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**EXECUTIVE SUMMARY**

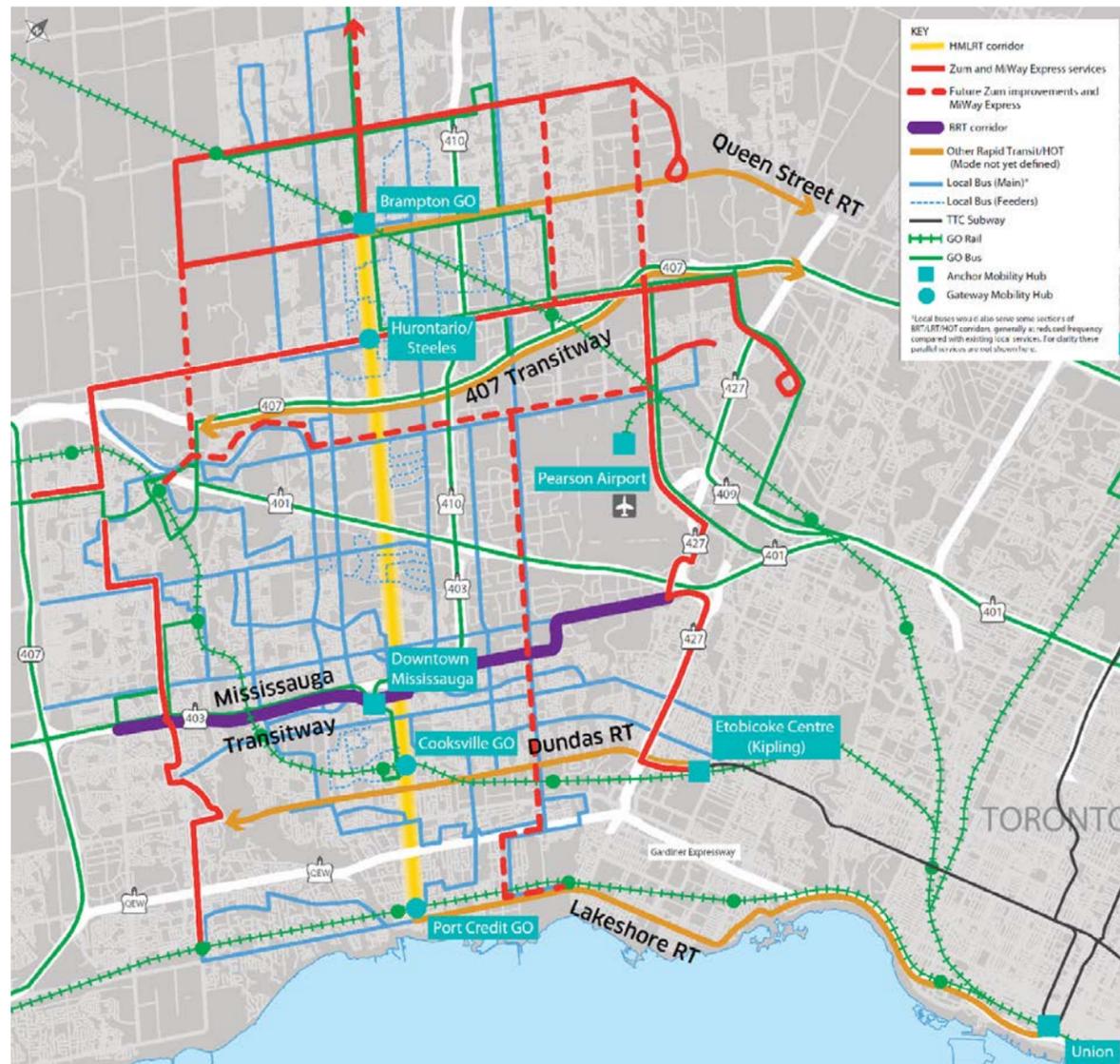
**ES.1 Introduction and Study Process**

**Project Context and Study Area**

Metrolinx, the City of Mississauga and the City of Brampton, as project co-proponents, have completed an environmental assessment for the introduction of Light Rail Transit (LRT) in the Hurontario-Main Street corridor.

The Hurontario-Main Light Rail Transit (HMLRT) Project involves the operation of a high frequency LRT service in the segment of the Hurontario-Main corridor between the Port Credit GO Station to the GO Station in Downtown Brampton, as shown in the regional context in Figure ES-1.

**Figure ES-1: Hurontario-Main LRT Project in the Regional Context**



The general study limits are the Brampton GO Station to the north, the Port Credit GO Station to the south, and the lands within and immediately adjacent to the Hurontario Street – Main Street corridor right-of-way. The study also encompasses the area around Downtown Mississauga, generally within the area bounded by Hurontario Street on the east, Burnhamthorpe Road on the south, Confederation Parkway on the west and the northern limit of the Parkway Belt West on the north.

Chapter 3 and Chapter 4 of this Environmental Project Report (EPR) address the existing and forecast environmental conditions in the vicinity of the project area, and the potential impacts of the proposed transit project, respectively. The area within which the potential effects of the project have been studied varies, depending on the environmental factor under consideration. The overall transportation demand modelling was based on information that covered the Greater Toronto and Hamilton Area (GTHA). For the purposes of detailed traffic modelling, the modelled area was confined to the Hurontario-Main corridor streets, including all significant intersections, with small network areas covering the downtowns of Brampton, Mississauga and Port Credit.

In November 2008, Metrolinx, the agency of the Province of Ontario responsible for improving the coordination and integration of all modes of transportation in the GTHA, released “The Big Move: Transforming Transportation in the Greater Toronto and Hamilton Area.” This Regional Transportation Plan (RTP) identified a rapid transit network to support population and employment growth, and help reduce reliance on the private car. The Hurontario-Main corridor was included in this network and was identified as a top priority project.



In support of the vision identified in the RTP for moving people and goods, and accommodating future urban growth, the City of Mississauga and the City of Brampton initiated the Hurontario/Main Street Study to develop a Corridor Master Plan. As part of the Hurontario/Main Street Corridor Master Plan process (2008 - 2011), the cities developed a co-ordinated vision for the Hurontario-Main corridor that integrated land use, urban design and transportation. The Master Plan, conducted under the Municipal Class Environmental Assessment process and approved by Councils in 2010, concluded that Light Rail Transit (LRT) is the preferred form of rapid transit along the Hurontario-Main corridor.

**Environmental Study Process**

This project is being implemented in accordance with Ontario Regulation 231/08, Transit Projects and Metrolinx Undertakings (Transit Projects Regulation) of the Environmental Assessment Act. The Transit Projects Regulation exempts proponents of all public transit projects from the requirements under Part II of the Environmental Assessment Act if they adhere to the requirements of the Transit Projects Assessment Process (TPAP). Proponents must follow the prescribed steps in the TPAP within specified time frames, including provision of adequate opportunities for review and comment by a broad range of stakeholders, culminating with the Minister of the Environment’s decision within six (6) months of the start of the process, which is marked by the Notice of Commencement. Once the TPAP has been completed to the satisfaction of the Minister of the Environment, transit project proponents may file a Statement of Completion and proceed to the next phase of the project.

The Transit Project Assessment Process also includes an addendum process for proponents to make changes to a transit project after the Statement of Completion for the transit project is submitted. Modifications to the design and implementation of the HMLRT Project proposed in this Environmental Project Report may occur due to unforeseen circumstances, including: changes in environmental conditions in the corridor that may affect anticipated project impacts and means of mitigating adverse effects; technological advancements; and funding availability. This may result in the project being inconsistent or non-compliant with commitments made in the EPR. Modifications to the project proposals will require preparation of an addendum to the EPR.

**Study Organization**

The project has been established contractually through the City of Mississauga, with the City of Brampton acting as a primary stakeholder. The decision-making/approval functions are provided through a joint Steering Committee comprising senior technical representatives of the two cities.

Technical inputs to the project team from the cities have been provided via the Core Working Team (CWT) with specialist input from an extended working team from all departments within the cities on an as-needed basis. Metrolinx became a project co-proponent in February 2014 and Metrolinx representatives have participated on the CWT since the study's inception. Ultimately, decisions at the technical level were made by a Steering Committee comprising senior staff from the City of Mississauga and the City of Brampton (refer also to Section ES.5 Consultation and Commitments to Further Work).

A multi-disciplinary consultant team led by SNC-Lavalin Inc. has been appointed by the Cities of Mississauga and Brampton to undertake the environmental assessment and preliminary design of the HMLRT Project.

#### **Related Studies**

The Hurontario Main Street LRT Project is being coordinated to align with a number of related studies and initiatives, undertaken by a variety of government agencies, and organizations, which have influenced the investigations conducted for this project, or may influence implementation of the project.

#### **Metrolinx**

##### **GO Transit Georgetown Corridor Planning Study/Metrolinx Georgetown North Improvements**

The GO Transit Georgetown Corridor Planning Study examined the introduction of All Day commuter rail service, including construction of an additional track and two new platforms at the Brampton GO Station, while the Metrolinx Georgetown North improvements initiative addresses service expansion to the Kitchener area. These proposals have influenced design of the Brampton GO Station LRT stop.

