transit, walking, and cycling. This approach is consistent with current transportation planning by the municipalities participating in this study and the Ontario Government through Metrolinx.

Building on this philosophy, the long-term transportation strategy for the Study Area is developed on the following principles and is incorporated into all alternative transportation network options that have been examined in this study:

- **A “Transit First” Strategy** – The “Transit First” planning strategy developed by Brampton in combination with Halton’s planned Bus Rapid Transit (BRT) service on Trafalgar Road and an upgrade of Georgetown GO service to Regional Service status with all-day 2-way service will encourage a shift from cars to public transit. Public transit is also identified by Metrolinx as a key strategy to serve and support future growth within the Study Area. Other important factors that can positively influence transit use are fast, high frequency and reliable service, comfortable vehicles, well-lit and sheltered waiting areas, real-time information technology (e.g. time until next transit vehicle arrives), electronic fare payment and fare integration, simple schedules, safe connections to pedestrian and cycling facilities, convenient vehicle drop-off facilities at stations (i.e. “kiss-and-ride”), and a user-friendly website and online trip planning capabilities
- **Travel Demand Management (TDM)** – can positively contribute to the reduction of peak period roadway congestion by promoting transit, walking and cycling as alternatives to private automobile travel. It is also the primary mechanism for promoting alternative travel modes and educating the public about the many travel choices. TDM initiatives and



programs developed by Smart Commute Halton and Smart Commute Brampton-Caledon are a good starting point

- **Active Transportation** – The primary active transportation options are cycling and walking. These transportation modes are considered to be practical, cost-effective, environmentally-friendly and healthy. Active transportation means sidewalks and bike paths at the doorstep of each neighbourhood, providing for abundant, inter-connected, safe, well lit and well maintained walking and cycling facilities to stimulate the vitality of urban sections of the Study Area and reducing the need for making short distance trips by automobile
- **Transportation System Management (TSM)** – The increased travel time and reduced reliability caused by congestion has environmental, social, and economic consequences. Congestion directly impacts quality of life and reduces time available to spend with families or at work. TSM involves improving the efficiency of the transportation network. TSM can include an inter-connected network of high occupancy vehicle (HOV) lanes for transit and carpoolers, transit signal priority systems installed at key intersections within the area, real-time traffic information and coordinated traffic progression systems

6.2 Currently Planned Road and Transit

6.2.1 Public Transit Improvements by 2031

As a starting point, the planning of the HPBATS transportation system incorporates key transit investments identified by Metrolinx, the Regions of Peel and Halton and the City of Brampton. Most of them are included in the MoveOntario 2020 plan, the Metrolinx Big Move Plan, including the 407 Transitway and Steeles Avenue BRT east of Lisgar GO Station, the Region of Halton 2008 TMP Update, the Region of Peel Long Range Transportation Plan or the 2009 City of Brampton Transportation and Transit Master Plan. Major transit investments that are assumed to be in place by 2031 are described below in **Table 6-1**. Transit network improvements assumed in the HPBATS forecasts are illustrated in **Exhibit 6-1**.

Table 6-1: Major Transit Investments by 2031

Region	Major Transit Services
Peel	Brampton TTMP Higher Order Transit program including Main / Hurontario, Bovaird, Mississauga, Steeles and Queen Street services; Dundas Street, Erin Mills Parkway Higher Order Transit in Mississauga; Mississauga Transitway
Halton	Trafalgar Rd BRT, new GO station at Trafalgar Rd north of Derry Rd; Highway 401/407 ETR
Toronto	Transit City LRT network and airport link
York	Subway extensions to Vaughan and Richmond Hill
GO Transit	Georgetown GO all-day, 2-way service; Aurora, Uxbridge, Pickering, Bolton and Crosstown lines, new 407 ETR express buses

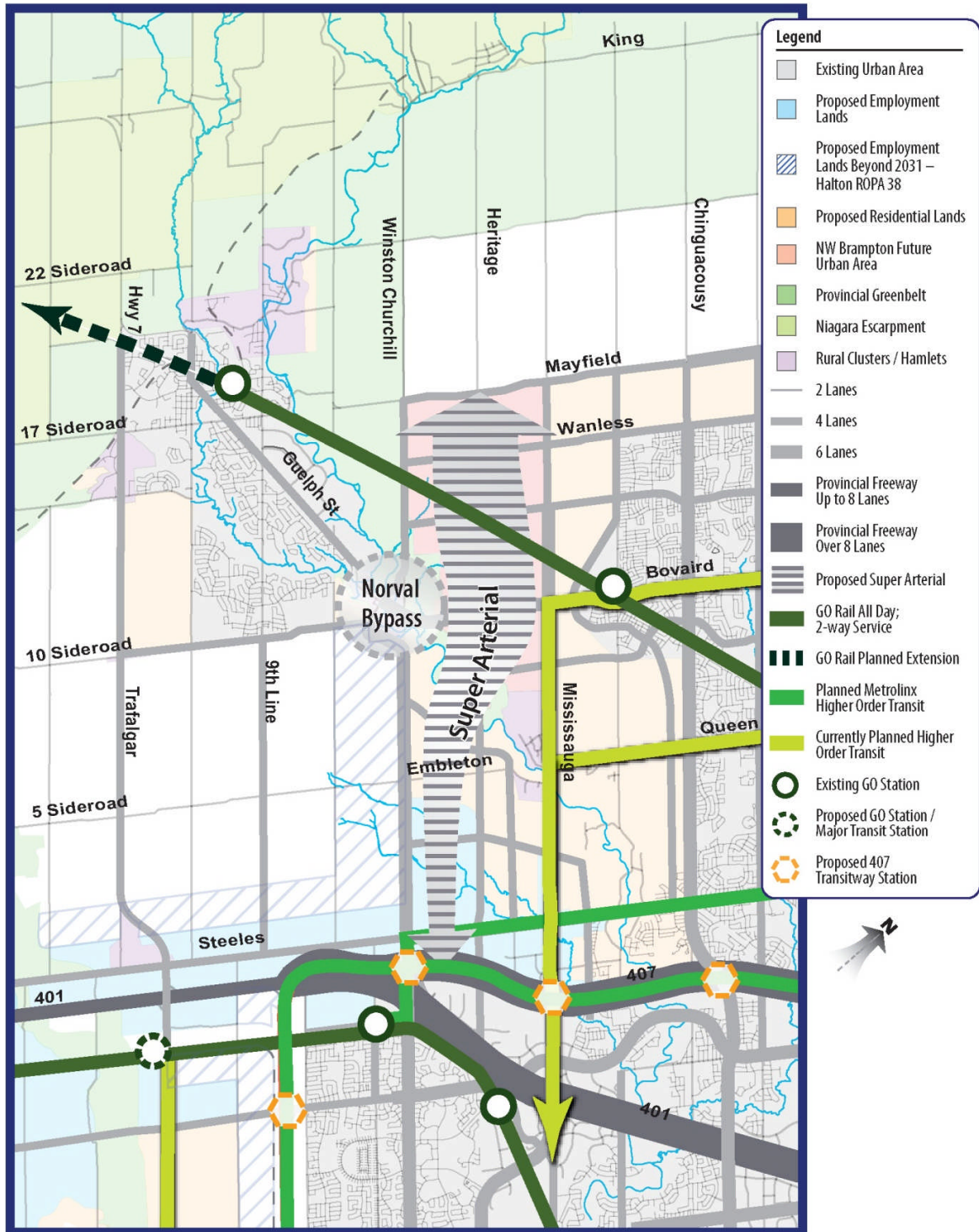


Exhibit 6-1: Currently Planned Transit, 2031

6.2.2 Road Widening and New Construction by 2031

Assumed road improvements by 2021 / 2031 are based on the sources documented in **Table 6-2**, and illustrated in **Exhibit 6-2**. It is important to note that at the time of study Halton Region has planned improvements to 2021, whereas Peel Region has planned improvements to 2031. The proposed roadway improvements throughout Halton Region and the Region of Peel presented below will be reviewed and confirmed through the Halton Transportation Master Plan and Peel's Long Range Transportation Plan Update process.

Table 6-2: Planned Road Improvements within the Study Area by 2031

Road	Improvement Type	From	To	Jurisdiction
Highway 401	Widening	6	12	MTO
407 ETR	Widening	8	10	MTO/ETR
New Creditview Road	New construction north of Bovaird Drive	0	4	City of Brampton
Williams Parkway	Extension To Heritage Road/North-South corridor	0	4	City of Brampton
Heritage Road	Widening from Steeles Avenue to Mayfield Road	2	4	City of Brampton
Mount Pleasant Area / Bramwest	New collector road network	0	2-4	City of Brampton
Chinguacousy Road	Widening	4	6	City of Brampton
Bramwest Parkway/ Brampton Super Arterial	New road alignment From Heritage Rd south of 407 to Mayfield Road; interchange with 407 ETR	0	4-8-6	City of Brampton
Mayfield Road	Widening from Winston Churchill Boulevard to Chinguacousy Road	2	4	Region of Peel
Mississauga Road	Widening from Steeles Avenue to Bovaird Drive	2	6	Region of Peel
Mississauga Road	Widening from Bovaird Drive to Mayfield Road	2	4	Region of Peel
Bovaird Drive	Ashby Ridge Road to Mississauga Road	4	6	Region of Peel
Queen Street	Widening from Mississauga Road to east of Chinguacousy Road	2	6	Region of Peel
Bovaird Drive	Mississauga Road to Halton Boundary	2	4	Region of Peel
Steeles Avenue	Widening within Brampton to the Halton boundary (Winston Churchill Boulevard to Chinguacousy Road)	2/4	6	Region of Peel
Winston Churchill Boulevard	Widening from Highway 401 to 10 Sideroad; listed in Peel Region Capital Plan	2	6	Boundary road-region of Peel & Region of Halton

Road	Improvement Type	From	To	Jurisdiction
Winston Churchill Boulevard	Widening from Bovaird Drive/Highway 7 to Mayfield Drive;	2	4	Boundary road-region of Peel & Region of Halton
Steeles Avenue	Widening Halton/Peel border to Milton	2	4	Region of Halton
Trafalgar Road	Widening	2	4	Region of Halton
Derry Road	Widening	2	4	Region of Halton
9 th Line	Widening	2	4	Region of Halton
10 Sideroad	Widening	2	4	Region of Halton

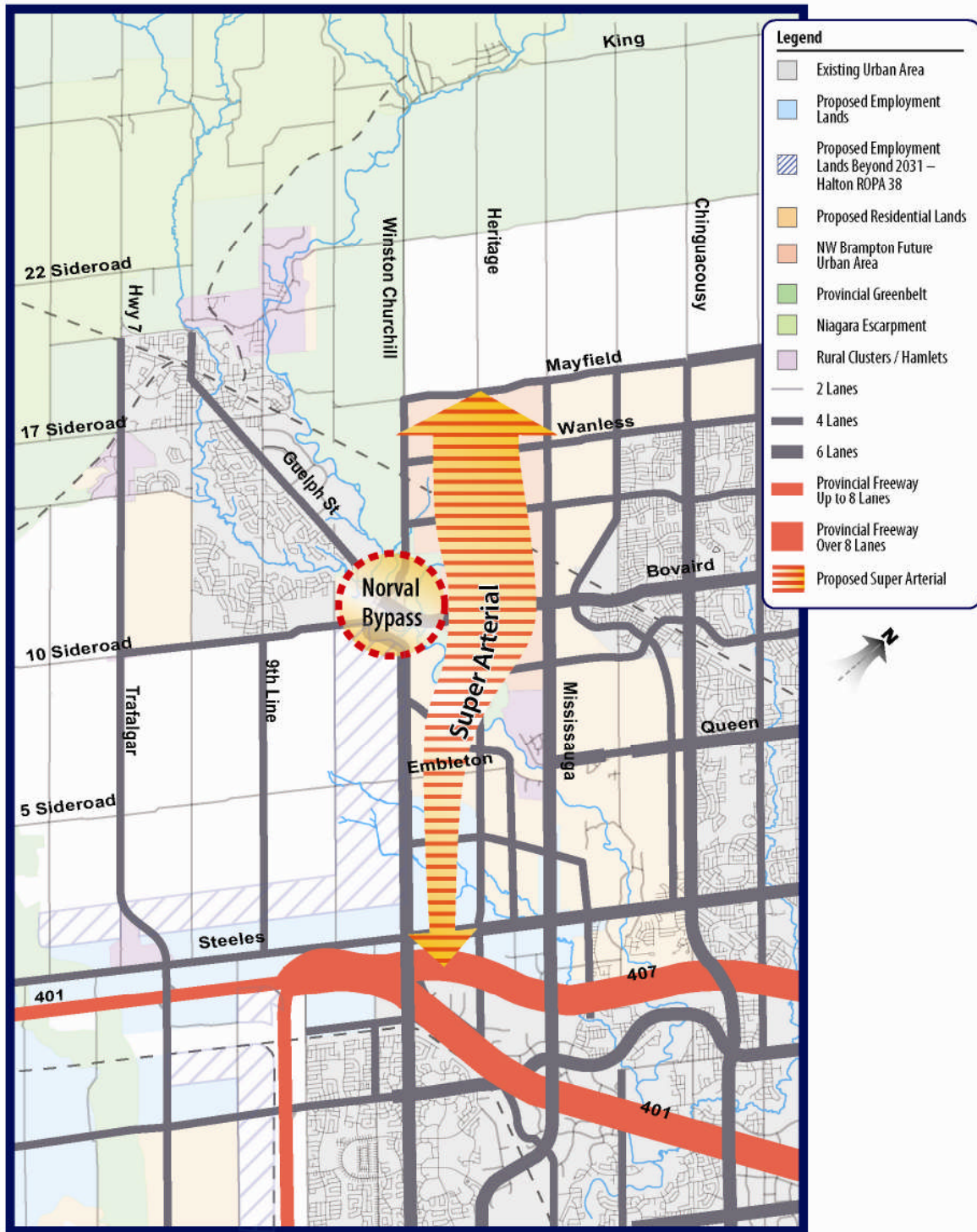


Exhibit 6-2: Currently Planned Road Network, 2031

6.3 Alternative Transportation Improvements

6.3.1 Context for Planning Alternatives

Transportation network options were identified on the basis of providing sufficient multi-modal transportation capacity to accommodate north-south and east-west demand in the Study Area, enhancing road network continuity and connectivity, construction feasibility, improving existing constraints, and minimizing socio-economic and environmental impacts. The approach to developing alternative transportation improvements is illustrated in **Exhibit 6-3**.

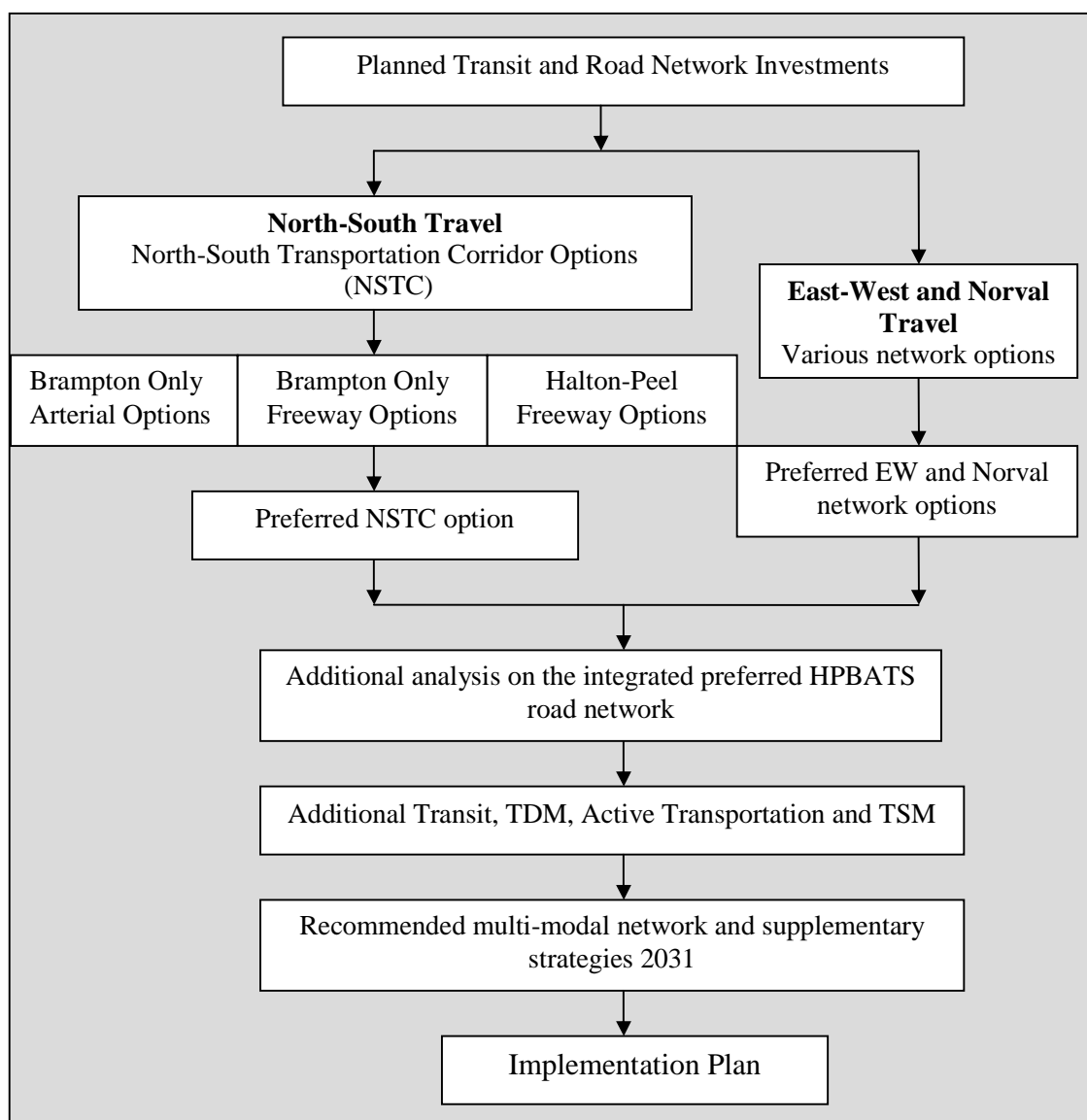


Exhibit 6-3: Development and Analyses of Planning Alternatives Flow Diagram

We note that the alternatives identified in the HPBATS represent proposed transportation connections. They do not represent alignments or routings – which would be examined in detail in future environmental assessments.

The following sections of the report discuss each of the components of the network for north-south and east-west travel options.

6.3.2 North-South Travel and Network Alternatives

To accommodate planned growth in the Study Area, a significant increase in north-south transportation capacity will be needed, from Mayfield Road to 401/407. The increase in capacity will be provided by planned north-south arterial improvements and by a new North-South Transportation Corridor. In addition to providing the significant capacity increase, the North-South Transportation Corridor will also need good connectivity with Highway 401 and 407 ETR.

There are three families of options for the North-South Transportation Corridor (NSTC):

1. **Brampton Arterial** – An enhanced Bramwest Parkway operating as arterial road (up to 8 lanes wide) wholly located within Brampton between 407 ETR and Mayfield Road, with an interchange connection to 407 ETR. Other north-south arterials widened as planned
2. **Brampton Freeway** – The Bramwest Parkway operating as a freeway, with grade-separated interchanges, located entirely within Brampton between 407 ETR and Mayfield Road, with an interchange connection to 407 and parallel service roads in the Bram West Secondary Plan area. Other north-south arterials widened as planned
3. **Halton-Peel Freeway** – A freeway connecting to the Highway 401 / 407 ETR interchange in Halton Hills, crossing the Credit River in Brampton, and continuing north to at least Mayfield Road in Brampton. Bramwest Parkway provides arterial road capacity between 407 ETR and its northern terminus with the Halton-Peel Freeway. Other north-south arterials widened as planned

The conceptual diagrams of the three main NSTC alternatives are presented in **Exhibit 6-4**.

6.3.2.1 Brampton Arterial Alternatives

This Brampton Arterial options assume the following:

- The facility operates as a high speed and high capacity arterial with a posted speed of 80 km/hr and simulated capacity of 1000 passenger cars / lane. Access with area roads is via at-grade intersections. The facility is provided with all-move connections to / from the 407 west of Mississauga Road.
- This new north-south arterial is generally located on the proposed Bramwest Parkway alignment
- It provides eight lanes of through capacity between 407 ETR and Bovaird Drive and six lanes of through capacity between Bovaird Drive and Mayfield Road
- It has an arterial-to-freeway interchange at 407 ETR. The 407 Transitway would have to be shifted to the south to make room for the interchange

The Brampton Arterial family of alternatives option has four options:

- Option BA-1: access to 407 ETR only
- Option BA-2: access to Highway 401 provided through the existing Highway 401 interchange at Winston Churchill Boulevard
- Option BA-3: access to Highway 401 provided through the existing Highway 401 interchange with Mississauga Road
- Option BA-4: access to Highway 401 provided through the existing employment centre in Meadowvale Business Park

The options are discussed in detail in **Table 6-3**.

6.3.2.2 Brampton Freeway Alternatives

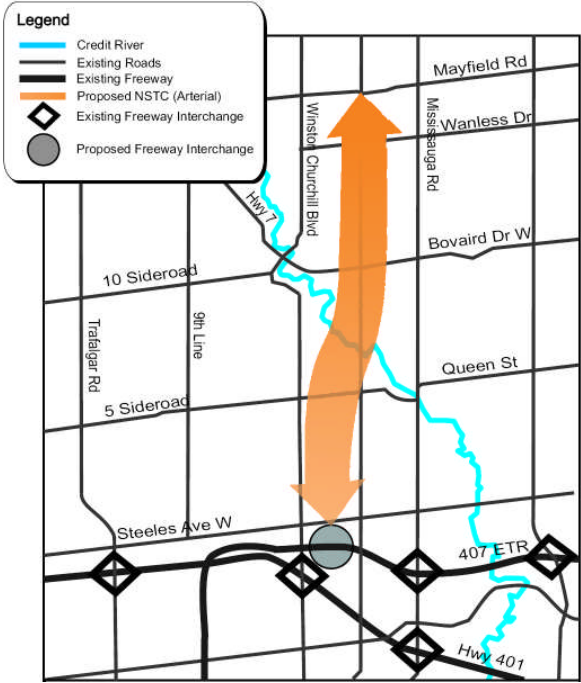
This family of alternatives involves a grade-separated freeway located within Brampton, between 407 and at least Mayfield Road, with the following characteristics:

- The facility operates with a posted speed of 100 km / hr and simulated capacity of 1800 passenger cars / lane. Limited access is provided via grade separated interchanges
- The facility is provided with all-move connections to / from 407 ETR west of Mississauga Road
- This new north-south freeway is generally near the proposed Bramwest Parkway alignment
- Between 407 ETR and Embleton Road, it has parallel service roads – one northbound and one southbound – to provide access to crossing arterial roads and limited access to adjacent properties
- In each direction, it has three core and two service road lanes north of Steeles Avenue to Embleton Road and three to four core lanes north of Embleton Road to Mayfield Road
- It has a freeway to freeway interchange at 407 ETR. The 407 Transitway would have to be shifted to the south to make room for the 407 interchange
- As with the arterial option, traffic operations on 407 between Highway 401 and Mississauga Road, and the spacing of the interchanges along 407 might become an issue

The Brampton Freeway family of alternatives has two options:

- BF-1 with access to 407 ETR only
- BF-2 with access to 407 ETR and partial access to Highway 401

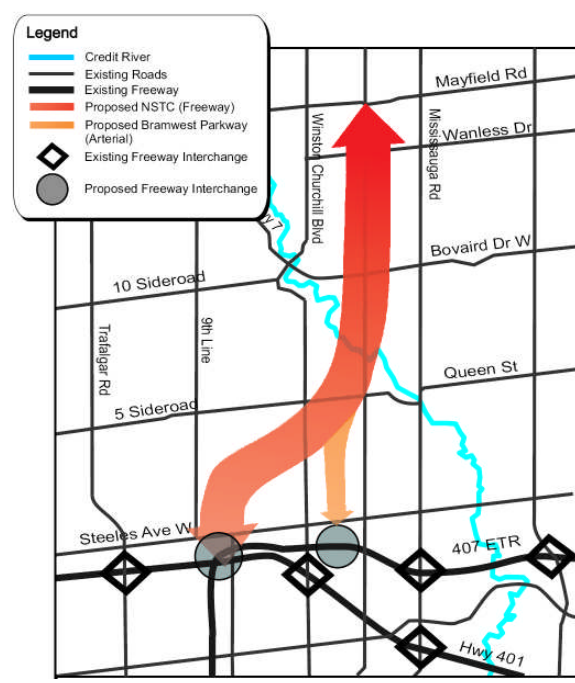
The options are discussed in detail in **Table 6-4**.



Brampton Arterial



Brampton Freeway



Halton-Peel Freeway

Exhibit 6-4: NSTC Alternatives

Table 6-3: NSTC Brampton Arterial Options

Option	Access to Freeways	Operational Parameters	General Characteristics	Conceptual Diagram
BA-1	Access to 407 ETR only	Arterial roadway with provision of pedestrian and cycling facilities, potential for HOV lanes for buses and carpools; access controlled, at-grade intersections; 70-80 km / hr speed; simulated capacity of 1000 passenger cars / lane	<p>From Heritage Rd in the south to Mayfield Rd; Generally follows the proposed alignment of Bramwest Parkway; Requires Credit River crossing; Lacks connectivity with Highway 401 and the provincial network; lacks connectivity and continuity with arterial network in Mississauga or Halton. Limited benefit to Halton.</p> <p>Could provide direct connectivity to Steeles Ave BRT, and indirect connectivity to Bovaird BRT / Mount Pleasant</p>	<p>The diagram shows a north-south arterial route starting at Mayfield Rd and ending at Steeles Ave W. It crosses the Credit River and connects to Highway 401. Key roads shown include Mayfield Rd, Wainless Dr, Bovaird Dr W, Queen St, Steeles Ave W, and Highway 401. The Credit River is shown flowing east-west. The proposed NSTC arterial is shown as a thick orange line.</p>
BA-2	<p>Access to Highway 401 via Winston Churchill Boulevard interchange</p> <p>Access to 407 ETR south of Steeles Avenue provided by Bramwest Parkway</p>	<p>Arterial roadway with provision of pedestrian and cycling facilities, potential for HOV lanes for buses and carpools; Mainline along Winston Churchill Blvd-Bramwest Parkway; access controlled, at-grade intersections; 70-80 km / hr speed and simulated capacity of 1000 passenger cars / lane for the mainline; section south of Embleton at 6 lanes</p>	<p>Generally follows the proposed alignment of Bramwest Parkway north of Embleton Rd; mainline swings to Winston Churchill Blvd south of Embleton Road and follows Winston Churchill Blvd south to the interchange with Highway 401; Provides access to Highway 401 and the provincial network; Provides limited connectivity and continuity with arterial network in Mississauga or Halton. Potential impact on Trans Canada Pipeline corridor, existing residents along Winston Churchill Blvd. Some benefit to Halton.</p> <p>Could provide direct connectivity to Steeles Ave BRT, and indirect connectivity to Bovaird BRT / Mount Pleasant</p> <p>Bramwest Parkway as arterial serving Bram West SP and providing linkage to 407 ETR.</p>	<p>The diagram shows a north-south arterial route starting at Mayfield Rd and ending at Steeles Ave W. It crosses the Credit River and connects to Highway 401 via Winston Churchill Blvd. Key roads shown include Mayfield Rd, Wainless Dr, Bovaird Dr W, Queen St, Steeles Ave W, and Highway 401. The Credit River is shown flowing east-west. The proposed NSTC arterial is shown as a thick orange line.</p>

Option	Access to Freeways	Operational Parameters	General Characteristics	Conceptual Diagram
BA-3	Access to 407 ETR south of Steeles Avenue and indirect access to Highway 401 via Mississauga Road / Erin Mills Parkway interchange	Arterial roadway with provision of pedestrian and cycling facilities, potential for HOV lanes for buses and carpools; Mainline along Bramwest Parkway; access controlled, at-grade intersections; 70-80 km / hr speed and simulated capacity of 1000 passenger cars / lane for the mainline; section east to Financial Drive at 6 lanes	Generally follows the proposed alignment of Bramwest Parkway; mainline continues south to Steeles; feeder line turns east to Financial Drive to connect to Mississauga Rd and follows it south to the interchange with Highway 401; Provides indirect access to Highway 401 and the provincial network; Provides limited connectivity and continuity with arterial network in Mississauga; lack of connectivity and continuity with Halton roads; Potential impact on Financial Drive employment area and on the operations at Mississauga Rd; Potential operational and ROW challenges at the intersection of Financial Drive and Mississauga Rd (expected large volumes of right turn and left turn traffic). Limited to no benefit to Halton. Could provide direct connectivity to Steeles Ave BRT and Mississauga BRT, indirect connectivity with Bovaird BRT / Mount Pleasant	
BA-4	Access to 407 ETR south of Steeles Avenue and partial access to Highway 401 via new partial interchange; WB off-ramps and EB onramps only	Arterial roadway with provision of pedestrian and cycling facilities, potential for HOV lanes for buses and carpools; Mainline along Bramwest Parkway; access controlled, at-grade intersections; 70-80 km / hr speed and simulated capacity of 1000 passenger cars / lane for the mainline	From Highway 401 in the south to Mayfield Rd; Generally follows the proposed alignment of Bramwest Parkway; Only partial connectivity with Highway 401 could be achieved due to insufficient spacing between interchanges; lacks connectivity and continuity with arterial network in Mississauga or Halton. Significant impact on the existing Meadowvale Business Park; questionable construction feasibility. Limited benefit to Halton. Could provide direct connectivity to Steeles Ave BRT, and indirect connectivity to Bovaird BRT / Mount Pleasant	

6.3.2.3 Halton-Peel Freeway Alternatives

The Halton-Peel Freeway family of alternatives has the following characteristics:

- The facility operates as a freeway with a posted speed of 100 km / hr and simulated capacity of 1,800 passenger cars / lane. Limited access is provided via grade separated interchanges. The facility is provided with an all-move interchange connection to / from Highway 401 / 407 ETR south of Steeles Avenue and west of 9th Line
- Halton-Peel Freeway provides six to eight lanes of capacity between Highway 401 / 407 ETR and Mayfield Road
- This option includes Bramwest Parkway as an arterial between 407 ETR and the Halton-Peel Freeway

The Brampton Freeway family of alternatives has two options:

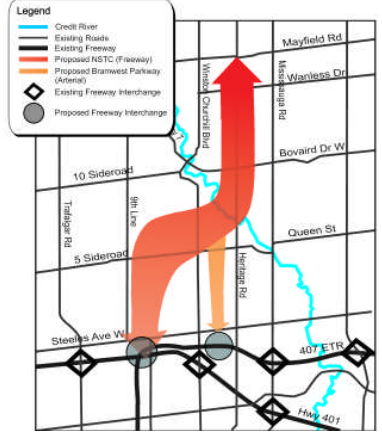

- HPF-1 and HPF-2 corridor which crosses the Halton-Peel boundary north or south of Embleton Road
- HPF-3 with the HPF corridor running north-south in Halton, crossing the Halton-Peel boundary north of Norval

The options are discussed in more detail in **Table 6-5**.

Table 6-4: NSTC Brampton Freeway Options

Option	Access to Freeways	Operational Parameters	General Characteristics	Conceptual Diagram
BF-1	Access to 407 ETR only	Freeway roadway with full access control and interchanges with major arterials; core-service roads north of Steeles Ave to provide access to Bram West secondary Plan Area; 100 km / hr speed; simulated capacity of 1800 passenger cars / lane	<p>From 407 ETR in the south to Mayfield Rd; Generally follows the proposed alignment of Bramwest Parkway; Requires Credit River crossing; Lacks connectivity with Highway 401 and the provincial network; lacks connectivity and continuity with arterial network in Mississauga or Halton. Limited benefit to Halton.</p> <p>Significant ROW requirement for core-service road system between Steeles Ave and Embleton will decrease inventory of employment land in Bram West.</p> <p>Could provide direct connectivity to Steeles Ave BRT, and indirect connectivity to Bovaird BRT / Mount Pleasant</p>	
BF-2	Access to 407 ETR and partial access to Highway 401 via new partial interchange; WB off-ramps and EB onramps only	Same as BF-1	<p>Same as BF-1</p> <p>Significant impact on the existing Meadowvale Business Park; questionable construction feasibility. Limited benefit to Halton.</p>	

Table 6-5: NSTC Halton-Peel Freeway Options

Option	Access to Freeways	Operational Parameters	General Characteristics	Conceptual Diagram
<p>HPF-1 HPF-2</p>	<p>Access to Highway 401 / 407 ETR interchange west of 9th Line in Halton Access to 407 ETR via Bramwest Parkway</p>	<p>Freeway with full access control and interchanges with major arterials; HPF at 100 km / hr speed; simulated capacity of 1800 passenger cars / lane Bramwest Parkway from 407 ETR to HPF at 6 lanes, 70 km / hr speed; 1000 veh / lane HPF-2 is considered a variation of HPF-1</p>	<p>Follows the alignment of Bramwest Parkway between Mayfield Road and Credit River / Embleton Road and swings southwest into Halton south of Embleton. In Halton, it crosses diagonally (Option HPF-1) or at a 90 degree angle (HPF-2) to Steeles and 401 / 407. Provides excellent connectivity with Highway 401 and the provincial network; provides connectivity and continuity with arterial network in Brampton and Halton. Of benefit to Halton's travel. Significant ROW requirement may on the one hand decrease inventory of employment land in Halton Hills but would also improve access to businesses in the entire study area. Could provide direct connectivity to Steeles Ave BRT, 407 Transitway, Highway 401 / 407 transit node and indirect connectivity to Bovaird BRT / Mount Pleasant and Trafalgar BRT.</p>	 <p>The diagram shows a red freeway alignment starting at Mayfield Rd, heading south, then turning southwest to cross Steeles Ave W and Highway 401/407 ETR. Key roads shown include Mayfield Rd, Wainwright Rd, Bovaird Dr W, Queen St, 407 ETR, Hwy 401, Steeles Ave W, 9th Line, 5 Sideroad, and Trafalgar Rd. A legend identifies existing roads, freeways, and interchanges.</p>
<p>HPF-3</p>	<p>Access to Highway 401 / 407 ETR interchange west of 9th Line in Halton. Bramwest Parkway connected to 407 and extended across Credit River to NSTC in northwest Brampton.</p>	<p>Freeway with full access control and interchanges with major arterials; HPF at 100 km /hr speed; simulated capacity of 1800 passenger cars / lane Bramwest Parkway from 407 to terminus at HPF in north west Brampton at 6 lanes, 70 km /hr speed; 1000 veh / lane</p>	<p>The alignment moves up to Highway 7, crosses Norval and swings northeast into Brampton south of Sandalwood. Like HPF-1 and HPF-2, provides excellent connectivity with Highway 401 and the provincial network, but less so with arterial network in Brampton. Limited benefit to Brampton's travel, major impact on existing communities in Halton. Could provide direct connectivity to Steeles Ave BRT, 407 Transitway, Highway 401 / 407 ETR transit node and indirect connectivity to Trafalgar BRT. Bramwest Parkway provided from 407 ETR, crossing the Credit and Bovaird and connecting to HPF in north west Brampton.</p>	 <p>The diagram shows a red freeway alignment starting at Mayfield Rd, heading south, then turning east to cross Steeles Ave W and Highway 401/407 ETR at a 90-degree angle. Key roads shown include Mayfield Rd, Wainwright Rd, Bovaird Dr W, Queen St, 407 ETR, Hwy 401, Steeles Ave W, 9th Line, 5 Sideroad, and Trafalgar Rd. A legend identifies existing roads, freeways, and interchanges.</p>

6.3.3 East-West Travel and Norval Network Alternatives

The different road network alternatives developed to address east-west capacity needs and network options in Norval are presented in the following sections of the report.

6.3.3.1 Guelph Street to Tenth Sideroad Connection

The connecting link between 10 Sideroad and Highway 7 / Guelph Street located east of Silver Creek valley has been identified in earlier studies (see Norval West corridor **Exhibit 6-5**). The southern terminus of the link could be located somewhere between the intersection of 10 Sideroad and 10th Line to 10 Sideroad west of Adamson Road. It would provide convenient access to Guelph Street and a bypass to Adamson Road South and the residential sections of Norval fronting Highway 7. To optimize operations, the western approach at Highway 7 should have a continuous direct link for north-south traffic. The eastern leg of Highway 7 through Norval would then intersect at an angle of 90 degrees.

6.3.3.2 Winston Churchill Bypass

The concept of bypassing existing homes and commercial and institutional uses located on Winston Churchill Boulevard north of 5 Sideroad has its root in discussions and input provided by stakeholders and the public at the first Public Information Centre on September 24, 2009. The Winston Churchill bypass would run diagonally between 10 Sideroad and existing Winston Churchill Boulevard, and also connect with Guelph Street via the connection described above. This new corridor would provide a high capacity, high standard alternative to the existing Winston Churchill Boulevard; divert traffic from the existing Winston Churchill Boulevard, and redirect traffic away from Norval. The conceptual diagram illustrating the new link and its connectivity is presented in **Exhibit 6-5**.

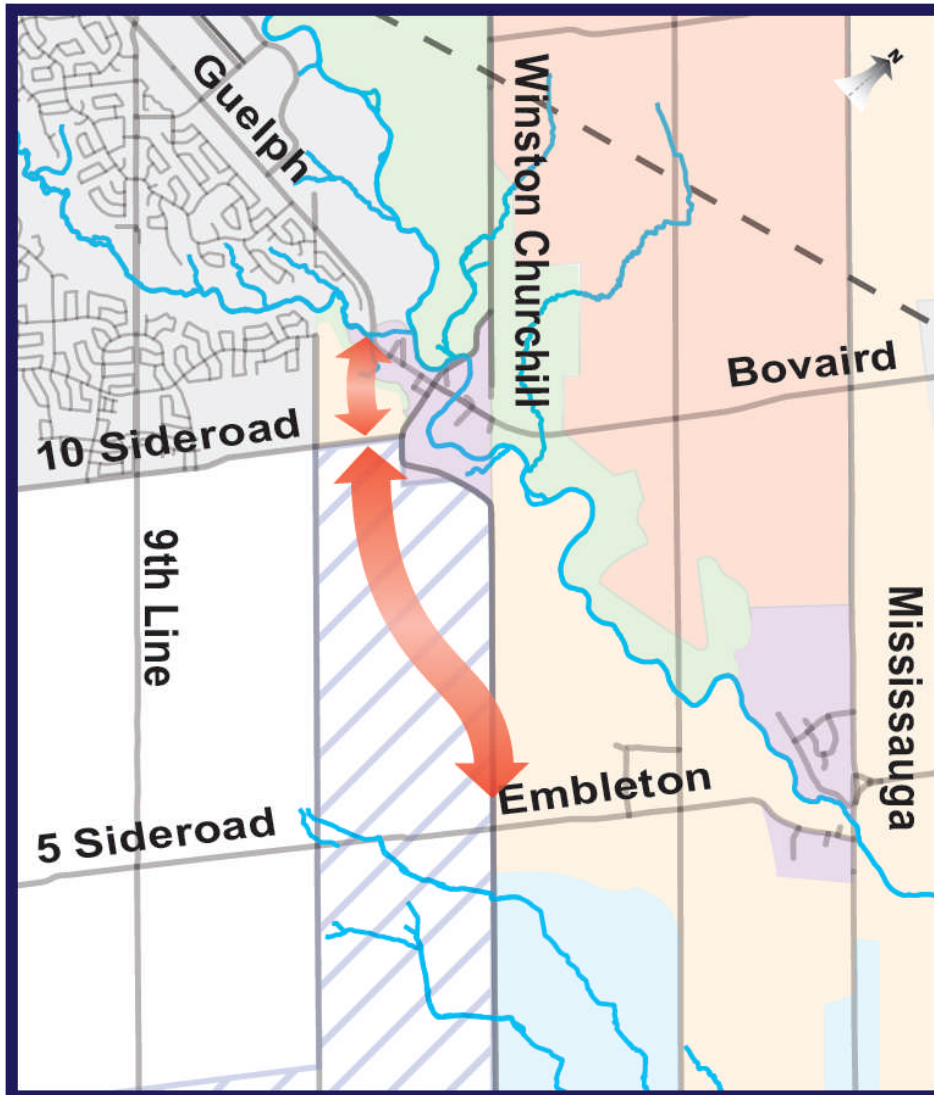


Exhibit 6-5: New Network Alternatives West of Winston Churchill Boulevard

6.3.3.3 Adamson Road North Bypass

The Adamson Road North Bypass has been envisioned as a solution to traffic congestion in Norval and heavy traffic on Adamson Road north of Norval. An Adamson North Bypass would provide a new major road link between Bovaird Drive and Winston Churchill Boulevard, thus diverting traffic from Adamson Road and from Norval. The Adamson Bypass could be incorporated into the Northwest Brampton road network and serve as a bypass as well as a road serving the development. The bypass is conceptually shown in **Exhibit 6-6**.

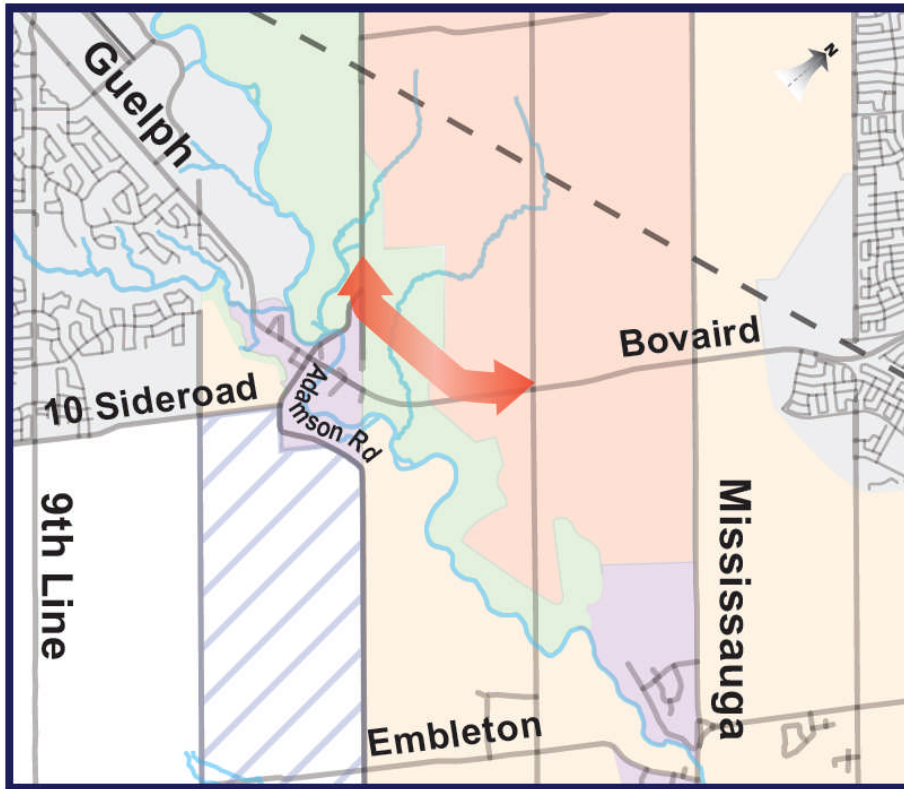


Exhibit 6-6: Adamson Road North Bypass

6.3.3.4 North Georgetown Bypass

Various network options with connections north of Georgetown were identified and assessed by earlier studies. There is a lack of east-west road network connectivity in this area between Halton and Peel Regions; this issue was raised by the public during the HPBATS consultation.

The HPBATS team reviewed network concepts identified in 1999 in the North Halton Functional Road Study Report. An alternative involving an extension of 22 Sideroad from its current terminus at Trafalgar Road to 10th Line and Winston Churchill Boulevard was evaluated, as illustrated in **Exhibit 6-7**. Based on a review of environmental constraints in the area, and potential impacts on the Credit River, the Niagara Escarpment, shale extraction areas, the community of Glen Williams and Limehouse, and other physical constraints, it is concluded that these constraints and impacts outweigh the potential benefits of an extension of 22 Sideroad. In addition, the construction of major new roads in un-urbanised areas could have the effect of shifting traffic patterns and increasing pressure for continued urban development northward into the protected Niagara Escarpment which is not consistent with the transportation and overall objectives of the Niagara Escarpment Plan Area. This option was therefore dropped from further consideration.

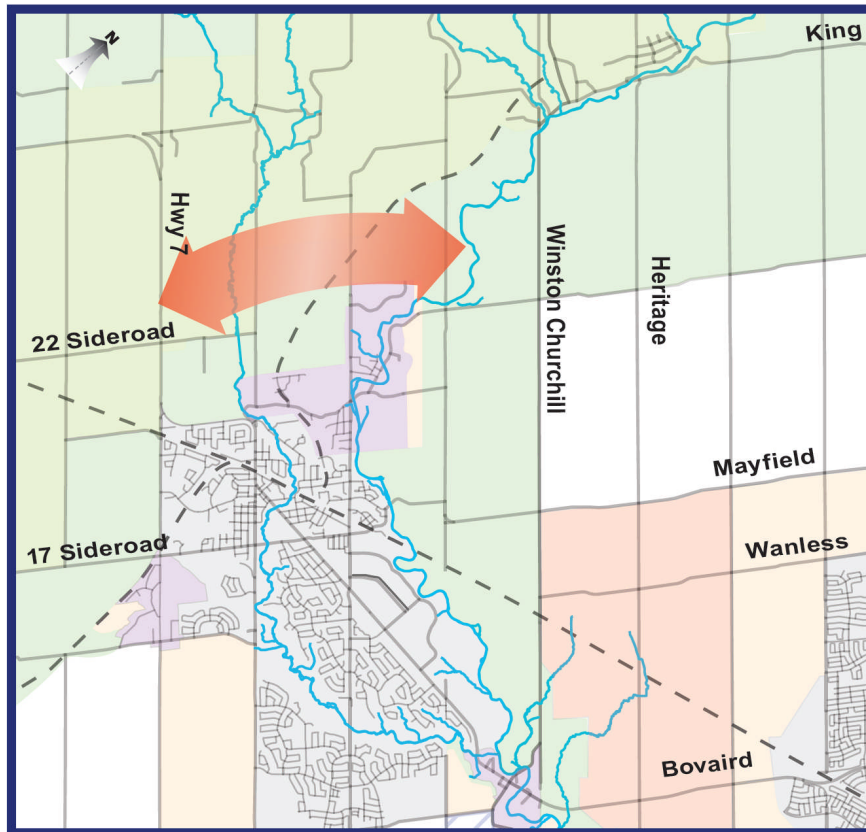


Exhibit 6-7: North Georgetown Option

6.3.3.5 West Georgetown Bypass

This network alternative was suggested by members of the public at PIC #1. This alternative would involve provision of a high-capacity and high-speed arterial road running parallel to and west of Trafalgar Road. Another alternative is the widening of Trafalgar Road to 6 lanes between Steeles Avenue and Highway 7. Based on an assessment of the potentially significant environmental and community impacts at Ashgrove and Stewarttown, it was concluded that these impacts outweigh the benefits of increased north-south capacity in the Trafalgar Road corridor. The need for increased north-south capacity can be alleviated by other alternatives such as a NSTC solution. This option was therefore dropped from further consideration.

6.3.3.6 Trafalgar Road / 10 Sideroad

During the public consultation process, some residents from the hamlet of Ashgrove pointed to a forecast increase in traffic on Trafalgar Road and 10 Sideroad expected with future growth in Georgetown. Although various alternatives were considered such as bypassing Ashgrove by shifting Trafalgar Road and / or shifting 10 Sideroad, these and other alternatives will be evaluated by the Halton Transportation Master Plan 2010.

6.3.3.7 East-West Connection

The East-West Connection, sometimes labelled as a Norval Bypass was identified in the previous studies as a facility that could be developed to serve person and goods movement (aggregate truck) travel between Halton Hills and Brampton, bypassing busy urban areas in Georgetown and the highly constrained area of Norval. The alignments identified through earlier studies commissioned by Halton Region are shown in **Exhibit 6-8**. The Norval Bypass EA Study has since been put on hold by Halton Region to allow for the completion of the Highway 7 Role and Function study by the MTO and the completion of transportation needs analysis in the Northwest Brampton Urban Brampton Study.

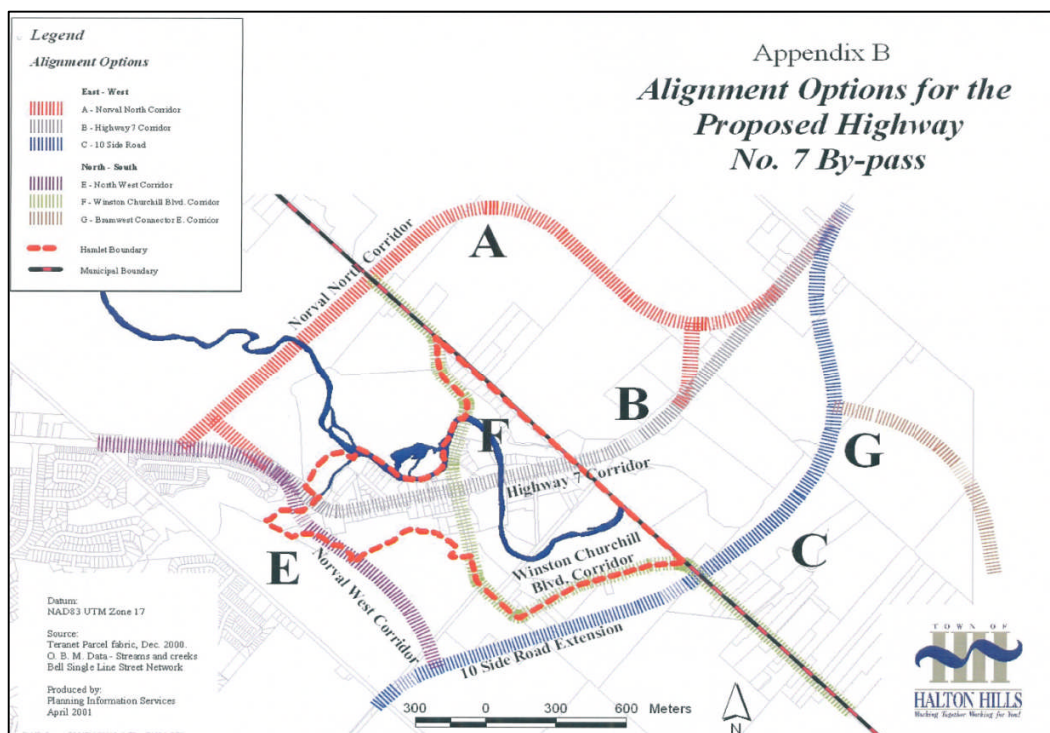
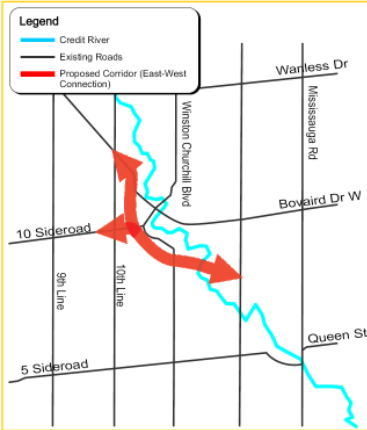
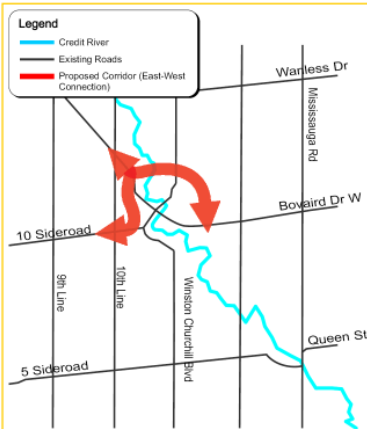


Exhibit 6-8: Early Concepts of the Norval Bypass

The HPBATS East-West Connection options are based on this earlier work, but this study is evaluating the need and justification for this facility in a new context of growth and intensification planned for the area, and in the context of an already completed transportation needs assessment in Peel. The East-West Connection options are presented in **Table 6-6**.

