

## Section 7

# Recommended Transportation Network

The transportation network considered in this section builds upon the vision set forth in the 2004 TTMP (**Section 1**), and makes recommendations on transit, roads, pedestrian, and cycling paths and trails, transportation system and demand management measures (TSM / TDM), goods movement, and a specific improvement plan for the Brampton Central Area. Recommendations on the remaining two components of Brampton's Transportation Network – long-distance rail and air facilities – were not considered.

TTMP policies promote an integrated and efficient transportation system to support a vibrant economy and high quality of life. Proposed transit nodes and corridors will be supported with higher density land use and a compact urban form supportive of sustainable travel through walking, cycling, and transit.

Some key policies building on the 2004 TTMP vision include:

- Public transit is the first priority for moving people
- Provision of a safe and comfortable pedestrian network
- Increased modal share of transit
- Optimized goods movement systems

Specific initiatives from the short-term to the long-term were identified in the 2004 TTMP. Initiatives specific to each horizon year are addressed in the following sections.

This 2009 TTMP Sustainable Update ensures that the City's and Region's growth needs are met, that the requirements of the Places to Grow Act and Metrolinx are met, that active transportation is considered as a viable mode of travel, and that the long-term vision for goods movement is established.

Further to the items above, detailed analyses are provided regarding the following:

- Road requirements in the Central Area / Queen Street Corridor
- Implications of substantial delays beyond desired timeframes for the extensions of Provincial Highways
- Alternative road network improvements within Northwest Brampton and Bram West Secondary Plan Areas

The timing shown in this report is approximate and based on high level network analysis and current city wide population and employment forecasts. The actual timing for each road and transit element recommended will be further evaluated in detail through annual review of capital projects, evaluation of priorities, detailed local evaluation of development phasing, the individual Environmental Assessment process where applicable, and the availability of funding through Development Charges, property tax grants, developer funding, and the private sector.

## 7.1 IMPLEMENTATION PHILOSOPHY

The TTMP is designed to be a practical guide for implementing transportation investments, policies and actions into the urban transportation environment influenced by perpetually changing economic, financial, and political conditions. The recommendations made in this 2009 TTMP were derived from a number of assumptions and while the broad vision set forth by this TTMP would not change, timing and scope of road or transit investments might change subject to availability of funding, growth management requirements, results of Environmental Assessment studies, or other factors. Moreover, cognisant of the fact that major transportation planning studies are currently being undertaken by the City and other agencies, modifications to the recommendations should be expected and considered on a case-by-case basis. For example, McVean Drive north of Casltimore Road has been identified as an opportunity to preserve the existing rural character, traversing through the City's Estate Residential area.

Short term transportation solutions should be synchronized with the long-term transportation vision for Brampton. For example, planning and design for interim road improvements should be compatible with the long-term vision and design for that road.

Interim road widening should look for solutions to allow constructing the road within its ultimate right-of-way and urban cross-section, with sidewalks and bicycle paths. Future widening to reach the ultimate number of lanes could take place within the roadway median. When circumstances prevent or make impossible interim road construction to its ultimate right-of-way and cross-section, the roadway should be constructed with at least one side pedestrian path (sidewalk) or paved shoulder (if it is a rural cross-section) to accommodate non-motorized traffic.

Further to the above, on-going coordination is required between the City of Brampton and adjacent municipalities to ensure that the transition of transit and road improvements are accommodated for, including but not limited to Right-of-Way standards, transit services, vehicle capacity, detail design, provision of HOV lanes, and bicycle lanes or multimodal pathways.

Peel Region roads should have designated right-of-way widths suitable for six-lane roadways.

Roadway congestion has become a fact of life and cannot be eliminated. The effects of congestion management measures, including modifications to intersection geometry, should minimize their impact on pedestrians, cyclists, and public transit and should support, not hinder the long-term vision for the corridor.

In the process of widening roadways that are designated as Bus Rapid Transit (BRT), Light Rail Transit (LRT) or other higher order transit corridors, staging opportunities should be investigated to ensure that balance between modes is maintained and long-term strategic objectives around increased transit and active transportation are achieved. Such staging opportunities should also consider transit and road network consistency with adjacent municipalities. Furthermore, widening to six lanes in planned BRT / LRT corridors needs to consider the implementation of these additional lanes as High Occupancy Vehicle (HOV) / Transit-exclusive from the outset.

For corridors designated as BRT / LRT but not identified as requiring widening to six lanes, a four-lane cross section does not preclude operation of BRT / LRT service. Right-of-way for six lanes should still be protected for in these corridors where possible for the potential for HOV / Transit-exclusive lanes, or mixed traffic operation where right-of-way is unavailable. Arterial road sections identified as BRT corridors operating alongside four general purpose lane roadways and requiring at the minimum 36 meters right-of-way include:

- Hurontario Street and Queen Street through the Downtown and Central Areas
- Queen Street between Mississauga Road and McLaughlin Road
- Hurontario Street north of the Downtown Area and into Caledon
- Steeles Avenue east of Finch Avenue into Toronto
- Finch Avenue south of Steeles and into Mississauga and Toronto

Arterial roads recommended for bus rapid transit or other high order transit services should follow Transit Project Assessment process and be subject to Transit Municipal Environmental Assessment Study.

The implementation of BRT or LRT technology and associated infrastructure should be proactive and accelerated where possible and feasible.

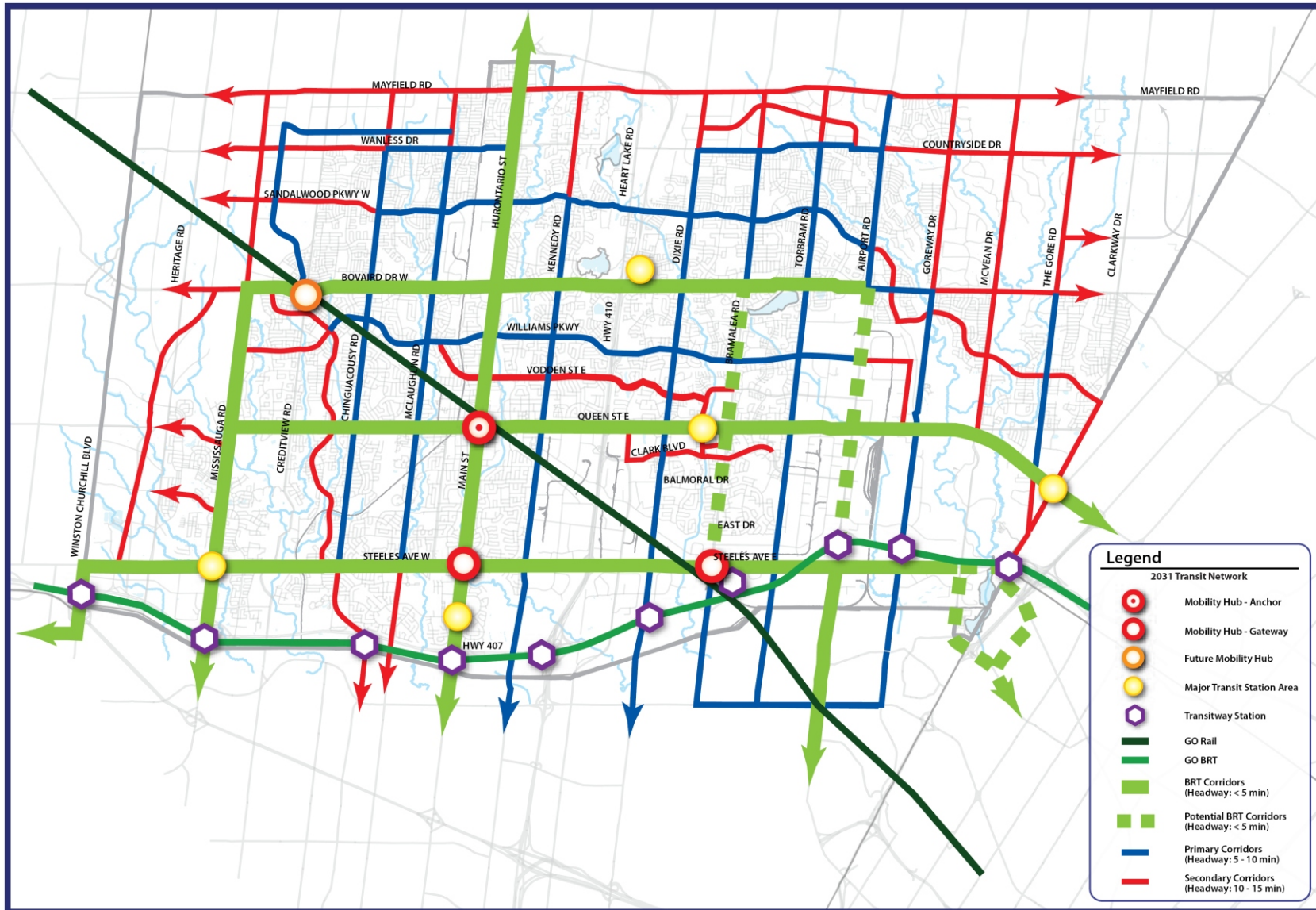
The outstanding 2004 TTMP recommendation items should be implemented as planned.

The following sections discuss a detailed implementation process for transit and road networks as well as recommendations for active transportation, Travel Demand Management, and goods movement.

## 7.2 TRANSIT NETWORK NEEDS

### 7.2.1 Ultimate Transit Network

The recommended long-term transit network for Brampton, illustrated in **Exhibit 7-1**, consists of transit nodes connected by high-order transit corridors, in accordance with, and in addition to both the Provincial Growth Plan and the Metrolinx RTP.



Note: Transit services will be provided to new growth areas in Bram West, Northwest Brampton, and Northeast Brampton. Determination of corridor types will be Established through the Secondary Planning Process. Connections to key future transit routes outside of Brampton should be provided as required.



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### Exhibit 7-1

## Ultimate Transit Network

The hierarchy of the various transit nodes shown in **Exhibit 7-1** is as follows:

■ **Mobility Hub (Anchor)**

Major transit station areas identified in the Metrolinx RTP that are particularly significant given the level of transit service that is planned for them and the development potential around them. Two classifications of mobility hubs exist, and these are anchor hubs and gateway hubs. Anchor hubs coincide with Urban Growth Centres identified in the Provincial Growth Plan and are characterized by a mixture of intensive land use combined with a significant transit station or transfer point. Gateway hubs also represent a significant transfer point between rapid transit services, but are not necessarily planned for intensive land use. These mobility hubs are places of connectivity where different modes of transportation – from walking to high-speed rail – come together seamlessly and where there is an attractive, intensive concentration of employment, living, shopping, and recreation around a major transit station.

- Downtown Brampton is identified as an Urban Growth Centre in the Provincial Growth Plan, and an Anchor Mobility Hub in the Metrolinx RTP. The Brampton Official Plan further characterizes the area as a primary location for business, shopping, dining, entertainment, cultural venues, and programs. It is imperative to provide excellent transit links to this area. This anchor hub will support the growth and development of the Urban Growth Centre and support the planning policies and objectives for downtown Brampton. A truly intermodal transit node, it will be the junction of two BRT corridors – Main Street and Queen Street – the Brampton GO Station on the Georgetown GO line, and numerous local transit routes.

■ **Mobility Hub (Gateway)**

Major transit station areas identified in the Metrolinx RTP that represent significant transfer points between rapid transit services.

- The Hurontario Street and Steeles Avenue intersection has an existing transit hub at the Shoppers World regional retail centre, and will be the intersection of two major BRT routes on Hurontario and Steeles. There is also the potential for this location to serve commuters from the City of Mississauga as Hurontario Street is a key North-South corridor linking the two Cities.

- The Bramalea and Steeles gateway hub is a strategic location connecting Brampton BRT, Georgetown GO, and a future 407 Transitway stop. Further to that, if the proposed north-south BRT east of Highway 410 runs along Bramalea Road, a second BRT route would connect this location to Bramalea City Centre to the north and Pearson International Airport to the south.
- **Future Mobility Hub**  
Major transit station areas that are being planned as Mobility Hubs by the City, but that have not yet been designated as such in the Metrolinx RTP. The Mount Pleasant GO Station area has been identified as a future mobility hub. A north-south transit spine is identified in this TTMP as a major corridor to connect new development areas to the north to the GO Rail Station. The newly proposed Mississauga Road BRT and Bovaird Drive BRT further reinforce the importance of this future mobility hub.
- **Major Transit Station Area**  
Identified in the Growth Plan as the area including and around any existing or planned higher order transit station within a settlement area, or a major bus depot in an urban core. Major transit station areas identified in this 2009 TTMP include existing shopping centres at Bramalea City Centre and Trinity Commons Mall. The remaining three areas are located at Mississauga Road and Steeles Avenue, Hurontario Street and Ray Lawson Boulevard, and at Highway 50 and Queen Street. The area at Mississauga Road and Steeles Avenue is planned for significant development in the future, and is a gateway to Mississauga Transit's planned BRT along Erin Mills Parkway / Mississauga Road. The area at Hurontario and Ray Lawson is also planned for intensified land uses around the future BRT / LRT transit station here. Finally, there are plans to incorporate a transit terminal into future development at Highway 50 and Queen Street.
- **407 Transitway Station**  
Identified by the Ministry of Transportation Ontario (MTO) 407 Transitway Stations are transit nodes that connect to the 407 Transitway. Within Brampton, a 407 Transitway Station will exist at all 407 interchanges.



Also illustrated in **Exhibit 7-1**, transit corridors will have the following hierarchy of services:

- **BRT Corridors**  
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.
- **Primary Corridors**  
Still high frequency (five to ten minute transit vehicle headway during peak periods) service, running along major arterials and feeding transit riders to the BRT routes. These corridors primarily link destinations within the City but will also serve lesser inter-regional routes.
- **Secondary Corridors**  
Lesser frequency (10-15 minute headway during peak periods) routes serving minor arterials and collector roads, and sometimes at the ends of primary corridors to reflect lower demand as the City expands.
- **Community Services (Not illustrated)**  
These services will be implemented in response to ridership demand and will typically run at lower frequencies (15 to 30 minute headway during peak periods).

The planned BRT network will consist of a grid network of east-west and north-south corridors as described below:

- **Steeles Avenue BRT Corridor**  
From Lisgar GO Station in Mississauga, along the following route: Argentia Road; Winston Churchill Boulevard; and Steeles Avenue, connecting with Steeles Avenue rapid transit service in Toronto / York.
- **Queen Street BRT Corridor**  
From Mississauga Road to Highway 50, connecting with the Highway 7 Rapidway in York Region

- **Bovaird Drive BRT Corridor**  
From Mississauga Road to Airport Road.
- **Main Street BRT Corridor**  
Connecting with the Hurontario high order transit corridor in Mississauga, and continuing north to the Brampton boundary to Mayfield Road or beyond, potentially connecting to the Mayfield West development in Caledon. The on-going Hurontario / Main Higher Order Transit Study and Metrolinx Benefits Case Analysis will determine the alignment and appropriate technology options for the corridor between Mississauga and Brampton Downtown Areas.
- **Mississauga Road BRT Corridor**  
Connecting with a Erin Mills high order transit corridor in Mississauga, and continuing north to Bovaird Drive and the Mount Pleasant GO Station.
- **North-South BRT Corridor on Airport Road or Bramalea Road** (Subject to Further Study)  
From Bovaird Drive south to Lester B. Pearson International Airport via Airport Road south of Steeles Avenue.

As mentioned above, the proposed BRT corridors will form the spine of the City's transit system. They serve many purposes as well, some of which include:

- Supporting growth of Central Area and Downtown Brampton Urban Growth Centre (UGC)
- Supporting transit supportive nodes
- Supporting increased density in the intensification corridors
- Providing connections between key Mobility Hubs
- Providing connections with UGC's outside of Brampton
- Connecting with GO transit services
- Supporting ridership demand

Regional transit facilities identified in **Exhibit 7-1** include the Georgetown GO Line which provides inter-regional commuter service to Union Station, via Mount Pleasant, Brampton, and Bramalea GO Stations. The **GO 2020 Plan** sets forth GO Transit's strategic direction to the year 2020, including vision, goals and objectives, and service strategy. **Exhibit 7-2** illustrates the Strategic Plan in and around the City of Brampton.

The GO 2020 Plan identifies the following improvements for the Georgetown GO Line:




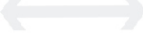




- Peak hour train service every 15 minutes for Brampton, with selected trips serving Georgetown and Guelph. Counter-peak service will be every 30 minutes
- Off-peak, all day train service twice hourly to Mount Pleasant, with bus service to Georgetown and Guelph
- Capital program improvements include provision of an additional track, and electrification if necessary

The planned 407 Transitway will provide for longer-distance inter-regional service between Brampton and Halton and York Regions. Operating on an exclusive right-of-way, it will have transit stations at all existing interchanges, as seen in **Exhibit 7-1**.

As the City of Brampton transitions from a suburban to urban environment, the transit nodes and corridors concept allows the City to grow strategically – putting land use in places that will support active and sustainable means of transportation as the City prepares for the year 2031 and beyond.



**Legend**

-  **CORE SERVICE:**  
All-day 2-Way Rail Service, every 15-20 minutes or better during the peak and every 30 minutes or better
-  **COMMUTER SERVICE:**  
Peak-period, peak direction rail service every 30 minutes or better, with counter-peak and off-peak bus service hourly or better.
-  **BRT Service:**  
All-day 2-way bus service, every 5 minutes or better during the peak, and every 10 minutes or better off-peak.
-  **Services Extensions:**  
Service will be considered to urban growth centres currently beyond GO's service area.
-  **EXISTING RAIL STATIONS:**  
Number and location of future stations will be determined during project planning.
-  **URBAN GROWTH CENTRES:**  
Downtown areas identified in "The Growth Plan" to encourage intensification and
-  **BUILT-UP AREAS:**  
Urban areas where development will be directed in accordance with "Places to Grow". (Approximate)
-  **GREENBELT AREAS:**  
Greenbelt, protected per Ontario regulation 59/05. (Approximate)

## Exhibit 7-2

# GO Transit 2020 Service Plan

Transit service intensification, potentially converting some BRT corridors to LRT, is identified in the 2004 TTMP as a long term or 2031 strategic initiative. Further to that, the overall transit objectives as stated in the Brampton Official Plan support protecting for BRT corridors to be operated as LRT corridors in the future. The City should aggressively move towards dedicated transit lanes in centre median right-of-ways and seriously consider LRT technology as transit supportive land uses continue to be implemented, transit ridership grows, and funding becomes available. This is important to serve Brampton's long-term needs in coordination with other initiatives in the GTA to achieve convenient and appropriate transit service integration.

Further to the above, a framework to identify when to move towards higher-order transit must be identified so as to form a fundamental rationale for approaching senior levels of government for transit funding. In the Toronto Transit Commission report entitled "*Transit Technologies and ROWs*", general guidelines for appropriate transit technology to serve a certain level of ridership demands were identified, and are illustrated below in **Exhibit 7-3**.

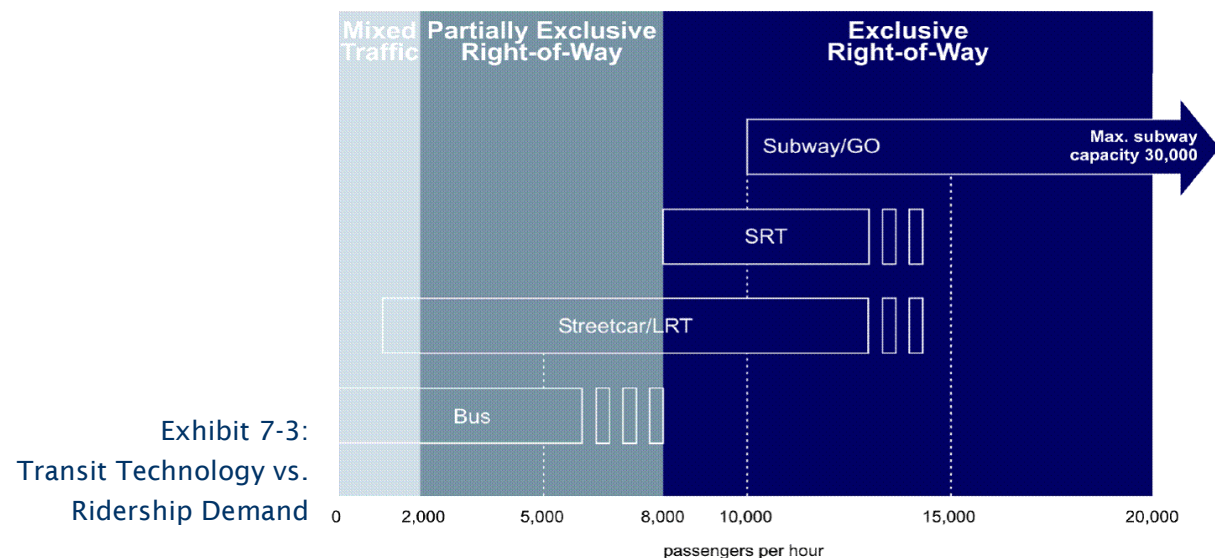


Exhibit 7-3:  
Transit Technology vs.  
Ridership Demand

Source: Toronto Transit Commission: "*Transit Technologies and ROWs*"

Studies have shown that actual ridership threshold necessitating the implementation of dedicated rapid transit in partially exclusive rights-of-way could be as low as 2,000 patrons per hour in the peak direction. Based on Exhibit 7-3 and aforementioned findings, the City should strongly consider transitioning from mixed traffic BRT to dedicated rapid transit (BRT or LRT) in partially exclusive rights-of-way when investment grade transit ridership forecasts show demand of at least 2,000 to 5,000 per hour in the peak direction. Approximately ten years in advance of the ridership trigger, a number of items and studies should be addressed in advance of implementation, including but not limited to:

- Environmental assessments
- Securing funding sources
- Right-of-Way acquisition if still outstanding
- Preliminary and detail design
- Determination of technology

Further to the ridership demand, other factors should be considered for this framework, (including existing and projected levels of road congestion, land use development patterns and co-ordination with other infrastructure improvements) so as to maximize benefit from construction costs.