#### **City of Brampton**

##### **City of Brampton Downtown Mobility Hub Area Design Plan and Downtown Design Guidelines**

In 2011, Metrolinx identified the Brampton GO Station and transit terminal in Downtown Brampton as an Anchor Hub in the Mobility Hub Guidelines. This study, which is still in progress, considers and consolidates the directions, recommendations and guidelines provided in various regional and city planning policy documents, in conjunction with Metrolinx's RTP and nine key objectives in Mobility Hub Guidelines, to determine a comprehensive vision for the Downtown Mobility Hub Area in Brampton. A number of plan's principal objectives and guidelines have influenced the LRT project, particularly with respect to guideway, stop and adjacent public realm design and connectivity/interface with the LRT.

##### **Queen Street Rapid Transit Project Business Case Analysis (BCA)**

The Brampton Queen Street Rapid Transit project would provide enhanced transit along the Queen Street and Highway 7 corridor from Downtown Brampton at Main Street to the Toronto-York Spadina Subway extension. This 23.7 km corridor would be developed as bus rapid transit, light rail transit, or a mix of both. The BCA recommends that higher-order rapid transit in the Queen Street corridor is desirable; and that a decision on technology requires further study. The decision-making process will influence the way in which the Hurontario-Main and Queen Street transit projects interface, including the HMLRT configuration at the Brampton GO Station.

##### **Hurontario-Main Corridor Secondary Plan**

The City of Brampton is undertaking an Official Plan Amendment and Zoning By-law to implement many of the planning recommendations of the Hurontario/Main Street Corridor Master Plan for lands generally fronting Hurontario/Main Street from Harold Street to Ray Lawson Boulevard.

##### **Heritage, Arts, Culture and Entertainment (HACE) Plan**

The purpose of this plan is to present a new five-year plan prepared by the City and local public stakeholders focused on leveraging growth of the creative economy from key cultural industries represented by Heritage Arts Culture Entertainment (HACE) activities in the Downtown district of Brampton. The plan's goals can be directly related to the

types of benefits associated with implementation of rapid transit (attracting business investment; developing HACE businesses; attracting visitors; and contributing to place branding).

#### **City of Mississauga**

##### **Mississauga Bus Rapid Transit Project**

Phase 1 of the Bus Rapid Transitway is under construction east of Downtown Mississauga. The HMLRT interfaces with the Transitway within Downtown Mississauga and will impact the movement of the BRT through the downtown area. Although the construction of the BRT is outside the scope of the HMLRT works, in order to meet the requirements of the urban form needs of Downtown Mississauga, the HMLRT Project proposals recommend that the conditions established for the BRT in the 2009 EA Addendum be reinstated and that the BRT be run in a tunnel from Rathburn Road to Centre View Drive and Station Gate Road.

##### **Mississauga Downtown21 Report and Master Plan**

The Downtown21 Report and Master Plan, approved by City of Mississauga Council in March 2013, converts the goals established in the City of Mississauga Strategic Plan into a functional and design driven Master Plan. The HMLRT Project supports the Downtown21 objectives of promoting the continued evolution of a liveable, compact, accessible, sustainable downtown centre for the entire city, which will enhance Mississauga's competitive advantage and reputation as a progressive community. The Master Plan forms the basis of the present City of Mississauga Downtown Local Area Plan, zoning and Built Form Standards to support a vibrant pedestrian and transit-supportive environment, and is a key input to developing the LRT corridor through Downtown Mississauga.

##### **Downtown Mississauga Movement Plan**

The Downtown Mississauga Movement Plan is in progress and is being prepared in parallel with, and informing, the work undertaken in the HMLRT Preliminary Design and TPAP Study. This study is examining the concepts and assumptions made in the Downtown21 Master Plan in order to carry out micro-simulation of the expected patterns of movement in Downtown Mississauga to confirm the feasibility of the concept espoused and make any recommendations for changes that would allow the vision of a truly urban Downtown Mississauga to come to fruition.

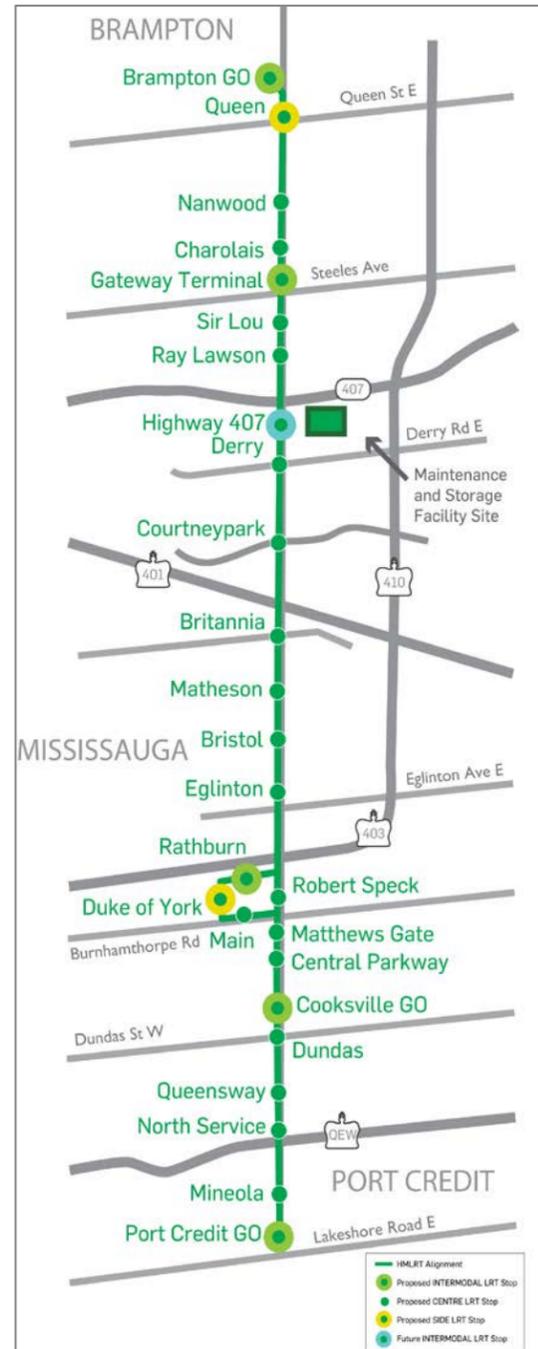
Other public planning initiatives, such as Inspiration Port Credit and One Port Master Plan are related to the area south of the HMLRT Project area established for this environmental assessment. This Master Plan work is ongoing, and has not yet reached a definitive conclusion. While it is a long term project objective to extend the LRT to Port Credit's waterfront, it is recognized that the ongoing Master Plan work needs to be completed before incorporation of this segment of the alignment into the urban fabric can be finalised. The City of Mississauga is committed to completing the Master Plan work, consulting further with the public on integration of the LRT in long range plans for the area south of the Port Credit GO Station stop, and to obtaining council endorsement, prior to advancing further with this segment of the alignment. For this reason, provisions have been made to enable the stop at Port Credit GO to function as a terminus.

## **ES.2 Project Description**

### **General Description and Design Philosophy**

The 23.2 km LRT alignment runs from the Port Credit GO Station in the City of Mississauga to the Brampton GO Station in Downtown Brampton, as shown in Figure ES-2. The alignment is double track throughout, is generally at-grade, and is within the existing road right-of-way, except at the north end, where it leaves the Main Street corridor and runs parallel to the CN Rail corridor into the Brampton GO Station, and along a new connection between Rathburn Road and Hurontario Street north of the Mississauga City Centre. Over most of the route the number of road traffic lanes is reduced to accommodate the LRT tracks. Preliminary design of the alignment is shown in Appendix A.1 of this EPR.

Figure ES-2: Hurontario-Main LRT Alignment and Stop Locations



The proposed LRT line is to have 26 stops, including stops within the Downtown Mississauga City Centre, as shown in Figure ES-2.

The LRT alignment is segregated from other traffic, except at road intersections and along the segment through the Main Street South Heritage Area in Brampton (north crossing of Etobicoke Creek to Wellington Street).

Grade-separated crossings of rail lines, roads and highways, and watercourses generally use existing structures, other than a proposed new LRT underpass beneath the rail lines at Port Credit and a new overpass of Cooksville Creek to accommodate the aforementioned new connection between Rathburn Road and Hurontario Street. There is also a new road underpass to carry Hurontario Street traffic beneath the Queen Elizabeth Way. The vertical alignment generally follows that of the roads on which the LRT runs. At the Brampton terminus, the western part of the stop is located in a cut below part of the current Brampton GO Station parking lot.



The LRT corridor design philosophy builds on the Vision and Guiding Principles set out in the Hurontario/Main Street Corridor Master Plan. The approach for the development of the corridor design introduces a comprehensive 'urban style' LRT that has the following attributes:

- Competitive journey times;
- Journey time reliability;
- Affordable capital and operating costs;
- Make a positive contribution to the "beautiful street" component of the Vision; and
- Minimize adverse impacts.