Table 6-6: East-West Connection Options

Option	Name	Description	Diagram
1	Do Nothing	<p>The Do Nothing option assumes that current conditions at and around Norval remains unchanged. No new road investments are included. Bovaird Drive / Guelph Street remain a gateway to Norval / Georgetown.</p> <p>Guelph Street through Norval is a 2-lane roadway with a capacity of 900 cars per hour and a speed of 50 km / hr. This section of Highway 7 is very congested during peak periods and carries large volumes of truck travel since Guelph Street is the preferred route for aggregate trucks.</p> <p>Future congestion is forecasted to further increase. Highway 7 through Norval lacks right of way therefore cannot be widened without expropriating numerous property owners. Lack of right of way eliminates the potential for introduction of transit services through Norval and transit connectivity with Brampton.</p>	
2	Connection to Bovaird South	<p>This is a combination of a new link between Guelph Street and 10 Sideroad, improvements to 10 Sideroad and a new link to Bovaird Drive.</p> <p>This option will provide 2 lanes per direction; arterial road capacity is 800 cars / lane</p> <p>This option requires a Credit River crossing.</p> <p>It offers good connectivity with the Brampton network is a desirable and efficient alternative truck route and is a potential corridor for transit services that can enhance connectivity between Georgetown and Brampton (Mount Pleasant).</p>	

<p>3</p>	<p>Connection to Williams Parkway</p>	<p>This is a combination of a new link between Guelph Street and 10 Sideroad (Norval West Bypass), improvements to 10 Sideroad, and a new link between 10 Sideroad and Williams Parkway. This option will provide arterial road capacity of 800 cars / lane, 2 lanes / direction.</p> <p>It will require a Credit River crossing and could provide relatively good connectivity with Brampton's network, although it may adversely affect residential areas along Williams Parkway not designed to support large volumes of traffic and trucks. It would be a relatively good alternative for truck travel; however, Williams Parkway is currently restricted to truck traffic. This connection has limited benefits to the transit network.</p>	 <p>The map shows a plan view of the Credit River valley. A red line indicates the proposed corridor, starting at 10 Sideroad, crossing the Credit River, and ending at Williams Parkway. Other roads shown include 5 Sideroad, 9th Line, 10th Line, Winston Churchill Blvd, Boivard Dr W, Mississauga Rd, and Warless Dr. Queen St is also shown to the east. A legend identifies the Credit River, existing roads, and the proposed corridor.</p>
<p>4</p>	<p>Connection to Bovaird Drive North</p>	<p>This is a combination of a Norval West Bypass and a new link to Bovaird Drive, traversing northern areas of the Credit River Valley and North West Brampton. This option would provide arterial road capacity of 800 cars / lane, 2 lanes / direction. This option requires a Credit River crossing; if provided, it would replace the Adamson Bypass discussed in Section 6.3.3.3.</p> <p>It offers good connectivity with the Brampton network and is a desirable and efficient alternative truck route. This option is a potential corridor for transit services that enhance connectivity between Georgetown and Brampton (Mount Pleasant).</p>	 <p>The map shows a plan view of the Credit River valley. A red line indicates the proposed corridor, starting at 10 Sideroad, crossing the Credit River, and ending at Bovaird Drive North. Other roads shown include 5 Sideroad, 9th Line, 10th Line, Winston Churchill Blvd, Mississauga Rd, and Warless Dr. Queen St is also shown to the east. A legend identifies the Credit River, existing roads, and the proposed corridor.</p>

7. EVALUATION OF TRANSPORTATION NETWORK ALTERNATIVES

7.1 Evaluation Methodology

Transportation network options were evaluated against the following major criteria:

- Transportation
- Natural Environment
- Community
- Economic
- Cost

The relative importance of each criterion reflects goals, objectives and values of member agencies, the community, stakeholders and residents living in the HPBATS Study Area or taking an interest in the future of the area. The qualitative assessment is provided in the form of a rating system that was developed jointly by the study team, the technical advisory group, the project stakeholders and the public. The relative importance of the evaluation criteria are summarized in **Table 7-1**.

Table 7-1: Evaluation Criteria and their Importance

Criteria	Importance
Transportation	✓✓
Natural Environment	✓✓✓
Community	✓✓
Economic	✓✓
Cost	✓

The indicators selected to be used in the evaluation of the alternatives are documented and described in **Table 7-2** and **Table 7-3** documents the performance measures used and the method of calculation of each measure.

Exhibit 7-1 and **Exhibit 7-2** show the evaluation screenlines in the Study Area used for the analysis which focused on the weekday PM peak hour in the two peak directions of travel – northbound and westbound. Off-peak directions generally have sufficient capacities.

Table 7-2: Criteria and Indicators

CRITERIA	INDICATORS
TRANSPORTATION	
Network capacity and Level of Service	Minimizes travel delay and maximizes the volume of people and goods transported by the network
Network connectivity and multimodality	Maximizes network connectivity to provincial and regional network
Network continuity	Maximizes network continuity between Halton-Peel transportation networks
Traffic diversion	Maximizes traffic diversion away from hamlets and rural clusters
Aggregate truck routing within the Study Area	Provides better connectivity and access between gravel producing quarries and new growth areas
Road function	Road capacity and traffic volumes are consistent with road function
Capacity Implications to other arterial roads	Reduces the need for additional (beyond planned) capacity improvements to roads within the Study Area.
Accommodation of goods movement	Sustains or improves the accessibility, mobility, and efficiency of goods movement
NATURAL ENVIRONMENT	
Terrestrial Features and Aquatic Habitat	Minimizes adverse effects on natural vegetation Minimizes adverse effects on aquatic habitat
Air Quality	Minimizes adverse effects on air quality and potential vehicle exhaust emissions
COMMUNITY	
Impact on existing or planned employment areas	Minimizes displacement / removal of businesses & employment use property from road improvements.
Impact on existing/planned residential communities	Minimizes displacement / removal of residents & residential property from road improvements.
Impact on quality of life	Quality of life for the residents of local communities in terms of traffic, pollution and noise.
Impact on existing agricultural areas	Minimizes impact on existing agricultural areas.
ECONOMIC	
Impact on Study Area economy	Minimizes congestion and maximizes accessibility to businesses within the Study Area
Impact on natural resources	Maximizes access to natural resources
Impact on delay and cost of travel	Minimizes travel time and cost of travel
COST	
Capital Cost	Minimizes construction costs
Utilities	Minimizes utility conflicts (Hydro lines and TransCanada Pipeline)
Property acquisition	Minimizes property needs
Feasibility	Engineering feasibility and acceptability to agencies

Table 7-3: Performance Measures

Measure	Method of Calculation
Total lane km	Within HPBATS Study Area, total km of vehicle roadway* multiplied by lanes
% Network Congested (Lane-km)	Congested lane-km as a percentage of total lane-km on HPBATS roads. Congestion defined as travel speed being less than 80% of free flow speed.
% Network with Volume to Capacity (V/C) > 0.9	Lane-km with V/C > 0.9 as a percentage of total lane-km on HPBATS roads. Volume to capacity ratio calculated as PM peak hour auto volumes divided by modeled auto capacities.
Cumulative total vehicle hours travel (vht)	Total time traveled on HPBATS roads* multiplied by peak hour auto volumes
Average travel speed on free-flow network (km/h)	Total road km on HPBATS roads* divided by total free-flow travel time
% Free flow speed	Average assigned speed divided by average free-flow speed, Study Area roads only
Cumulative total VKT	Peak hour volumes multiplied by distance travelled
Cumulative annual hours of congestion	Total annual travel time spent in congestion (80% of free flow speed). Considers both AM and PM peak periods and expanded to annual assuming 250 working days per year.
Annual cost of congestion in \$ per capita	Assuming a value of time of \$34.08/h, this value is multiplied by the annual hours of congestion, and divided by population plus employment within the Study Area
Annual Greenhouse Gas (GHG) in tonnes	Based on peak period fuel wasted due to congestion and a CO ₂ equivalent of 2468.89 g/L. Considers both AM and PM peak periods and expanded to an annual value assuming 250 working days per year.

* Considers freeways, arterials, and major collectors included in the EMME transportation model

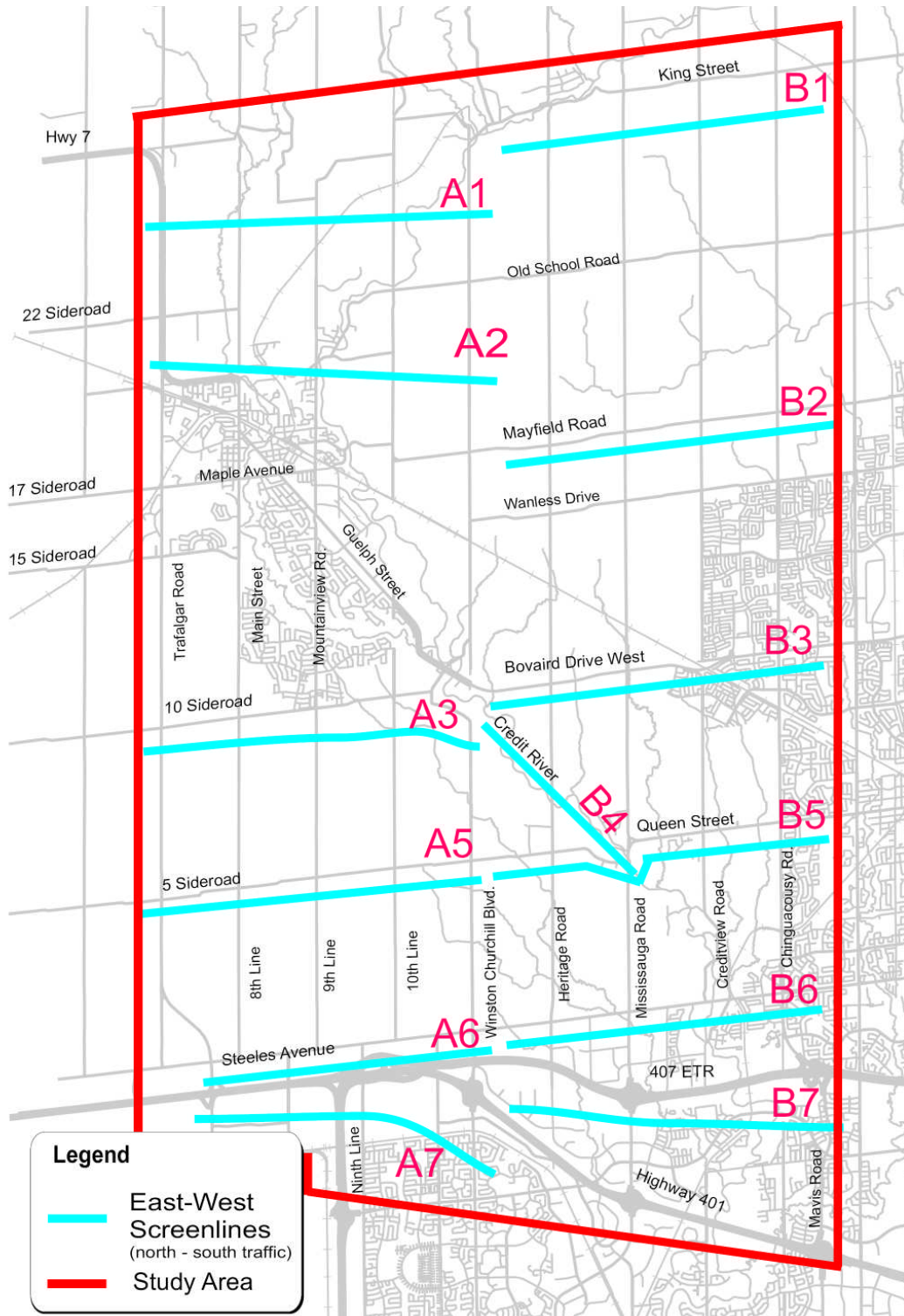


Exhibit 7-1: HPBATS East-West Evaluation Screenlines (for North-South Traffic)

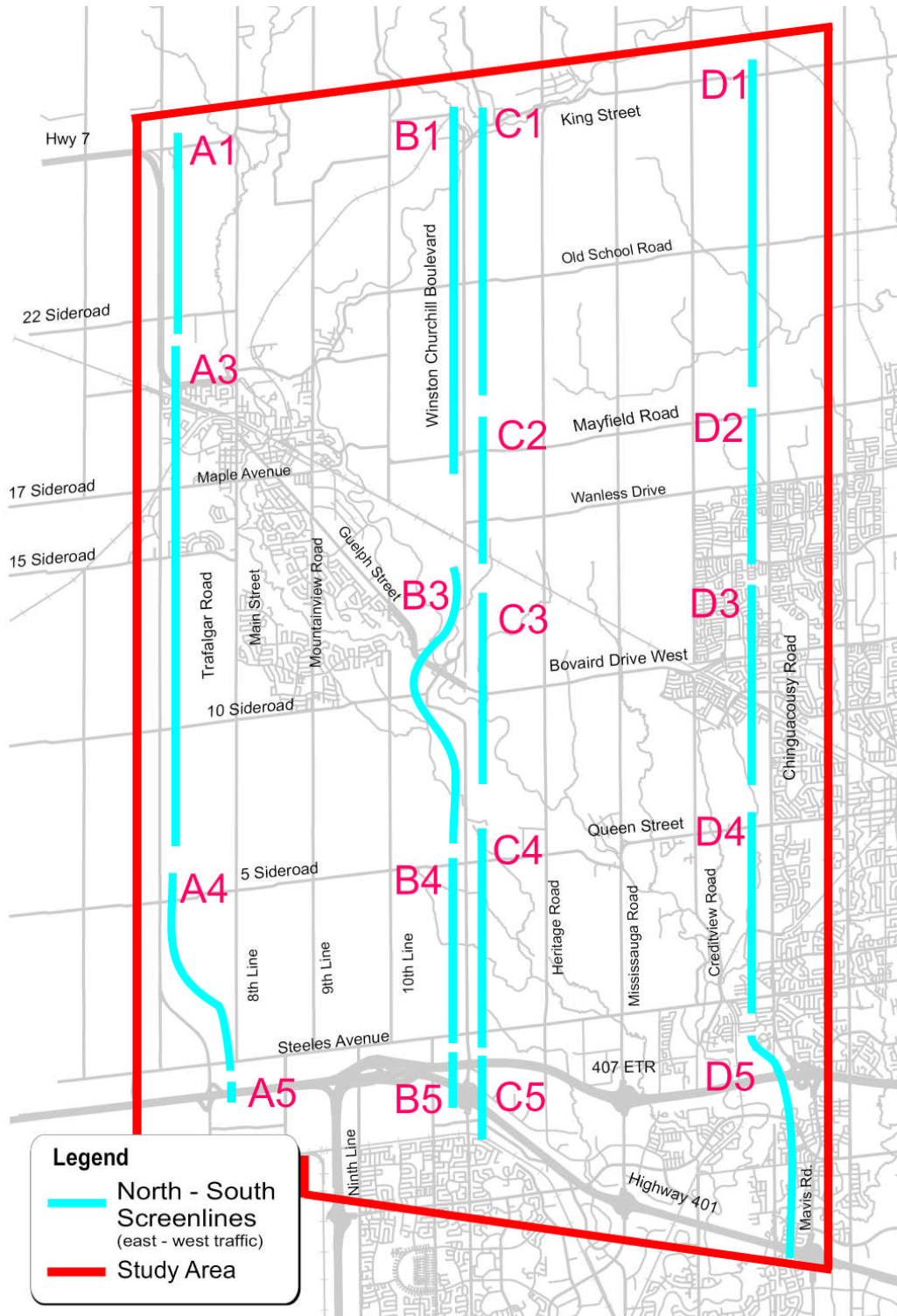


Exhibit 7-2: HPBATS North-South Evaluation Screenlines (for East-West Traffic)

7.2 North-South Alternatives

The family of options for the north-south transportation corridor (NSTC) alternatives was introduced briefly in **Section 6.3.2** and discussed in **Tables 6-3, 6-4** and **6-5**; now we will discuss the results of modeling and forecasting completed for each of the options.

7.2.1 Do Nothing

Following the requirements of the Environmental Assessment process, the HPBATS evaluation approach includes a “Do Nothing” option. In the “Do Nothing” case, the road and transit network is limited to improvements already planned by provincial and municipal agencies and presented in **Section 6.2**.

The Do Nothing option includes the Bramwest Parkway coded to 4 lanes from Heritage Road south of 407 to Embleton Road, with an interchange with the 407 ETR. As such, the Bramwest Parkway is part of the approved Bram West Secondary Plan. The Do Nothing option excludes the Norval Bypass.

7.2.1.1 Network Performance

Network performance for the HPBATS Study Area for the Do Nothing scenario, as well as the planning alternatives to be analyzed later, are measured through screenline analysis and a number of network-wide performance measures for the 2031 horizon year. The screenline results shown in **Table 7-4** and **Table 7-5** indicate significant capacity deficiencies across much of the Study Area.

Table 7-4: Do Nothing Screenlines - Northbound Travel, 2031 PM Peak Hour, Volume to Capacity Ratios

Screenline	ID	Halton	Peel	Screenline Total
		A	B	
South of 27 Sdrd / King St	1	0.65	0.32	0.47
Georgetown N / S of Mayfield	2	0.68	0.37	0.47
South of 10 Sdrd / Hwy 7	3	1.27	0.95	1.08
Credit River	4	-	1.72	1.72
South of 5 Sdrd/ Embleton / Queen	5	0.99	1.07	1.04
South of Steeles	6	1.22	1.08	1.13
South of 401 / 407	7	0.88	1	0.96

Table 7-5: Do Nothing Screenlines - Westbound Travel, 2031 PM Peak Hour, Volume to Capacity Ratios

Screenline	ID	East of Trafalgar	West of WCB	East of WCB	West of Chinguacousy
		A	B	C	D
North of Georgetown / Caledon	1	0.55	0.76	0.69	0.98
North Brampton	2	-	-	0.16	1.18
Georgetown-Norval-Highway 7	3	0.55	1.22	0.63	1.36
South of Georgetown / South Brampton	4	0.97	1.01	0.67	1.43
Highway 401 and 407	5	1.38	0.9	0.94	1.1
Screenline Total	-	1.01	0.92	0.79	1.17

7.2.2 Brampton Arterial Options

The Brampton Arterial family of options is a particular vision of the Bramwest Parkway. It would operate as 6 to 8 lane, high standard arterial road, wholly located within Brampton between 407 ETR and Mayfield Road, with an interchange connection to 407 ETR.

The Brampton Arterial family of alternatives has four options:

1. BA-1: Brampton arterial from 407 ETR to Mayfield
2. BA-2: Brampton arterial with access to Highway 401 via Winston Churchill Boulevard and full interchange with 407 ETR
3. BA-3: Brampton arterial with full interchange with 407 ETR and indirect access to Highway 401 via Financial Drive - Mississauga Road connection
4. BA-4: Brampton arterial with full interchange with 407 ETR and direct access to Highway 401 through partial interchange in the Meadowvale Business Park

Bramwest Arterial Southern Section: Highway 401 / 407 ETR to Embleton Rd

In the PM peak hour, the peak direction of travel is northbound. The southern section provides a travel corridor for volumes exiting the freeway system and distributes the volumes to the Bram West Secondary Plan Area as well as other parts of the HPBATS Study Area. This section carries from 4,000 to 4,500 NB volumes in BA-1, BA-3 and BA-4 and approximately 5,000 in BA-2. The modelling results show high assignment volumes on roads leading to and from Highway 401, indicating that options without full and direct access to Highway 401 will force traffic onto other arterials, further increasing spot congestion. In options BA-1 and BA-3, the intersection of Steeles Avenue and Winston Churchill Boulevard will be challenging from an operations perspective, as large numbers of vehicles travel between the NSTC and the Winston Churchill Boulevard interchange with Highway 401. The intersection will likely require dual left and fully channelized right turn lanes to handle AM and PM peak period travel. The section of Winston Churchill Boulevard south of Steeles Avenue to Highway 401 will require widening to 6 lanes.

Only option BA-2, consisting of a combination of the Bramwest Parkway and Winston Churchill Boulevard will provide this section of the NSTC with capacity sufficient to maintain the volume to capacity ratio below 0.9. In all other options, the southern section of the corridor will be congested.

Select link analysis for the Brampton Arterial north of Steeles Avenue reveals that 10% of trips would be destined to Halton and 83% to Peel (predominantly to the Bram West Secondary Plan Area and Northwest Brampton). In general, the Brampton Arterial options would predominantly serve trips to Peel.

Brampton Arterial Mid Section: Embleton Road to Bovaird Drive

The mid-section of the Brampton Arterial extends from Embleton Road to Bovaird Drive. This section includes an 8-lane wide Credit River bridge and intersections with Embleton Road, New Road A collector, the western terminus of Williams Parkway and Bovaird Drive. This section attracts the highest demand anticipated for the corridor, but is also one of the most constrained sections of the Brampton Arterial and of the entire HPBATS Study Area.

The PM peak hour demand in the northbound direction of travel varies from 5,300 to 5,400 vehicles per hour. With four lanes of travel in each direction and a modelled capacity of 1,000 autos / lane, the volume on the Brampton Arterial options will exceed their capacity. Other parallel routes such as Heritage Road, Mississauga Road and Winston Churchill Boulevard would be equally overloaded and unable to meet the demand. More discussion of the screenline analysis is provided in later sections of the report.

Brampton Arterial Northern Section: Bovaird Drive to Mayfield Road

The northern section extends from Bovaird Drive to Mayfield Road. The Brampton Arterial will provide access to the North West Brampton Secondary Plan Area, the Mount Pleasant Community and southwest Caledon. This section could also connect to the GTA West Transportation Corridor, if such a corridor is implemented. There is little variation in the forecast traffic volumes among the Brampton Arterial options. The northbound demand on the links between Bovaird Drive and Wanless Drive varies between 2,500 and 2,800 vehicles per hour, and about 1,500 vehicles per hour between Wanless Drive and Mayfield Road.

7.2.2.1 Network Performance

Northbound travel in the Halton section of the HPBATS is extremely congested on all roads south of 10 Sideroad. None of the Brampton Arterial options combined with planned road network improvements will benefit capacity in Halton. A summary of volume to capacity ratios by northbound screenline is provided in **Table 7-6**.

Westbound travel in Peel will be extremely congested on all roads south of Bovaird Drive. None of the Brampton Arterial options or planned road network improvements meet the

transportation needs in the area. A summary of volume to capacity ratios by westbound screenline is provided in **Table 7-7**.

Table 7-6: Brampton Arterial Screenlines - Northbound Travel, 2031 PM Peak Hour, Volume to Capacity Ratios

Screenline	ID	Halton	Peel	Screenline total
		A	B	
BA-1				
South of 27 Sdrd / King St	1	0.66	0.40	0.51
Georgetown N / S of Mayfield	2	0.68	0.30	0.40
South of 10 Sdrd / Highway 7	3	1.13	0.88	0.96
Credit River	4	-	1.27	1.27
South of 5 Sdrd/ Embleton / Queen	5	0.99	1.02	1.01
South of Steeles	6	1.30	0.95	1.06
South of 401 / 407	7	0.89	0.94	0.92
BA-2				
South of 27 Sdrd / King St	1	0.66	0.40	0.52
Georgetown N / S of Mayfield	2	0.67	0.32	0.41
South of 10 Sdrd / Highway 7	3	1.12	0.89	0.96
Credit River	4	-	1.29	1.29
South of 5 Sdrd/ Embleton / Queen	5	0.97	1.05	1.03
South of Steeles	6	1.33	0.95	1.07
South of 401 / 407	7	0.90	0.94	0.92
BA-3				
South of 27 Sdrd / King St	1	0.67	0.40	0.52
Georgetown N / S of Mayfield	2	0.68	0.31	0.40
South of 10 Sdrd / Highway 7	3	1.13	0.88	0.95
Credit River	4	-	1.29	1.29
South of 5 Sdrd/ Embleton / Queen	5	0.98	1.03	1.01
South of Steeles	6	1.25	0.94	1.03
South of 401 / 407	7	0.88	0.95	0.93
BA-4				
South of 27 Sdrd / King St	1	0.66	0.40	0.52
Georgetown N / S of Mayfield	2	0.69	0.31	0.41
South of 10 Sdrd / Highway 7	3	1.13	0.88	0.95
Credit River	4	-	1.29	1.29
South of 5 Sdrd/ Embleton / Queen	5	1.00	1.02	1.02
South of Steeles	6	1.10	1.09	1.09
South of 401 / 407	7	0.91	1.09	1.03

Table 7-7: Brampton Arterial Screenlines - Westbound Travel, 2031 PM Peak Hour, Volume to Capacity Ratios

Screenline	ID	East of Trafalgar	West of WCB	East of WCB	West of Chinguacousy
		A	B	C	D
BA-1					
North of Georgetown / Caledon	1	0.60	0.80	0.75	0.94
North Brampton	2	-	-	0.13	1.13
Georgetown-Norval-Highway 7	3	0.54	1.29	0.54	1.28
South of Georgetown / South Brampton	4	1.01	1.00	0.81	1.43
Highway 401 and 407	5	1.37	0.90	0.95	1.13
Screenline total:	-	1.01	0.93	0.81	1.16
BA-2					
North of Georgetown / Caledon	1	0.60	0.81	0.75	0.94
North Brampton	2	-	-	0.13	1.13
Georgetown-Norval-Highway 7	3	0.55	1.26	0.50	1.28
South of Georgetown / South Brampton	4	1.04	1.03	0.50	1.42
Highway 401 and 407	5	1.36	0.90	0.95	1.13
Screenline total:	-	1.02	0.92	0.76	1.17
BA-3					
North of Georgetown / Caledon	1	0.58	0.81	0.75	0.94
North Brampton	2	-	-	0.12	1.13
Georgetown-Norval-Highway 7	3	0.54	1.27	0.52	1.28
South of Georgetown / South Brampton	4	1.01	1.02	0.79	1.41
Highway 401 and 407	5	1.37	0.89	0.94	1.14
Screenline total:	-	1.01	0.92	0.79	1.17
BA-4					
North of Georgetown / Caledon	1	0.58	0.83	0.76	0.94
North Brampton	2	-	-	0.12	1.12
Georgetown-Norval-Highway 7	3	0.53	1.27	0.54	1.26
South of Georgetown / South Brampton	4	0.97	1.04	0.66	1.43
Highway 401 and 407	5	1.36	0.87	0.89	1.14
Screenline total:	-	1.00	0.91	0.75	1.17

7.2.2.2 Evaluation of Brampton Arterial Options

The four Brampton Arterial options were further evaluated following the evaluation methodology described in **Section 7.1**.

In-depth discussion of impacts as well as an evaluation summary and recommendations are presented in **Table 7-8** and **Table 7-9**.

The BA-2 Option – Brampton Arterial with connection to Highway 401 via Winston Churchill Boulevard and connection to 407 ETR is the most preferred of the arterial options. This network option has been carried forward for further analysis.

Table 7-8: Brampton Arterial Options Evaluation

INDICATORS	MEASURES	Option BA-1	Option BA-2	Option BA-3	Option BA-4
		Brampton Super Arterial from 407 ETR to Mayfield Road	Brampton Super Arterial from 407 ETR to Mayfield Road with connection to Highway 401 via Winston Churchill Blvd	Brampton Super Arterial from 407 ETR to Mayfield Road with connection to Highway 401 via Financial Drive/ Mississauga Road	Brampton Super Arterial from 407 ETR to Mayfield Road with connection to Highway 401 via Southern Extension
TRANSPORTATION					
Network capacity and Level of Service	Minimizes travel delay and maximizes the volume of people and goods transported by the network	Additional capacity of 4000 passenger cars per hour in each direction to the Study Area network south of Embleton Rd / 5 Sideroad Additional capacity of 4000 passenger cars per hour at the Credit River Severe capacity shortages across all Northbound screenlines, from south of Highway 401 / 407 ETR to Bovaird Drive. Credit River screenline volume to capacity ratio (v/c) at 1.27. Westbound capacity deficiency east of Trafalgar (v/c of 1.01) and west of Winston Churchill Blvd (v/c of 0.93) 46.8% network congested 26.3% network with v/c > 0.9	Additional capacity of 5400 passenger cars per hour to the Study Area network south of Embleton Rd / 5 Sideroad Additional capacity of 4000 passenger cars per hour at the Credit River Severe capacity shortages across all Northbound screenlines, from south of Highway 401 / 407 ETR to Bovaird Drive. Credit River screenline volume to capacity ratio (v/c) at 1.29. Westbound capacity deficiency east of Trafalgar (v/c of 1.02) and west of Winston Churchill Blvd (v/c of 0.92) 46.8% network congested 26.3% network with v/c > 0.9	Additional capacity of 4000 passenger cars per hour in each direction to the Study Area network south of Embleton Rd / 5 Sideroad Additional capacity of 4000 passenger cars per hour at the Credit River Severe capacity shortages across all Northbound screenlines, from south of Highway 401 / 407 ETR to Bovaird Drive. Credit River screenline volume to capacity ratio (v/c) at 1.29. Westbound capacity deficiency east of Trafalgar (v/c of 1.01) and west of Winston Churchill Blvd (v/c of 0.92) 46.8% network congested 26.3% network with v/c > 0.9	Additional capacity of 4000 passenger cars per hour in each direction to the Study Area network south of Embleton Rd / 5 Sideroad Additional capacity of 4000 passenger cars per hour at the Credit River Severe capacity shortages across all Northbound screenlines, from south of Highway 401 / 407 ETR to Bovaird Drive. Credit River screenline volume to capacity ratio (v/c) at 1.29. Westbound capacity deficiency east of Trafalgar (v/c of 1.0) and west of Winston Churchill Blvd (v/c of 0.91) 46.8% network congested 26.3% network with v/c > 0.9
Network connectivity and multimodality	Maximizes network connectivity to provincial and regional network	Good north-south connectivity across the Credit River. No access to Highway 401. Direct access to 407 ETR. Opportunity for a BRT corridor.	Good north-south connectivity across the Credit River. Direct access to Highway 401 via Winston Churchill Direct access to 407 ETR. Opportunity for a BRT corridor with connections to Mississauga Transit and 407 Transitway.	Good north-south connectivity across the Credit River. Indirect access to Highway 401 via Financial Drive. Direct access to 407 ETR. Opportunity for a BRT corridor with connections to Mississauga Transit and 407 Transitway.	Good north-south connectivity across the Credit River. Direct access to Highway 401. Direct access to 407 ETR. Opportunity for a BRT corridor with connections to Mississauga Transit and 407 Transitway.
Network continuity	Maximizes network continuity between Halton-Peel transportation networks	Additional continuous north-south corridor in west Brampton across the Credit River	Additional continuous north-south corridor in west Brampton across the Credit River	Additional continuous north-south corridor in west Brampton across the Credit River	Additional continuous north-south corridor in west Brampton across the Credit River
Traffic diversion	Maximizes traffic diversion away from Norval, Huttonville, Heritage and Embleton clusters	Approximately 22% traffic diversion from Huttonville. Significant congestion along Embleton / 5 Sideroad and Heritage Rd.	Approximately 20% traffic diversion from Huttonville. Congestion relief through Embleton and along Heritage Rd.	Approximately 18% traffic diversion from Huttonville. Significant congestion along Embleton / 5 Sideroad and Heritage Rd.	Approximately 21% traffic diversion from Huttonville. Significant congestion along Embleton / 5 Sideroad and Heritage Rd.

INDICATORS	MEASURES	Option BA-1	Option BA-2	Option BA-3	Option BA-4
Aggregate truck routing within the Study Area	Provides better connectivity and access between gravel producing quarries and new growth areas.	New north-south corridor connection to 407 ETR.	New north-south corridor connection to 407 ETR and Highway 401.	New north-south corridor connection to 407 ETR.	New north-south corridor connection to 407 ETR and 401.
Road Function	Road capacity and traffic volumes are consistent with road function	Road capacity is consistent with road function.	Road capacity is consistent with road function.	Financial Drive function compromised by excess traffic.	Road capacity is consistent with road function.
Capacity Implications to other Arterial Roads within Study Area	Reduces the need for additional (beyond planned) capacity improvements to roads with the Study Area.	Requires widening Steeles between WCB and North-South Transportation Corridor; however, congestion will remain due to large turning volumes. Requires significant capacity improvements to intersection of Winston Churchill Blvd and Steeles Avenue.	Requires widening WCB to 6 lanes north of Steeles to North-South Transportation Corridor. Requires significant capacity improvements to intersection of Winston Churchill Blvd and Steeles Avenue.	Requires widening Financial Drive to 6 lanes between North-South Transportation Corridor to Mississauga Road, with congestion expected at major intersections.	Requires new north-south road between Highway 401 and 407 ETR, with new partial interchange at 401.
Accommodation of Goods Movement	Sustains or improves the accessibility, mobility, and efficiency of goods movement	Improvement to inter-regional goods movement on regional corridors. Lack of direct access to Highway 401 is a disadvantage.	Significant improvement to inter-regional goods movement on regional corridors. Direct access to Highway 401 and 407 ETR.	Improvement to inter-regional goods movement on regional corridors. Lack of direct access to Highway 401.	Significant improvement to inter-regional goods movement on regional corridors. Direct access to Highway 401 and 407 ETR.
NATURAL ENVIRONMENT					
Terrestrial Features and Aquatic Habitat*	Minimizes adverse effects on natural vegetation Minimizes adverse effects on aquatic habitat	New Credit River crossing will affect terrestrial features, Greenland areas in Peel and might affect the Provincial Greenbelt. Impacts might be minimized if crossing located east of Heritage Road.	New Credit River crossing will affect terrestrial features, Greenland areas in Peel and might affect the Provincial Greenbelt. Impacts might be minimized if crossing located east of Heritage Road.	New Credit River crossing will affect terrestrial features, Greenland areas in Peel and might affect the Provincial Greenbelt. Impacts might be minimized if crossing located east of Heritage Road.	New Credit River crossing will affect terrestrial features, Greenland areas in Peel and might affect the Provincial Greenbelt. Impacts might be minimized if crossing located east of Heritage Road.
Air Quality**	Minimizes adverse effects on air quality and potential vehicle exhaust emissions	0.64 tonnes per capita per year of annual greenhouse gas emissions due to congestion delays in the AM and PM peak periods	0.63 tonnes per capita per year of annual greenhouse gas emissions due to congestion delays in the AM and PM peak periods	0.63 tonnes per capita per year of annual greenhouse gas emissions due to congestion delays in the AM and PM peak periods	0.64 tonnes per capita per year of annual greenhouse gas emissions due to congestion delays in the AM and PM peak periods
COMMUNITY					
Impact on existing or planned employment areas	Minimizes displacement / removal of businesses & employment use property from road improvements.	Potential negative impact on Maple Lodge Farms. Right of Way requirements will affect land inventory for future employment in Bram West Secondary Plan. Improved accessibility to/from employment areas.	Potential negative impact on Maple Lodge Farms and on lands to the north. Right of Way requirements will affect land inventory for future employment in Bram West Secondary Plan. Significant improvement in accessibility to/from employment areas.	Potential negative impact on Maple Lodge Farms. Impacts on employment lands along Financial Drive. Right of Way requirements will affect land inventory for future employment in Bram West Secondary Plan. Improved accessibility to/from employment areas.	Potential negative impact on Maple Lodge Farms. Significant impact on existing employment in Meadowvale Business Park area south of 407 ETR. Right of Way requirements will affect land inventory for future employment in Bram West Secondary Plan and Meadowvale area. Significant improvement in accessibility to/from employment areas.
Impact on existing or planned residential communities	Minimizes displacement / removal of residents & residential property from road improvements.	Negative impact on existing homes along Winston Churchill Blvd. Traffic impacts on residential development in Bram West. Improved accessibility to/from residential areas.	Negative impact on existing homes along Winston Churchill Blvd. Traffic impacts on residential development in Bram West. Significant improvement in accessibility to/from residential areas.	Traffic impacts on residential development in Bram West Improved accessibility to/from residential areas.	Traffic impacts on residential development in Bram West Significant improvement in accessibility to/from residential areas.

INDICATORS	MEASURES	Option BA-1	Option BA-2	Option BA-3	Option BA-4
Impact on quality of life	Maximizes improvement in quality of life for the residents of local communities measured in exposure to traffic, pollution and noise.	No improvement in quality of life for existing communities.	Potential negative impacts to residents along Winston Churchill Blvd.	No improvement in quality of life for existing communities.	No improvement in quality of life for existing communities
Impact on existing agricultural areas	Minimizes impact on existing agricultural areas.	Impact to existing agricultural lands in Peel	Impact to existing agricultural lands in Peel	Impact to existing agricultural lands in Peel	Impact to existing agricultural lands in Peel
ECONOMIC					
Impacts on Study Area economy	Minimizes congestion and maximizes accessibility to businesses within the Study Area	Annual cumulative hours of congestion (in millions): 9.14	Annual cumulative hours of congestion (in millions): 8.96	Annual cumulative hours of congestion (in millions): 8.85	Annual cumulative hours of congestion (in millions): 8.87
Impact on natural resource	Minimizes impact and maximizes access to natural resources	No impact on natural resources	No impact on natural resources	No impact on natural resources	No impact on natural resources
Impacts on delay and cost of travel	Minimizes travel time and cost of travel	Estimated total travel time on roads in the Study Area (hours): 18,920	Estimated total travel time on roads in the Study Area (hours): 18,780	Estimated total travel time on roads in the Study Area (hours): 18,690	Estimated total travel time on roads in the Study Area (hours): 18,730
COST					
Capital Cost	Minimizes construction costs	\$163 M	\$175 M	\$170 M	\$ over 183 M
Utilities	Minimizes utility conflicts (Hydro lines and TransCanada Pipeline)	Potential conflicts with TransCanada Pipeline.	Potential conflicts with TransCanada Pipeline.	Potential conflicts with TransCanada Pipeline.	Potential conflicts with TransCanada Pipeline. Crosses utility corridor and hydro corridor in the Parkway Belt
Property Acquisition	Minimizes property needs	Land requirements (acres): 164	Land requirements (acres): 168	Land requirements (acres): 190	Land requirements (acres): 225 Including existing commercial uses in Mississauga.
Feasibility	Engineering feasibility and acceptability to MTO	Good level of engineering feasibility Likely to be accepted by MTO and 407 ETR	Good level of engineering feasibility Likely to be accepted by MTO and 407 ETR.	Good level of engineering feasibility Likely to be accepted by MTO and 407 ETR.	Questionable engineering feasibility due to close spacing of interchanges and environmental impacts Unlikely to be approved by MTO and 407 ETR.

*Note: A more detailed description of environmental impacts is not provided since all North-South Transportation Corridor options discussed above will have similar environmental impacts in terms of construction effects, short-term effects and long-term effects. Construction effects include, but are not limited to, loss of habitat, loss of biota and impacts to hydrology. Short-term impacts include, but are not limited to, the creation of a new microclimate, plant mortality, habitat loss, wildlife disturbance and traffic-related wildlife deaths. Long-term effects include, but are not limited to, loss of habitat, fragmentation of habitat, continued traffic-related wildlife deaths, change in biological communities, run-off from the road, litter, noise, emissions and other physical disturbance. The only option which has no impacts on the aquatic and terrestrial environment is the Do Nothing case and this has been reflected in the analysis table. A more detailed assessment of the environmental impacts of different alternatives will be undertaken in the later stages of the Environmental Assessment process.

**Note: Future GHG estimates account for improvements in vehicle emissions. The 24% GHG decrease by 2031 is based on the average 0.94% per annum decreased in GHG emissions observed in Canada in transportation sector (small and large cars only) between 1997 and 2006 and reported by Natural Resources Canada (<http://oee.nrcan.gc.ca/corporate/statistics>).

7.2.3 Brampton Freeway Options

The Brampton Freeway options involve a 6 to 8-lane freeway, with a posted speed limit of 100 km/h and grade-separated interchanges. In the Bram West area, the facility will have parallel service roads which will provide access to crossing arterial roads and limited access to adjacent properties. The Brampton Freeway options have a freeway to freeway interchange at 407 ETR, which will require shifting the proposed 407 Transitway to the south. As with the Brampton Arterial option, traffic operations on the 407 ETR between the Highway 401 and Mississauga Road interchanges will be an issue to be examined.

Two Brampton Freeway options were evaluated:

1. BF-1 with access to 407 ETR only
2. BF-2 with access to 407 ETR and partial access to Highway 401

Brampton Freeway South Section: 407 ETR / Highway 401 to Embleton Road

The southern section of the mainline will carry NB volumes that range from 5,000 (BF-1) to 5,500 (BF-2) vehicles per hour; the parallel service roads will carry an additional 2,000 vehicles per hour. With Option BF-1, Winston Churchill Boulevard at Highway 401, Steeles Avenue east of Winston Churchill Boulevard and Mississauga Road will have high volumes indicating that the BF-1 option, without direct access to Highway 401, will force traffic onto other arterials. The intersection of Steeles Avenue and Winston Churchill Boulevard will be a pressure point for the large number of vehicles travelling between the Brampton Freeway and Highway 401 via Steeles Avenue and Winston Churchill Boulevard. The intersection will likely require dual left and fully channelized right turn lanes, while Winston Churchill Boulevard between Highway 401 and Steeles Ave will require widening to 6 lanes. Both Brampton Freeway options will have some congestion.

Approximately 14% of trips on the Brampton Freeway will be destined to Halton and 72% to Peel, predominantly to the Bram West Secondary Plan Area and Northwest Brampton.

Brampton Freeway Mid-Section: Embleton Road to Bovaird Drive

The mid-section of the NSTC extends from Embleton Road to Bovaird Drive. This section includes an 8-lane crossing of the Credit River. This section will attract the highest volumes within the corridor because of the lack of capacity crossing the Credit River. PM peak hour demand in the northbound direction of travel will be 7,500 cars per hour in both options – with the freeway operating at capacity.

In this section of the corridor, the highest demand on the Brampton Freeway options originates from Highway 401. The Brampton Freeway options will not provide substantial benefits to Halton in the Study Area.

Brampton Freeway North Section: from Bovaird Drive to Mayfield Road

The northern section of the Brampton Freeway from Bovaird Drive to Mayfield Road will provide access to the Northwest Brampton Secondary Plan Area, the Mount Pleasant Community and southwest Caledon. There is also the potential for a connection to the GTA West Transportation Corridor. There is little variation between the BF options in forecast travel volumes. Between Bovaird Drive and Sandalwood Parkway, the freeway options will attract northbound volumes of approximately 5,000 vehicles per hour. Between Sandalwood Parkway and Mayfield Road, demand will be about 3,200 vehicles per hour.

7.2.3.1 Network Performance of Brampton Freeway Options

Northbound travel in Halton will be congested on all roads south of 10 Sideroad. Neither the Brampton Freeway options nor the planned road network improvements will provide sufficient capacity in the north-south direction. The screenline analysis is shown in **Table 7-10**.

Westbound travel in Peel’s section of the HPBATS is very congested on all roads south of Bovaird Drive. The Brampton Freeway options, similar to the Brampton Arterial options, do not meet the transportation needs in the Study Area. The summary of volume to capacity ratios by screenline is provided in **Table 7-11**.

Table 7-10: Brampton Freeway Screenlines – Northbound Travel, 2031 PM Peak Hour, Volume to Capacity Ratios

Screenline	ID	Halton	Peel	Screenline total
		A	B	
BF-1				
South of 27 Sdrd / King St	1	0.67	0.45	0.55
Georgetown N / S of Mayfield	2	0.7	0.43	0.49
South of 10 Sdrd / Highway 7	3	1.08	0.92	0.97
Credit River	4	-	1.26	1.26
South of 5 Sdrd/ Embleton / Queen	5	0.92	0.91	0.91
South of Steeles	6	1.2	1.2	1.2
South of 401 / 407	7	0.88	1.09	1.01
BF-2				
South of 27 Sdrd / King St	1	0.67	0.45	0.55
Georgetown N / S of Mayfield	2	0.7	0.44	0.5
South of 10 Sdrd / Highway 7	3	1.07	0.92	0.97
Credit River	4	-	1.28	1.28
South of 5 Sdrd/ Embleton / Queen	5	0.9	0.94	0.93
South of Steeles	6	1.1	1.25	1.21
South of 401 / 407	7	0.91	0.98	0.96

Table 7-11: Brampton Freeway Screenlines – Westbound Travel, 2031 PM Peak Hour, Volume to Capacity Ratios

Screenline	ID	East of Trafalgar	West of WCB	East of WCB	West of Chinguacousy
		A	B	C	D
BF-1					
North of Georgetown / Caledon	1	0.59	0.85	0.79	0.92
North Brampton	2	-	-	0.2	1.09
Georgetown-Norval-Highway 7	3	0.55	1.27	0.52	1.26
South of Georgetown / South Brampton	4	1.01	0.99	0.77	1.43
Highway 401 and 407	5	1.35	0.89	0.93	1.14
Screenline total:	-	1.01	0.92	0.8	1.16
BF-2					
North of Georgetown / Caledon	1	0.59	0.86	0.78	0.92
North Brampton	2	-	-	0.22	1.08
Georgetown-Norval-Highway 7	3	0.53	1.28	0.52	1.25
South of Georgetown / South Brampton	4	0.99	1.04	0.64	1.39
Highway 401 and 407	5	1.34	0.87	0.86	1.16
Screenline total:	-	0.99	0.91	0.74	1.17

Travel and operational conditions on the road network with options BF-1 and BF-2 will be unsatisfactory. Approximately 45-46% of road lane kilometres will be congested. The average driving speed will be 43% lower than the average driving speed in uncongested conditions, resulting in longer travel times.

7.2.3.2 Evaluation

As both BF-1 and BF-2 have similar network performance characteristics and differ only by the provision of access to Highway 401, option BF-2 was selected for further analysis, given the importance of connecting directly to Highway 401.

7.2.4 Halton-Peel Freeway (HPF) Options

The Halton-Peel Freeway option features a freeway at 6 to 8 lanes with a posted speed limit of 100 km/h, and access to major arterials provided by grade-separated interchanges. The facility will be connected to the 401 / 407 interchange west of 9th Line in Halton. An all moves interchange will provide access to all directions.

The Halton-Peel Freeway has the following options (see Table 6-4):

1. HPF-1 and 2 with the HPF corridor south of Norval
2. HPF-3 with the HPF corridor north of Norval

With all HPF options, there will be a Bramwest Parkway arterial connecting to 407 ETR in Brampton, and extending north to connect to the Halton-Peel Freeway.

Halton-Peel Freeway: Halton Section

In the weekday PM peak hour, northbound is the peak direction of travel. The Halton section will provide a travel corridor for traffic exiting the provincial freeway system, and will distribute the traffic to Georgetown and north Halton. The remaining traffic will continue northeast to Peel.

The section between Highway 401 and 5 Sideroad will carry 6,500 to 6,600 vehicles per hour. Approximately 31% of trips on the HPF will be destined to Halton and 56% of trips will be destined to Peel. The Halton-Peel Freeway attracts significantly more Halton trips than do the other alternatives.

Halton-Peel Freeway: Peel Section

In HPF-1/2, the HPF will enter Peel south of Norval between Norval and Steeles Avenue. It will cross the Credit River in Brampton and continue north to Mayfield Road. Forecast northbound demand on the HPF is 8,200 vehicles per hour at the Credit River, 7,000 vehicles per hour south of Bovaird, 5,000 vehicles per hour south of Sandalwood Parkway, and 3,000 vehicles per hour south of Mayfield Road.

Option HPF-3 will cross into Peel north of Norval in the vicinity of Sandalwood Parkway. Option HPF-3 will require two Credit River crossings.

7.2.4.1 Network Performance for Halton-Peel Freeway Options

The screenline analysis for north-south travel is shown in **Table 7-12**. Generally, there will be sufficient capacity in the north-south direction except for the Credit River screenline which remains over capacity. In the westbound direction, as shown in **Table 7-13**, congestion will remain. This indicates that the HPF options will not alleviate all north-south and east-west capacity needs.