At a minimum, those corridors identified in the Metrolinx RTP should be studied as candidates for LRT – including Hurontario Street, Queen Street, and Steeles Avenue. Of note is the on-going Hurontario / Main Street Study that is assessing the corridor’s potential for higher-order transit, land use, and urban design. The results of this study will have an impact upon the City of Brampton’s final vision and implementation of its high-order transit corridors. Priority for potential LRT studies should go firstly to Queen Street, followed by Steeles, and then Hurontario Street north of Downtown Brampton.

### 7.2.2 Short-Term (2011-2015) Transit Network

In keeping with the City's *AcceleRide BRT Strategic Implementation Plan*, by 2011 the first stages of BRT service will be implemented on Hurontario / Main and Queen Streets. The exact extent of the BRT service should be determined by more detailed operational studies, but at a minimum it should serve Queen Street east of Main Street and into York Region, and Hurontario / Main Street from the Sandalwood Terminal, south into the City of Mississauga.

It should be noted that the working name "AcceleRide" has now been branded "Züm" as a marketing strategy to attract more transit riders and distinguish BRT from regular bus services.

As mentioned previously, the on-going Hurontario Street / Main Street Higher-Order Transit Study has identified transit technology and alignment options on Hurontario / Main Street from the City of Mississauga north to the Brampton GO Station in Downtown Brampton. Separate detailed studies are required to identify the appropriate technology and alignment of the Hurontario BRT section north of Brampton GO, and the Queen BRT section east of Hurontario Street.

With the implementation of BRT, Brampton Transit can continue to enhance its grid based transit structure with higher quality transit service on primary and secondary corridors. As mentioned in the previous section, Primary Corridors will run at five to ten minute transit vehicle headways, and incorporate transit priority measures including traffic signal priority, bus bays, queue jump lanes, etc. Location and timing for the provision of transit priority measures, HOV or reserved bus lanes treatments are, in part, governed by specifics of local road and traffic conditions and as such are left at the discretion of the City and location specific infrastructure plans. Primary Corridors in advance of future BRT service have been identified for Bovaird Drive, Queen Street west of Main Street, and Steeles Avenue.

Primary Corridors improvements are also recommended for the following corridors:

- Chinguacousy Road between Wanless and Steeles
- McLaughlin Road between Wanless and Steeles
- Kennedy Road from Sandalwood Parkway south to connect to the City of Mississauga

- Dixie Road from Bovaird Drive south to connect to the City of Mississauga
- Bramalea Road from Bovaird Drive to Steeles Avenue
- Torbram Road from Bovaird Drive to Steeles Avenue
- Airport Road from Bovaird Drive to Steeles Avenue
- Goreway Drive from Bovaird Drive to Westwood Mall south of Steeles Avenue.

The 10 to 15 minute headway service (secondary corridors) will be implemented on all other corridors serving developed areas. Local or community service will be provided as demand requires.

Brampton Transit services will be further bolstered by improved service on the Georgetown GO Rail line – potentially all-day, two-way service.

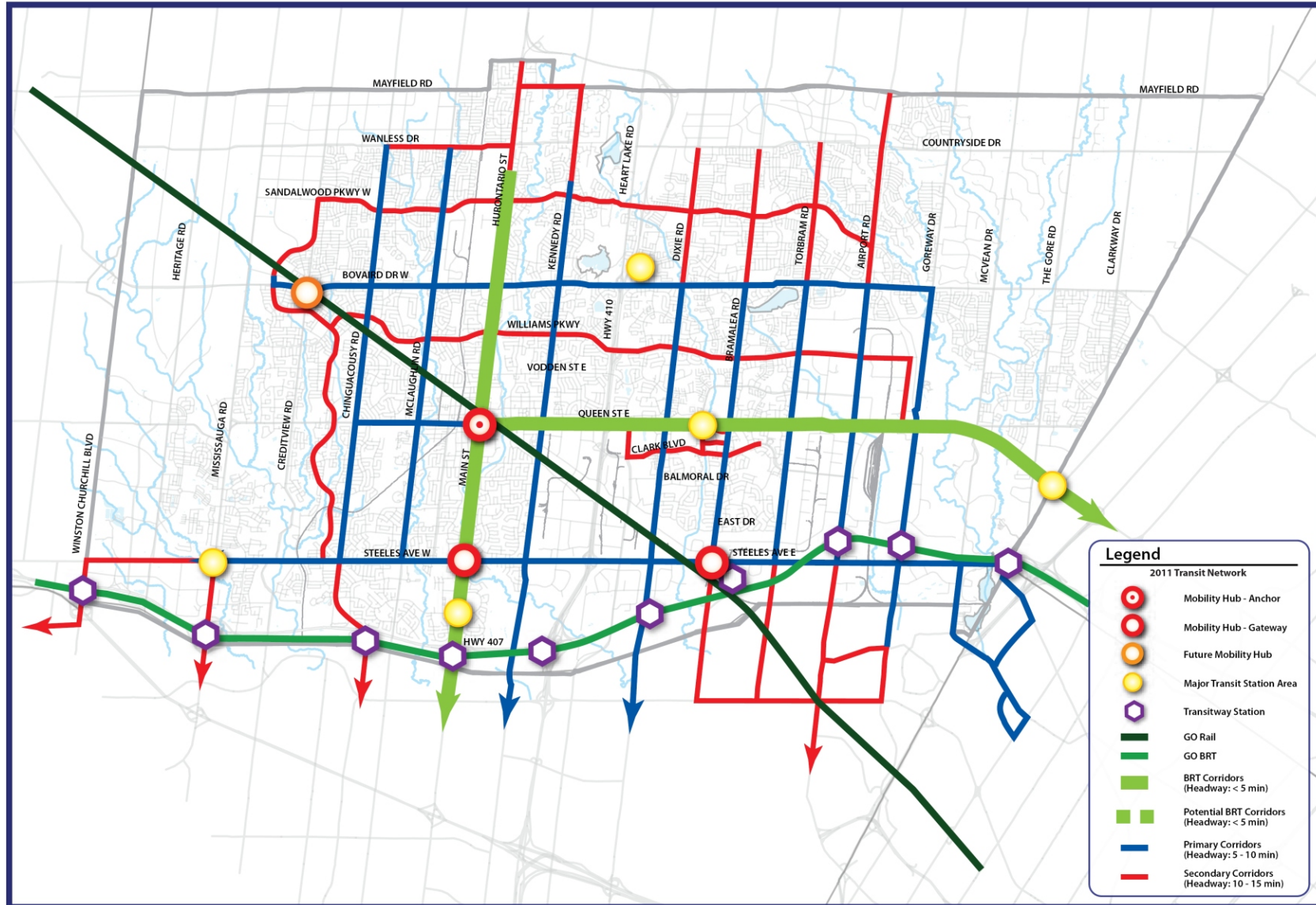
Short-term transit improvements include:

- Establishment of improved transit connections to York Region, in conjunction with the recommended road improvements Peel-Highway 427 Transportation Master Plan Study
- Improved connections to Mississauga destinations, including Pearson Airport and closer integration with Mississauga Transit's proposed BRT network
- Introduction of transit links to Lisgar GO Rail Station (Secondary service from Steeles Avenue)
- Working with the Region of Peel and the Province to implement a network of commuter parking lots at gateways to the City
- Introduction of express transit services on Highway 410 (together with widening)
- A bus service to Georgetown
- Express GO bus service on the Highway 407 Transitway and provincial freeways

The recommended short\* term transit network is provided in **Exhibit 7-4**.

With funding in place for Phase 1, Brampton Transit's BRT service is set to launch in 2010 on Queen Street, followed by Main Street in 2011 and Steeles Avenue in 2012. Phase 2 is tentatively scheduled to begin with Bovaird in 2014, expansion to the Steeles route in 2015, and expansion to the Queen Street route in 2016. Implementation staging for Phases 1 and 2 follows the *AcceleRide BRT Strategic Implementation Plan*, illustrated in **Exhibit 7-5**. Implementation staging for new BRT routes proposed in this document will be determined at a later date.

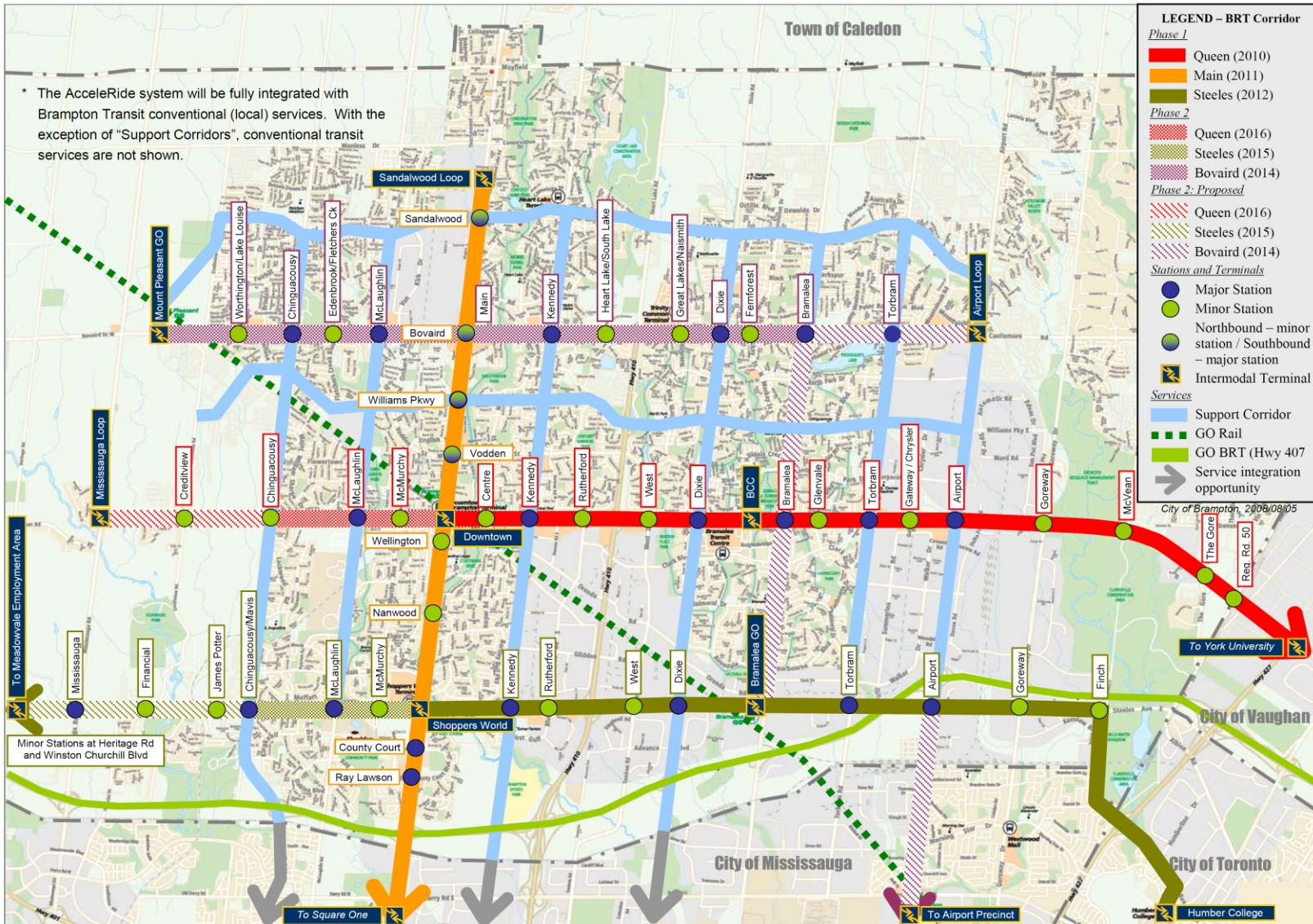




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**Exhibit 7-4**

**2011 Transit Network**



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**Exhibit 7-5**

**Brampton BRT Corridor Implementation**

The precise service implementation date for Bramalea / Airport Road and Mississauga Road corridors, as identified in the 2009 TTMP, is subject to detailed service planning and needs to be confirmed.

Brampton Transit is working on a schedule to implement BRT service as identified in the *AcceleRide BRT Strategic Implementation Plan*. Phase 1 of the plan has received funding commitments from Federal, Provincial, and local municipal governments. Funding has been identified for the following BRT service requirements:

- Equipment:
  - Vehicles
- Technology:
  - Transit Signal Priority
  - Next bus
- Infrastructure:
  - **Partially Exclusive Right-of-Way:** Curb-side transit priority lanes that include transit priority measures and station / stop infrastructure

Funding commitments have yet to be obtained for exclusive right-of-way: centre-median transit only lanes that include station / stop infrastructure. Secure funding commitments must be obtained for this transit infrastructure for Brampton's BRT system to achieve its ultimate vision.

These equipment, technology, and infrastructure requirements are tied to the funded *Plan* leaving little room to accelerate service implementation as per schedule as the funds are unavailable. Provincial funding and Federal Commitments for Züm do not include centre median running way on exclusive rights-of-way – only priority improvements at intersections (i.e. queue-jump lanes and Transit Signal Priority).

Moving forward, as new funds become available via the Provincial Metrolinx program or Federal program or other funding source, Brampton Transit staff will be able to exercise flexibility in the implementation of BRT services across Brampton and neighbouring municipalities. This flexibility

will allow Brampton to assess whether performance (transit boarding's, mode share) justifies accelerating:

- Equipment and technology requirements
- Implementation dates
- Infrastructure projects (right-of-way)

However, as Brampton Transit is scheduled to launch BRT service in September 2010, the appropriate course of action today is to execute the *Implementation Plan* as is. As performance data begins to be collected post-launch, and as funding programs become available, Brampton Transit can assess the system's requirements and best allocate funds to accelerate and enhance the current *Plan*.

### 7.2.3 Medium-Term (2016) Transit Network

As identified in the previous section, by 2016 BRT service will be implemented on Bovaird Drive (2014) from Mount Pleasant GO Station, east to either Bramalea Road or Airport Road and on Queen Street from Main Street to Mississauga Road (2016). Steeles Avenue will also gain BRT service (2012), from Hurontario and Main Streets to the east, potentially connecting to future YRT and TTC services.

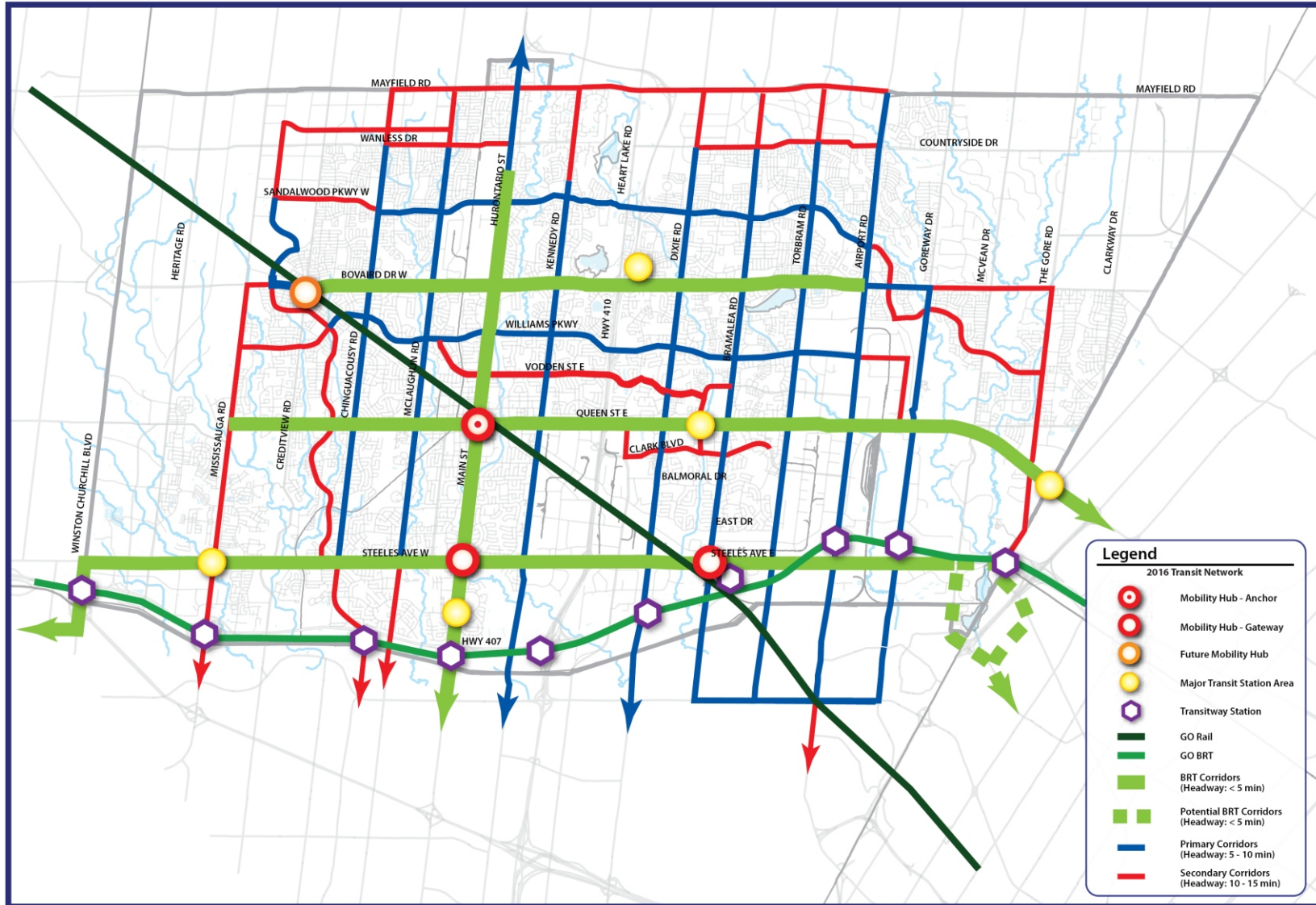
New Primary Corridors by 2016 include the following:

- Extensions of north-south primary corridors north to Wanless / Countryside, except for Goreway
- Extensions of the eastern north-south corridors (Dixie to Goreway) south to Derry Road
- Mount Pleasant North-South Transit Spine up to Sandalwood
- Sandalwood Parkway
- Williams Parkway

Other transit improvements for the 2016 horizon year include:

- Enhanced transit service in primary and secondary corridors across the City, together with continued reconfiguration to a grid based overlay on community services
- Increased reliance on transit, walking, and cycling for travel in the core established areas of Brampton (i.e. Steeles to Bovaird, Kennedy to McLaughlin)
- Potential transit connections to the Bolton area in Caledon, and since Caledon does not have local transit service an express bus service could be provided by other agencies
- If a Bolton GO Rail service is implemented, bus links to the stations would be required

Location and timing for the provision of transit priority measures, HOV or reserved bus lanes treatments are, in part, governed by specifics of local road and traffic conditions and as such are left at the discretion of the City and location specific infrastructure plans. The recommended medium-term transit network is illustrated in **Exhibit 7-6**.



**Exhibit 7-6**  
**2016 Transit Network**

#### 7.2.4 Longer-Term (2021) Transit Network

By 2021, the full scope of Brampton BRT service will be implemented, adding BRT on Mississauga Road and another BRT corridor on either Bramalea Road or Airport Road. As mentioned previously, the exact timing of these corridors is not yet known as a detailed service planning study has not been carried out, but they are recommended at least by 2021.

BRT ridership levels on certain corridors by this time should warrant higher-order transit. Transition from BRT in mixed traffic / HOV lanes to dedicated right-of-way and perhaps initial LRT or other technologies should be considered. As mentioned previously, Queen Street, Main Street, and Steeles Avenue at a minimum should be considered.

More primary transit service will be added by 2021, on the following corridors:

- Wanless Drive between Chinguacousy and Hurontario Street
- Countryside Drive between Dixie and Airport Road
- North-south Mount Pleasant Transit Spine north to the East-west Transit Spine
- East-west Mount Pleasant Transit Spine between North-south Transit Spine and McLaughlin
- Airport Road primary service extended up to Mayfield Road

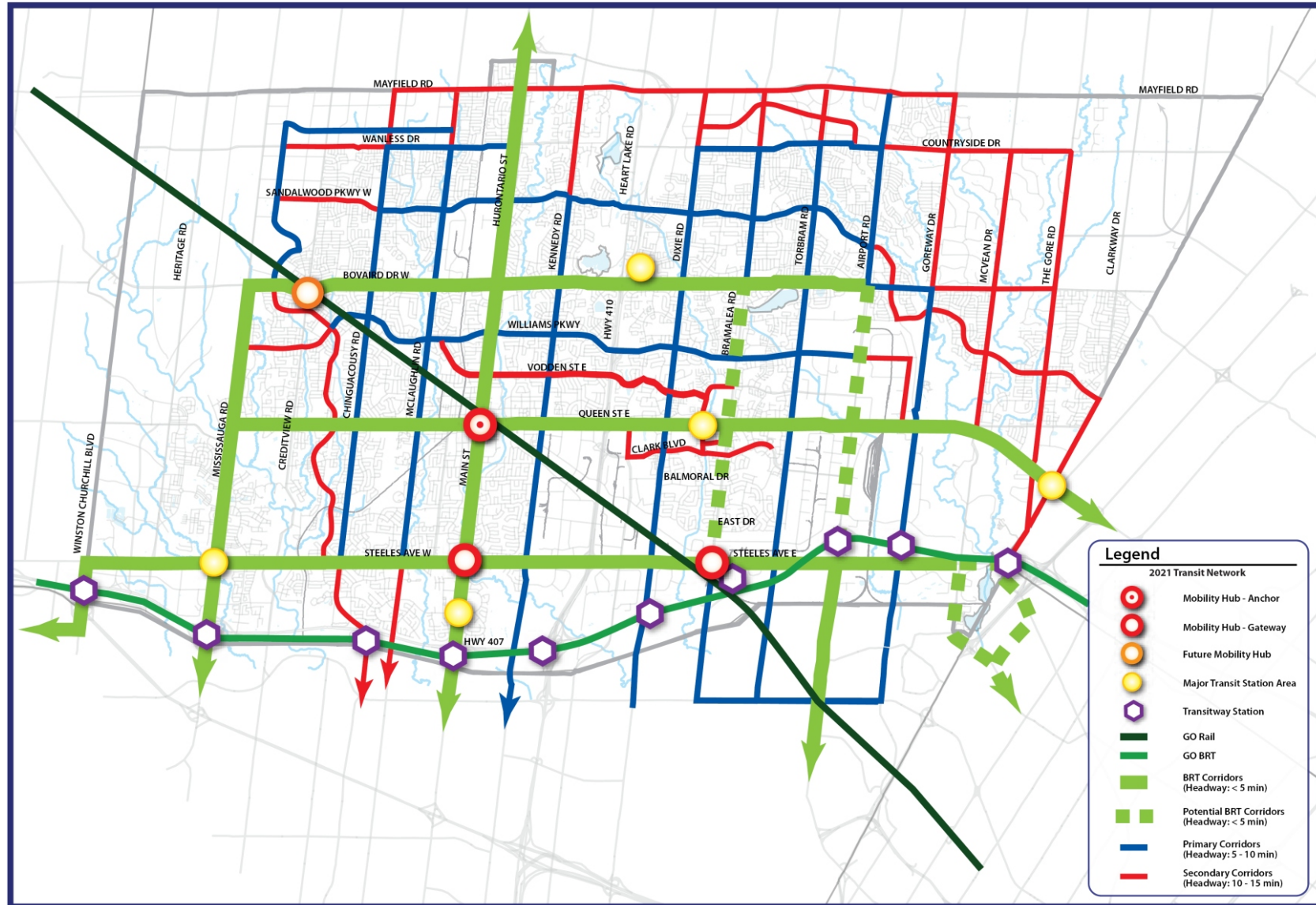
The following differences are noted in the 2009 TTMP's 2021 primary transit corridors, compared to the 2004 TTMP's recommendations:

- New primary transit corridors on:
  - Mount Pleasant North-South Transit Spine
  - Goreway Drive
  - Mount Pleasant East-West Transit Spine
  - Countryside Drive
  - Castlemore Road between Airport Road and Goreway Drive
- Wanless Drive is not a primary corridor west of Chinguacousy

- Airport Road is a primary corridor between Countryside and Mayfield
- Bramalea Road ties into the Major Transit Node at Goreway and Derry.

