

HURONTARIO/ MAIN STREET CORRIDOR Master Plan

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in association with

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EXECUTIVE SUMMARY

HURONTARIO/ MAIN STREET MASTER PLAN REPORT



EXECUTIVE SUMMARY



This report documents a Master Plan for the Hurontario / Main Street corridor within the City of Brampton and the City of Mississauga, integrating planning for rapid transit, intensified land use and enhanced urban design. This project has been fundamentally about city-building along this important corridor – creating a “main street” for the 21st century, where people can live, work and play in a highly sustainable and active way.

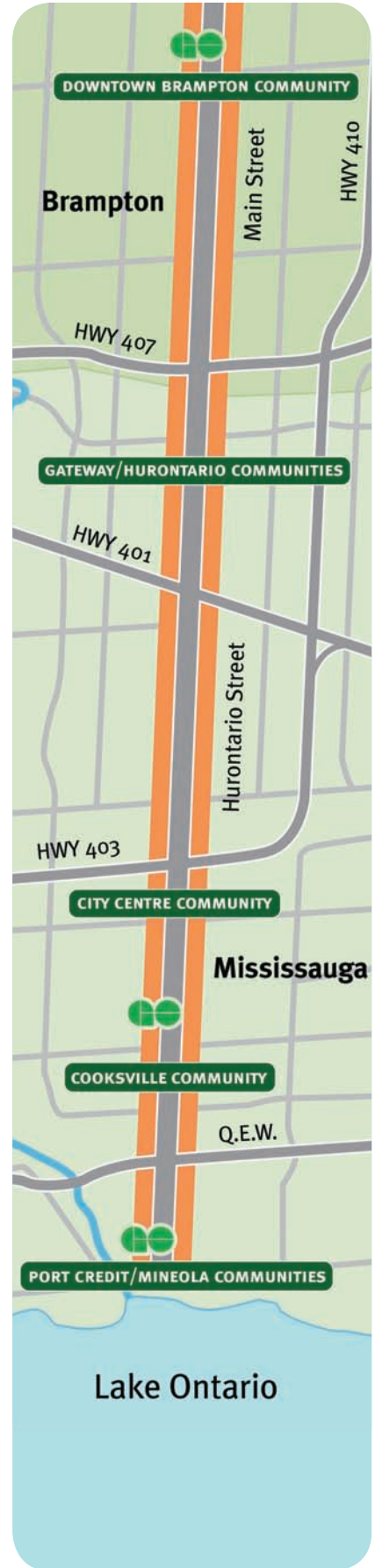
The Hurontario/Main Street Corridor will link the Urban Growth Centres, as designated by the Province’s Places to Grow initiative, while traversing five Mobility Hubs – which are identified locations for future inter-regional transit connections and enhanced transit-oriented development, as defined by the Big Move (The Metrolinx Regional Transportation Plan). The corridor has a distinctive urban character that varies from stable residential communities to areas with great potential for intensification and/or redevelopment. The cities can capitalize on opportunities throughout the Corridor, through a comprehensive and bold planning framework.

The Corridor is a logical focus for both Cities to invest in infrastructure and design. The two Cities envision the plan for Hurontario/Main Street as a critical city-building initiative that will help them remain socially, environmentally and economically sustainable and competitive.

When you design your city around cars...you get more cars.

When you design your city around people...you get more people.

— Fred Kent, *Project for Public Space*



Hurontario/Main Street

This vision is supported by Metrolinx and the Province, positioning the Corridor for high-density, pedestrian and transit friendly development in targeted areas with higher order rapid transit as the first priority for infrastructure investment.

The Cities of Mississauga and Brampton are now significant urban centres within the Greater Golden Horseshoe Area (GGHA) with a combined population of

close to 1.5 million people and an employment base of nearly 587,000.

The two municipalities are expected to grow in population by nearly 400,000 people and add nearly 250,000 jobs by 2031. Of that, nearly 100,000 people and 50,000 jobs will be located in the area immediately surrounding the corridor. The proposed densities are aimed at making the Corridor an urban, vibrant and pedestrian friendly street.



Historically it is worth noting that the Port Credit area was served by streetcars until 1930, and this project represents an opportunity to re-introduce light rail-based transit in the Corridor.



The Vision for the Corridor – a 21st Century Main Street

The vision for the Corridor has been developed through a multi-disciplinary analysis of transportation, land use and urban design that included consultation with staff, stakeholders and the public. The vision is fundamentally one of city-building and sustainability, centered on rapid transit as a key mode of travel on a beautiful street.

Three key statements articulate the vision:

- **Easy, reliable, frequent, comfortable and convenient rapid transit service is provided throughout the corridor**, with effective connections to other links in the inter-regional transit network;
- **Hurontario/Main Street is a beautiful street**, with attractive places along the corridor featuring expanded mobility, vibrant economic activity, and livable, connected, mixed-use neighbourhoods, integrated with the transportation infrastructure; and
- **The Regional Urban System and the planned urban structure of each City are recognized and reinforced**, and accordingly, mixed-use, compact, Transit Oriented Development is present along the corridor, customized to suit the varying and distinct nature of each existing community and sensitive to the presence of adjacent stable neighbourhoods.



Guiding Principles

Building on the vision, a set of Guiding Principles was developed to focus the development of a sustainable transportation solution along the Corridor:

1. Maintain the focus on the “big picture”
2. Make it sustainable and integrated
3. Support transit through built form and densities
4. Put pedestrians first
5. Plan for development that is compact and complete
6. Facilitate multimodalism
7. Create connectivity
8. Focus on place-making
9. Ensure that the plan is both visionary and attainable
10. Protect stable neighbourhoods

Transportation Plan

The Alternatives

A high-level screening was undertaken to assess the broad range of rapid transit technologies that would be suitable in the corridor. The technologies that were assessed ranged from at-grade LRT and BRT to grade separated (above or below grade) technologies such as subways, monorail and automated guided transit.

Transit options located at-grade within the existing corridor right-of way are appropriate in terms of being supportive of the corridor vision; this allows a direct connection between the transit service and pedestrian environment, maximizing the potential for transit ridership and connectivity. At-grade options are also appropriate for the projected demands. Grade separated technologies such as subway are not warranted given the projected demand.

The following four alternatives were tested to evaluate and establish the preferred technology for Hurontario/ Main Street.

Make no little plans; they have no magic to stir men's blood...

— Daniel Burnham, *American Architect and Urban Planner*



LRT: Phoenix, USA

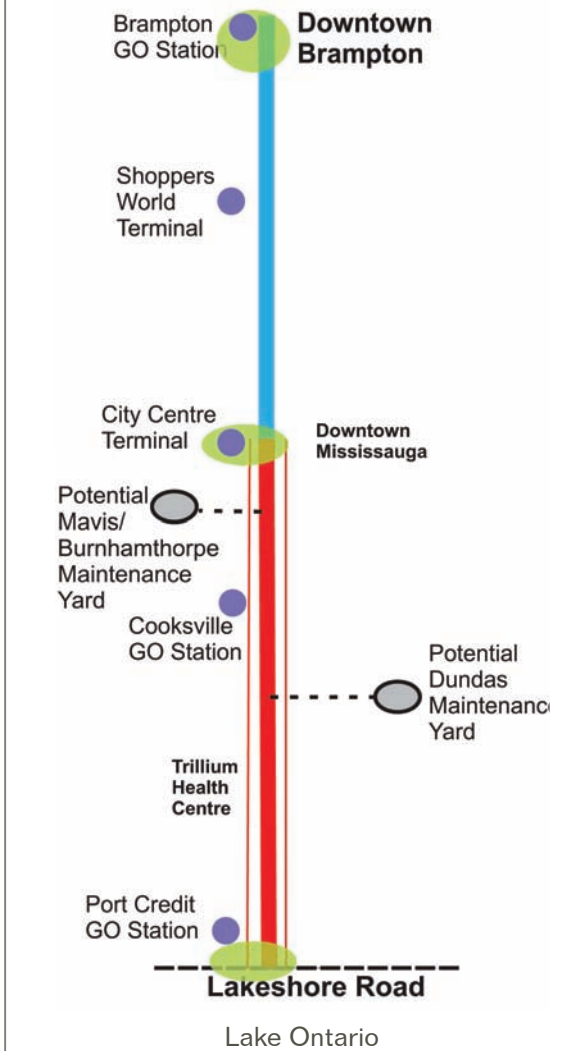


BRT: Cleveland, USA

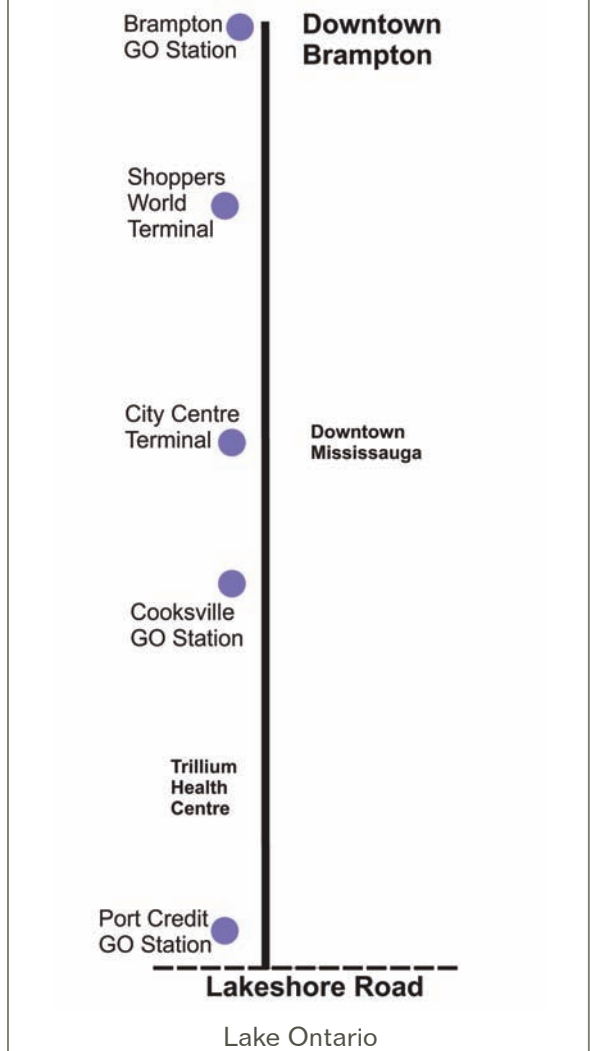
**Figure ES.1:
Corridor Rapid Transit Alternatives**