This project has also adopted a "complete street" approach to the design of the HMLRT Corridor. Planning for a complete street means aiming to create a balance between all modes of movement, by providing space, and amenities to encourage walking, cycling, and transit, in addition to motor vehicles. The aim is to achieve a safe, attractive, and comfortable environment, particularly for pedestrians. The design of the street may differ from area to area, to align with the diverse range of places along the corridor, such as busy urban centres, and quiet residential neighbourhoods. Complete streets have been found to support: the creation of valued places; improved safety; lower transportation costs; improved physical health through walking and biking; and improved social interaction.

Measures that help to achieve these attributes are:

- Maximizing the segregation of the LRT alignment from other traffic;
- Maximizing the amount of signal priority at intersections in favour of LRT;
- Minimizing property acquisition; and
- Developing complementary road traffic measures, such as:
  - Alternative routes for traffic displaced from the LRT route;
  - Changes to bus routes (to provide a complementary and integrated transit network);
  - Provision for pedestrians and cyclists; and
  - Considering the access requirements of frontages.

**LRT System Elements**

**LRT Operations**

The objective of the operational design criteria was to set out specifications that will help ensure reliable service, even during downgraded operating conditions. The operations will also vary to cater to the expected demand throughout the hours of operation. On a daily basis, revenue service is expected to commence at 5:00 a.m. from both terminal stops and end at 1:30 a.m. on weekdays and Saturdays, and operate between 7:00 a.m. and midnight on Sundays. The headway will be adjusted throughout operational service in order to comply with scheduling demands, with a minimum headway of 5 minutes during peak periods and decreasing in off-peak periods. The current operations plan will result in an average operating speed of 27 km/h and a one-way journey time of 47 minutes between the two end stops. This is achieved through partial segregation from other vehicular traffic and providing priority to LRT vehicles at signalized intersections (through the implementation of Intelligent Transportation System components), and the system will operate on an LRT vehicle priority green signal basis. In order to achieve this, the traffic signal system will be optimized, including the installation of an integrated system of location sensors, with specialized traffic controllers that use logical algorithms to define optimum cycle times for an LRT priority system throughout the corridor.

**Light Rail Vehicle**

The light rail vehicles will be multi-section articulated low-floor vehicles, with a maximum width of 2.65 m (excluding rear-view cameras) and a length of about 30 m (although longer units around 40 m long are also possible). Initially, the vehicles will typically be operated in two-unit consists (60 m long). The system has been designed to operate with three-unit consists up to a length of 90 m in the long term. Peak carrying capacity will be in the order of 200 passengers/vehicle, or 600 passengers per 3-vehicle consist.



**Maintenance and Storage Facility**



It is proposed that the HMLRT Maintenance and Storage Facility (MSF) be situated on the provincially-owned lands within the Parkway Belt West bounded by Highway 407 to the north, Hurontario Street to the west, the Hydro One Networks Inc. transmission line and utility corridor to the south and Kennedy Road to the east. It will be connected to Hurontario Street via a dedicated spur line that diverges from the Hurontario Street corridor and runs east on Topflight Drive and north on Edwards Boulevard. The 7 ha MSF will accommodate up to 56 LRVs initially, and 74 over the long term. The HMLRT Control Centre will also be located on the MSF site. The MSF layout is shown in Appendix A.1 of this EPR.

**Power Supply and Distribution**

The system will be designed to provide the necessary power, as well as the voltage range, to ensure proper operation of the trains. The traction power system, consisting of traction power substations (TPSS) and the Overhead Contact System (OCS), will provide 750Vdc to power the trains. Due to concerns related to heritage attributes within the Main Street South Heritage Area and Downtown Brampton, (i.e., between the north crossing of Etobicoke Creek and the Brampton GO stop), an alternative power supply system (the option comprising battery packs or super/ultracapacitors installed on board the LRVs, with no Overhead Contact System) is being carried forward for further investigation of costs and benefits as part of the Detail Design phase. Its implementation is contingent upon final acceptability of financial and technical implications.

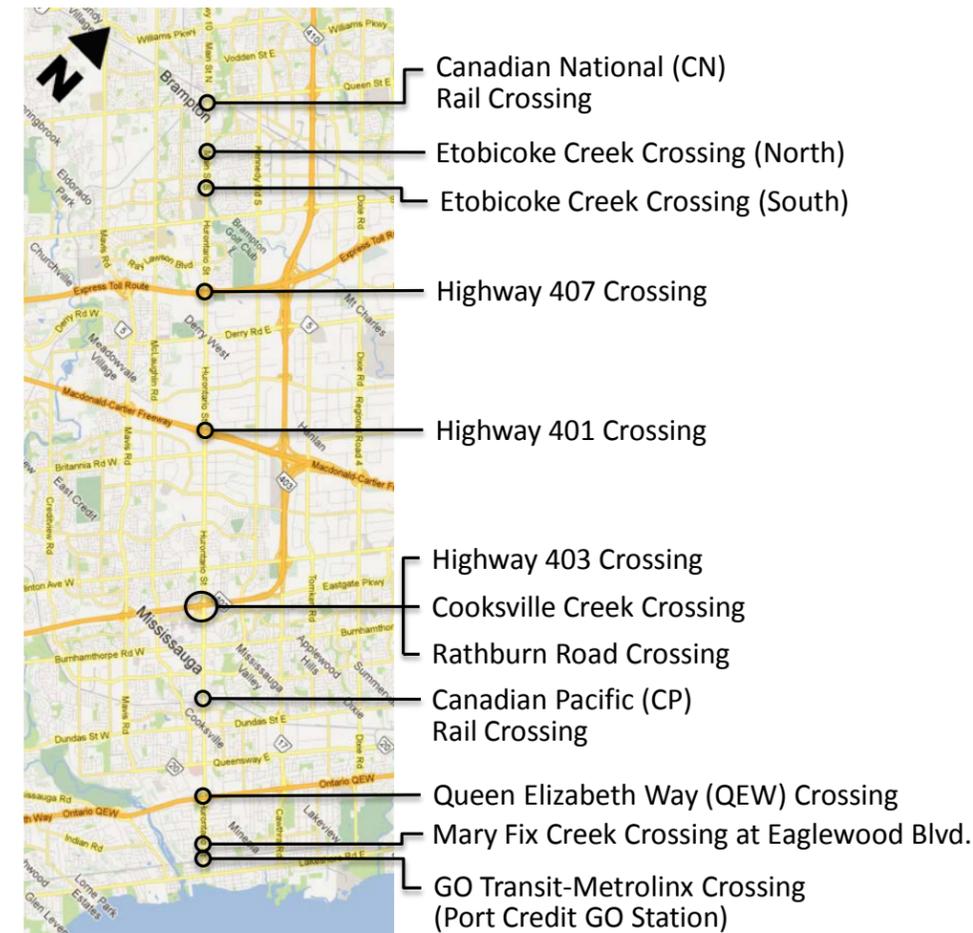


The system will be designed to allow for a single TPSS failure without any degradation of service. A preliminary estimate indicates that 15 TPSS would be needed for the mainline and one TPSS will be provided for the Maintenance and Storage Facility to meet the Service Level to 2031. The preliminary TPSS locations are shown in Appendix A.1 of this EPR.

**Structures**

A number of existing structures are affected by the proposed HMLRT design scheme. In addition, some new structures are proposed. The engineering investigations included an assessment of the condition of all existing structures in the LRT corridor, identified the new structures required, and offered recommendations for the structural work to be completed as part of the project. The structure locations are shown in Figure ES-3.

**Figure ES-3: Key Plan for New and Upgraded Structures**



The proposed structural work, as shown on the Preliminary Design plates in Appendix A.1, include:

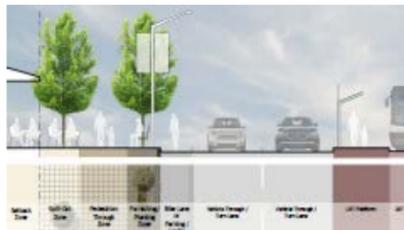
- New bridges at:
  - GO Transit-Metrolinx Crossing (Port Credit GO Station) - immediately west of the existing bridge (box structure through the existing rail embankment);
  - Mary Fix Creek - Eaglewood Boulevard will be extended to Oriole Avenue (west of Hurontario Street) via a new bridge over the Mary Fix Creek channel;
  - Queen Elizabeth Way (QEW) - construction of a new bridge to carry the QEW over the realigned northbound lanes carrying general purpose traffic; and

- Cooksville Creek – west of Hurontario Street to carry the dedicated LRT guideway connection between Rathburn Road and Hurontario Street.
- Replacement of the bridge at Highway 403 to accommodate the LRT guideway, three northbound and four southbound lanes of general purpose traffic in each direction, and multi-use paths on both sides serving cyclists and pedestrians.
- Bridge modifications at:
  - Rathburn Road - removal of existing asphalt and concrete median; installation of rails and rail expansion joints; and construction of a concrete platform;
  - Highway 401/Whittle Road - removal of existing asphalt, concrete median and mass concrete infill; installation of rails; and construction of a concrete slab (Highway 401) and removal of the existing 300 mm pavement structure and median curbs; installation of rails; and construction of a concrete slab (Whittle Road);
  - Highway 407 - load bearing reinforcements; removal of existing asphalt and concrete median; installation of rails and rail expansion joints; and construction of a concrete platform; and
  - Etobicoke Creek North and South Crossings – replacement of the superstructure and rehabilitation of piers and abutments.