Location and timing for the provision of transit priority measures, HOV or reserved bus lanes treatments are, in part, governed by specifics of local road and traffic conditions and as such are left at the discretion of the City and location specific infrastructure plans. The recommended longer-term transit network is illustrated in **Exhibit 7-7**.





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### Exhibit 7-7

## 2021 Transit Network

### 7.2.5 2031 Transit Network

The transit network presented in **Section 7.2.1** and **Exhibit 7-1** represents the ultimate vision for transit to be implemented by 2031. While the full scope of rapid transit (BRT / LRT) improvements is to be implemented by 2021, transit service to the new growth areas in Bram West, Northwest Brampton, and Northeast Brampton will be implemented before 2031. It should be noted that corridor types and routing will be determined through the secondary planning process. Connections to routes outside of Brampton will be provided as required. Finally, the only new Primary Transit corridor to note is the Gore Road between Queen Street and Bovaird Drive.

### 7.2.6 Transit Beyond 2031

Specific transit improvements have not been identified beyond 2031. However, it is anticipated that the transit network established by 2031 will continue to evolve with increased levels of service, improved technologies and closer integration with land use in order to continue the trend of increasing transit and active transportation's shares in accommodating travel demand.

## 7.3 ROAD NETWORK NEEDS

### 7.3.1 Long-Term (2031) Road Network

The vision for a balanced transportation system includes improvements to all aspects of the transportation network to allow for the efficient movement of people and goods. As detailed in the analysis of alternative strategies in **Chapter 1**, a strategy for improving transit alone will not work (Alternative 2, **Section 6.3** and **Section 6.4**).

In addition to providing capacity for commuter auto travel demand, improvements to the road network also support both commercial vehicle traffic and transit trips. Ensuring the efficient movement of vehicles also reduces congestion and associated greenhouse gas emissions (**Section 6.4**). The performance of road network improvements recommended in this section is documented in **Section 6.3** and **Section 6.4**.

One of the strategic initiatives for the 2031 road network in the 2004 TTMP identified continued improvements and completion of new roads to accommodate new development areas, particularly in the northwest and northeast edges of the urbanized City. This 2009 TTMP has satisfied this strategy, allowing for arterial expansion where warranted, especially in addition to or in conjunction with transit improvements.

The recommended long-term road network is illustrated in **Exhibit 7-8**.

As such, the resulting 2031 road network does differ slightly from the 2004 TTMP's recommended 2031 road network. The differences are summarized below in **Table 7-1**.

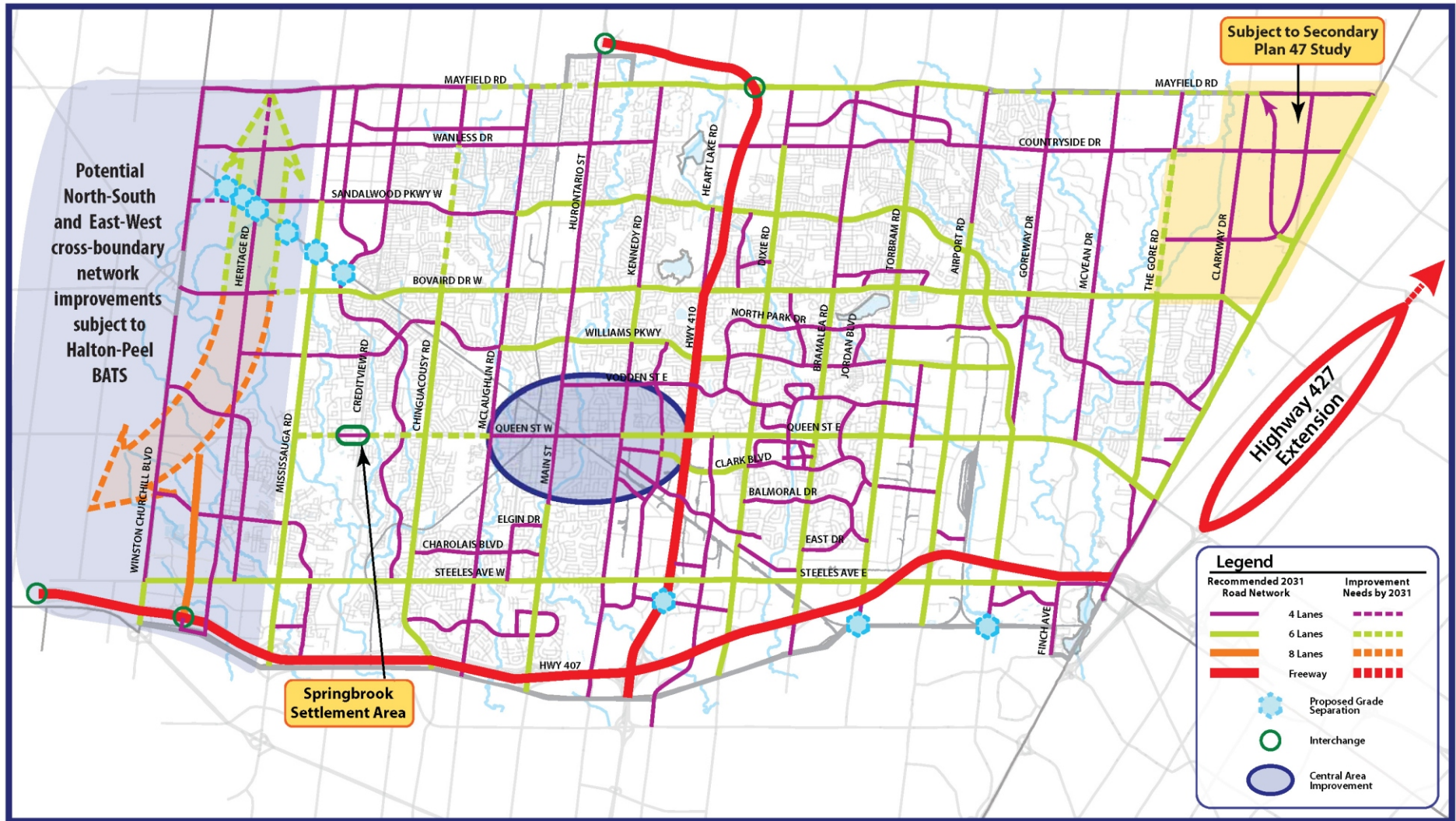
Table 7-1: 2031 Road Network Improvements, 2004 TTMP vs. 2009 TTMP

Road Section	2004 TTMP	2009 TTMP
Winston Churchill Boulevard from Steeles to Bovaird	6 lanes	4 lanes
New Road A from Financial to Steeles	n/a	4 lanes
Mississauga Road from Sandalwood to Mayfield	6 lanes	4 lanes
Transit spine from Mt. Pleasant to Mayfield	n/a	4 lanes
Transit spine just north of Wanless to McLaughlin	n/a	4 lanes
Dixie Road from Bovaird to Countryside	4 lanes	6 lanes
Bramalea Road from Queen to Bovaird	4 lanes	6 lanes
Goreway Drive from Bram-Miss Border to Steeles	6 lanes	4 lanes
The Gore Road south of Queen to Hwy 50	6 lanes	4 lanes
Mayfield Road from Dixie to Goreway	4 lanes	6 lanes
Mayfield Road from Goreway to Major Mackenzie Extension	4 lanes	6 lanes
Countryside Villages collector	n/a	4 lanes
Major Mackenzie Extension	West to The Gore	North to Mayfield
Queen Street Downtown Area to Kennedy	6 lanes	4 lanes
Queen Street from McLaughlin to Springbrook	4 lanes	6 lanes
Queen Street from Springbrook to Mississauga Road	4 lanes	6 lanes

Modifications in the new growth areas comprise the majority of variations from the 2004 TTMP. Changes to projected land use in those areas as well as changing Provincial and Regional initiatives require different solutions from those previously required.

The recommended long-term (by 2031) transportation strategy will require an estimated \$1.7 billion in capital roads projects over the 22-year period covered by this Transportation Master Plan. The estimates are based on roadway construction costs developed for the 2009 City of Brampton Development Charges By-law.

Regarding the road network in West Brampton, the on-going Halton-Peel Boundary Area Transportation Study (HP BATS) may refine the recommendations for the North-South Transportation Corridor (NSTC), and in addition, a corridor Environmental Assessment Study will be required to devise and recommend the corridor alignment.



All improvement needs on all Regional Roads depicted in these exhibits are subject to confirmation by Peel's Long Range Transportation Plan Update (LRTP Update). The upcoming LRTP Update will confirm and further define the road improvement needs required on Regional Roads with respect to capacity requirements and timing. To develop formal plans for specific road improvements, environmental assessment studies will need to be carried out and approved through the EA process.

### Exhibit 7-8

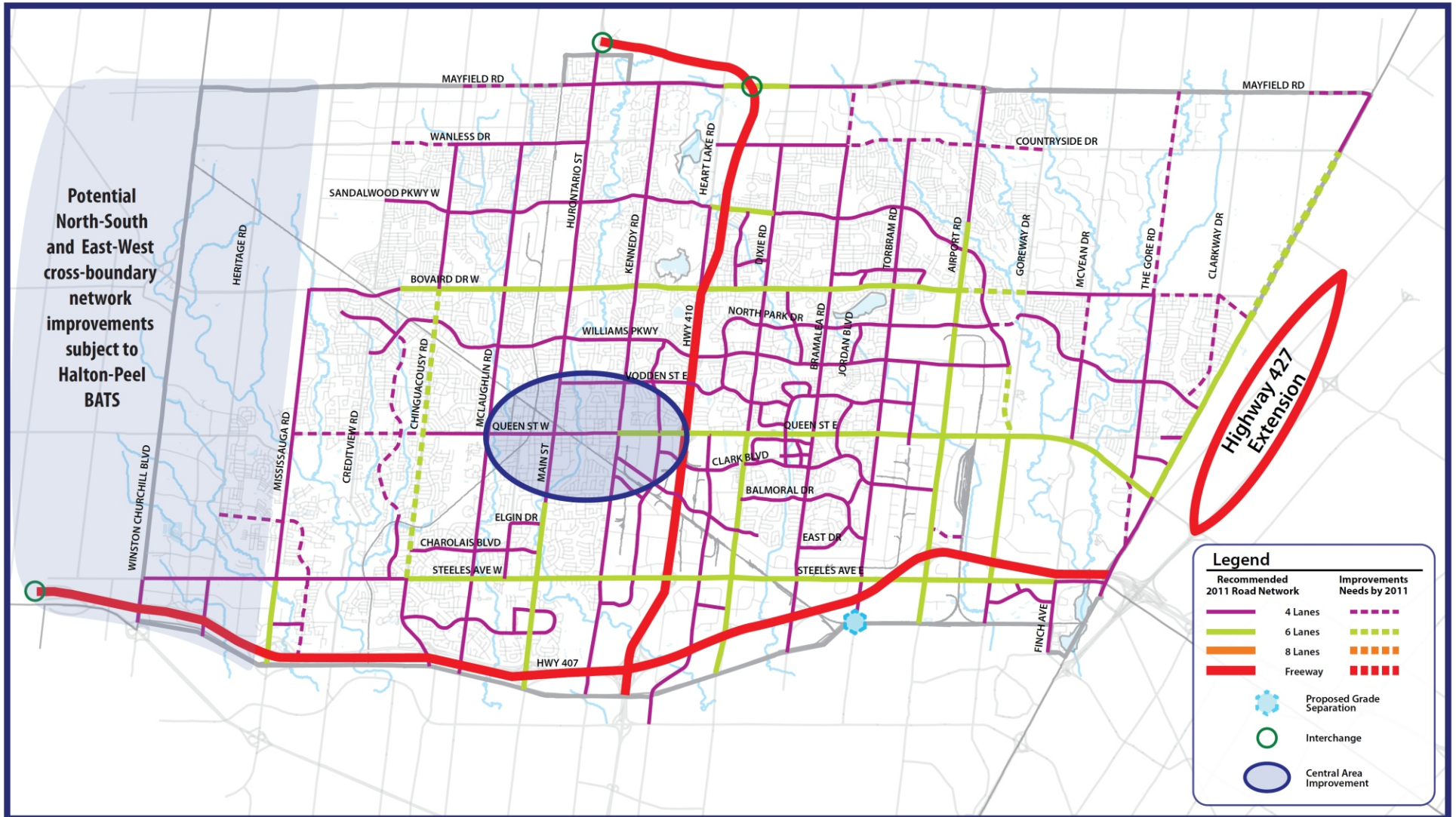
## Recommended Road Network Needs by 2031

### 7.3.2 Short-Term (2011) Road Network

Significant recommended road improvements in the short-term include:

- Implementation of the updated 10-year Capital Works Program for road links and intersections developed as part of the Development Charge Update component of this 2009 TTMP
- Focus on increasing capacity across the Highway 410, Steeles Avenue, Brampton / Vaughan, and Brampton / Halton Hills screenlines
- Protect for the link of West Creek Boulevard to Biscayne Crescent across Hwy 410
- Extension of Highway 410 north of Mayfield Road
- Highway 427 extension to Major Mackenzie Drive or beyond
- Queen Street capacity improvements from Centre Street to Highway 410 for future implementation of BRT and potentially LRT, recommended in the Queen Street Environmental Assessment – already underway
- James Potter Road will be completed between Williams Parkway and Steeles Avenue
- Financial Drive extension from Steeles Avenue to Heritage Road
- Continued expansion of the arterial and collector road network in new growth areas

**Exhibit 7-9** shows the recommended short-term (2011) road network.



All improvement needs on all Regional Roads depicted in these exhibits are subject to confirmation by Peel's Long Range Transportation Plan Update (LRTP Update). The upcoming LRTP Update will confirm and further define the road improvement needs required on Regional Roads with respect to capacity requirements and timing. To develop formal plans for specific road improvements, environmental assessment studies will need to be carried out and approved through the EA process.

**Exhibit 7-9**

**Recommended Road Network Needs by 2011**

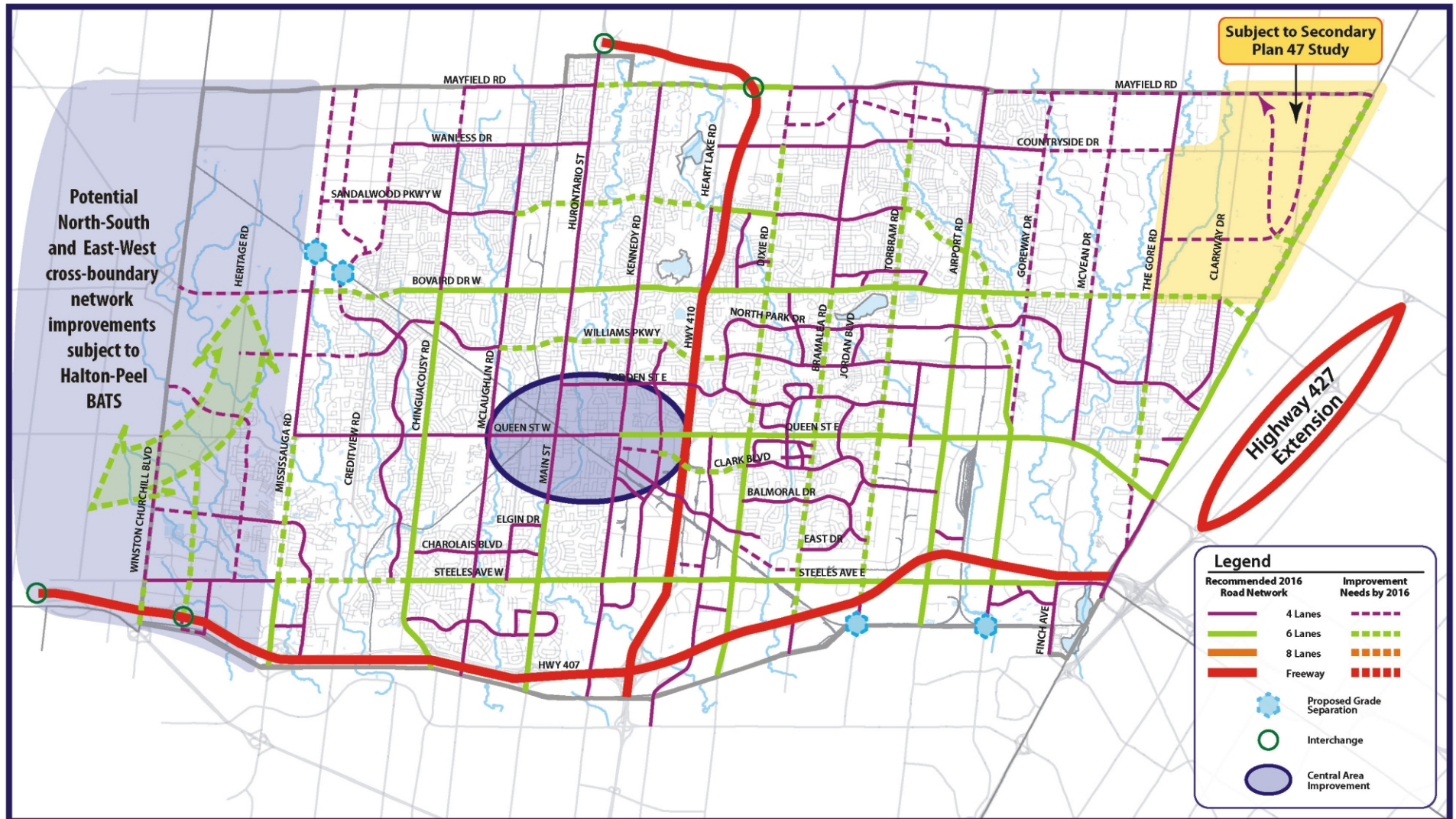


### 7.3.3 Medium-Term (2016) Road Network

Road improvements for the 2016 horizon year include:

- Introduction of a multi-modal transportation corridor in west Brampton (implementation of Bram West Parkway from 407ETR up to Bovaird Drive).
- Begin implementation of new or improved parallel roads around key freeway interchanges (i.e. Highway 410 crossings around Queen Street and Steeles Avenue). These are expected to off-load some of the local traffic from these keys through routes. Interchanges are often the focus for both development and for traffic congestion. Parallel collector roads can serve to facilitate intensification of development and improve distribution of traffic. Clark Avenue is to be widened to six lanes by 2016.
- Continued expansion of the arterial and collector road network.
- Improvement of road links to Halton Region. Development will continue to the west of the City, and planning for effective access will facilitate employment and residential development in Brampton.

**Exhibit 7-10** illustrates the recommended medium-term (2016) road network.



All improvement needs on all Regional Roads depicted in these exhibits are subject to confirmation by Peel's Long Range Transportation Plan Update (LRTP Update). The upcoming LRTP Update will confirm and further define the road improvement needs required on Regional Roads with respect to capacity requirements and timing. To develop formal plans for specific road improvements, environmental assessment studies will need to be carried out and approved through the EA process.

### Exhibit 7-10

## Recommended Road Network Needs by 2016

#### 7.3.4 Longer-Term (2021) Road Network

2021 will see the further development of Northwest Brampton and Northeast Brampton, and the road network will be improved to serve development in these growth locations.

Other significant road improvements by 2021 include:

- East-west transit spine arterial in the Mount Pleasant area
- Extension of Westcreek Boulevard to Biscayne Crescent over Highway 410

The recommended 2021 road network is illustrated in **Exhibit 7-11**.