Table 7-12: HPF Screenlines – Northbound Travel, 2031 PM Peak Hour, Volume to Capacity Ratios

Screenline	ID	Halton	Peel	Screenline total
		A	B	
HPF-1				
South of 27 Sdrd / King St	1	0.68	0.47	0.56
Georgetown N / S of Mayfield	2	0.71	0.39	0.46
South of 10 Sdrd / Highway 7	3	1.09	0.86	0.92
Credit River	4	-	1.16	1.16
South of 5 Sdrd/ Embleton / Queen	5	0.87	0.84	0.86
South of Steeles	6	0.89	0.74	0.79
South of 401 / 407	7	0.86	0.85	0.86
HPF-2				
South of 27 Sdrd / King St	1	0.69	0.48	0.57
Georgetown N / S of Mayfield	2	0.74	0.36	0.44
South of 10 Sdrd / Highway 7	3	0.99	0.87	0.9
Credit River	4	-	1.13	1.13
South of 5 Sdrd/ Embleton / Queen	5	0.82	0.85	0.83
South of Steeles	6	0.95	0.83	0.87
South of 401 / 407	7	0.77	0.86	0.84
HPF-3				
South of 27 Sdrd / King St	1	0.73	0.45	0.57
Georgetown N / S of Mayfield	2	0.87	0.33	0.51
South of 10 Sdrd / Highway 7	3	0.88	0.77	0.84
Credit River	4	-	1.17	1.17
South of 5 Sdrd/ Embleton / Queen	5	0.81	0.96	0.88
South of Steeles	6	0.92	0.83	0.86
South of 401 / 407	7	0.91	0.87	0.89

Table 7-13: HPF Screenlines – Westbound Travel, 2031 PM Peak Hour, Volume to Capacity Ratios

Screenline	ID	East of Trafalgar	West of WCB	East of WCB	West of Chinguacousy
		A	B	C	D
HPF-1					
North of Georgetown / Caledon	1	0.6	0.83	0.78	0.93
North Brampton	2	-	-	0.18	1.07
Georgetown-Norval-Highway 7	3	0.55	1.18	0.45	1.23
South of Georgetown / South Brampton	4	1.02	0.63	0.51	1.42
Highway 401 and 407	5	1.29	1.0	0.99	1.15
Screenline total:	-	0.97	0.96	0.79	1.16
HPF-2					
North of Georgetown / Caledon	1	0.58	0.76	0.78	0.93
North Brampton	2	-	-	0.16	1.07
Georgetown-Norval-Highway 7	3	0.54	1.1	0.33	1.24
South of Georgetown / South Brampton	4	1.04	0.6	0.48	1.41
Highway 401 and 407	5	1.26	0.95	0.98	1.15
Screenline total:	-	0.97	0.91	0.78	1.16
HPF-3					
North of Georgetown / Caledon	1	0.56	0.85	0.62	0.92
North Brampton	2	-	-	0.41	1.07
Georgetown-Norval-Highway 7	3	0.55	1.33	0.33	1.23
South of Georgetown / South Brampton	4	1.03	0.88	0.54	1.4
Highway 401 and 407	5	1.26	0.99	1.01	1.16
Screenline total:	-	0.96	0.98	0.82	1.16

7.2.4.2 Evaluation

Table 7-14 presents the performance of each of the HPF options set against the evaluation indicators and measures as discussed in Section 7.1. Table 7-15 presents the comparative evaluation of HPF options against the performance criteria.

Table 7-14: HPF Evaluation

INDICATORS	MEASURES	Option HPF-1	Option HPF-2	Option HPF-3
		HALTON-PEEL FREEWAY From Highway 401/407 ETR Interchange to Mayfield Road, crossing to Peel south of Embleton Road	HALTON-PEEL FREEWAY From Highway 401 / 407 Interchange to Mayfield Road; crossing to Peel north of Embleton Road	HALTON-PEEL FREEWAY From Highway 401 / 407 Interchange to Mayfield Road; crossing to Peel at Sandalwood Road
TRANSPORTATION				
Network Capacity and Level of Service	Minimizes travel delay and maximizes the volume of people and goods transported by the network	Additional capacity of 9600 passenger cars per hour in each direction added to the Study Area network south of Embleton Rd / 5 Sideroad Additional capacity of 7200 passenger cars per hour at the Credit River Capacity deficiency at the Credit River screenline (volume to capacity ratio (v/c) of 1.16) Westbound capacity deficiency east of Trafalgar (v/c of 0.97) and west of Winston Churchill Blvd (v/c of 0.96) 44.3% network congested 24.1% network with v/c > 0.9	Additional capacity of 9600 passenger cars per hour in each direction added to the Study Area network south of Embleton Rd / 5 Sideroad Additional capacity of 7200 passenger cars per hour at the Credit River Capacity deficiency at the Credit River screenline (volume to capacity ratio (v/c) of 1.13) Westbound capacity deficiency east of Trafalgar (v/c of 0.97) and west of Winston Churchill Blvd (v/c of 0.91) 43.9% network congested 21.4% network with v/c > 0.9	Additional capacity of 9600 passenger cars per hour in each direction added to the Study Area network south of Embleton Rd / 5 Sideroad Additional capacity of 7200 passenger cars per hour at the Credit River north of Norval and 2,400 at the Credit River south of Bovaird Drive Capacity deficiency at the Credit River screenline (volume to capacity ratio (v/c) of 1.17) Westbound capacity deficiency east of Trafalgar (v/c of 0.96) and west of Winston Churchill Blvd (v/c of 0.98) 44.2% network congested 21.3% network with v/c > 0.9
Network connectivity and multimodality	Maximizes network connectivity to provincial and regional network	Good north-south connectivity across the Credit River. Direct access to Highway 401 and 407. Opportunity to connect to GTA multi-modal corridors.	Good north-south connectivity across the Credit River. Direct access to Highway 401 and 407. Opportunity to connect to GTA multi-modal corridors.	Good north-south connectivity across the Credit River. Direct access to Highway 401 and 407. Opportunity to connect to GTA multi-modal corridors.
Network continuity	Maximizes network continuity between Halton-Peel transportation networks	Additional continuous north-south corridor across the Credit River.	Additional continuous north-south corridor across the Credit River.	Additional continuous north-south corridor across the Credit River.
Traffic diversion	Maximizes traffic diversion away from Norval, Huttonville, Heritage and Embleton clusters	High level of traffic diversion (25%)	High level of traffic diversion (25%)	High level of traffic diversion (25%)
Aggregate truck routing within the Study Area	Provides better connectivity and access between gravel producing quarries and new growth areas.	New north-south corridor connection to 407 ETR and Highway 401.	New north-south corridor connection to 407 ETR and Highway 401.	New north-south corridor connection to 407 ETR and Highway 401.
Road Function	Road capacity and traffic volumes are consistent with road function	Road capacity is consistent with road function.	Road capacity is consistent with road function.	Road capacity is consistent with road function.
Capacity Implications to other Arterial Roads within Study Area	Reduces the need for additional (beyond planned) capacity improvements to roads with the Study Area.	Requirement for one additional lane of directional capacity NB at the Credit River screenline. Additional NS capacity needs in Halton north of Steeles	Requirement for one additional lane of directional capacity NB at the Credit River screenline. Additional capacity NS needs in Halton north of 5 Sideroad	Requirement for 2 additional lanes of directional capacity NB at the Credit River south of Bovaird.
Accommodation of Goods Movement	Sustains or improves the accessibility, mobility, and efficiency of goods movement	Significant improvement to inter-regional goods movement on freeway corridor. Direct access to Highway 401 and 407 ETR	Significant improvement to inter-regional goods movement on freeway corridor. Direct access to Highway 401 and 407 ETR	Significant improvement to inter-regional goods movement on freeway corridor. Direct access to Highway 401 and 407 ETR

INDICATORS	MEASURES	Option HPF-1	Option HPF-2	Option HPF-3
NATURAL ENVIRONMENT				
Terrestrial Features and Aquatic Habitat*	Minimizes adverse effects on natural vegetation Minimizes adverse effects on aquatic habitat	New Credit River crossing will affect terrestrial features, Greenland areas in Peel and might affect the Provincial Greenbelt. Impacts might be minimized if crossing located east of Heritage Road.	New Credit River crossing will affect terrestrial features, Greenland areas in Peel and might affect the Provincial Greenbelt. Impacts might be minimized if crossing located east of Heritage Road.	Substantial impacts. Two new Credit River crossings will affect terrestrial features, Greenland areas in Peel and the Provincial Greenbelt.
Air Quality**	Minimizes adverse effects on air quality and potential vehicle exhaust emissions	0.63 tonnes per capita per year of greenhouse gas emissions due to congestion delays in the AM and PM peak periods	0.63 tonnes per capita per year of greenhouse gas emissions due to congestion delays in the AM and PM peak periods	0.64 tonnes per capita per year of greenhouse gas emissions due to congestion delays in the AM and PM peak periods
COMMUNITY				
Impact on existing or planned employment areas	Minimizes displacement / removal of businesses & employment use property from road improvements.	Impact on future employment lands in Halton Hills. Impact on land zoned employment along Steeles – Highway 401 corridor in Halton Hills Improvement in accessibility to / from employment areas.	Impact on future employment lands in Halton Hills. Impact on land zoned employment along Steeles – Highway 401 corridor in Halton Hills Improvement in accessibility to / from employment areas.	Impact on future employment lands in Halton Hills. Impact on land zoned employment along Steeles –Highway 401 corridor in Halton Hills Improvement in accessibility to / from employment areas.
Impact on existing or planned residential communities	Minimizes displacement / removal of residents & residential property from road improvements.	No direct physical impacts of road construction on residential areas. Right of Way requirements for the freeway will have a negative impact on land inventory for future residential development in Bram West and North-West Brampton Secondary Plan. Significant improvement in accessibility to / from residential areas.	No direct physical impacts of road construction on residential areas. Right of Way requirements for the freeway will have a negative impact on land inventory for future residential development in Bram West and North-West Brampton Secondary Plan. Significant improvement in accessibility to / from residential areas.	Direct physical impacts of road construction on residential areas of Norval. Right of Way requirements for the freeway will have a negative impact on land inventory for future residential development in Georgetown Significant improvement in accessibility to / from residential areas.
Impact on quality of life	Maximizes improvement in quality of life for the residents of local communities measured in exposure to traffic, pollution and noise.	Significant improvement to quality of life.	Significant improvement to quality of life.	Significant impact on quality of life to Georgetown / Norval residents
Impact on existing agricultural areas	Minimizes impact on existing agricultural areas.	Impact to existing agricultural lands in Peel and Halton	Impact to existing agricultural lands in Peel and Halton	Impact to existing agricultural lands in Peel and Halton
ECONOMIC				
Impacts on Study Area economy	Minimizes congestion and maximizes accessibility to businesses within the Study Area	Annual cumulative hours of congestion (in millions): 8.19	Annual cumulative hours of congestion (in millions): 7.87	Annual cumulative hours of congestion (in millions): 7.63
Impact on natural resource	Minimizes impact and maximizes access to natural resources	Some shale resources in Halton may be impacted, but access is improved	Some shale resources in Halton may be impacted, but access is improved	Some shale resources in Halton may be impacted; potential impact on active shale resource extraction application in Peel
Impacts on delay and cost of travel	Minimizes travel time and cost of travel	Estimated total travel time on roads in the Study Area (hours): 18,150	Estimated total travel time on roads in the Study Area (hours): 18,040	Estimated total travel time on roads in the Study Area (hours): 18,080

INDICATORS	MEASURES	Option HPF-1	Option HPF-2	Option HPF-3
COST				
Capital Cost	Minimizes construction costs	\$370 M	\$380 M	\$430M
Utilities	Minimizes utility conflicts (Hydro lines and TransCanada Pipeline)	Potential utility conflicts. Impact on hydro corridor and Parkway Belt utility corridor.	Potential utility conflicts. Impact on hydro corridor and Parkway Belt utility corridor.	No direct impact
Property Acquisition	Minimizes property needs	Land requirements (acres): 656	Land requirements (acres): 660	Land requirements (acres): 700
Feasibility	Engineering feasibility and acceptability to agencies	Good level of engineering feasibility Likely to be accepted by MTO and 407 ETR	Good level of engineering feasibility Likely to be accepted by MTO and 407 ETR	Not feasible

*Note: A more detailed description of environmental impacts is not provided since all North-South Transportation Corridor options discussed above will have similar environmental impacts in terms of construction effects, short-term effects and long-term effects. Construction effects include, but are not limited to, loss of habitat, loss of biota and impacts to hydrology. Short-term impacts include, but are not limited to, the creation of a new microclimate, plant mortality, habitat loss, wildlife disturbance and traffic-related wildlife deaths. Long-term effects include, but are not limited to, loss of habitat, fragmentation of habitat, continued traffic-related wildlife deaths, change in biological communities, run-off from the road, litter, noise, emissions and other physical disturbance. The only option which has no impacts on the aquatic and terrestrial environment is the Do Nothing case and this has been reflected in the analysis table. A more detailed assessment of the environmental impacts of different alternatives will be undertaken in the later stages of the Environmental Assessment process.

**Note: Future GHG estimates account for improvements in vehicle emissions. The 24% GHG decrease by 2031 is based on the average 0.94% per annum decreased in GHG emissions observed in Canada in transportation sector (small and large cars only) between 1997 and 2006 and reported by Natural Resources Canada (<http://oee.nrcan.gc.ca/corporate/statistics>).

Table 7-15: Evaluation Summary

Criteria	Option HPF 1/2 HALTON-PEEL FREEWAY Crossing to Halton between Norval and Steeles Avenue	Option HPF 3 HALTON-PEEL FREEWAY Crossing to Halton north of Norval
Transportation Service Impacts		
Impacts on Natural Environment		
Community Impacts		
Economic Impacts		
Costs		
OVERALL	Carry forward	Not Recommended

LEGEND

Most preferred

 Least preferred

Criteria	Relative Weighting
Transportation	✓✓
Natural Environment	✓✓✓
Community	✓✓
Economic	✓✓
Cost	✓

HPF-1&2 is the preferred HPF option, compared with HPF-3, considering the significant community and environmental impacts of HPF-3.

7.2.5 Preferred North-South Alternative

The final step in the evaluation and selection of the preferred north-south network option involved a comparison of the preferred Brampton Arterial, Brampton Freeway, and Halton-Peel Freeway options and the Do-Nothing option, as follows:

- **BA-2** – Brampton Arterial option BA-2 with a full interchange at the 407 ETR and direct access to Highway 401 via Winston Churchill Boulevard
- **BF-2** – Brampton Freeway option BF-2 with a full interchange at the 407 ETR and direct access to Highway 401 with a partial interchange (to and from the east)
- **HPF-1/2** – Halton Peel Freeway 1/2 HPF-2 – with full-moves interchange at 401/407 in Halton, and the Bramwest Arterial Road connecting to 407 ETR

The evaluation of these options is presented in **Table 7-16**, followed by the evaluation summary and the selection of the preferred option presented in **Table 7-17**.

Based on the evaluation presented below, the Halton-Peel Freeway (HPF-1/2) is the preferred north-south transportation corridor alternative. In **Section 5.5** we stated that the planned transportation network will not meet forecast travel demand generated by existing and future residents and employees in both Regions, and that therefore the Study Area needs new transportation solutions that will address the challenges and opportunities identified in problem statement.

Out of the four alternatives considered, only the Halton-Peel Freeway provides capacity, connectivity and network continuity sufficient to support Provincial Growth Plan goals, support planned growth in Halton (Sustainable Halton) and Halton Hills and support planned growth in Peel, Brampton and Caledon. Although the Brampton Arterial and Brampton Freeway options provide capacity and enhance to various degrees the network performance in Brampton, neither of these options benefits the entire Study Area while providing direct connectivity with the provincial network. Therefore, the Brampton Arterial and Brampton Freeway options do not address the first three points of the problem statement.

Disturbance to aquatic and terrestrial features of the Credit River, protected under the Green Belt Plan, is inevitable under each option other than the Do Nothing case. Potential impacts to watersheds, such as terrestrial and aquatic habitat disruption or loss, and impacts to wildlife movement, are also likely. However, in-depth environmental screening, Credit River crossing site selection and the set of mitigating measures established through the Environmental Assessment process could minimize the impacts. Air quality impacts can be mitigated by providing a transportation solution that maximizes the efficient movement of people and goods and minimizes congestion.

The Halton-Peel Freeway will ease transportation deficiencies in cross-border travel south of Embleton Road / 5 Sideroad, will provide for enhanced connectivity and continuity of the

transportation system across the Halton-Peel boundary, and will provide appropriate linkages to the existing arterial road network in Peel and Halton and to the new potential GTA West corridor. The Halton-Peel Freeway is the only alternative that is able to connect to both Highway 401 and 407 ETR and to provide a north-south linkage to the future GTA West Corridor.

Construction of the Halton-Peel Freeway will divert the inter-regional and long range trips away from the arterial and collector network within the Study Area, relieving congestion in Huttonville. The potential impact on existing residential areas caused by the Halton-Peel Freeway corridor is far less than the impact that would be caused by the Brampton Arterial and Brampton Freeway corridors. The Brampton Arterial would directly impact houses and businesses along Winston Churchill Boulevard south of 5 Sideroad / Embleton Road. The Brampton Freeway and its necessary service roads would negatively impact residences along Heritage Road and Huttonville.

The capacity, connectivity and continuity provided by the Halton-Peel Freeway will serve and benefit the entire Study Area. HPF option 1/2 has the potential to significantly decrease access time to the provincial and major regional network for residents of Georgetown. New growth in Georgetown planned in Sustainable Halton and ROPA 37 will need better, more direct access to 401 / 407. It is conceivable that ROPA 38 and its employment uses in the Winston Churchill Boulevard corridor, which were not directly assessed in HPBATS, will increase the pressure for capacity and access to the provincial network and the entire GTA. The Halton-Peel Freeway is well suited to provide sufficient transportation infrastructure to accommodate growth, as it is near to the ROPA 38 employment centre and ROPA 37 residential growth areas in Georgetown.

Although capacity provided by Brampton Arterial or Freeway option might meet the minimum requirements to accommodate growth in Brampton west, only the Halton-Peel Freeway provides direct access to the provincial network. Direct access to 401 / 407 is essential to businesses and residents of Bram West SP and North West Brampton and only the Halton-Peel Freeway has the ability to protect and enhance access to employment and residential lands in Brampton.

The Halton-Peel Freeway can serve as a multimodal corridor designed to provide HOV lanes for carpools and buses. Its advantageous location in Halton and Peel, as well as accessibility to 401/407 in the south and to Mayfield Road/future GTA West in the north, could be supplemented by strategically located carpool lots.

The Halton-Peel Freeway is the only corridor option capable of serving inter-regional transportation needs for the aggregate industry in Halton Hills and Brampton and for goods movement. Spanning both Peel and Halton and providing direct access to 401/407 and Mayfield Road/GTA West (in the future) the facility can be an attractive haul route for aggregate trucks, and inter-regional and provincial goods movement.

Disruption to the natural environment and consumption of some sections of agricultural land is unavoidable with any of the network alternatives aside from the Do Nothing case. As discussed earlier, the Halton-Peel Freeway will have least impact on existing communities, equal impact on environmental systems of the area as the Brampton Arterial and Brampton Freeway options would (Credit River crossing), and will have a somewhat higher impact on agricultural land. Proper and careful alignment selection should limit and mitigate the impacts of the facility. Environmental impacts to the Credit River Valley could be minimized, as there are opportunities to position the corridor east of Heritage Road and east of the boundaries with the Provincial Greenbelt area.

Table 7-16: Evaluation of North-South Alternatives

INDICATORS	MEASURES	Do Nothing	Option BA-2	Option BF-2	Option HPF-1/2
		DO NOTHING	BRAMPTON ARTERIAL From 407 ETR to Mayfield Road with connection to Highway 401 via Winston Churchill Blvd	BRAMPTON FREEWAY From 407 ETR to Mayfield Road with partial connection to Highway 401	HALTON-PEEL FREEWAY From Highway 401 / 407 ETR Interchange to Mayfield Road
TRANSPORTATION					
Network Capacity and Level of Service	Minimizes travel delay and maximizes the volume of people and goods transported by the network	Additional capacity of 2400 passenger cars per hour in each direction added to the Study Area network south of Embleton Rd / 5 Sideroad No additional capacity at the Credit River Severe capacity shortages across all northbound screenlines, from south of Highway 401 / 407 ETR to Bovaird Drive. Credit River screenline volume to capacity ratio (v/c) at 1.72. Westbound capacity deficiency east of Trafalgar (v/c of 1.01) and west of Winston Churchill Blvd (v/c of 0.92). 49.3% network congested 26.3% network with v/c > 0.9	Additional capacity of 5400 passenger cars per hour in each direction added to the Study Area network south of Embleton Rd / 5 Sideroad Additional capacity of 4000 passenger cars per hour at the Credit River Severe capacity shortages across all northbound screenlines, from south of Highway 401 / 407 ETR to Bovaird Drive. Credit River screenline volume to capacity ratio (v/c) at 1.29. Westbound capacity deficiency east of Trafalgar (v/c of 1.02) and west of Winston Churchill Blvd (v/c of 0.92). 46.9% network congested 26.3% network with v/c > 0.9	Additional capacity of 7400 passenger cars per hour in each direction added to the Study Area network south of Embleton Rd / 5 Sideroad Additional capacity of 5400 passenger cars per hour at the Credit River Capacity shortages across all NB screenlines, from south of Highway 401 / 407 ETR to Bovaird Drive. Credit River screenline volume to capacity ratio (v/c) at 1.28. Westbound capacity deficiency east of Trafalgar (v/c of 0.99) and west of Winston Churchill Blvd (v/c of 0.91). 44.9% network congested 25.2% network with v/c > 0.9	Additional capacity of 9600 passenger cars per hour in each direction added to the Study Area network south of Embleton Rd / 5 Sideroad Additional capacity of 7200 passenger cars per hour at the Credit River Capacity deficiency at the Credit River screenline (volume to capacity ratio (v/c) of 1.13) Westbound capacity deficiency east of Trafalgar (v/c of 0.97) and west of Winston Churchill Blvd (v/c of 0.91). 43.9% network congested 21.4% network with v/c > 0.9
Network connectivity and multimodality	Maximizes network connectivity to provincial and regional network	Limited north-south connectivity between Halton and Peel and with other arterials in Peel No access to Highway 401. Direct access to 407 ETR.	Good north-south connectivity across the Credit River. Direct access to Highway 401 via Winston Churchill Direct access to 407 ETR. Potential opportunity for a multi-modal corridor.	Good north-south connectivity across the Credit River. Partial access to Highway 401 and direct full access to 407 ETR. Opportunity for inter-regional multi-modal corridor.	Good north-south connectivity across the Credit River. Direct access to Highway 401 and 407 ETR Opportunity to connect to GTA multi-modal corridors.
Network continuity	Maximizes network continuity between Halton-Peel transportation network	Limited number of continuous north-south corridors across the Credit River	Additional continuous north-south corridor across the Credit River	Additional continuous north-south corridor across the Credit River	Additional continuous north-south corridor across the Credit River.
Traffic diversion	Maximizes traffic diversion away from Norval, Huttonville, Heritage and Embleton clusters	No traffic diversion	Moderate level of traffic diversion (20%)	High level of traffic diversion (24%)	High level of traffic diversion (25%)
Aggregate truck routing within the Study Area	Provides better connectivity and access between gravel producing quarries and new growth areas.	No improvement to truck routing.	New north-south corridor connection to 407 ETR and Highway 401.	New north-south corridor connection to 407 ETR and Highway 401.	New north-south corridor connection to 407 ETR and Highway 401.
Road Function	Road capacity and traffic volumes are consistent with road function	Traffic volume exceeds road capacity on Bram West arterial.	Road capacity is consistent with road function.	Requires service roads to provide capacity in Bram West. Impact on Bram West road network	Road capacity is consistent with road function.

INDICATORS	MEASURES	Do Nothing	Option BA-2	Option BF-2	Option HPF-1/2
Capacity Implications to other Arterial Roads within Study Area	Reduces the need for additional (beyond planned) capacity improvements to roads with the Study Area.	Requirement for additional 1-4 lanes of NB capacity and one lane of WB capacity. Significant additional capacity needs in Halton (9th Line and Trafalgar Rd, Winston Churchill Blvd) and in Brampton	Requirement for additional 1-3 lanes of NB capacity and one lane of WB capacity. Requires widening Winston Churchill Blvd to 6 lanes north of Steeles to NSTC. Additional capacity needs in Halton (9th Line and Trafalgar Rd)	Requirement for additional 1-4 lanes of NB capacity. Additional capacity needs in Halton (9th Line and Trafalgar Rd)	Requirement for an additional lane of directional capacity NB at the Credit River screenline. Additional capacity needs in Halton (9th Line or Trafalgar Rd)
Accommodation of Goods Movement	Sustains or improves the accessibility, mobility, and efficiency of goods movement	Poor connections for inter-regional goods movement. Poor access to Highway 401 and 407 ETR	Significant improvement to inter-regional goods movement on regional corridors. Direct access to Highway 401 and 407 ETR	Significant improvement to inter-regional goods movement on freeway corridor. Partial access to Highway 401 and direct access to 407 ETR.	Significant improvement to inter-regional goods movement on freeway corridor. Direct access to Highway 401 and 407 ETR
NATURAL ENVIRONMENT					
Terrestrial Features and Aquatic Habitat*	Minimizes adverse effects on natural vegetation Minimizes adverse effects on aquatic habitat	No direct adverse effects.	New Credit River crossing will affect terrestrial features, Greenland areas in Peel and might affect the Provincial Greenbelt. Impacts might be minimized if crossing located east of Heritage Road.	New Credit River crossing will affect terrestrial features, Greenland areas in Peel and might affect the Provincial Greenbelt. Impacts might be minimized if crossing located east of Heritage Road.	New Credit River crossing will affect terrestrial features, Greenland areas in Peel and might affect the Provincial Greenbelt. Impacts might be minimized if crossing located east of Heritage Road.
Air Quality**	Minimizes adverse effects on air quality and potential vehicle exhaust emissions	0.63 tonnes per capita per year of greenhouse gas emissions due to peak period congestion	0.63 tonnes per capita per year of greenhouse gas emissions due to congestion delays in the AM and PM peak periods	0.63 tonnes per capita per year of greenhouse gas emissions due to congestion delays in the AM and PM peak periods	0.63 tonnes per capita per year of greenhouse gas emissions due to congestion delays in the AM and PM peak periods
COMMUNITY					
Impact on existing or planned employment areas	Minimizes displacement / removal of businesses & employment use property from road improvements.	No direct physical impacts of road construction on employment areas. Limited accessibility to transportation corridors and employment / commercial markets.	Potential negative impact on Maple Lodge Farms and on lands to the north. Right of Way requirements will affect land inventory for future employment in Bram West Secondary Plan. Improvement in accessibility to / from employment areas.	No direct physical impacts of road construction on employment areas. Right of Way requirements for the core-collector system will have a significant negative impact on land inventory for future residential development in Bram West and North-West Brampton Secondary Plan. Improvement in accessibility to / from employment areas.	Impact on future employment lands in Halton Hills. Impact on land zoned employment along Steeles –Highway 401 corridor in Halton Hills Improvement in accessibility to / from employment areas.
Impact on existing or planned residential communities	Minimizes displacement / removal of residents & residential property from road improvements.	No direct physical impacts of road construction on residential areas. Poor accessibility to/from residential areas.	Negative impact on existing homes along Winston Churchill Blvd. Traffic impacts on residential development in Bram West Significant improvement in accessibility to / from residential areas.	No direct physical impacts of road construction on residential areas. Right of Way requirements for the freeway will have a negative impact on land inventory for future residential development in Bram West and North-West Brampton Secondary Plan. Significant improvement in accessibility to/from residential areas.	No direct physical impacts of road construction on residential areas. Right of Way requirements for the freeway will have a negative impact on land inventory for future residential development in Bram West and North-West Brampton Secondary Plan. Significant improvement in accessibility to/from residential areas.
Impact on quality of life	Maximizes improvement in quality of life for the residents of local communities measured in exposure to traffic, pollution and noise.	Negative impact on quality of life.	No noticeable improvement to quality of life	No noticeable improvement to quality of life	Significant improvement to quality of life.
Impact on existing agricultural areas	Minimizes impact on existing agricultural areas.	No direct physical impacts of road construction on agricultural areas.	Impact to existing agricultural lands in Peel	Impact to existing agricultural lands in Peel	Impact to existing agricultural lands in Peel and Halton

INDICATORS	MEASURES	Do Nothing	Option BA-2	Option BF-2	Option HPF-1/2
ECONOMIC					
Impacts on Study Area economy	Minimizes congestion and maximizes accessibility to businesses within the Study Area	Annual cumulative hours of congestion (in millions): 10.1 hours	Annual cumulative hours of congestion (in millions): 9.0 hours	Annual cumulative hours of congestion (in millions): 8.8 hours	Annual cumulative hours of congestion (in millions): 7.9 hours
Impact on natural resource	Minimizes impact and maximizes access to natural resources	No impact	No impact	No impact	Some shale resources in Halton may be impacted, but access is improved
Impacts on delay and cost of travel	Minimizes travel time and cost of travel	Estimated total travel time on roads in the Study Area (hours): 19,350	Estimated total travel time on roads in the Study Area (hours): 18,780	Estimated total travel time on roads in the Study Area (hours): 18,530	Estimated total travel time on roads in the Study Area (hours): 18,040
COST					
Capital Cost	Minimizes construction costs	\$35 M	\$175 M	\$344 M	\$370-380 M
Utilities	Minimizes utility conflicts (Hydro lines and TransCanada Pipeline)	No utility conflicts.	Potential conflicts with TransCanada Pipeline.	Potential utility conflicts. Impact on hydro corridor and Parkway Belt utility corridor.	Potential utility conflicts. Impact on hydro corridor and Parkway Belt utility corridor.
Property Acquisition	Minimizes property needs	Land requirements (acres): 27	Land requirements (acres): 168	Land requirements (acres): 590	Land requirements (acres): 656 to 660 for HPF-1 and HPF-2, respectively.
Feasibility	Engineering feasibility and acceptability to agencies	Good level of engineering feasibility Likely to be accepted by MTO and 407 ETR	Good level of engineering feasibility Likely to be accepted by MTO and 407 ETR	Questionable engineering feasibility due to close spacing of interchanges and environmental impacts Unlikely to be approved by MTO and 407 ETR.	Good level of engineering feasibility Likely to be accepted by MTO and 407 ETR

*Note: A more detailed description of environmental impacts in terms of construction effects, short-term effects and long-term effects. Construction effects include, but are not limited to, loss of habitat, loss of biota and impacts to hydrology. Short-term impacts include, but are not limited to, the creation of a new microclimate, plant mortality, habitat loss, wildlife disturbance and traffic-related wildlife deaths. Long-term effects include, but are not limited to, loss of habitat, fragmentation of habitat, continued traffic-related wildlife deaths, change in biological communities, run-off from the road, litter, noise, emissions and other physical disturbance. The only option which has no impacts on the aquatic and terrestrial environment is the Do Nothing case and this is reflected in the analysis table presented above. A more detailed assessment of the environmental impacts of different alternatives will be undertaken in the later stages of the Environmental Assessment process.

*Note: Future GHG estimates account for improvements in vehicle emissions. The 24% GHG decrease by 2031 is based on the average 0.94% per annum decreased in GHG emissions observed in Canada in transportation sector (small and large cars only) between 1997 and 2006 and reported by Natural Resources Canada (<http://oee.nrcan.gc.ca/corporate/statistics>).

Table 7-17: North-South Alternatives Evaluation

Indicators/Options	DO NOTHING	Option BA-2 BRAMPTON ARTERIAL from 407 ETR to Mayfield with connection to 401 via WCB	Option BF-2 BRAMPTON FREEWAY from 407 ETR to Mayfield with partial connection to Highway 401	Option HPF-1/2 HALTON-PEEL FREEWAY from Highway 401/407 Interchange to Mayfield
Transportation Service Impacts				
Impacts on Natural Environment				
Community Impacts				
Economic Impacts				
Construction Costs				
OVERALL	Not Recommended	Not Recommended	Not Recommended	Carry Forward

LEGEND

Most preferred

 Least preferred

Criteria	Relative Weighting
Transportation	✓✓
Natural Environment	✓✓✓
Community	✓✓
Economic	✓✓
Cost	✓

7.3 East-West and Norval Network Alternatives

The east west network needs were assessed in two rounds of modelling and evaluation. The first round was completed on the preliminary networks and included the north-south corridor represented by Brampton Arterial Option 1 (BA-1). The second round of assessments involved sensitivity testing of the “promising” east-west alternatives identified in the preliminary assessment in conjunction with the preferred north-south corridor option - Halton Peel Freeway Options 1 and 2 (HPF-1 and HPF-2).

The study also assessed needs for capacity improvements around Norval.

The Norval network alternatives include:

- Norval West Bypass
- Winston Churchill Bypass
- Adamson Road North Bypass
- Other roads

The East-West alternatives assessed in this study include:

- East-west connection to Williams Parkway
- East-west connection to Bovaird / Highway 7 south
- East-west connection to Bovaird / Highway 7 north
- Georgetown north connection

Assessment of the Norval network alternatives and East-West alternatives included a Do Nothing option.

7.3.1 Do Nothing

The “Do Nothing” case developed for the assessment of east-west travel and the road network around Norval includes the road and transit network already planned by the province and municipalities, as discussed in **Section 6.2**.

The NSTC has been coded to the Do Nothing network as an arterial road providing 4 lanes of capacity per direction between 407 ETR and Bovaird Drive and 3 lanes per direction between Bovaird Drive and Mayfield Road. In this option the NSTC corridor is located in Brampton somewhere between Mississauga Road and Winston Churchill Boulevard. The Norval Bypass is not included in the “Do Nothing” alternative. The Do Nothing scenario for the analysis of the east-west travel is essentially the NSTC option BA-1.

There are two main reasons that the NSTC corridor was included in the framework of the Do Nothing network:

- To account for the potential shifts of traffic from east-west to north-south triggered by the provision of sufficient north-south capacity

- To eliminate the risk of providing redundant road links or unnecessary crossings of the Credit River

Travel and operational conditions on the “Do Nothing” road network within the Study Area are extremely low, with 46.3% lane kilometres of roads congested. As illustrated in **Table 7-18** and **Table 7-19**, all roads south of Bovaird Drive / Highway 7 are approaching or at capacity.

The westbound volume on Highway 7 increases from 900 auto-drivers simulated for 2006 to 1,400 auto driver trips forecasted for 2031. The eastbound volume is expected to increase by 50%. WB movement is well over the average operating capacity of 900-1,000 autos / lane. At the same time, 1,260 northbound auto-driver trips have been assigned on Adamson Road south of Highway 7.

The Credit River (NB screenline 4B), Highway 7 and 10 Sideroad west of Adamson (WB screenline 3B) and Highway 7 east of Adamson Road (WB screenline 3C) screenlines are critical. All three screenlines show significant over capacity demand of 1.25, 1.3 and 1.15, respectively. Northbound travel on all roads under NB screenline 3A in Halton are also over capacity (V/C of 1.14).

7.3.2 Norval Network Alternatives

7.3.2.1 Norval West Bypass

The connecting link between 10 Sideroad and Highway 7 / Guelph Street located east of Silver Creek valley has been identified in earlier studies (see **Exhibit 6-8**). The southern terminus of the link could be located somewhere between the intersection of 10 Sideroad / 10th Line and 10 Sideroad east of Adamson Road. Highway 7 would intersect this road from the east at a T-intersection. Highway 7 west of the intersection, currently at 3 to 4-lanes, will require widening to provide a consistent 4-lane of capacity. The Norval West Bypass link could be between 800 meters and one kilometre long.

The results of modelling numerous network configurations developed and assessed during the course of the HPBATS study showed that provision of this connection, more so in combination with Winston Churchill Bypass, had a measurable positive effect on traffic flow through Norval and Adamson Road South. In combination with a Winston Churchill Bypass, this two-lane link would provide significant benefits. Highway 7 traffic through Norval would decrease from 1,400 to 500 vehicles per hour, while traffic on Adamson Road south of Norval would drop from 1,200 to 500 vehicles per hour.

The need for the Norval West Bypass was assessed with Halton-Peel Freeway Options 1 and 2. In Options 1 and 2, the Bypass performs very well and carries significant northbound volumes exiting off the HPF, diverting them away from Norval and Adamson Road South. Considering the significant benefits to the community, it can be concluded that this north-

south bypass west of Norval (in combination with a Winston Churchill bypass) is a key element of the future road network.

A future environmental assessment will identify alternative alignments for this facility and evaluate the impacts of the alternatives, considering major features, such as:

- The Silver Creek Greenland A area
- Impacts on existing and planned residential areas
- Impacts on businesses

7.3.2.2 Winston Churchill Bypass

The alternative of bypassing the existing Winston Churchill Boulevard between 10 Sideroad and 5 Sideroad was identified through public consultation, raised by residents located on Winston Churchill Boulevard north of 5 Sideroad. Residents living along Winston Churchill Boulevard are experiencing increased traffic, noise impacts, and impacts on wells. Without a bypass, conditions will worsen as traffic increases.

As a four-lane arterial road, the Winston Churchill bypass would run in a north-south direction from a location north of 5 Sideroad / Embleton Road to 10 Sideroad. The Bypass would then connect with the proposed north-south bypass west of Norval to provide a linkage to Highway 7 (Guelph Street). It would become the main north-south arterial route west of the Credit River and divert traffic from the existing Winston Churchill Boulevard north of 5 Sideroad. The part of Winston Churchill Boulevard currently north of the junction with the Winston Churchill Bypass would remain as a 2-lane road and serve local trips. Improvements planned by Peel and Halton for Winston Churchill Boulevard south of the junction will still be required.

Auto assignment to Winston Churchill and the subsequent diversion of traffic away from Winston Churchill Boulevard ranges from over 1,200 in the preliminary analysis (with BA-1) to 1,700 in analysis with Halton Peel Options 1 and 2.

The Queen of Peace Croatian Franciscan Centre is a key feature to be considered during the development and evaluation of alternatives for the Winston Churchill Bypass. It has significant institutional and community importance. A future environmental assessment for the Winston Churchill Bypass should consult with the Centre.

7.3.2.3 Adamson Road North Bypass

By 2031, traffic on Adamson Road north of Norval is estimated to quadruple compared to 2006-2007 levels, even with planned improvements in the Study Area. The increased traffic will exert more pressure on the Adamson / Highway 7 intersection, worsen operating conditions on a highly constrained section north of Noble Street and across the Credit River bridge, and adversely impact the quality of life for residents living in this part of Norval and along Winston Churchill Boulevard north of Old Pine Crest Road.

The proposed Adamson Road North Bypass could consist of a collector road or a combination of two collector roads that will be part of the Northwest Brampton Secondary Plan Area road network. The goal of the Adamson Road North Bypass facility would be to divert traffic generated by areas north of Old Pine Crest Road and travelling to / from Brampton by providing a new connection between Winston Churchill Boulevard and Bovaird Drive. The Bypass has the potential to divert 300 vehicles per hour from Adamson Road.

Based on the results of this study, the Adamson Road North Bypass is recommended for inclusion in the Northwest Brampton Secondary Plan Area road network.

7.3.2.4 Other Roads

Roads in southern parts of Halton Hills will experience higher volumes of traffic. Network sensitivity analysis with the Halton-Peel Freeway confirmed that the planned widening for Trafalgar Road and Ninth Line from 2 to 4 lanes should be sufficient to accommodate future traffic; however, rural roads such as 8th Line, 10th Line and 5 Sideroad located south of Georgetown will experience capacity deficiencies. Currently, these three roads function as rural local roads, providing maximum capacity of 400-500 vehicles per lane. This capacity will not be sufficient in the future. In 2031 the assignment volumes on various sections of 8th Line, 10th Line and 5 Sideroad exceed 500 auto-driver trips / lane. Increasing the capacity to 600-700 vehicles / lane, the capacity of standard two-lane rural collector roads, should be sufficient to meet these needs.

Further improvements to these roads and particularly Tenth Line north of 5 Sideroad will have to be considered once the alignment of the Halton Peel Freeway is finalized.

7.3.3 East West Alternatives

The assessment of the east-west network alternatives included a number of analyses with additional road network options. The network options that were analysed are described in **Section 6.3.3**. In this section, we discuss the results of the analyses of the initial four options (with BA-1 assumed for NSTC) and the subsequent sensitivity analysis completed afterwards including HPF 1 / HPF-2.

In general, it is assumed that all options of the East-West connections, with the exception of the Do-Nothing alternative, would provide four lanes of capacity at a speed of 80 km / hr and would be supported by the Norval West Bypass (the connecting link between Guelph Street / Highway 7 and 10 Sideroad) and already planned capacity improvements to 10 Sideroad and Trafalgar Road. Highway 7 through Norval and Georgetown will provide two and four lanes of capacity respectively. Capacity reduction to 400 autos / lane was applied to Adamson Road south of Highway 7.

7.3.3.1 Analyses

Travel and operational conditions on the Study Area screenlines for the East-West Option are illustrated in **Table 7-18** and **Table 7-19**. Screenline points located south of 10 Sideroad / Highway 7 and across the Credit River capturing Northbound travel (Screenlines 3A, 3B and 4B) as well as selected screenline points capturing Westbound travel (3A, B, C and 4A, B, C) are considered relevant for this assessment.

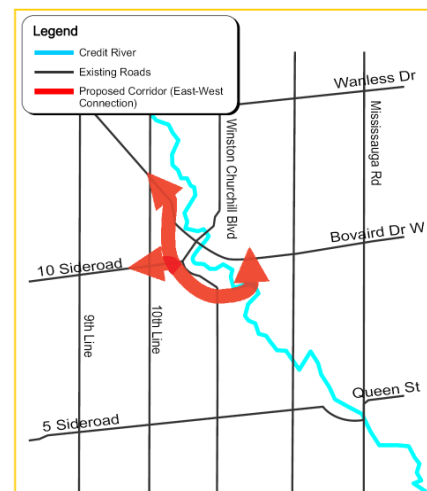
Below we have provided a high-level discussion about the results of the preliminary analysis. A detailed evaluation table and evaluation summary for East-West Connections are presented in **Table 7-20** and **Table 7-21**.

All options for the East-West Connections would provide four lanes of capacity. It is assumed that the Norval West Bypass (the connecting link between Guelph Street / Highway 7 and 10 Sideroad) and already planned capacity improvements to 10 Sideroad, Trafalgar Road and Highway 7 will be in-place. Option 1 - Do Nothing is discussed in **Section 7.3.1**

Option 2 – New Connection to Bovaird South

This option requires a new crossing of the Credit River, as it connects from 10 Sideroad to Bovaird Drive with a “bow” connection south of Bovaird. It would cross the Credit River Valley and the Provincial Greenbelt where the valley is relatively narrow but steep.

This option adds capacity to heavily congested Credit River screenline; however the screenline (NB screenline 4B) is still over capacity (at 1.19). Northbound travel on all roads under NB screenline 3A in Halton has improved as compared to Do Nothing but remain over capacity at 1.05.



There is significant improvement to Westbound travel on Highway 7 and 10 Sideroad west and east of Winston Churchill Boulevard / Adamson Road. With the new connection the volume to capacity ratio estimated for these two screenlines is 0.89 (WB 3B) and 0.42 (WB 3C). Westbound travel south of 10 Sideroad east of Winston Churchill Boulevard (WB 4C) has improved from 1.0 in Do Nothing to 0.80.

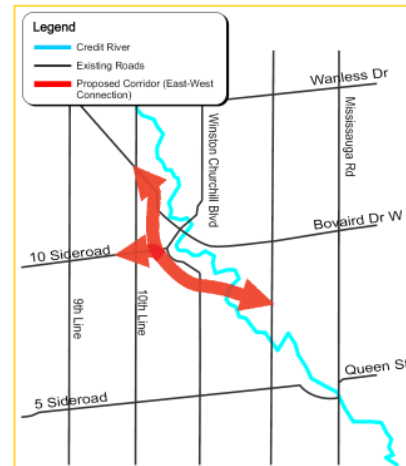
The new East-West link attracts approximately 800 auto-driver trips eastbound and 650 trips westbound. Together with the East-West Connection, the connection to the Bovaird South option relieves Norval and shifts traffic flow away from the community. The connection also provides additional capacity across the Credit River and some capacity relief to NSTC BA-1. Considering that this option connects major aggregate extraction sites in the west (Acton Quarry) with major aggregate markets in the east (North West Brampton) it could

significantly divert aggregate truck travel away from Norval, Maple Avenue and even River Road in north Georgetown. Moreover, its direct connection with the Georgetown Business Park along Armstrong and access to Bovaird- NSTC could stimulate diversion of goods movement trucks.

Option 3 – New Connection to Williams Parkway

This option, like Option 2, will require a new crossing of the Credit River to connect from 10 Sideroad to the future Williams Parkway with a direct, straight-line connection further south of Bovaird. It would cross the Credit River Valley and the Provincial Greenbelt where the valley is not particularly steep and is wider than the crossing location in Option 2.

The Credit River screenline (NB screenline 4B) is over capacity (at 1.20). Northbound travel on all roads under NB screenline 3A in Halton remains over capacity at 1.05.

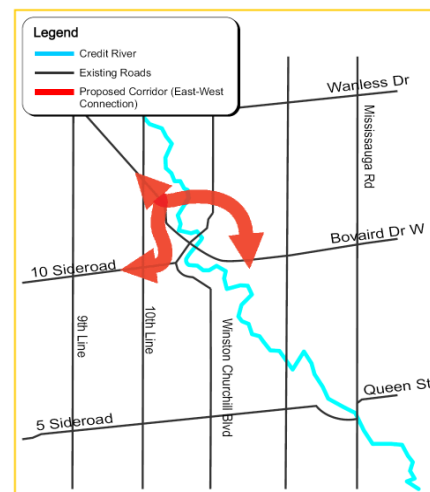


This option provides significant improvement to Westbound travel on Highway 7 and 10 Sideroad west and east of Winston Churchill Boulevard / Adamson Road. With the new connection, the volume to capacity ratio estimated for these two screenlines is 0.89 (WB 3B) and 0.37 (WB 3C). Westbound travel south of 10 Sideroad east of Winston Churchill Boulevard (WB 4C) has improved from 1.0 in Do Nothing to 0.83.

This option attracts less traffic than Option 3 (WB shows 600 auto volume). Its routing takes users away from Bovaird Drive and into residential subdivisions along Williams Parkway. Due to its lack of connectivity with Bovaird Drive and an eastern terminus away from the aggregate markets of North West Brampton, it may not attract as many aggregate trucks as Option 2. In this case, it would be more desirable for them to stay on Highway 7 or River Drive instead of diverting south and away from their eventual destination.

Option 4 – New Connection to Bovaird Drive North

Option 4 connects Highway 7 and Bovaird Drive with a bow type connection north of Bovaird Drive. This option has a new link crossing the Credit River Valley and the Provincial Greenbelt at a wide and shallow section that contains numerous terrestrial features, flood plains, habitat restoration areas, the Georgetown Credit River Valley Regional Life Sciences Area of Natural and Scientific Interest, the Upper Canada College Education Centre, protected agricultural areas and residential properties.



This option does not provide capacity relief for the Credit River screenline (NB screenline 4B). The screenline is over capacity, with a volume to capacity ratio of 1.26. Northbound travel on all roads under NB screenline 3A in Halton is higher than Option 1 Do Nothing (at 1.19) indicating lack of congestion relief to roads located in the south of Georgetown.

This option provides the best benefits to Westbound travel on Highway 7 and 10 Sideroad west and east of Winston Churchill Boulevard / Adamson Road. With the new connection included, the volume to capacity ratio estimated for these two screenlines is 0.78 (WB 3B) and 0.47 (WB 3C). Westbound travel south of 10 Sideroad east of Winston Churchill Boulevard (WB 4C) has a volume to capacity ratio of 0.78.

Even though the environmental and socio-economic impacts are considerable, this option has its merits from a transportation perspective. It provides the shortest path connection between Georgetown and the Bovaird Drive corridor, attracts approximately 1,200 eastbound auto-driver trips, and reduces volumes on Regional Road #23 / River Drive, Mountainview Road (NB down by 12%) and Trafalgar Road. Its directness makes it an attractive corridor for goods movement and aggregate travel as well as for potential future transit links between Georgetown and Brampton.

Table 7-18: East-West Connection – Northbound Travel, 2031 PM Peak Hour, Volume to Capacity Ratios

Screenline	ID	Halton	Peel	Screenline Total
		A	B	
EW Option 1 - Do Nothing				
South of 27 Sdrd / King St	1	0.71	0.29	0.48
Georgetown N / S of Mayfield	2	0.73	0.28	0.4
South of 10 Sdrd / Highway 7	3	1.14	0.87	0.95
Credit River	4		1.25	1.25
South of 5 Sdrd/ Embleton / Queen	5	0.99	1.05	1.03
South of Steeles	6	1.28	0.94	1.05
South of 401 / 407	7	0.89	0.94	0.92
EW Option 2				
South of 27 Sdrd / King St	1	0.66	0.39	0.51
Georgetown N / S of Mayfield	2	0.7	0.31	0.41
South of 10 Sdrd / Highway 7	3	1.05	0.83	0.89
Credit River	4		1.19	1.19
South of 5 Sdrd/ Embleton / Queen	5	1.01	1.02	1.02
South of Steeles	6	1.31	0.96	1.07
South of 401 / 407	7	0.89	0.9	0.89
EW Option 3				
South of 27 Sdrd / King St	1	0.67	0.4	0.52
Georgetown N / S of Mayfield	2	0.7	0.3	0.41
South of 10 Sdrd / Highway 7	3	1.05	0.84	0.91
Credit River	4		1.2	1.2
South of 5 Sdrd/ Embleton / Queen	5	1.01	1.02	1.01
South of Steeles	6	1.31	0.96	1.07
South of 401 / 407	7	0.89	0.9	0.9
EW Option 4				
South of 27 Sdrd / King St	1	0.68	0.4	0.52
Georgetown N / S of Mayfield	2	0.7	0.31	0.41
South of 10 Sdrd / Highway 7	3	1.19	0.87	0.97
Credit River	4		1.26	1.26
South of 5 Sdrd/ Embleton / Queen	5	1.01	1.01	1.01
South of Steeles	6	1.3	0.95	1.06
South of 401 / 407	7	0.88	0.9	0.89

Table 7-19: East-West Connection – Westbound Travel, 2031 PM Peak Hour, Volume to Capacity Ratios

Screenline	ID	East of Trafalgar	West of WCB	East of WCB	West of Chinguacousy
		A	B	C	D
EW Option 1 Do Nothing					
North of Georgetown / Caledon	1	0.38	0.8	0.64	0.91
North Brampton	2			0.12	1.13
Georgetown-Norval-Highway 7	3	0.57	1.30*	1.15**	1.29
South of Georgetown / South Brampton	4	0.99	0.97	1	1.43
Highway 401 and 407	5	1.37	0.9	0.95	1.13
Screenline total:	-	1.01	0.92	0.85	1.16
EW Option 2					
North of Georgetown / Caledon	1	0.6	0.77	0.73	0.93
North Brampton	2			0.12	1.13
Georgetown-Norval-Highway 7	3	0.55	0.89*	0.42***	1.29
South of Georgetown / South Brampton	4	1.02	0.96	0.8	1.44
Highway 401 and 407	5	1.36	0.9	0.95	1.13
Screenline total:	-	1.01	0.89	0.78	1.17
EW Option 3					
North of Georgetown / Caledon	1	0.59	0.77	0.72	0.93
North Brampton	2			0.12	1.13
Georgetown-Norval-Highway 7	3	0.55	0.89*	0.37***	1.3
South of Georgetown / South Brampton	4	1.01	0.93	0.83	1.43
Highway 401 and 407	5	1.36	0.9	0.95	1.13
Screenline total:	-	1.01	0.89	0.77	1.17
EW Option 4					
North of Georgetown / Caledon	1	0.59	0.77	0.73	0.93
North Brampton	2			0.12	1.13
Georgetown-Norval-Highway 7	3	0.54	0.78*	0.47***	1.3
South of Georgetown / South Brampton	4	0.99	0.97	0.78	1.45
Highway 401 and 407	5	1.37	0.9	0.95	1.13
Screenline total:	-	1.01	0.88	0.78	1.17

* V/C for Highway 7 and 10 Sideroad west of Adamson Road

**V/C for Highway 7 east of Adamson Road

*** V/C for Highway 7 and East-West Connection east of Adamson Road

7.3.3.2 East-West Connection Sensitivity Testing

The sensitivity analysis was completed for the “most promising” East-West Connections including Option 2 “New Link South of Norval from 10 Sideroad to Bovaird Drive” and Option 4 “New Link North of Norval to Bovaird Drive”. The main goal of the sensitivity analysis was to validate the need for either of the Bypasses in the case where Halton Peel Freeway Option 1 or 2 has been implemented.