**Special Trackwork**

Special trackwork includes crossovers, which allow Light Rail Vehicles to switch from one track to another during normal operations, or in the case of single-track operations where there is an obstruction along a track, or maintenance is being performed. Crossovers are situated at the terminal stops and elsewhere along the alignment to maintain operational headways and allow short turns.

**Streetscape and Urban Design Strategy**



The Streetscape and Urban Design Strategy (SUDS) was prepared as a discrete document and is presented in Appendix A.2 of this EPR. The SUDS is intended to support the re-design of the Corridor from a high speed, vehicle-oriented arterial roadway to a more pedestrian-supportive multi-modal streetscape; one that strengthens the quality and integration of streetscapes with a range of public spaces, transit facilities and key destinations in keeping with the Complete Street concept.

This objective has been pursued through consideration of the following key design strategies:

- Incorporation of a Pedestrian Through Zone over the full length of the HMLRT corridor and strategic introduction of Pedestrian Priority Areas to streets, crosswalks, and intersections typically within 100 m of the access to LRT stop platforms;
- Elimination of street medians to facilitate reallocation of the space to enlarge and enhance the pedestrian streetscape;
- Reduction of pedestrian crossing distances through the removal of dedicated right-turn lanes and reduced curb radii, where feasible;
- Provision of direct pedestrian mid-block connections to LRT platforms from the adjacent streetscape;

- Where bike lanes are to be accommodated, give preference to physically separated lanes, which provide a greater degree of separation from adjacent vehicle and/or LRT lanes, in support of increased safety. Otherwise, consider measures such as sharrows; off-street multi-use trails; two-stage turn queue boxes at intersections with connecting bicycle routes; and provision of bicycle parking in close proximity to LRT stops, intermodal stops, and major transit interchanges, in accordance with the Metrolinx Mobility Hub hierarchy of types;
- Adoption of four principal street typologies (typical and enhanced greenway typologies; typical and enhanced urban streetscape typologies) to respond to the unique conditions along the corridor, while targeting an appropriate level of investment, and providing a consistent approach to the creation of well designed and pedestrian supportive environments; and
- The inclusion of public art as part of creating valuable and meaningful public spaces in the HMLRT corridor.

**Provisions for Pedestrians and Cyclists**

As part of implementing the foregoing Complete Street strategies in accordance with the hierarchy of modes, the level of provision for pedestrians and cyclists in the corridor is to be improved, as shown in the graphic below.



Provision for cyclists is made over the full length of the HMLRT route in the City of Mississauga, and in Brampton south of Steeles Avenue. This is formed by a multi-use trail from the Port Credit GO Station to Queensway, then boulevard cycle lanes from Queensway to Steeles Avenue. North of Steeles Avenue, the bike lanes connect to the City of Brampton off-road trails network, in accordance with Brampton’s cycling policies.

**Regional and Local Transit Interface**

The Hurontario-Main LRT project is being planned as part of the wider transit network, including local and express bus services, and regional GO Rail service (refer to Figure ES-1), and will require changes to the existing network, both in the corridor itself and in the surrounding areas. An outline of the proposed, complementary local bus network is shown in Table ES-1.



**Table ES-1: Outline Strategy for Local Buses in Hurontario-Main Corridor**

Section	Existing Local Services	Proposed Local Services
Port Credit to Downtown Mississauga	MiWay route 19 group	Local service between Port Credit and Downtown Mississauga only, at reduced frequency (initially proposed as 3 buses per hour)
Downtown Mississauga to Bristol Road	MiWay Route 19 group MiWay Route 10, plus others on certain sections	Existing Route 10, supplemented in part by other existing routes, retained to provide local service
Bristol Road to Steeles Avenue	MiWay Route 19 group Brampton Route 2 (part) Brampton Transit Route 52 at northern end	No local services Brampton Transit Route 52 retained
Steeles Avenue to Downtown Brampton	Brampton Route 2	No local services on Main Street Improvements to parallel 'back street' local services

In addition to the LRT on Burnhamthorpe Road, the design will include a new south bus terminal for the Downtown Mississauga area, which comprises provision for approximately 5 routes/buses to use a layby on the north and south side of Burnhamthorpe Road west of Main.

**Land and Property Requirements**

The general approach adopted in developing the LRT alignment has been to fit the route within the existing road right-of-way in order to minimize property requirements outside the existing road ROW. During the preliminary Design process, it was identified that approximately 140 properties will have impacts on their frontages or may require full acquisition.

**Project Implementation**

Experience from other Canadian LRT projects of similar scale and complexity suggest that implementation (design and construction) of the HMLRT Project should take between 3 and 5 years, depending on expectations set by the proponents on the contractors.

The method of project procurement and implementation has yet to be determined. However, consistent with other LRT projects of similar scale implemented recently within Canada, there is a trend to use Public Private Partnerships (P3) or Design-Build type procurement models. In the P3 model, also referred to in Ontario as the Alternative Financing and Procurement (AFP) approach, companies bid through a competitive process to undertake the entire project, including the design, construction, project financing, maintenance and rehabilitation and, in some cases, operation of the system for a defined period of time, typically about 30 years. Design-Build procurement models are similar, but typically do not include the long term maintenance, rehabilitation and operations elements. To date, the City of Mississauga has explored funding opportunities at the federal level through P3 Canada.

It is expected that the HMLRT Project will be implemented in stages. Staging will depend on, amongst other things:

- Confirmation of projected need/demand;
- Available funding;

- Integration with implementation of large site development/redevelopment projects, either as free-standing projects or as part of broader based initiatives (e.g., mobility hubs, redevelopment plans);
- Coordination with other large municipal infrastructure (capital roads/servicing) projects; and
- Procurement model and associated contract structuring.

Staged implementation may apply, variously, to the implementation of LRT stops, traction power substations and/or designated segments of the LRT line.

**Project Investment**

The Hurontario-Main LRT is a significant investment in the future of Brampton, Mississauga and the Greater Toronto Area. The current estimate for the capital cost is \$1.6 Billion. These are the total costs to bring the project into service, acquire vehicles, complete the Detail Design and build the system, allowing for:

- Direct costs of labour and materials, including vehicles and the MSF;
- Construction indirect costs to manage and direct the work; and
- Contingency funds to address unknown conditions.

These costs also include the funds required to bring the project to the market and ensure that the project has strong public oversight; and to acquire lands for the project.

**ES.3 Existing Conditions/Potential Impacts/Mitigation and Net Effects**

The environmental effects of the proposed HMLRT Project were assessed in terms of impacts to municipal transportation and transit services and networks, utilities infrastructure, and the natural, socio-economic and cultural environments, including:

- Road Network;
- Transit Network;
- Cycling and Trail Networks;
- Surface and Subsurface Utilities;
- Urban Structure and Land Use Policy;
- Existing and Forecast Land Use and Employment;
- Socio-economic Environment;
- Noise and Vibration;
- Air Quality;
- Aquatic Ecosystems;
- Terrestrial Ecosystems;
- Hydrogeology;
- Contaminated Property;
- Built Heritage and Cultural Landscapes; and
- Archaeology.

Details of the impact assessment are presented in Chapter 4 of the EPR and summarized in Table 4-13.

**Transit Service and Transportation Network**

The HMLRT corridor is a major arterial in the road hierarchy for the area (refer to Figure ES-1). The number of through traffic lanes along the corridor generally ranges from 2 to 3 lanes in each direction within a right-of-way width ranging from 20 m to 65 m. Posted speeds range from 50 km/h to 80 km/h. The corridor supports a number of commercial nodes where both on-street and off-street parking spaces and loading opportunities exist.

As a key transportation corridor between Mississauga and Brampton, the Hurontario-Main corridor connects to four major east-west highways: QEW; Highway 403; Highway 401; and Highway 407. The corridor also intersects with a number of major, regional roads: Queensway; Britannia Road; Derry Road West; Steeles Avenue; and Queen Street.

There are four main local and express bus transit services operating in the Hurontario-Main corridor, including MiWay and Zum buses, which run between 3 and 6 buses per hour during the peak travel periods of the day and serve relatively long trips between sub-regional nodes in the corridor. There are also several other bus routes that serve shorter lengths of the LRT corridor, as well as routes that use the corridor but do not stop within it.

Most inter-regional transit comprises a network of GO rail and bus services, also shown in Figure ES-1, which provide broadly east-west movements, focused on either Downtown Toronto or the North York area (Finch Station/York Mills and York University). The Mississauga Transitway (Bus Rapid Transit) project will provide a dedicated east-west transit corridor across the centre of Mississauga; it runs immediately adjacent to the HMLRT on Rathburn Road, and its proposed City Centre Station will be close to the LRT Rathburn Road stop and the existing City Centre Transit Terminal.