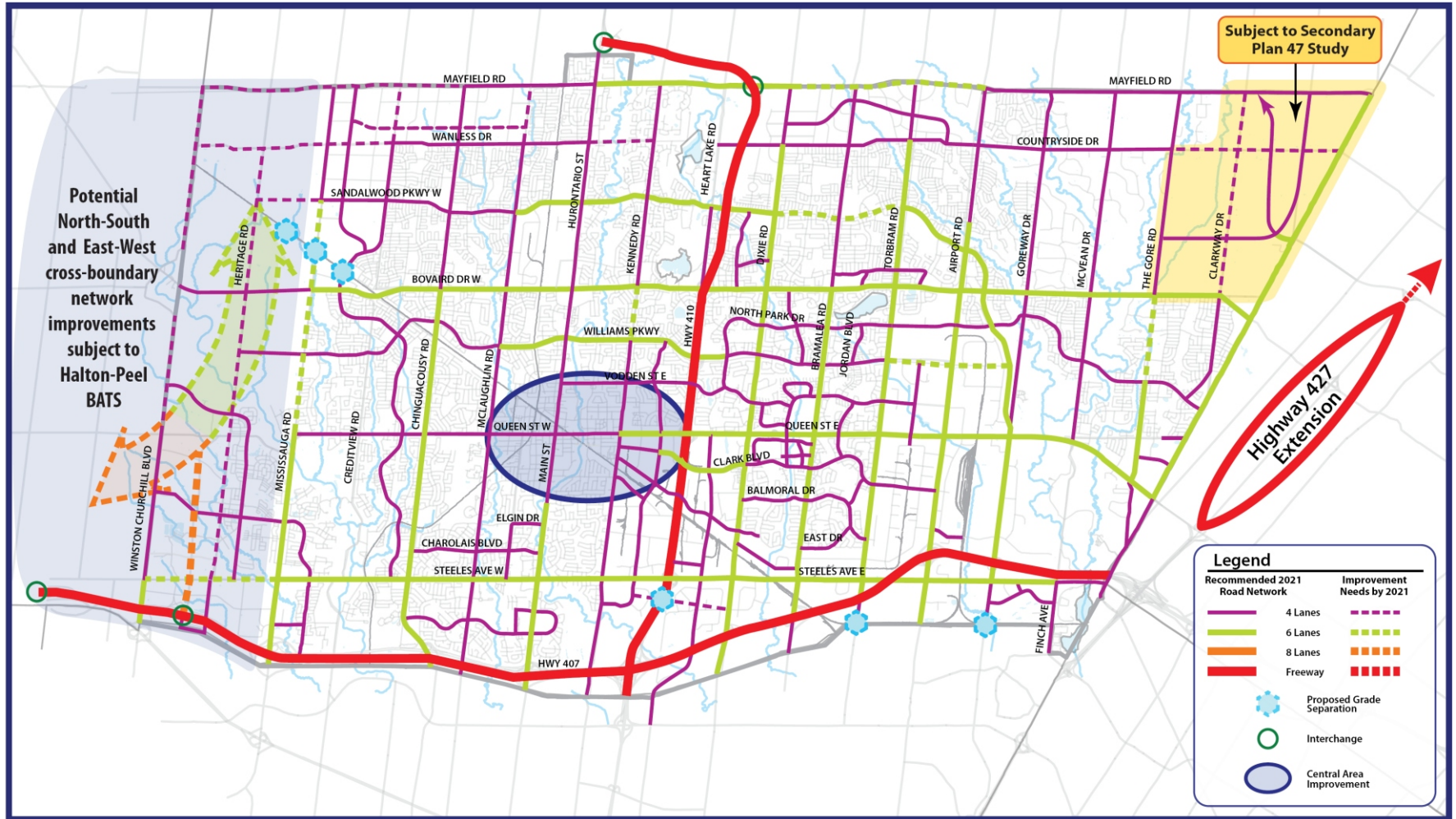
#### 7.3.5 Beyond 2031 Road Network

Beyond 2031, only two significant transit improvements are anticipated.

These improvements are:

- Widening of North-South Transportation Corridor from six to eight lanes between Bovaird Drive and Mayfield Road
- Widening of Mississauga Road from four to six lanes between Sandalwood Parkway and Mayfield Road

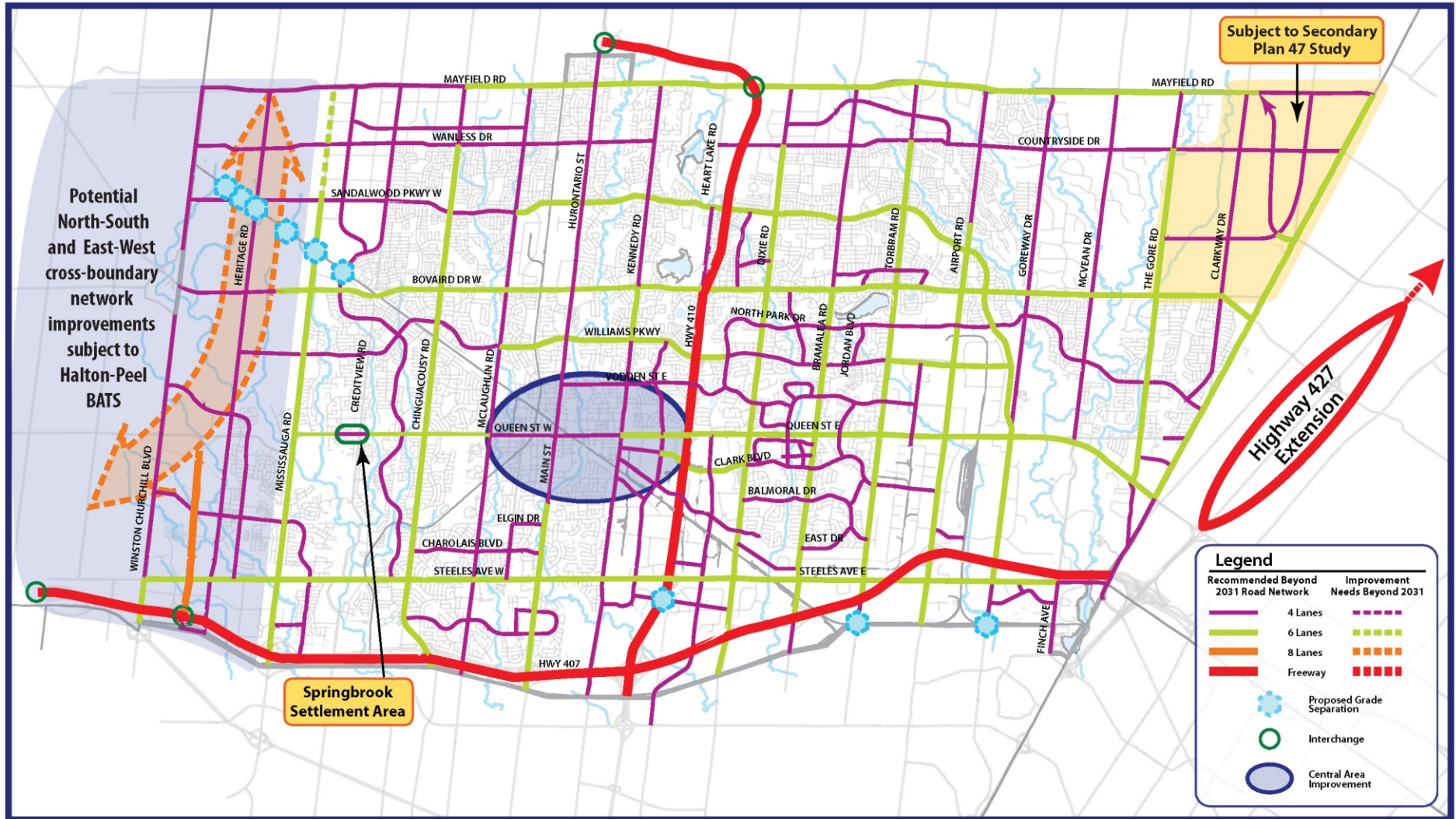
The recommended road network beyond 2031 is shown in **Exhibit 7-12**.



All improvement needs on all Regional Roads depicted in these exhibits are subject to confirmation by Peel's Long Range Transportation Plan Update (LRTP Update). The upcoming LRTP Update will confirm and further define the road improvement needs required on Regional Roads with respect to capacity requirements and timing. To develop formal plans for specific road improvements, environmental assessment studies will need to be carried out and approved through the EA process.

**Exhibit 7-11**

**Recommended Road Network Needs by 2021**



All improvement needs on all Regional Roads depicted in these exhibits are subject to confirmation by Peel's Long Range Transportation Plan Update (LRTP Update). The upcoming LRTP Update will confirm and further define the road improvement needs required on Regional Roads with respect to capacity requirements and timing. To develop formal plans for specific road improvements, environmental assessment studies will need to be carried out and approved through the EA process.

**Exhibit 7-12**

**Recommended Road Network Needs Beyond 2031**

## 7.4 SPECIFIC ISSUES

### 7.4.1 Northwest Brampton Road Improvements and New Construction

Key features of the road network in Northwest Brampton to accommodate 2031 travel demand, including full build-out of Northwest Brampton, are listed below:

- North-South Transportation Corridor at six lanes between 407 ETR and Bovaird Drive by 2016, widening to eight lanes by 2031. Road function to be established by Halton-Peel Boundary Area Transportation Study. Final road alignment to be established during the EA and Preliminary Design Stage.
- Extension of North-South Transportation Corridor at six lanes from Bovaird Drive to Mayfield Road by 2031, widening to eight lanes beyond 2031. Road function to be established by Halton-Peel Boundary Area Transportation Study. Final road alignment to be established during the EA and Preliminary Design Stage.
- Bovaird Drive at six lanes between North-South Corridor and Main Street
- Mississauga Road at six lanes up to Sandalwood Parkway, four lanes between Sandalwood Parkway and Mayfield Road by 2031. Mississauga Road at six lanes beyond 2031.
- Chinguacousy Road at six lanes throughout study area
- Heritage Road at four lanes with an eastern by-pass of the proposed village core in the Bram West Secondary Plan Area (at Embleton Road)
- Mayfield Road at four lanes between Winston Churchill Boulevard and McLaughlin Road
- Connection of Williams Parkway to Heritage Road (at four lanes) and North-South Corridor
- Sandalwood Parkway Extension at four lanes between Winston Churchill Boulevard and Creditview Road

### 7.4.2 Mt Pleasant Secondary Plan Area Road Improvements and New Construction

The preferred road network to support 2031 demand along with the development of the Mount Pleasant Secondary Plan included the following improvements:

- Creditview Road at four lanes between Bovaird Drive and Mayfield Road
- Sandalwood Parkway Extension at four lanes between Creditview Road and Mississauga Road by 2016
- Bovaird Drive at six lanes between Mississauga Road and west of Chinguacousy
- Wanless Drive at four lanes between Chinguacousy Road and Mississauga Road
- Mayfield Road at six lanes between McLaughlin Road and Chinguacousy Road
- Mayfield Road at four lanes between Chinguacousy Road and Creditview Road
- Construction of North-South Spine Road between Creditview Road and Mayfield Road by 2016
- Construction of an East-West Spine Road between North-South Spine Road and McLaughlin Road by 2021

### 7.4.3 North-South Transportation Corridor

The Halton-Peel Boundary Area Transportation Study (HP BATS) will recommend the long-term (2031) needs for the cross-boundary roads including North South Transportation Corridor in west Brampton. The 2009 TTMP network performance evaluations and subsequent recommendations are based on the “working assumption” of NSTC operating as a high order “Super Arterial” road, providing six to eight lane capacity, constructed to accommodate travel demand generated by the Bram West, Northwest Brampton, and Mount Pleasant areas as well as potential growth in surrounding areas such as Halton Hills and Caledon. The term “Super Arterial” coined for this facility reflects its unique operational characteristics defined by speeds higher than speeds on a typical urban arterial (80 km/h vs. 60km/h), eight lane cross-section and restricted access via signal controlled, at-grade intersections.

The NSTC alternative adopted for the TTMP analyses assumes a “Super Arterial” road beginning south of Highway 407 ETR at Heritage Road and ending at Mayfield Road in the north. The corridor constructed at eight lanes north-south up to Bovaird Drive is located between Winston Churchill Boulevard and Heritage Road. A six lane cross-section was assumed north of Bovaird Drive to Mayfield Road. With its alignment undetermined at this time, it was anticipated that it will be located between Winston Churchill Boulevard and Mississauga Road. The potential alignment was shown previously in the recommended 2031 road network in **Exhibit 7-8**. It is anticipated that the NSTC section north of Bovaird Drive will require an eight lane cross-section beyond 2031.

The section of the NSTC between Highway 407 ETR and Embleton Road (referred to as the “Bram West Parkway”) will be required to support development in the Bram West Secondary Plan Area (SP40). Identified in the Secondary Plan as a “Major Arterial Road” with a ROW of 45-50m, the TTMP Update recommends that this portion of the NSTC be constructed initially at 6-lanes, with a potential widening to 8 lanes by 2031.

It is anticipated that roughly 20% of both population and employment growth occurring in North West Brampton, defined as SPA’s 52 and 53, will trigger the need for the construction of NSTC north from Embleton Road to Bovaird Drive and Mayfield Road. Without the NSTC, additional development in North West Brampton tipping over the 20% level would result in severely congested conditions in this section of City’s road network. However, it should be noted that likely greater than 20% of the projected employment can be supported, since employment uses located in this area would increase travel demand in the underutilized off-peak direction of traffic (during peak periods). Conversely, more residential growth would place additional stress on the already congested peak direction of travel.

Based on this analysis, Brampton should at this time plan and protect for a minimum as presented in **Table 7-2**.



Table 7-2: NSTC Implementation Timing

Southern Terminus	Northern Terminus	Number of Lanes	Year
Heritage Road / Meadowvale Blvd	407 ETR	4	2012
407 ETR	Steeles Avenue	6	2012
Steeles Avenue	Embleton Road	6	2014
Embleton Road	Sandalwood Parkway	6	2016
407 ETR	Steeles Avenue	8	2018
Steeles Avenue	Embleton Road	8	2019
Embleton Road	Bovaird Drive	8	By 2031
Sandalwood Parkway	Mayfield Road	6	By 2031
Bovaird Drive	Mayfield Road	8	Beyond 2031

Using the TTMP transportation model, the potential users of the corridor are estimated. The trip origins of NSTC users are summarized in **Table 7-3**, while the trip destinations are summarized in **Table 7-4**. Out of a estimated 13,240 users during the afternoon rush hour, 53% start in Brampton, while 22% come from Mississauga and 15% from Halton. On the destination side, 55% of trips end in Brampton, while 17% end in Halton, 11% in Mississauga and 4% in Caledon. Overall, nearly half of the users of the NSTC come from or are destined to locations outside of Brampton, emphasizing the inter-regional significance of this corridor.

Table 7-3: NSTC Users - 2031 Trip Origins

Trips Originating From:	2031 Recommended Network	
Bram West	2,900	22%
Northwest Brampton & Mount Pleasant	1,500	11%
Rest of Brampton	2,600	20%
Mississauga	2,000	15%
Caledon	260	2%
Halton	2,890	22%
Other	1,090	8%
Total	13,240	100%

Table 7-4: NSTC Users - 2031 Trip Destinations

Trips Destined To:	2031 Recommended Network	
Bram West	2,230	17%
Northwest Brampton & Mount Pleasant	1,210	9%
Rest of Brampton	3,810	29%
Mississauga	1,480	11%
Caledon	480	4%
Halton	2,200	17%
Other	1,830	14%
Total	13,240	100%

Acknowledging that the above infrastructure performs both a regional and interregional function, the recommendations in **Table 7-2** are a minimum requirement to accommodate growth planned in Brampton. Further study (HP BATS) should look at all options for this corridor on both sides of boundary including various freeway options, since the benefits of a potential freeway connection to Peel and Halton have been identified earlier. On this basis Brampton should continue to protect for the NSTC north of Embleton Road at a right-of-way width sufficient to accommodate a freeway. South of Embleton Road, freeway right-of-way width should be protected west of the proposed Bramwest Parkway / NSTC alignment towards Winston Churchill Boulevard. Potential future connections to a GTA West corridor, GTA freeway network, and a goods movement corridor should also be protected for.

#### 7.4.4 Norval Bypass

The Norval Bypass has been proposed by Halton Region to provide an alternative route for east-west traffic between Halton Hills and Brampton to bypass Norval. Although it would improve east-west inter-regional connectivity, the Norval Bypass is not required to accommodate planned development and growth in Brampton. An alternative alignment for the Norval Bypass as previously proposed by Halton, with a new crossing of the Credit River, is not recommended in this study because of its significant environmental impacts. However, the need for improved east-west connections and alternative network improvements between Halton Hills and Brampton are being examined in the ongoing Halton-Peel Boundary Area Transportation Study which is jointly funded by the City of Brampton, Halton Region, and Peel Region.

#### 7.4.5 Northeast Brampton Road Improvements

The road network needs and improvements in Northeast Brampton have been evaluated by the Peel-Highway 427 Extension Area Transportation Master Plan study. The study recommends the extension of Highway 427 to at least Major Mackenzie Drive by 2021 and north of Major Mackenzie Drive by 2031. Further to the extension of Highway 427, the required road network improvements within the City of Brampton include a combination of road widenings, the provision of a new north-south arterial road connection from Highway 50 and Major Mackenzie Drive to Mayfield Road located between Coleraine Drive and Clarkway Drive by 2016, the realignment of Coleraine Drive to intersect with the new north-south link, and an east-west connection from the realigned Coleraine Drive west to the Gore Road. The recommended road network is presented in **Exhibit 7-10**.

The timing of road improvements at the York-Peel boundary will be carried out in consultation with Peel Region and York Region. Final function and location of roads within northeast Brampton will be established in the Secondary Plan Study and subsequent EAs and at the Preliminary Design Stage.

The 2009 TTMP strongly supports the Peel-Highway 427 Extension Area Transportation Master Plan recommendation to advance the extension of Highway 427 beyond Major Mackenzie Drive to 2021.

A detailed list of recommended road network improvements in the area is provided in **Table 7-5**.

Table 7-5: Northeast Brampton Road Improvements

Corridor	Road Section	Current Configuration	Needs by 2014†	Needs by 2021	Needs by 2031
<b>North-South Roads</b>					
The Gore Road	Healey to Mayfield	2	2	2	2**
	Mayfield to Countryside	2	4*	4*	4*
	Countryside to Castlemore	2	4	4	6
Clarkway Drive - Humber Station Road	Healey to Mayfield	2	2	2	2
	Mayfield to Countryside	2	4 (SP47)	4 (SP47)	4 (SP47)
	Countryside to Castlemore	2	4 (SP47)	4 (SP47)	4 (SP47)
Mayfield – Major Mac Link	Highway 50 to Coleraine Drive	0	6	6	6
	Coleraine Drive to Mayfield	0	4	4	4
Coleraine Drive	Mayfield to Countryside	2	4	4	4
	Countryside to Major Mackenzie	2	4	4	4
Highway 50	Healey to Mayfield	4	4	4	4
	Mayfield to Countryside	4	6	6	6
	Countryside to Major Mackenzie	4	6	6	6
	Major Mackenzie to Castlemore	4	6	6	6
Albion-Vaughan Road	Queens Gate to Mayfield	2	2	4	4
<b>East-West Roads</b>					
East-west Link	The Gore Road to Clarkway	0	4	4	4
	Clarkway to Major Mack Link / Coleraine	0	4	4	4
Castlemore Road	The Gore to Clarkway	4	6	6	6
	Clarkway to Highway 50	4	6	6	6
Countryside Drive	The Gore to Clarkway	2	4*	4*	4*
	Clarkway to Coleraine	2	4*	4*	4*
	Coleraine to Highway 50	2	4*	4*	4*
Mayfield Road	The Gore to Clarkway	2	4	4	6
	Clarkway to New Link	2	4	4	6
	New Link to Highway 50	2	4*	4*	4*
Healey Road	The Gore to Clarkway	2	2	2	2
	Clarkway to Coleraine	2	2	2	2
	Coleraine to Highway 50	2	2	2	2

Notes: †assumed Hwy 427 opening

\* - This section was identified as needed prior to 2014 in ESR (Without Mayfield – Major Mackenzie Link)

\*\* - Widening was identified as needed prior to 2031 in ESR (Without Mayfield – Major Mackenzie Link)

(SP 47) – The timing to be confirmed through the planning for Brampton Secondary Plan 47

### 7.4.6 Impacts of GTA West Corridor

The GTA West corridor was identified in the Provincial Growth Plan as a strategic link between the Urban Growth Centres in the west of the GTA, potentially connecting the City of Guelph with the North-western part of the GTA connecting to the future extension of Highway 427, and terminating at Highway 400. An excerpt from the Growth Plan (**Exhibit 7-13**) shows a conceptual alignment of the corridor running along the northern urban boundary within Peel, which is generally the northern boundary of the City of Brampton.

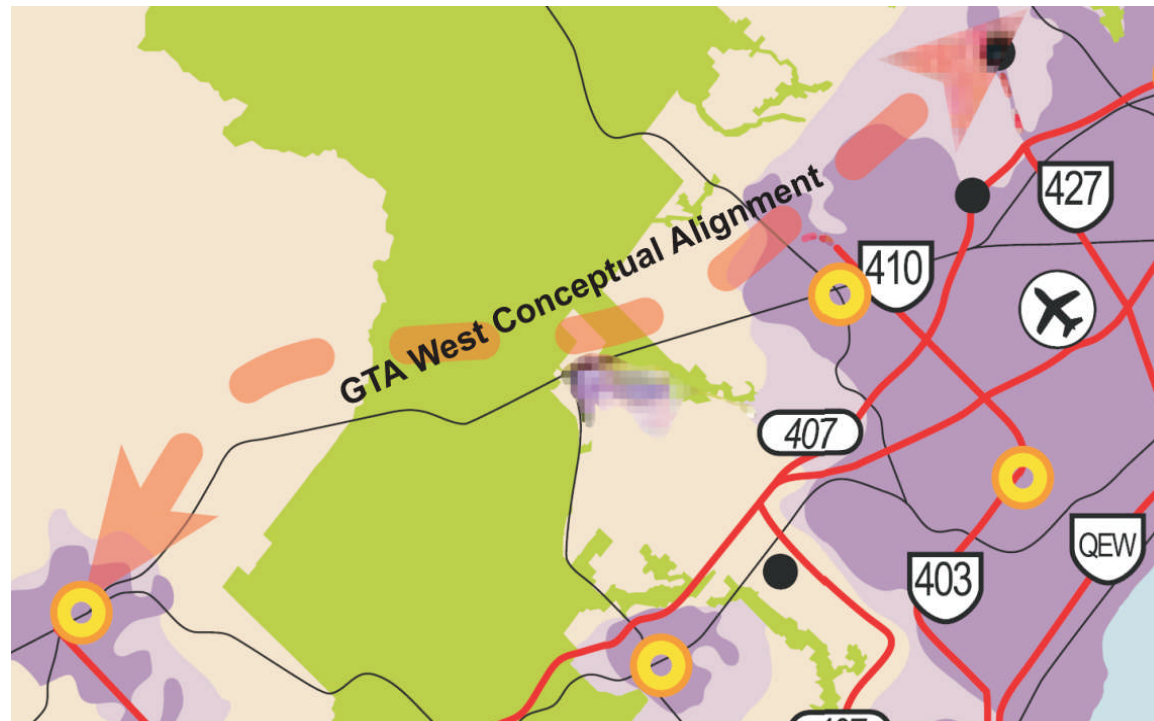


Exhibit 7-13: GTA West Corridor Conceptual Alignment (Growth Plan)

The 2009 TTMP's recommended transportation networks are independent from the corridor. Thus, the recommendations made in this report are conservative and provide the City with a sustainable transportation network not contingent on the Provincial corridor. In the likely scenario that the corridor is completed, the City would gain the additional benefits of having access to additional capacity, inter-regional connectivity, and a goods movement corridor that such a facility would provide.