The analyses were based on the HPBATS integrated network, defined as a network inclusive of all planned improvements except for the widening of Winston Churchill Boulevard beyond its current two-lane width north of the junction of the Winston Churchill Bypass and Winston Churchill Boulevard. The following road improvements were included in this analysis: The Norval West Bypass, the Adamson Road North Bypass, the Bramwest Parkway extending from Heritage Road / 407 ETR to its terminus with the Halton-Peel Freeway, and Halton Peel Freeway Options 1 and 2. The observations are discussed below.

Sensitivity Test 1 – Conditions without Additional East-West Connection

Without the additional capacity provided by the East-West connection the Credit River Screenline is over capacity with a volume to capacity ratio of 1.06.

The provision of the Winston Churchill Bypass and the Norval West Bypass eliminates congestion problems through Norval. Without the additional East-West connection, goods movement and aggregate trips will be forced to travel through Norval. Lack of right of way precludes the provision of higher order transit on Highway 7 through Norval.

Sensitivity Test 2 - East-West Connection Option 2 in Conjunction with HPF-1 / HPF-2

With the additional capacity provided by the East-West Connection Option 2, the Credit River Screenline volume to capacity ratio decreases to 0.89. Option 2 supports the HPF and other roadways crossing the Credit River by providing additional capacity. The link attracts approximately 1,200 auto driver trips moving east (towards Brampton) and 400 auto-driver trips moving west (towards Georgetown).

The results indicate that Option 2, in conjunction with the Winston Churchill Bypass and Norval West Bypass, entirely eliminates congestion problems and Norval through-travel.

Sensitivity Test 3 - East-West Connection Option 4 in Conjunction with HPF-1 / HPF-2

When located north of Bovaird Drive, the East-West Connection Option 4 benefits the Credit River screenline and provides a direct bypass of Norval along Highway 7. The Credit River volume to capacity ratio decreases to 0.93. Option 4 is more attractive for transit and goods movement as it provides direct linkage between Brampton and Georgetown; Option 2 is more attractive for aggregate truck travel while providing a better overall Credit River Screenline volume to capacity ratio.

Including the Winston Churchill Bypass and Norval West Bypass in this combination also eliminates congestion problems through Norval. Option 4 attracts fewer trips than Option 2 (1200 WB auto trips in Option 2 and 720 WB auto trips in Option 4).

7.3.3.3 Evaluation

The detailed analysis and evaluation of the East-West Connection options are presented in **Table 7-20** and **Table 7-21**, respectively. The evaluation is based on the evaluation results discussed in **Section 7.3.3.1**.

Table 7-20: East-West Options Analysis

INDICATORS	MEASURES	Option 1	Option 2	Option 3	Option 4
		DO NOTHING – No Georgetown-Norval Bypass	New Link South of Norval to Bovaird	New Link to Williams Parkway	New Link North of Norval to Bovaird Drive
TRANSPORTATION					
Network Capacity and Level of Service	Minimizes travel delay and maximizes the volume of people and goods transported by the network	No additional capacity across the Halton-Peel boundary.	Additional capacity of 1600 passenger cars per hour in each direction across the Halton-Peel boundary.	Additional capacity of 1600 passenger cars per hour in each direction across the Halton-Peel boundary.	Additional capacity of 1600 passenger cars per hour in each direction across the Halton-Peel boundary.
Network connectivity and multimodality	Maximizes network connectivity to provincial and regional network	Limited east-west connectivity between Halton and Peel along the Highway 7 / Bovaird. corridor Limited access to North-South Transportation Corridor.	New east-west link between Halton and Peel along the Highway 7/ Bovaird corridor. Improved access to NW Brampton. Additional direct access to North-South Transportation Corridor. Opportunity for interregional transit service on Bovaird Drive – Guelph Street.	New east-west link between Halton and Peel, but not to a regional corridor in Peel. Additional but limited direct access to North-South Transportation Corridor.	New east-west link between Halton and Peel along the Highway 7 Bovaird corridor. Improved access to North-West Brampton. Additional direct access to North-South Transportation Corridor. Opportunity for interregional transit service on Bovaird Drive – Guelph Street.
Network continuity	Maximizes network continuity between Halton-Peel transportation network	Limited number of continuous, high capacity roads between Halton and Peel	Enhanced east-west high capacity link between Halton and Peel along the Highway 7 / Bovaird corridor.	New link between Halton and Peel, but not to the Bovaird corridor. Impact on Williams Parkway	Enhanced east-west high capacity link between Halton and Peel along the Highway 7 / Bovaird corridor.
Traffic diversion	Maximizes traffic diversion away from Norval and Georgetown	No traffic diversion from Norval. Significant congestion in Norval.	Significant traffic diversion from Norval. Congestion relief in Norval.	Some traffic diversion from Norval. Some congestion relief in Norval.	Significant traffic diversion from Norval. Congestion relief in Norval.
Aggregate truck routing within the Study Area	Provides better connectivity and access between gravel producing quarries and new growth areas.	No improvements in aggregate truck routing. High truck traffic impacts in Norval.	Significant improvement in aggregate truck routing. Low truck traffic impact in Norval.	Some improvements in aggregate truck routing. Moderate truck traffic impacts in Norval. Additional truck traffic impacts on residential development along Williams Parkway, which is currently restricted to truck traffic.	Significant improvement in aggregate truck routing. Low truck traffic impact in Norval.
Road Function	Road capacity and traffic volumes are consistent with road function	Traffic volume exceeds road capacity (Guelph St and Adamson) and is inconsistent with road functions (Adamson).	Road capacity and traffic volumes are consistent with road function.	Road capacity and traffic volumes are consistent with road function in Halton. Truck routing inconsistent with road function of Williams Parkway.	Road capacity and traffic volumes are consistent with road function.
Capacity Implications to other Arterial Roads within Study Area	Reduces the need for additional (beyond planned) capacity improvements to roads with the Study Area.	1.30 westbound volume to capacity ratio at screenline west of Winston Churchill Blvd Requirement for additional one lane directional capacity.	0.89 westbound volume to capacity ratio at screenline west of Winston Churchill Blvd No need for additional capacity.	0.89 westbound volume to capacity ratio at screenline west of Winston Churchill Blvd No need for additional capacity.	0.78 westbound volume to capacity ratio at screenline west of Winston Churchill Blvd No need for additional capacity.
Accommodation of Goods Movement	Sustains or improves the accessibility, mobility, and efficiency of goods movement	Poor connections for inter-regional goods movement.	Significant improvement to inter-regional goods movement on regional corridors.	Some improvements to inter-regional goods movements, but Williams Parkway is not a major truck route.	Significant improvement to inter-regional goods movement on regional corridors.

INDICATORS	MEASURES	Option 1	Option 2	Option 3	Option 4
NATURAL ENVIRONMENT*					
Terrestrial Features and Aquatic Habitat	Minimizes adverse effects on natural vegetation Minimizes adverse effects on aquatic habitat	No direct adverse effects.	Significant impacts. New Credit River crossing will affect terrestrial features, Greenland A and B in Halton, Greenland areas in Peel and the Provincial Greenbelt.	Significant impacts. New Credit River crossing will affect terrestrial features, Greenland A and B in Halton, Greenland areas in Peel and the Provincial Greenbelt.	Significant impacts. New Credit River crossing will affect terrestrial features, Greenland A and B in Halton, Greenland areas in Peel and the Provincial Greenbelt.
Air Quality	Minimizes adverse effects on air quality and potential vehicle exhaust emissions	No measurable differences between options. Air Quality not reported			
COMMUNITY					
Impact on existing or planned employment areas	Minimizes displacement / removal of businesses & employment use property from road improvements.	No direct physical impacts of road construction on employment areas.	No direct physical impacts of road construction on employment areas.	No direct physical impacts of road construction on employment areas.	No direct physical impacts of road construction on employment areas.
Impact on existing or planned residential communities	Minimizes displacement / removal of residents & residential property from road improvements.	Continuing traffic impacts on Norval.	Significant reduction of traffic impacts on Norval.	Some reduction of traffic impacts on Norval. Traffic impacts on residential community along Williams Parkway	Significant reduction of traffic impacts on Norval.
Impact on quality of life	Maximizes improvement in quality of life for the residents of local communities measured in exposure to traffic, pollution and noise.	Direct negative impacts to quality of life for residents of Norval	Significant improvement to conditions in Norval.	Partial improvement to quality of life for residents of Norval Direct negative impacts to quality of life for residents along Williams Parkway	Significant improvement to conditions in Norval.
Impact on existing agricultural areas	Minimizes impact on existing agricultural areas.	No direct physical impacts of road construction on agricultural areas.	No direct physical impacts of road construction on agricultural areas.	No direct physical impacts of road construction on agricultural areas.	No direct physical impacts of road construction on agricultural areas.
ECONOMIC					
Impacts on Study Area economy	Minimizes congestion and maximizes accessibility to businesses within the Study Area	Annual cumulative hours of congestion (in millions): 2.55 No impact to natural resources, but access is limited	Annual cumulative hours of congestion (in millions): 2.30 Access for aggregate industry improved across Halton-Peel border	Annual cumulative hours of congestion (in millions): 2.30 Access for aggregate industry improved across Halton-Peel border	Annual cumulative hours of congestion (in millions): 2.39 Access for aggregate industry improved across Halton-Peel border
Impact on natural resource	Minimizes impact and maximizes access to natural resources	No direct physical impacts of road construction on natural resources.	No direct physical impacts of road construction on natural resources.	No direct physical impacts of road construction on natural resources.	No direct physical impacts of road construction on natural resources.
Impacts on delay and cost of travel	Minimizes travel time and cost of travel	Estimated total travel time on roads in the vicinity of the GNB (hours): 4,250	Estimated total travel time on roads in the vicinity of the GNB (hours): 4,060	Estimated total travel time on roads in the vicinity of the GNB (hours): 4,060	Estimated total travel time on roads in the vicinity of the GNB (hours): 4,140
COST					
Capital Cost	Minimizes construction costs	No capital costs required.	\$85 M	\$80 M	\$88 M
Property Acquisition	Minimizes property needs	No property needs	Land requirements (acres): 50	Land requirements (acres): 30	Land requirements (acres): 60

*Note: A more detailed description of environmental impacts is not provided because all East-West Connection options have similar environmental impacts, in terms of construction effects, short-term effects and long-term effects. Construction effects include, but are not limited to, loss of habitat, loss of biota and impacts to hydrology. Short-term impacts include, but are not limited to, the creation of a new microclimate, plant mortality, habitat loss, wildlife disturbance and traffic-related wildlife deaths. Long-term effects include, but are not limited to, loss of habitat, fragmentation of habitat, continued traffic-related wildlife deaths, change in biological communities, run-off from the road, litter, noise, emissions and other physical disturbance. The only option which has no impacts on the aquatic and terrestrial environment is the Do Nothing case and this is reflected in the analysis table presented above. A more detailed assessment of the environmental impacts of different alternatives will be undertaken in the later stages of the Environmental Assessment process.

The East-West Connection is vital for responding to challenges identified by the Problem Statement, and is necessary for ensuring the suitability of the transportation network in the area. It provides a viable solution for the provision of a transit corridor and goods movement / aggregate corridor. The East-West Connection is also essential for meeting capacity and connectivity demands across the critical Credit River screenline. The East-West Connection serves Georgetown and Brampton equally and serves Halton and Peel equally.

Options 2 and 4 address and respond to the challenges identified in Problem Statement better than Option 3.

Options 2, 3 and 4 all support Provincial Growth Plan goals and provide support for planned growth in Halton (Sustainable Halton), Halton Hills and Brampton. Neither of the options has impact on growth in Caledon. These options are also capable of addressing outstanding transportation capacity deficiencies in cross-border travel, in North Halton, Peel and Norval.

Options 2 and 4, the East-West Connections south and north of Bovaird Drive, both greatly enhance connectivity and continuity of the transportation system across the Halton-Peel boundary and provide linkages to the Halton-Peel Freeway and arterial networks in North Halton and Peel. Further to that, these Options provide a continuous, high-standard east-west arterial connection between Guelph Street (Highway 7) in Georgetown and Bovaird Drive in Georgetown. They would provide a suitable east-west multi-modal corridor to serve trucks and an east-west transit route connecting Georgetown and Brampton.

Option 3, connection to Williams Parkway, is not suitable for the development of a multi-modal corridor. This option does not connect to the major arterial network in Peel and is not a suitable truck route. Williams Parkway is also currently restricted to truck traffic. Furthermore, although Options 2, 3 and 4 have positive impacts on existing communities in Norval and Norval South, Option 3's connection to Williams Parkway will result in adverse impacts to the existing residential community along Williams Parkway.

It is recognized that the East-West Connection alternatives north and south of Norval would have significant potential environmental and community impacts. Concerns have been expressed by residents in the previous Norval Bypass EA Study by Halton Region, while more recently, both residents and Upper Canada College have stated their concerns about a connection north of Norval. Disturbance to aquatic and terrestrial features of the Credit River, protected under the Green Belt Plan, is inevitable under each option other than the Do Nothing case. However, in-depth environmental screening, Credit River crossing site selection and the set of mitigating measures established through the Environmental Assessment process could minimize the impacts. Air quality impacts can be mitigated by providing a transportation solution that maximizes the efficient movement of people and goods and minimizes congestion.

Given the analysis in this chapter, the preferred alternatives for the East-West Connection are Option 2 – Connection to Bovaird Drive South of Norval, and Option 4 - Connection to Bovaird Drive North of Norval.

As a transportation master plan study, the HPBATS is not recommending a preferred route for the East-West Connection. This study has concluded that there is a need for the East-West Connection, that there are options that could satisfy this need, and that there are significant environmental impacts associated with the options. An environmental assessment study should be initiated to consult with the public and all stakeholders in the area, examine and develop more detailed alternatives for the East-West Connection, and evaluate the impacts of the alternatives. Based on a detailed examination of the impacts, and through the consultation program, the environmental assessment study will be in a position to conclude whether there are options that are feasible from an environmental and community perspective and, if so, determine the preferred alternative.

7.4 The Preferred Road Network

The analyses and evaluation of network options discussed in **Sections 7.2** and **7.3** resulted in the planned road network and additional improvements as listed below:

- Bramwest Parkway south of 407 ETR with 4 lanes from Heritage Road to 407 ETR
- Bramwest Parkway with 6 lanes from 407 ETR to the proposed Halton-Peel Freeway, with a full interchange at 407 ETR
- Halton-Peel Freeway with 8 lanes from the 401 / 407 interchange in Halton to Bovaird Drive in Peel, and with 6 lanes from Bovaird Drive to Mayfield Road
- North-South Bypass west of Norval with 4 lanes from Guelph Street (Highway 7) to 10 Sideroad, and then connecting to the proposed Winston Churchill Bypass (below)
- Winston Churchill Bypass with 4 lanes from 10 Sideroad to north of 5 Sideroad / Embleton Road
- Adamson Road North Bypass from Winston Churchill Boulevard north of Norval to Bovaird Drive
- Norval Bypass from Guelph Street (Highway 7) corridor to Bovaird Drive
- 8th Line and 10th Line reconstruction to rural collector standards from Steeles Avenue to 10 Sideroad in Halton Hills
- 5 Sideroad reconstruction to rural collector standards
- Steeles Avenue widening from 4 to 6 lanes, from Winston Churchill Boulevard to Milton. Widening of Steeles Avenue from 4 to 6 lanes in Halton is required to provide more road capacity to the new employment corridor and new residential growth in Milton identified in Sustainable Halton and to provide for a transit corridor extension from Brampton to Milton. This is discussed in detail in **Section 7.5.1**

The preferred road network provides sufficient capacity to accommodate future growth within the Study Area and to support growth in other sections of Halton and Peel. The preferred road network presented above constitutes the HPBATS road network recommendations. The screenline summary results for northbound and westbound movements are provided in **Table 7-22** and **Table 7-23**. Overall network performance is presented in **Table 7-24**.

Table 7-22 Preferred Road Network, Screenline Summary – Northbound, 2031, PM Peak Hour, Volume to Capacity Ratios

Screenline	ID	Halton	Peel	Screenline Total
		A	B	
Recommended Network				
South of 27 Sdrd / King St	1	0.72	0.46	0.57
Georgetown N / S of Mayfield	2	0.78	0.34	0.44
South of 10 Sdrd / Highway 7	3	0.90	0.80	0.83
Credit River	4	-	0.92	0.92
South of 5 Sdrd/ Embleton / Queen	5	0.81	0.85	0.83
South of Steeles	6	1.02	0.85	0.91
South of 401 / 407	7	0.80	0.88	0.86

Table 7-23: Preferred Road Network, Screenline Summary – Westbound, 2031, PM Peak Hour, Volume to Capacity Ratios

Screenline	ID	East of Trafalgar	West of WCB	East of WCB	West of Chinguacousy
		A	B	C	D
Recommended Network					
North of Georgetown / Caledon	1	0.55	0.68	0.69	0.91
North Brampton	2	-	-	0.11	1.05
Georgetown-Norval-Highway 7	3	0.52	0.49	0.17	1.24
South of Georgetown / South Brampton	4	0.87	0.44	0.51	1.42
Highway 401 and 407	5	1.22	0.94	0.98	1.16
Screenline total:	-	0.9	0.78	0.73	1.17

Table 7-24: Preferred 2031 Network – Performance Indicators

Performance Indicators	Results
Total lane km	1,404
% network congested (by lane km)	41.2%
% network V/C > 0.9	19.4%
Cumulative total vehicle hours travel (vht)	17,781
Average travel speed on free-flow network (km/hr)	80
% Free flow speed	61%
Cumulative total Vehicle-kilometres travelled (vkt)	872,700
Cumulative Annual hours of congestion	7,292,800
Annual cost of congestion (\$ per capita of population + employment)	312

Performance Indicators	Results
Greenhouse gas emissions due to congestion per capita of population (tonnes/year) peak periods auto travel only*	0.637

*Note: Future GHG estimates account for improvements in vehicle emissions. The 24% GHG decrease by 2031 is based on the average 0.94% per annum decreased in GHG emissions observed in Canada in transportation sector (small and large cars only) between 1997 and 2006 and reported by Natural Resources Canada (<http://oee.nrcan.gc.ca/corporate/statistics>).

7.5 Transit and Travel Demand Management

The auto mode continues to represent the highest percentage of trips made to and from the Study Area in 2031. However, transit usage is expected to grow significantly by this time, fuelled by transit investments in Peel, improvements to Georgetown GO train services and GO buses by Metrolinx, and new services in Halton south of Highway 401. The planned transit investments within the Study Area are discussed and illustrated in **Section 6.2.1**.

To further improve the “sustainability” of the Halton-Peel transportation system, HPBATS considered opportunities for reducing the role of the single occupant vehicle and shifting travel toward public transit, walking, and cycling, and by the implementation of Travel Demand Management programs and support measures.

The City of Brampton Transportation and Transit Master Plan has proposed a system of transit nodes connected by high-order transit corridors, spanning the City from north to south and east to west (see **Exhibit 3-8**). The proposed Brampton transit system within the HPBATS Study Area envisions bus rapid transit (BRT) services on Steeles Avenue, Mississauga Road and Bovaird Drive, as well as the development of a future mobility hub at Mount Pleasant. The role of the planned 407 Transitway will be to provide for longer-distance inter-regional service between Brampton and Halton Region, and also to York Region (beyond the HPBATS Study Area).

BRT services have been defined as a high frequency (less than five minutes between buses during peak periods) transit service, serving as the spines of the transit system and providing key linkages to major destinations outside of the City. Transit priority is ensured via design and signal systems, guaranteeing schedule adherence and reliability. The ultimate vision is for these corridors to operate in their own right-of-way, potentially using light rail technology to be consistent with inter-regional plans.

Planned employment intensification along Steeles Avenue in Halton, higher growth in Georgetown and the provision of the proposed Halton-Peel Freeway and Norval Bypass would create ideal conditions for the extension of BRT-type services to Halton and the development of integrated transit linkages and operations, ultimately promoting a shift away from auto mode trips to transit.

The impacts of transit service expansion on the performance of the integrated network discussed in **Section 7.4** were evaluated at the corridor and trip table level for selected transit corridors. Travel demand management was evaluated at the trip table level with a working

assumption that the combined effect of TDM programs implemented throughout the GTA, such as allowing employees to work from home, the promotion of carpooling by the Smart Commute Transportation Management Associations, compressed work weeks and flexible work hours, will reduce the work trip generation rate at the trip origin end (PM peak hour model) by 5%. TDM support measures were represented and modelled by the addition of carpool lots and high occupancy vehicle (HOV) lanes to the network, including the Halton-Peel Freeway. The model also shows an approximate 5-10% shift from single occupancy vehicles to high occupancy vehicles on the Halton-Peel Freeway.

7.5.1 Steeles Avenue BRT

The extension of Steeles Avenue BRT service from its currently planned western terminus at Lisgar GO Station further west, possibly to Milton GO Station, has been identified in HPBATS as a high potential transit service option. Linking the Steeles Avenue BRT service with future GO service on Trafalgar and the proposed transit hub on Highway 401 / 407 ETR west of Trafalgar in Halton would provide a viable travel alternative to trips generated by the future employment corridor along Steeles Ave. A modest increase in modal split applied to traffic zones along the Steeles employment corridor in Halton (PM peak hour) from zero (in 2006) to 5% (in 2031) could eliminate between 150 to 290 auto trips and shift them to transit. With further improvements to connectivity with transit systems in Milton, Georgetown, Mississauga and Brampton the corridor can generate 500-600 peak hour transit trips (10% modal split).

Higher modal split, around 10%, is achievable, considering that the planned employment density in the corridor is high and the corridor will be strategically anchored by high frequency, high coverage transit services such as GO (Trafalgar and Lisgar), BRT services (Trafalgar BRT and Steeles BRT) access to the 407 Transitway and the transit hub at Highway 401 / 407 ETR. The BRT services on Steeles in Peel are scheduled to launch in 2012. Service extension to Halton should be triggered by the progression of development along Steeles Avenue, demand for travel along the Steeles Avenue corridor, employment in Milton, and traffic congestion on Steeles Avenue.

As an interim staging option, Steeles Avenue from Winston Churchill Boulevard to Milton (past Trafalgar Road) could be widened to 6 lanes with the assumption that the curb lane will operate as a high occupancy vehicle (HOV) lane for buses and carpools. With continuing growth in the corridor and in Milton, and higher demand for transit services, the HOV lane could be later converted to reserved bus lanes or to exclusive centre-median transit-only lanes.

7.5.2 Guelph Street to Bovaird Drive High Order Transit

Construction of the East-West Connection creates an opportunity to provide high order, inter-municipal transit service in the Guelph Street – Bovaird Drive corridor, using the proposed East-West Credit River crossing. The Georgetown GO train service would continue to provide long-distance, inter-regional service, predominantly to downtown Toronto. The

proposed high order transit service in the Guelph – Bovaird corridor would function as an urban transit service for shorter trips in the Study Area, with closer spacing of stops to provide better transit accessibility for people who live, work, and shop in the corridor. Approximately 15% to 17% of all travel across the Halton-Peel border is already attributed to daily trips between Georgetown and Brampton. In the future, new employment areas in West Brampton and Northwest Brampton will attract even more trips to and from Georgetown and increase daily flows and the intensity of the interactions between Brampton and Georgetown.

The proposed Guelph Street – Bovaird Drive high order transit service would be an extension of the Bovaird Drive BRT already planned by the City of Brampton. The Brampton TTMP plans for Bovaird Drive BRT services extending from Mississauga Road (and connected to the Mississauga Road BRT) to Airport Road. With proper funding in place, services on Bovaird Drive will commence in 2014. By 2031 and subject to ridership demand, the Bovaird transit service could be extended westward to connect to the Halton-Peel Freeway, continue on Bovaird Drive to Guelph Street, turn north to Mountainview Road and terminate at the Georgetown GO Station.

The Bovaird – Guelph Street transit connection will only be possible if the East-West Connection is constructed. The existing right-of-way constrains Highway 7 to one lane per direction through Norval, which makes the provision of high frequency transit service impractical and unfeasible. Lack of travel options along the Highway 7 corridor beyond the auto mode will, in time, destabilise the transportation system and result again in increased congestion, diminished quality of life and decreased economic competitiveness for businesses located within the corridor.

7.5.3 9th Line Transit Service

The 9th Line / Mountainview Road transit corridor would connect Georgetown with the Steeles Avenue BRT, the Trafalgar Road BRT and the 407 Transitway. It would serve the high travel demand and strong origin-destination ties between Georgetown and other parts of Halton, particularly Milton. This service would run from Georgetown GO in the north, provide transit service on Mountainview Road and connect to Milton or Mississauga at Steeles Avenue and either 9th Line or Trafalgar Road. This service would run with larger headways than BRT and is envisioned as a feeder type of service. No capacity increases on 9th Line, beyond the already planned widening to 4 lanes, will be required to accommodate the 9th Line transit service.

7.5.4 Halton-Peel Freeway HOV lanes and Transitway

HPBATS considers the Halton-Peel Freeway as a multi-modal corridor, with the potential to serve carpoolers and transit vehicles. HOV lanes, for example, could be reserved for carpoolers and transit vehicles. The Halton Peel Freeway corridor has the potential to connect with the 407 Transitway, Steeles Avenue BRT, 401 / 407 ETR transit hub in Halton, secondary transit services in Bram West, potential services in Northwest Brampton and the

Bovaird Drive BRT. The corridor could also connect with the future multi-modal GTA West corridor.

Although the conversion of two general traffic lanes to HOV lanes within the planned 8-lane and 6-lane cross-section would decrease vehicle capacity, people-carrying capacity would increase. The HOV lanes should be supported by the provision of carpool lots located at the northern terminus of the Halton-Peel Freeway (potentially Mayfield Road) and in Halton south of Georgetown, to serve residents of Georgetown. The location of a carpool lot in Halton should be examined in future studies once the location of the HPF corridor through Halton Hills has been determined.

In addition, the provision of high speed transit services on the HOV lanes would provide a high quality transit service in the corridor and function as the main north-south transit corridor in the Study Area.

7.5.5 Recommended Road Network with the Preferred Transit and HOV

With the proposed transit improvements, HOV lanes on the Halton-Peel Freeway, and Travel Demand Management measures, the performance of the transportation network will improve. This is shown in **Table 7-26** and **Table 7-27**. Travel congestion, cost of congestion, and greenhouse gas emissions will all decrease. The summary of network performance measures is presented in **Table 7-28**.

The estimated transit (including local and GO variants) mode share in the Study Area is expected to increase from 3.9% in 2006 to 6.8% in 2031. **Table 7-25** below shows the projected changes in transit person trips and the resulting transit modal split by 2031.

Table 7-25: 2006 and 2031 PM Peak Period Modal Split

	2006 PM Peak Period Trips	2031* PM Peak Period Trips
Auto Person Trips	64,600	239,900
Transit Person Trips	2,600	17,400
Total Trips	67,200	257,300
Transit MS %	3.9%	6.8%

*2031 results for the preferred road and transit networks

Table 7-26: Recommended Road and Transit Network, Northbound 2031 PM Peak Hour, Volume to Capacity Ratios

Screenline	ID	Halton	Peel	Screenline Total
		A	B	
South of 27 Sdrd / King St	1	0.70	0.45	0.56
Georgetown N / S of Mayfield	2	0.75	0.33	0.42
South of 10 Sdrd / Highway 7	3	0.81	0.77	0.78

Credit River	4	-	0.89	0.89
South of 5 Sdrd/ Embleton / Queen	5	0.78	0.81	0.79
South of Steeles	6	0.96	0.81	0.87
South of 401 / 407	7	0.78	0.84	0.83

Table 7-27: Recommended Road and Transit Network, Westbound 2031 PM Peak Hour, Volume to Capacity Ratios

Screenline	ID	East of Trafalgar	West of WCB	East of WCB	West of Chinguacousy
		A	B	C	D
North of Georgetown / Caledon	1	0.52	0.62	0.65	0.88
North Brampton	2	-	-	0.11	1.02
Georgetown-Norval-Highway 7	3	0.50	0.58	0.16	1.2
South of Georgetown / South Brampton	4	0.81	0.4	0.49	1.38
Highway 401 and 407	5	1.17	0.91	0.95	1.13
Screenline total:	-	0.86	0.78	0.71	1.13

The recommended network meets capacity needs at most of the screenlines including the Credit River screenline. However, travel demand would exceed peak direction roadway capacity west of Chinguacousy, on Highway 401 and 407 east of Trafalgar Road and on roads south of Steeles in Halton.

Table 7-28: Recommended Road and Transit Network 2031, Network Performance

Performance Indicators	Results
Total lane km	1,404
% network congested (by lane km)	39.1%
% network V/C > 0.9	16.3%
Cumulative total vehicle hours travel (vht)	16,493
Average travel speed on free-flow network (km/hr)	80
% Free flow speed	63%
Cumulative total Vehicle-kilometres travelled (vkt)	839,300
Cumulative Annual hours of congestion	6,192,000
Annual cost of congestion (\$ per capita of population + employment)	265
Greenhouse gas emissions due to congestion per capita of population (tonnes/year) peak periods auto travel only*	0.598

*Note: Future GHG estimates account for improvements in vehicle emissions. The 24% GHG decrease by 2031 is based on the average 0.94% per annum decreased in GHG emissions observed in Canada in transportation sector (small and large cars only) between 1997 and 2006 and reported by Natural Resources Canada (<http://oee.nrcan.gc.ca/corporate/statistics>).

7.6 Phasing Analysis

The objective of the phasing analyses was to determine the potential timing and the extent of road and transit network improvements recommended for the HPBATS. The HPBATS is intended as a needs based analysis that will feed future input into the agencies' TMP and LRTP plans and Capital Budgets. However, the "need based timing" may not always be reflected in the budget as other factors such as logistics and funding availability are considered. Therefore, the results of the phasing assessment discussed below should be viewed as strategic timing directions only. Phasing analysis was completed for 2021.

By 2021 most of the "planned improvements" to roads and transit as discussed in **Section 6.2** will be in place in Halton, and the majority of the investments in Peel should be completed as well. Improvements identified by HPBATS that should be in place by 2021 include: the East-West Connection, Winston Churchill Bypass, the Norval West Bypass, the reconstruction of 8th Line and 10th Line from Steeles Avenue to 10 Sideroad in Halton, and the Bramwest Parkway to Embleton Road, including the interchange with 407 ETR.

The screenline analysis summarised in **Table 7-29** indicates a satisfactory level of service for northbound peak direction traffic in Peel, a slightly worse level of service in Halton south of 10 Sideroad and south of Steeles Avenue and the Credit River Screenline approaching capacity.

The level of service for westbound travel, summarized in **Table 7-30** is satisfactory with the exception of high volumes and capacity deficiency on Highway 401, which has been analysed as an 8-lane facility. HPBATS Study Area roads west of Chinguacousy experience capacity deficiencies. Network performance indicators are presented in **Table 7-31**.

Table 7-29: Recommended Network, Northbound 2021 PM Peak Hour, Volume to Capacity Ratios

Screenline	ID	Halton	Peel	Screenline Total
		A	B	
South of 27 Sdrd / King St	1	0.72	0.35	0.52
Georgetown N / S of Mayfield	2	0.65	0.31	0.43
South of 10 Sdrd / Highway 7	3	0.92	0.76	0.84
Credit River	4		0.98	0.98
South of 5 Sdrd/ Embleton / Queen	5	0.71	0.83	0.79
South of Steeles	6	1.01	0.86	0.91
South of 401 / 407	7	0.80	0.84	0.83

Table 7-30: Recommended Network, Westbound, 2021 PM Peak Hour, Volume to Capacity Ratios

Screenline	ID	East of Trafalgar	West of WCB	East of WCB	West of Chinguacousy
		A	B	C	D
North of Georgetown / Caledon	1	0.43	0.66	0.45	0.66
North Brampton	2			0.28	0.76
Georgetown-Norval-Highway 7	3	0.42	0.78	0.46	1.01
South of Georgetown / South Brampton	4	0.85	0.90	0.60	1.25
Highway 401 and 407	5	1.26	0.79	0.90	1.04
Screenline total:	-	0.88	0.79	0.72	1.00

Table 7-31: Network Performance Measures, 2021, PM Peak Hour

Performance Indicators	Results
Total lane km	1,213
% network congested (by lane km)	38.0%
% network V/C > 0.9	18.1%
Cumulative total vehicle hours travel (vht)	13,223
Average travel speed on free-flow network (km/hr)	78
% Free flow speed	64%
Cumulative total Vehicle-kilometres travelled (vkt)	658,530
Cumulative Annual hours of congestion	4,921,450
Annual cost of congestion (\$ per capita of population + employment)	210
Greenhouse gas emissions due to congestion per capita of population (tonnes/year) peak periods auto travel only*	0.534

*Note: Future GHG estimates account for improvements in vehicle emissions. The 24% GHG decrease by 2031 is based on the average 0.94% per annum decreased in GHG emissions observed in Canada in transportation sector (small and large cars only) between 1997 and 2006 and reported by Natural Resources Canada (<http://oee.nrcan.gc.ca/corporate/statistics>).

7.7 Sensitivity Analysis of the Preferred Network

In this section, we discuss the results of two sensitivity analyses completed for the preferred network, inclusive of transit and HOV lanes for the GTA West Corridor analysis and without the Halton-Peel Freeway for risk analysis.

7.7.1 GTA West Corridor

The concept of the GTA West Corridor providing connectivity and access to the Provincial network across GTA West was identified in the Places to Grow Report. Presently, the Ministry of Transportation is undertaking an Environmental Assessment study to examine long-term transportation problems and opportunities, and to consider alternatives that provide better linkages to Urban Growth Centres in the Study Area, as per the Province's Growth Plan. At the time of the writing of this report, the GTA West EA team was entering Stage 2 of the EA process, identifying various transportation system options and multi-modal network alternatives.

The HPBATS, in coordination with the GTA West Corridor Study team, has assessed two GTA West corridor options. These two options were developed independently from an array of transportation alternatives developed at the time by the GTA West Corridor EA study team. Corridor options and the connectivity of a potential GTA West facility with the HPBATS network represent conceptual and high-level potentials for interaction between the two facilities. For the purpose of this analysis, the GTA West corridor was coded to the 2031 preferred HPBATS network as:

1. A freeway facility extending from Guelph to Highway 400 and generally located north of Highway 7 in Halton Hills and north of Mayfield Road in Peel
2. A freeway facility extending from the Highway 401 / 407 ETR interchange in Halton, following the Halton-Peel Freeway corridor through Halton and Peel, north of Mayfield Road and continuing eastward to Highway 400 in York Region. In this option, the GTA-West Corridor and the North-South Transportation Corridor are the same facility throughout the Study Area

The analyses were completed with the understanding that the future GTA West corridor would function as a multi-modal corridor providing opportunities for high-order transit services.

The results of the assessment are discussed below.

In the analysis of **Option 1**, the GTA West corridor is coded in the model as a toll-free facility extending from Guelph to Highway 400. Within the HPBATS Study Area and in the PM peak hour, the GTA West corridor attracts approximately 3,300 westbound trips through Halton (from Winston Churchill Boulevard to Trafalgar Rd) and approximately 4,000 westbound auto-driver trips through Peel (between Chinguacousy Road and its junction with the Halton Peel Freeway). Eastbound volumes are 2,000 and 3,000 respectively.

The impact of the GTA West corridor between Highway 400 and Guelph on the Halton Peel Freeway and other HPBATS roadways is described below:

- Additional 1,000 to 2,000 northbound trips assigned to the Halton Peel Freeway
- Approximately 4,000 trips north of Mayfield Road to the junction with the GTA West links
- An additional 1,300 to 1,500 southbound trips assigned to the Halton Peel Freeway throughout its length
- Approximately 3,000 trips southbound from north of Mayfield Road to the junction with the GTA West corridor
- A minor increase in assigned traffic volumes on north-south arterials
- At the screenline level a general decline in the level of service for northbound travel and across north-south roadways, illustrated in **Table 7-32**, with major impacts on the Peel section of the Study Area and at the Credit River screenline
- The GTA West corridor benefits westbound travel and has a positive effect on the notoriously congested screenline west of Chinguacousy Road; traffic conditions on the Highway 401 and 407 ETR screenline also improve, as shown in **Table 7-33**
- The percentage of Study Area trips (trips whose origin or destination is in the Study Area) on the Halton Peel Freeway decreases from 76% in the scenario without the GTA West corridor to 69% in Analysis Option 1

In Analysis **Option 2**, the GTA West corridor is coded in the model as a toll-free facility extending from the interchange of Highway 401 / 407 ETR in Halton to Highway 400. Within the HPBATS Study Area, the GTA West corridor attracts approximately 3,500 westbound auto-driver trips through Peel (between Chinguacousy Road and its junction with Halton Peel Freeway). Eastbound volumes are at over 3,000 trips. The impact of the GTA West corridor on the Halton Peel Freeway and other HPBATS roads is described below:

- Additional northbound trips assigned to Halton Peel Freeway as follows:
 - Through Halton (+500)
 - Across the Credit River (no increase)
 - North of Bovaird Drive (+1,000)
 - North of Sandalwood Parkway (+2,200)
 - Approximately 3,100 trips north of Mayfield Road to the junction with the GTA West links
- An additional 1,000 to 1,800 southbound trips are assigned to the Halton Peel Freeway throughout its length
- Approximately 3,500 trips southbound from north of Mayfield Road to the junction with the GTA West corridor
- Minor increase in assigned traffic volumes on north-south arterials
- At the screenline level we observe a general decline in the level of service for northbound travel and across north-south roadways, but it is less pronounced than the decline projected in the case where the GTA West corridor stretches over to Guelph (see **Table 7-32**). Major impacts are again seen in the Peel section of the Study Area and at the Credit River screenline
- The GTA West corridor benefits westbound travel and has a positive effect on the notoriously congested screenline west of Chinguacousy Road; traffic conditions east of

Trafalgar Road and at the junction of the three freeways (Highway 401, HPF and 407 ETR) will worsen (see **Table 7-33**)

Table 7-32: Impact of GTA West on the Recommended Network with Transit and HOV, Northbound 2031 PM Peak Hour, Volume to Capacity Ratios

Screenline	ID	Halton	Peel	Screenline Total
		A	B	
Recommended transportation system (with higher transit) without GTA Corridor				
South of 27 Sdrd / King St	1	0.70	0.45	0.56
Georgetown N / S of Mayfield	2	0.75	0.33	0.42
South of 10 Sdrd / Highway 7	3	0.81	0.77	0.78
Credit River	4		0.89	0.88
South of 5 Sdrd/ Embleton / Queen	5	0.78	0.81	0.79
South of Steeles	6	0.96	0.81	0.87
South of 401 / 407	7	0.78	0.84	0.83
Recommended transportation system (with higher transit) with GTA Corridor to Guelph				
South of 27 Sdrd / King St	1	0.61	0.38	0.48
Georgetown N / S of Mayfield	2	0.56	0.55	0.55
South of 10 Sdrd / Highway 7	3	0.83	0.88	0.86
Credit River	4		1.03	1.03
South of 5 Sdrd/ Embleton / Queen	5	0.84	0.86	0.85
South of Steeles	6	0.97	0.83	0.88
South of 401 / 407	7	0.81	0.86	0.85
Recommended transportation system (with higher transit) with GTA Corridor to 401/407ETR				
South of 27 Sdrd / King St	1	0.76	0.42	0.57
Georgetown N / S of Mayfield	2	0.77	0.48	0.55
South of 10 Sdrd / Highway 7	3	0.82	0.84	0.83
Credit River	4		0.99	0.99
South of 5 Sdrd/ Embleton / Queen	5	0.81	0.84	0.82
South of Steeles	6	0.95	0.81	0.86
South of 401 / 407	7	0.81	0.85	0.84

Table 7-33: Impact of GTA West on the Recommended Network with Transit and HOV, Westbound 2031 PM Peak Hour, Volume to Capacity Ratios

Screenline	ID	East of Trafalgar	West of WCB	East of WCB	West of Chinguacousy
		A	B	C	D
Recommended transportation system (with higher transit) without GTA Corridor					
North of Georgetown / Caledon	1	0.52	0.62	0.65	0.88
North Brampton	2	-	-	0.11	1.02
Georgetown-Norval-Highway 7	3	0.50	0.58	0.16	1.2
South of Georgetown / South Brampton	4	0.81	0.4	0.49	1.38
Highway 401 and 407	5	1.17	0.91	0.95	1.13
Screenline total:	-	0.86	0.78	0.71	1.13
Recommended transportation system (with higher transit) with GTA Corridor to Guelph					
North of Georgetown / Caledon	1	0.25	0.4	0.37	0.86
North Brampton	2	-	-	0.12	1.00
Georgetown-Norval-Highway 7	3	0.44	0.42	0.18	1.19
South of Georgetown / South Brampton	4	0.89	0.45	0.47	1.34
Highway 401 and 407	5	1.15	0.89	0.94	1.11
Screenline total:	-	0.79	0.72	0.69	1.11
Recommended transportation system (with higher transit) with GTA Corridor to 401/407 ETR					
North of Georgetown / Caledon	1	0.48	0.67	0.74	0.91
North Brampton	2	-	-	0.21	0.98
Georgetown-Norval-Highway 7	3	0.62	0.45	0.21	1.15
South of Georgetown / South Brampton	4	0.73	0.33	0.47	1.35
Highway 401 and 407	5	1.24	0.91	0.94	1.11
Screenline total:	-	0.90	0.74	0.72	1.11

Based on the analyses, it is expected that the GTA West Corridor would provide clear benefits to the Study Area by reducing congestion on north-south and east west screenlines. Conditions on Highway 401 and 407 ETR at the junction with the GTA West Corridor may worsen, however. The GTA West corridor would also provide additional capacity and a desirable route for heavy truck traffic, both for inter-provincial goods movement travel and more locally contained aggregate and construction industry travel, which have not been directly assessed at this point.

To connect to the GTA West Corridor, the Halton Peel Freeway will have to be extended north of Mayfield. The extension will be required once the GTA West is constructed. The location of this connection is shown in **Exhibit 8-3**, Recommended Road Network. Peak direction travel demand on Highway 401 and 407 ETR east of Trafalgar Road consistently exceeds capacity provided. This deficiency becomes more pronounced in the case where the GTA West corridor is connected to 401 / 407 via the Halton-Peel Freeway.

7.7.2 Risk Analysis

The objective of the risk analysis was to determine network performance in the case that the Halton Peel Freeway is not constructed by 2031. The underlying assumption is that all the other improvements identified in this report, including road network widenings and additions as well as transit service expansion, have been realized.

The summary of the screenline analysis provided in **Table 7-34** and **Table 7-35** shows a substantial deterioration of traffic conditions across the entire HPBATS area in both the northbound and westbound peak directions of travel. With 70% of north-south screenlines and 50% of east-west screenlines exceeding a volume to capacity ratio of 0.8, the area will face significant capacity deficiencies. Under these conditions, achieving the development targets set by the Places to Grow Plan is at risk.

Table 7-34: Screenline Analysis, HPBATS Recommended Transportation System with and without Halton Peel Freeway, Northbound Travel, 2031 PM Peak Hour Volume to Capacity Ratios

Screenline	ID	Halton	Peel	Screenline Total
		A	B	
Recommended transportation system - with Halton Peel Freeway				
South of 27 Sdrd / King St	1	0.70	0.45	0.56
Georgetown N / S of Mayfield	2	0.75	0.33	0.42
South of 10 Sdrd / Highway 7	3	0.81	0.77	0.78
Credit River	4		0.89	0.89
South of 5 Sdrd/ Embleton / Queen	5	0.78	0.81	0.79
South of Steeles	6	0.96	0.81	0.87
South of 401 / 407	7	0.78	0.84	0.83
Recommended HPBATS network - without Halton-Peel Freeway				
South of 27 Sdrd / King St	1	0.68	0.33	0.49
Georgetown N / S of Mayfield	2	0.78	0.36	0.50
South of 10 Sdrd / Highway 7	3	1.19	0.87	1.03
Credit River	4	-	1.30	1.30
South of 5 Sdrd/ Embleton / Queen	5	0.94	0.96	0.95
South of Steeles	6	1.27	0.99	1.09
South of 401 / 407	7	0.85	0.93	0.91

The network performance summary provided in **Table 7-36** confirms the aforementioned system breakdown and shows a visible increase in network congestion, travel time, hours and cost of congestion as well as GHG emissions.

Table 7-35: Screenline Analysis, HPBATS Recommended Transportation System with and without the Halton Peel Freeway, Westbound Travel, 2031 PM Peak Hour Volume to Capacity Ratios

Screenline	ID	East of Trafalgar	West of WCB	East of WCB	West of Chinguacousy
		A	B	C	D
Recommended transportation system - with Halton-Peel Freeway					
North of Georgetown / Caledon	1	0.52	0.62	0.65	0.88
North Brampton	2	-	-	0.11	1.02
Georgetown-Norval-Highway 7	3	0.50	0.58	0.16	1.20
South of Georgetown / South Brampton	4	0.81	0.40	0.49	1.38
Highway 401 and 407	5	1.17	0.91	0.95	1.13
Screenline total:	-	0.86	0.78	0.71	1.13
Recommended transportation system - without Halton-Peel Freeway					
North of Georgetown / Caledon	1	0.51	0.70	0.67	0.96
North Brampton	2	-	-	0.15	1.14
Georgetown-Norval-Highway 7	3	0.51	1.11	0.74	1.33
South of Georgetown / South Brampton	4	0.98	0.82	0.72	1.43
Highway 401 and 407	5	1.29	0.86	0.93	1.12
Screenline total:	-	0.95	0.88	0.79	1.17

Table 7-36: Network Performance Summary, HPBATS Recommended Transportation System without the Halton Peel Freeway, 2031, PM Peak Hour

Performance Indicators	Results with HPF	Results without HPF
Total lane km	1,404	1,323
% network congested (by lane km)	39.1%	44.1%
% network V/C > 0.9	16.3%	23.6%
Cumulative total vehicle hours travel (vht)	16,493	18,916
Average travel speed on free-flow network (km/hr)	80	76
% Free flow speed	63%	57%
Cumulative total Vehicle-kilometres travelled (vkt)	840,000	821,000
Cumulative Annual hours of congestion	6,192,000	9,043,000
Annual cost of congestion (\$ per capita of population + employment)	265	387
Greenhouse gas emissions due to congestion per capita of population (tonnes/year) peak periods auto travel only*	0.598	0.631

*Note: Future GHG estimates account for improvements in vehicle emissions. The 24% GHG decrease by 2031 is based on the average 0.94% per annum decrease in GHG emissions observed in Canada in transportation sector (small and large cars only) between 1997 and 2006 and reported by Natural Resources Canada (<http://oee.nrcan.gc.ca/corporate/statistics>).

8. RECOMMENDED TRANSPORTATION STRATEGY

8.1 A Sustainable Transportation Strategy

As introduced in **Section 6.1**, building blocks of the recommended transportation strategy for the Halton Peel Boundary Area consist of:

- **Public Transit** playing a significant role in demand management, serving and supporting future growth within the Study Area.
- **Travel Demand Management (TDM)** as a way to reduce peak period roadway congestion by promoting carpooling, transit, walking and cycling as alternatives to private automobile travel
- **Active Transportation** as a practical, cost-effective, environmentally sensitive and healthy travel mode choice for short range trips
- **Traffic System Management (TSM)** with capabilities of improving roadway operations and decreasing travel time and congestion
- **Road Network** providing a network of multimodal corridors to serve multiple users – autos, trucks, public transit, pedestrians, and cyclists (where appropriate)

These building blocks, as the pillars of the comprehensive transportation strategy for the Halton-Peel Boundary Area, will form the foundation of a sustainable transportation network, capable of serving planned growth and development with enhanced mobility and accessibility, while balancing transportation needs with protection of the environment, community protection, and sustainability principles.

The HPBATS transportation strategy is a broad multi-modal strategy intended to manage the growth in travel demand, and encourage the use of active transportation modes. The objective of the HPBATS transportation strategy is to supply only essential infrastructure and modify trip-making choices by modifying travel behaviour. This is achieved by providing a viable roadway system that is capable of sustaining multi-modal trips, providing travel alternatives to the single-occupant vehicle (SOV), dispersing trip start times to non-peak periods, and reducing the need for travel. HPBATS strategy tools include enhancements to the transit and road networks, provision and accessibility of alternative modes, incentives for HOV travel, and employer-based trip reduction programs.