Both municipalities have existing cycling networks that intersect, travel along or travel parallel to the Hurontario-Main corridor.

The assessment of the HMLRT Project considered changes to existing transit services (in the context of the Ultimate Transit Network Plan for the sub-region) and traffic operations (traffic circulation; permitted and prohibited turning movements; property access; parking and loading provisions).

**Transit Service** - The HMLRT Project will result in shorter in-vehicle time and more reliable service. Most MiWay and Zum local and express bus routes in the Hurontario-Main corridor will be either removed or shortened, since they will be replaced by the HMLRT service. However, the greater stop spacing of the LRT service will result in longer walking distances, which may have an impact on people with reduced mobility. Where warranted, local transit service will be maintained at a reduced transit frequency in order to support those individuals. The details of the routing of the residual service will be developed by MiWay and Brampton Transit during the implementation phase of the project. Taken together, these changes will generate significant savings in bus operating costs through reductions in mileage. In addition, some minor local diversions to routes that currently intersect the corridor without passing an LRT stop are proposed to enable direct bus-LRT transfers. No changes are proposed to the four (4) MiWay routes that run north on Hurontario Street from Downtown Mississauga for a relatively short distance before diverging. On Rathburn Road, the LRT design accommodates stops in close proximity to the LRT for east-west BRT operations, thus enhancing integration of these two high order transit services.



A package of changes to bus routes outside the Hurontario-Main corridor is proposed and is designed to maximize access to the HMLRT route from the surrounding areas, to increase network connectivity and to enable as many riders as possible to use the LRT with only a single transfer.

**Traffic Operations** - Across the majority of the HMLRT Corridor, the impact on general traffic circulation is minimal, as the LRT alignment is placed within the existing road space. The project will result in a reduction in the number of through lanes in each direction, but does not result in any road closures or changes to traffic circulation. Notwithstanding the loss of capacity for general purpose traffic, the corridor will be able to move up to three times the number of people as general purpose car traffic alone, based on current average car occupancy.

At the majority of the intersections along the corridor, traffic signal timing will be altered to provide the LRT with a separate timing period, or turning movements will be separated from through moves, to eliminate vehicle-LRT conflicts. Left-turn movements across the LRT alignment have been banned at five (5) intersections, due to insufficient road space. However, suitable alternative routes are available. Where the LRT guideway results in right-in, right-out only moves from adjacent properties and side streets, U-turn provisions have been strategically introduced at existing intersections to facilitate access. The exception to this is the Main Street South Heritage Area where, for the segment between Harold Street and Wellington Street, vehicles are allowed to make left turns from the LRT guideway. The project will also result in the introduction of seven (7) new signalized intersections in the corridor to enhance traffic progression.

The introduction of the LRT service in conjunction with the various components of the Complete Street concept will result in the loss of loading/unloading areas and approximately 80 on-street parking spots. Every attempt will be made to minimize or replace any parking loss for individual homes and businesses, both in the short term during the construction stages and in the longer term, once the project is constructed and operational. As part of the Detail Design phase of the project, delivery and loading arrangements and potential parking replacement solutions will be formulated and discussed with the affected property owners. To address loss of loading facilities this may include: designate new on-street loading space on the closest side-street; designate on-street loading space where feasible and where on-street parking in the corridor is to be provided; and improve public alleyways and ongoing maintenance (e.g., snow removal) to ensure abutting commercial parcels have access.

A monitoring and complaint process will be in place to ensure that traffic and transit operations are not unduly compromised by construction in the LRT corridor; traffic and transit modifications are operating efficiently during the operational phase of the project; and there is not undue infiltration of through traffic on local neighbourhood streets.

**Surface and Subsurface Utilities**

The sub-surface utilities along the route include: power, telecommunications and signal control, natural gas, fuel oil, petroleum, water, and storm and sanitary sewage. The surface level infrastructure is a mix of surface run utilities, and access and control elements of the sub-surface utilities, including overhead power lines, telecommunications, street lighting, traffic signals, and their supporting infrastructure of poles and pedestals, maintenance access covers, metering, relief valves, control valves, and water hydrants.



The project will result in the need for permanent relocation of both above ground and underground utilities, as well as potential localized traffic disruptions during construction. Lane closures and traffic interruptions during construction will generally be staged to retain some traffic carrying capacity through the work zone. If a total street closure is required for a short period of time, alternative access to businesses and residences will be provided. In those cases, a strategic site-specific traffic management protocol and plan will be developed and implemented. The plan will be designed to reduce disruption to traffic along the corridor. Where restricted access to existing residential, commercial and business properties is to occur as a result of utility relocations, the owners will be notified in advance of the alternative access arrangements.

**Socio-Economic Environment**

The assessment of effects on the socio-economic environment included consideration of transit project's impacts on land use planning, existing homes and businesses, the economic viability of the corridor and adjacent areas, and community cohesion.

**Land Use** - Although it is generally in an urbanized/mature state, the HMLRT Corridor encompasses portions of the urban growth centres identified for Brampton and Mississauga in the Growth Plan for the Greater Golden Horseshoe (GGH). The study area supports approximately 16% and 18% of the total combined population and employment, respectively, of



Mississauga and Brampton. Significant growth is anticipated along the corridor over the next two decades, with population and employment forecast to increase by 59,000 persons and 31,500 jobs. The Eglinton-Bristol and Mississauga Downtown core are forecast to experience close to half (48%) of the projected population growth within the study area. Employment growth is anticipated to be largely directed towards the Mississauga Employment Area and Mississauga Downtown, accounting for approximately 72% of forecast new jobs within the study area to 2031.

In conjunction with the aforementioned growth plan, the Regional Transportation Plan prepared by Metrolinx has identified five mobility hubs within the corridor: Downtown Brampton (Anchor Hub); Hurontario and Steeles (Gateway Hub); Mississauga City Centre (Anchor Hub); Cooksville GO (Gateway Hub); and Port Credit GO (Gateway Hub).



The increased connectivity, reduced automobile use and improved aesthetics associate with the HMLRT Project are expected to increase residential property values and attract commercial and retail development, further driving up the cost of land and increasing intensification opportunities. Furthermore, light rail transit represents a key component of municipal infrastructure, and will help meet provincial growth targets and support long-term visions developed for the City of Mississauga and the City of Brampton.

Establishment of an LRT service can stimulate opportunities for the development of a wider variety of housing choices, helping to build a diverse population looking for an urban lifestyle. It is envisaged that the HMLRT Project will also create opportunities for public investment and the evolution of character areas and neighbourhood identities, building on distinct district visions outlined in local area plans. These factors both contribute to increased demand for land and support the economic viability of the highest and best uses. Since contemplation of the HMLRT Project, there has already been significant development activity along the transit corridor and developers in the corridor are working with municipal staff to facilitate integration of the LRT with their proposals.

**Economic Impacts** - The proposed HMLRT service is anticipated to result in a positive net impact to the local economy and businesses along the route, which can generally be characterized as improved regional competitiveness due to lower costs. The most significant short term economic benefit of the transit project proposal is the creation of employment during the construction phase, expected to be 4,500 person years of direct employment associated with the construction activities and a further 2,500 person years of indirect employment at businesses providing goods and services to the construction project.

In addition to construction employment and local spending, these benefits will be created as a result of improved transportation for employees and customers, and increased densities that can be accommodated as a result of the improved transit network. It has been estimated that residential and commercial property values would increase in the range of 2 to 4%, on average, within 500 m of each LRT stop, translating to a significant increase in tax assessment. Further, the enhancements to the streetscape along the alignment are expected to increase the attractiveness of stores, restaurants and personal services for tenants and customers and increase the profile of the Hurontario-Main Street corridor as a regional destination. Overall, the economic uplift (which excludes the value of development relocated from elsewhere as its base value) has been estimated at \$1.8 Billion by 2031.



The benefits created for transportation users are related to travel time savings, automobile operating cost savings, safety benefits and qualitative transportation benefits, such as reliability and passenger comfort, and have been enumerated in the Benefits Case Analysis for the project.

For most of the businesses in the commercial areas along the alignment, there will be minimal or no negative impact during the operation of the LRT. The permanent loss of parking and loading areas, and measures to address such impacts, have been discussed above. Although much of the proposed alignment will be located within existing rights-of-way, property acquisition (including full and partial takings) will be required at a number of locations - the majority of the land takings are not significant and represent less than 5% of the land area. Several business operations will be displaced to accommodate the alignment, including a bakery/restaurant and a beauty salon in Downtown Brampton.

Construction and operation of the project also has the potential to disrupt or displace special events in Downtown Mississauga (Square One peak season shopping) and Downtown Brampton (Farmers' Market, parades). These impacts will be addressed through strategic scheduling of the HMLRT construction and provisions for short-turning to avoid critical street segments during special events.

The cities are committed to staging and scheduling construction in a manner that reduces temporary impacts during the construction period. A communication protocol with area businesses will be established, in order to ensure that concerns regarding construction activities are addressed in a timely manner, and HMLRT construction and operations will be monitored to identify and address any undue effects.