The evaluation process completed for the 2009 TTMP update included an assessment of the impacts of the GTA West corridor. The recommended alternative was tested with and without the potential GTA West corridor coming into place by 2031. The results indicate that the inclusion of the corridor to the overall road network caused 13% diversion of peak direction westbound traffic from arterial roads between Mayfield Road and Queen Street. The largest impact is seen on the screenline east of Highway 410. Without the corridor, the screenline volume to capacity ratio is at 100%, but with the GTA West corridor, this percentage decreases to 86%.

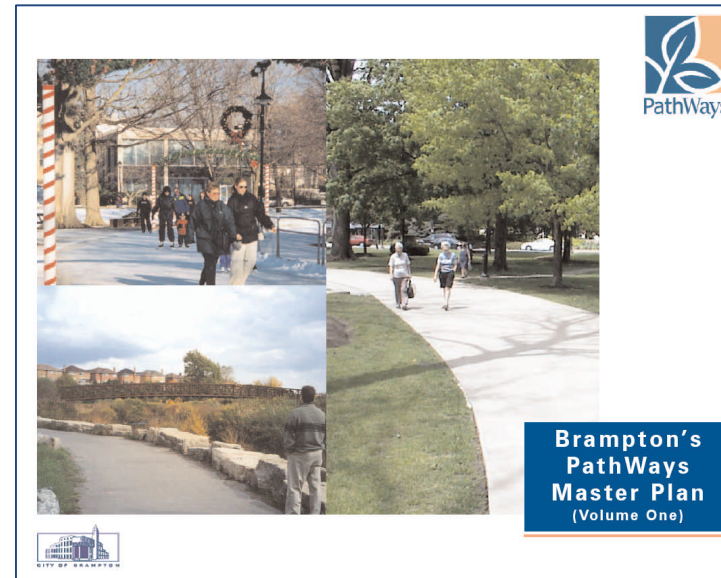
The corridor, if approved, is expected to provide a choice route for heavy truck traffic, both for inter-provincial goods movement travel and more locally contained aggregate and construction industry travel. In all, the GTA West corridor, when completed, will provide clear benefits to the City by reducing congestion over certain screenlines, providing additional capacity and a more direct corridor for goods movement, and accommodating growth in Brampton. The TTMP strongly supports the implementation of this strategic corridor.

## 7.5 ACTIVE TRANSPORTATION

Active transportation is a key component of a sustainable transportation system. Whether it be walking or cycling to work, for leisure, exercise, or to access public transportation, the proper infrastructure must be in place before people will consider active modes of transportation.

Since 1986 walking and cycling during the PM peak period declined from 8% to 3.8%. A similar trend has been observed in other municipalities within the GTA. Despite the decline, continued promotion of active transportation could have significant individual, societal, environmental, and economic benefits and should be encouraged. Cycling and walking can contribute to the reduction of dependence on the automobile and to shifting travel choices away from single occupancy vehicles. Above all, cycling is an energy efficient and environmentally friendly mode of travel and contributes towards mitigating ozone depletion, the greenhouse effect, ground-level air pollution, photochemical smog, acid rain, and noise pollution. Provision of walking and cycling facilities, identified in City of Brampton Pathway Master Plan discussed below, delivered in conjunction with community based education efforts could provide opportunities for reversing the decline and returning to 1986 walk and cycle levels by 2021.

Multimodal paths, sidewalks and / or bike paths are included in the City's design standards. Furthermore, to ensure a seamless pathways network, the City of Brampton developed in 2002 its Pathways Master Plan. The Master Plan set the vision and a step-by-step implementation plan for Brampton's extensive pathway systems. Subsequent review and update in 2006 has increased the coverage and connectivity within the pathway network. The 2006 recommended pathways network was illustrated previously in this document in **Exhibit 4-7**.





The Pathways Plan is built on three pillars:

1. Campaign for Customer Driven Pathways
2. Campaign for Beautiful Pathways
3. Campaign for Valued Pathway

These pillars provide clearly stated goals and objectives and a detailed action plan for each element of the Plan. The recommendation of the Plan includes pathway network layout, pathway network development and staging, maintenance schedule, cost and financing, pathway design guidelines (including character of pathways and pathway surroundings), signage and points of interest, education, promotion, and partnerships.

The City should continue to support and implement the recommendations of the Pathways Master Plan and the Official Plan policies developed from the Master Plan recommendations to meet the overall objectives of:

- Providing a city-wide pathway system
- Promoting bicycle use beyond recreational trips, i.e. work, shopping, entertainment
- Encouraging walking as healthy and environmentally friendly, such that it is the preferred travel mode for short trips
- Promoting the safe movement of pedestrians, especially those with disabilities, throughout the City
- Developing a beautiful and informative trails system that promotes the Brampton Flower City concept

In addition to the above the City should also:

- Ensure a complete and high-quality sidewalk network on all streets serviced by transit
- Ensure separation of cycling lanes from general purpose traffic lanes or high occupancy lanes
- Continue creating designated bike lanes on major streets that are used for utilitarian cycling
- Work with other jurisdictions, local road safety or cycling groups to establish an educational campaign for cyclists and motorists on how to share the road safely
- Secure bicycle facilities at existing and proposed transit hubs.

Further to continued support of the Pathways Master Plan, the City should continue to support urban design policies that promote pedestrian and cyclist friendly environments, conducive transit access, and attractive public areas that are desirable as ‘activity’ spaces. The Road Design Standards have already been updated to include provision for sidewalks and bicycle paths on all type of roads constructed by the City. All new facilities and reconstructed roads will be provided with 1.5 meter cycling lanes separated from the general purpose lanes of traffic and, in some cases, from sidewalks. The implementation of the revised standards will, in time, enhance the cycling network and provide cohesive bike-paths systems integrated with off-road paths and trails.

In the short term, the City will continue to expand the pathways system through new development, devise an ambitious signage program, and investigate partnership development opportunities. New developments must also incorporate urban design principles that promote active transportation not only as a travel mode, but as a lifestyle.

## 7.6 ACCESSIBLE TRANSPORTATION

The vision of a modern, balanced, and sustainable transportation system proposed in this document must provide for safe, affordable, and efficient movement of all people, including persons with disabilities. In accordance with the Accessibility for Ontarians with Disabilities Act and the Ontario Human Rights Code, the City of Brampton must remove and prevent barriers for persons with disabilities, including the planning and implementation of the transportation system.

Existing services are provided by local community agencies while Peel Region's TransHelp system provides additional service to those who cannot use conventional transit. Peel Region also has an Accessible Transportation Coordination Office to serve those without access to TransHelp.

According to Region of Peel Official Plan, demand for transportation for persons with disabilities is forecast to grow at a high rate given an aging population. In Peel, currently 8% of persons are over 65, but by 2021 this will increase to 15%. Estimated demand is expected to double, from approximately 525,000 trips to 1,020,000 between 2001 and 2021.

The current Brampton Official Plan identifies the importance of planning and designing for accessibility for persons with disabilities, especially with respect to:

- The overall transportation system
- The transit system
- Pathways network
- Parking design
- Other urban design elements

As part of this Brampton Transportation and Transit Master Plan Update, specific policies with respect to accessible transportation for inclusion in an amended Brampton Official Plan include the following:

- Continue to phase in accessible low floor buses on primary and secondary transit corridors until all Brampton Transit buses are accessible
- Ensure that transit vehicles used for future BRT/LRT corridors are accessible and have low floors if possible
- Continue to support Peel’s Transhelp system with increased efforts to coordinate transportation services to ensure that the needs of Brampton residents and employees are met
- Work with the Province, Metrolinx, Region of Peel, surrounding municipalities, and human service agencies to facilitate interregional transportation for persons with disabilities
- Work with Province, Metrolinx, and Region of Peel to ensure that proper and sustainable funding are in place to ensure mobility of persons
- Coordination with Brampton Transit and private sector to ensure that the built form within the City is accessible to persons with disabilities, including but not limited to curb cuts, accessible entrances to buildings, parking standards and design, and access to the pathways network.

## 7.7 TRANSPORTATION SYSTEM AND DEMAND MANAGEMENT

Transportation System and Demand Management (TSM / TDM) policies and programs are an essential component to the sustainable transportation network in Brampton. Policies in this regard focus on enhancing the capacity of the existing transportation system by adopting TSM / TDM strategies and devising traffic circulation patterns to optimize road efficiency.

Official Plan objectives with respect to TSM / TDM are as follows:

- To encourage personal mobility and travel choices that reduce overall transportation resource demands through enhancement of the Brampton transit system, adopting Transportation System and Demand Management measures, and Intelligent Transportation System strategies
- To optimize the people moving capability of the transportation network by the utilization of reserve bus lanes or high occupancy vehicle (HOV) lanes where appropriate, and other traffic management strategies for the purposes of minimizing the social, financial, and environmental costs of transportation, mitigating transportation related pollution, and reducing dependency on fossil fuels

TSM strategies identified in the Official Plan, which may or may not already be implemented in Brampton, but are further endorsed in the 2009 TTMP, include:

- Implementation of Transit Signal Priority system to Primary Transit Corridors
- Provision of HOV lanes on 6-lane roadways
- Provision of queue jump lanes and bus bays on Züm and Primary Transit Corridors
- Provision of turning lanes where required and where feasible
- Segregation of slow moving traffic
- Minimizing pedestrian-vehicle conflicts while maintaining pedestrian-friendly streets and roads and minimizing size of intersections
- Exploring new Intelligent Transportation Systems (ITS) opportunities
  - Traffic signal control systems
  - Transit management systems
  - City-wide multi-modal traveller information systems

The EA process undertaken prior to implementation of these strategies should assess viability, operational parameters and interconnectivity with strategies planned or applied by other municipalities.

TDM strategies aim to improve efficiency of the transportation system by influencing travel demand and trip patterns. Strategies include:

- Car pool programs (Smart Commute Brampton-Caledon)
- Provision of employer incentives for TDM measures (e.g. telecommuting, flexible hours, transit pass subsidy)
- Educational opportunities by working with schools

The City shall continue to support the Smart Commute Brampton-Caledon initiative and look to develop new programs and partnerships in cooperation with Peel Region and other agencies and private groups. The development of a TDM Master Plan would help to identify these opportunities and a strategy for implementing them in conjunction with Smart Commute.

Completion of a TDM Master Plan is recommended for the City by 2016 or preferably sooner. The future document should address:

- Development of an effective City-wide TDM promotion plan
- Development of a “TDM culture” for Brampton, including the consistent application of TDM principles within the City’s administration processes. This should include:
  - Reviewing and modifying transit, cycling, and pedestrian-related Official Plan policies to acknowledge their important role in City-wide travel demand management
  - Reviewing and modifying site design guidelines, traffic impact study requirements, and site plan approval process to encourage applicants to adopt TDM initiatives
  - Development of TDM supportive parking policy such as paid parking, shared parking, and other parking management strategies

## 7.8 GOODS MOVEMENT

Safe and efficient movement of goods and services within and through the City of Brampton is essential for sustainable economic growth and is an important component of the city's economy in attracting and retaining a wide range of industries and businesses.

The City is a hub for goods movement activity, with a major CN intermodal terminal near the intersection of Steeles Avenue and Airport Road. Its roads also serve the aggregate trucking industries prevalent in Caledon and Halton Region. Finally, the City is located just north of Pearson International Airport which generates significant truck traffic from goods shipped by air.

The Official Plan has identified a number of goods movement policies to meet the following objectives:

- Facilitate safe and efficient movement of goods within the city and between neighbouring municipalities
- Obtain data needed to track goods movement activity, co-operating with the Ministry of Transportation and other provincial agencies, Region of Peel, and industry stakeholders
- To channel through movements of heavy truck traffic away from neighbourhoods and commercial areas
- To provide adequate and direct access to all truck traffic-generating land uses
- To encourage truck traffic-generating land uses to locate in proximity to Provincial Highways and major arterials

Further to the Official Plan objectives, the 2009 TTMP makes the following recommendations:

- Undertake rationalization of truck routes in Brampton to provide for seamless connectivity to the Regional and Provincial goods movement network
- Protect for a high-order goods movement corridor in west Brampton to support existing and future employment areas in Bram West and Northwest Brampton

- Protect for a high-order goods movement corridor linked to aggregate extraction areas in Halton Hills and to the future GTA West corridor and GTA freeway network
- Endorse the recommendations of the Peel-Highway 427 TMP to extend Highway 427 to Major Mackenzie Drive by 2021 and beyond Major Mackenzie by 2031, and the extension of Major Mackenzie Drive in Brampton to Mayfield Road, recognizing that this corridor will have a positive impact on the efficient movement of goods – further strengthened by current plans for an industrial area in the Northeast part of Brampton

## 7.9 CENTRAL AREA IMPROVEMENT PLAN

The Brampton Central Area, comprising the historic Downtown core and adjoining Queen Street Corridor, is identified in the Official Plan as the major location for a number of important civic, institutional, cultural, and entertainment facilities as well as major commercial, retail, and employment activities. A specific plan for transit and road network improvements in this area is essential firstly to ensure that existing neighbourhoods are both maintained and enhanced and secondly to encourage revitalization, infill, and intensification to allow people to live and work in the same area. As part of the Downtown Core and Queen Street Corridor is designated as an Urban Growth Centre in the Provincial Growth Plan, the challenge is to maintain the unique character of its existing neighbourhoods while allowing it to grow and function as a key inter-regional mobility hub for the City of Brampton.

A significant amount of planning and visioning work has been carried out over the past decade to support the revitalization of Downtown Brampton and the Central Area, including Secondary Plan studies and the 2005 visioning exercise. Current major planning and transportation initiatives are shown in **Exhibit 7–14**.



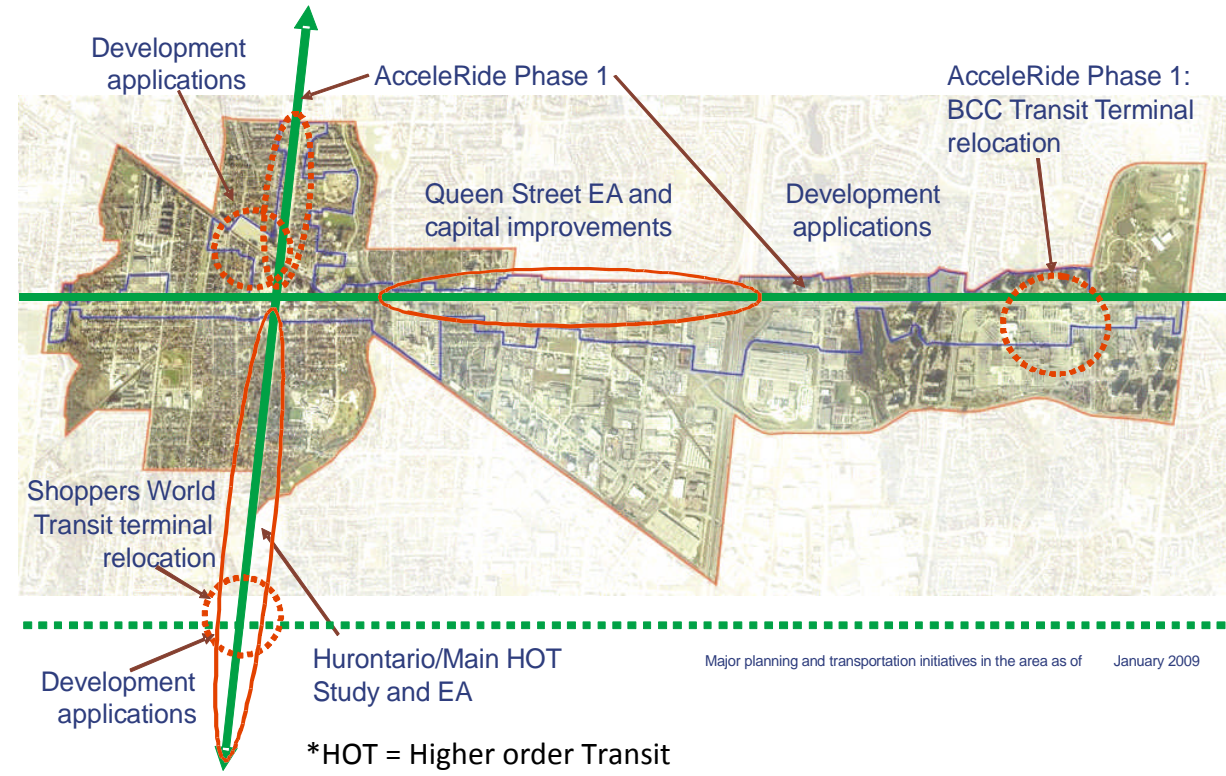


Exhibit 7-14: Major Planning and Transportation Initiatives in the Central Area

### 7.9.1 Transit Strategy for the Central Area

The Brampton Central Area is a vibrant place to live and work with a strong image and is identified in the Official Plan as the “heart of the City”. The Downtown Area in particular was identified in the “Provincial Places to Grow” document and the Metrolinx RTP as an Urban Growth Centre (UGC) and an Anchor Hub – a central place where people will live, work, play, and also a place to facilitate transit travel to, from, or through the area. The Queen Street Corridor, between Kennedy Road and Highway 410 and part of which is also located in the UGC, has great potential to develop into a mixed-use, transit-oriented, pedestrian-friendly environment. As stipulated in the Growth Plan, UGC’s are to develop at a minimum density of 200 people and jobs per hectare by 2031. Given this significant growth, transit priority and infrastructure improvements are essential to the development of the area.

One of the major challenges that the Downtown Area faces is the need to provide high frequency higher-order transit– (BRT or LRT) service in a highly developed area within narrow existing right-of-ways. Strategies set forth in the 2004 TTMP and other studies have identified a multitude of options for the facilitation of such service through this area. These options include:

- BRT in mixed traffic versus HOV lanes
- Passenger amenities, (i.e. terminal shelter seating and real-time information)
- On-street parking management strategy
- Land use integration – more intensive mixed use with an active streetscape
- Integration with regional rail service (GO)
- Building on existing infrastructure including Brampton Transit Downtown Terminal and existing GO Station

- Consideration of routing options both short-term and long-term, (i.e. use of Theatre Lane, George Street, Nelson Street, Bus Tunnel)
- Potential evolution of BRT to provide increased service, decreased travel time and potential to move to LRT
- Evaluation of running way alternative, (i.e. mixed traffic, curb side operations, dedicated running way centre / curb side)

Previous studies like the Brampton Central Area Plan Review, Clark-Eastern Connection Study, John Street Extension Feasibility Study, Ken Whillans Extension EA, Queen Street EA, etc., have studied road network improvements and other strategies tied to improving connections to the Central Area. Options relating specifically to the implementation of BRT service in Downtown Brampton up to the Brampton GO Station are currently being examined in the on-going Hurontario / Main Higher-Order Transit study, as referenced in **Section 7.2.2**.

While it is outside the scope of this 2009 TTMP document to provide a detailed strategy and analysis of alternatives for transit through the downtown core, it is definitely stressed here that the Brampton Central Area is the cornerstone of the Brampton Transit network and thus is a vital component of the GTA's transit network. As a regional urban growth centre, an effective, viable, efficient strategy must be identified to allow the area to develop to its fullest potential. The 2009 TTMP recommends the Hurontario/Main Higher-Order Transit Study to develop the engineering alternatives and the ultimate vision for the area. Further to this on-going study, and as referenced in **Section 7.2.2**, a future Queen Street higher-order transit study is recommended to develop engineering alternatives and the vision for the Queen Street Corridor, while the Hurontario higher-order transit section north of the Brampton GO Station and up to the existing Sandalwood Parkway Terminal will require its own study in the near future.

The redevelopment of the Peel Memorial Hospital (PMH) campus provides an opportunity for planned transit service in the vicinity to implement transit infrastructure on site. Suggestions have been put forward at public meetings around the idea of an alternative “Downtown Transit Terminal” on the hospital lands. Pending more detailed findings through the Hurontario/Main Street Higher Order Transit Study and future work to evolve higher order transit along Queen Street, it is not recommended that the PMH site be pursued as an alternative location for the Anchor Hub designated in the Metrolinx Regional Transportation Plan at the current Downtown Brampton GO Station.

The advantages in continuing to support the Mobility Hub location just north of the Queen and Main intersection, connecting to the existing Downtown Transit Terminal and the existing Brampton GO Station, far outweigh the PMH site, and include:

- Existing transit infrastructure facility in the Downtown Transit Terminal, currently serving Brampton Transit, GO buses, and Greyhound buses
- Intermodal connectivity with the Brampton GO Station and local bus services using the existing Terminal
- Serves the significant residential, employment, and cultural land uses and events including the “Four Corners,” Roselea Park, the Rose Theatre, and City Hall

While the PMH site would serve a significant employment centre in the Hospital, the Queen and Main “Four Corners” location is too vital to not be designated as the Anchor Mobility Hub for the City. Furthermore, the on-going Hurontario / Main Higher-Order Transit Study is currently assessing options for connecting to the Downtown Terminal, and is not considering any alignments for the Hurontario / Main higher-order transit to connect to the PMH site.