Alternative 3 – BRT/LRT Split



Alternative 4 – Do Nothing



Legend

-  LRT
-  BRT
-  Local Bus
-  Mobility Hub (as per the Metrolinx Big Move)
-  Multiple Alignment Options Examined



Each of these technology options were analyzed to gauge their effectiveness for transit ridership and community building along the Hurontario/Main Street Corridor. This analysis included an evaluation based on the following criteria:

- **Transit Capacity and Operations** – Ridership demands for each technology option were projected through the use of an EMME/2 transportation model for the entire GTHA. Based on these projections, the technologies were evaluated on their potential for generating ridership, and their capacity to accommodate this ridership in terms of vehicle capacity and operating frequency;
- **Social Effects** – The potential for each technology to contribute to city building, increase connectivity between destinations on the corridor, enhance the pedestrian realm and fit into the character of existing neighbourhoods along the corridor;
- **Environmental Effects** – Each technology’s impact on the surrounding environment, including air quality, impact on nearby water bodies, and energy use; and
- **Economic Effects** – The capital and operating costs of each technology, as well as the potential for stimulating development and increasing property value along the corridor.

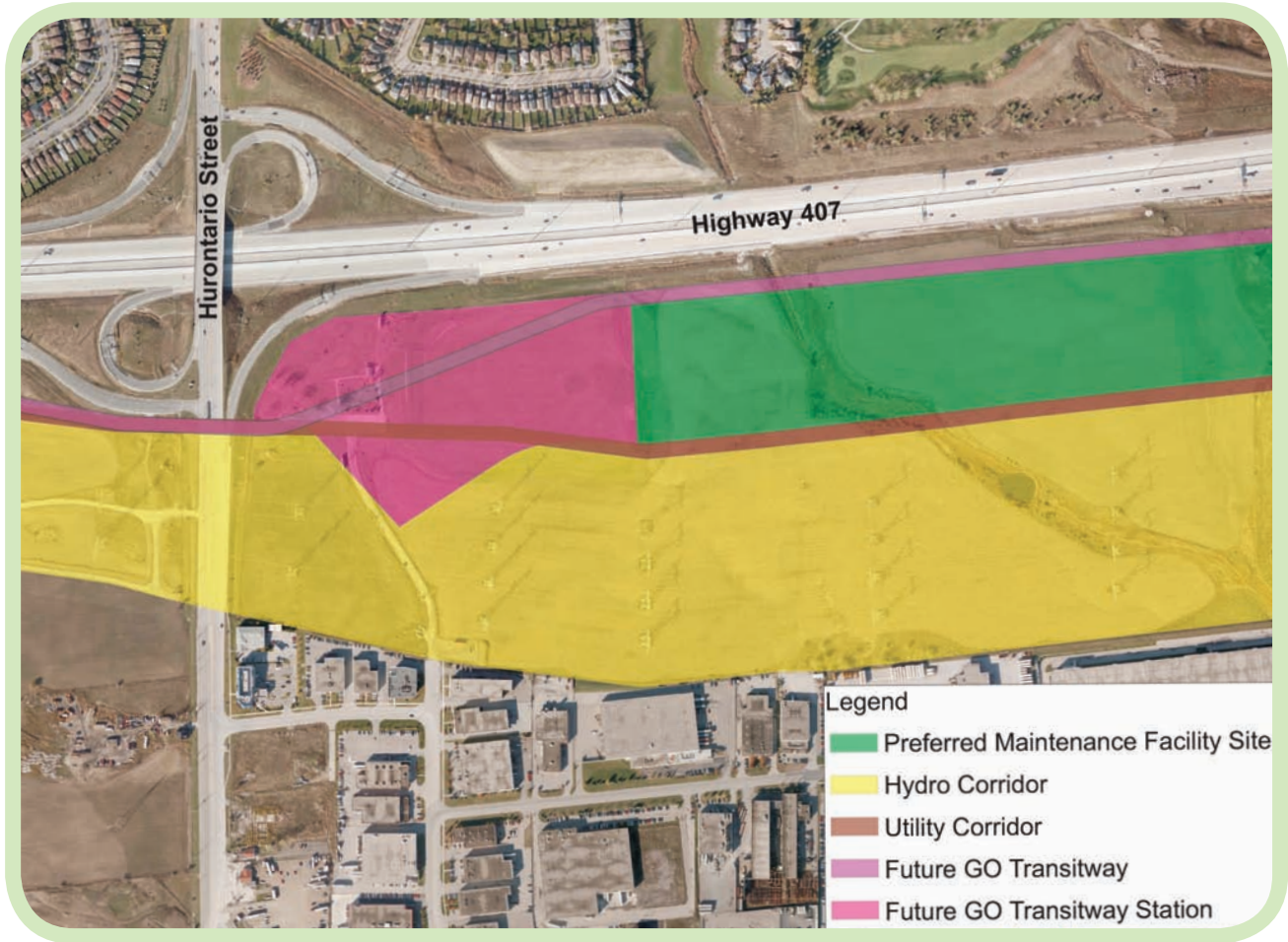
The Plan

The recommended transportation solution, developed in close consultation with residents and stakeholders, supports the vision of an 'easy, reliable, frequent, comfortable and convenient rapid transit service throughout the corridor'. The major elements of the preferred solution include:

- Light Rail Transit along Hurontario Street between Downtown Brampton and the Port Credit waterfront that moves more people, faster and more efficiently;
- Local transit services operating on Hurontario Street rerouted as feeders to serve the proposed LRT;
- Use of innovative technologies, such as transit signal priority, that improve the speed and reliability of transit operations along Hurontario Street;
- Conversion of the existing six-lane cross-section segments to four lanes for auto use and two reserved transit lanes. Segments of Hurontario Street that are currently four lanes will have the LRT operate in shared lanes, in the Main Street South Heritage Area in Brampton and in Mineola in Mississauga; and
- A maintenance/storage facility to be located in the southeast quadrant of the junction of Hurontario Street and Highway 407, on lands owned by the Ontario Realty Corp.