The HPBATS transportation management strategy presented here describes approaches that are designed to balance supply and demand and influence the demand for and choice of transportation services by the public through:

- Identifying strategic road network investments to effectively alleviate current network problems and provide capacity for future growth
- Reducing or better managing future demand for travel; in particular, the demand for single occupant vehicle trips
- Augmenting the capacity of the supply of transportation infrastructure through complementary actions that better manage the use of these facilities and services

- Improving the efficiency in the usage of the overall transportation system by focusing on people-carrying capacity rather than vehicle capacity
- Encouraging the formation and viability of appropriate institutional structures and procedures to support the overall transportation strategy within the Study Area
- Ensuring that transportation management strategies are integrated into complementary land use planning and development processes

Various transportation management measures envisioned for HPBATS can be grouped as follows, from higher to lower priority:

1. Development and implementation of supportive land use
2. Provision of efficient and sustainable transportation networks (roads and transit)
3. Provision of a variety of travel choices
4. Integrated approach
5. Development and implementation of incentives to encourage use of sustainable modes

These TDM measures stress the paramount importance of linking transportation plans with land use and modal choices. The need to preserve this synergy across jurisdictions is the key message the consultant's team would like to send to the agencies and stakeholders responsible for shaping the future of the Halton-Peel transportation system.

Although land use densities and the future urban form of the Study Area were not assessed in this study, the body of research completed on the interaction between land use and transportation suggests that those two factors are the main cause of transportation system challenges faced by many regions and agencies within the GTA, and are recognized causes of transportation-related emissions of greenhouse gases and other pollutants. As the area is only now opening up for growth, the use of appropriate land use planning practices could eliminate, or at least lessen, future challenges and hurdles.

The primary categories of land use measures that can successfully influence the demand for and choice of transportation services, and that are put forth for the consideration of HPBATS agencies, are:

- Transit oriented development, which is an umbrella term that denotes ways of designing communities with a variety of land uses clustered together in order to enhance overall accessibility. The HPBATS jurisdictions are encouraged to incorporate the principles of transit oriented development in planning activities for the future residential and employment communities of Bram West, North West Brampton, residential clusters in Norval and southwest Georgetown, and employment areas along Steeles Avenue and Winston Churchill Boulevard
- Reduce the dependence on automobiles through the implementation of shared spaces, pedestrian malls or similar area treatments
- Parking strategies, including parking pricing or shared parking strategies designed to influence demand and recover costs

Communities of today and tomorrow in the Study Area need supportive infrastructure. A well-functioning transportation network is instrumental in providing access to goods, services and people. In economic terms, transportation is a diseconomy factor, meaning that an increase in the cost of transportation is directly related to an increase in the cost of purchasing goods and services, which are subsequently passed on to consumers. Consequently, these cost increases should be minimized. An insufficient transportation network that is disconnected, over-congested and discontinuous limits the mobility of the population and reduces overall quality of life and economical vitality. To this end, road networks of the Halton Peel Boundary Area should:

- Enhance the mobility of residents and the accessibility of businesses by providing good access to the Provincial and Regional road networks across Peel and Halton. This will entail straightforward access to Highway 401, 407 ETR, the future potential GTA West Corridor and major arterials in Peel and Halton
- Offer multi-modal functionality which involves the provision of general purpose lanes for use by cars and trucks, high occupancy lanes for use by buses and carpools, sidewalks and cycling paths, and carpool lots
- Ensure smooth and efficient operation by incorporating intelligent traffic management systems, bus priority measures and traveller information solutions

Even with appropriate land use policies and a supportive road and transit network in place, the modal shift can only be achieved in an environment supportive of a variety of transportation choices. The array of transportation and communication forms and choices must be accompanied by appropriate infrastructure and support programs in order to succeed. Some examples of measures that can enhance modal choice in the Study Area include:

- Public transit supported by transit priority measures, transit technology, frequent service, attractive fare structure strategies and a fare integration strategy, and the provision of park-and-ride lots and high occupancy vehicle (HOV) lanes
- Acknowledgement of non-motorised modes as valid transportation modes with needs for planning, investments and connectivity similar to the auto mode
- Support for non-motorised modes such as walking and cycling by a safe, well-connected and well maintained network of walk and cycle paths
- Support for tele-commuting by the provision of high-speed communication networks, development of new employee management standards, education and outreach
- Designated and properly maintained truck routes that provide continuous connections through metropolitan areas
- Support for carpooling programs through local Transportation Management Associations (TMAs)

The responsibility for transportation and land use planning within the Halton Peel Boundary Area is divided among various levels of local and regional governments. As a result, the ability to deliver on initiatives such as roads, transportation management and transit must include an integrated approach to land use and transportation planning.

In the following sections we discuss the recommended elements of the HPBATS transportation system management strategy.

8.2 Travel Demand Management

Travel Demand Management (TDM) has been a prominent feature of the transportation plans and Official Plans of the HPBATS jurisdictions in recent years. The creation of subsequent programs of Smart Commute GTHA and its local branches such as Smart Commute Halton and Smart Commute Brampton - Caledon have advanced the popularity and success of TDM programs and measures.

Recognizing the encouraging progress of TDM programs in Peel, Brampton and Halton, the HPBATS recommends that the participating jurisdictions:

- Implement TDM measures already identified in the Halton TMP, the Brampton TTMP, Peel Region ROPA 22 and Peel Five Year TDM Work Plan
- Work collaboratively to deepen the planning and implementation of TDM measures already identified in TMP and Work Plan documents and expand TDM planning to 2031
- Include TDM measures in development planning and the development applications process for Bram West, Northwest Brampton, ROPA 37 and ROPA 38 areas within the Study Area
- Provide ongoing support for Smart Commute Halton and Smart Commute Brampton - Caledon, and develop joint programs

8.3 Active Transportation Strategy

To reduce reliance on automobile travel, agencies and stakeholders are encouraged to collaboratively promote and support walking and cycling. Proper and well maintained infrastructure must be in place before an individual will make the decision to walk or cycle to work instead of driving in a single occupant vehicle. It is clear that continued promotion of active transportation could have significant individual, societal, environmental, and economic benefits. Multimodal paths, sidewalks and bike paths can be included in the road design standards; in the case of the City of Brampton, they have already been included. The Region of Halton addresses active transportation through its Transportation Master Plan, and the Region of Peel has just initiated the development of a Regional Bicycle Master Plan.

The HPBATS jurisdictions should continue to develop, support and implement the recommendations of their respective pedestrian and cycling policies and plans, giving further consideration to:

- Developing a coordinated north-south and east-west grid network of bicycle and pedestrian pathways with pathway spacing and pathway connectivity supportive to active transportation modes
- Extending pathway grid recommended by Brampton's Pathway Master Plan to Halton and Halton Hills. Potential east-west cross-regional pathways may be placed along Financial Drive, Embleton Road and 5 Sideroad, Street A and Winston Churchill Bypass, Bovaird Drive-Highway 7 through Norval, future Adamson Road Bypass, Sandalwood Road and Wanless Drive, Mayfield Road to River Road and along the Credit River

- Ensuring pedestrian sidewalks and cycling paths are included in road design standards for urban collector and urban arterial roads within residential and employment sections of the Study Area
- Updating, where feasible, regional road standards for rural collector and rural arterial roads to include provision for on-road and off road bicycle paths
- Supporting urban design policies that promote pedestrian and cyclist friendly environments
- Working collaboratively to ensure connectivity and continuity of bicycle and pedestrian networks across the regional border
- Promoting live-work land use patterns and urban form conducive to walking and cycling
- Providing infrastructure to improve crossings of existing and proposed freeways and Provincial highways

8.4 Traffic System Management Strategy

Efficient and adaptable traffic operations are necessary to extend the lifetime of the system, increase the throughput of roadways, decrease congestion and travel time and cut down on emissions of greenhouse gases. The HPBATS agencies have in place appropriate policies and strategies to develop, implement and maintain traffic operation systems on their respective roads. However, with the Halton Peel boundary Study Area in mind, the responsible jurisdictions are encouraged to:

1. Implement Transportation System Management measures already identified in, the Brampton TTMP, the Halton TMP and the Peel Long Range Transportation Plan (currently being updated)
2. Provide transit priority measures and high occupancy vehicle lanes (HOV) where feasible
3. Ensure coordination between Halton, Halton Hills, Brampton, Peel and Caledon in constructing HOV lanes and implementing transit priority measures

8.5 Recommended Transit Network

The current and future road network in the Study Area is challenged by significant capacity deficiencies, a number of operational “pinch-points” and considerable environmental and socio-economic constraints. However, as presented in **Section 7.5.5**, improving roadway capacity, connectivity and continuity alone will not work; in addition to providing capacity for commuter auto travel, improvements to the transit network will also be necessary. The need, justification and the implementation phasing should be monitored by the regional and municipal planning agencies and adjusted accordingly.

8.5.1 Recommended Transit Services

The recommended transit system includes the following:

1. Steeles Avenue BRT service extension further west, from its currently planned western terminus at Lisgar GO station to possibly Milton GO station by 2031
2. Inter-regional transit service on the Guelph Street - Bovaird Drive corridor, connecting Brampton with Georgetown by 2021
3. 9th Line / Mountainview Road transit service by 2031
4. HOV lanes and transit service on the Halton-Peel Freeway synchronised with the construction and opening of sections of the Halton-Peel Freeway
5. Carpool lot implementation synchronised with the opening of sections of the Halton- Peel Freeway and the provision of transit service
6. Surface transit service in existing and planned development areas

The recommended transit network is presented in **Exhibit 8-1**.

8.5.2 Road Improvements Necessary for Transit

The recommended transit services will require the following investments to roadway network:

Steeles Avenue – Widening west of Winston Churchill Boulevard to Milton from the planned 4 lane to a 6 lane cross-section. The additional lanes should be planned for and constructed to standards sufficient to accommodate BRT services such as HOV lanes and transit priority measures and to provide for a seamless transition between jurisdictions

East-West Connection to Bovaird Drive and Highway 7 / Guelph Street. The East-West link connected to Bovaird Drive and Highway 7 / Guelph Street is essential for the provision of inter-regional transit between Brampton and Georgetown. The facility is recommended to provide at least four lanes of capacity with transit initially operating in mixed traffic. Facility planning should consider the addition of high-occupancy vehicle lanes and the potential conversion of HOV lanes to reserved bus lanes in the long term. Addition of HOV lanes and the conversion from HOV to RBL should be triggered by transit demand and transit operations needs.

Halton-Peel Freeway is required to provide infrastructure for inter-regional transit services connected to the 407 Transitway, Halton BRT services, Brampton BRT services and GO services. The Halton-Peel Freeway could also interlink with the GTA West multi-modal corridor in the north. This facility should be constructed to include HOV lanes and transit-priority measures.

8.5.3 Other Transit Recommendations

The next steps in planning for transit services within the Study Area should include:

- 1 Update of long range planning documents including Master Plans and Official Plans by Peel, Halton, Brampton and Halton Hills to include the provision of inter-regional rapid transit services on Steeles Avenue and on Bovaird Drive / Guelph Street
- 2 Initiation of an inter-agency planning group consisting of representatives from Peel, Halton, Halton Hills, Brampton, Brampton Transit and Metrolinx to detail planning and operational issues
- 3 The current study does not address issues of jurisdiction over service planning, provision and maintenance of the recommended transit services; however, we recognise that transit services on the Halton-Peel Freeway could be provided at a provincial level and as such be of interest to GO Transit and Metrolinx. It is therefore recommended that Metrolinx be a member of the inter-agency group described above, to facilitate discussions among municipalities, regions and provincial partners about the provision, timing and scope of the proposed services

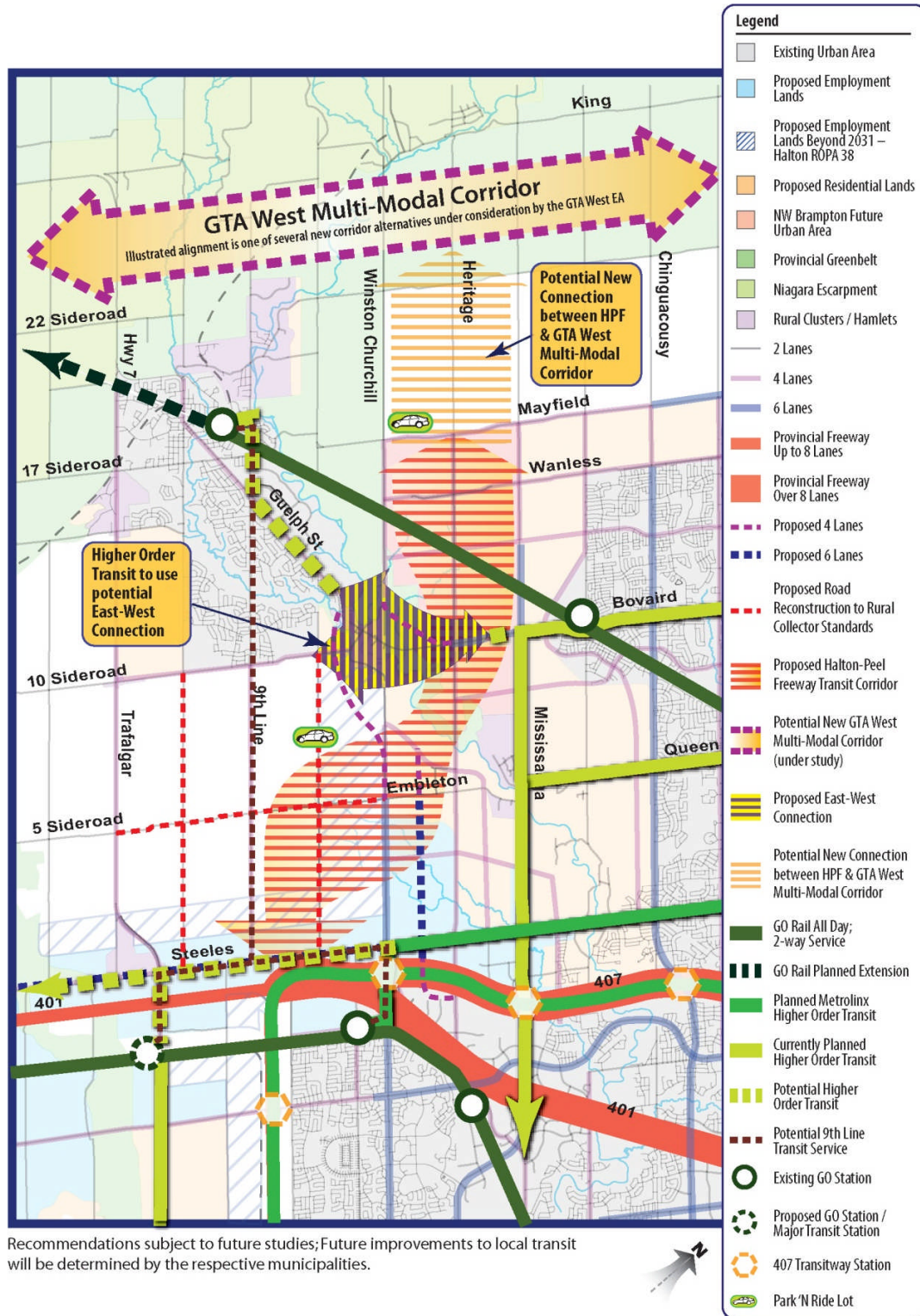


Exhibit 8-1: HPBATS Recommended Transit Network, 2031

8.6 Recommended Road Network

The recommended sustainable transportation system depends on a road system that includes a network of multi-modal corridors that provide accessibility and mobility options to all users – public transit commuters, auto drivers, carpoolers, goods movement operators, pedestrians, and cyclists. The recommended transportation network solution to the Study Area is a complete and interdependent system capable of addressing the challenges presented in the Problem Statement only when implemented as a whole. For projects recommended in this study following the Municipal Class Environmental Assessment guidelines, future Environmental Assessments will determine the appropriate Schedule (Type A, B, or C) that will be followed in the Municipal Class EA process.

The recommended long-term road network is illustrated in **Exhibit 8-2** and **Exhibit 8-3**. The discussion and detailed recommendations for each network element are provided in the following sections. Recommended timings are shown in **Table 8-1**.

1. Planned road improvements to roads in Halton include:

- Widening of Steeles Avenue from 2 to 4 lanes, from Winston Churchill Boulevard to Milton
- Widening of Trafalgar Road from 2 to 4 lanes, from Steeles Avenue to Maple Avenue
- Widening of Winston Churchill Boulevard (boundary road) from 2 to 6 lanes (ultimately from Highway 401 to 5 Sideroad / Embleton Road)
- Widening of 10 Sideroad from 2 to 4 lanes, from Trafalgar Road to Winston Churchill Bypass / Norval West Bypass

2. Planned road improvements to roads in Peel include:

- Widening of Mississauga Road from 2 to 6 lanes from 407 ETR to Sandalwood Parkway and from 2 to 4 lanes up to Mayfield Road
- Widening of Bovaird Drive from 2 to 6 lanes up to the Halton-Peel Freeway and from 2 to 4 lanes to access the North West Brampton Secondary Plan area (to be determined through future studies)
- Widening of Winston Churchill Boulevard from Highway 401 to 5 Sideroad / Embleton Road from 2 to 6 lanes
- Widening of Heritage Road from 2 to 4 lanes from Steeles Avenue to Mayfield Road
- Construction of Bram West road network including Financial Drive, New Road A and other roads planned and approved under the Bram West Secondary Plan
- Construction of Williams Parkway from the Halton-Peel Freeway to Creditview Road
- Construction of Sandalwood Parkway at 4-lanes from Creditview Road to Winston Churchill Boulevard
- Widening of Wanless Drive from Creditview Road to Winston Churchill Boulevard
- Widening of Mayfield Road from Chinguacousy Road to Mississauga Road

3. Additional improvements in the Study Area as recommended by this study include:

- Construction of Bramwest Parkway at 4 lanes from Heritage Road to 407 ETR
- Construction of Bramwest Parkway at 6 lanes from 407 ETR to the Halton-Peel Freeway

- Extension of Bramwest Parkway at 4 lanes to New Road A in Bram West SP
- Halton-Peel Freeway at 8 lanes from Highway 401 / 407 ETR interchange west of Ninth Line in Halton to Bovaird Drive and at 6 lanes from Bovaird Drive to Mayfield Road
- Halton-Peel Freeway connection to the potential future GTA West Corridor
- Winston Churchill Bypass at 4 lanes from north of 5 Sideroad / Embleton Road to 10 Sideroad / Norval West Bypass
- Widening of Winston Churchill Boulevard from 5 Sideroad / Embleton Road to the junction with Winston Churchill Bypass from 2 to 4 lanes
- Norval West Bypass at 4 lanes from 10 Sideroad / Winston Churchill Bypass to Guelph Street
- Widening of Highway 7 west of the intersection with Norval West Bypass to provide consistent 4-lanes of capacity
- Adamson Road North Bypass from Bovaird Drive to Winston Churchill Boulevard (part of North West Brampton Secondary Plan network)
- East-West Connection from Bovaird Drive west of Halton-Peel Freeway to Georgetown (corridor to be determined by the EA)
- Road reconstruction to rural collector standards for Eight Line and Tenth Line from Steeles Avenue to 10 Sideroad in Halton Hills
- Road reconstruction to rural collector standards for 5 Sideroad
- Steeles Avenue widening from 4 to 6 lanes for transit, from Winston Churchill Boulevard to Milton

4. The following improvements planned by Peel Region are not required:

- Widening of Winston Churchill Boulevard from 2 to 6 lanes from north of the junction with the Winston Churchill Bypass to 10 Sideroad. This section should remain at a 2 lane cross-section serving local traffic only
- Widening of Bovaird Drive east of Adamson Road from 2 to 6 lanes. This section should provide no more than 2 lanes of through traffic capacity

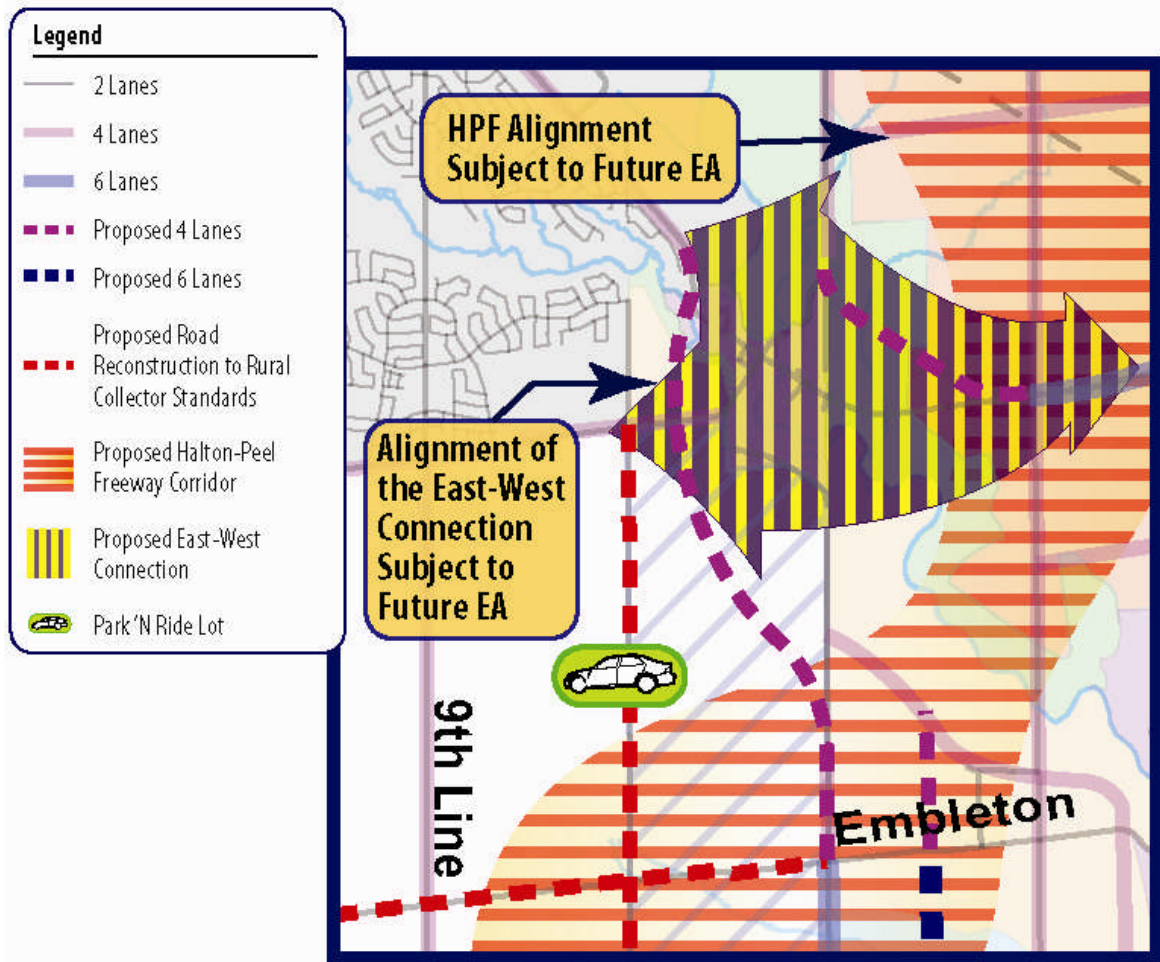
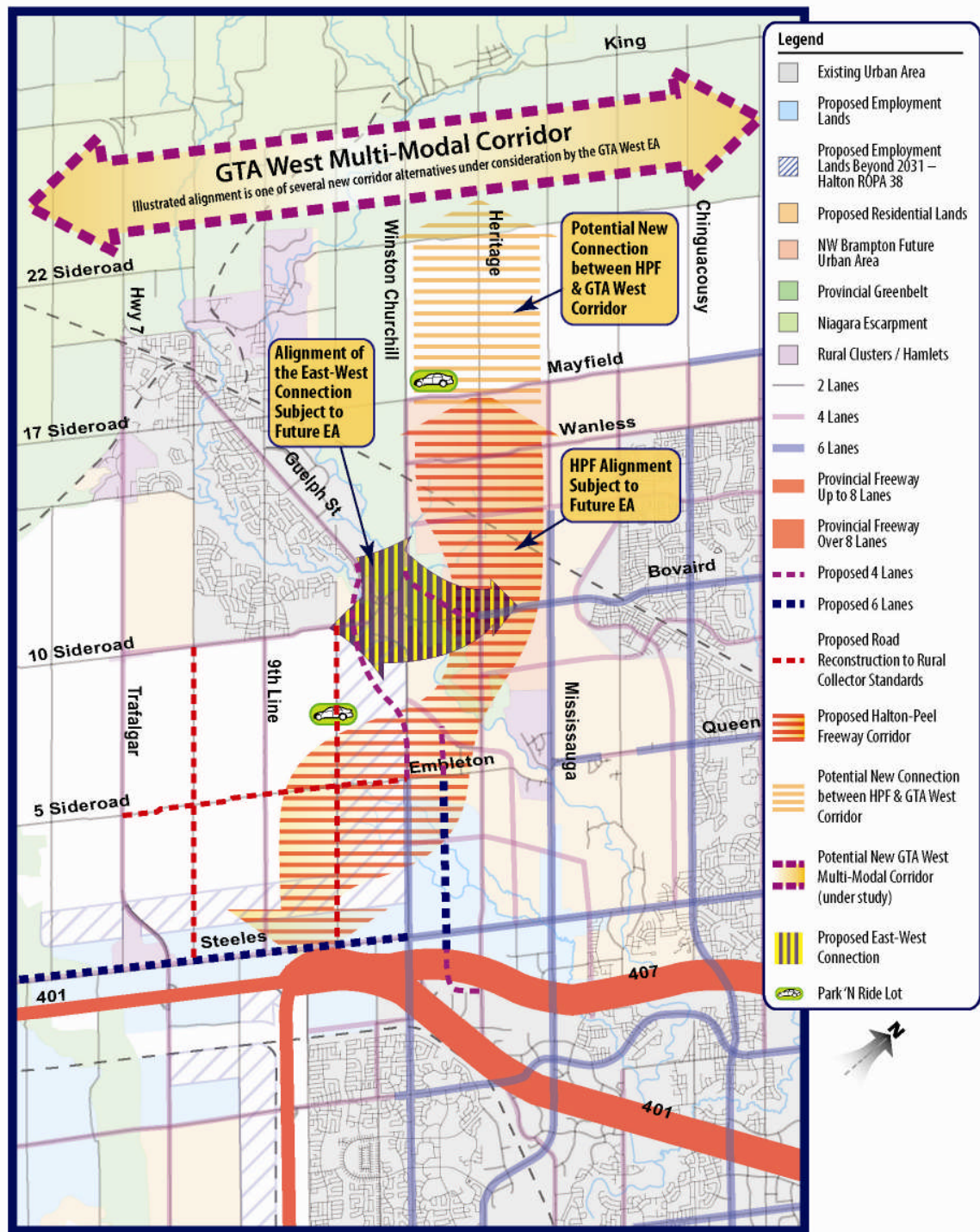


Exhibit 8-2: HPBATS Recommended Road Network; Halton Hills, 2031



Subject to future Environmental Assessment studies

Exhibit 8-3: HPBATS Recommended Road Network, 2031

8.6.1 Halton-Peel Freeway

The recommended facility would connect to Highway 401 / 407 ETR in Halton ensuring optimal connectivity with Highway 401 and the Provincial network. It would traverse the southeast quadrant of Halton Hills, cross over to Peel near Embleton Road, cross the Credit River and run north to Bovaird Drive and Mayfield Road. The Halton-Peel Freeway would provide general purpose lanes and HOV capacity and would serve as a corridor for transit and goods movement. It is projected that the facility will require 8 lanes of capacity between Highway 401 / 407 ETR and Bovaird Drive and 6 lanes of capacity north of Bovaird Drive. The section north of Bovaird Drive should be protected to accommodate 8-lanes in the future to provide this capacity if the GTA West Corridor is approved and constructed. In conjunction with the potential GTA West Corridor, the Halton-Peel Freeway corridor could be extended north of Mayfield Road to provide for proper connectivity with GTA West.

Of the many options evaluated in this study, the Halton-Peel Freeway is the only north-south transportation spine that will provide:

- The capacity needed to support growth planned in Halton (Milton and Halton Hills) and in Peel (Brampton)
- Direct links to Highway 401 and 407 ETR, and the proposed GTA West corridor
- A multimodal corridor with priority lanes for transit and HOV, and the potential for an exclusive transit corridor
- Less overall congestion in Halton Hills and Brampton
- Enhanced access to new employment areas in Halton and Peel
- A superior goods movement corridor

The capacity, functionality, network connectivity and continuity provided by the Halton-Peel Freeway is essential to improving existing conditions and supporting a large proportion of growth and development in the Study Area. Correspondingly, timing, phasing and design parameters of the Bramwest Parkway, in addition to the extent and timing of improvements on Winston Churchill Boulevard and Bovaird Drive, are directly correlated to the alignment, timing and construction phasing of the Halton-Peel Freeway. The approval, EA, design and construction for the Halton-Peel Freeway should therefore be vigorously pursued by HPBATS agencies including the Ministry of Transportation.

To this end we recommend that:

1. The Official Plans of Halton Region, Region of Peel, City of Brampton, Town of Halton Hills, and Town of Caledon be amended to show the Halton-Peel Freeway corridor as presented in **Exhibit 8-3** and include appropriate corridor protection policies
2. Intra-agency discussions be initiated between Peel, Halton, the Ministry of Transportation and Metrolinx on prioritizing next steps including the commencement of the Environmental Assessment process

While the HPBATS study has confirmed the need for the Halton-Peel Freeway along with other key transportation network improvements to accommodate planned growth in Halton and Peel Regions, the Halton-Peel Freeway will also have a major provincial function, in providing a much needed north-south multi-modal freeway link in the West GTA that will

connect with Highways 401 and 407, and with a potential GTA West Corridor. It would be a key north-south link in the 400-series network in the GTA, as a northerly extension of 407 north to the GTA West Corridor. As a multi-modal provincial corridor, it would also serve longer-distance, inter-regional traffic including goods movement.

8.6.2 East-West Connection

The East-West Connection, which would link Georgetown and Brampton via the Guelph Street – Bovaird Drive corridor, is recommended to be built to urban arterial standards, and to provide sufficient right-of-way to accommodate at least 4 general purpose lanes, transit priority lanes, cycling lanes and sidewalks. It is required to provide:

- A high capacity, multimodal, east-west transportation corridor linking Georgetown and Brampton
- An alternative route for cars and trucks to bypass Norval
- A corridor for inter-municipal transit services between Georgetown and Brampton, as well as improved transit service within Georgetown and Brampton
- Continuity in pedestrian and cycling networks within and between Georgetown and Brampton
- Efficient goods movement, including aggregate truck movement, between Halton Hills and Brampton

As a result, the HPBATS recommends that:

1. The Official Plans of Halton Region, Region of Peel, City of Brampton, Town of Halton Hills, and Town of Caledon be amended to show the East-West Connection as presented in **Exhibit 8-2** and **Exhibit 8-3** and include appropriate corridor protection policies
2. Subject to confirmation by municipal partners, the Environmental Assessment Phase 3 and 4 for the East-West Connection be re-initiated as a joint study involving Halton Region, Peel Region, and affected local area municipalities. Recognizing the desire to avoid a new crossing of the Credit River if possible, a future environmental assessment for the East-West Connection should explore all reasonable options including alternatives that would not require a new crossing of the Credit River
3. Key stakeholders identified in HPBATS be consulted during the Environmental Assessment, including Upper Canada College
4. The potential tie-in of the East-West Connection with Bovaird Drive be incorporated into the on-going Bovaird Drive EA Study, included in North West Brampton Secondary Area Plan and the alignment design for the future Halton-Peel Freeway EA

8.6.3 Bramwest Parkway

The Bramwest Parkway is an important element of the Study Area network and is vital for development of the Bram West Secondary Plan area. Bramwest Parkway will be a major urban arterial road, with 4 general purpose lanes, sidewalks and bicycle paths between Heritage Road and the interchange with 407 ETR, 6 general purpose lanes, sidewalks and bicycle paths between the interchange of 407 ETR and the interchange with the Halton-Peel Freeway and 4 general purpose lanes, sidewalks and bicycle paths from Halton-Peel Freeway to New Road A in Bram West SP north of Embleton Road.

HPBATS recommends the commencement of Phases 3 and 4 of the Environmental Assessment process for the Bramwest Parkway, including its interchange with 407 ETR. The Bramwest Parkway corridor north of Embleton Road, its connection to the recommended Halton-Peel Freeway and connectivity to New Road A should be assessed separately or as part of the Halton-Peel Freeway EA.

8.6.4 Other Improvements

HPBATS recommends the following road improvements and actions:

1. Norval Bypass West – 4-lane arterial road bypass, west of Norval, running between Guelph Street (Highway 7) and 10 Sideroad. The Norval Bypass West should be constructed as an urban arterial road with 4 lanes of through traffic capacity, and provision for cyclists and sidewalks. It is recommended that Phases 3 and 4 of the Environmental Assessment be initiated
2. Highway 7 west of the future intersection with Norval Bypass West should be widened to provide uniform and continuous 4-lanes of capacity up to McFarlane Drive / Hall Road
3. Winston Churchill Boulevard Bypass – construction of a new 4-lane arterial road bypassing Norval South and extending from 10 Sideroad to the existing Winston Churchill Boulevard north of 5 Sideroad. It is recommended that Phases 3 and 4 of the Environmental Assessment be initiated. The existing Winston Churchill Boulevard north of the junction with Winston Churchill Bypass would serve local traffic only and should remain at a 2 lane cross-section
4. Trafalgar Road – Restart the Trafalgar Road Environmental Assessment process and address transportation issues in Ashgrove
5. Steeles Avenue widening from 4 to 6 lanes for transit from Winston Churchill Boulevard to Trafalgar Road
6. Adamson Road North Bypass – Commencing the Northwest Brampton Secondary Plan study and addressing the need to provide the Adamson Road North Bypass, connecting Winston Churchill Boulevard with Bovaird Drive
7. 8th Line, 10th Line reconstruction to rural collector road standard, between Steeles Avenue and 10 Sideroad
8. 5 Sideroad reconstruction to rural collector road standard, between Winston Churchill Boulevard and Trafalgar Road

8.6.5 Other Road Recommendations

Supplementary directions and recommendations to the study are provided below:

In this report we are recommending a comprehensive, multimodal transportation network, with each element of the recommended network having an important role and function. To expedite the approval process we recommend that future EAs be initiated on an individual basis and be undertaken on a network-wide approach.

We recognize that at present neither municipality owns or operates any freeway facilities, as these are in the Provincial domain. This report addresses the need for a freeway facility, not the jurisdiction(s) that will be responsible for the funding, planning, design, and implementation of the freeway facility. Considering the inter-regional function of the proposed Halton-Peel Freeway, it can be argued that the Province of Ontario should have the lead role for the funding, planning, design, and implementation of the freeway. It is suggested that discussions continue with the Province of Ontario on the jurisdiction and financing of the Halton Peel Freeway.

To expedite the Environmental Assessment process for Halton Peel Freeway we recommend that the HPBATS municipal partners:

- Submit the HPBATS recommendations to the Ministry of Transportation and request that the Ministry take on the proponenty of the Halton-Peel Freeway, and that it initiate the EA process for the Freeway within a reasonably short time frame
- If MTO is unable at this time to satisfy the above, request that MTO participate in the HPF EA as a joint proponent with the municipal partners
- If MTO is unable at this time to satisfy either of the above, request that MTO participate in the HPF EA, not as a proponent, but as a partner to demonstrate provincial interest and active participation in the HPF EA. Communications with the public would state that the Province has a strong interest in the project, that MTO is an active participant in the EA through the project Steering Committee, and that MTO may elect to become a proponent of the project at a future date (depending on the findings of the GTA West Corridor Study)

The study has identified the growth in demand on the Highway 401 corridor and confirms the need to widen Highway 401 in Mississauga and Halton Region. The study also confirms the need for east-west improvements between Halton and Peel Regions to accommodate the growth in travel.

As HPBATS did not assess land use scenarios or evaluate development staging options or urban structure plans, we recommend that future development and growth be aligned with the timing for planned infrastructure improvements to the road network, particularly the timing for the widening of Highway 401, the proposed Halton-Peel Freeway, and GTA-West Corridor.

8.6.6 Summary of Recommendations and Timing

The following table summarizes the transportation network elements and timing recommended by HPBATS in addition to already planned improvements. Following the terms of reference and HPBATS scope, the study examined 2016, 2021 and 2031. A detailed timing schedule should be established by agencies with appropriate administrative jurisdiction. The summary of timing recommendations is presented in **Table 8-1**.

Table 8-1: Summary of Recommendations and Timing

Road	From	To	Improvement Type	Initial Lanes	Final Lanes	Suggested Timing
Roads						
Halton Peel Freeway	Hwy 401 / 407 ETR in Halton	Bovaird Drive	New construction	0	8	2031
Halton Peel Freeway	Bovaird Drive	Mayfield Road	New construction	0	6 (8 ultimate)	2031
Halton Peel Freeway	Mayfield Road	GTA West Corridor	Corridor protection			Beyond 2031
East-West Connection	Guelph Street / Highway 7	Bovaird Drive	New construction	0	4	2021
Bramwest Parkway	Heritage Road south of 407 ETR	Halton Peel Freeway / Embleton Road	New construction	0	6	2016
Norval West Bypass	10 Sideroad	Guelph Street / Highway 7	New construction	0	4	2016
Highway 7	Norval West Bypass	McFarlane Drive/ Hall Road	Widening	3	4	2016
Winston Churchill Bypass	North of 5 Sideroad	10 Sideroad / Norval West Bypass	New construction	0	4	2016
Adamson Road North Bypass	Bovaird Drive	Winston Churchill Blvd	New construction	0	4	2021
Winston Churchill Blvd	5 Sideroad / Embleton Road	Winston Churchill Bypass	Widening	2	4	2016
Steeles Avenue	Winston Churchill Blvd	Milton	Widening	4	6	2031
Eight Line	Steeles Avenue	10 Sideroad	Reconstruction to Collector	2	2	2021
Tenth Line	Steeles Avenue	10 Sideroad	Reconstruction to Collector	2	2	2021
Fifth Line	Winston Churchill Blvd	Trafalgar Road	Reconstruction to Collector	2	2	2021

Road	From	To	Improvement Type	Initial Lanes	Final Lanes	Suggested Timing
Transit						
Steeles Avenue BRT	Brampton	Milton	Bus rapid transit	4	4 plus HOV	2031
Guelph Street –Bovaird	Brampton	Georgetown GO	Inter-regional transit	4	4	2021
9 th Line	Georgetown GO	Milton or Mississauga	Transit service	4	4	2031
Halton-Peel Freeway Transitway	HPF corridor		Bus service, potential for RBL	8	6 plus HOV	2031 and beyond
Carpool lots			HPF carpool lots (2)			2031

8.6.7 Coordination with GTA West Corridor EA Study

Although the HPBATS recommendations are independent from the GTA West Corridor, it is recognized that the development of the HPBATS network and its main recommendation – the Halton-Peel Freeway – will have opportunities to connect with the proposed GTA West Corridor, currently being planned by the Ontario Ministry of Transportation. The potential connection between the Halton-Peel Freeway and GTA West Corridor is shown in **Exhibit 8-3**.

The benefits of the GTA West Corridor to the HPBATS Study Area include:

- Greater access to the provincial highway network
- Improved inter-regional connectivity, for autos, transit, and goods movement
- Alternative goods movements corridor, including aggregate trucks

As the recommendations of HPBATS are implemented, ongoing coordination will be needed with the GTA West Corridor Study.

9. IMPLEMENTATION

The completion of HPBATS opens up the opportunity for Halton Region, Region of Peel, City of Brampton, Town of Halton Hills, and Town of Caledon to resolve outstanding transportation issues and, more importantly, to develop a comprehensive and coordinated approach by enhancing the HPBATS transportation strategy with land use information.

To implement the recommendations of HPBATS, the following actions are recommended:

- Official Plan Amendments – Following approval of HPBATS, develop and adopt an Official Plan Amendment (OPA) consisting of updated transportation policies, transportation schedules and corridor protection policies for Halton Peel Freeway, East-West Connection and other roads identified in HPBATS
- Development Charge Updates – Following approval of Official Plan Amendments, amend municipal capital plans and Development Charges By-Laws
- Confirm the results of this study through other major transportation strategy documents such as transportation master plans, and incorporate the findings
- Work cooperatively with the stakeholders and members of the public including but not limited to the Upper Canada College Outdoor Education Centre, Queen of Peace Croatian Franciscan Centre, Brampton Brick, Smart Centres, Maple Lodge Farms, individual land owners and land developer groups to further advance and implement the recommendations of the HPBATS
- Work cooperatively with other public agencies such as Hydro One for the planning of infrastructure projects to support population growth in the Study Area. Explore the use of joint use transportation and power transmission corridors where possible to provide services to the residents of the study area in a coordinated, efficient and cost effective manner.
- Nurture and preserve the spirit of cooperation and partnership established during the course of the HPBATS and use it as a platform for developing and implementing all aspects of the HPBATS transportation management strategy
- Subject to confirmation by municipal partners, initiate Environmental Assessment Phase 3 and 4 studies for the Halton-Peel Freeway, Bramwest Parkway, East-West Connection, Norval West Bypass, Winston Churchill Boulevard Bypass, and Steeles Avenue, and restart the Environmental Assessment process for Trafalgar Road
- Include the results and recommendations of the HPBATS in ongoing environmental assessment studies, including the Bovaird Drive widening EA and Mississauga Road widening EA
- Seek ways to accelerate the widening from four to six lanes of Steeles Avenue west of Winston Churchill Boulevard
- Undertake a comprehensive update and review of the needs and conditions in the Halton-Peel boundary area in five years

10. FINANCING

High level estimates of road construction costs for the recommended road improvements (beyond those already planned) identified in HPBATS and summarized in **Table 10-1** amount to \$629 million. This cost does not include land acquisition costs, utility relocation costs or the costs of the construction of the Bramwest Parkway, since the costs for this road have been included in City of Brampton and Region of Peel plans and budgets. The costs include \$604 million for the construction of new roads and \$20 million for the widening and reconstruction of existing roads. The construction of the Halton-Peel Freeway is the most significant item on this list, as it accounts for 76% of the total cost.

Table 10-1: Summary of New Road Investments to the HPBATS Network by 2031

Improvement	Estimated Cost of Improvement (in millions)*
Halton Peel Freeway	\$479.3
East – West Connection	\$100.1
Adamson North Bypass	\$8.4
Winston Churchill Bypass	\$8.0
Norval West Bypass	\$8.1
Steeles Avenue Widening	\$8.7
Reconstruction of 8th Line	\$5.7
Reconstruction of 10 th Line	\$5.7
Reconstruction of 5 Sideroad	\$5.2
Overall Total	\$629.2

*Cost by improvement includes estimated construction cost, cost of EA studies, 10% contingency and 15% engineering costs. Costs derived from the City of Brampton construction cost benchmarks, 2009.

The high new quota of population and employment growth and the expected deterioration of existing levels of service might be sufficient enough to recover most of the cost of road construction and road related improvements to arterial and collector roads through Development Charges. It is also vital that improvements to boundary roads be coordinated with the appropriate municipality or municipalities through cost sharing or other agreements.

The construction of the Halton-Peel Freeway is necessary to meet the Provincial Growth Plan objectives, exceeds the financial capabilities of Halton and Peel and should be financed from other sources (presumably Provincial). The Freeway will serve not only Peel and Halton but also the GTA and the Golden Horseshoe and would provide connectivity with the GTA West Corridor identified by the Provincial Growth Plan. Understanding this, all Study Area agencies are encouraged to work co-operatively and with an open mind in order to determine the most appropriate method to finance the recommended projects.

Appendix A

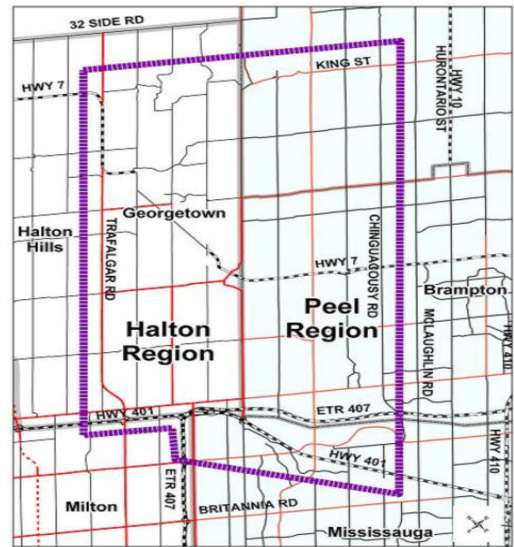
Consultation Process

Appendix A-1

Public Information Centre #1 and Stakeholder Workshop #1 Summary Report



Halton Peel Boundary Area Transportation Study (HP BATS)



PUBLIC FEEDBACK REPORT Stakeholder Workshop # 1 Public Information Centre#1 Held September 24, 2009

This report has been prepared by an independent facilitator. It is not intended as a verbatim account and is provided here as a record of the input.

For more information about the study, please contact
Tyrone Gan, Consultant Project Manager
HDR | iTRANS Consulting Inc. at
tgan@itransconsulting.com
www.halton-peelbats.ca

Sue Cumming, MCIP, RPP
Cumming + Company
Tel: (866) 611--3715



Halton Peel Boundary Area Transportation Study (HP BATS) PUBLIC FEEDBACK REPORT

TABLE OF CONTENTS

1.	Context for Public Consultation	Page 2
2.	Feedback from Public Information Centre #1	Page 5
3.	Feedback from Stakeholder Workshop #1	Page 7

APPENDIX

APPENDIX 1 - Stakeholder Workshop Table Feedback	Page 15
APPENDIX 2 - Written comments received at time of report writing	Page 19
APPENDIX 3 - Project Team for Study	Page 24

Halton Peel Boundary Area Transportation Study

PUBLIC FEEDBACK REPORT

1. CONTEXT FOR PUBLIC CONSULTATION ROUND 1

The Halton-Peel Boundary Area Transportation Study (HP BATS) is a joint study by Peel Region, Halton Region, City of Brampton, Town of Caledon, and the Town of Halton Hills. The study was suspended in July 2007 and has been reinitiated in June 2009. Its purpose is to identify the long-term (2021 and 2031) transportation network required to support provincial and municipal planning goals, and to serve future transportation demands within the Study Area. HDR | iTRANS Consulting has been retained to carry out this study. The Study Area (see Figure 1) generally extends from Trafalgar Road in the west, Chinguacousy Road in the east, King Street in the north and Highways 401 and 407 to the south.

The specific goals and objectives of the Study are to:

- Support current and future municipal planning objectives by providing transportation capacity to accommodate future travel demands generated by planned growth in west Brampton and Halton Hills.
- Develop a coordinated interconnected roadway network near the Halton-Peel Boundary.
- Identify opportunities for transportation mode choices, including public transit, carpooling/vanpooling, and High Occupancy Vehicle (HOV) lanes in the study area.
- Identify solutions to serve long-distance truck traffic travelling between Halton Region and Peel Region.
- Identify improvements that will serve inter-regional traffic including longer-distance, cross-boundary traffic from Halton Region (and areas west of Halton Region), travelling through west Brampton and southwest Caledon to destinations to the south and east in Peel Region, York Region, and Toronto.
- Review the potential to improve connections with the existing Provincial 400-series highway network and possible future Provincial transportation facilities including the GTA West Corridor Planning and Environmental Assessment Study in support of the Province's growth objectives as set out in the Provincial Growth Plan for the Greater Golden Horseshoe.
- Explore opportunities to reduce dependency on the automobile through Travel Demand Management (TDM) and transit supportive measures.

This joint study is being carried out through an open public process in accordance with the requirements of Phases 1 and 2 of the Municipal Class Environmental Assessment (EA) process (MEA, 2000) which is an approved process under the Environmental Assessment Act, so that the study results can serve as direct input to any subsequent EA

studies that may be deemed appropriate. A key component of the study is consultation with both stakeholders and the general public through stakeholder group workshops and public information centres (PICs). The first round of public consultation was held on September 24, 2009 at the Mold Masters Sportsplex in Georgetown with an afternoon Stakeholder Workshop followed by an evening Public Information Centre.

The purpose of these Public Consultation events was to present the following to the public and stakeholders for their information and input:

- Study background;
- Problem and Opportunity Statement;
- North-south transportation corridor options;
- Georgetown Norval By-Pass options; and
- Draft evaluation criteria

Further information about this study and presentation materials provided at these meetings are available at www.halton-peelbats.ca

For the Stakeholder Group Workshop, letters of invitation were sent to representatives of "organized" entities such as land owners/developers, rate payers groups, businesses, environmental groups, political organizations who expressed in interest in the Study. Individuals who responded to the Notice of Study Commencement in 2007 and those that responded to the September 2009 Public Information No. 1 Advertisement were also included. Municipal representatives from the Steering Committee also provided additional stakeholder contacts. Notification for Public Information Centre No. 1 was advertised as follows:

- *The Georgetown Independent and Free Press on September 11, 2009*
- *North Halton Compass on September 10, 2009*
- *Acton Tanner on September 10, 2009*
- *Through Regions of Halton and Peel web site*

The Stakeholder workshop was held from 2 to 4:30 p.m. and attended by 40 stakeholders. The format for the workshop involved interactive table discussions seeking input on the Problem and Opportunity Statement and different transportation options. A participant workbook was provided for recording individual comments. Comments and feedback were received through the table discussions and overall workshop plenary. Many of the workshop booklets were submitted to the project team and these individual comments are being reviewed.

The public information centre was held with an open house from 6 to 7 p.m. followed by a presentation and public discussion. Over 100 people attended in the evening. Residents in attendance lived in both Halton and Peel Regions. Following the presentation, members of the public were able to raise questions and provide their comments. A comment form was also provided for individual written comments and numerous forms were completed and are being reviewed.

This report prepared by Sue Cumming, Cumming+Company who facilitated the discussion includes the discussion points noted and synthesizes input received. It is not intended as a verbatim account of the meetings. This report along with the response to comment forms is being used to evaluate the different transportation corridor options. The views and ideas expressed in this Report serve to provide an understanding of the directions that the public would like to see incorporated into the Halton Peel Boundary Area Transportation Study. The main body of the report includes a synthesis of the key points noted throughout the Public Information Centre and Stakeholder Workshop. To ensure full transparency in the reporting of the input received through the Round 1 Public events, the Appendix to this Report includes additional input received at the workshop and through written comments received from the public.