While it should not be designated as a Mobility Hub, plans for the PMH site should definitely include transit infrastructure on site as a transit stop on the Queen Street higher-order transit route. It is still an important location to serve with transit as a significant travel destination for patients, visitors, and employees. Since PMH is located east of Main Street at Queen and Centre Streets, and that Centre Street is identified in the *AcceleRide BRT Strategic Implementation Plan* as a transit stop (**Exhibit 7-5**), a future Queen Street higher-order transit study should analyze in detail the transit interface here and how the Queen Street higher-order transit route will connect to the PMH site.

### 7.9.2 Road Network Improvements in the Central Area

Road network improvements in the Brampton Central Area have been identified in the Official Plan as necessary to ensure sufficient transportation capacity to support proposed and existing development, to promote new development, and to address emergency preparedness and risk management.

In addition to the Official plan goals and providing support for the BRT system on Queen and Main Streets, Central Area improvements are important in realizing the full redevelopment potential of the Queen Street Corridor and in particular, the Peel Memorial Hospital site. The PMH site will be the most important development site for employment uses in the Central Area, and work has already started on its redevelopment. In addition to transit access mentioned in the previous section, it will require direct access to Highway 410 from opening day, which could be as early as 2012 or 2013.

A number of studies have been undertaken in the past and it is the goal of the 2009 TTMP to reaffirm and consolidate the analyses in these studies to provide one coherent Central Area improvement plan. This consolidation is important to update costs, update and confirm the travel demand forecasts and need for improvements, confirm the timing of the need, and finally to recommend changes to the existing documents, including the Official Plan.

Previous studies like the Brampton Central Area Plan Review, Clark-Eastern Connection Study, John Street Extension Feasibility Study, Queen Street EA and the on-going Ken Whillans Extension EA, etc., have evaluated road network improvements and other strategies tied to improving connections to the Central Area. The 2009 TTMP re-examined the recommendations in these previous studies using the new transportation model and forecasts developed for this study. It recommends that the following road improvements be carried forward and at a minimum be protected for as an opportunity for future road network connections and to accommodate the growth and development potential in Downtown Brampton and the Queen Street Corridor:

- Clark Boulevard-Eastern Avenue Connection (between Rutherford and Kennedy Road)
- John Street transit, cyclist and / or pedestrian connection between James Street and Centre Street
- Denison-Mill Connection
- Ken Whillans Drive Extension
- Queen Street access management and driveway consolidation

Detailed analysis for all Central Area improvements is documented in the **Supplementary Analysis Report, Appendix F**, and a summary discussion of each improvement follows.

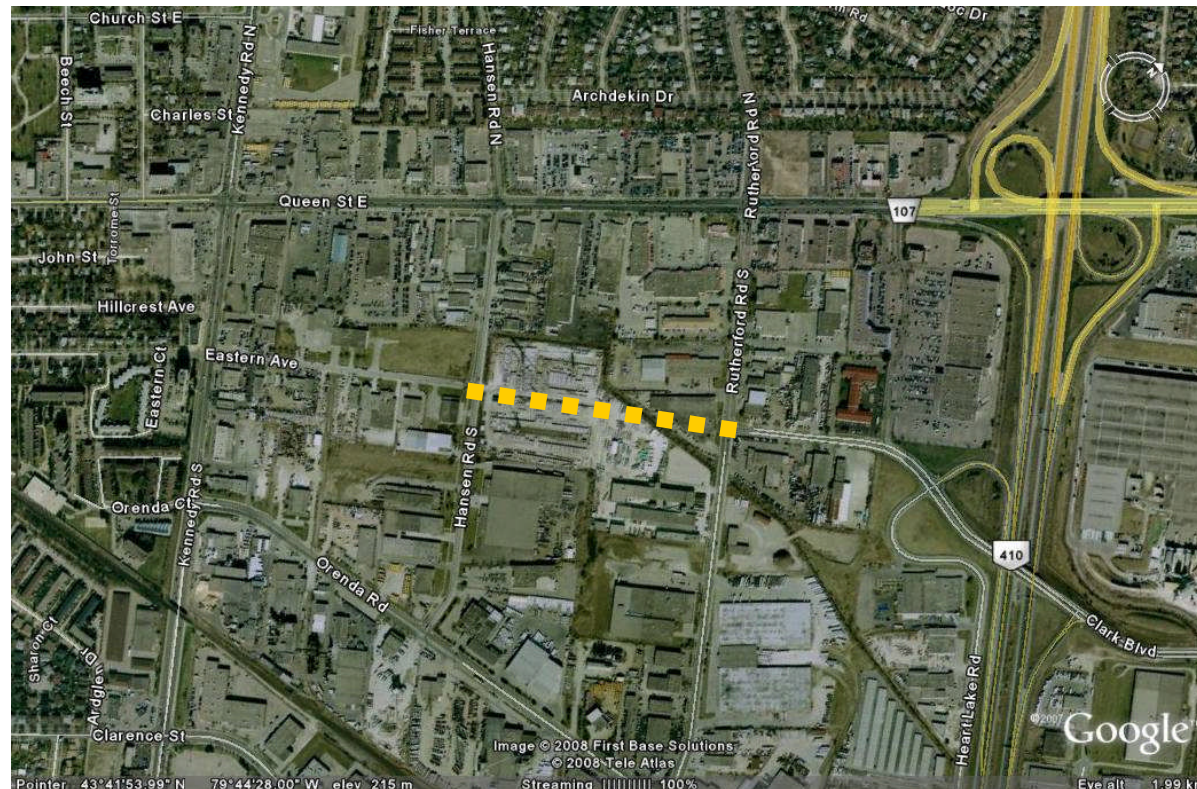


Exhibit 7-15: Clark Boulevard – Eastern Avenue Connection

### Clark Boulevard – Eastern Avenue Connection

The 2009 TTMP has reconfirmed the need for this improvement, which will complete the missing link between Hansen Road and Rutherford Road and connect Eastern Avenue and Clark Boulevard in order to create a continuous route linking the Bramalea City Centre (east of Dixie Road), Highway



410, and the aforementioned PMH redevelopment site (at Centre Street). Currently, Eastern Avenue's eastern terminus is Hansen Road and Clark Boulevard terminates in the west at Rutherford Road. This leaves Orenda Road and Queen Street as the only two options for drivers when travelling between the Bramalea City Centre area and the Central Area.

As a parallel route to Queen Street, this improvement is expected to improve flow on heavily-congested Queen Street by providing an alternative choice for drivers and by providing additional capacity in the Central Area. The TTMP transportation model assessed the impact of including the Clark-Eastern connection, illustrated in **Exhibit 7-16**.

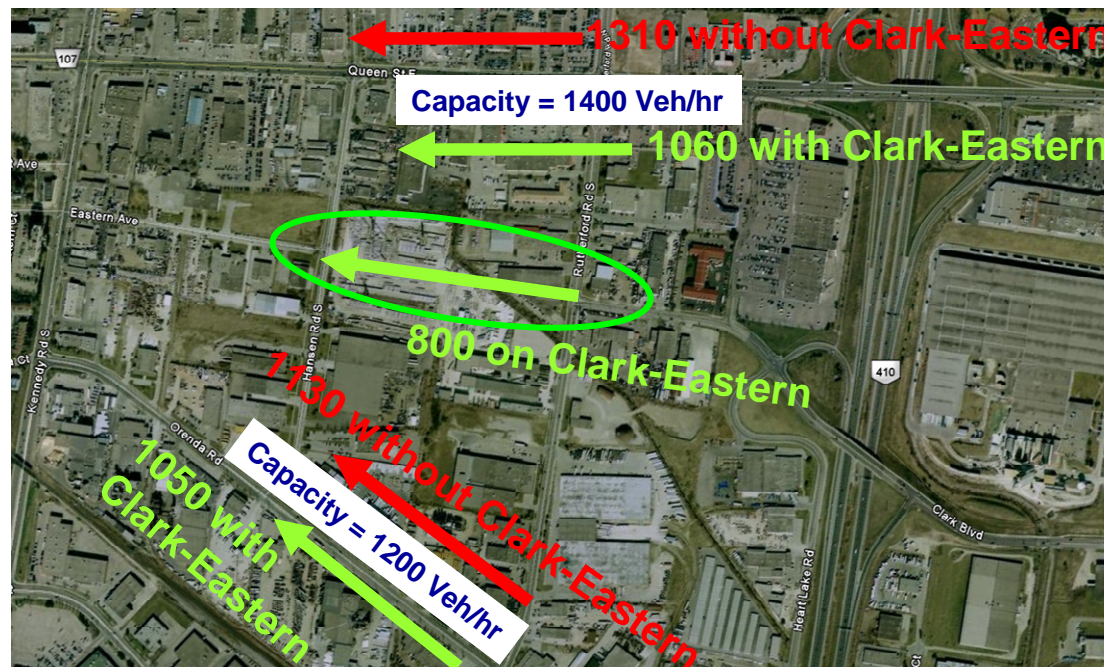


Exhibit 7-16: Clark-Eastern Traffic Impact

Without Clark-Eastern, both Queen Street and Orenda Road are estimated to operate at about 94% capacity. With Clark-Eastern however, this percentage drops to 76% on Queen and 88% on Orenda. 800 vehicles are estimated to use Clark-Eastern during the afternoon rush hour. Besides the relief of traffic from parallel arterials, forced diversion from Clark and Eastern Avenues creates extra side-street friction and intersection operational impacts especially on Queen Street at both Hansen and Rutherford Roads.

While identified in the 2009 Brampton Capital Program for 2016, the recommended timing for the connection should be coordinated with the implementation of the proposed dedicated lanes for the Züm BRT system on Queen Street, one of the key steps in achieving the long-term vision for the Queen Street Corridor. The Clark-Eastern connection will accommodate some of the traffic diversion off Queen Street when two lanes on Queen Street will be dedicated to future BRT service.

Further to the traffic impact and support for the long term vision for Queen Street, the importance of this connection needs to be restated as it provides a vital alternative route with direct access to Highway 410 from the PMH re-development site and other parts of the Downtown Area.

### **John Street Extension**

The John Street extension from James Street to Centre Street, across the Etobicoke Creek, is not currently in the Official Plan. Although it has been recommended in the John Street Feasibility Study, Brampton City Council has directed that John Street must not be carried forward as an extension to accommodate automobile traffic. However, a John Street extension for public transit, bicycles or pedestrians is still a possibility. The alignment of this extension is illustrated in **Exhibit 7-17**.



Exhibit 7-17: John Street Extension

This extension will improve access to the Peel Memorial Hospital, and will be in keeping with the planned vision for the PMH site to be developed into a pedestrian-friendly environment based on health care, education and complementary open space, residential and commercial land uses. The extension will provide an ideal opportunity to accommodate pedestrians and cyclists moving between the Downtown Core and the PMH lands. Because of the benefits of the John Street

extension to PMH, the extension should continue to be protected and further studied with redevelopment plans for the Hospital Area.

A Wellington Street extension through a portion of the PMH site connecting Trueman Street and Wellington Street over the Etobicoke Creek and underneath the Georgetown GO Line was also studied as an alternative to the John Street extension; however, the John Street connection is preferred over the proposed Wellington Street extension based on a comparison of their impacts to the Downtown Core and Hospital Area, their construction costs, and the results of a functional design and benefit-cost analysis study, which concluded that the expense of the Wellington Street extension (at approximately \$37.6 million compared to \$2.3 million required for the John Street Extension) would outweigh any direct or indirect benefits gained by the extension.

Although permitting vehicular traffic to use the John Street extension would have a positive impact on alleviating network congestion in the downtown area, a vehicular connection is not supported by council. Several concerns about a vehicular John Street extension were expressed by the Brampton Downtown Development Corporation. Below is a list of their concerns, listed in their letter to City Council, September 30, 2008:

- John Street is not a viable alternative to Queen, since it is one-way eastbound between Main and Chapel Street
- Queen and James intersection would be too close to a John extension and James intersection
- Negative impact on other streets in the downtown area – especially potential doubling of traffic on Wellington Street and Mary Street
- Potential negative impact on desirability of new developments in the area
- Potential negative impact on attracting businesses both to the Downtown and the City as a whole

The John Street Extension for transit, cyclists and/or pedestrians is recommended for the year 2018.

### **Denison-Mill Connection**

The potential Denison Avenue to Mill Street connection provides a continuous link for Denison Avenue and Church Street via Mill Street. This connection is advantageous to Railroad Street

because the existing Railroad Street connection is less direct. Providing the Denison-Mill connection will draw traffic away from Queen Street, Railroad Street, Nelson Street, and McMurchy Avenue. The potential alignment of this connection, shown in **Exhibit 7-18**, will be located very close to an existing heritage structure (Dominion Skate). A current application for redevelopment of the property provides an opportunity for the alignment to be protected.

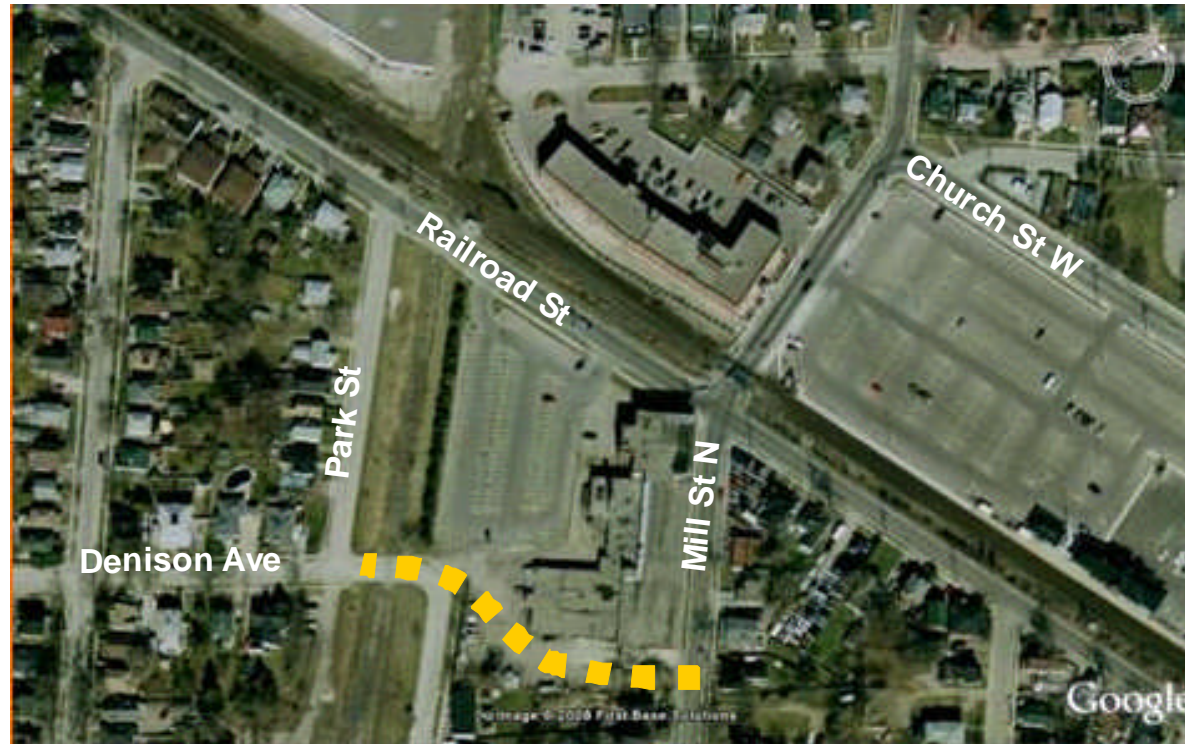


Exhibit 7-18: Potential Denison Avenue to Mill Street Connection

Construction for a connection between Haggert Avenue and McMurchy Avenue is underway, and is circled in green in

**Exhibit 7-19.** The proposed extension to Mill Street further facilitates Denison Avenue as a viable alternative route parallel to Queen Street, in providing more direct access to Church Street (via Mill Street) and the Brampton GO station. It is expected that such a connection will reduce volumes on a busy section of Queen Street between Main Street and McMurchy Avenue.

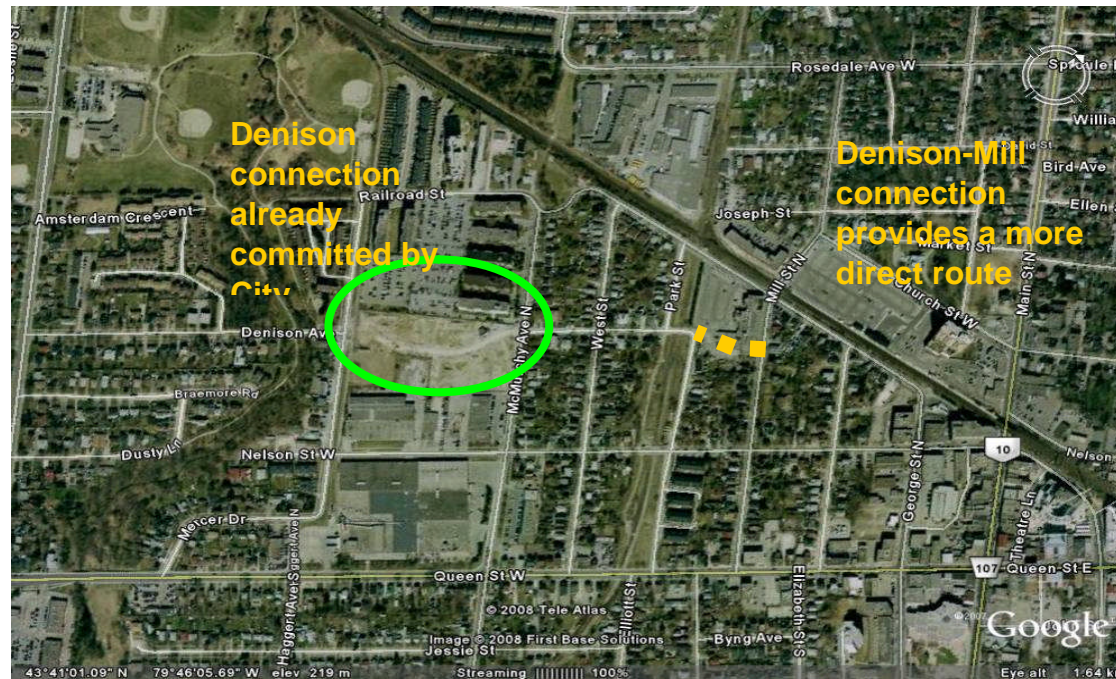


Exhibit 7-19: Denison-Mill Connection

### **Ken Whillans Extension**

The proposed Ken Whillans extension provides an alternate route to Main Street for access to the northeast quadrant of the Downtown Core.

An Environmental Assessment is currently being undertaken for the proposed Ken Whillans extension from Church Street to the intersection of Union and Nelson Streets. The proposed extension is shown in Exhibit 7.20.

The extension is identified in the Brampton 10-year Capital Programme for 2011 and includes drainage improvements.

From a traffic operations perspective, the extension will accommodate peak demands during Theatre events and provide more direct access between the Downtown and neighbourhoods to the north and west. The extension will also provide relief to Main Street during weekday peak commuting periods, as Main Street BRT service is scheduled to begin in 2011.

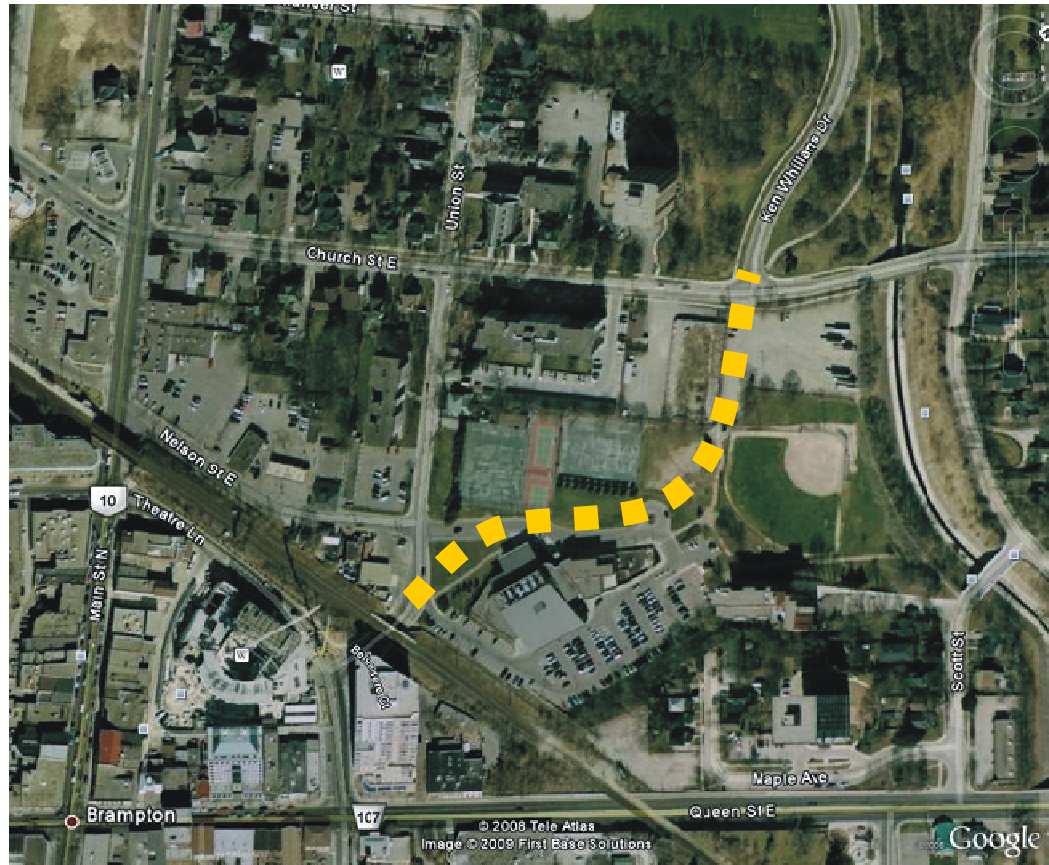


Exhibit 7-20: Proposed Ken Whillans Drive Extension



### **Queen Street EA and Capital Improvements**

The Queen Street Class Environmental Assessment for Centre Street to Highway 410 recommended improvements necessary in the interim leading up to the ultimate long-term BRT / LRT objectives.