Figure ES.2:
Proposed LRT Maintenance and Storage Facility Site



**Figure ES.3:
Preferred Corridor Concept**

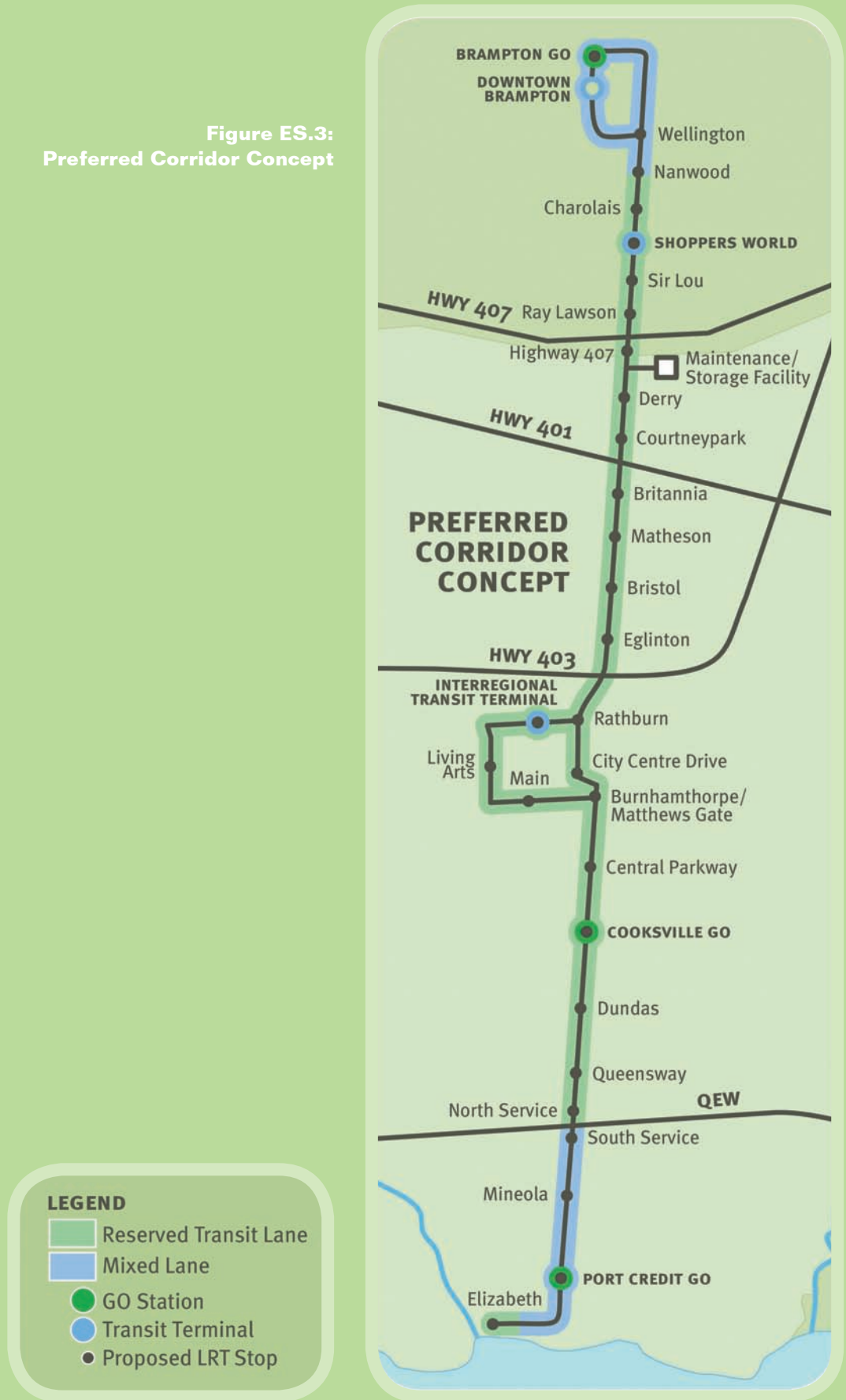




Figure ES.4:
Proof of Concept for Downtown Brampton



Figure ES.5:
Proof of Concept for Downtown
Brampton

Downtown Brampton

The LRT line will operate in mixed traffic (sharing the lane with other vehicles) in Downtown Brampton due to the limited right-of-way available on the streets and the goal of minimizing disruption to the built environment.

Analysis of the road network, transit access opportunities and development in Downtown Brampton identified three potential routing options for the LRT. The recommended option involves the LRT operating as a one way loop that includes Wellington and George Streets, then passing through a new tunnel under the CN rail corridor, and returning to Main Street north of the rail corridor. This alignment connects the LRT to the Georgetown GO rail service, the Brampton Züm BRT services and other Brampton bus services.

Downtown Mississauga

A two corridor system was chosen to provide more flexibility for the operator and for riders. The two corridors allow the implementation of service plans with alternate vehicles either passing directly through or circulating around downtown. Of all the assessed LRT routing options to serve downtown Mississauga, the preferred option is based on factors including integration with the Transit Terminal, traffic operations and integration with development, as shown in the figure below.

The plan includes functional designs for each road. Options for crossing Highway 403 have been identified; these are to be studied further in the next project phases in conjunction with the Ontario Ministry of Transportation, to define a preferred option.

It is recommended that the LRT line operate in reserved lanes throughout downtown Mississauga, in keeping with the fundamental goal of “putting transit first”, an essential objective in attracting “choice” riders (i.e. riders who choose transit over their private car).



Infrastructure

28 stations are planned (with a potential four additional stations) along the LRT route, serving major employment and residential centres. The station locations were based on a number of factors, such as:

- A maximum walking distance of 500 metres or a 10 minute walk;
- Connection to east/west transit services;
- Location of the Metrolinx Mobility hubs, both anchor and gateway hubs;
- Connection to GO Rail services at the Brampton, Cooksville and Port Credit Stations;
- Current and planned development patterns; and
- Public input.

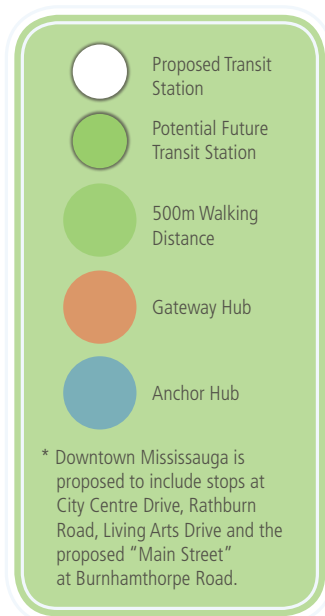
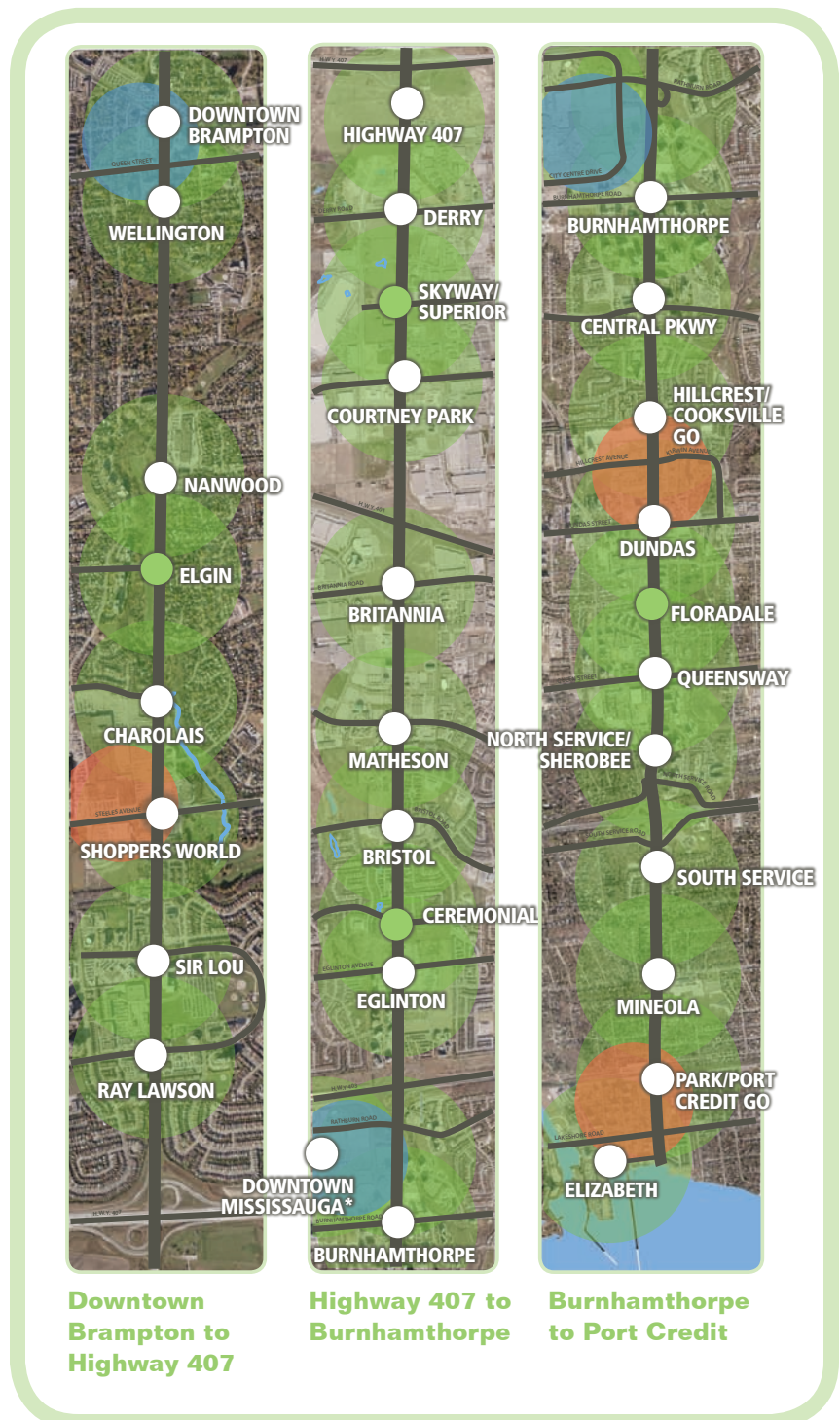