Figure 1 HP BATS Study Area



2. FEEDBACK FROM PUBLIC INFORMATION CENTRE 1

The following is a synthesis of points noted at the evening Public Information Centre held on September 24, 2009. The questions and comments can be summarized in a number of themes as follows:

2.1. Discussion of Alternative Transportation Corridor Options

- View that swinging the North-South Transportation Corridor from Winston Churchill south is not useful.
- View that the area north of Highway 7 has not been taken into account.
- View that aggregate operations need to be considered particularly access and trucking activity.
- View that the Georgetown Norval By-Pass (GNBP) will mostly serve commuter traffic from Georgetown. People living on Heritage Road want to see a solution that stops the trucks from going through Georgetown. One individual referenced a preference for the by-pass going south provided trucks were dealt with.
- View that traffic should be diverted north of Georgetown and Norval.
- Discussion of the need to think about the community impact and protect the established communities. The view was also expressed about not cutting off the existing communities.
- Questions about what is happening with Winston Churchill Blvd and reference to widening that were to have been undertaken. *The project team indicated that widening would be taking place in the next year as planned and that information would be available on both of the Regions of Halton and Peel web sites for residents wanting more detailed information. Residents were also encouraged to contact staff.*
- Comment that the study team should be thinking about east-west travel between Bolton and Guelph and if looking at north-south then it should start at Winston Churchill.
- Concerns expressed about how the 401 will handle the growth in Halton. Comment about the GNBP Options citing that most of the growth will be in Milton suggesting that the 10 Sideroad would be taking most of the traffic. *The project team noted that the Province has plans widen the 401 through Halton and that there is an acknowledgment of the significant longer distance travel between the GTA and Guelph and Kitchener-Waterloo that would need to be served by the 400 series highways. The HP BATS study is focusing on north-south movement between Halton and Peel and the Georgetown Norval By-Pass.*

- Questions raised asking about the need for the Halton Peel Freeway Option. *The project team responded that options were being looked at to support planned growth and development in west Brampton.*

2.2. Suggestions for considering other options and refinements

- Consideration of an option that would see the north-south corridor go straight up 9th Line or just east and connect with the GNB, swing north towards the east and cross Credit River.
- Comment from another individual citing difficulty going along 9th Line, north of 10 Sideroad because the area is built up.
- Consideration of widening of Steeles Avenue. *It was noted by the project team that Steeles Avenue is planned to be widened and also looking at Rapid Transit along Steeles.*
- Consideration of option north of Highway 7 to accommodate significant growth in Northwest Brampton.
- Desire for better connections to Highways 401 and 407 in all directions.
- Consideration of an option across 22 Sideroad. A longtime area resident suggested looking at 22 Sideroad and noted that it would provide a shorter route for access to the quarries and could eliminate more community impact from trucks.
- Consideration of the north-south route down Heritage Road, swinging right at Winston Churchill to 401/407. It was suggested that for those living along this part of Heritage Road they would then only have to worry about Georgetown traffic. Difficulties were cited in trying to go south in the morning and trying to get onto Winston Churchill Blvd south of 5 Sideroad.
- Question as to whether the North South Transportation Corridor Options will all end at Mayfield as shown on the diagrams. *The project team responded that this would be monitored with the outcomes of the GTA West Corridor Study.*

2.3. Who is involved in study, timing and funding

- Need to ensure that the City of Mississauga is involved.
- What is financial impact and availability of funding and how this could affect timing for improvements with questions about what triggers there may be to get the Province to provide funding and who will pay for the infrastructure. *The project team responded indicating that the study will result in a long term strategy that would be implemented when funding is available. It was noted that discussions are taking place with the Province and municipalities.*

2.4. Status of the GTA West Corridor Transportation Study and 401 Improvements

- Comments about the status of the Ministry of Transportation GTA West Corridor Study. There was reference to public meetings held by the Province and questions about the impact that the north-south options would have to this study. *The project team noted that they had just met with the Province who is considering a number of options for east-west and north-south connections through to the Guelph area. The Province at this time has not determined where it will go or when. The study team believes that the BATS north south corridor options are needed to solve transportation problems within the study area. The project team will monitor closely the GTA West Corridor Study.*
- Concern that Highway 401 and 407 interchange improvements need to be done expeditiously.

2.5. Growth impacts and scope of the HP BATS Study

- Clarification of Growth Plan Population Projections to 2031.
- Reference that significant growth is underway in Brampton and Milton.
- View that less development is occurring in Georgetown.
- View that transportation options should serve areas north of Highway 7.

3. FEEDBACK FROM STAKEHOLDER WORKSHOP 1

The Stakeholder Workshop held on the afternoon of September 24, 2009 provided the opportunity for informal discussions and input on defining the problem and opportunity statement and review and discussion of preliminary corridor options and evaluation criteria. Workshop participants representing community and business interests in Halton and Peel collaborated in small group discussions. Several communication tools were used including a workshop participant guide, handouts displaying north-south corridor options and Georgetown Norval By-Pass options, area maps and a “things I didn’t get a chance to say” form. The discussion was paced with a lead in presentation by HDR | iTRANS on each discussion topic. Comments from the table discussions contributed to a plenary on each topic. The workshop table input is found at Appendix 2. The following is a synthesis of points which were noted.

Several workshop participants expressed the view that the study area may be too narrow and should be looked at to see if extending it to the west would capture a potential Halton north-south option. Others commented that the study area was appropriate and that the north-south options were focused geographically to accommodate growth

**Halton and Peel Boundary
Area Transportation Study**
*Problem and Opportunity
Statement*

The planned transportation network will not meet forecasted travel demand generated by existing and future residents and employees in both Regions. The study area transportation network requires new transportation solutions that will:

- Support Provincial Growth Plan goals and Greenbelt Plan
- Support planned growth in Halton (Sustainable Halton)
- Support planned growth in Brampton and Caledon
- Serve inter-regional transportation needs for long-distance travel and goods movement
- Serve regional transportation needs at an acceptable level of service
- Enhance transit accessibility
- Provide for enhanced connectivity and continuity of the transportation system across the Halton-Peel boundary
- Protect existing and planned communities
- Protect and enhance access to employment lands
- Protect natural resources
- Protect agricultural resources
- Improve air quality (minimize vehicular greenhouse gas emissions)

demands. There evolved a discussion about the growth that was planned in both the Regions of Halton and Peel and how this would be accommodated through transportation improvements within the study area. It was recognized that there is significant growth planned for Brampton, more so than what is being planned in the Georgetown Area. The project team will revisit the study area to ensure that it is appropriate for the development of potential options.

Many participants raised questions about the involvement of the Province and status of improvement to Provincial Highways. There were specific questions about the status of the planning for the GTA West Transportation Corridor Study and widening of Highway 401. Connectivity with Provincial Highways 401 and 407 and Highway 7 is of high priority to stakeholders. There is support for the timely implementation of Highway improvements.

There are strong views about protecting the existing communities. Heritage is of importance to stakeholders along with the natural environment. Agricultural uses need to be addressed in terms of impacts from transportation improvements and movement of farm vehicles.

Stakeholders noted the importance of recognizing the impact of the aggregate industry and trucking through the study area particularly in the northwest area.

There is a desire to develop a holistic approach whereby the transportation infrastructure would be combined with other infrastructure maximizing the use of the corridors to serve a variety of needs. The project team was encouraged to consider the comprehensive use of transportation infrastructure for all services and utilities.

3.1. Comments on Problem and Opportunity Statement

The workshop discussion focused initially on the draft problem and opportunity statement developed by the project team. The following words were used to describe the statement (shown in left margin):

- Sense that the statement is balanced and encompasses many aspects.
- Some held view that the language is too broad and generic and requires more specificity and refinement.
- Questions arose about how all of this could be achieved and what funding is available.
- If compromise was needed, how will the different components be weighted. Are some components more important than others.
- Question noted about how priorities would be determined.
- Need to include words responding to agriculture, heritage and aggregates.

3.2. Views on addressing transportation needs

Stakeholders were asked whether they felt that the problem and opportunity statement address the transportation needs in the Study Area? The following themes emerged:

- Does not appear to speak to short trips.
- Will there be policies for these options towards less car dependence and encouraging other modes (cycling and walking). Active Transportation Modes need to be expanded on (i.e. Bike/Pedestrian).
- How will options provide for car parks, car pooling and HOV lanes?
- What will be the threshold for building roads?
- How will options improve travel times?
- Options need to link communities and roads to rail lines
- Impact of goods movement on communities
- Funding - who pays to build and maintain new roads
- Reference to how to manage and plan of use movement of farm vehicles.
- Would like options to avoid slopes.
- How will transportation support the integration of employment lands with residential lands (work/live relationships)?
- Aggregate traffic impacts/resources within study area and to the Northwest.

3.3. Other problems and/or opportunities recommended for consideration

Stakeholder identified the following list of other problems and/or opportunities that should be considered

- Take opportunity to solve existing problems as well as future growth related problems.
- Need to address Georgetown Norval By-Pass with the sense that this is long overdue.
- Expedite timing for implementation with the view that development is happening and infrastructure needs to keep pace.
- Encourage less car dependence, encourage other modes (cycling and walking).
- Address truck movement and impact of goods movement on the communities.
- Assess who pays to build and maintain new roads and detail costs and benefits of travel.
- Protect natural environment (in addition to natural heritage) - valleylands and heritage.
- Accommodate improvements for short trips.
- Obtain public buy-in.
- Minimize land use impacts (i.e. aggregate).
- Coordinate servicing.

3.4. Discussion of Transportation Options

A key area of discussion at the workshop was the review of proposed transportation options.

3.4.1. Feedback on proposed North-South Transportation Corridor Options:

- View that there needs to be better connectivity to the 401 and 407. Concern that eastbound only connection to 401 is useless and that the connection to only 407 is not useful. Questions about how people would get to the 403?
- View that for the Peel Freeway options- interchanges are needed at existing 401/407 to provide access to all roads, all directions is needed.
- Questions about the cost difference between an arterial and freeway and whether arterial options would provide enough capacity to alleviate congestion.
- Questions about who would fund, build and operate freeway options.
- Some feel that more options are needed.
- View that Brampton Arterial options also require better east-west connections. None of the options are sufficient in this regard
- Concern that Brampton Freeway 2 and Brampton Arterial need better consideration of interchange spacing on Hwy. 401
- Questions about whether capacity be accomplished on arterials

- Desire to look at freeway spacing on a regional level
- One table asked for consideration of an option with a Halton alignment
- Concern that without City of Mississauga participation then some options may not be feasible.
- Peel Freeway - Splitting road for access-could add cost and additional maintenance requirements
- View that the GTA West Corridor could affect the Peel Freeway Options.
- Some tables prefer Peel Freeway Option No. 4. Others prefer No. 2, with the view that No. 1 is reasonable and No. 3 would be their last choice.
- View that the 9th line is most direct access to 401 and 407 and better for Halton commuters.

Feedback Georgetown/Norval By-Pass Corridor Options:

- View that most of options seem to ignore development - where is the proposed infrastructure north of 10 Sideroad to GO?
- Desire to reduce Credit River crossings.
- View that the GTA West Corridor would provide a major E-W connection and comments about whether this would remove congestion in Norval.
- Suggestions that north-south and GNB options be combined in order to minimize any potential credit crossings.
- Several tables preferred Option 5 citing less river crossings and potential to expedite.
- View that Norval cannot be totally by-passed because of congestion on Highway 7
- View that it is critical to keep traffic out of four corners of Norval
- Comments/questions about the potential impact in Georgetown by solving Norval bottleneck and what mitigation would be needed.
- Questions about Option 6: How far north will this option go? What distance will trucks have to travel? Hard to see the amount of development. Where will the by-pass come out?

3.5. Individual comments from Stakeholder Participants

In addition to the workshop discussion, stakeholders were provided with a comment form titled “things I didn’t get a chance to say form” to provide any additional feedback to the project team. The following are suggestions and comments transcribed from the forms received. Each point represents a different individual’s perspective.

- a. Norval By-Pass is needed now! Who will fund these proposed roads? Is the Brampton Freeway needed now? Will the Province assist with funding these roads? Truck traffic is a serious concern today and a solution is required now. Winston Churchill Blvd. south of 10 Sideroad is dangerous and needs repair today. Norval By-Pass was put on hold before - how can we be assured this time that the process will move forward?

- b. It is impossible for everyone to be happy. I think that it is essential for the best long-term solution to be chosen regardless of public upset. Georgetown has a closed mindset especially in older areas of Georgetown. Decisions that affect the future sustainability of the entire community ought not to be based on “keeping us in” and “keeping them out”. We need innovation and new ways of thinking if we are to survive in the future. Thank you!
- c. Highways 401 and 407 are already at capacity. Why is Highway 413 not being considered at this point in time?
- d. You need to clearly show reasoning to pick - local, freeway and major freeway. You need to better engage Metrolinx and GO Transit on issues of funding, costing, utilization and level of anticipated and projected service.
- e. I lack knowledge of the process and cost to make a comment.
- f. Please label north and south streets on drawings. Please add detail like width of corridor.
- g. Details of the crossing of the Credit Valley and entry into Peel are important to consider and identify in the Options for arterials and freeways etc.
- h. I would like to understand the cost and timing of approvals for each of the options.
- i. How will the road/transportation corridor be funded? Who will be responsible for maintenance? If this is to be large, would it not be a Provincial Road? What planning for transit and other modes of transportation will be looked at? How comprehensive will this corridor be?
- j. The need to preserve “employment lands” on the north and south side of Steeles in Halton Hills between Winston Churchill and Trafalgar Road given proximity to 407 and 401. Most of the growth area is in Brampton and therefore it is unfair that these lands in Halton Hills should be lost to proposed highway and this ideal location is hard to replace. An ideal alternative is to have north-south Highway go through Brampton side because: most of the urban /employment area concentrated in this area; connect to 407 and 401 west of Mississauga Road which is still open land; Expand Winston Churchill to wider lanes since this infrastructure already in place therefore cheaper and Winston Churchill already has connection to 401. In summary I do not believe interrupting the employment lands along Steeles Avenue in Halton Hills achieves the best result since massive infrastructure to be built will be onerous and expensive. Also from an environmental perspective, north of Steeles in Halton Hills is largely “greenspace” and such a highway through Halton Hills will be disruptive to the environment. Should consider other options with existing infrastructure such as a connection at 9th line or near Trafalgar to service Milton area as well.

APPENDICES

APPENDIX 1 - STAKEHOLDER WORKSHOP SUMMARY OF TABLE FEEDBACK

APPENDIX 2 - WRITTEN COMMENTS RECEIVED FROM PUBLIC

APPENDIX 3 - PROJECT TEAM FOR STUDY

APPENDIX 1

STAKEHOLDER WORKSHOP SUMMARY OF TABLE FEEDBACK

The following points were recorded from the workshop group discussions. Not all groups responded to all of the discussion questions.

a) **What words would best describe the problem and opportunity statement?**

FIRST TABLE

- Tremendous if can be accomplished
- If need to compromise how will the different components be weighted
- Where is the Provincial input
- Study area is too narrow - needs to be enlarged
- Would it not be a Provincial Road?
- Would miss options in Halton for north-south corridor if study area is not expanded to the west.
- Wording is vague
- Connectivity with provincial roads and highways (including Highway 7)

NEXT TABLE

Too open-ended

NEXT TABLE

- Agree with need for enhanced connectivity (point number 7)
- Appears balanced
- Agree with need to protect existing and planned communities
- Broad - requires refinement
- How will all of this be executed
- Holistic servicing considerations - look at all infrastructure

NEXT TABLE

- Very generic - lacks specific focus
- Prioritize items
- Conflicting Halton/Peel Growth Plans
- Agriculture - is it relevant
- Existing communities need protection

b) Does the problem and opportunity statement address the transportation needs in the Study Area?

FIRST TABLE

- Bike/Pedestrian
- HOV Lanes
- Farm Vehicles
- Heritage Buildings and protection of communities
- Avoid slopes
- Identify number of lanes - now or later
- When will the needs of the roads be met (what is the threshold for building roads?)
- Integration of employment lands with residential lands (work/live relationships)
- Car parks for car pooling (reserve lands)
- Norval Village By-Pass

NEXT TABLE

- Aggregate traffic impacts/resources within study area and to the Northwest. Most other needs seem to be addressed.
- Does not appear to speak to short trips

NEXT TABLE

- Improve travel times and options
- Steeles Avenue - needs upgrade at 9th Line
- Need to link committees and roads to rail lines

c) Are there other problems and/or opportunities that you would like to see considered?

FIRST TABLE

- Less car dependence, encourage other modes (cycling and walking)
- Impact of goods movement on the communities
- Funding - who pays to build and maintain new roads
- Solve existing problems as well as future growth related problems
- Protect natural environment (in addition to natural heritage) - valleylands and heritage

NEXT TABLE

- No reference to aggregates (shale)
- Flow through traffic -Norval
- Costs (need detail) - costs and benefits and travel

NEXT TABLE

- Short trips
- Public buy-in
- Land use impacts (i.e. aggregate)
- Opportunities for coordinated servicing

d) Comments on North-South Transportation Corridor Options:

FIRST TABLE

- Need more options
- BF2 and BA-4 - interchange spacing on Hwy. 401
- Can capacity be accomplished on arterials
- Need to look at freeway spacing on a regional level
- What about options with a Halton alignment

NEXT TABLE

- Eastbound only connection to 401 is useless
- Connection to only 407 is not useful
- How do you get to 403?
- What is the cost difference between an arterial and freeway?
- Will the arterial options work?
- Who builds freeway? Who operates it?
- HPF Option preferred

NEXT TABLE

- Brampton Arterial - These all require east-west connection to the 401. None of the options are sufficient in this regard
- Brampton Freeway - East-west 401 connection needed. 407 only and 407 only/east only 401 are not sufficient

NEXT TABLE

- GTA West Corridor will affect this
- North -south arterial - #4 is best
- Freeway - 1 is reasonable, 2 is best choice, 3 is last choice
- To best suit Halton Hills commuters - 9 th line is most direct access to 401 and 407

NEXT TABLE

Peel Freeway

- Interchange at existing 401/407 to provide access to all roads, all directions is needed.

- Splitting road for access- \$\$\$ and added maintenance requirements

e) **Comments on Georgetown-Norval By-Pass Options:**

FIRST TABLE

- Comments about Option 6: How far north will this option go? What distance will trucks have to travel? Hard to see the amount of development. Where will the by-pass come out?

NEXT TABLE

- All options seem to ignore development - where is the proposed infrastructure north of 10 Sideroad to GO?
- Combine with north-south to reduce credit river crossings
- Will this be needed if GTA West is installed? The GTA West would provide major E-W connection, removing congestion in Norval?
- Could north-south and GNB be combined in order to minimize any potential credit crossings?

NEXT TABLE

- #5 less river crossings, will happen faster, Norval cannot be totally by-passed because of congestion on Highway 7

NEXT TABLE

- Crossing Credit River twice is not good/critical to keep traffic out of four corners of Norval
- What will impact be in Georgetown by solving Norval bottleneck? How will these be mitigated?
- Option 5 preferred

APPENDIX 2

WRITTEN COMMENTS RECEIVED FROM PUBLIC

In addition to the discussion during the Public Information Centre, members of the public were provided with a comment form to share their written views. A number of forms have been returned and each of these is being reviewed by the project team. The following is not intended to be a COMPLETE summary of the comments expressed. The following are the responses noted on the returned comment forms received at the time that this report was prepared. Additional comment forms are being received and will be reviewed by the project team.

Does the problem and opportunity statement address the transportation needs in the Study Area?

- a. Yes
- b. Yes--but omits bypass of Georgetown instead of using Highway 7 through town
- c. Yes
- d. No-This study is 30 years too late and the roads proposed should have been in place 30 years ago. Bicycles and public transit in now rural areas of Halton Hills? Are you people serious. We have winter and distance out here.
- e. Yes, however an east-west solution should be prioritized, you can't hope to fix all the problems at once
- f. Yes
- g. It outlines the needs but does not provide solutions
- h. Yes
- i. The Problem and Opportunity Statement (POS) states that the planned transportation network will not meet demand but does not state which of the several planned transportation networks is being referred to. The problem and opportunity statement might have identified the opportunity to create business / employment opportunities along freeways as a "spin off" benefit to Freeways that are needed to satisfy transportation needs. There are specific existing facilities located in Halton Peel Boundary Area that could have been identified in the POS i.e. The Croation Cathedral and Maple Lodge Farms

Are there other problems and/or opportunities that you would like to see considered?

- a. BIKE LANES should be included
- b. Need a 'lifestyle/quality of life' element-way too much unproductive time is spent in cars rather than at work or with family-and emissions while in stop and go traffic
- c. Bypass Georgetown-Trafalgar? 10th Line?
- d. Unfortunately, there is very little information contained in the presentation which addresses the fact that much, if not most, of the traffic present in the "Bram West" area during rush hours either originates from, or is destined for, areas west of Georgetown. It is unfortunate that the "GTA West Corridor Study" is mentioned,

but there is no representation from the MTO and what the province decides to do, and when, would have a dramatic impact on this study. Why does this north-south corridor exist on the east side of Georgetown, and why is there no consideration of such a corridor on the west side of Georgetown?

- e. Yes-detail on integration with GTA Traffic Study currently underway in southern Ontario.

What about linkages to east-west traffic issues?

What are your thoughts on the fundamentals of a transportation strategy for the Study Area?

- a. Reduction of congestion is urgently required
- b. Change first bullet point to "Accommodate the efficient movement of people and goods"
- c. I question multimedia strategy and focus on moving people--too diverse--more - coordinating Peel/Halton
- d. Whatever you build, they will come. The roads will dictate the development
- e. Need roads first
- f. Does not cover all possible modes of transport (i.e. rail, bicycle, streetcar)
- g. Does not detail the integration of public transit in any of the options

What do you think are the building blocks of a transportation strategy for the study area?

- a. TDM: good. Transportation Systems Management: good. Public Transit: Ok within city in response to "Public Transit is the first priority for moving people": still need roads, sitting in a bus is worse than sitting in a car. Still need roads first again, not included in any of the options presented
- b. You also need to eliminate bottlenecks by creating freely-moving arteries-increase capacity but integrate new roads fully into the existing grid. At the same time, existing communities need to be safeguarded.

What are your views on the proposed North-South Transportation Corridor Options?

What comments do you have about each of the following?

- a. -All options are acceptable
- b. -BA-2: Yes, include 9th Line. Ba-4: Yes, include 9th Line
- c. -None are acceptable-will not address current or future growth
- d. -Option BA-4 looks to me to be the best choice because it has the most direct access to both 407 and 401
- e. Brampton Arterial BA1 - Not adequate: provides access to 407 only. Brampton Arterial BA3 Not realistic: Provides access to 407 but provides no direct access to 407, Introduces too much demand to the already overloaded Winston Churchill Blvd. Would create additional pressure on existing industry (MLF) by creating major restrictions both on Winston Churchill Blvd alignment and creating a barrier severing the Maple Lodge Farms industrial operations from its farming operations and eliminate the possibility of growth of Maple Lodge Farms. Brampton Arterial BA4 - Not realistic: routes traffic through the MLF lands with all the bad of BA3 on Maple Lodge Farms and proceeds through the middle of the existing industrial community presently located between 401 and 407.

The proposed Georgetown Norval By Pass Option 1 Not realistic: Demand is increasing if capacity is not increased, an increase in congestion is inevitable. Option 2 to Winston Churchill Not realistic: Winston Churchill is already overloaded Option 3 to Bovaird Dr. Not realistic: requires an unnecessary additional crossing of the Credit River. Option 4 to Williams Parkway Not realistic: requires unnecessary crossing of the Credit River Option 5 to Street 'A' If Option 5 provides access to the HPF Option it would eliminate the need for any additional crossing of the Credit and provide relief of congestion on the existing road system. Option 6 Not realistic: requires an additional unnecessary crossing of Credit River

What comments do you have about Freeway Options?

- a. They tend to take traffic southwest rather than south-> will commuters see this as desirable if they are heading to Central Mississauga or Toronto? Neither help Georgetown residents heading to the 401
- b. BF-1: No. BF-2: Yes, include 9th line. HPF: Best, it addresses southbound traffic from Georgetown on 9th Line
- c. Too far east! The majority of rush traffic originates from and is destined for areas west of Georgetown!
- d. The Brampton Freeway Arterial options have been in the planning stage for year. It is and was a good Brampton solution, but procrastination has now made it an expensive if not impossible proposition. Which means that the Halton Peel Freeway option will result in a highway through my house. What else is there to say.
- e. The freeway, in itself, is a good idea but there needs to be a non-toll (i.e. free) extension of the freeway southward to connect to SW Mississauga, Oakville, Burlington. Otherwise, you are dumping southbound traffic on to overburdened regional arterials and collectors in Mississauga (Mississauga Road, Winston Churchill Boulevard, Ninth Line)
- f. BA-4 is the only route to consider
- g. 401 interchange will only add to existing congestion unless province expands 401 prior to these options being implemented
- h. We prefer arterial road options because they don't create a barrier between the two sides and disrupt existing residences and businesses to a lesser degree. HPF would be a mistake!
- i. Brampton Freeway Option BF1 Not realistic: Does not provide direct access to 401. Would create unacceptable levels of congestion on Steeles, Winston Churchill, Heritage Rd., and Mississauga Rd. BF1 similar to the Brampton Arterial Options would defeat the purpose of building the Freeway which is to relieve congestion and reduce travel times by removing congestion from one part of the trip to a different part of the trip with the result of financial expenditure to produce neither a reduction in travel time nor congestion. Would provide an even greater to truncate the Maple Lodge Farms Operations. Brampton Freeway BF2 More Unrealistic: Intensifies all of the bad impacts on the existing industrial uses of Maple Lodge Farms and the existing industrial community between 401 and 407 at a bigger cost.

- j. Halton Hills Freeway Option HPF Most realistic: Provides freeway access to both 401 and 407 however the inclusion of the arterial connection through Concession VI to 407 is unnecessary. All connections to 401 and 407 are available at freeway confluence with 401 and 407 between the 9th and 10th lines of Halton Hills. The arterial connection to 407 through concession VI is not only necessary and expensive it has the added negative impact in the existing industry of Maple Lodge Farms separating the industrial and farming uses and preventing expansion of the existing operations.
- k. The only option that is sufficient and comprehensive is the Halton Peel Freeway option (HPF). The option not presented that should be considered is the option that would include the HPF Freeway connection without the expensive, unnecessary and disruptive arterial appendix.

Are the options presented sufficient and comprehensive to address the problem opportunity statement?

- a) Yes
- b) Need to address southbound traffic Trafalgar, 8th Line, 9th Line to 401, very hard in the AM due to back-ups
- c) Not really
- d) What other options are there in the study area? They were covered. Study area should be expanded for more options.
- e) See comment above
- f) Not necessarily, as these options do not present a comprehensive integration strategy with existing roads (i.e. Steeles Avenue, Bovaird Drive) that are insufficient at the present time. Significant improvement to the surrounding roads would be required.
- g) Yes, as long as intelligent E-W arterial access is provided for as well.

Are there other options not presented that you feel should be considered?

- a) Bypass Georgetown. No use bypass Norval and not Georgetown, maybe Trafalgar and 10 Sideroad, more Halton input
- b) A north-south corridor on the west side of Georgetown
- c) Halton-Peel option needs to be expanded beyond the Brampton border to address east-west options in Caledon.
Impact on other area residents needs to be considered--not just Winston Churchill residents.
Need to consider future states of other roads in area and required expansion- Steeles, Bovaird, Mississauga- and future roads to be built-Williams Parkway, Sandalwood Parkway.

Do you have any other comments for the North South Transportation Corridor Options?

- a) More emphasis on bypass Georgetown and N/S links 8th Line, 9th, Trafalgar to 401. Relieve cut through traffic from Highway 7-22nd Sideroad-8th Line, Wildwood, Main, Prince, 10th Line, River, Mayfield coming through the Glen.
- b) It would be useful and appreciated, if members of these various project teams are meeting and speaking with each other, (as I've been told on numerous occasions

that they are) if it would be possible to have "overview" of where things actually stand

c) No.

Georgetown/Norval Bypass; Are the options presented sufficient and comprehensive to address the problem opportunity statement?

- a) We have a concern with Option 6. We understand there are plans to alter Winston Churchill Boulevard by 2011. Surely it would not be appropriate to disrupt and damage the area again
- b) No, they provide a Norval bypass but take traffic through Georgetown. A true bypass would leave #7 in the Trafalgar area and go around Georgetown (south side?)
- c) 1: NO. 2: No. 3: No. 4: No. 5: YES BEST 6: NO. Need to expand west to reduce flow on Highway 7 through Georgetown
- d) Any option is better than none.
- e) Yes I think they are. #4 or 5 please!
- f) Yes
- g) Option #4 or #5 is the only route
- h) 1: Not acceptable. 2: Does not address issues and needs. 3: Doesn't address linkage to N-S corridor (freeway) 4,5,6: Does not address issues with Bovaird traffic, no direct linkage to N/S freeway. Overall: No-do not meet existing traffic needs on Bovaird Drive by redirecting traffic to bypass
- i) Option 1: unacceptable; option 2-inadequate-a missed opportunity. Option 3-see #2. Option 4: Best option. Option 5: next best. Option 6: Bad idea; would create major disruption to wildlife, be expensive and not do much to solve the problems.

Are there other options not presented that you feel should be considered?

- a) See above
- b) No
- c) Northern bypass-east/west to Caledon east-west route (i.e. 22nd Sideroad)
- d) Widen 10 Sideroad and make it an extension of Williams Pkwy west to Trafalgar. This would take more pressure off Hwy 7 through Georgetown.
- e) Need to look at service to area north of Mayfield Road-Caledon?

APPENDIX 3

PROJECT TEAM

The following are the Regional and Area Municipal Staff and consultants working together on this study. Most were in attendance at the Public Events for Round 1 to hear firsthand the feedback. These can be contact for further information on this study. Information is available at the study web site at www.halton-peelbats.ca

REGIONAL MUNICIPALITY OF HALTON:

Mitch Zamojc, Commissioner, Public Works
Tim Dennis, Director, Transportation Services, Public Works Department
Andrew Head, Manager, Transportation Services, Public Works Department
David Lukezic, Planner, Transportation Services, Public Works Department

REGIONAL MUNICIPALITY OF PEEL

Wayne Chan, Manager, Transportation Planning Division, Environment, Transportation and Planning Services
Tina Detaramani, Planner, Transportation Planning Division, Environment, Transportation and Planning Services

CITY OF BRAMPTON:

Chris Tschirhart, Manager, Brampton Transit
Marta Rostas, Project Manager, Planning Design and Development

TOWN OF HALTON HILLS

Bruce MacLean, Director, Development and Sustainability
Chris Mills, Director, Infrastructure Services
Ted Drewlo, Manager, Engineering Services
John Linhardt, Manager, Planning Policy

HDR | ITRANS CONSULTANT

Tyrone Gan, Consultant Project Manager
Elizabeth Szymanski, Consultant Project Planner
Jonathan Chai, Consultant Project Engineer
Matthew McCumber, Consultant Project Engineer
Andrew O'Connor, Consultant Project Planner

CUMMING+COMPANY

Sue Cumming, Facilitator Public and Stakeholder Consultation

Appendix A-2

Public Information Centre #2 and Stakeholder Workshop #2 Summary Report



Halton Peel Boundary Area Transportation Study (HP BATS)



PUBLIC FEEDBACK REPORT Stakeholder Workshop # 2 Public Information Centre#2 Held November 24, 2009

This report has been prepared by an independent facilitator. It is not intended as a verbatim account and is provided here as a record of the input.

For more information about the study, please contact
Tyrone Gan, Consultant Project Director
HDR | iTRANS Consulting Inc. at
tgan@itransconsulting.com
www.halton-peelbats.ca

Sue Cumming, MCIP, RPP
Cumming + Company
Tel: (866) 611--3715



Halton Peel Boundary Area Transportation Study (HP BATS) PUBLIC FEEDBACK REPORT

TABLE OF CONTENTS

1.	Context for Public Consultation Round 2	Page 2
2.	Feedback from Public Information Centre #2	Page 5
3.	Feedback from Stakeholder Workshop #2	Page 8

APPENDIX

APPENDIX 1 - General Comment Form Input

APPENDIX 2 - Stakeholder Workshop Discussion Points

APPENDIX 3 - Stakeholder Workshop Individual Comments

APPENDIX 4 - Project Team Members

Halton Peel Boundary Area Transportation Study

PUBLIC FEEDBACK REPORT

1. CONTEXT FOR PUBLIC CONSULTATION ROUND 2

The Halton-Peel Boundary Area Transportation Study (HP BATS) is a joint study by Peel Region, Halton Region, City of Brampton, Town of Caledon, and the Town of Halton Hills. The study was suspended in July 2007 and has been reinitiated in June 2009. Its purpose is to identify the long-term (2021 and 2031) transportation network required to support provincial and municipal planning goals, and to serve future transportation demands within the Study Area. HDR | iTRANS Consulting has been retained to carry out this study. The Study Area (see Figure 1) generally extends from Trafalgar Road in the west, Chinguacousy Road in the east, King Street in the north and Highway 401 and 407 ETR to the south.

The specific goals and objectives of the Study are to:

- Support current and future municipal planning objectives by providing transportation capacity to accommodate future travel demands generated by planned growth in west Brampton and Halton Hills.
- Develop a coordinated interconnected roadway network near the Halton-Peel Boundary.
- Identify opportunities for transportation mode choices, including public transit, carpooling/vanpooling, and High Occupancy Vehicle (HOV) lanes in the study area.
- Identify solutions to serve long-distance truck traffic travelling between Halton Region and Peel Region.
- Identify improvements that will serve inter-regional traffic including longer-distance, cross-boundary traffic from Halton Region (and areas west of Halton Region), travelling through west Brampton and southwest Caledon to destinations to the south and east in Peel Region, York Region, and Toronto.
- Review the potential to improve connections with the existing Provincial 400-series highway network and possible future Provincial transportation facilities including the GTA West Corridor Planning and Environmental Assessment Study in support of the Province's growth objectives as set out in the Provincial Growth Plan for the Greater Golden Horseshoe.
- Explore opportunities to reduce dependency on the automobile through Travel Demand Management (TDM) and transit supportive measures

This joint study is being carried out through an open public process in accordance with the requirements of Phases 1 and 2 of the Municipal Class Environmental Assessment (EA) process (MEA, 2000) which is an approved process under the Environmental Assessment Act, so that the study results can serve as direct input to any subsequent EA

studies that may be deemed appropriate. A key component of the study is consultation with both stakeholders and the general public through stakeholder group workshops and public information centres (PICs). The first round of public consultation was held on September 24, 2009 with an afternoon Stakeholder Workshop followed by an evening Public Information Centre. The summary of Public Feedback is posted on the study web site. Building on the input received from the public, stakeholders and technical review team, a second round of public consultation was held on November 24, 2009. The format was similar to the first with an afternoon Stakeholder Workshop followed by an evening Public Information Centre. The purpose of the second round of meetings was to present and receive feedback on the recommended elements of the Multimodal Transportation Strategy which includes recommendations pertaining to:

- Travel Demand Management Measures to reduce single occupant vehicle use during peak periods;
- Active Transportation Policies to create opportunities for increased pedestrian and cycling;
- Transportation Systems Management Policies to increase the capacity of the existing transportation network
- Goods Movement and Aggregate Truck Routing to improve the efficiency and safety of goods movement and reduce the community impacts in the study area;
- Public Transit Elements and,
- Road Network Elements.

The Stakeholder workshop was held from 2:00 to 5:00 p.m. and attended by 35 stakeholders and several individual residents. The format for the workshop involved interactive table discussions seeking input on the recommended elements of the Multimodal Transportation Strategy. A participant workbook with questions on each of the above-noted elements of the strategy was provided for recording individual comments. Comments and feedback were received through the table discussions and overall workshop plenary. Several workshop booklets were submitted to the project team and these individual comments are being reviewed.

The public information centre was held with an open house from 6 to 7 p.m. followed by a presentation and public discussion. Over 90 people attended in the evening. Residents in attendance lived in both Halton and Peel Regions. Following the presentation, members of the public were able to raise questions and provide their comments. A comment form was also provided for individual written comments and numerous forms were completed and are being reviewed. Following the second round of meetings a number of emails and letters were forwarded to the Project team. These are being reported on and responded to by HDR | iTRANS separately.

This report, prepared by Sue Cumming, Cumming+Company who facilitated the discussion, includes the discussion points noted and synthesizes input received at the afternoon workshop and evening public meeting. It is not intended as a verbatim account of the meetings. This report along with the response to comment forms is being used to refine and modify the recommended Multi-modal Transportation Strategy. The main body of the report includes a synthesis of the key points noted throughout the Public Information Centre and Stakeholder Workshop. To ensure transparency in the reporting of the input received through the Round 2 Public events, the Appendix to this Report includes additional input received at the workshop.

Figure 1 HP BATS Study Area



2. FEEDBACK FROM PUBLIC INFORMATION CENTRE 2

The following is a synthesis of points noted at the evening Public Information Centre held on November 24, 2009. Sue Cumming introduced the study and purpose of the meeting. Councillors and members of the project team were introduced. Tyrone Gan identified the objectives of the study and provided an overview of the study background, analysis results from the first phase and public feedback that was received and how it was addressed. He then presented the recommended Multi-Modal Transportation Strategy.

The questions and comments are as follows:

- View that more focus should be on transportation road network improvements on the Brampton portion of the study given the growth and demand from population entering Brampton to work. Would like to see major new roads constructed in Brampton to serve this demand.
- View that plan was comprehensive and provided a good range of transportation improvements. Concern on how this will be implemented and when.
- Concern raised that Bramwest Parkway will not be adequate to manage the traffic going to and from Toronto.
- Questions about what incentives there are for people to use public transit. The concern was noted that transit as it exists today in the study area is not going to attract people to use it and people will continue to rely on their own automobile to get around.
- A question was raised about the bus that currently goes from Mt. Pleasant to Georgetown and whether it would go through the town? It was noted that they don't see the point of another bus. Another resident commented that the GO bus picks people up along the way.
- Questions about how the significant population growth in the surrounding areas and the resulting traffic will be managed. *Tyrone Gan advised that growth in the surrounding areas and projected population and employment growth has been included in the forecasts and that the background work looked at more than what could be expected in the study area.*
- View that “by building it, they will come” - perspective that any new main roads or arteries will entice industry and congestion will worsen. *Tyrone Gan*

commented that attracting more industry/employment is a goal of the municipalities.

- A resident expressed the importance of the Levis Creek, the Provincially Significant Wetland that Bramwest Parkway could impact.
- Tyrone Gan responded indicating that the Halton Peel Freeway would serve more than Highway 401 traffic. He confirmed that the work undertaken has concluded that there is enough demand for an eight lane freeway (four lanes in each direction). On the topic of transit service, he agreed that it is not going to happen overnight. There are some short term improvements with Georgetown GO but more needs to be done.
- Another resident asked about truck traffic and whether it would be shifting. She asked about trucks coming down 9th Line from Guelph Street. There was a reference to the options for trucks to use Guelph Street and Winston Churchill By-Pass. Concern expressed about protecting neighbourhoods from infiltration of truck traffic.
- Questions about the whether the Halton Peel Freeway was being proposed far enough west. *Tyrone Gan responded that there are plans by MTO to address congestion on the 401. He noted that unfortunately congestion is a reality and we want to provide options. MTO plans to widen Highway 401 and more improvements are planned for 407 ETR. He noted the public feedback in Round 1 stressed the need to improve access to the Provincial Highways as well as provide for more north-south and east-west capacity.*
- Question about how interchanges would be managed when bringing in a new freeway to an already congested area. *Tyrone Gan responded that new interchanges would be planned with care to provide travel choices and to ensure safety.*
- There were some comments about future employment lands planned with ROPA 38 and the importance of addressing these in the Multi-Modal Strategy.
- Question about what the percentage of population growth is in this area, in Peel vs. percentage of growth in Halton? *Response from Tyrone: 15% from Halton Hills and 85% in Brampton. Residents asked if this information could be posted on the web site.*

- Question about how the Winston Churchill Boulevard Bypass would tie in and how it would interface with Freeway. *Tyrone Gan responded that whether it would be grade separated or with an at grade interchange would be addressed in a future EA.*
- Concerns about the traffic on Steeles Avenue noting that currently it is “crazy”. Comment that while these recommendations are addressing longer term problems, are people aware of doing studies on how much traffic there is right now? Concern that there are improvements that need to be done right away. Tyrone Gan noted that the municipalities are doing ongoing traffic surveys and that it would be important to talk with municipal staff; many are present here tonight to talk about the specific issues.
- It was further commented that during rush hour people divert off the 401 onto Steeles and how will people be able to get off the 401 and make a left turn. What are the plans for Steeles Avenue? Tyrone Gan responded that there are some solutions being looked at for improving the movements between Steeles and Highway 401 and there is recognition of the need for this.
- Question about how many lanes are on Winston Churchill Boulevard from By-Pass to 401? *Tyrone Gan responded that: four from Guelph Street to Halton Peel Freeway and six from Halton Peel Freeway to 401.*
- Questions about the timing for these improvements. *Tyrone Gan responded that there are too many unknowns to answer definitively when the improvements would be done. He described the next steps beyond this study which would involve specific environmental EAs on the various projects. Best guess would be that the EA process for the arterial roads when initiated would be 1 to 2 years which 2 years and longer for the EA Study on the Freeway. He also advised that public input would be sought during each of these EAs.*
- A question was raised about who would be paying for the transit proposed from Bovaird to the Georgetown GO? Tyrone Gan responded that this is a long term strategy and we are highlighting the need, not sure how it will be paid for.
- There was a question about the overall approach to developing the strategy and given that there are a number of essential improvements needed in both Halton and Peel whether there needs to some care to ensure that the improvements are not piecemealed. Tyrone Gan responded: We have included all plans for growth in all of Halton. We have included plans form other municipalities. Our mandate is to look at the area from Trafalgar Road to West Brampton.

3. FEEDBACK FROM STAKEHOLDER WORKSHOP 2

The Stakeholder Workshop held on the afternoon of November 24, 2009 provided the opportunity for informal discussions and input on the recommended Multi-Modal Transportation System. Workshop participants representing community and business interests in Halton and Peel collaborated in small group discussions. Several communication tools were used including a workshop participant guide, handouts displaying recommended elements, area maps and a “things I didn’t get a chance to say” form. The discussion was paced with a lead in presentation by HDR | iTRANS on each discussion topic. Comments from the table discussions contributed to a plenary on each topic. The workshop table input is found at Appendix 2. The following is a synthesis of points which were noted.

People like the carrots and not sticks approach being put forward for Travel Demand Management Measures. Many would like to see these incentives put in place to spur action. It was noted that Maple Lodge is an excellent example where TDM is being implemented successfully. It was noted that a significant employee base is needed to develop programs. Most agree that there needs to be a combination of measures and that TDM should be combined with parking strategies, carpooling, active transportation and transit.

It was noted that HOV could be looked at for north-south corridor options but there needs to be recognition that HOV lanes are not well used and some form of incentives may be necessary. The timing for implementation is seen as an important factor with most supporting creating infrastructure i.e. car pool lots as development occurs.

Most agree that transit is a good objective to have and would support new transit elements. They do not see it having an impact in the travel demand and reduction in auto use because of the lack of existing services. Most agree that significant improvements are needed and suggest that for future growth development areas that transit infrastructure be planned and built before people move in. Most noted that it is impractical to take transit between destinations now. Specific examples noted include: removal of service on weekends, no longer Go Bus to Huttonville or Go Train to/from Acton and Guelph. GO service on Highway 7 is only east and west with no north/south connections. There is no service in between Brampton and Milton and other key areas where the demand for travel exists.

People are supportive of ways to improve on Active Transportation. This is noted as a difficult challenge given the growth patterns that exist and the rural nature of parts of the study area. Most agree that it is good in theory and is dependent on land use planning, subdivision planning and addressing need for sidewalks, pathway, bicycle lanes and infrastructure. It was noted that the current way of planning for super schools with

elementary schools having large catchment areas has resulted in children not being able to walk or cycle to school. Some question climate considerations and vast geography of area for Active Transportation to relieve congestion in any way.

There was a discussion about the differences between recreational and commuter cycling and opportunities inherent for more active transportation in planning for both types of usage. Safety considerations were noted as needing consideration in planning for safe cycling routes. Some are of the opinion that cycling need to be separated from traffic.

There is a desire to work with developers to educate them about mixed use opportunities, to address active transportation in development planning and to review parking management.

There continue to be concerns about truck movements in the study area. This is noted as an area that requires more planning. Given that this is a long term plan, some would like to see more consideration of rail.

A number of workshop participants noted the importance of building transportation infrastructure before development goes in. They note that Infrastructure has not kept pace with development. Many commented that development occurs and then people move in and get used to using their cars for all trips.

Questions were raised about how the transportation improvements would be financed and how much would be financed by growth, contributions from senior levels of government and on the existing tax base.

Most agree that a by-pass is needed to help local businesses and residents by alleviating heavy trucks through Georgetown/Norval. There were different opinions on where the by-pass should go. With respect to North-South travel, key questions were raised about connections, possible interchanges, phasing and access. Individuals noted that they would be following up to provide their comments on the specific road network elements being recommended.

In addition to the comments discussed through the workshop plenary and table discussion points recorded in Appendix 2, some participants submitted their more detailed comments in the workshop booklets. These are noted in Appendix 3.

APPENDIX 1- Written General Comment Form Input

A detailed comment form was provided with the opportunity for the public to provide specific comments about their preferences. Twelve individuals returned these forms. HDR | iTRANS also received 21 letters noting comments and emails which are being reviewed and responded to by HDR | iTRANS. The following are the overall project comments noted on the general comments section and on the “things I didn’t get a chance to say form” and general comment form.

1. Would like to see consideration of “best in class” solutions from other countries i.e. Quiet electric and GO Train versus the old noise, smelly diesel and cycle paths in Holland and Germany
2. This project should have begun 10 years ago. All trucks must be removed from residential areas, they are noisy, polluting and a health hazard. Why a bus is necessary from one GO Station - Mt. Pleasant to another GO Station - Georgetown doesn’t make sense. GO bus already operates between stations. When all day train service is running, buses won’t be necessary unless the intent is for them to wind through Georgetown. If so, then I am against the bus service. What is urgently needed is a new road to get trucks and vehicles out of Georgetown residential and well established communities including 9th line/Mountainview Road South.
3. Truck and commuter traffic will use the fastest route and Highway No. 7 through and around Norval will cease to be the preferred choice. There may not be a need for an east west by-pass. If it is needed, however, then it should be positioned near the Adamson By-Pass keeping the transportation network together. This must also be the most cost effective solution and less land acquisition. There is also great concern about the environment and proximity to the Credit River and heart of Norval. The presentation overall was excellent, well thought out and delivered. I appreciate that the communities concerns and suggestions were in fact taken into consideration and I also appreciated the rationale given for the recommendations put forth. I would hope in the future that the recommendations put forth would relieve congestion in and around Norval and as outlined the possibility that some roads in and around Norval may not need widening is wonderful. Norval could now have the opportunity to become a true historic landmark attracting merchants, tourists and so on much like Kleinberg and Niagara on the Lake.
4. Excellent presentation. Would have liked more definitive answer of exact route of North-South HP Freeway as this is going to impact our farm.
5. Preference for HP Freeway but would like to have more information about alignment and timing.

6. The most significant feature of the HP Bats is the Halton Peel Freeway. All other issues are impacted by it. All other solutions and options should be considered in the context of with the HP Freeway in place as a solution set. Considering individual pieces outside the context of the complete picture introduces a degree of irrelevance to those individual pieces. For example - with the HP Freeway in Place, the Bramwest Parkway is not needed; the Norval bypass takes on a new form and connections from Winston Churchill Blvd. need to be reconsidered. It is a recommendation of Maple Lodge Farms that the need for the Bramwest Parkway be specifically reconsidered as part of the HP Bats Study as it appears that the HP Freeway preferred option effectively eliminates the need for the Bramwest Parkway.
7. Integrated connections to 407/401 interchange is the only option - not 407 as it would have no benefit. HP Freeway with full interchange at 401/407 is preferred. Bramwest Parkway Option is of no benefit - must be to 401/407. Bram Freeway Option 2 is not feasible - costs too high. HP Freeway Option Preferred.

APPENDIX 2 Stakeholder Workshop Discussion Points

The following is the workshop table input as recorded on the flipcharts used in the group discussion. Not all groups responded to questions about each aspect of the multi-modal transportation strategy. The following are the point noted organized by topic.