**Community Cohesion** - Along the corridor, the existing degree of community cohesion varies significantly from place to place. For instance, some urban areas are well connected to the corridor, particularly where there is an established and walkable network of streets and blocks, with sidewalks, trails, and a continuous fabric of busy and higher density developments. Other areas reflect a much lower degree of community cohesion, particularly where the network of streets, sidewalks and/or trails do not frequently connect to the corridor. These areas reflect less than desirable walking distances to LRT stops and other key destinations.

The introduction of the HMLRT will assist the cities towards achieving numerous community cohesion objectives contained within the Hurontario/Main Street Corridor Master Plan and their broader policy frameworks through the creation of Pedestrian Priority Areas along the corridor that facilitates and prioritizes the safe and comfortable movement of pedestrians and cyclists around LRT stops and in adjacent neighbourhoods and at other major destinations; the creation of well-designed areas of transition between the LRT corridor and adjacent neighbourhoods; the provision of safe,

convenient, and continuous cycling routes along, and/or connecting to the LRT corridor; and the inclusion of public art to support the creation or enhancement of valuable and meaningful public spaces.

**Natural Environment**

**Surface Water and Aquatic Ecosystems** - The study area is located within four (4) subwatersheds. The northern segment of the corridor, north of Steeles Avenue, falls within the Upper Etobicoke Creek Subwatershed and falls under the jurisdiction of the Toronto and Region Conservation Authority (TRCA). South of Steeles Avenue to Highway 401 comprises the Fletchers Creek Subwatershed. The Lake Ontario Shoreline East Subwatershed reaches from Highway 401 to the QEW. South of the QEW to the southern limit of the corridor consists of the Norval to Port Credit Subwatershed. These latter three (3) subwatersheds are under the jurisdiction of the Credit Valley Conservation Authority (CVC). The study area is highly urbanized and many of the watercourses have been altered to manage stormwater runoff. There is a high percentage of impervious surfaces, resulting in degradation of natural aquatic features.



The HMLRT corridor will cross Etobicoke Creek twice and Cooksville Creek twice. Mary Fix Creek runs parallel to the LRT corridor and will be crossed once by the proposed relocation of Inglewood Drive. Construction and operation of the Maintenance and Storage Facility will involve installing a new crossing of the Etobicoke Creek East Tributary and potential indirect impacts to a permanent on-line pond on this tributary, as well as relocation of the watercourse conveying overflow from the Highway 407 stormwater management pond situated immediately north of the MSF. Construction is not expected to involve any in-water work, with the exception of rehabilitation of the substructures on the Main Street bridges crossing Etobicoke Creek. There will be no direct impacts to aquatic species at risk.

Environmental design and construction mitigation includes measures to avoid and/or minimize potential impacts to the aquatic environment and surface water through the use of best management practices for erosion and sediment control and excavation dewatering; constraints on construction timing, equipment movement, fuelling and maintenance, and materials storage; use of a debris containment system for bridge works; and appropriate construction period compliance monitoring.

With respect to surface drainage, the majority of the proposed HMLRT alignment will have surface runoff collected and fed into the municipal storm sewer system. The study area is urbanized and the LRT alignment will generally remain within existing roadway allowances where the road sections are already built to urban standards. Consequently, the amount of impervious area will not increase substantially and the impacts on stormwater drainage are not expected to be significant. Where the facilities represent an increase in impervious surface and will result in increased stormwater runoff (e.g., at the MSF site), a stormwater management pond will be constructed to provide prescribed water quality treatment and quantity controls. Low Impact Development measures will also be considered for incorporation in the MSF site design. The flood control wall proposed north of the Port Credit GO Station constitutes a positive drainage control measure, in that it will contain the Mary Fix Creek flows, eliminating the spill to Hurontario Street and the associated flooding of the rail underpass (and adjacent residential lands) for the 100-year and Regional Flood events. A detailed surface water management plan will be prepared and used for monitoring throughout construction.

**Terrestrial Ecosystems** - The majority of the lands within the project area have a high proportion of impervious surfaces and altered landscapes. The natural environment has been subjected to significant anthropomorphic pressure, which has degraded the natural attributes of the remaining vegetative assemblages. All areas examined exhibit significant degradation of historic natural systems. Cultural meadow or groomed open spaces dominate all sites, with a few small remnant woodlots or pockets of planted wooded areas present in some areas. There are also numerous areas where roadside trees and shrubs have been planted as part of landscaping/streetscaping initiatives. With the exception of the valley corridor along Etobicoke Creek, terrestrial wildlife habitat adjacent to the



HMLRT corridor is minimal. The habitat that is present is provided by cultural meadows, cultural thickets, cultural woodlots and isolated forested parcels. These isolated patches are fragmented, relatively small and provide little connectivity for movement.

The HMLRT Project will result in the displacement of approximately 4.6 ha of vegetation and wildlife habitat, as well as the removal a number of street trees. To minimize the effects of construction of the project on those natural and/or semi-natural vegetative assemblages and wildlife habitat found within the project area, and their function as wildlife habitat, the proponents will engage in best management practices for the protection of trees not scheduled for removal, including: preparation of a Tree Protection Plan; implementation of hard and soft landscaping in the corridor, including planting of additional street trees, where opportunities present themselves; compensation/reimbursement for displacement of publicly owned roadside trees; and timing constraints on clearing within the migratory bird nesting/breeding period. Follow-up work will include construction period compliance/effects monitoring and post-construction (warranty period) monitoring of the health of newly planted trees. In addition, supplementary breeding bird surveys specific to species at risk may be required to verify presence/absence of barn swallow and chimney swift use of the corridor, particularly the MSF area.

**Hydrogeology and Groundwater** - Since the extent of earth excavation on the project will be limited in most areas of the project, the shallow groundwater conditions are of most interest. Shallow groundwater exists within the upper weathered shale bedrock and/or perched groundwater in the supper sand lenses and till layers and, within the study area in the City of Mississauga, likely ranges from 3.3 m below grade (mbg) near the CP Rail Galt Subdivision line, to between 3.4 and 6.1 mbg near Courtneypark Boulevard. The general direction of shallow groundwater flow is towards Lake Ontario, and is locally influenced by the creeks that ultimately outlet to Lake Ontario. Several areas along the HMLRT corridor that exhibit groundwater vulnerability to contamination were identified (i.e., where construction may encounter highly permeable (sandy) surficial soils).

Shallow groundwater levels may be temporarily affected if dewatering is required for excavation (guideway/structural/building foundations; utilities relocation/protection). If required, a Permit to Take Water application will be prepared and submitted to the Ministry of the Environment for approval in accordance with Ontario Regulation 387/04, as amended, and the monitoring program prescribed in the permit will be implemented.

**Contamination** - Twenty-five (25) sites previously or currently supporting land uses of concern adjacent to the HMLRT Corridor (defined as automobile service/repair and/or dry cleaning) were identified. These sites were generally identified as having the potential for environmental impact; however, the likelihood of encountering contaminated material will depend on the actual final land takings for the project.

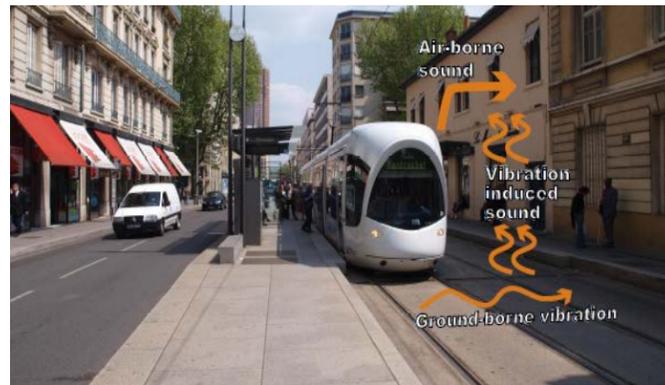
Potential impacts associated with disturbance of contaminated soils include run-off of contaminated materials into watercourses; the airborne transmission of fine contaminated particulates; leaching of contaminants into groundwater; and disposal of contaminated soil removed during construction. The potential for adverse environmental impacts directly within the HMLRT Corridor is very low. The aforementioned areas of concern adjacent to the LRT alignment represent sources of contamination that have the potential for impacts to adjacent sites, including the LRT alignment lands, in the event of leaks or spills. During construction activities, excavations are anticipated; therefore, contaminated soil and groundwater may be encountered. Consequently, more detailed investigations (Phase II Environmental Site Assessments) are recommended at thirteen properties, which will provide information on soil and groundwater at these locations. At the MSF site, Areas of Potential Environmental Concern include the potential presence of fill of unknown origin and quality on the site; and the potential for designated substances to be present in the buildings on the site, including asbestos-containing material, lead-based paint, other designated substances, mercury and silica. Similar concerns, as well as the potential for encountering contaminated groundwater, have been identified at the Highway 403 site of the new LRT guideway. Therefore, Phase II ESAs are also recommended for the MSF and Highway 403 sites.