Figure ES.6: Proposed Transit Stops



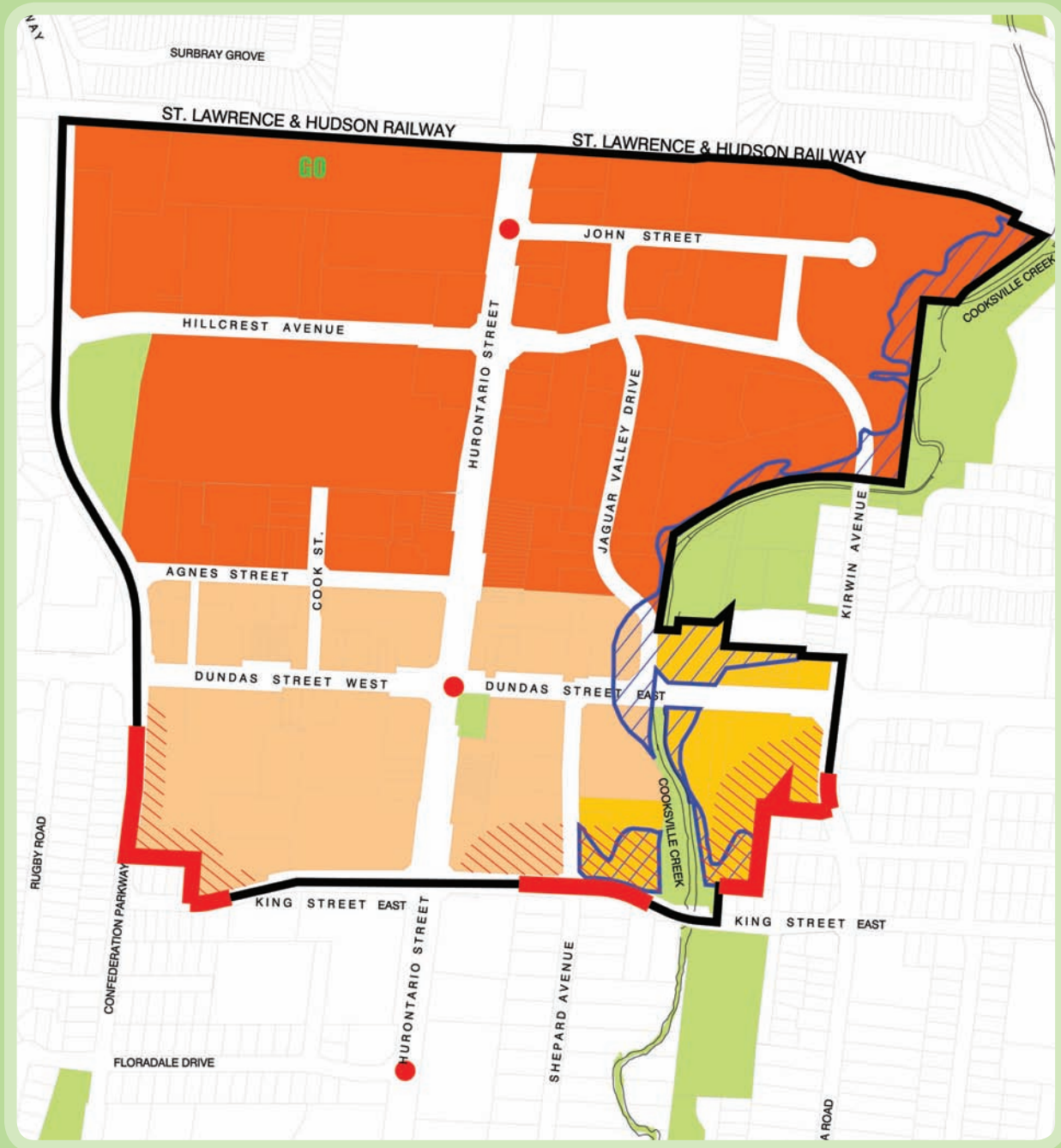


Figure ES.7:
Proposed Height and Density in Cooksville



Planning and Urban Design Strategy

In order to realize the vision of the Corridor and adhere to the guiding principles, the Master Plan includes a planning and urban design strategy based on a transit-supportive land use and design framework. The intent is to guide the public and private sectors to a level of design excellence, while at the same time incrementally building toward the long term vision.

It is imperative that the Cities adopt a planning and urban design strategy that facilitates and encourages the best designs in buildings, streetscapes and landscaping.

The key ideas and concepts that inform the policy framework are listed below:

- A vibrant and healthy mix of uses, all located within close proximity to each other;
- Higher density nodes centered around the major transit stations;
- Pedestrian-friendly streets and neighbourhoods;
- Active main streets with retail uses at grade and continuous street walls;
- An interconnected network of open spaces and local street network;
- On-street parking or structured parking to replace surface lots;
- Protecting stable neighbourhoods;
- Protecting and preserving natural areas;
- Providing for phased development;
- Cycling as an integral transportation option; and
- Place making to create memorable and unique places.

The strategy has been designed so that each City can implement it specifically tailored to their jurisdiction.



Urbanism works when it creates a journey as desirable as the destination.

— Paul Goldberger, *Architecture critic for the New Yorker*,
Author, Educator

Phasing

In addition to the planning and urban design strategy, a number of additional strategies addressing complementary modes, safety and travel demand management need to be implemented to further the benefits of higher order rapid transit along the Corridor, such as:

- Pedestrian Strategy
- Cycling Strategy
- Transportation Demand Management Strategies
- Neighborhood Traffic Management
- Access Management

Transit improvements on Hurontario are identified as a Quick-Win in the Big Move. Improvements such as enhanced bus service now being considered for Hurontario are among the quick wins, which are positioned as early, foundation investments to support the Move Ontario 2020 vision and to achieve tangible customer benefits within a short time frame. They are also expected to demonstrate the ability of Metrolinx, the Province, municipalities and transit agencies in the region to work together and agree to a shared set of initial high-impact priorities. The transit ridership forecasted by the Hurontario travel demand model indicates that a LRT is warranted for the entire length of the Corridor by 2016. However, the phasing is dependent on a number of key external factors, such as:

- Construction feasibility;
- Operational considerations;
- Multi-agency cooperation;
- Funding; and
- The risk associated with the successful implementation of other major transit initiatives that traverse the Corridor.





Business Case Assessment

It is anticipated that the first phase of the LRT line will be anchored to the proposed maintenance facility, linking to the major transit terminal at Steeles Avenue in the north and both Urban Growth Centres. A detailed phasing plan will be completed as part of the next stage of this study where LRT service is projected to be operational throughout the entire length of the Corridor by 2021.

A business case assessment has been completed for the LRT and BRT-based options. This assessment followed the Metrolinx methodology, encompassing social, environmental and economic factors. A detailed analysis indicated a preliminary capital cost estimate for the LRT between \$925 Million and \$1.15 Billion.

Benefits for the LRT are likely to exceed those for BRT for three out of the four accounts used in the evaluation (transportation, environmental, economic). This conclusion is corroborated by the review conducted of numerous case studies in North America and Europe. LRT has been found to provide a degree of certainty in transit investment that is generally very attractive to the development community, and hence results in marked economic uplift.

Study Process: A Class Environmental Assessment Master Plan



This study has been conducted as a Class Environmental Assessment (EA) Master Plan, in accordance with the Municipal Class Environmental Assessment process. It addresses the first two of the five phases of the Municipal Class EA document. The five phases of the EA process are listed below:

- Phase 1: Identify the problem or opportunity statement
- Phase 2: Identify alternative solutions
- Phase 3: Examine alternative design concepts for the preferred solution
- Phase 4: Prepare Environmental Study Report
- Phase 5: Implementation

The implementation of the LRT line is conditional on the completion of the next two phases (Phase 3 and Phase 4) of the EA, or the undertaking of the Transit Project Assessment Process. It is recommended that the Municipalities of Brampton and Mississauga proceed with the six-month Transit Project Assessment Process to complete the Environmental Assessment process. The primary advantages are the streamlined approval process through the assigned Director from the Ministry of the Environment, and the overall six-month time limit, which includes a maximum 35-day review period by the Minister of the Environment.

Public Consultation

An extensive public consultation plan (PCP) was implemented during the course of this study, to meet the requirements of the Class EA process and to ensure the solution was vetted with the various communities along the corridor. The main components of the PCP included:

- Notice of Project Commencement
- Three rounds of Public Information Centres (one per City in each round)
- Community Workshops
- Stakeholder Symposium
- External Liaison Committee
- Cable TV Spots
- Ratepayer Association Updates
- Electronic Media
- Newsletters

Throughout the study, the public and stakeholders provided input to the Corridor vision, alternatives and trade offs, in order to identify opportunities and constraints for transit, traffic, land use and urban design unique to their communities and the Corridor itself. Over all the three stages, their comments were generally supportive of the plan for rapid transit and evolution of the Corridor. They provided inputs on defining existing conditions, vision concepts, and the final articulation of the functional plan for LRT throughout the Corridor. All the comments are summarized in the main report.



Workshop, October 2008



Stakeholder Symposium, November 2008



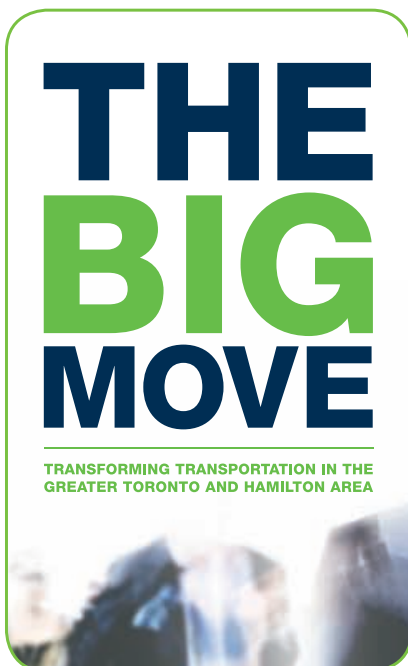
Public Information Centre, March 2010

INTRODUCTION



1 INTRODUCTION

1.1 Report Organization



The Metrolinx “Big Move” Regional Transportation Plan (RTP), adopted in November 2008, sets many goals to improve the state of transportation across the Greater Toronto and Hamilton Area (GTHA), the most notable of which is the construction of a “comprehensive regional rapid transit network.” The “Big Move” recognizes the Hurontario/Main Street corridor between Port Credit in Mississauga to Downtown Brampton as a top priority corridor for the implementation of rapid transit within the next 15 years. This report is intended to fulfill the first two stages of the Municipal Class Environmental Assessment process for the implementation of this proposed rapid transit system on the corridor.

This report is organized into three parts.