Active Transportation

First Table

- *Good in theory but need to reflect on issue of our climate*
- *Live-work land use mix needs to change*
- *Elementary schools have large catchment areas - super schools are a problem*
- *There are opportunities for other types of lands uses*
- *Need to consider recreational and commuter cycling*
- *Aware that people don't necessarily want self-contained land use*
- *Should educate developers about mixed land use opportunities*
- *Parking management*
- *These are being sold as the ideas, but how do you implement Active Transportation*
- *Go Multi-deck parking may be needed - with rising gas prices*

Next Table

- *Generally support*
- *There will be many challenges to implement*
- *Every development needs a TDM and Active Transportation Plan*
- *Higher density will be required to achieve transit and Active Transportation elements*

Next Table

- *To be effective it would need a bigger profile*
- *Peoples want active transportation*
- *Need to have consistent plans in place*

Next Table

- *There are safety issues that need to be considered for bicycles*
- *Bicycles should not be allowed on major roads*
- *Should be separated from traffic*
- *Active transportation should be encouraged for short trips*
- *Roads are too steep in many parts of study area and are too dangerous for cyclists*

Goods Movement

First Table

- *Emphasis is on trucks, how about rail lines?*

Next Table

- *Provide convenient routes for aggregate trucks*

Transit

First Table

- *Need to have better connections between house and public transit*
- *How can we make public transit more attractive - how do we increase usage?*
- *Car is still the comfortable mode of travel*

- *Best Metro systems are in Moscow and London which have comprehensive networks*
- *Should consider double-decker buses*

Next Table

- *Existing transit in Halton is a joke*
- *Milton has no bus service on weekends*
- *Go Bus is no longer in Huttonville*
- *Go Train to Acton and Guelph is gone*
- *How do we reduce if nothing to replace autos*
- *GO on Highway 7 only east and west. There is no connecting service north and south*
- *In between Brampton and Milton, there is no transit service*
- *There are no sidewalks or bike lanes*
- *At the Sustainable Halton meetings we learned what a mess the traffic is now, this will get much worse with the growth*
- *Need provincial investment*

Next Table

- *Get transit service first before moving in*

Next Table

- *Public transit is not an issue for Halton Hills*
- *Improve GO Train service*
- *North-south movements are more important than east-west movements*
- *Will we still need North South Transportation Corridor transit if Mississauga BRT is built?*
- *Like to see transit hubs around GO stations to improve multi-modal trips*

Next Table

- *Too convenient to drive alone*
- *Transportations improvements will encourage people to drive*
- *Too inconvenient to take transit*

Travel Demand Management

First Table

- *Need to increase use of car pooling and build car pool lot facilities*
- *Example of Trafalgar which has 160 spots and it is at 75% capacity.*
- *Need to ensure that there is a short distance between car parks*
- *Should consider roundabouts for cars and trucks*

Next Table

- *Like carrots and not sticks of TDM*
- *Somewhat support overall statement about TDM*
- *Employment land should be encouraged*

Next Table

- *Could be effective if have flex hours*
- *Need a significant employer base*
- *Maple Lodge Is a success story in our Region*

Next Table

- *Measures will take a small percentage*
- *HOV needs to combined with car pooling and emergency ride homes*
- *Need to improve existing experience with HOV lanes - most are empty*
- *Need to do TDM in combination with other transportation improvements*

- *Would like to see transit built first*

Transportation Systems Management

First Table

- *Support these initiatives*
- *Support Transit supportive measures*
- *Supportive of HOV lanes*
- *Would like to see limited road widenings*

Road Network Elements

First Table

- *Very important to coordinate with GTA West Corridor*
- *Challenge of this study - cannot answer specifics*
- *Given existing traffic issues, why is growth being allowed?*
- *Hard to please everyone*
- *Winston Churchill Bypass - positive - no more connection with Street 'A'*
- *Heritage: Role and function with North South Transportation Corridor or without*
- *Adamson Bypass: definite benefits to this option with opportunity for NorthWest Brampton.*

Next Table

- *How much additional traffic can we add to the 401?*
- *Additional east -west routes are required*
- *407 isn't a viable east-west route - tolls are a deterrent*
- *GTA West may help but it is too far north*
- *Social impact study should be done to assess impacts on Upper Canada College, residences and farms*
- *By-pass is needed*
- *Traffic improvements would help local businesses by alleviating heavy trucks through Georgetown/Norval*
- *Infrastructure has not kept pace with development*
- *Need to be proactive-not reactive*

Next Table

- *HP Freeway provides good connection to 401 and 407*
- *Where is the money coming from*
- *Is there a phasing options to protect the corridor and build the arterial in phase one with capability to expand to freeway*
- *Protect grid network*
- *Identify future connection to GTA West Corridor*
- *Steeles overloaded - additional 401/407 connections are important*

APPENDIX 3 Individual Stakeholder Booklets

The following are the received comments from the individual workshop booklets submitted. Not all individuals answered all questions. This information supplements the discussion noted throughout the workshop.

What are your comments on the recommended Transit Elements?

Steeles Avenue High Order Transit:

- Strongly agree
- Somewhat agree

Guelph St/Norval Bypass/Bovaird Drive High Order Transit:

- Strongly agree
- Somewhat agree
- Strongly agree

Nine line transit service:

- Somewhat agree
- Somewhat agree
- Somewhat agree

Halton Peel Freeway Transitway:

- Strongly agree
- Somewhat agree
- Strongly agree

Carpool parking lots:

- Somewhat agree
- Somewhat agree
- Strongly agree

Additional Comments:

- Rapid Transit options needed, but demand must be there to justify it.
- Expand existing systems as much as possible, particularly as service provides continuity from local to regional transit system.
- Higher order transit on Steeles Avenue/Guelph Street/Norval Bypass will be necessary as intensity of development in Halton and Peel increases. The Halton Peel Freeway complete with transit is the only options that addresses the North South Transportation needs in the study. Connections to 401 are a priority. High Order Transit a priority.
- Agree with need to provide strong transit plan but can't comment on specifics at this time.

What are your comments on the recommended Road Network Elements?

Recommended Guelph Street-10th Side road Connection:

- Strongly agree - diverts traffic with no impact on Credit River.
- Somewhat disagree - dumps traffic onto local roads without options to major arterials.
- No preference.
- Strongly agree.

Recommended Winston Churchill Blvd. By-Pass:

- Strongly agree - logical path to divert traffic with minimal impacts on people, creeks and Credit River, etc.
- Somewhat disagree - dumps traffic onto local roads without options to major arterials.
- Somewhat disagree - irrelevant outside of context of Halton Peel Freeway.
- Somewhat agree - not convinced necessary.

Recommended Adamson Bypass:

- Somewhat agree - I would like to see the traffic studies.
- Somewhat disagree - only takes care of traffic from north of Georgetown and from aggregate traffic.
- No preference - it might work. Drawing doesn't include the Halton Peel Freeway. How can it be left out?
- Somewhat agree - should relate to demand/volume.

Recommended Norval Bypass:

- Strongly disagree - too many crossings of the Credit River.
- Strongly agree - need to maintain primary old Highway 7 Route.
- No preference - The Halton Peel Freeway provides the Credit River Crossing but it is not shown.
- Somewhat agree as above linked to demand and volume. Alternatives implementing bypass are still needed.

Recommended Bramwest Parkway:

- No comment
- Somewhat disagree - services 407
- Strongly disagree - very significant impact on existing employer. Truncates Maple Lodge Farms Operation. Question need for this road. Not required. What community would it serve? The community bounded by Mississauga Road and the Credit River. The Halton Peel Freeway, Highway 401 and 407 doesn't require it. No studies have demonstrated the need.
- Strongly agree - connection to 401 not feasible.

Recommended Halton-Peel Freeway:

- No comment
- Strongly agree - needs to also have linkages
- Strongly agree - The Halton Peel Freeway provides connections to Highway 401 and Highway 407 from the complete Halton Peel Boundary Area and beyond as well as the Credit River crossing required by the Norval By-Pass. However, the Bramwest Parkway adds nothing new and no demand studies have been made available to demonstrate the need for the appendage.
- Strongly agree - only reasonable/ effective alternative, 401/407 interchange connection essential. Connection to GTA West Corridor if realized.

What are your views on the recommended elements of the Multimodal Transportation Strategy?

Travel Demand Management:

- Somewhat agree - need for a comprehensive network across GTA. Use double decker buses.
- Somewhat agree.
- Strongly agrees. TDM is a step towards reducing traffic and traffic problems. Improve rapid transit. Planning of communities to promote proximity of dwellings to work places.
- Somewhat agree - not sure what the specific measures are. Longer term goal

Active Transportation Policies:

- Strongly agree - look to Holland and Germany for how cycle paths are integrated into a transportation system
- Strongly agree - having been a land use planner since 1979 and wishing to work for another 15 years this will net gainful employment for me. Thanks keep up the good work.
- Strongly agree - will be a challenge to implement with suburban development, higher densities required. Provide transit before houses are built.
- Strongly agree - improve GO transit (train service significantly - Georgetown and Milton links and Georgetown line expansion).

Transportation System Management:

- Somewhat agree
- Strongly agree - to allow people goods movement with a level of service at A, B and C.

- Somewhat agree - intelligent transportation systems, BRT, metering of access on ramps, regulating speed limits and HOV.
- Somewhat agree.

Goods Movement:

- Somewhat agree
- Somewhat agree - needs to be one dedicated route only so as to not impede other modes.
- Somewhat agree - agree that economic growth and employment land uses should be encouraged. Maple Lodge Farms would like to see an option that includes the Halton Peel Freeway without the unnecessary appendage of Bramwest Parkway. Halton Peel Freeway provides access to Highways 401 and 407 for the large demand area outside of the area south of the Credit River that can be serviced by Mississauga Road and Winston Churchill Blvd. The HP Freeway provides the essential crossing of the Credit River needed for the Norval Bypass.
- Strongly agree - nature of the economy and manufacturing, warehousing and distribution - effort to dedicate exclusive truck and passenger lanes.

APPENDIX 4

PROJECT TEAM

The following are the Regional and Area Municipal Staff and consultants working together on this study. Most were in attendance at the Public Events for Round 1 to hear firsthand the feedback. These can be contact for further information on this study. Information is available at the study web site at www.halton-peelbats.ca

REGIONAL MUNICIPALITY OF HALTON:

Mitch Zamojc, Commissioner, Public Works
Tim Dennis, Director, Transportation Services, Public Works Department
Andrew Head, Manager, Transportation Services, Public Works Department
David Lukezic, Planner, Transportation Services, Public Works Department

REGIONAL MUNICIPALITY OF PEEL

Wayne Chan, Manager, Transportation Planning Division, Environment, Transportation and Planning Services
Tina Detaramani, Planner, Transportation Planning Division, Environment, Transportation and Planning Services

CITY OF BRAMPTON:

Chris Tschirhart, Manager, Brampton Transit
Marta Rostas, Project Manager, Planning Design and Development

TOWN OF HALTON HILLS

Bruce MacLean, Director, Development and Sustainability
Chris Mills, Director, Infrastructure Services
Ted Drewlo, Manager, Engineering Services
John Linhardt, Manager, Planning Policy

HDR | ITRANS CONSULTANT

Tyrone Gan, Consultant Project Manager
Elizabeth Szymanski, Consultant Project Planner
Jonathan Chai, Consultant Project Engineer
Matthew McCumber, Consultant Project Engineer
Andrew O'Connor, Consultant Project Planner

CUMMING+COMPANY

Sue Cumming, Facilitator Public and Stakeholder Consultation

Appendix A-3

Public and Stakeholder Comments Received and
Project Team Responses

TABLE OF CONTENTS

- 1. Public Comments Received1**
 - 1.1 Georgetown-Norval Bypass.....1
 - 1.2 North-South Transportation Corridor5
 - 1.3 Other Comments12
- 2. Stakeholder Comments Received15**
 - 2.1 Georgetown-Norval Bypass.....15
 - 2.2 North-South Transportation Corridor22

1. PUBLIC COMMENTS RECEIVED

Throughout the course of the study, many individuals from the public contacted the project team to share their opinions and viewpoints about existing transportation deficiencies in the study area, and the advisability of potential solutions to these deficiencies. Comments received from the public are listed in this section of the appendix. Comments are sorted by those pertaining to the Georgetown-Norval Bypass, those pertaining to the North-South Transportation Corridor, and those pertaining to other concerns.

1.1 Georgetown-Norval Bypass

Table 1-1: Public Comments Received regarding the Georgetown-Norval Bypass

Comment Number	Comment Date	Comment Content	Project Response
1.	September 20, 2009	<p>Transcription of a telephone conversation between a member of the public and the project team:</p> <p>This gentleman is a former MPP and a former MP for the area. Firstly, he mentioned that Norval actually extends from 10th Line to Mississauga Road, and south to 5 Sideroad. This was how Norval was defined before the regional boundaries came into effect. He also mentioned that 40 years ago MTO had developed a bypass option for Highway 7 around Norval – somewhere to the north. He actually saw this option (presumably when he was an MPP). He suggested the study team look into this. He will submit comments to us and a sketch of the option. Once we receive his submission, we will follow up with MTO to see what they can find.</p>	<p>Comment considered throughout the study process. (Telephone Conversation, September 20, 2009)</p>
2.	September 22, 2009	<p>Our lands consist of the draft plan shown on PDF Please call me</p> <p>(Attached PDF shows property south of Guelph Street in Norval)</p>	<p>Route alignments to be determined during a future environmental assessment. (Telephone Conversation and Email, September 22, 2009)</p>
3.	September 30, 2009	<p>I was not able to attend the entire public meeting in Georgetown last week, but have now briefly reviewed the boards online. (I sit on the Town of Halton Hills Environmental Advisory Committee, and have copied them on this email, but my comments here do not represent those of TEAC.) I would</p>	<p>All routes shown are conceptual only; detailed</p>

		<p>like to pose the following question re: the Georgetown-Norval Bypass Options:</p> <p>All options, with the exception of Option 1 (Do Nothing), appear to involve a ‘new link between Guelph Street and 10th Sideroad’. This link has been proposed in past planning exercises, and identified as the northward extension of 10th Line, a bridge crossing of Silver Creek and connection to Guelph Street via Hall Road. This particular link would of course include potential impacts to Silver Creek, as well as 10th Line and Hall Road area residents. Such potential impacts do not appear to have been taken into consideration in the preliminary analysis of options presented at the meeting. This implies one of two things: either these potential impacts have been overlooked; or, a new route for the link (which would pass through existing farmland south of Silver Creek) is now being considered. Please provide some clarification on this point.</p> <p>I would also like to confirm that in the case of the Brampton Arterial Options and the Brampton Freeway Options that, even though precise routes are not yet determined, any crossing of the Credit River will occur in Brampton, and not in Halton Hills.</p> <p>Thank you for your attention to these issues. I would greatly appreciate hearing from you before my next TEAC meeting, which occurs one week from today (Wed 7 Oct 09).</p>	<p>alternative routes would be assessed in a future environmental assessment. Comments considered throughout the study process. (Email, October 3, 2009)</p>
4.	October 4, 2009	<p>For the Georgetown Norval Bypass, do options 2, 3 and 4 involve connecting 10th Line and Hall Rd or will the connection be east of 10th Line? I own property that would back onto an extension of 10th Line to Hall Rd and would oppose any option that involves a major road running behind my property.</p> <p>I do not think that the Halton Peel Freeway Option is in the best interests of Halton residents. The highway is primarily to support growth in Brampton and if it is truly needed it should be built within Peel Region. Since there is already a north south highway in Brampton that could be extended north, why not develop the land further north rather than building in the west which requires new road infrastructure?</p>	<p>All routes shown are conceptual only; detailed alternative routes would be assessed in a future environmental assessment. Comments considered throughout the study process. (Email, October 8, 2009)</p>
5.	October 7, 2009	<p>My specific concern is in reference to the proposed options for the Georgetown - Norval Bypass options.</p> <p>I am a resident living on Winston Churchill Blvd. (Halton side), almost exactly where you propose to put the bypass in Option 2, 3 and 4. I am somewhat surprised that with all the options available for adding additional transportation infrastructure to the region that one connecting to the top of Winston</p>	<p>Comments considered in the development of alternatives for the second Public Information</p>

		<p>Churchill, north of Embleton and south of Hwy 7 is even considered. The increase in traffic in this area will no doubt negatively impact the hamlet of Norval (a historic landmark area that needs to be preserved), the protected lands surrounding the Credit River, and the many residents that live in this area. I think it is important to note that a bypass so close to boundary of the hamlet of Norval - the top end of Winston Churchill - will impact all the residents of Norval living along Winston Churchill. The optimum solution would be to divert traffic away from Norval. As a resident of Norval, I am only too well aware of the number of large trucks and heavy traffic that already flow through Norval and down Winston Churchill. A bypass solution needs to be moved much further down Winston Churchill where the least number of residential homes are impacted. We moved to Norval because of the historic and rustic nature of the area and a bypass at the top of Winston Churchill will certainly change this. I am certain that if asked, every resident along Winston Churchill will feel the same.</p> <p>I thought it wise to also share with you that the homes between Embleton and the graveyard just before Bovaird on Winston Churchill are all on well water and septic. The water table in this region is extremely high (with many of the homes on dug wells) so there is less opportunity for water to filter through the ground and be purified. With a high water table and ever increasing traffic the residents are experiencing road salt and petroleum in their water. I understand that residents on well water are responsible for their own water quality, but that does change when a problem is identified and choices are made by the region that negatively impact the problem. The Region of Halton has advised that there are no plans (several decades) before water and waste services will be offered. Adding more transportation infrastructure or increasing lanes will only increase the problem. Reducing the traffic to Winston Churchill by offering a bypass that directs traffic away from this area is an opportunity to help the problem, not add to it.</p> <p>Please accept the following as an option to consider – Use 10th line and have it swing over, above or at 5th side road to connect with the new Freeway. The land between 10th side road and 5th side road along 10th line offers wide open space, room for expansion, very few residences and keeps the traffic away from an area that should not be further stressed. From an economic standpoint there would be less to compensate for. The land below 5th side road on 10th line is also lined with residences but bypass that cuts off prior to that works perfectly to connect with the freeway and not disrupt. This option would be in keeping with Option 5 but perhaps consider using 10th line for south bound traffic and cut over closer to Embleton.</p> <p>Option 6 is also worth considering as it does by pass through an area that is undeveloped and causes minimum impact to residents and to Norval. It does the job of diverting away from Norval yet still offers a connection to the freeway.</p>	<p>Centre. (Telephone Conversation, October 2009, Email, November 5, 2009)</p>
--	--	---	---

		<p>In summary, I oppose options 2, 3 and 4. Option 5 (with possible changes) or Option 6 would provide solutions that would minimize the impact to Norval, the protected credit river lands and the many residents who live in the area.</p> <p>I appreciate your consideration in this matter.</p>	
6.	October 7, 2009	<p>It is hard to understand exactly the options under consideration for the Norval By-pass based on the information available online. All of the options roughly show a re-routing of traffic somewhere between the 10th line road allowance (currently unopened as it crosses Silver Creek) and the Norval village.</p> <p>I have heard it suggested in the past this re-routing would roughly begin in the credit river valley between the village of Norval and the Hwy 7 crossing over Silver creek. Is that the case for these options? Is an extension of Hall Road and the opening of the 10th line road allowance a possible route under these scenarios?</p>	Comments considered throughout the study process
7.	October 7, 2009	<p>I am a resident of Norval located in Halton Hills, specifically on Winston Churchill Blvd. (North of 5th Sideroad(Embleton Rd.) and South of 10th Sideroad). I am absolutely against by-pass options 2, 3, 4, and 5 which run directly through my property, as well as many of my neighbours. These options will obviously have a negative impact on the small yet historic town of Norval. It will completely destroy this beautiful community, not to mention the environmental impact it will have.</p> <p>Myself as well as many residents in this area have spent a great deal of time and money to beautify our properties making this area a much beautiful place to hopefully spend the rest of our lives. I believe the best solution would be options 1 or 6. This keeps the more populated areas of Norval residents from be disrupted, while at the same using farmland and less populated areas with much less disruption. I hope that you can appreciate my concerns as well as my fellow neighbours and focus on directing traffic away from our community.</p> <p>In summary, I oppose options 2, 3, 4 and 5.</p>	Comments considered throughout the study process
8.	November 25, 2009	<p>I wanted to take this opportunity to thank you for the excellent presentation yesterday. It was wonderful to see that the feedback given by the community and various stakeholders was carefully looked at when deciding on the recommended options put forward.</p> <p>I did have two questions for you if you don't mind:</p> <p>1) What exactly does "higher order transit" involve and how would that translate into the bypass proposed?</p> <p>2) I remember looking at the transportation plans forecasted for Winston Churchill north of Embleton</p>	Answers to questions provided; Peel Region Development Charges and Halton Region Transportation Master Plan sources referenced

		and south of Bovaird a while back and I only remember seeing expansion to 4 lines (not six as outlined in the study). It may have been the Halton plans and they outlined resurfacing the existing two lines and expanding to four lanes in 2017 - can you provide me with a copy of the plans you have used in your analysis?	(Email, November 26, 2009)
9.	December 2, 2009	<p>Please consider my comments re. Halton-Peel Boundary Area Transportation Study</p> <p>Regarding Bypass North of Norval, option #6 Not only are you crossing the Credit River through Upper Canada College and one of the most beautiful portions of the river valley, you are also disturbing the river tributary (between Winston Churchill & Heritage Rd.) which includes a Significant Woodland and heavily use wildlife movement corridor. Of all the disturbed area in Peel & Halton, why does the last remaining Natural Heritage has to be sacrificed to make the most direct route? This area was designated Greenbelt because it performs important ecological functions. Your own public survey showed that Natural Environment ranked higher in public opinion than any other impact concerns. Natural Heritage protection is sacred, and the fastest & straightest route is not.</p> <p>The Credit bridge for expanded Go rail service should include a road. That would be the bypass north of Norval.</p>	A future environmental assessment would detail the environmental impacts of different options. Comments considered throughout the study process. (Email, December 3, 2009)

1.2 North-South Transportation Corridor

Table 1-2: Public Comments Received regarding the North-South Transportation Corridor

Comment Number	Comment Date	Comment Content	Project Response
10.	September 27, 2009	I am a resident of Milton and rely on the 401 for my trip to work and back to home everyday. Will this study take into consideration the added grid lock any one of the proposed solutions will bring to the already grossly under-capacity 401? All the fancy terminology and wording in the EA documentation means nothing if the main transportation artery so many of us Halton residents rely on, gets even further jammed! We have been suffering long enough in Milton.....the auto isn't dead yet and many of us must rely on our vehicles to sustain our livelihoods.....	Future planning and construction of 400 series highways is the responsibility of MTO; the study team will liaise with MTO. Comment considered

			throughout study process. (Email, September 30, 2009)
11	October 6, 2009	I have searched the site but cannot find a map showing the various option routes, can you please advise where I find them. Although I appreciate the need to preserve and protect Norval, it is my belief and many others that the villages of Terra Cotta and Glen Williams need to be persevered even more as they represent our heritage. Too many acres of farmland and our heritage are being converted into housing developments, this area should be protected and left in its quaint condition without highways going through.	Link to PIC boards provided; comment considered throughout study process (Email, October 6, 2009)
12	October 7, 2009	<p>After attending the Public Information Centre on September 24, 2009, please note my following comments which I trust will be considered as part of the above study:</p> <p>I have significant reservations and objections to the Brampton Freeway Option HPF, which shows a proposed freeway going through Halton Hills. I believe this to be an inefficient and impractical long term solution for the issues currently being addressed and has the potential to create more problems both now and in the future than it endeavours to solve, for the following reasons:</p> <ol style="list-style-type: none"> 1. Halton Hills is relatively small compared to Brampton and to have a freeway going through a critical area such as its employment lands along Steeles Avenue West is extremely detrimental since these lands are prime Employment Lands that cannot be replaced in terms of geographical proximity to current highway systems and general commerce, now and in the future. This hampers potential development in the future to this area for a freeway that may not happen for another 30 plus years and has the potential to be detrimental to Halton Hills since there will be significantly less land for development and reduce its source of revenues such property taxes, utilities, etc. 2. It would seem very problematic to align any new interchange with the existing 401/407 interchange; the creation of Basket weave effect is very inefficient, much more expensive and could possibly cause more disruption to flow than it endeavours to solve. Therefore, this should be avoided. Taking this potential technical inefficiency along with the fact that the vast majority of potential use will be on the Peel side of the study area, it would seem highly impractical to consider this option. 3. There are various communities along this corridor that would be negatively disrupted i.e along 10th Line North. It does not appear that such communities have been given any regard or standing in this study, unlike communities in Norval and Brampton 	Comments considered throughout study process (Letter, October 16, 2009)

		<p>4. There are current traffic problems in the area which will not be addressed now by this option which may again not take place for another 30 plus years especially given that governments are running significant deficits at all levels, funds may never be available for such a project and stifle development in this corridor for Halton Hills in the meantime. I do not believe the economic feasibility of this option has been thoroughly investigated as it appears to be one of the most costly.</p> <p>5. It is extremely unfair and punitive to Halton Hills that it should subsidize Peel’s growth since the vast majority of such growth is in Peel. It is unfair that Halton Hills should have its communities disrupted, its future Employment Lands taken away, its Greenspace area as protected by Provincial legislation, compromised for a growth largely concentrated in Peel. As well, since the vast majority of the growth is in Peel i.e urban and business expansion, it would appear to make sense that proximity to any transportation system should be closer to the growth area i.e Peel. As a compromise, I think the second best solution (the first being a freeway or arterial in Brampton area) is along the North-South border along Winston Churchill since there is an existing road, not as disruptive to either Halton Hills or Peel and along the border.</p> <p>6. The Study needs to consider that currently there are many North-South interchange connections both in Peel and Halton Hills such as Hurontario, Mavis, Mississauga Rd, Winston Churchill, Trafalgar Road and many of these roads are 4 and 6 lanes. As well, there are plans to widen Steeles Avenue West from Trafalgar to Winston Churchill and the Study should incorporate the benefits of these existing and near future improvements which may prove that such a costly and disruptive proposal such as Option HPF is impractical and inefficient.</p> <p>7. Similarly, it is not evident if this Study has considered the widening of Heritage Road which is already under construction, that it could act as an interchange to 401/407 in the future, it will certainly alleviate some of the north-south traffic flows (because wider now) and at least this is located closer to where the vast majority of the development is to occur. I question given, all these road systems that do and could connect to the 401/407 all within less than 1km of each other, why we need a superhighway or arterial through Halton Hills.</p> <p>I trust that these points will be considered in the course of your Study. I will email these points as well as fax them to your attention at 905-882-1557.</p>	
13.	October 8, 2009	On the evening of September 24th I attended the Public Information Centre for the Halton Peel Boundary Area Transportation Study. As a resident of Norval Village I have a special interest in this study insofar as it relates to finding a solution to the problem of increasing traffic volumes through Norval Village. I note from the material presented at the public meeting, and subsequently made	Comments considered throughout the study process.

		<p>available on the study website, that while a great deal of attention has been paid to the issue of east-west traffic capacity and alleviating the increasing traffic volumes on the Guelph Street - Bovaird Drive corridor, the same consideration has not been given to the problem of increasing volumes of traffic in the north-south direction along Winston Churchill Boulevard and Adamson Street as it passes through Norval. There is already considerable traffic on this road today, including a fairly large component of heavy commercial trucks. As development proceeds in the northwest area of Brampton and up into Caledon, there will inevitably be an increase in this traffic, resulting in a similar situation of traffic congestion as we see along Guelph Street today. I believe that this study should include a road option that includes a diversion or bypass of Winston Churchill Boulevard starting from a point somewhere to the north of where Adamson Street meets Old Pine Crest Road, and heading generally south and east to meet Bovaird Drive well to the east of Norval. This would provide a route for existing and future traffic to find its way both east and south without having to cut through Norval, as it is forced to do today. Other than this specific comment, my general observation is that whatever decision is made with respect to the future road network should be one that solves our traffic problems with a view to long term growth in this area. For that reason, it would seem that the Halton Peel Freeway option has a distinct advantage over the others that have been presented.</p>	
14.	October 31, 2009	<p>Previously I forwarded to you a letter dated October 8, 2009 in response to the Public Information Centre for the Halton Peel Boundary Area Transportation Study. This letter was prepared by a Transportation Consultant on my behalf as I was out of the country and unable to address the time frame for responses identified at the public meeting.</p> <p>While generally agreeing with the contents of the submission I now find that it is not totally consistent with the verbal presentation I made during the public meeting. Therefore the following is to be considered as my submission along with the above mentioned letter dated October 8.</p> <p>In paragraph four of my previous letter I identify the option of planning for a north-south Norval bypass during your boundary study. The letter identifies a future planned alignment that would generally follow an easterly direction from Winston Churchill Boulevard north of Norval to a location easterly and southerly paralleling the future Halton-Peel Freeway or Heritage Road. My suggested bypass route would then continue southerly across the Credit River valley to rejoin Winston Churchill Boulevard at a point around or southerly of Embleton Road.</p> <p>I believe that a serious evaluation of my suggestions at this time is merited for the following, but not limited to, reasons.</p> <p>1. Winston Churchill (Adamson Street) through Norval was not and never should be considered as a north south transportation alternative particularly with the magnitude of growth being considered for northwest Brampton.</p>	Comments considered throughout the study process.

		<p>2. If the study is truly considering protection of existing communities Winston Churchill (Adamson Street) should be identified as an urban or village street consistent with your mandate.</p> <p>3. Following the proposed Halton-Peel Freeway alignment resolves two important issues firstly, one joint crossing of the Credit River presents an environmental opportunity and secondly this suggestion gets the increased north south traffic past the existing narrow alignment through and south of Norval to Embleton Road.</p> <p>4. Brampton Brick has identified and applied for a shale extraction approval on lands just north, within a kilometre, of Norval. In other words identifying, planning for and directing that (shale extraction) eventually away from the village of Norval at this time seems to make sense.</p> <p>5. The suggested alignment also provides a unique opportunity to link future 10 Sideroad configurations to Winston Churchill Boulevard north creating a true Norval bypass.</p> <p>Finally, the study provides a unique opportunity to plan a north south bypass with a clean land use slate and before the final Northwest Brampton community configuration is finalized. Creating the north south bypass alignment now will alert current and future development interests early as to what their obligations will be.</p>	
15.	November 25, 2009	<p>I agree that the Halton-Peel Freeway is one of the best NSTC options presented at PIC #1. Can you provide me with more details about the alignment and timing of the HPF?</p> <p>I disagree with all the proposed NSTC alignments, it would be much better to locate it between Trafalgar and 9th Line where there are only open fields and minimal social impacts. Go west of Georgetown.</p>	<p>Rationale for project timeline described; comments considered throughout study process. (Telephone Conversation, November 25, 2009)</p>
16.	November 30, 2009	<p>We live on 10th Line and are concerned about the alignment of the potential future Halton Peel Freeway. Will this go right through our backyard? What will the timing of the project be?</p>	<p>Actual alignment will be determined through a future study. (Telephone Conversation,</p>

			November 30, 2009)
17.	December 7, 2009	<p>The following mass letter was sent by 21 individuals.</p> <p>This letter is to confirm my strong disagreement to Freeway proposed – Recommendation F (page 5 of the Questionnaire). I also would like to confirm my “somewhat agree” to Recommendation E with suggestion to alter the Parkway. Please consider my recommendations below to replace completing the Questionnaire but to be considered with equal opportunity to provide feedback.</p> <p>My strong disagreement to Recommendation F is as follows:</p> <ol style="list-style-type: none"> 1) The proposed Freeway will destroy agricultural lands in Halton still utilized by farmers and would negatively impact on the area. The southwest corner of Winston Churchill and 5 side road is 100 acres of agricultural land that is continuously being used for farming. Halton needs to preserve their lands for their own agricultural use and not another Region’s use and benefit. Prime land should not be given up for a Freeway to serve West Brampton. 2) Any lands in that prime area available for development should be strategically marked by Halton Region for future use to accommodate the ever-growing Georgetown South population. Homes were built but little was done to meet the demands of the residents especially for work and play. Halton residents need to leave Georgetown and travel the congested roads in order to work, play sports and shop at major electronic stores, home improvement stores and Outlet stores. More opportunity should be created within Georgetown so residents could work and play within their own community and reduce their carbon footprint. 3) The freeway proposal as is would destroy any industrial potential on Steeles Avenue since it would run right through it. Again this eliminates any potential to increase job creation in the area. A strong industrial area would provide good jobs and benefit not only the citizens of Halton but the whole community in positive spin offs from employment. Many communities would be envious of having such available land so close to the 401 with major exits such as Winston Churchill Blvd and Trafalgar Road. This area is a diamond in the rough, and unlike Brampton, Georgetown has not expanded to its full potential. The plans for that area including expansions would benefit Georgetown tremendously. Having a major Freeway right through it does not make sense! Ignoring the fact that the area is well positioned for the future prosperity of Georgetown Residents is scandalous. Throwing it away to serve another Region is unforgiveable. 4) The proposed freeway does not need to run through Halton and should be developed mainly within the Peel boundary, especially since its intention is to address the population growth of 2021 and beyond where Peel accounts for 71% of the growth and Halton only 29%. 	Alignments to be determined through future studies; comments considered throughout study process. Email responses sent to individuals with email addresses; mailed letter responses sent to individuals without email addresses; sent December 2009.

		<p>5) The proposed freeway is to serve mainly the Brampton West residents largely who will be travelling from Toronto. Having them travel additional time on the 401 in order to exit into Halton and then backtrack to Brampton does not make sense. This does not align with alleviating traffic congestion on the 401 at all and promotes traffic to stay on longer than necessary.</p> <p>6) It would be more beneficial and cost saving if the 410 Highway was expanded to accommodate the needs of the anticipated Brampton West population growth. The 410 is well positioned unlike the proposed Freeway. The 410 provides travelers an opportunity to get to Brampton and exit the congested 401 at a point where they are not backtracking. The 410 is linked to the 401 and 407 and can be easily linked to the proposed GTA West Corridor which is proposed to link the GTA to Guelph/Kitchener.</p> <p>7) The “S” pattern of this proposed Freeway does not in any way demonstrate efficient use of land. It appears that the aim was to destroy as much land as possible to create this redundant freeway.</p> <p>I partially agree to Recommendation E for the Bramwest Parkway for the following reasons:</p> <p>1) The proposed Parkway path makes sense to go straight north with the Peel boundary starting at the 407 but it does not do enough with only 4 lanes. Brampton West residents will still use that Parkway because they will not want to travel to another exit in another Region and then back track home adding extra kilometres to their trip every day. The Parkway’s potential congestion is underestimated.</p> <p>2) This proposed Parkway should be expanded from 4 lanes to 6 lanes without much additional impact to the surrounding lands. It could swing over to Winston Churchill at Steeles in order to meet the need to connect the 400 series Highways. This is the only way that this Parkway would be beneficial.</p> <p>3) It would be redundant to create a Parkway and then a Freeway at the next exit which then in turns swings over anyways to meet up with the Parkway. How much land do we need to destroy? How does this make sense?</p> <p>My other comment to this survey is why there is only one Recommendation for the Freeway (Recommendation F). I have never heard of the other options being narrowed down to only one at this stage of the consultation process. I would like to understand the process and if you could please explain to me why all other options have been eliminated. When there is only one option or recommendation then this implies that the Freeway idea could be defeated since there are no longer any alternatives to consider. Therefore there was “No plan B” developed. Very unusual. I look forward to your response.</p>	
--	--	---	--

1.3 Other Comments

Table 1-3: Public Comments Received regarding Other Concerns

Comment Number	Comment Date	Comment Content	Project Response
18.	September 14, 2009	<p>There is an enormous gap between what needs to be done, and what will likely actually happen, to meet Brampton’s transportation requirements at a Provincial level:</p> <p>What needs to be done:</p> <ul style="list-style-type: none"> -Widen Hwy 410 from a 6-lane to a 10-lane highway and do it within the next 3 years -Considering there is no property acquisition required, and there is ample space in the present grass-covered median to do so, the project would be relatively simple -Build a new north-south 400-series highway at the west end of Brampton to help relieve congestion on Hwy 410, Chinguacousy Rd, & Mississauga Rd (with a population of close to half a million, the 410 alone is insufficient to meet the N-S traffic needs). This should be done within the next 5-6 years. <p>What will likely actually happen:</p> <ul style="list-style-type: none"> -The 410 is not planned to be widened to 10 lanes until 2021, and given historical MTO / environmental assessment / funding delays, it likely won’t actually happen until closer to 2030 (case in point: the extension of Hwy 410 to Hwy 10 was planned to be completed by the end of 2001, yet it is still under construction 8 years later) -A new north-south 400-series highway at the west end of Brampton probably will happen, sometime around 2030-2040, but by that time the combined population of Mississauga and Brampton will likely have grown so much that the new highway will be heavily congested right from the first day it opens <p>As with the previous workshops I have attended, which caused great excitement to see much-needed transportation improvement projects being planned out, I will only end up being disappointed as the upcoming years are plagued by changes in government, lack of funding approval, and lengthy planning processes which will push out these project completion dates further and further.</p>	Comments considered throughout the study process
19.	September 27, 2009	<p>Individual faxed in a long message and several articles, including features from the Toronto Star, Toronto Sun, Globe and Mail and Today's Trucking</p> <p>Traffic problems (& unsafe driving acts) are major concerns everywhere, including your Halton-Peel</p>	Comments considered throughout the study process.

		<p>study area! Traffic facts clearly show the vast majority of congestion, violations, crashes and fatalities are caused by cars and light trucks! Cars also cause most large truck/car crashes! A study shows annually, 50000 more cars are added to the GTA Roads!</p> <p>Like an elephant in a room, large trucks stand out in traffic-they're observed more, often resulting in unfair/exaggerated and one-sided criticism! A small minority of truckers are unsafe or discourteous. Many motorists are oblivious to their speeding, poor driving acts and how to properly "share the road with large trucks"! Large truck pollution has greatly improved recently, with more improvements coming with 2010. Trucks overall, car pollution and congestion and much greater, additional housing equals more car congestion, pollution and problems!</p> <p>Trucking faces many political, arbitrary, hypocritical laws and bans by all government levels. Truck road restrictions/bans and night bans are unfair and politically motivated! Peel Region (including Brampton and Mississauga) and Toronto are the worst for excessive truck restrictions on local roads. I've complained to these municipalities and Municipal Affairs recently on unfair truck bans. Residents freely move onto bust roads (many roads 50-100 years old). Then, some complain about trucks and traffic and unfairly demand truck bans. What did they expect?? Why should trucking pay for their errors? Trucks previously built these roads and maintain them! When people move near busy roads, airports, schools, railroads, etc., noise and traffic is expected! Residents and motorists don't own roads/areas! They should be help accountable, not trucks or business! Over-regulated trucks pay high taxes for road uses-not bans! Misguided hypocrites unfairly demand laws, bans and controls for trucks-but none for themselves or cars! Overlooked and ignored is more car caused complaints (ie speeding cars, car street parking and car congestion)-this is a double standard! The average motorist driving has increased many miles, from two decades ago! Mostly, there's no alternative to using trucks. People using cars have alternatives (ie public transit, car pooling, moving closer to work, etc. Buses are equally as noisy as trucks! Truck bans have been ruled unconstitutional-when challenged in court! There are two sides to every story—or truck complaint!! Truck critics are appeased too much! Greater car problems and complaints are ignored! Most trucking is local/short haul, often with multiple deliveries! Only 10% of all trucking is long haul (over 800 km). Trucks are essential for consumers and business. 90% of all consumer goods are shipped by truck! A few years ago, Peel Region did a study on truck importance, citing roads were vital for truck use! Every person, every job and business relies on trucks! Whiners should be denied the benefits of trucks-you can't have it both ways! Too often government powers are abused, "politics" or vote chasing is common. Hypocrisy and politics is destroying democracy and hurts trucking and business! How can politicians/government command any credibility/respect when they solely and unfairly target trucking, and ignore greater car caused complaints!! Please reply! (Don Bell)</p>	<p>(Letter, October 4, 2009. Telephone conversation, November 2009.)</p>
--	--	--	--

20.	October 1, 2009	<p>Unfortunately I was unable to attend the Public Information Centre No. 1 held on September 24. However, from reading the report of the meeting in The Independent and reviewing the presentation on the website it appears to me that several issues and questions remain to be addressed.</p> <p>While I recognize that the initial purpose of the study and its continuing primary thrust is to examine transportation needs along the boundary between the two regions, the study area set out on page 2 of the presentation is bounded on the west by Trafalgar Road and includes all of urban Georgetown. However, the recommended options within Halton deal only with a Norval Bypass and fail to address much of the traffic flows through and around urban Georgetown (e.g. the detailed maps of the options extend no further than 9th Line).</p> <p>Currently most of the traffic with an origin/destination in Georgetown or points north of Georgetown moves to and from highways 401/407 via Trafalgar Road, 8th, 9th, or 10th Lines. These routes are currently at or close to capacity at peak periods and with the exception of Trafalgar Road were never designed to carry high-density traffic loads (e.g. two lanes with minimal shoulders and deep ditches that are hazardous, particularly during inclement weather). In addition, there are significant capacity problems on the remaining two-lane segment of Guelph Street between Main and Maple Streets.</p> <p>It is not clear from the presentation material how the proposed new North-South Transportation Corridor options or the Georgetown-Norval Bypass options will address or affect these issues. Should the North-South proposed corridor options attract traffic from Georgetown and points north, it is not clear how such traffic would access the new corridor. Much of the traffic would presumably have to cross the Georgetown urban area, exacerbating the congestion on the two-lane segment of Guelph Street, or take other routes through town to access 10th Sideroad. Furthermore, some traffic to and from the north may be attracted away from Trafalgar Road and route through the Georgetown urban area adding to existing congestion.</p> <p>It would appear that either this study needs to address all the traffic flows within the study area in a broader and more comprehensive manner, or that Halton Region should initiate a companion study focussed on the traffic issues specific to Georgetown residents and their access to Highways 401/407.</p> <p>It would be unfortunate if decisions are taken and infrastructure investments made based on a narrow study that fails to address the transportation needs of north-eastern Halton Region in a more comprehensive manner.</p>	<p>Comments considered throughout the study process. (Email, October 7, 2009)</p>
-----	-----------------	---	---

2. STAKEHOLDER COMMENTS RECEIVED

Different stakeholders groups with a diverse set of concerns were involved with the Halton-Peel Boundary Area Transportation Study. Comments received from these organizations are provided in this section of the Appendix. The comments are sorted by those pertaining to the Georgetown-Norval Bypass and those pertaining to the North-South Transportation Corridor.

2.1 Georgetown-Norval Bypass

Table 2-1: Stakeholder Comments Received regarding the Georgetown-Norval Bypass

Comment Number	Comment Date	Comment Content	Project Response
21.	October 5, 2009	<p>Maple Lodge Farms</p> <p>The proposed Georgetown Norval Bypass Options</p> <p>Option 1 Not realistic: Demand is increasing if capacity is not increased, an increase in congestion is inevitable.</p> <p>Option 2 to Winston Churchill Not realistic: Winston Churchill is already overloaded</p> <p>Option 3 to Bovaird Dr. Not realistic: requires an unnecessary additional crossing of the Credit River.</p> <p>Option 4 to Williams Parkway Not realistic: requires unnecessary crossing of the Credit River</p> <p>Option 5 to Street 'A' If Option 5 provides access to the HPF Option it would eliminate the need for any additional crossing of the Credit and provide relief of congestion on the existing road system.</p> <p>Option 6 Not realistic: requires an additional unnecessary crossing of Credit River</p>	Comments considered throughout the study process
22.	October 8,	Brampton Brick	Comments will be

	2009	<p>Our Client, Brampton Brick Limited, is a major, Ontario manufacturer of clay brick. The Company's primary plant is located on Wanless Drive, west of Hurontario Street. In December 2008 Brampton Brick filed an application for rezoning to enable development of a new shale quarry in the City of Brampton, near Norval. The proposed quarry is situated on the east side of Winston Churchill Boulevard, approximately 800 m north of Bovaird Drive. It is within a Queenston shale deposit designated for quarry development in the Region of Peel and City of Brampton Official Plans. I have attached a truck route plan prepared by our Client's transportation consultant, Paradigm Transportation Solutions Inc., which illustrates the locations of the brick plant and the proposed Norval Quarry.</p> <p>We have confirmed, with the Regions of Halton and Peel, that Winston Churchill Boulevard is being reconstructed as set out in the September 2005 Environmental Study Report by SNC. This reconstruction will enable our Client's shale trucks to operate effectively on two regional roads: Winston Churchill Boulevard and Mayfield Drive.</p> <p>I attended your PIC No. 1 on September 24th and have reviewed the available reports on the Halton-Peel BATS website. It is apparent that your alternative NTSC and GNBPs routings should not affect the reconstruction of Winston Churchill, our Client's regional road access or its protected shale resource area. Would you please advise us, as soon as possible, if you foresee any conflict?</p>	considered throughout the study process (Email, October 8, 2009)
23.	October 16, 2009	<p>Brampton Brick</p> <p>Thanks for your response</p> <p>I am concerned that one of your proposed corridors could be partly located within the protected shale deposit in the West Half of Lot 12, Concession 6, where it could adversely affect my Client's proposed quarry. As input to your study we would ask that Brampton Brick's property be avoided when you are selecting routes for the north-south and Norval by-pass corridors.</p>	More information will be available at the second PIC. (Email, October 16, 2009)
24.	October 23, 2009	<p>SmartCentres</p> <p>We are pleased to submit an alternate option for the proposed Georgetown Norval Bypass (GNBP). This option provides a new link (Street A) that connects Halton Hills and Bramwest. Street A would be located south of 10 Sideroad and connects the proposed North-South Transportation Corridor (NTSC) and Ninth Line in Halton Hills (Appendix A). Depending on future traffic demands Street A can be widened or further extended to Eighth Line/Trafalgar Road. Additional alternative would be to consider a direct connection to Bovaird Drive and/or Street A in Brampton. The rationale for the proposed alternated option is summarized below.</p>	SmartCentres can submit other alternatives; comments considered throughout the study process (Meeting, October 2009)

		<p>Growth in Georgetown As part of Sustainable Halton, Local and Regional Council considered two growth options both in south/southwest Georgetown. Future urban boundary expansions are also likely to occur in south/southwest Georgetown as the areas to the north are constrained by the Escarpment, Greenbelt and Natural Heritage System. Street A would address the future anticipated growth in south/southwest Georgetown by providing additional east-west capacity and providing a connection/bypass to the NTSC and Bramwest. This connection would also alleviate congestion at the current Bovaird Drive/Guelph Street gateway. Traffic heading in/out of Georgetown from Brampton, Toronto and Mississauga can use Street A and any north-south connection (Ninth Line/Eighth Line). Traffic bypassing Georgetown and heading northwest to/from Brampton, Toronto and Mississauga can use Street A and Trafalgar Road (a major arterial). At the ROPA 38 (Sustainable Halton) public open house held in Georgetown on October 15, 2009, various residents expressed the need for additional arterial roads and capacity along Ninth Line (please see attached article: “Residents raise concerns about growth”, The Independent and Free Press, October 22, 2009). This option would address some of these concerns. Depending on future growth and traffic demand Street A can be widened or extended to Eighth Line or Trafalgar Road.</p> <p>Impact on the natural environment: The proposed alternative minimizes the impact to the natural environment by avoiding the creation of a new crossing at the Credit River. In addition, it appears that areas to the south of 10 Sideroad have less NHS designated land than areas around the existing Bovaird/Guelph Street gateway.</p> <p>Impact on the community The proposed east-west connection/bypass (Street A) is located outside the built boundary and therefore minimizes the impact on the existing development and community. Enclosed is a diagram illustrating the proposed option (Appendix A).</p>	
25.	November 5, 2009	<p>Brampton Brick</p> <p>I see that your next workshop is November 24th to consider a revised set of corridor options. I have attached Figure 10 from our November 2008 Planning Report. It includes two schedules from your current Peel ROP.</p> <p>Schedule C indicates the fairly extensive High Potential Mineral Aggregate Resource Area, west of Mississauga Road. This is the area the Region and City thought they were protecting. Unfortunately, most of it will be utilized for urban development and infrastructure.</p> <p>The very small red area labelled "site", on Winston Churchill Boulevard is Brampton Brick's proposed</p>	Comments considered throughout the study process

		<p>Norval Quarry. This 35 ha. is the only feasible shale quarry site, within the Region's 1,060 ha. designation. It is accessible from Winston Churchill Boulevard, to be reconstructed as a 2-lane rural collector by 2012.</p> <p>We trust it can be avoided.</p>	
26.	December 7, 2009	<p>Queen of Peace – Croatian Franciscan Centre - Norval Croatian Social and Cultural Centre</p> <p>This letter is to express strong objection and disagreement to the following in relation to the captioned Queen of Peace Church and Franciscan Center.</p> <ul style="list-style-type: none"> (i) Recommendation B (Winston Churchill Blvd. Bypass) (ii) Recommendation F (Halton - Peel Freeway) (iii) Transit Network elements # 4, and # 5 (page 2 of Questionnaire) <p>Below are some but not all of the reasons:</p> <ol style="list-style-type: none"> 1) The proposal would severely impact, paralyze and destroy the existing operations of the Queen of Peace Church - the Croatian Franciscan Center which has been in existence for over 33 years. 2) With the recent completion of the multi-million dollar Queen of Peace Church which is part of Hamilton Diocese - the gothic style church - the Center is now known as the gateway into the town of Georgetown and has become a major landmark. 3) The proposed transit network elements # 4 and # 5 and recommendations B and F would not only destroy the said landmark but would completely paralyze the entire activities and operations which are partially identified on the attached Overall Drawing 1 of the subject property and the park layout drawing also attached. 4) In addition to the above, the Franciscan Center has been in existence since 1976 and has been serving a large population of Halton Hills as well as the Greater Toronto Area not only for religious purposes but also for social, cultural, sport, recreational and other activities. 5) It is very important to point out that the Franciscan Center has established a long standing relationship with the Town of Halton Hills in respect to providing the use of 	<p>Exhibits modified to reflect conceptual nature of alignments; importance of the Centre written into the HPBATS report; comments considered throughout the study process (Email on December 14, 2009, Fax and Letter send on December 15, 2009 and Meeting at the site on January 5, 2010)</p>

		<p>its 6 soccer fields for the Georgetown Soccer Club: which in turn has alleviated the shortage of available soccer fields in Georgetown. The Franciscan Center serves inter alia over 2000 youth soccer players each year.</p> <p>In conclusion, we are confident that the above brief points clearly demonstrate the potential negative impact on the entire operations and existence of the Queen of Peace Church - Franciscan Center. If you pursue with your proposal, please be advised that we will have no other choice but to retain a team of expert Consultants & legal advisors and will vigorously oppose your proposal.</p> <p>We are kindly requesting a meeting with you, as soon as possible, to obtain more information on your proposal and to discuss our aforesaid concerns in detail. Please let us know when you are able to meet with us. We invite you to our premises anytime so that you may see for yourself, first hand, the negative impact which your proposal has.</p>	
27.	December 8, 2009	<p>Brampton Brick</p> <p>We are planning consultants for Brampton Brick Limited in connection with its proposed Norval shale quarry. The quarry site is situated on the east side of Winston Churchill Boulevard (WCB) and comprises about 35 ha in the West Half of Lot 12, Concession 6 WHS. Our Client filed an Application For Zoning By-law Amendment in December 2008 and the City confirmed that it was complete, in accordance with the Planning Act, in January 2009. The application included our Norval Quarry Planning Report and an appended Transportation Assessment by Paradigm Transportation Solutions Inc.. Paradigm recommended that truck traffic associated with the quarry should utilize WCB north to Mayfield Road to enable delivery of Queenston shale to our Client's brick plant on Wanless Drive, west of Hurontario Street.</p> <p>I have attended your PICs 1 and 2. My comments, following PIC No. 1 were sent to you, Mr. Andrew Head and Mr. Wayne Chan, Peel's Manager of Transportation Planning. My email exchange with Mr Chan is forwarded below. As I explained, protection of my Client's proposed quarry is essential to implementing planning policies, in the Region of Peel and City of Brampton Official Plans, to utilize a very small part of the 1,060 ha of shale resource designated for protection.</p> <p>Unfortunately, the proposals presented during PIC No. 2, while very general and conceptual, appear to adversely and directly affect our Client's lands. We wish to raise two issues, in particular, referring to the attached enlargements of excerpts from your maps on panels 15 and 17:</p> <p>Panel 15 - Norval Bypass: Two routes are suggested. Both are "Proposed 4 Lanes". The northeasterly</p>	Exhibits to be revised; alignments to be determined during an a future study (Email, December 8, 2009)