**Noise and Vibration** - The existing ambient noise within the HMLRT Corridor is dominated by road traffic, light industrial and commercial activities. Existing sound levels range from 55 decibels (Church Street in Brampton) to 72 decibels (Admiral Boulevard in Mississauga), which is typical for a busy urban environment. The noise and vibration impact assessment was completed using accepted protocols for urban transit projects, for 14 representative sensitive receptors

in the HMLRT Corridor, as well as the MSF site and the Traction Power Substations, which were addressed as stationary noise sources.

In most areas along the LRT route, the project will result in a modest reduction or increase in noise (1-2 dB), primarily because of the replacement of general purpose traffic by LRT vehicles. Sound levels can be expected to increase by 1-2 dB along the major parallel streets that Hurontario-Main traffic will divert to. There are no areas along the corridor where there will be a significant (5 dB or greater) change in the sound levels. The only area with a noticeable change in sound levels will be in the Downtown Brampton area, near the Brampton GO Station (increase of 4 decibels). Since the increases in sound levels attributable to the HMLRT Project are well below the guideline level for consideration of mitigation measures (5 dB), noise mitigation is not warranted for any part of the LRT route. Overall, given the distance between the MSF and the nearest sensitive receptor, and given the high ambient noise from Highway 407, an adverse noise impact from the MSF is not expected. Noise control measures are also not warranted for most of the TPSS.

Segments of the corridor are expected to experience both ground borne vibration and sound from vibration created by the LRT operation, particularly at locations situated within 20 m of the LRT tracks and within 50 m of special trackwork. It is assumed that there will be a basic level of vibration isolation installed throughout the system. This will include encapsulated rail (rail embedded in a rubber casing to dampen vibration). For residential receptors located closer than 20 m, various levels of upgraded vibration isolation will be required (e.g., improved encapsulated rail systems or floating slab track). The upgraded vibration isolation will primarily serve to control the vibration-induced noise, but will also reduce the perceptible vibration levels to acceptable levels.



With regard to mitigation of noise impacts during construction, contractors will be required to adhere to provincial guidelines, which place specific restrictions on source equipment sound levels. City of Mississauga and City of Brampton by-laws place restrictions on the hours of operation for all construction activities; contractors will generally be required to adhere to these restrictions. A construction phase protocol will also be developed for addressing noise and vibration complaints in keeping with the cities' standard practice. For the operations phase, a noise and vibration monitoring plan will be considered, along with a complaints protocol.

**Air Quality** - Existing air contaminant levels in the study area are within acceptable thresholds set out in MOE Ambient Air Quality Criteria (AAQCs), with the exception of particulate matter and acrolein, benzene, and benzo(a)pyrene. With respect to inhalable and respirable particulate matter and acrolein, 24-hour concentrations are within the thresholds most of the time, but do exceed them from time to time. In the case of benzene, the annual average concentration exceeds the future annual average AAQC's. The 24-hour and annual concentrations of benzo(a)pyrene exceed their respective AAQCs.

Construction activities will involve heavy equipment that generates air pollutants and dust; however, these impacts are temporary in nature. Ontario Regulation 419/05 under the Environmental Protection Act requires that every measure be taken to minimize emissions and prohibit visible emissions from escaping beyond the contract limits of a construction site. The best manner to deal with the emissions from the construction phase is through diligent implementation of operating procedures, such as application of dust suppressants, reduced travel speeds for heavy vehicles, efficient staging of activities, minimizing haul distances, and covering up stockpiles. To minimize potential air quality impacts during construction, the construction tendering process will include requirements for implementation of an emissions management plan. This is expected to reduce the exposure of the general public and workers on-site to fine particles that can contribute to certain human health effects and traffic safety concerns.

During the operations phase, since the LRT is an electrified rail system, it will not produce any significant local air emissions, but will displace emissions that otherwise would be generated by automobile or bus traffic. Therefore, local air

quality from vehicle-related pollutants along the HMLRT corridor will improve due to the reduced vehicular traffic with the LRT in place. With respect to changes in regional air quality, which were assessed in terms of net reductions in greenhouse gases (CO2 equivalent), the HMLRT Project will result in a net annual reduction in total emissions of 8,573 tonnes, and will thus have a positive effect on regional air quality. The implementation of the HMLRT Project may cause traffic to increase on certain sections of roads off the Hurontario-Main corridor, due to the diversion of some vehicles. The assessment of impacts due to the projected traffic changes indicate that for most of the contaminants of interest, the maximum concentrations will remain within acceptable thresholds at residences and other areas along the corridor, with the highest concentrations typically occurring at residences located at the intersection of major roadways, and at very close proximity. No additional mitigation or project-specific monitoring of air quality is proposed during the operations phase.

**Built Heritage, Cultural Landscapes and Archaeological Resources**- The results of background historic research and a review of secondary source material, including historic mapping, revealed a study area with a rural land use history dating back to the early nineteenth century. Over the course of the twentieth century, the HMLRT Corridor has steadily urbanized, primarily with a combination of residential, commercial and recreational land uses. A total of 24 built heritage resources and 12 cultural heritage landscapes were identified within the study area. There is a particular concentration of such features in the Main Street South Heritage Area of Brampton. The Stage 1 archaeological assessment background study for the TPAP investigations determined that eight (8) archaeological sites have been registered within 1 km of the study areas.



The Hurontario-Main LRT Project has been designed to generally avoid displacing any built heritage resources, adversely affect cultural heritage landscapes, or encroach on areas with archaeological potential. However, the project is situated in close proximity to, or may directly affect several cultural heritage features. Where indirect/direct impacts are anticipated, and avoidance is not possible, mitigation measures will include context sensitive design of the LRT guideway, stops and platforms in areas where cultural heritage resources have been identified; and documentation of resources in advance of alteration will be considered during subsequent design phases. For example, due to concerns related to heritage attributes within the Main Street South Heritage Area and Downtown Brampton, the option, an underground or onboard power supply system instead of overhead wires is being carried forward for further investigation of costs and benefits as part of the Detail Design phase. Its implementation is contingent upon final acceptability of financial and technical implications. Built heritage resources in close proximity to the LRT alignment will be subject to pre-construction building condition surveys and monitoring during heavy construction activity. Additional archaeological investigations will be conducted on lands determined to have archaeological potential, if the final proposed design will impact these lands.

#### ES.4 Permits and Approvals Required for Project Implementation

The HMLRT project will be implemented in accordance with all applicable municipal, provincial and federal laws. Metrolinx, the City of Mississauga and the City of Brampton will obtain the necessary permits and approvals for the construction and operation of the project. It should be noted that Metrolinx is generally not subject to the legal requirements of municipal by-laws, conservation authorities permitting processes, and the Planning Act and, as such, is legally unable to obtain authorizations for these requirements. Notwithstanding, Metrolinx will work closely with all authorities having jurisdiction to achieve conformance to their respective requirements, thereby securing "approvals". This will include engaging in the normal consultation/negotiation processes and submitting the prescribed design information, where appropriate, without formally entering into the permitting process.

The required authorizations will include additional environmental assessment approvals required for any changes to the design of the project that is presented in this Environmental Project Report, in accordance with the Transit Projects Regulation and other applicable EA processes. This will include conducting additional environmental investigations to obtain information that supports the various applications and facilitates negotiations with regulatory agencies.

## ES.5 Consultation and Commitments to Further Work

### Consultation

There have been two distinct phases to this study, during which consultation has occurred:

**Pre-Planning Phase** - The objectives of consultation during the Pre-Planning phase were to provide continuity with the Hurontario/Main Street Corridor Master Plan in planning of the light rail transit system in the Hurontario-Main corridor, including examination of project alternatives; and to assist in development of conceptual and preliminary design of the project. This phase was undertaken between December 2011 and January 2014.

**Transit Project Assessment Process Phase** - The objective of consultation during the TPAP phase was to consult on the proposed transit project, the associated potential impacts and proposed mitigation measures. This phase commenced on February 19, 2014.

The general public, government agencies, various interest groups, and Aboriginal communities have been provided with numerous opportunities to review and comment on the Hurontario-Main LRT Project as it has developed. These include from the Master Plan stage, through the Pre-Planning stage to the current Transit Project Assessment Process. The consultation program is summarized in Chapter 6 of this EPR, and details are provided in the Consultation Record in Appendix C.

A number of communication methods have been used to notify stakeholders of events, the latest project news and opportunities to provide input and comment. These include:

- Public Launch Open Houses;
- Public Information Centres;
- The project website;
- The project Facebook page;
- Twitter;
- Face-to-face meetings;
- Presentations to stakeholder groups, including Chamber of Commerce, Ratepayer Associations, and Business Improvement Areas (BIAs);
- Appearance and exhibits at local community events and festivals;
- Regular newsletters;
- Postcard mail drop along the corridor;
- Door-to-door outreach; and
- Contacting the LRT project team directly via telephone, the project website, email or postal mail.

The City of Mississauga's and City of Brampton's LRT Project Manager and the Consultant Team have also directly contacted First Nations and local Aboriginal organizations, identified through consultation with provincial and federal agencies, to solicit their views and input to development of the project, including provision of milestone notification of all opportunities to review and comment on project proposals, and to respond to requests for information/study documentation.