Between Centre and Kennedy, a minor widening will be provided, increasing lane and boulevard widths to accommodate increased bus service in the corridor. Widening of the Kennedy Road to Rutherford Road section is needed to accommodate future traffic growth and improve transit service for the planned BRT service, since the corridor has been designated as Transit Priority corridor and urban growth centre in various plans. The centre two-way left turn lane will be maintained to allow access to/from driveways/ properties. From Rutherford Road to Highway 410, the existing seven-lane cross section is maintained while the existing lane widths would be reconfigured to provide an alignment and lane widths that are consistent with the widened section between Kennedy Road and Rutherford Road, and include HOV in the westbound curb lane

The need for the capacity improvement between Kennedy Road and Rutherford Road is reconfirmed in this Brampton 2009 TTMP. Traffic forecasts for 2031 show a demand greater than the four-lane capacity of 1,600 vehicles / hour / lane. Despite being an interim solution, demand and transit service will definitely require a solution and attempting to provide increased bus service in congested conditions would likely be ineffective. The widening for HOV and transit then firstly alleviates the congestion experienced by auto users, secondly will allow for more reliable transit services, and thirdly promote high occupancy vehicular travel. HOV lanes are proposed to be implemented as part of a larger HOV network such as HOV lanes on Queen Street east of Highway 410 or HOV lanes on Highway 410.

The long term vision for Queen as per the Queen Street EA is for an urban street – pedestrian and cycle friendly with rapid transit operating in a dedicated centre median right-of-way. The improvements recommended by this EA, which are currently underway, are the first step towards achieving this goal.

### **Queen Street Access Management Improvements**

Further to the interim lane, boulevard, and capacity improvements discussed in the previous section, access management on Queen Street from Centre Street to Highway 410, is identified as an important improvement in support of the ultimate vision of Queen Street and accommodation of future BRT. A conceptual interpretation of the vision for Queen Street is illustrated below in **Exhibit 7-21** where the BRT system would be operating in the median lanes along Queen Street. Access and travel across the BRT median lanes would not be permitted except at signalized public road intersections where there would be transit stops for the BRT. As such, all private driveways along Queen Street will be restricted to right turns only in the future.

Even if all existing private driveways were restricted to right turns only, there are too many driveways along Queen Street to effectively move traffic and to safely accommodate pedestrian / cycling movements. Accordingly, consolidations and relocations of driveways to side roads / cross streets are recommended to minimize the number of conflict points along Queen Street.



Exhibit 7-21: Ultimate Vision for Queen Street

While driveway consolidations were examined as part of the interim improvements to Queen Street, an Access Management Guidelines Study is recommended in the short to mid term. This study will identify a driveway elimination strategy for Queen Street, preliminary recommendations, and plans showing side or rear lane access to local cross streets, as part of plans to achieve the ultimate vision for Queen Street.

### **Downtown Access Plan**

In addition to access improvements along the Queen Street Corridor, the need for a detailed access plan for the Downtown Area around Queen and Main Streets has also been identified. Such a study should deal comprehensively with transit (higher-order transit, Züm), car access and parking, driveway spacing, pedestrians, and cyclists. Co-ordination with or even consolidation with the Queen Street Corridor Access Management study mentioned above should be considered.

### **7.9.3 Improvements Previously Considered but Not Recommended**

Seven other road improvements have been considered but are not recommended for various reasons:

1. Wellington Avenue extension over Etobicoke Creek and under the CN railway
2. Royce Avenue extension over Fletchers Creek
3. Wellington - Fleming connection (jog elimination and at grade CN crossing)
4. Scott Street connection to Ken Whillans Drive
5. Harold Street / Clarence Street connection
6. McMurchy Avenue / Pleasantview Avenue grade separation
7. Church / Archdekin connection

The Wellington Avenue extension over Etobicoke Creek and under the CN railway was assessed in detail in the Clark-Eastern Feasibility Study and from a benefit-cost perspective, the extension was not feasible given its significant capital cost of construction and property acquisition (in the Hospital Area). The 2009 TTMP confirmed that the John Street extension could accommodate similar travel demands and provide the same role and function without the significant cost and impact.

The Royce Avenue extension was also assessed in detail in the Clark-Eastern Feasibility Study and the capital cost of a structure over Fletchers Creek and the environmental impacts were the two key factors that made this improvement not viable from a benefit-cost perspective. The forecast travel demands that could be accommodated with the extension will not outweigh the cost and environmental impacts.

The Wellington – Fleming connection was first assessed in detail in the Clark-Eastern Feasibility Study and from a benefit-cost perspective. The improvement was not recommended primarily since the Royce Avenue extension over Fletchers Creek and the Wellington extension over Etobicoke Creek and under the CN railway were neither viable nor feasible. The 2009 TTMP reconfirmed that improvements in this middle section of Wellington Avenue cannot be supported with low forecast demand on a future road network without the Royce Avenue Extension or the Wellington Extension over Etobicoke Creek.

The Ken Whillans Extension EA study assessed the Scott Street connection alternative. This improvement alternative does not provide the same relief to Main Street as the preferred connection to Union Street / Nelson Street.

The Harold Street / Clarence Street connection was not recommended to be carried forward due to significant property costs created by the realignment of the jogged intersections. Growth in traffic on Harold Street and on Clarence Street is not expected to increase significantly based on the 2009 TTMP and their current alignments and intersections on Main Street can continue to accommodate forecast travel demands.

The McMurchy Avenue / Pleasantview Avenue grade separation was initially proposed as a relief to Main Street. The unavailability of property and the traffic impacts on Pleasantview Avenue are two key factors / issues that would be significant to overcome from a benefit-cost and community impact perspective. The relief to Main Street is not sufficient to overcome these two issues.

The Church / Archdekin connection was initially proposed to create a similar parallel route to that of Clark-Eastern north of Queen Street. However, property acquisition and the existing high school are the two key reasons that this alternative would have significant roadblocks in both the short and long term to overcome. The 2009 TTMP confirmed that the additional traffic gained on Church / Archdekin to relieve Queen Street would not justify its implementation over the impacts and costs of this alternative.

#### 7.9.4 Central Area Final Road Network Recommendations

The 2009 TTMP Study confirms that the following transportation improvements be carried forward in the Central Area:

- Coordinate the construction of the Clark-Eastern connection with the implementation of Züm and mixed traffic lane reductions on Queen Street that would occur at the same time
- Include consideration for a non-automobile John Street connection between James and Centre Street as part of the redevelopment planning for the Peel Memorial Hospital precinct, with a view to improving transit/cyclists/pedestrian access. Construction is after the implementation of the Clark-Eastern connection
- Include the Denison-Mill connection in the DC / Capital Plan and construct when redevelopment of the Dominion Skate property is undertaken by the private sector
- Construct Ken Whillans Extension between Church and Union Streets and associated drainage improvements
- Implement the Queen Street capacity improvements between Centre Street and Highway 410 recommended in the Environmental Assessment for the same section

The implementation of these improvements will accommodate and support redevelopment and intensification of the Downtown Core and improve local access between the Downtown Core and adjacent neighbourhoods currently constrained by lack of north-south and east-west capacity. The improved road network will benefit emergency vehicle access to the Peel Memorial Hospital and generally support its redevelopment. The recommended improvements will also better manage Queen Street traffic congestion and assist in achieving its ultimate vision – improving the level of service for BRT and providing enhanced network flexibility and continuity.

The final recommendations for improvements to the road network in Central Brampton are summarized in **Table 7-6** and presented in **Exhibit 7-22**.

Table 7-6: Recommended Central Brampton Improvements

Improvement	From	To	Recommended Timing*
Queen Street EA Recommendations	Centre Street	Highway 410	Capital improvements underway
Ken Whillans Extension	Church Street	Nelson Street / Union Street	2011**
Clark – Eastern Connection	Kennedy Road	Rutherford Road	2016
John Street Extension	James Street	East of Centre Street	2018
Denison – Mill Connection	Park Street	Mill Street	Long-term improvement
Queen Street Access Management Improvements	Centre Street	Highway 410	Long-term improvement

\* Recommended timing based on Brampton 10 year capital program \*\* Timing may be deferred based on ongoing EA and current issues

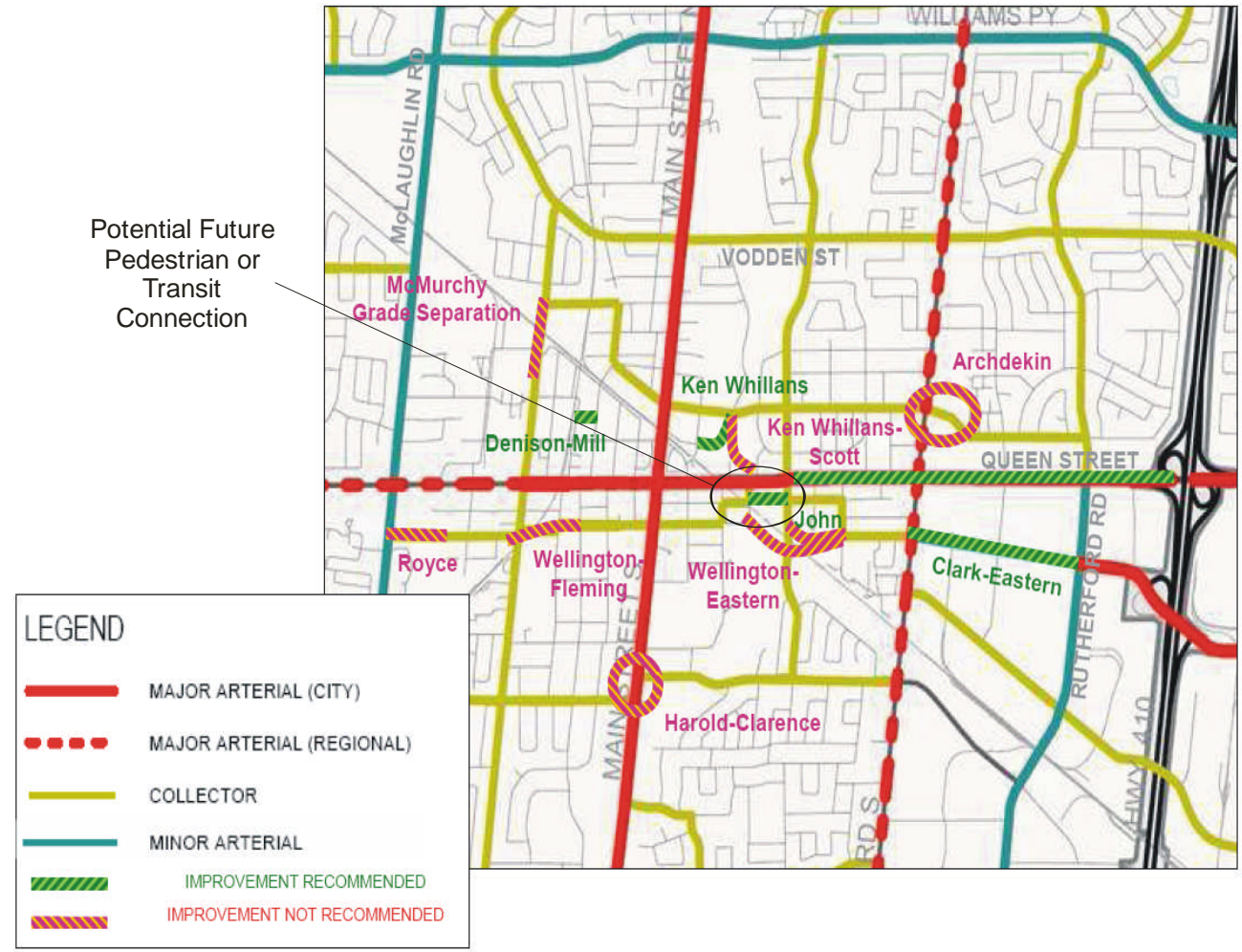


Exhibit 7-22: Brampton Central Area Recommended Road Improvements



## Section 8

# Air Quality Strategic Directions

The sustainable transportation approach adopted in the 2009 TTMP update considered more than just the needs of transportation network. Transportation is essential to achieving the City's economic, social, and environmental goals but is proven to have detrimental effects on air quality and, in turn, on the well being of the community.

### 8.1 AIR QUALITY VISION

The City of Brampton will move towards a sustainable future with improved air quality through walk, cycle and transit supportive land use planning. Higher density urban form, in step with the *Provincial Places to Grow Plan*, development of a stronger transit system as defined in this document and in the *AcceleRide* (now *Züm*) *Strategic Implementation Plan*, promotion of active transportation through its *Pathways Master Plan*, and promotion of carpooling through the *Smart Commute Brampton-Caledon* initiative described in **Section 4.6** will transform the City's transportation system into one that is cleaner, healthier and more efficient.

The 2004 TTMP vision identified improved air quality as one of its major goals. Improved air quality was also the fundamental assumption governing the recommendations of this TTMP. The policies promoted in this document promote an integrated and efficient transportation system in support of a vibrant economy that can be achieved in conjunction with a healthier environment and better quality of life.

## 8.2 EMISSION SOURCES

The amount and sources of pollution that flow within or into Ontario varies by pollutant. It is a function of the location of the sources as well as the characteristics of the pollutant itself.

Statistics have shown that in the case of some pollutants, approximately 50% of pollutants in Ontario come from the United States. According to the Ontario Ministry of the Environment report entitled “*Transboundary Air Pollution in Ontario*,” monitoring stations in Ontario have determined that on high PM<sub>2.5</sub> days (a pollutant linked to health impacts), 27% come from Ontario, 55% from the United States, and 18% from background sources (other areas).

Transportation (including transit) sources emit significant quantities of substances that directly impact the health of humans and change the climate. Worldwide emission estimates of substances that cause climate change indicate transportation sources account for approximately 24% of equivalent carbon dioxide (CO<sub>2</sub>) emissions. In Ontario, the transportation sector is responsible for approximately 26.4% of the nitrogen oxide (NO<sub>x</sub>) emissions and 41.8% of the carbon monoxide (CO) emissions, but only 0.3% of the PM<sub>10</sub> emissions province wide. Studies indicate that both the number of vehicles and the distances being driven in Ontario are increasing, whereas emissions from each vehicle are decreasing as a result of improved engine technologies. It is also evident that much of the air pollution problem arising from urbanization is related to motor vehicle use.

## 8.3 GREENHOUSE GAS EMISSIONS MODELLING

Using the TTMP Transportation model, greenhouse gas (GHG) emissions produced by auto travel during weekday peak periods (6 hours) are estimated following a method first developed in the Transport Canada Study entitled *Costs of Urban Congestion in Canada*. As the sources of air pollution are many, it is noted that this model is a simple measure of effectiveness, focused only on emissions caused by the volume of auto travel on roads within the boundaries of the City of Brampton, estimated for weekday auto travel during the AM and PM peak periods. The 2031 GHG emissions levels have been decreased by 24% relative to 2006 to account for advances in

transportation technology and fuels applicable to small and large passenger cars. The 24% 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>).

The results of the GHG modelling in addition to other network performance indicators were presented previously in this report in **Section 6.4**. This section presented four network alternatives for the 2031 horizon, including a do-nothing scenario analyzing 2031 demand on 2006 transit and road network, improved transit network with 2006 road network, 2004 TTMP recommended transit and road network, and finally the 2009 TTMP recommended transit and road network. **Table 8-1** below summarizes the GHG emissions predicted by the transportation model for each TTMP alternative.

Table 8-1: Modelled Greenhouse Gas Emissions

	2006 Model	Alternative 1	Alternative 2	Alternative 3	Alternative 4
Lane-km	1,655	1,655	1,655	2,474	2,558
Congested lane-km	149	960	934	516	407
Peak hour % Network congested (lane km)	9%	58%	56%	21%	16%
<b>Annual GHG (tonnes/ weekday peak periods of auto travel)</b>	<b>188,200</b>	<b>422,788</b>	<b>404,548</b>	<b>303,316</b>	<b>292,296</b>
<b>Annual GHG per capita (tonnes/ weekday peak periods of auto travel)</b>	<b>0.42</b>	<b>0.56</b>	<b>0.53</b>	<b>0.40</b>	<b>0.38</b>
Lane-km per 1,000 persons	3.66	2.18	2.18	3.26	3.37

\*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>).

With the City's population predicted to grow from 452,000 in 2006 to 758,000 by 2031, total greenhouse gas emissions are expected to almost double without any transit or road network improvements. With the implementation of 2004 and 2009 TTMP transit and road improvements annual weekday peak periods auto travel GHG emissions per capita are estimated to decrease by 2031, further improving the quality of life for Brampton's residents. It is important to note that in 2006, much of the City's developable area had yet to be built and that by 2031, all of the urban land will be filled in. A measure of available road supply, lane-km per 1,000 persons decreased from 3.66 in 2006 to 3.37 in 2031, meaning that as demand for travel increases, supply of road infrastructure decreases which is inevitable as the City matures.

## 8.4 POLICIES AND PROGRAMS

In addition to transit and road network improvements and strategies to reduce overall auto demand and congestion, there are a number of options for policies and programs that the City can implement to help improve air quality. These options include but are not limited to the following:

- Public Education and Consultation
- Command and Control Options
- Various Methods for Charging Users
- Subsidy Options
- Governance Options
- Municipal Act
- Local Offset Approaches
- Local Roads Infrastructure
- Fleet Mix
- Revising Zoning
- Reducing the Number of Vehicle Kilometres Travelled

- Technology Improvements
- Street Washing
- Installing “Pervious” Concrete Edges Along Roadways

Detailed descriptions of the above options including a sampling of case-study jurisdictions where some of these solutions are currently being employed are provided in **Appendix G**.

In addition to the above items, the City shall continue to support its on-going sustainable transportation initiatives in walk, cycle, and transit supportive land-use planning, transit service improvements, providing a continuous pathways and trails system, and finally promoting TDM initiatives like Smart-Commute Brampton-Caledon. In doing so, the vision set forth in the 2004 TTMP and adopted in the 2009 TTMP for improved air quality and a high quality of life can be achieved.

The City is also encouraged to develop its Air Quality Strategy, a master plan document that will provide an in-depth assessment of the existing and future air quality conditions, undertake stakeholders and community consultations and apply professional air quality data and modelling to establish goals, an action plan, timing and an implementation cost of the Short to Long Term Air Quality Strategy.

The following steps are proposed to arrive at a forward looking strategic direction to develop a comprehensive air quality strategy and implementation plan for the City of Brampton:

#### **STEP 1: Hold a One-Day Facilitated Think Tank**

This meeting should involve decision makers from at least the transportation, health, parks & recreation and legal departments of the City of Brampton. This City-wide diversity may need to be augmented with some members of the Regional Air Quality working Group. The day would consist of setting a goal (outline for a long-term air quality strategy for the City) and presenting the full range of options for improving air quality within various categories (education, health, command &

control, charging, subsidy and governance). A couple of examples of thinking outside of the box would also be presented. The output from this meeting would be a list of possible options and a second list of those options that were considered to be non-starters in Brampton. This would provide a multi-departmental series of options that could be taken away and costed and examined in more detail.

### **STEP 2: Prepare an Air Quality Strategic Plan for Brampton**

The information from Step 1 would be examined in more detail, costed and evaluated against Brampton's long term strategic development plan goals. A ranked series of options would be developed and the top 10 (or more) built into an Air Quality Strategic Plan for Brampton. Each potential option would be evaluated against the following stated Brampton future objectives:

- To be a dynamic urban community
- To be a sustainable community
- To have a compact and transit-oriented structure
- To celebrate and preserve its unique cultural and natural heritage
- To be a multi-dimensional, full service urban economy with ample live-work opportunities
- To have building pathways as part of an integrated transportation system;
- To have transit oriented communities
- To protect, restore and enhance natural, cultural, recreational and urban open space systems
- To manage operational programs / services in an environmentally conscious way
- To be developing new environmental initiatives to meet future challenges
- To develop policies and strategies for air quality protection from municipal and residential sources
- To ensure that projects build on the greenbelt plan
- To estimate implementation costs, implementation staging and action plan

## Section 9

# Financing Requirements and Options

### 9.1 2009 TTMP FINANCING REQUIREMENTS

The cost of the road program, inclusive of road widening, new construction, reconstruction, road related transit improvements, property acquisition, studies, and other investments will add up to approximately \$1.68 billion. The cost of the road related transit program is expected to reach \$116 million by 2018.

The overall estimated cost of capital improvements for road reconstruction and widenings is \$723 million. To accommodate new growth, the City will have to construct new roads for the total cost of \$255 million, reconstruct and erect interchanges, overpasses and rail grade separations at an estimated cost of \$101 million, invest in transit, and upgrade traffic operations capabilities at intersections. The costs of constructing then widening the Bramwest Pkwy /NSTC from Heritage Road over to Hwy 407, north to Embleton Road at eight-lane cross-section, widening of NSTC from Embleton Road to Bovaird Drive from six to eight -lanes, as well as the extension of the facility from Sandalwood Parkway to Mayfield Road will account for an additional \$70.3 million. The cost of land acquisition for BramWest Pkwy/NSTC, widening of the corridor to eight -lanes, and the extension to Mayfield Road is estimated to add up to \$40.4 million.

Table 9-1: Summary of Road Investments by 2031

Program Item	Estimated Cost (\$M)
Road Improvements	\$1,043.4
New and upgraded structures	\$101.4
Intersections and sidewalks	\$148.7
Road related transit improvements	\$116.0
Transportation studies	\$3.2
Property costs	\$214.9
Other costs	\$51.8
<b>Total by 2031:</b>	<b>\$1,679.4</b>

The planned quota of population and employment growth and the decrease in level of service as compared to the present could provide opportunities to recover most of the cost of road construction and road related improvements through the growth component of the City of Brampton Development Charges. Other road related projects and improvements recommended by the TTMP could also be financed by DC funds. However, a portion of the program will have to be financed from other sources. Details of Development Charge supported road investments are discussed in the *DC Background Study Report*.