One: Background

- 1 Introduction
- 2 Existing Conditions
- 3 Analysis

Two: The Master Plan

- 4 Vision
- 5 Preferred Transit Alternative
- 6 Transportation Plan for the Corridor
- 7 Planning & Urban Design Framework
- 8 Character Areas
- 9 Proof of Concept Sites

Three: Implementation

- 10 Implementation Plan
- 11 Costs
- 12 Interim Service Plan

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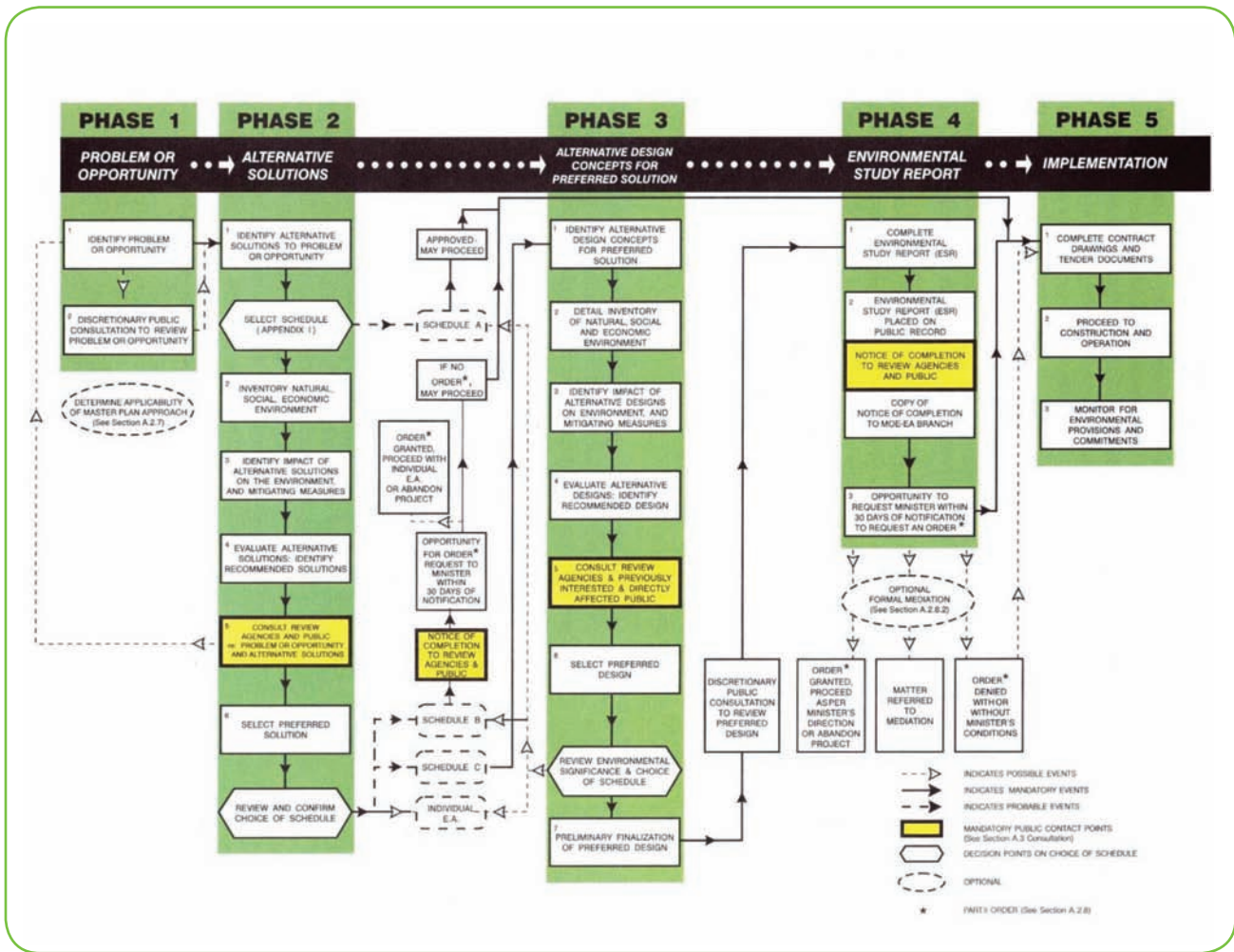
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Part 1 establishes the necessary background for the master plan, explaining the EA and public consultation processes followed over the course of the project. This section outlines the existing conditions in terms of the transportation, planning natural environment and socioeconomic context, highlighting the existing infrastructure and policy guidelines in place that affect the future development and use of the corridor. Part 1 also features a detailed analysis of the future transit demand, to reach recommendations encompassing a vision for the corridor, which includes the implementation of higher order transit, what transit technology might be feasible, and a preferred alignment along the corridor.

Part 2 of the report provides the details of the master plan for the corridor. This is done in a transportation context, detailing the preferred transit alternative and its role among the other modes accommodated in the corridor, and in a planning context, describing the planning and urban design framework needed to work with the new transit system to transform the corridor to its envisaged status as a “People Place.” Separate planning and urban design strategies are specified for the eleven character areas along the corridor, to ensure the preservation of the existing neighbourhood feel unique to each in any future transformations to the built environment. Further details are provided for select Proof of Concept sites chosen from areas of high potential development along the corridor.

Part 3 establishes an implementation plan for the transportation and planning developments described in the preceding section. This includes recommended changes to the Brampton and Mississauga Official Plans and planning policies, as well as the recommended phasing and governance of the construction of the proposed transit system. This also includes a detailed cost analysis and business case for the chosen transit technology and alignment. The implementation plan also includes an interim service plan for continued improvements to the existing and proposed local transit services, in preparation for the implementation of the LRT.



1.2 EA Objectives

The Ontario Environmental Assessment Act (EA Act) identifies two types of environmental assessment planning and approval processes: Individual Environmental Assessments and Class Environmental Assessments. The Municipal Class Environmental Assessment (2000, as amended in 2007), provides a process in accordance with the EA Act, for municipal infrastructure projects. Once approved, the Class EA establishes a process whereby the municipal projects as defined in the Municipal Class EA and any subsequent modifications, can be planned, designed, constructed, operated, maintained, rehabilitated and retired without having to obtain project specific approval under the EA Act, provided the approved environmental assessment planning process is followed.

1.3 Municipal Class Environmental Assessment Process

The Municipal Class EA process is completed by following a five phase process. The process addresses projects by classifying them into four schedules according to their environmental significance (Schedule A, A+, B or C). The level of complexity and the potential impacts of a project will determine the Schedule of the project that in turn will determine which phases will need to be addressed.

Schedule A projects are limited in scale, have minimal adverse effects and include the majority of municipal road maintenance and operational activities. These projects are approved and may proceed directly to Phase 5 for implementation, without following Phases 2 to 4 of the Class EA process.

Schedule A+ projects were introduced in the 2007 amendment to the MEA Class EA. These projects are pre-approved, however the public is to be advised prior to project implementation.

Schedule B projects generally include improvements and minor expansions to existing facilities. These projects have some potential for adverse environmental impacts, and consultation with those who may be affected is required. Examples of Schedule B projects include: the installation of traffic control devices, smaller road-related works or the extension of certain types of municipal water/wastewater infrastructure. These kinds of projects require completion of Phase 1 and 2 of the Class EA process.

Schedule C projects generally include the construction of new facilities and major expansions to existing facilities.

Class EA Master Plans are long range plans which integrate infrastructure requirements for existing and future land uses with environmental assessment planning principles. The Class EA Master Plan process examines infrastructure system(s) or groups of related projects in order to outline a framework for implementation of subsequent projects and/or developments with environmental protection and mitigation measures integrated into the project.



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The Class EA Master Plan typically differs from project specific studies in several key respects. Long range infrastructure planning enables the proponent to comprehensively identify need and establish broader infrastructure options. The combined impact of alternatives is also better understood, possibly leading to other more positive solutions. The opportunity to integrate with land use planning also enables the proponent to consider different perspectives when looking at the full impact of decisions (MEA, 2007).

The Hurontario Master Plan report has been prepared as a Class EA Master Plan, and addressed Phase 1 and 2 of the Municipal Class EA document. The transit component of the Master Plan is a Schedule C project, and will require further study beyond the Master Plan. Once this Master Plan is complete, the Report is adopted by Mississauga and Brampton City Councils. It is then filed and made available for review by the public and any agency that expressed interest in the study. Requests to the Ministry of Environment for a Part II Order (to require an Individual EA) are possible only for specific projects identified in the Master Plan – such as the transit line, and not the Master Plan itself.

Opportunity Statement

The first phase of the Class EA is to define the problem or opportunity. The opportunity statement for this project is described as:

Rapid transit is needed to facilitate projected growth in development and travel in accordance with the concept of city-building to which both municipalities are committed. There are substantial opportunities which are expected to result from the planned rapid transit service, to realize the vision of a mixed-use, pedestrian-oriented corridor.

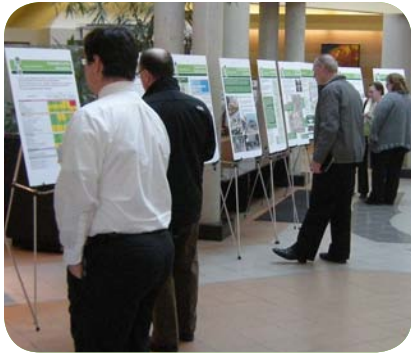
The opportunity statement recognizes that the project study is a major City building initiative for Brampton and Mississauga and supports the vision identified by Metrolinx and the two municipalities for future growth. The Metrolinx Regional Transportation Plan, THE BIG MOVE, identified rapid transit for the Hurontario/Main Street corridor as one of 15 priority projects for the Greater Toronto and Hamilton area.