		<p>route passes through significant development on Bovaird Drive and residential uses, including important heritage structures, in the vicinity of our Client's property. This route is very similar to the "recommended" Adamson Bypass. Our Client's property should be avoided in its entirety to enable use of the protected shale deposit. Your suggested bypass should obviously be located farther to the north, with a connection to Bovaird Drive via the proposed Halton-Peel Freeway. Our Client's proposed quarry should have access to this proposed bypass.</p> <p>Panel 17 - Adamson Bypass: The Adamson Bypass was suggested by former Regional Chair Pete Pomeroy, during PIC No. 1. While the graphics differ, this "New Major Collector Link" is essentially the same as the northeasterly Norval Bypass option, above. The same comments apply. A somewhat more northerly route would avoid the residential cluster associated with Old Pinecrest Road and provide access to our Client's proposed quarry.</p> <p>The Halton-Peel Freeway is not in close proximity to our Client's property. However, we need to ensure that it will not affect our Client's access and haul routes, on Winston Churchill Boulevard and Mayfield Road.</p> <p>Thank you for the opportunity to participate in this process.</p>	
28.	December 8, 2009	<p>Upper Canada College</p> <p>We act on behalf of UCC and are writing with respect to the above noted matter in order to provide you with an outline of the potential impacts from the result of the above noted study and proposed future EA.</p> <p>Outline of Concerns</p> <p>We understand that there is an identified need for an East-West Norval By-pass in the area around the intersection of Winston Churchill Boulevard, Bovaird Drive West, Guelph Street and Adamson Street in the village of Norval. UCC generally supports the goals of this proposal being to increase the efficiency of movement of people in the area through better road connections and improvements to public transit.</p> <p>What UCC does not support is the solution of Option 6 (of 6) as one of the two options being recommended to be put forward to a future EA for further study. Below you will find a brief outline of the reasons that we believe Option 6 is not a reasonable option and ask that you remove it from the recommended options for further consideration.</p>	Alignments to be determined in future studies; importance of UCC lands will be written into HPBATS report. (Letter, January 15, 2010)

		<p>Option 6 Has Greatest Impacts on Natural Environment</p> <p>Option 6 will have the greatest possible impact on the natural environment. Not only will this option include a crossing of the Credit River (as is the case with other options) but it will do so at a location that is surrounded by a large amount of significant natural area. The UCC Norval property, which UCC has owned since 1911, has been maintained in a natural state that is far more comprehensive than other properties in the area. As an example, the property has been identified as an area that is important for wildlife and bird habitat because of its unusual position as a large natural space in this area. The property is also recognized as a natural area in the applicable planning policies such as the Greenbelt Plan and in the Official Plans. In short, the UCC Norval property is, in our opinion, the worst possible option for the East – West By-Pass given the significant and unique impact it would have on the natural environment</p> <p>Option 6 has Significant Social, Cultural and Economic Impacts</p> <p>In addition to the natural impacts, Option 6 also has significant social, cultural and economic impacts.</p> <p>The UCC Norval property is currently used as the home of the Environmental Educational Program of the school. This location provides a unique opportunity for outdoor education of the younger generation, both those attending UCC as well as other schools to whom UCC currently leases the facility. The program is a unique opportunity for students in a large metropolitan area such as the GTA. The unique use of the property is also entirely consistent with the goals of the Province’s Greenbelt legislation, which includes both the protection of the natural environment and the use of Greenbelt land to provide unique social activities unavailable in the urban areas.</p> <p>If Option 6 were to be adopted, the result would be a total sterilization of the property and the educational use. It would be impossible to continue the program with a road running through the property. For one, it would not be safe to have children so close to a major roadway. IN addition, to be viable, the program needs to use the entire property as different parts of the property provide their own unique benefits to the program. Given the unique environmental features of the property, there are almost no other uses that would be practical for the property. As a result, the selection of Option 6 would result in the sterilization of the entire property, not simply where the road cuts through it.</p> <p>Furthermore, the unique features of this property would be almost impossible to replicate anywhere else within a reasonable proximity of the UCC main campus in Toronto. The Norval property is only about one hour away from UCC in Toronto, making it perfect for day trips from the school. The unique</p>	
--	--	--	--

		<p>features of the site include its naturalized state, its unique facilities to house and educate students on the same property as a natural area, and its extremely close proximity to the City of Toronto. These features would be almost impossible to replicate anywhere else, and as such, the social and economic impacts of running a road through the property are extremely high.</p> <p>Request: Remove Option 6, Add to Notice List</p> <p>For the reasons briefly set out above, we ask that you remove Option 6 from the options being recommended to take forward for further study. We would be happy to engage the EA Team in further conversation about the UCC Norval property in order to discuss this matter further.</p> <p>In addition, we would ask that you add myself to any Notice lists relating to the current, or any further EA studies or other studies involving the UCC Norval site.</p> <p>Please feel free to contact the undersigned to further discuss anything relating to the UCC Norval property.</p>	
29.	January 19, 2010	<p>Representative for landowners near Winston Churchill and Embleton</p> <p>We have spoken in the past about the HPBAT process. I am trying to get myself somewhat up to speed on how the Norval By-pass fits into this (or not). In terms of the best description of the type of EA this will fall under can you give me any direction or point me to something on some website that details that part of the process?</p>	Links to EA process provided (Email on January 21, 2010)

2.2 North-South Transportation Corridor

Comment Number	Comment Date	Comment Content	Project Response
30.	September 24, 2009	<p>Catholic Cemeteries Archdiocese of Toronto</p> <p>The urban planning consulting firm, Augusta National Inc., acts on behalf of Catholic Cemeteries Archdiocese of Toronto, registered owners of 77 acres located at the northeast corner of Heritage Road and Wanless Drive, Brampton.</p>	Comments considered throughout study process. (Letter sent November 17,

		<p>Further to today's meeting, please advise on the following:</p> <ul style="list-style-type: none"> • all schedules should indicate the street name 'Heritage Road'; • Northwest Brampton Landowners appealed to the OMB, the interim OPA and ZBA protecting the transportation corridor options. Please advise how this Board decision, anticipated in the summer 2010, may supplant the proposed terms of reference of the Transportation Study. • Referring to Halton-Peel Freeway Option (HPF), demarcate that section of the Bram West Pkwy. that was approved by Brampton City Council under the approved DC By-law; • Since financing of Bram West Pkwy. is complete, can the EA proceed independent from the balance of the Transportation Study? 	2009)
31.	September 30, 2009	<p>Ventawood Investments Limited</p> <p>Pursuant to my presentation to Council on October 8th, 2009 please be advised that I would like to file this objection to the current proposed Regional Plan.</p> <p>Land should be reserved for a new north-south Freeway Link from the 410 (at Mayfield Road) to the proposed new GTA West Highway Corridor as per the attached coloured plan.</p> <p>Land for the Freeway Link could be acquired by land dedications from the industrial developments proposed for this area or by area Cost Sharing Agreements if the Province deems that this Freeway Link is a Peel Region or Caledon responsibility.</p> <p>The creation of this prestige highway frontage for industrial or office use (similar to Highway #404 north of Highway #7) would be an immense benefit to the Region of Peel and Caledon. INC.</p>	Comments considered throughout study process; information regarding the GTA West study and HPBATS study provided. (Letter sent November 5, 2009)
	October 5, 2009	<p>Maple Lodge Farms</p> <p>Introductory Comments</p> <p>a. The Problem and Opportunity Statement (POS) states that the planned transportation network will not meet demand but does not state which of the several planned transportation networks is being referred to.</p> <p>b. The problem and opportunity statement might have identified the opportunity to create business / employment opportunities along freeways as a “spin off” benefit to Freeways that are needed to satisfy</p>	Comments considered throughout the study process

		<p>transportation needs. c. There are specific existing facilities located in Halton Peel Boundary Area that could have been identified in the POS ie. The Croatian Cathedral and Maple Lodge Farms</p> <p>North-South Transportation Corridor Options</p> <p>Brampton Arterial BA1 Not adequate: provides access to 407 only.</p> <p>Brampton Arterial BA3 Not realistic: Provides access to 407 but provides no direct access to 407, Introduces too much demand to the already overloaded Winston Churchill Blvd. Would create additional pressure on existing industry (MLF) by creating major restrictions both on Winston Churchill Blvd alignment and creating a barrier severing the Maple Lodge Farms industrial operations from its farming operations and eliminate the possibility of growth of Maple Lodge Farms.</p> <p>Brampton Arterial BA4 Not realistic: routes traffic through the MLF lands with all the bad of BA3 on Maple Lodge Farms and proceeds through the middle of the existing industrial community presently located between 401 and 407.</p> <p>Brampton Freeway Option BF1 Not realistic: Does not provide direct access to 401. Would create unacceptable levels of congestion on Steeles, Winston Churchill, Heritage Rd., and Mississauga Rd. BF1 similar to the Brampton Arterial Options would defeat the purpose of building the Freeway which is to relieve congestion and reduce travel times by removing congestion from one part of the trip to a different part of the trip with the result of financial expenditure to produce neither a reduction in travel time nor congestion. Would provide an even greater to truncate the Maple Lodge Farms Operations.</p> <p>Brampton Freeway BF2 More Unrealistic: Intensifies all of the bad impacts on the existing industrial uses of Maple Lodge Farms and the existing industrial community between 401 and 407 at a bigger cost.</p> <p>Halton Hills Freeway Option HPF Most realistic: Provides freeway access to both 401 and 407 however the inclusion of the arterial connection through Concession VI to 407 is unnecessary. All connections to 401 and 407 are available at freeway confluence with 401 and 407 between the 9th and 10th lines of Halton Hills. The arterial</p>	
--	--	--	--

		<p>connection to 407 through concession VI is not only necessary and expensive it has the added negative impact in the existing industry of Maple Lodge Farms separating the industrial and farming uses and preventing expansion of the existing operations.</p> <p>The only option that is sufficient and comprehensive is the Halton Peel Freeway option (HPF). The option not presented that should be considered is the option that would include the HPF Freeway connection without the expensive, unnecessary and disruptive arterial appendix.</p>	
32.	December 1, 2009	<p>SmartCentres</p> <p>The following submission outlines our comments/recommendations relating to the options presented at the Stakeholders Workshop #2 and Public Information Centre #2 on November 24, 2009.</p> <p>The new S-shaped freeway (serving Halton and Peel Regions) needs to be carefully aligned so as to better serve future residents in South Georgetown and to further alleviate anticipated traffic congestion on the existing road network. Specifically, we recommend that the following modifications be included in the HP BATS final report:</p> <ol style="list-style-type: none"> 1) Ensure that the east-west portion of the freeway alignment is located further north closer to 10 Sideroad (shown in red in Appendix A). 2) Provide an additional interchange/exit and connection from the freeway (between 5 Sideroad & 10 Sideroad) to Ninth Line (shown in blue in Appendix A). <p>The abovementioned changes would provide future residents in South Georgetown a more accessible connection to Brampton, Mississauga, Hwy 401 or Hwy 407 and would further alleviate traffic along 10 Sideroad and Norval bypass. Depending on future growth and traffic demand, the east-west connection from the freeway (between 5 Sideroad & 10 Sideroad) can be further extended to Eighth Line or Trafalgar Road.</p> <p>Enclosed is a diagram illustrating the proposed recommendations (Appendix A). Should you have any questions or concerns please do not hesitate to contact the undersigned.</p>	Comments considered throughout study process (Letter sent December 2, 2009)
33.	December 4, 2009	<p>Maple Lodge Farms</p> <p>Bramwest Parkway: Strongly disagree.</p> <ul style="list-style-type: none"> -Very significant impact on existing employers. -Truncates Maple Lodge Farms operations -Question need for this road 	Comments considered throughout the study process

		<p>-Not required. What community would it serve? The community bounded by Mississauga Road, the Credit River, the Halton Peel Freeway, Highway 401 and Highway 407 doesn't require it. No studies have been done to demonstrate the need</p> <p>Halton-Peel Freeway: Strongly agree The Halton Peel Freeway provides connections to Hwy 401 and Hwy 407 from the complete Halton Peel Boundary Area and beyond, as well as the Credit River crossing required by the Norval Bypass. However, the Bramwest Parkway adds nothing new and no demand studies have been done to demonstrate the need for the appendage.</p>	
34.	December 8, 2009	<p>Fieldgate Developments</p> <p>Of particular interest is the alignment that is shown for a potential Halton-Peel freeway. It would be appreciated if you could provide more detail on the travel demand that would be met by such a significant piece of infrastructure. Is there a more elaborate network plan available that might show how this potential infrastructure would tie into the broader provincial network? Clearly there is no demand at the shown terminus at Mayfield Road and any alignment through Caledon or connection to the broader provincial network should be contemplated in detail.</p> <p>The alignment shown in your presentations seems to favour a broad swath generally along Heritage Road. The use of an existing right of way would likely be difficult due to existing properties and frontages. I would suggest that an alignment further to the east, towards Mississauga Road might better service existing and approved growth areas by being closer to the already built areas within Brampton and Caledon. In addition a more easterly alignment would be more central allowing better accessibility to potential future long term growth.</p> <p>Also, some questions: Is the demand information that identifies the 8 lane section available? How is the demand determined and what will be the source of the traffic (i.e. Who will it serve)?</p> <p>Will the freeway be a Provincial highway or that of another jurisdiction. When is the EA expected to start and what does the current process, the Halton-Peel Boundary Area Transportation Study, intend to determine about this roadway?</p> <p>It would be appreciated if you would take these comments into consideration when moving forward with your work and show the alignment of this roadway further to the east towards Mississauga or Creditview Road.</p>	<p>Alignments to be determined through a future study; there is demand for an 8-lane freeway crossing the Credit River; if the GTA West corridor is constructed, it is expected that the Halton Peel Freeway would connect to it. Comments considered throughout study process (Email, December 8, 2009)</p>

Appendix A-4

Input to the Draft Report from the
Technical Advisory Committee

TABLE OF CONTENTS

- 1. Comments Received – Agencies2**
- 1.1 Comments Received – MTO2
- 1.2 Comments Received – Metrolinx2
- 1.3 Comments Received – Conservation Halton4
- 1.4 Comments Received – Niagara Escarpment Commission7
- 1.5 Comments Received – Credit Valley Conservation8
- 1.6 Comments Received – Hydro One10

1. COMMENTS RECEIVED – AGENCIES

The original letters received from these agencies are shown after these tables.

1.1 Comments Received – MTO

Number	Date	Comment	HDR iTRANS Response
<i>Transportation Planning Branch – Policy & Planning Division</i>			
1	February 24, 2010	As indicated in the <i>Study Scope and Objectives</i> on page 10, the HPBATS study recommends a strategy for a balanced transportation system through multi-modal solutions and travel demand management initiatives. These are very similar to the multi-modal, building block approach of the GTA West study.	Comment Noted
2	February 24, 2010	As shown on pages 146 to 149, it appears that the HPBATS study has taken the initial recommendations of the MTO and conducted all network and system analysis, both with and without the GTA West Corridor in place. MTO is pleased to see this considering the varying timelines of each project.	Comment Noted
3	February 24, 2010	Wherever the GTA West Transportation Corridor is graphically shown throughout the report, it should be clearly noted that it is one of the several new corridor alternatives under consideration by the GTA West EA. There were five options illustrated at the recent round of PIC's (PIC #3) and we have no issue with you showing only one, but please label it accordingly.	A note has been added to exhibits including the GTA West Corridor that explains that this option is one alternative

**Note: All references to sections, table numbers, page numbers and exhibit number refer to those in those in Draft Report 1.*

1.2 Comments Received – Metrolinx

Number	Date	Comment	HDR iTRANS Response
1.	March 19, 2010	<u>Section 7.2.5, p. 126</u> - The proposed Halton-Peel Freeway is described as a multimodal corridor. We encourage the design of this corridor, regardless of whether it is an arterial or grade-separated freeway, to include HOV lanes and transit-priority measures. We also	Text in Section 8.3 has been modified to reflect this comment.

		encourage the Boundary Area Transportation Study to identify potential routes and measures for improved pedestrian and cyclist facilities. Similarly, measures to provide safe, convenient and comfortable pedestrian and cyclist crossings of this corridor would improve conditions for active transportation in the study area.	
2.	March 19, 2010	Section 7.7.1, p. 157 - Based on the descriptions provided for two potential options of for a GTA West Corridor, it is unclear whether Option 2 (described as "following the Halton-Peel Freeway corridor") is in addition to the proposed freeway, or in lieu of the proposed freeway.	In Option 2, the GTA-West corridor and the HPF are the same facility; text has been corrected to reflect this.
3.	March 19, 2010	It would be useful if this Study included further information about how the GTA West Corridor impacts the need for the east/west connection also recommended by this Study.	More details regarding the GTA-West EA study and the recent PIC have been added
4.	March 19, 2010	We encourage the Halton-Peel BATS team to continue working with a high degree of coordination with MTO and its partners on the development of the GTA West Corridor, and its role within the study area.	Comment noted
5.	March 19, 2010	<u>Section 8.1, p. 163</u> - We are supportive of the sustainable transportation strategy, with its emphasis on public transit, travel demand management, and active transportation, as a key component of the recommended strategy.	Comment noted
6.	March 19, 2010	<u>Section 8.3, p. 166</u> - In addition to the recommendations made with respect to the active transportation strategy, we encourage the study to include "Providing infrastructure to improve crossings of existing and proposed freeways and Provincial highways".	Recommendation added
7.	March 19, 2010	<u>Section 8.5.1, p. 168</u> - The recommended transit services listed include a number of corridors that are identified as higher-order transit, but are not part of the Regional Rapid Transit Network identified in The Big Move. These higher-order corridors identified include Steeles Avenue west from Lisgar GO station, Guelph Street - Bovaird Drive connecting Brampton and Georgetown, and along the proposed Halton-Peel Freeway. Exhibit 8-1 also shows new higher-order transit services planned for Mississauga Road, and Queen Street west to Mississauga Road. Network modelling of these proposed transit services should be done to ensure that they do not detract ridership from existing or planned higher-order transit services. With respect to Bovaird Drive, it was found in the development of The Big Move that the inclusion of higher order transit on Bovaird Drive would detract from ridership on both Queen Street in Brampton and Steeles Avenue, and that densities along this corridor were insufficient to support higher order transit.	Not all corridors that are required by the respective municipalities have been identified by Metrolinx; text has been modified to clarify projects recommended by Metrolinx
8.	March	It is recommended that, in order to align with The Big Move, transit corridors identified as part of the Regional Rapid Transit Network in The Big Move be shown as distinct (e.g. in	Exhibits 6-1 and 8-1 have been modified to

	19, 2010	a different colour) from the other transit corridors in Exhibit 8-1.	show Big Move corridors as distinct from corridors planned by other agencies / municipalities.
9.	March 19, 2010	<u>Section 8.5.3, p. 170</u> - We encourage the inclusion of Metrolinx in the recommended inter-agency planning group to detail planning and operational issues, as Metrolinx operates GO Transit trains and buses within the study area.	Text has been modified to indicate inclusion of Metrolinx in the inter-agency planning group
10.	March 19, 2010	<u>Section 8.6.1, p. 171</u> - The recommended Halton-Peel freeway is not in existing provincial plans, including the MTO's 5-year capital plan, the Growth Plan and The Big Move.	Comment noted

**Note: All references to sections, table numbers, page numbers and exhibit number refer to those in those in Draft Report 2.*

1.3 Comments Received – Conservation Halton

Number	Date	Comment	HDR iTRANS Response
1.	March 26, 2010	Section 1.1 - Background – to clarify, the Region of Halton is not bordered by the City of Guelph. This should be revised.	Text revised as suggested
2.	March 26, 2010	Section 3.8 – Other Key Documents and Studies – the Halton Natural Areas Inventory should be included in this section and referenced accordingly.	Summary of the Halton Natural Areas Inventory added to the policy context section
3.	March 26, 2010	Section 4.2.1 – Key Environmental Features – staff agree that the majority of the study area is within the CVC's watershed however, a portion of the study area, including a portion of the proposed corridor, is within Conservation Halton's watershed (Sixteen Mile Creek). This should be reflected in Section 4.2.1.	Text added to reflect 16 Mile Creek watershed and Conservation Halton's role in the study process
4.	March 26, 2010	Section 4.2.4 – Transportation Impacts to the Natural Environment – this section focuses on the air quality impacts of transportation. Staff recommend that additional information should be included related to the impacts to wildlife movement that existing and new transportation corridors can have on wildlife. The impacts of roads on wildlife (including plants) are many and varied, and there is substantial literature available. The following, summary is from a literature review on the ecological impacts of roads and traffic by Ian Spellerberg (1998): Table 1: A summary of ecological effects of roads	Information regarding impacts of new road infrastructure and rationale for existing level of analysis added underneath evaluation tables in Section 7. The added text includes: A more detailed description of environmental impacts is not provided since all North-South Transportation Corridor options discussed above will have similar

	<p>Effects during construction</p> <ul style="list-style-type: none"> -There is a direct loss of habitat and biota -There are effects resulting from the infrastructure and supporting activities for construction -The impacts may occur beyond the immediate vicinity of the road; for example changes in the hydrology. Mining for aggregates for the road may take place in a different area. It is important therefore to agree on the geographical boundary for an impact assessment. <p>Short term effects (of a new road)</p> <ul style="list-style-type: none"> -The new linear surface creates a new microclimate and a change in other physical conditions extends varying distances from the road edge. -The newly created edge provides habitat for edge species -Plant mortality increases along the edge; and such mortalities may extend from the road edge for varying distances -The mortality of plants has direct and secondary effects on other organisms. -Some fauna will move from the area of the road as a result of habitat loss and physical disturbance -Animals are killed by traffic <p>Long term effects</p> <ul style="list-style-type: none"> -Animals continue to be killed by traffic -The road kills have secondary effects as carrion -The loss of habitat and change in habitat extends beyond the edge of the road -The changes in the biological communities may extend for varying distances from the road edge. -There is fragmentation of habitat and this in turn has implications for habitat damage and loss, for dispersal and vagility of organisms and for isolations of populations. -The edge habitat (or ecotone) and traffic on the road may facilitate dispersal for some taxa, including pest species. -Associated structures such as bridges and tunnels may provide habitats for some taxa. -The run-off from the roads affects aquatic communities. -Emissions, litter, noise and other physical disturbances may extend into the roadside vegetation for varying distances and result in changes in species composition. 	<p>environmental impacts in terms of construction effects, short-term effects and long-term effects. Construction effects include, but are not limited to, loss of habitat, loss of biota and impacts to hydrology. Short-term impacts include, but are not limited to, the creation of a new microclimate, plant mortality, habitat loss, wildlife disturbance and traffic-related wildlife deaths. Long-term effects include, but are not limited to, loss of habitat, fragmentation of habitat, continued traffic-related wildlife deaths, change in biological communities, run-off from the road, litter, noise, emissions and other physical disturbance. The only option which has no impacts on the aquatic and terrestrial environment is the Do Nothing case and this has been reflected in the analysis table. A more detailed assessment of the environmental impacts of different alternatives will be undertaken in the later stages of the Environmental Assessment process</p>
--	---	--

		<p>Wherever possible, Conservation Halton staff support the consideration of solutions that do not involve new roads or expansions of existing roads. Where there is no other reasonable alternative to new roads or road expansion, projects should incorporate terrestrial ecopassages and/or other measures to reduce road mortality, promote safe wildlife passage and minimize other ecological impacts such as noise. Roads should be located as far as possible from natural features and consider the seasonal habitat requirements of wildlife in the vicinity. Road crossings in or adjacent to wetlands are particularly problematic given the life history of many wildlife species (e.g. amphibians and waterfowl) and their use of several habitat types throughout the year. Mitigation for the ecological impacts of road works should be factored into project budgets.</p> <p>Other impacts include loss of terrestrial and or aquatic habitat, impacts to water quality as a result of stormwater runoff to watercourses, etc.</p>	
5.	March 26, 2010	Table 7-14 HPF Evaluation – staff recommend that the description of anticipated impacts to the natural environment are insufficient and do not clearly document all of the anticipated impacts of the various alternatives. As recommended above additional criteria should be listed and each documented in terms of impacts. Staff question whether construction impacts and constructability have been considered in the evaluation.	Detailed assessment of environmental impacts will be completed during Phases 3 and 4 of the EA process.
6.	March 26, 2010	Table 7-2 – Criteria and Indicators – under “Natural Environment” only two criteria are listed (Terrestrial Features / Aquatic Habitat and Air Quality). Staff recommend that for a more open and transparent evaluation it would be appropriate to further break down the various terrestrial and aquatic features (i.e. use the PPS list of features/functions). In addition, impacts to natural heritage systems, rather than just individual features should also be assessed. Within the “Indicators” staff question why the term “local” is used when referring to natural vegetation and aquatic habitat?	See the response to Conservation Halton # 4. Word “local” has been removed.
7.	March 26, 2010	Within Table 7-14, under Air Quality, reference is made to peak period congestion. Staff question why peak period congestion is anticipated given that the purpose of this new corridor would be to relieve such congestion?	Peak period congestion is a standard measure utilized in transportation analysis.
8.	March 26, 2010	Table 7-15 – Evaluation Summary – staff recommend that the circle size and colour is deceiving in terms of impacts to the natural environment. While HPF 1/2 may have less impacts to the natural environment than HPF 3 staff recommend that the chart would make it appear as though HPF 1 and 2 have no environmental impacts.	The legend indicates “most preferred”, not “no impacts”; the report is clear that the study is within an environmentally sensitive area, and that all solutions have environmental impacts

9.	March 26, 2010	Section 7.2.5 – Preferred North-South Alternative – staff note that there is no reference to potential impacts within Conservation Halton's watershed. Impacts could include terrestrial and aquatic habitat disruption/loss as well as impacts to wildlife movement.	Text added to reflect potential impacts to Conservation Halton's watersheds
10.	March 26, 2010	Staff note that the east-west and north-south alternatives all impact the Credit Valley Conservation's watershed significantly and, as such, we defer to the CVC with respect to the preferred alternative.	This has been acknowledged in the Report.

**Note: All references to sections, table numbers, page numbers and exhibit number refer to those in those in Draft Report 2.*

1.4 Comments Received – Niagara Escarpment Commission

Number	Date	Comment	HDR iTRANS Response
1.	March 29, 2010	Niagara Escarpment Commission staff has reviewed the Halton Peel Boundary Area Transportation Study (HPBATS), draft 2 Report. While the Study Area only includes a small portion of the Niagara Escarpment Plan (NEP) Area, NEC staff participated in the Technical Advisory Committee to monitor the direction of the investigation into transportation improvements in the south Halton/Peel area to determine the possible future implications arising from the study. The draft report states that there is a need for new east/west and north/south transportation capacity in south Brampton/Halton Hills due to population and employment growth projected for both Halton and Peel. We appreciate that the HPBATS report acknowledges that the Niagara Escarpment Plan represents a “significant constraint” to the development of new road infrastructure. The study emphasizes an approach that will encourage transit first, Transportation Demand Management, active transportation and Transportation System Management to limit the impact of new facilities on the natural environment and encourage alternative approaches to meeting transportation needs. The NEC supports this direction rather than the traditional direction of just constructing new roads. We also support the need to improve the transportation capacity in the urban areas, outside the NEP, in order to provide better transportation alternatives for aggregate haul routes as the existing routes are not optimal in urbanised areas and impact sensitive land uses.	Comment noted. Section 6.3.3.4 has been modified to include NEC inputs.
2.	March 29, 2010	We support the conclusion that there should not be a new Georgetown by-pass north of 22 Side Road. The construction of major new roads in un-urbanised areas could have the effect of shifting traffic patterns and increasing pressure for continued urban development northward into the NEP which is not consistent with the transportation and overall	Comment noted

		objectives of the NEP. We recognise that there is need for additional east/west transportation capacity and the NEC will continue to provide input to other related provincial transportation studies that are ongoing to find appropriate solutions such as improving rail capacity in existing corridors. NEC staff prepared a separate staff report on the Niagara to GTA and GTA West EA Studies in January 2010.	
3.	March 29, 2010	We appreciate the opportunity to provide input to HPBATS and look forward to receiving a final copy of the report. The NEC will continue to provide input to this and other related transportation studies/environmental assessments and Official Plan amendments to ensure that the options chosen conform to the NEP and minimise impacts on the Escarpment and the natural environment.	Comment noted

**Note: All references to sections, table numbers, page numbers and exhibit number refer to those in those in Draft Report 2.*

1.5 Comments Received – Credit Valley Conservation

Number	Date	Comment	HDR iTRANS Response
1.	April 7, 2010	In section 1.3, Study Scope and Objectives, the last point regarding impacts to natural environmental features should be broadened to include avoids, minimizes, mitigates and compensates.	Protection of environmental features is addressed within study objectives
2.	April 7, 2010	Section 4.2.1, last sentence, states that watercourses located within the study area that directly support fish habitat are identified in Exhibit 4.4. This does not appear to be the case.	Text in Section 4.2.1 has been modified
3.	April 7, 2010	Although there is a discussion about the natural environment in the context of the Credit River Valley there is no discussion about other natural features including multiple tributaries and natural hazards such as floodplain, meander belt, slope, etc. Cumulative impacts on these could be considered significant to the system as a whole.	Consideration of other natural features will take place during the Environmental Assessment process of network improvements.
4.	April 7, 2010	Numerous north-south and east-west proposals propose credit river crossings. There is a lack of confirmation on how the proposals integrate to minimize the number of Credit River crossings and impacts on the natural environment as a whole. CVC's preference is for no new river crossings. If crossing is unavoidable, it should be minimized to one new crossing. Any crossing of the Credit River will	Comment noted; consideration of Credit River crossings will take place during the Environmental Assessment process of network improvements.

		require the spanning of the entire valley and will have to be designed to the ultimate road build out to minimize disturbance to the valley system. Compensation may also be required beyond any minimizing and mitigation of impacts. The various options appear to imply multiple Credit River crossings which CVC is not in support of. This is highlighted even more as Natural Environment is seen as most important factor in the Selection Criteria.	
5.	April 7, 2010	Section 7.2.5 and the evaluation tables for the north-south alternatives state that impacts to the Credit River valley may be minimized if the crossing is located east of Heritage Road. It is important to note that the significance of the Credit River valley does not diminish when the Greenbelt designation ends. CVC understands this comment to reflect a narrowing of the valley east of Heritage Road which could provide for a shorter overall crossing distance of the Credit, however, impacts may still be significant and must be subject to further study through a further EA for the Halton-Peel Freeway alternative as stated in the document.	Comment noted; as stated in the document, impacts will most certainly be subject to further study through a further Environmental Assessment.
6.	April 7, 2010	As stated, further study in the form of an EA should be conducted before any decisions are made regarding a Norval East-West bypass. There are numerous environmental features in the vicinity of Norval, not just the Credit River valley and these must be carefully evaluated within a proper public process prior to any recommendations being put forward for such a by-pass.	Comment noted; as stated in the document, impacts to environmental features will be assessed and addressed in a future Environmental Assessment study.
7.	April 7, 2010	It should be noted in the document that Silver Creek is considered Redside Dace habitat in the vicinity of Norval. Redside Dace and its habitat are protected under the Endangered Species Act. This may have impacts on any proposed alternatives. CVC recommends that you contact Melinda Thompson-Black, Species at Risk Biologist to determine if MNR has any requirements with respect to this project.	Information regarding the Redside Dace habitat in Silver Creek near Norval has been added to Section 4.2.3.

**Note: All references to sections, table numbers, page numbers and exhibit number refer to those in those in Draft Report 2.*

1.6 Comments Received – Hydro One

Number	Date	Comment	HDR iTRANS Response
1.	April 13, 2010	<p>Hydro One has reviewed the Halton-Peel Boundary Area Transportation Study (HPBATS) Draft 2 Report dated March 2010 and offers the following comment to ensure that Hydro One’s needs for future infrastructure to meets the future residents of this area are considered. We request that a new bullet be added to Section 9, Implementation, be added to the Draft Report to ensure that coordination of needs occurs. This is shown as point number 5 below.</p> <p>5. Work cooperatively with other public agencies such as Hydro One for the planning of infrastructure projects to support population growth in the Study Area. Explore the use of joint use transportation and power transmission corridors where possible to provide services to the residents of the study area in a coordinated, efficient and cost effective manner.</p>	Text added to the Executive Summary and Chapter 9: Implementation.

**Note: All references to sections, table numbers, page numbers and exhibit number refer to those in those in Draft Report 2.*

Original Correspondence Received from Agencies:

1. Letter from MTO – February 24, 2010
2. Email from Metrolinx – March 19, 2010
3. Letter from Conservation Halton – March 26, 2010
4. Letter from Niagara Escarpment Commission – March 29, 2010
5. Letter from Credit Valley Conservation – April 7, 2010
6. Email from Hydro One – April 13, 2010

Transportation Planning Branch
Policy & Planning Division
777 Bay Street
30th Floor
Toronto, ON M7A 2J8
Telephone: (416) 585-7255
Fax: (416) 585-7324
Joe.Perrotta@ontario.ca

February 24, 2010

Wayne Chan, Manager
Transportation Planning
Region of Peel
10 Peel Centre Drive
Brampton, Ontario
L6T 4B9

Re: Halton-Peel Boundary Area Transportation Study, Draft 1 Report – January 2010

Dear Mr. Chan:

Thank you for providing this office with the opportunity to review the Halton-Peel Boundary Area Transportation Study - Draft 1 Report – January 2010. We have completed our review, which included input Provincial Planning Office staff and GTA West Project Team, and offer the following comments for your consideration.

- As indicated in the *Study Scope and Objectives* on page 10, the HP Bats study recommends a strategy for a balanced transportation system through multi-modal solutions and travel demand management initiatives. These are very similar to the multi-modal, building block approach of the GTA West study.
- As shown on pages 146 to 149, it appears that the HP Bats study has taken the initial recommendations of the MTO and conducted all network and system analysis, both with and without the GTA West Corridor in place. MTO is pleased to see this considering the varying timelines of each project.
- Wherever the GTA West Transportation Corridor is graphically shown throughout the report, it should be clearly noted that it is one of the several new corridor alternatives under consideration by the GTA West EA. There were five options illustrated at the recent round of PIC's (PIC #3) and we have no issue with you showing only one, but please label it accordingly.

Please call me if you wish to discuss these comments further.

Yours truly,

Original Signed by:

Joe Perrotta MCIP, R.P.P
Manager, Urban Planning Office

cc: GTA West Project File

Email Correspondence from Metrolinx

From: Briana Illingworth [mailto:Briana.Illingworth@metrolinx.com]

Sent: Friday, March 19, 2010 3:16 PM

To: Gan, Tyrone

Subject: RE: HPBATS

Tyrone:

Thank you for this opportunity to review and provide comments on the Halton-Peel Boundary Area Transportation Study. This study plays an important role in transportation planning for both Halton and Peel Regions. The Study is a big step in the direction of bringing Regional OPs into alignment with current provincial policy, for which the Study team is to be commended.

Section 7.2.5, p. 126 - The proposed Halton-Peel Freeway is described as a multimodal corridor. We encourage the design of this corridor, regardless of whether it is an arterial or grade-separated freeway, to include HOV lanes and transit-priority measures. We also encourage the Boundary Area Transportation Study to identify potential routes and measures for improved pedestrian and cyclist facilities. Similarly, measures to provide safe, convenient and comfortable pedestrian and cyclist crossings of this corridor would improve conditions for active transportation in the study area.

Section 7.7.1, p. 157 - Based on the descriptions provided for two potential options of for a GTA West Corridor, it is unclear whether Option 2 (described as "following the Halton-Peel Freeway corridor") is in addition to the proposed freeway, or in lieu of the proposed freeway.

It would be useful if this Study included further information about how the GTA West Corridor impacts the need for the east/west connection also recommended by this Study.

We encourage the Halton-Peel BATS team to continue working with a high degree of coordination with MTO and its partners on the development of the GTA West Corridor, and its role within the study area.

Section 8.1, p. 163 - We are supportive of the sustainable transportation strategy, with its emphasis on public transit, travel demand management, and active transportation, as a key component of the recommended strategy.

Section 8.3, p. 166 - In addition to the recommendations made with respect to the active transportation strategy, we encourage the study to include "Providing infrastructure to improve crossings of existing and proposed freeways and Provincial highways".

Section 8.5.1, p. 168 - The recommended transit services listed include a number of corridors that are identified as higher-order transit, but are not part of the Regional Rapid Transit Network identified in The Big Move. These higher-order corridors identified include Steeles Avenue west from Lisgar GO station, Guelph Street - Bovaird Drive connecting Brampton

and Georgetown, and along the proposed Halton-Peel Freeway. Exhibit 8-1 also shows new higher-order transit services planned for Mississauga Road, and Queen Street west to Mississauga Road. Network modelling of these proposed transit services should be done to ensure that they do not detract ridership from existing or planned higher-order transit services. With respect to Bovaird Drive, it was found in the development of The Big Move that the inclusion of higher order transit on Bovaird Drive would detract from ridership on both Queen Street in Brampton and Steeles Avenue, and that densities along this corridor were insufficient to support higher order transit.

It is recommended that, in order to align with The Big Move, transit corridors identified as part of the Regional Rapid Transit Network in The Big Move be shown as distinct (e.g. in a different colour) from the other transit corridors in Exhibit 8-1.

Section 8.5.3, p. 170 - We encourage the inclusion of Metrolinx in the recommended inter-agency planning group to detail planning and operational issues, as Metrolinx operates GO Transit trains and buses within the study area.

Section 8.6.1, p. 171 - The recommended Halton-Peel freeway is not in existing provincial plans, including the MTO's 5-year capital plan, the Growth Plan and The Big Move.

Again, thank you for this opportunity to provide input. Please feel free to contact me should you require further clarifications.

Sincerely,
Briana Illingworth
Transportation Policy/Planning Advisor
Metrolinx



2596 Britannia Road West
RR2, Milton, Ontario L9T 2X6
905.336.1158 Fax 905.336.7014
www.conservationhalton.on.ca

March 26, 2010

Mr. Jonathan Chai
HDR/iTrans
100 York Boulevard, Suite 300
Richmond Hill, On
L4B 1J8

Dear Mr. Chai:

**Re: Halton-Peel Boundary Area Transportation Study (HPBATS)
Draft ESR
CH File: MPR 431**

Staff of Conservation Halton have reviewed the above noted draft ESR, prepared by HDR/iTrans and offer the following comments.

Section 1.1 - Background – to clarify, the Region of Halton is not bordered by the City of Guelph. This should be revised.

Section 3.8 – Other Key Documents and Studies – the Halton Natural Areas Inventory should be included in this section and referenced accordingly.

Section 4.2.1 – Key Environmental Features – staff agree that the majority of the study area is within the CVC's watershed however, a portion of the study area, including a portion of the proposed corridor, is within Conservation Halton's watershed (Sixteen Mile Creek). This should be reflected in Section 4.2.1.

Section 4.2.4 – Transportation Impacts to the Natural Environment – this section focuses on the air quality impacts of transportation. Staff recommend that additional information should be included related to the impacts to wildlife movement that existing and new transportation corridors can have on wildlife. The impacts of roads on wildlife (including plants) are many and varied, and there is substantial literature available. The following summary is from a literature review on the ecological impacts of roads and traffic by Ian Spellerberg (1998):



Table 1. A summary of ecological effects of roads.**Effects during construction**

There is a direct loss of habitat and biota.

There are effects resulting from the infrastructure and supporting activities for construction.

The impacts may occur beyond the immediate vicinity of the road; for example changes in the hydrology. Mining for aggregates for the road may take place in a different area. It is important therefore to agree on the geographical boundary for an impact assessment.

Short term effects (of a new road)

The new linear surface creates a new microclimate and a change in other physical conditions extends varying distances from the road edge.

The newly created edge provides habitat for edge species.

Plant mortality increases along the edge; and such mortalities may extend from the road edge for varying distances.

The mortality of plants has direct and secondary effects on other organisms.

Some fauna will move from the area of the road as a result of habitat loss and physical disturbance.

Animals are killed by traffic.

Long term effects

Animals continue to be killed by traffic.

The road kills have secondary effects as carrion.

The loss of habitat and change in habitat extends beyond the edge of the road.

The changes in the biological communities may extend for varying distances from the road edge.

There is fragmentation of habitat and this in turn has implications for habitat damage and loss, for dispersal and vagility of organisms, and for isolation of populations.

The edge habitat (or ecotone) and traffic on the road may facilitate dispersal for some taxa, including pest species.

The dispersal of pest species via ecotones or traffic may have secondary effects on biological communities.

Associated structures such as bridges and tunnels may provide habitats for some taxa.

The run-off from the roads affects aquatic communities.

Emissions, litter, noise and other physical disturbances may extend into the roadside vegetation for varying distances and result in changes in species composition.

Wherever possible, Conservation Halton staff support the consideration of solutions that do not involve new roads or expansions of existing roads. Where there is no other reasonable alternative to new roads or road expansion, projects should incorporate terrestrial ecopassages and/or other measures to reduce road mortality, promote safe wildlife passage and minimize other ecological impacts such as noise. Roads should be located as far as possible from natural features and consider the seasonal habitat requirements of wildlife in the vicinity. Road crossings in or adjacent to wetlands are particularly problematic given the life history of many wildlife species (e.g. amphibians and waterfowl) and their use of several habitat types throughout the year. Mitigation for the ecological impacts of road works should be factored into project budgets. Other impacts include loss of terrestrial and/or aquatic habitat, impacts to water quality as a result of stormwater runoff to watercourses, etc.

Table 7-2 – Criteria and Indicators – under “Natural Environment” only two criteria are listed (Terrestrial Features/Aquatic Habitat and Air Quality). Staff recommend that for a more open and transparent evaluation it would be appropriate to further break down the various terrestrial and aquatic features (i.e., use the PPS list of features/functions). In addition, impacts to natural heritage systems, rather than just individual features should also be assessed. Within the “Indicators” staff question why the term “local” is used when referring to natural vegetation and aquatic habitat?

Table 7-14 – HPF Evaluation – staff recommend that the description of anticipated impacts to the natural environment are insufficient and do not clearly document all of the anticipated impacts of the various alternatives. As recommended above, additional criteria should be listed and each documented in terms of impacts. Staff question whether construction impacts and constructability have been considered in the evaluation?

Within Table 7-14, under Air Quality, reference is made to peak period congestion. Staff question why peak period congestion is anticipated given that the purpose of this new corridor would be to relieve such congestion?

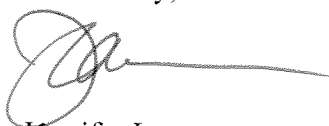
Table 7-15 – Evaluation Summary – staff recommend that the circle size and colour is deceiving in terms of impacts to the natural environment. While HPF 1/2 may have less impacts to the natural environment than HPF 3 staff recommend that the chart would make it appear as though HPF 1 and 2 have no environmental impacts.

Section 7.2.5 – Preferred North-South Alternative – staff note that there is no reference to potential impacts within Conservation Halton’s watershed. Impacts could include terrestrial and aquatic habitat disruption/loss as well as impacts to wildlife movement.

Staff note that the east-west and north-south alternatives all impact the Credit Valley Conservation’s watershed significantly and, as such, we defer to the CVC with respect to the preferred alternative.

We trust the above is of assistance. If you require additional information, please contact the undersigned at extension 266.

Yours truly,



Jennifer Lawrence
Manager, Environmental Planning

cc: Mr. Liam Murray, CVC, email
Mr. Wayne Chan, Region of Peel, email (wayne.chan@peelregion.ca)
Mr. Andrew Head, Region of Halton, email
Ms Carolyn DeLoyde, Region of Halton, Planning, email

Niagara Escarpment Commission

232 Guelph St.
Georgetown, ON L7G 4B1
Tel: 905-877-5191
Fax: 905-873-7452
www.escarpment.org

Commission de l'escarpment du Niagara

232, rue Guelph
Georgetown ON L7G 4B1
No de tel. 905-877-5191
Télécopieur 905-873-7452
www.escarpment.org



*Ontario's Niagara Escarpment
A World Biosphere Reserve*

March 29, 2010

Mr. Jonathon Chai, P. Eng.
Transportation Engineer
HDR iTrans
100 York Boulevard,
Suite 300
Richmond Hill, ON | L4B 1J8

Dear Mr. Chai:

**Re: Halton Peel Boundary Area Transportation Study
Draft 2 Report**

Niagara Escarpment Commission staff has reviewed the Halton Peel Boundary Area Transportation Study (HPBATS), draft 2 Report. While the Study Area only includes a small portion of the Niagara Escarpment Plan (NEP) Area, NEC staff participated in the Technical Advisory Committee to monitor the direction of the investigation into transportation improvements in the south Halton/Peel area to determine the possible future implications arising from the study. The draft report states that there is a need for new east/west and north/south transportation capacity in south Brampton/Halton Hills due to population and employment growth projected for both Halton and Peel. We appreciate that the HPBATS report acknowledges that the Niagara Escarpment Plan represents a "significant constraint" to the development of new road infrastructure. The study emphasizes an approach that will encourage transit first, Transportation Demand Management, active transportation and Transportation System Management to limit the impact of new facilities on the natural environment and encourage alternative approaches to meeting transportation needs. The NEC supports this direction rather than the traditional direction of just constructing new roads. We also support the need to improve the transportation capacity in the urban areas, outside the NEP, in order to provide better transportation alternatives for aggregate haul routes as the existing routes are not optimal in urbanised areas and impact sensitive land uses.

We support the conclusion that there should not be a new Georgetown by-pass north of 22 Side Road. The construction of major new roads in un-urbanised areas could have the effect of shifting traffic patterns and increasing pressure for continued urban development northward into the NEP which is not consistent with the transportation and overall objectives of the NEP. We recognise that there is need for additional east/west transportation capacity and the NEC will continue to provide input to other related provincial transportation studies that are ongoing to find appropriate solutions such as improving rail capacity in existing corridors. NEC staff prepared a separate staff report on the Niagara to GTA and GTA West EA Studies in January 2010.

We appreciate the opportunity to provide input to HPBATS and look forward to receiving a final copy of the report. The NEC will continue to provide input to this and other related transportation studies/environmental assessments and Official Plan amendments to ensure that the options chosen conform to the NEP and minimise impacts on the Escarpment and the natural environment.

Yours truly,

Nancy Mott-Allen, MCIP, RPP
Senior Strategic Advisor

cc. Wayne Chan, Region of Peel
Andrew Head, Region of Halton

April 7, 2010

Jonathan Chai
HDR | iTRANS
100 York Boulevard, Suite 300
Richmond Hill, ON
L4B 1J8

Dear : Mr. Chai

**Re: HP BATS EA – Draft 2 Report – CVC Comments
CVC File No. EA 07/011**

CVC staff has had a chance to review the Draft 2 Report and offer the following comments for your consideration

In section 1.3, Study Scope and Objectives, the last point regarding impacts to natural environmental features should be broadened to include avoids, minimizes, mitigates and compensates.

Section 4.2.1, last sentence, states that watercourses located within the study area that directly support fish habitat are identified in Exhibit 4.4. This does not appear to be the case.

Although there is a discussion about the natural environment in the context of the Credit River Valley there is no discussion about other natural features including multiple tributaries and natural hazards such as floodplain, meander belt, slope, etc. Cumulative impacts on these could be considered significant to the system as a whole.

Numerous north-south and east-west proposals propose credit river crossings. There is a lack of confirmation on how the proposals integrate to minimize the number of Credit River crossings and impacts on the natural environment as a whole. CVC's preference is for no new river crossings. If crossing is unavoidable, it should be minimized to one new crossing. Any crossing of the Credit River will require the spanning of the entire valley and will have to be designed to the ultimate road build out to minimize disturbance to the valley system. Compensation may also be required beyond any minimizing and mitigation of impacts. The various options appear to imply multiple Credit River crossings which CVC is not in support of. This is highlighted even more as Natural Environment is seen as most important factor in the Selection Criteria.

Section 7.2.5 and the evaluation tables for the north-south alternatives state that impacts to the Credit River valley may be minimized if the crossing is located east of Heritage Road. It is important to note that the significance of the Credit River valley does not diminish when the Greenbelt designation ends. CVC understands this comment to reflect a narrowing of the valley east of Heritage Road which could provide for a shorter overall crossing distance of the Credit, however, impacts may still be significant and must be subject to further study through a further EA for the Halton-Peel Freeway alternative as stated in the document.

April 7, 2010

Re: **HP BATS EA – Draft 2 Report – CVC Comments**
CVC File No. EA 07/011

As stated, further study in the form of an EA should be conducted before any decisions are made regarding a Norval East-West bypass. There are numerous environmental features in the vicinity of Norval, not just the Credit River valley and these must be carefully evaluated within a proper public process prior to any recommendations being put forward for such a by-pass.

It should be noted in the document that Silver Creek is considered Redside Dace habitat in the vicinity of Norval. Redside Dace and its habitat are protected under the Endangered Species Act. This may have impacts on any proposed alternatives. CVC recommends that you contact Melinda Thompson-Black, Species at Risk Biologist to determine if MNR has any requirements with respect to this project.

Should you have any further questions please contact the undersigned at (905) 670-1615 extension 287 or jkilis@creditvalleyca.ca.

Regards,

ORIGINAL SIGNED BY

Jakub Kilis
Planner, Environmental Assessment

JK/rf

cc: Melinda Thompson-Black
Species at Risk Biologist
Ministry of Natural Resources
Aurora District Office

From: john.sabiston@HydroOne.com [mailto:john.sabiston@HydroOne.com]
Sent: April 13, 2010 8:07 AM
To: Chan, Wayne
Cc: Detaramani, Tina; efinn@burgarowe.com; David.Smith2@HydroOne.com;
mccormick.bj@HydroOne.com; mike.sheehan@HydroOne.com;
mengelberg@HydroOne.com; Bing.Young@HydroOne.com
Subject: Hydro One Comment to Halton-Peel Boundary Area Transportation Study
(HPBATS) Draft 2 Report

Hydro One has reviewed the Halton-Peel Boundary Area Transportation Study (HPBATS) Draft 2 Report dated March 2010 and offers the following comment to ensure that Hydro One's needs for future infrastructure to meet the future residents of this area are considered. We request that a new bullet be added to Section 9, Implementation, be added to the Draft Report to ensure that coordination of needs occurs. This is shown as point number 5 below:

5. Work cooperatively with other public agencies such as Hydro One for the planning of infrastructure projects to support population growth in the Study Area. Explore the use of joint use transportation and power transmission corridors where possible to provide services to the residents of the study area in a coordinated, efficient and cost effective manner.