During this study, a technical Core Working Team comprised of specialists within the Planning and Building, and Transportation and Works departments at the City of Mississauga; the Planning and Infrastructure Services Department of the City of Brampton; and representatives from Metrolinx met frequently and shaped the development of the project. This has been supplemented and strengthened by strategic reviews conducted by an Extended Working Team of specialists from across departments from both cities and a Communications Core Team led by the Consultant Team. The Extended

Working Team was also engaged in design workshops oriented to refining conceptual design of the LRT. Numerous staff and information reports have gone before both the City of Mississauga and the City of Brampton Councils.

Ultimately, decisions at the technical level were made by a Steering Committee comprising respective City project leads from Mississauga in the Transit Project Department, Transportation, Infrastructure and Planning Department, Redevelopment and Design Department and MiWay, and from Brampton in the Engineering and Construction Division, Policy Planning and Growth Management Divisions, Engineering and Development Department and Brampton Transit. The meetings are chaired by the Director of Transit Projects from the City of Mississauga.

Formal public consultation/engagement events in the form of Public Information Centres (PIC) were held; three as part of the Pre-Planning phase and the one as part of the TPAP phase. The PICs were held for the public to view plans and have direct communication with project team members. Flyers were distributed throughout the study area and the dates/locations were advertised in local newspapers prior to each open house. The project team was in attendance at the PICs to answer questions regarding the study, and display panels and video presentations were used to present information about the project. As an extension of the PICs, focused workshops were held with community members in Mineola, the Main Street South Heritage Area and the owners and residents of Peel Condominium Corporation No. 690 in Mississauga. In addition, meetings with public and private sector owners of individual properties abutting the HMLRT Corridor occurred (e.g., provincial ministries; developers; 407ETR Concession Company Ltd.). These information sessions demonstrated wide-scale support for the HMLRT Project, but also identified areas of concern that were subsequently addressed during refinement of the LRT design.



As an extension of the PICs, focused workshops were held with community members in Mineola, the Main Street South Heritage Area and the owners and residents of Peel Condominium Corporation No. 690 in Mississauga. In addition, meetings with public and private sector owners of individual properties abutting the HMLRT Corridor occurred (e.g., provincial ministries; developers; 407ETR Concession Company Ltd.). These information sessions demonstrated wide-scale support for the HMLRT Project, but also identified areas of concern that were subsequently addressed during refinement of the LRT design.

### Commitments to Further Work and Consultation

Notwithstanding the extensive consultation conducted to date, it is recognized that there are outstanding planning and design matters on which closure cannot be achieved at this stage and which need to be carried forward to future project stages. To address this need, commitments to future work for the project, and related consultation activities, are listed below.

### LRT Design

- Continue general consultation with the public, property owners, business operators, regulatory and other government agencies, Aboriginal communities, and other interested stakeholders in finalizing design of the LRT alignment, guideway, stops and ancillary facilities, such as Traction Power Substations and the Maintenance and Storage Facility.
- Continue consultation with TRCA and CVC with respect to restoration opportunities in directly affected reaches of Etobicoke Creek, Mary Fix Creek and Cooksville Creek.
- Continue consultation on integration of the LRT system and public realm enhancement (Complete Street) initiatives.
- Work with residents and businesses along the corridor to further develop property access, parking and loading strategies to minimize impacts.
- Continue to address 407ETR Concession Company Limited's concerns in the vicinity of the Hurontario Street/407ETR Interchange in the context of its Concession and Ground Lease Agreement with the Province.
- The HMLRT preferred alignment for this TPAP is from Port Credit GO to Brampton GO. Both municipalities are undertaking various studies along the Hurontario-Main corridor and seeking approvals, as may be required or directed by their respective councils.

- Carry forward the option “no overhead contact system” technology for further investigation of costs and benefits as part of the Detail Design phase, its implementation being contingent upon final acceptability of financial and technical implications.
- Continue to work collaboratively on the development master planning process with stakeholders in the segment of the project between Port Credit GO Station and the waterfront (e.g., Inspiration Port Credit and Canada Lands Company Limited) with respect to the timing and design specifics of the LRT alignment and stop location(s), including:
  - Flexibility for system expansion across the Credit River;
  - Location of the LRT alignment;
  - Location of the waterfront LRT stop;
  - Potential impacts to One Port Street frontage and the site’s commercial viability; and
  - Vehicular, pedestrian and cyclist access to the waterfront in the context of the LRT complete street concept, the City’s site-specific policies for the Port Credit Local Area Plan, the Inspiration Port Credit Comprehensive Strategic Master Plan and the One Port Master Plan.

#### Detail Design Investigations

- Rail and highway crossing structural design.
- Geotechnical investigations.
- Additional noise and vibration impact assessment based on known LRV specifications and additional geotechnical information.
- Additional (Stage 2) archaeological resources assessment based on refined property acquisition needs and permission to enter lands requiring assessment.
- Confirmation and refinement of built heritage conservation strategies, including preparation of Heritage Impact Assessments and Conservation Plans.
- Continue discussions and liaison with Metrolinx/GO Transit and city transit operators to ensure that opportunities for high quality service integration are realized and good pedestrian connectivity is achieved between LRT stops, GO Transit Bus service stops, GO Transit Rail service stations, and Bus Rapid Transit stops.
- City of Brampton and City of Mississauga policies regarding the introduction or replacement of noise attenuation barriers on a retrofit basis within major road corridors were reviewed for applicability to the segment of the Hurontario-Main Street corridor under consideration on this project. The City of Brampton’s retrofit noise barrier policy is not applicable. Application of the City of Mississauga’s policy (Policy No. 09-03-03 – Noise Attenuation Barriers on Major Roadways) identified four candidate locations in Mineola and Cooksville with sensitive receptors where the sound levels from roadway traffic are, or will be, above the 60 decibel threshold criterion, warranting the introduction of barriers where none exist (2 locations), or the replacement/upgrade of existing barriers (2 locations) – for details, refer to Section 4.2.6 of the Noise and Vibration Impact Assessment Report in Appendix B.6, and the barrier locations on Sheet Numbers NCO05, NCO06 and NCO19 in Appendix A.1 of this EPR. The City will carry consideration of the introduction of these barriers into subsequent phases of the HMLRT Project.

#### Transit Operations

- The greater stop spacing of the LRT service will result in longer walking distances (balanced by reduced in-vehicle time and greater reliability), which may have an impact on people with reduced mobility. Where warranted, local transit service will be maintained at a reduced transit frequency in order to support those individuals. The details of the routing of the residual service will be developed by MiWay and Brampton Transit during the implementation phase of the project.

#### Permits and Approvals

- Secure any necessary approvals, permits and authorizations from municipal, provincial and federal regulatory agencies with a mandate governing implementation of the project. This will include conducting additional environmental investigations to obtain information that supports the various applications and facilitates negotiations with regulatory agencies.

#### Property Acquisition

- Refine property requirements through the design phase.
- Develop a property acquisition strategy based on how implementation of the project will be staged.
- Proceed with acquisition of the required property through negotiation, or expropriation if required.
- Proceed with provincial property acquisition, or transfer, in accordance with the prevailing property transfer and licensing requirements.

#### Address Construction Issues

- Establish a protocol to provide quick community access to construction related information, specifically schedule and timing information for business owners and residents.
- Develop and implement a detailed traffic management plan, comprising a construction staging and street closure or lane reduction strategy, including an emergency response component (Fire, Police, Emergency Medical Services).
- Develop and implement a detailed utilities relocation/replacement plan that is fully integrated with the traffic management plan to ensure minimum disruption of services.
- Strictly control air, noise and vibration emissions.
- Develop and implement a strategic Erosion and Sediment Control Plan to protect watercourse crossings (Mary Fix Creek; Cooksville Creek; Etobicoke Creek; Etobicoke Creek Tributary), including provision of adaptive management to address construction staging requirements.
- Minimize impacts to street trees and natural areas not scheduled for removal through development and implementation of a Tree Management Plan.
- Pre-construction building condition surveys will be completed for specific cultural heritage resources (as outlined in the Cultural Heritage Assessment).

#### Monitoring

- Monitor construction and operations/rehabilitation phase activities for compliance with environmental protection commitments made during the Environmental Assessment phase and requirements imposed by permits and approvals obtained during the Detail Design phase.
- Specific cultural heritage resources will be monitored during heavy construction activity, whenever such activity occurs in the vicinity of the above identified resources (as outlined in the Cultural Heritage Assessment).
- Monitor construction activities for effectiveness of new/modified environmental protection and mitigation measures adopted during the construction period (adaptive management measures).
- Monitoring during construction to ensure that adequate property/business access is maintained.
- Monitor during construction to identify undesirable traffic infiltration in adjacent neighbourhoods.
- Monitor during the operations phase to assess predicted benefits and net environmental effects of the project, including:
  - land use redevelopment;
  - assessed property values;

- integration of LRT and public realm;
- noise and vibration;
- traffic operations (Hurontario-Main corridor; infiltration through adjacent neighbourhoods);
- parking and loading; and
- LRT/bus system usage.

**Project Funding**

The cities and Metrolinx will continue to explore funding opportunities for the HMLRT Project, including provincial sources and federal programs.