1.4 Public Consultation

An essential component of the Class EA process is public consultation. This includes regulatory agency contact, as well as contact with local stakeholders and First Nations. Input received from consultation has been important in determining the preferred alternative. The main components of consultation for this project included:

- Notice of Project Commencement
- Public Information Centres
- Community Workshops
- Stakeholder Symposium
- Presentations at City events and community ratepayers group meetings
- Electronic Media (Project website, email blasts, cable TV)
- Newsletters
- On street sign boards

All comments and responses received through consultation are documented, and located in Appendix 1A.



1.4.1 Notice of Project Commencement

A combined Notice of Project Commencement and first Public Information Centre was prepared at the outset of the study. In June, 2008, the Notice of Project Commencement was placed in the Mississauga News and the Brampton Guardian. The Notice of Project Commencement was also sent to agencies and local stakeholders. A copy of the Notice and the list of names are located in Appendix 1B.



1.4.2 Public Information Centres

Three rounds of Public Information Centres (PICs) were held throughout the course of the study. Each round was held at venues in both Brampton and Mississauga.

Public Information Centre #1

The Cities of Brampton and Mississauga hosted the first round of PICs for the Hurontario Study on June 24, 2008 at Brampton's City Hall and June 25, 2008 at the Frank McKechnie Community Centre in Mississauga. Sixty participants attended the two sessions. The notice of PIC #1 was prepared as a combined Notice of Project Commencement, and was issued in the Mississauga News and Brampton Guardian in June, 2008. A summary of PIC #1 is presented in Appendix 1C.

Public Information Centre #2

PIC #2 was held at Mississauga's City Hall on June 10, 2009 and at Brampton's City Hall on June 17, 2009. At this PIC, participants were provided with information on the two remaining technologies – Bus Rapid Transit and Light Rail Transit. In discussions during the PICs, and on submitted comment forms, a preference for Light Rail Transit was expressed. Residents also commented on the importance of connections between the communities along the corridor, and the connections

to other transit systems, including GO Transit, and local service in Mississauga and Brampton. The aesthetics and visual appeal of the corridor are also important to the development of the area. A newspaper notice for PIC #2 was issued in Mississauga News and Brampton Guardian in May and June, 2008. PIC #2 presented transit, planning and urban design alternatives for the corridor. There were 120 attendees over both sessions. A summary of PIC #2 and copy of the newspaper notice is presented in Appendix 1D.

Public Information Centre #3

The third and final PIC was held at Brampton's City Hall on March 30, 2010 and at Mississauga's City Hall on March 31, 2010, and was attended by 125 members of the public. At the PIC, the project team announced Light Rail Transit as the preferred technology. Participants provided support for the recommendation. Some concerns were raised with respect to design of the project; these will be addressed in subsequent phases.

These PICs were advertised in the Brampton Guardian and Mississauga News in March, 2010. A copy of the notice and display materials for PIC #3 are provided in Appendix 1E.

1.4.3 Community Workshops

In October and November, 2008, a series of five workshops were held in communities along the Hurontario/Main Street Corridor. Workshops were held at the following locations:

- Brampton Community Workshop, Rose Theatre – October 29, 2008
- Port Credit and Mineola Community Workshop, Clarke Memorial Hall – October 30, 2008
- Mississauga City Centre Community Workshop, Central Library – November 3, 2008
- Cooksville and Queensway Community Workshop, T.L. Kennedy Secondary School – November 4, 2008
- Upper Hurontario and Gateway Community Workshop, HJA Brown Education Centre – November 5, 2008

The Hurontario / Main Street Community Workshops provided residents with the opportunity to provide comments on the corridor vision and to identify for City staff the opportunities and constraints for transit and transportation, land use and urban design in their unique communities along the corridor. Ninety-nine individuals attended the five workshops, including residents, community leaders and other key stakeholders. The workshop format included:

- Opportunities to meet with project staff one-on-one;
- Presentations by the project team highlighting planning, transportation and urban design terms and features as well as an explanation of transportation technologies; and
- Break-out groups and a plenary discussing issues relevant to the community.

A presentation describing why the study is being undertaken, providing a study overview and describing the consultation activities was delivered. Participants were also provided information on key elements of planning, transportation and urban design terms and features along the Hurontario / Main Street corridor. Upon completing the presentations, the project team facilitated small group discussions relative to several pertinent issues, including:

- Community destinations
- Transit-supportive transportation, land use and urban design elements
- Opportunities and constraints
- Station locations
- Potential intensification/redevelopment sites
- Routing options
- Transit right-of-way placement

Following small group discussion, participants returned to a plenary to share the ideas discussed in each group. To conclude the workshops, the project team outlined the next steps in the study process and let participants know how they could stay involved in the study. A full summary of the community workshops is provided in Appendix 1F.

1.4.4 Stakeholder Symposium

The Hurontario / Main Street Symposium provided stakeholders with the opportunity to identify the desired vision for transit, land use and urban design along the Hurontario / Main Street corridor. Participants were able to discuss ideas and issues with each other as well as project team members. Ninety-nine individuals attended the symposium, including community leaders, developers, agency representatives, government staff and other stakeholders. The symposium format included:

- A project overview from project staff;
- Presentations by the project team and keynote speaker highlighting the potential for transit, land use and urban design along the corridor, and a successful case study; and
- Opportunities for dialogue between symposium attendees and the project team.

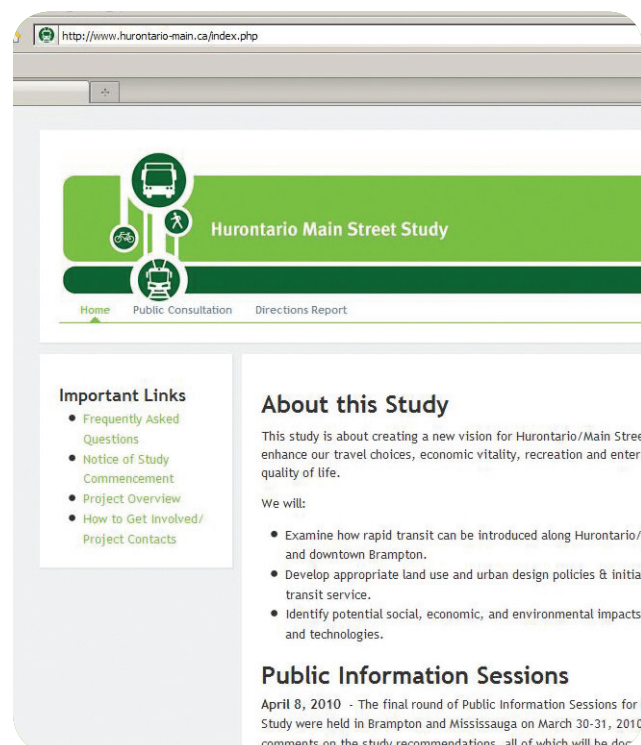
Following the welcome and introduction was a presentation from the keynote speaker, Natalio “Nacho” Diaz, the former Director of Transportation Services for the Metropolitan Council of Minneapolis-St. Paul, Minnesota. The consultant team delivered presentations on key elements of planning, transportation and urban design terms and features along the Hurontario / Main Street corridor, and transportation technologies being considered.

A list of Symposium attendees is located in Appendix 1G.

1.4.5 Electronic Media

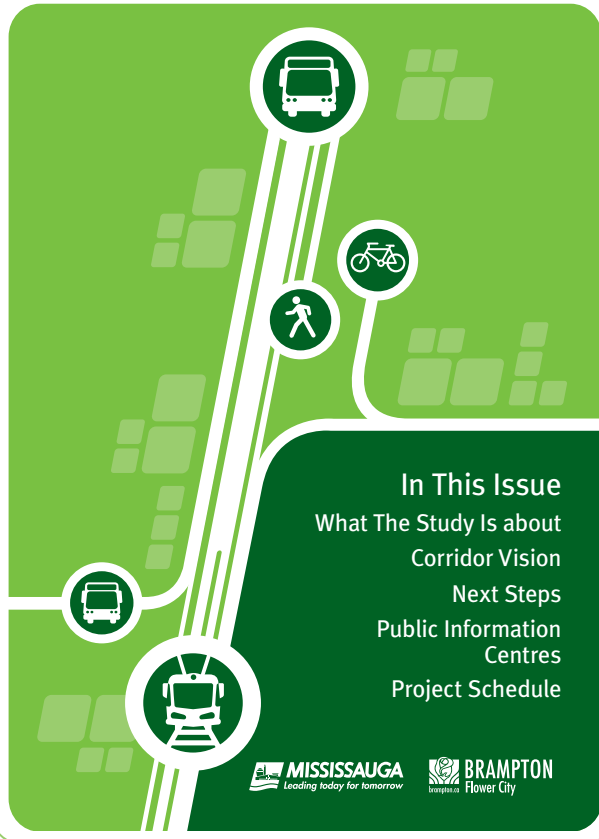
Early in the study process, a dedicated project website – www.hurontario-main.ca – was created to provide a project overview, provide answers to frequently asked questions, and post information on public consultation events and materials. The website also provides study contact information.