Growth related transit investments identified in 2004 and in the current TTMP are eligible for Development Charge funding as well. However, DC eligible transit services and service levels will not recover all the costs even though a significant amount of transit funding will be needed to accumulate and manage growth within the City. The \$229 million of transit investment required by 2018 identified in the 2009 Development Charge Background Study Report includes vehicle procurement for conventional and Züm services and the cost of providing stations, stops and



shelters, control centres, maintenance facilities, a surveillance system, building transit terminals, and lay-over loops. Expansion of Züm services beyond 2018 will require an additional \$47 million in vehicle procurement and station / stops cost alone.

Especially given the level of transit services planned for in this report, significant increases to operational funding will be required. Funding is typically received for infrastructure and capital requirements, but very little is money allocated to running the system once the infrastructure is in place.

A consistent source of funding would alleviate this issue, but securing sustainable transit funding has been an ongoing issue for the City. Although recently higher interest in mass transportation spurred new transit funding opportunities provided via Federal and Provincial programs such funding sources are usually not intended to secure long term financing for transit operation, maintenance, or expansion.

## 9.2 CURRENT FINANCING SOURCES

The City of Brampton is currently receiving both federal and provincial funding from a variety of programs. These sources are summarized in this section.

### 9.2.1 Federal

#### **Canada Strategic Infrastructure Fund (CSIF)**

A total of \$6 billion over the period from 2001-2013, designed for key strategic investments in urban transit, highways, sewage treatment and flood mitigation. Investments from this fund are project-specific, and required provincial and/or municipal matching funds. It has been replaced by the Building Canada Fund.

#### **Gas Tax Fund (New Deal for Cities and Communities)**

Consists of an ongoing transfer of funds from the federal government to municipalities. Amounts have been rising from \$600 million per year in 2005-06 to \$2 billion per year starting in 2009-10 and

continuing at that level. The total for all of Canada represents \$13 billion over this entire period. The funds are generally allocated to municipalities on a per capita basis and are to be used for “environmentally sustainable municipal infrastructure.” Eligible expenditures include public transit, water, wastewater, solid waste, community energy systems, as well as local roads, bridges and tunnels, and active transportation infrastructure (e.g. bike lanes) that enhance sustainability outcomes. Funds must result in net incremental capital spending on public transit infrastructure. There cannot be any reduction in capital funding provided by the municipality and the funds must be used within three years of receipt. Funds have been fully allocated to several Transit projects including the Transit Sandalwood Facility, Smartbus, Fare Collection Equipment, and Buses.

#### **Public Transit Fund**

A one-time investment of \$400 million exclusively for transit capital across Canada in 2005-2006, allocated on a per-capita basis to provinces and territories, and then primarily on a ridership basis within provinces. The Ontario share is \$155 million. Funds have been fully allocated to the Transit Sandalwood Facility.

#### **Public Transit Capital Trust**

A one-time investment of \$900 million exclusively for transit capital across Canada in 2006-2009, delivered through a third-party trust for the benefit of the provinces and territories, allocated on a per-capita basis, and then on a ridership basis within provinces. The Ontario share is \$352 million.

#### **Transit Secure**

Funding of \$110 million for an Immediate Action Plan to enhance the security of Canada’s passenger rail and public transit systems. Operators of passenger rail and transit systems are eligible for funding to undertake security assessments and develop plans. This program is application-based, with a focus on risk management, and provides funding on a cost shared basis – 75% federal government, 25% recipient.

## 9.2.2 Provincial

### **Ontario Transit Vehicle Program**

A capital funding program, which ended in 2006, that supported transit systems by covering up to 1/3 of the cost of growth, replacement and refurbishment of municipal transit buses. The Ontario Bus Replacement Program has since replaced this program.

### **Ontario Bus Replacement Program**

A multi-year capital funding program that supports the replacement of municipal transit buses and replaces the former Ontario Transit Vehicle Program, which the province ended in the 2006 Provincial Budget. This program is capped at a maximum of \$50 million per year.

### **Ontario Gasoline Tax**

An ongoing transfer of funds to municipalities exclusively for public transit that has risen from one cent per litre of the provincial gas tax in 2004-05 to two cents per litre in 2006-07, to continue at approximately that level in the future. The allocation is based upon each municipality's proportionate share of the province's population and ridership (conventional and specialized). The funds can be used for either operating or capital costs. These funds have been fully allocated to Transit's operating costs.

### **ReNew Ontario**

A provincial infrastructure investment plan that includes \$2.8 billion in funding for major public transit projects.

### **GTA Farecard System & Farebox Replacement**

A one-time investment for municipal transit systems involved in the GTA Farecard Project to cover up to 1/3 of the capital cost of implementing the GTA farecard system and farebox replacement costs.

#### **Ontario Fall Economic Statement Funding**

A one-time investment of \$600 million to improve and expand public transit. Of this funding, \$300 million is provided to municipalities to address immediate state of good repair needs. Must be used for municipal transit capital expenditures. Of this funding, \$1.8 million has been allocated in 2009 for Brampton Transit's repair and replacements needs.

#### **Metrolinx BikeLinx Program**

A one-time investment for bicycle related infrastructure funding to enhance the links between active transportation and public transit. Must be used to purchase and install bicycle racks on buses as well as for secure and safe bicycle parking. A 2009 capital project has been approved for this purpose.

The City of Brampton should further investigate, develop, and implement sustainable transit funding options sufficient to supplement the Provincial and Federal program funding as well as Development Charge based funding. Protecting for steady and reliable transit funding is fundamental for the development of the City's transit network – a key element of the overall transportation system.

### 9.3 POTENTIAL FINANCING SOURCES

Additional funding for transit and other infrastructure could be provided from the federal and provincial governments, as well as other sources. The following identifies funding programs available to Brampton Transit and the City of Brampton that are not counted as current funding sources, which are identified in the Government of Canada's Budget 2009 and the Province of Ontario's Budget 2009.

### 9.3.1 Federal

#### **Infrastructure Stimulus Fund**

\$4 billion program that covers up to half the cost of infrastructure rehabilitation projects that begin construction in 2009 or 2010.

#### **Green Infrastructure Fund**

\$1 billion program over five years for projects that supports a focus on the creation of sustainable energy.

### 9.3.2 Provincial

#### **Metrolinx**

\$9.1 billion for transit infrastructure as identified by the Province of Ontario's Metrolinx office and via their Regional Transportation Plan.

### 9.3.3 Other Financing Solutions

In the quest to stabilize transit funding, municipalities across North America have been looking into innovative ways of generating additional transit revenues. The menu of potential solutions includes:

- **Property Based Taxation**

In 2001 the City of Hamilton introduced an area rated system of cost recovery for transit services. Allocation to the various service rating areas is determined by transit service mileage within the service area. The City is now investigating two-tier rating models based on charging one transit rate within the given area and no charge for the properties outside the service area, and three-tier rating models that allows further breakdown of transit rates between the Core / Enhanced Service and Standard Service

- **Transit Advertising**

Already utilized by numerous transit agencies and considered viable, although a proportionally insignificant source of revenue

- **Joint Development Transaction**  
Transit geared Private Public Partnership (P3) ventures focused on development and investments in high density-high transit service nodes
- **Cross-Border Leases of Transit Vehicles**  
A method applied by some of the US transit agencies with potential savings of between 3% to 7% of leasing cost transactions
- **Leasehold Interest Transactions**  
Like cross-border leases, this approach has potential savings of between 4% to 10% of the value of the leased asset
- **Farebox Revenue Bonds**  
Involves the issuance of debt bonds by the transit agency guaranteed by revenues collected by operation of the transit system
- **Establishing State (or Province) Revolving Loan / Fund or Infrastructure Banks**

More information on the innovative transit funding methods mentioned above can be found in the Transit Cooperative Research Program (TCRP) Legal Research Digest August 1999, and in the TCRP Synthesis of Transit Practice 32.

## Section 10

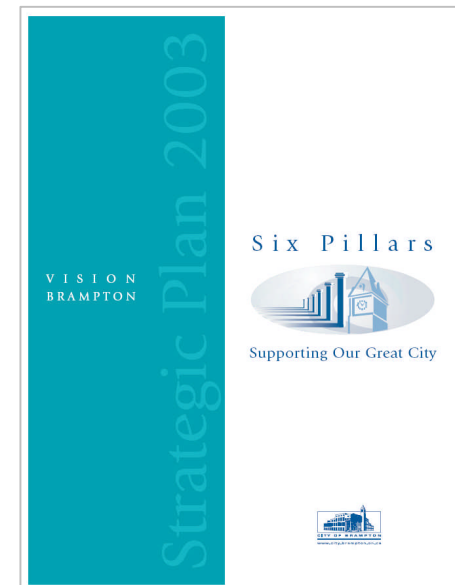
# Policy Directions and OP Recommendations

### OFFICIAL PLAN

The 2009 TTMP is inherently tied to the transportation system vision verbalized in Brampton's Six Pillars Strategic Plan. The Six Pillars Plan called for the development of a modern transportation system:

*"To provide a safe, convenient, economical, efficient, sustainable and energy conserving Transportation System for the movement of people and goods which supports the Official Plan land use designations and encourages the appropriate development of the City Centre, the Central Commercial Corridor and other activity centres, while protecting established neighborhoods, and promoting orderly growth."*

The 2008 Brampton Official Plan takes the ideas in the Pillars plan further and sets out broad objectives for the City's transportation system:



- a) To develop a balanced, integrated and accessible multi-modal transportation system which provides for the safe, economic and efficient movement of people, including persons with disabilities, as well as goods and services
- b) To ensure the provision of adequate and accessible road, transit, pedestrian and bicycle links between Brampton and adjacent municipalities
- c) To promote the development of an efficient transportation system and land use patterns that foster strong live-work relationships and encourage an enhanced public transit modal share
- d) To promote a high standard of environmental management and aesthetic quality in the routing, design, and construction of transportation and associated structures
- e) To work cooperatively with the neighbouring municipalities and the Regions to develop an integrated transportation plan



The recommendations of the 2009 TTMP support the achievement of these broad objectives. Consistent with the current Official Plan (and for the consideration of the City), the 2009 TTMP recommends the following additions / changes to the OP policies.



Table 10-1: OP Policy Recommendations

OP Section	Recommendations
4.4.2 Road Network Schedule B and B1	<p>City road hierarchy and ROW maps should be modified to include new arterial and collector roads identified in area transportation master plan studies and Secondary Plan studies and confirmed by the 2009 TTMP. Further modifications to road hierarchy, ROW, road alignment and location might be prompted by the individual EA process. The new roads hierarchy and ROW include:</p> <ul style="list-style-type: none"> <li>• Spine Road north-south and east-west collectors at 23-26 m. ROW</li> <li>• Countryside Village Rd collector at 23-26 m ROW</li> <li>• Ken Whillans Dr extension proposed minor road</li> <li>• Denison Ave connection Mill to Park south of railway tracks proposed minor road</li> <li>• Denison Ave connection McMurchy to Mercer/Hagert minor road improvements</li> <li>• Addition of north-south connecting link between Hwy 50 to Mayfield Road arterial at 36 m ROW</li> <li>• Addition of 40-100m ROW segment on east-west link between Hwy 50 and Coleraine/north-south link intersection</li> <li>• Recognition that designated ROW widths should be wider at intersections to accommodate turning lanes, and may need to be increased to account for topography, grading, and natural features.</li> <li>• Recognition that widening to 6 lanes in planned BRT corridors needs to consider the implementation of these additional lanes as HOV / Transit-exclusive from the outset.</li> </ul>

OP Section	Recommendations
	<p>The OP policies should also consider recommendations in Metrolinx’s The Big Move Regional Transportation Plan, including the following:</p> <ul style="list-style-type: none"> <li>• The Big Move Policy 2.12, that sidewalks be included on all new regional and local roads inside settlement areas</li> <li>• The Big Move Policy 7.8, that the transportation system be planned, designed, built and operated to create pedestrian-, cycling-, and transit-friendly communities</li> <li>• Wider ROW widths should also include features to create safe crossing environments for pedestrians</li> </ul>
<p>4.4.3 Transportation System and Demand Management</p>	<ul style="list-style-type: none"> <li>• The 2009 TTMP confirms the Official Plan objectives and associated policies related to OP Section 4.4.3 Transportation System and Demand Management</li> <li>• The OP should recognize cycling and walking as viable transportation modes and establish support policies and financial strategies to support proliferation of walking and cycling</li> <li>• Ensure safe movement of pedestrians, especially those with disabilities, throughout the City</li> <li>• Ensure a complete and high-quality sidewalk network on all streets serviced by transit</li> <li>• Ensure separation of cycling lanes from general purpose traffic lanes or high occupancy lanes</li> <li>• Continue creating designated bike lanes on major streets that are used for utilitarian cycling</li> </ul>

OP Section	Recommendations
	<ul style="list-style-type: none"> <li>• Work with other jurisdictions, local road safety or cycling groups to establish an educational campaign for cyclists and motorists on how to share the road safely</li> <li>• Secure bicycle facilities at existing and proposed transit hubs.</li> <li>• Prepare a TSM and TDM Master Plan Reports by 2011</li> </ul>
4.4.4 Public Transit	The 2009 TTMP confirms the Official Plan objectives and associated policies related to OP Section 4.4.4 Public Transit. The OP policies are in agreement with Metrolinx The Big Move plan.
Schedule C	<p>Schedule C should be updated to reflect findings of the 2009 TTMP and include:</p> <ul style="list-style-type: none"> <li>• Extension of Steeles Ave BRT to Lisgar GO Station</li> <li>• Mississauga Rd BRT connection to the planned City of Mississauga BRT service on Erin Mills / Mississauga Rd.</li> <li>• Pending the final recommendation of the Airport Rd BRT Corridor assessment Schedule C should be amended to reflect the recommended corridor</li> <li>• Major Transit Nodes should be expanded to include node categories and node locations as proposed by the 2009 TTMP</li> </ul>
Section 4.4.5 Parking Management	The 2009 TTMP confirms the Official Plan objectives and associated policies related to OP Section 4.4.5 Parking Management.
Section 4.4.6 Pathway System	The 2009 TTMP confirms the Official Plan objectives and associated policies related to OP Section 4.4.6 Pathway System.

OP Section	Recommendations
Section 4.4.7 Trucking and Goods Movement	<p>The 2009 TTMP confirms the Official Plan objectives and associated policies related to OP Section 4.4.6 Trucking and Goods Movement.</p> <p>Further to the Official Plan objectives, the 2009 TTMP makes the following recommendations:</p> <ul style="list-style-type: none"> <li>• Undertake rationalization of truck routes in Brampton to provide for seamless connectivity to the Regional and Provincial goods movement network</li> <li>• Provide high-order goods movement corridor in west Brampton to support existing and future employment areas in Bram West and Northwest Brampton</li> <li>• Provide high-order goods movement corridor linked to aggregate extraction areas in Halton Hills and to the potential GTA West corridor</li> </ul>
Section 4.4.10 Adverse Impacts	<p>The 2009 TTMP confirms the Official Plan objectives and associated policies related to OP Section 4.4.10 Adverse Impacts.</p> <p>Further to OP policies and since transportation (including transit) sources emit significant quantities of substances that directly impact the community, it is therefore recommended that the OP identify the need to develop and implement a comprehensive City-wide Air Quality Strategy.</p>
Section 4.11 Financial	<p>Implementation of the 2009 TTMP, in particular the transit strategy, requires sustainable funding from senior levels of government in order for the vision to be achieved as currently available funding tools are not sufficient. Other sustainable methods of funding should be proactively investigated and implemented to supplement senior government funding and the Development Charge program. The OP should reflect this in its policies under Section 4.11.</p>

## 10.2 WEST BRAMPTON

As the Halton-Peel Boundary Area Transportation Study (HP BATS) is still on-going, recommendations made in the Brampton 2009 TTMP are being co-ordinated with HP BATS, and are subject to any changes resulting from that study. As a result of this coordination, three options are considered for west Brampton:

- Brampton “Super Arterial” 8-lane option
- Brampton Freeway option
- Halton-Peel Freeway option

Analyses undertaken as part of the 2009 TTMP indicate the following recommendations for the West Brampton road network:

- Brampton Freeway option is not preferred due to a lack of connectivity to Highway 401 and right-of-way impacts on the Bram West Secondary Plan Area
- Protect for Brampton Super Arterial in Bram West area and protect for freeway right-of-way north of Embleton, across the Credit River to Mayfield
- Protect for connection in Brampton to potential Halton-Peel Freeway in Halton
- Protect for connection to future GTA West corridor and GTA freeway network
- Protect for goods movement corridor
- Continue co-ordination with HP BATS

### 10.3 NORTHEAST BRAMPTON

Recommendations from this 2009 TTMP are made in following with the recommendations from the Peel-Highway 427 Extension Area TMP, which include:

- Widenings of north-south and east-west roads to serve future development in Northeast Brampton
- Provision of a new north-south arterial road between Clarkway Drive and Coleraine Drive to serve future development in Northeast Brampton
- Protection for a major east-west corridor in Northeast Brampton to connect with a future extension of Highway 427
- Need for studies to assess the future extension

## Section 11

# Plan Monitoring

A sustainable Transportation Plan cannot be fully successful without effective monitoring of the Plan's progress. The growth of the City of Brampton is closely dependant on balanced investments in all modes of transportation including transit services at various levels, roads to serve passenger cars and goods movement, bicycle, and cycle path system services to serve active transportation.

The recommended monitoring plan will rely on observed data measured against set performance targets. The TTMP progress reporting schedule will include annual to 5-year reporting driven by data availability. **Table 11-1** below summarises the recommended indicators, measures data for available targets, and identifies a reporting schedule.

The performance indicator menu should be enhanced by measures to estimate the public's interest and participation in active transportation and TSM / TDM. City wide or focus group surveys can also be considered.

The recommended Air Quality Strategy will address the environmental performance measures as they relate to transportation.

Table 11-1: Recommended Plan Performance Indicators and Measures

Indicator	Measure	Data	Targets Year	Target	Reporting Schedule
Transit Utilization	Transit ridership per capita. Detailed data provided in <b>Exhibit 11-1</b>	Annual transit ridership counts and total population estimates	2006 2009 2012 2015 2018 2021 2031	23 26 28 31 33 35 42	Three year schedule. Targets should be updated in through the subsequent TTMP studies.
Modal shift	Proportion of local transit and GO transit trips in pm peak hour traffic	TTS survey	2006 2016 2021 2031	8.3% 14.1% 16.1% 16.6%	Five year interval to coincide with the release of Transportation Tomorrow Survey data. Targets should be updated in through the subsequent TTMP studies.
Walking and cycling	Modal share of walking and cycling during the PM peak period. Modal share measured as % of all trips (motorised and non-motorised)	TTS survey	2006 2016 2021	3.8% 6.6% 8.0%	Five year interval to coincide with the release of Transportation Tomorrow Survey data. Targets should be updated in through the subsequent TTMP studies.
Road network congestion	V/C ratio on northbound and southbound screenlines, peak direction of travel during the pm peak hour	Cordon count program or City/Regional ATR counts if available	2006 2011 2016 2021 2031	0.75 0.75 0.76 0.82 0.81	Five year interval to coincide with the release of Cordon Count data. The frequency can be increased to three years depending on data availability



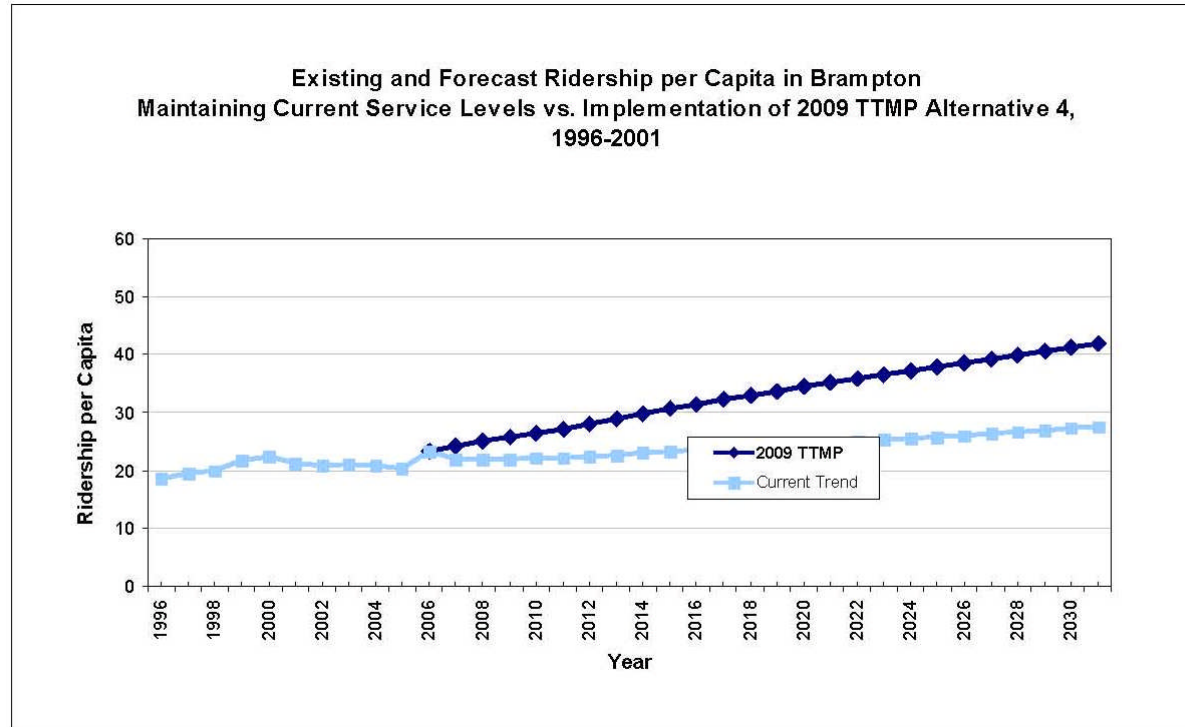


Exhibit 11-1: Transit Ridership Per Capita Targets, 2006 to 2031

## **Appendices**