During the course of the study, a “Hurontario / Main Street Study” project page was created on Facebook. Facebook is a social media tool used to help the study reach a broader audience. The Hurontario/Main Street Study Facebook page provides an interactive forum, where fans of the page can post questions and exchange information. Project staff reply to questions posed by fans of the Hurontario page, and post notices for the public information centres. All comments received on the Facebook page have been captured as part of the EA engagement.



CONNECT10

SPRING 2009 | VOL 2 | HURONTARIO/MAIN STREET STUDY NEWS



1.4.6 Newsletters

Three editions of the Connect10 Newsletter were prepared over the course of the study, and were each delivered to 42,000 residents and businesses along the Hurontario/Main Street Corridor. Edition #1 - Fall 2008, provided background information on the study, and invited residents and stakeholders to attend the community workshops. Edition #2 – Spring 2009, provided an update on study alternatives and notified residents of the second PIC, in June 2009. Edition #3 – Winter 2010, presented the recommended transit technology and invited residents to the third and final PIC in March, 2010. Copies of each of the newsletters are located in Appendix 1H.

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1.5 Participants

Participation from residents, stakeholders and business owners was encouraged throughout the study. Each of the public information centres was advertised in the Mississauga News and Brampton Guardian to generate awareness of the study and of the public event. The community workshops sought to target input from residents and business owners within identified communities along the corridor, recognizing that each community is unique with a variety of needs and challenges. The symposium was designed to garner input from local politicians, city staff and involved stakeholders.



1.6 External Agencies

As part of the study process, an external liaison committee was formed of representatives from the following agencies potentially affected by the project:

- Region of Peel
- Ministry of Transportation of Ontario (MTO)
- Metrolinx/GO Transit
- 407 ETR
- Toronto Regional Conservation Authority (TRCA)
- Credit Valley Conservation (CVC)

This committee met with the project staff three times over the course of the study to review the progress and direction of the study and offer input. Representatives from these agencies will continue to be involved in subsequent stages of the EA process.

EXISTING CONDITIONS



2 EXISTING CONDITIONS

2.1 Transportation



2.1.1 Traffic

At approximately 22 kilometres in length, the Hurontario / Main Street corridor is a key transportation route between Mississauga and Brampton, and also provides links to highways and arterials that connect across the GTA. The Corridor is home to four 400 series highways and the QEW. Other major transportation links that traverse the Corridor are Queen Street, Eglinton Avenue, Dundas Street and Lakeshore Road.

Although some minor parallel roads exist (e.g. Confederation Parkway, Mavis Road), there is no continuous parallel road network in proximity to the corridor. The Corridor is flanked by varied land uses and different levels of interconnectivity along its length resulting in significant differences in speed, safety conditions and traffic demands.

Collision data collected over the last three years indicates that major intersections such as Eglinton Avenue, Burnhamthorpe Road and Hillcrest Avenue tend to have higher collision rates than other less travelled intersections. However, there is no discernible pattern that could be used to construe that the Hurontario Corridor is any different from other similar major corridors in the GTHA.



2.1.2 Transit

The Corridor is served by Mississauga Transit, Brampton Transit and GO Transit. The transit services along the corridor operate from the Port Credit GO Station and Lakeshore Road in the south to Hurontario Street at Mayfield Road in Brampton to the north. In addition to all-day service on Route 19, Mississauga Transit operates Routes 19A and 202, which offer express peak period service along this corridor.

Mississauga Transit experiences strong all-day ridership, carrying over 25,000 daily riders in the Corridor, whereas Brampton Transit carries approximately 1,200 daily riders. All routes operated by Mississauga Transit and Brampton Transit along Hurontario / Main Street operate in mixed traffic, and are therefore subject to delays from traffic congestion, collisions and bottlenecks. Narrower right-of-way widths with four lanes are present in Port Credit / Mineola, Downtown Brampton and at the crossings of the Queen Elizabeth Way, and Highway 401.

An examination of current ridership patterns shows that the Shoppers World Terminal and the Mississauga City Centre Terminal are key transfer points. Downtown Mississauga in particular is a key location for riders getting on or off to access jobs in the surrounding area. Local transit services also provide links to three GO rail stations. Travel to these stations by transit does not represent a significant share of current ridership, but development in the vicinity of these stations proposed in the ongoing Metrolinx Mobility Hub Studies present an opportunity to increase transit ridership in the future.

Typical rough trip durations average 70 minutes during peak periods and 61 minutes in off-peak periods for Route 19 and 50 and 55 minutes for Route 19A during the same periods. Services can experience closed door operations and delays of up to five minutes are common during peak periods for both routes.



2.1.3 Pedestrian Facilities

Sidewalks are generally present on both sides of the street throughout the corridor. The width of the sidewalk varies considerably depending on the character of the area, from a minimum 1.5 metres in older residential areas to possibly over three metres in some newer commercial areas (and further enhanced by private pedestrian space in these areas).

There are a few pedestrian access issues along the Corridor as listed below:

- Discontinuities at the highway interchange ramp terminals (QEW, Highways 403, 401 and 407). In some areas, these discontinuities take the form of sections with no sidewalk; in others, the issue is the presence

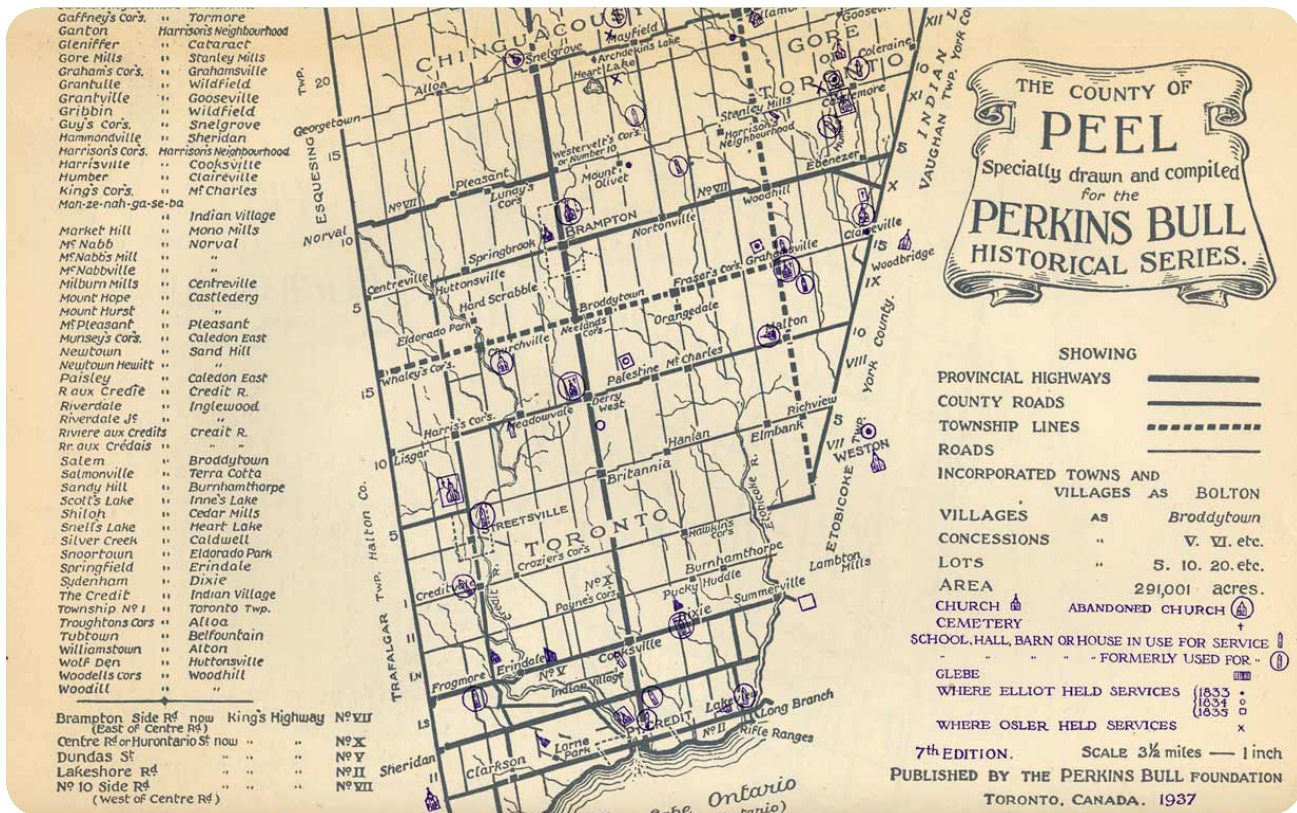
of high-speed directional ramp entrances where pedestrian priority is undefined or non-existent. Some of the interchanges also pose challenges because they are located in open, unprotected areas for pedestrian movement;

- Channelized right turn lanes at intersections, such as Burnhamthorpe Road, inhibit pedestrian movements. Many of these intersect Regional roads; and
- The use of pedestrian push-buttons to activate pedestrian phases at signalized intersections. In areas of high pedestrian activity, these constrain pedestrian mobility.

2.1.4 Cycling Facilities and Activity

There are no dedicated or shared cycling lanes along the street although a multi-use trail is provided on the east side for segments south of the QEW. Parallel routes or adjacent trail systems for cyclists are available at a network level, such as on-street facilities on and proposed for Confederation Parkway/McLaughlin Road and trail segments along Cooksville Creek in Mississauga, and the Etobicoke Creek Trail in Brampton.

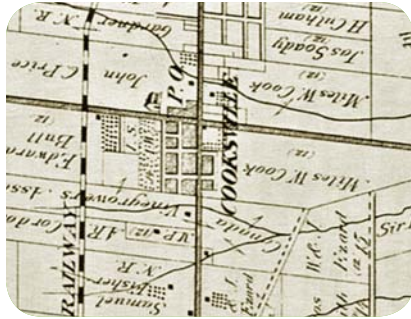




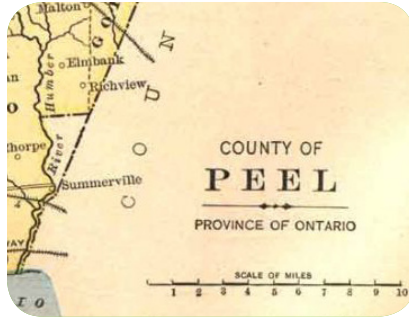
2.2 Socio-economic

2.2.1 Archaeology along the Corridor

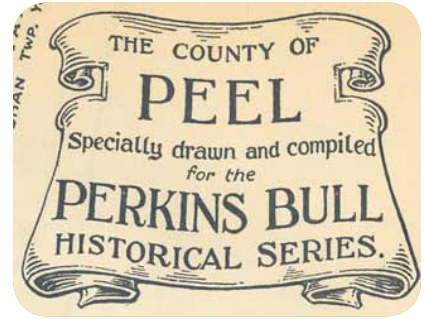
Archeoworks completed a Stage 1 archaeological assessment of the Hurontario/Main Street Corridor, extending from Port Credit in the City of Mississauga to the Brampton GO Transit Station located just north of Queen Street in the City of Brampton. The following text summarizes the archaeological findings. The full Stage 1 assessment is located in Appendix 2A.



The assessment was confined mostly to lands falling within the existing road Right-of-Way (ROW) on both sides of the road. Consultation of the Ontario Heritage Properties Database and the Mississauga and Brampton Heritage Registries has confirmed the presence of both listed and designated heritage properties and heritage landscapes within close proximity to study corridor. Additional background research has determined that nine archaeological sites have been found within a 500 metre radius of the corridor, of which six are located within 250 metres or less, indicating potential for locating additional sites within this region. Furthermore, with Etobicoke Creek bisecting the study corridor between Steeles Avenue and Queen Street; and the shores of Lake Ontario, the Credit River, and Cooksville Creek all within 300



metres of the study corridor, we find high potential for the location and recovery of Aboriginal archaeological resources within the boundaries of the study corridor limits. A review of the study corridor within the 1859 Tremaine's Map of Peel County and the 1877 Illustrated Historical Atlas of Peel County illustrates many historical features including numerous homesteads, three churches, two cemeteries, two school houses, one mill, and four post offices as well as the historic villages of Brampton, Cooksville, and Port Credit to be located within close proximity of the study corridor. Therefore, the background research also supports potential for locating historical remains within undisturbed portions of the study corridor limits. A detailed review of the study corridor was conducted in order to identify disturbances and



physiographic conditions resulting in areas of low archaeological potential and those undisturbed areas warranting Stage 2 assessment. The overall study corridor falls within extensively urbanized portions of the Cities of Mississauga and Brampton, with the subject lands under investigation for the most part being confined to the existing, disturbed road ROW. Despite these disturbances and physiographic factors, select locations have been assessed to be potentially undisturbed. Due to the established high potential for the recovery of Aboriginal and Euro-Canadian remains within the study corridor limits, once a final design has been created, all identified undisturbed areas should be subjected to a Stage 2 archaeological field assessment, prior to the onset of construction activities.

2.2.2 Cultural Heritage

Unterman McPhail Associates conducted a built Heritage Management Resource Consultants, to undertake a built heritage and cultural heritage landscape assessment as part of the Hurontario/Main Street Study. The study area focused on the area adjacent to the Hurontario/Main Street corridor from Port Credit in the City of Mississauga north to the Brampton GO Transit Station located north of Queen Street in the City of Brampton.

For the most part, the analysis of cultural heritage resources in the study area addressed above-ground, person-made heritage resources, over 40 years old. The application of this rolling forty year principle is an accepted federal and provincial practice for the preliminary identification of cultural heritage resources that may be of heritage value. Its application does not imply however that all built heritage resources or cultural heritage landscapes that are over forty years old are worthy of the same levels of protection or preservation.

Infrastructure development such as new and rehabilitated transit lines may potentially affect cultural heritage resources in a number of ways. The effects may include displacement through removal or demolition and/or disruption by the introduction of physical, visual, audible or atmospheric elements that are not in keeping with the character of the cultural heritage resources and, or their setting.

For the purposes of this study, Unterman McPhail Associates undertook the following tasks:

- Identified major historical themes and activities of the study area through historical research and a review of topographical and historical mapping;
- Identified built heritage resources and cultural heritage landscapes within and adjacent to the study area through major historical themes and activities, historical mapping, and a review of the City of

Brampton's Register of Heritage Properties and Mississauga's list of Heritage Properties;

- Completed a windshield survey of the proposed alignments in October 2008, to review and identify any built heritage resources and principal cultural heritage landscapes of forty years and older located within or adjacent to the proposed transit routes, as well as any other built heritage resources less than forty years of age deemed to be of cultural heritage interest;
- Prepared an Existing Conditions Report to inform the client as to potential built heritage resource and cultural heritage landscape issues;
- Reviewed the proposed alternative transit alignments within the revised study area; and prepared a Cultural Heritage Assessment Report (CHAR);
- Consultations were carried out with heritage staff at the City of Brampton and the City of Mississauga in October 2008 and again in February 2010;
- The respective municipal heritage inventories and lists of designated properties were consulted in regard to heritage issues for the Hurontario/Main Street Study in October 2008 and in February 2010; and,
- The Canadian Register of Historic Places was consulted in February 2010.



2.2.3 City of Brampton

A number of properties along Main Street South and North are included on the City Municipal Register of Cultural Heritage Resources; as well, several are designated under Part IV of the *Ontario Heritage Act*. The City has an ongoing program of designating individual properties along Main Street South and North and Queen Street East and West under Part IV of the *Ontario Heritage Act*.

Two municipally designated sites are federally recognized as cultural heritage properties. First, the municipally designated Dominion Building at 8 Queen Street East is included on the federal Canadian Register of Historic Places; Second, the Brampton Train Station, which is federally recognized as a cultural heritage property by the Government of Canada under the *Heritage Railway Stations Protection Act* (11/1/92) and included on the federal Canadian Register of Historic Places. Several planning and heritage studies that emphasize the importance of the heritage character of Main Street are ongoing along the corridor, including, but not limited

to: the Main Street North Vision Planning Study, which emphasizes the heritage characteristics of Main Street North; the study of the Courthouse Precinct HCD Study including Wellington Street East and Main St. South/Gage Park/City Hall as a heritage conservation district.

The City of Brampton also plans to undertake several other future heritage conservation district studies within the study area in downtown Brampton including Park/Railroad/ Elizabeth/Nelson/Mill Streets; West/Denison/Nelson/Mill Streets. Two other heritage conservation district studies are located beside Main Street on the north limits of the study area, namely, the ongoing Washington Block HCD Study. Further, the City of Brampton heritage staff provided information that the Peel Heritage Centre is expanding into the former 20th century Registry Office building on Main Street and that the City will be completing studies on this site use as well.

2.2.3.1 Direct Impacts

There are no anticipated direct impacts, i.e., removal or demolition of built heritage resources and cultural heritage landscape, in the City of Brampton proposed by the Hurontario/Main Street Study.

2.2.3.2 Indirect Impacts

There will be disruption impacts to the character and setting of numerous built heritage resources and cultural heritage landscapes along the Hurontario/Main Street study corridor in the City of Brampton and in the City of Mississauga. In particular, Main Street North and Main Street South from the GO/VIA tracks to the north to Etobicoke Creek in the south. These areas contain the most concentrated area of cultural heritage resources along the Hurontario/Main Street study corridor.



Rapid Transit on Main Street North

Main Street North from Queen Street to the GO/VIA railway structure contains a dense concentration of cultural heritage resources, principally of a 19th and early 20th century commercial nature. There will be disruption effects to this area as a result of construction activities. The streetscape of this section of Main Street North will be transformed by the addition of a rapid transit line down its centre.



Rapid Transit on Main Street South and Proposed Rapid Transit Stop at Hurontario Street and Wellington Street

Main Street South from Queen Street to Wellington Street is considered to be a sensitive area in regard to cultural heritage resources. North of Wellington Street there are two designated properties and municipally listed properties. From Wellington Street south to Harold Street, Main Street South is a municipally listed cultural heritage landscape; this section of Main Street is a proposed Heritage Conservation District area. The streetscape includes a mature tree canopy, and a concentration of 19th and early 20th century residences, many municipally listed, set on estate sized lots, particularly on the west side. The intersection of Wellington Street and Main Street South has the Peel Heritage Centre, the former Peel County Court House complex, on the southeast corner, Gage Park on the southwest corner, the Cenotaph on the northwest corner and St. Paul's United Church, a municipally designated property under the *Ontario Heritage Act*, and the First Baptist Church, a municipally listed building, on the northeast corner. The intersection is a significant area of identified and recognized cultural heritage resources within the City's downtown core.

There will be disruption effects to this area as a result of construction activities. The streetscape of this section of Main Street North will be transformed by the addition of a rapid transit line down its centre. It is anticipated that the proposed rapid transit stop at Hurontario Street and Wellington Street will result in disruption effects to adjacent municipally recognized cultural heritage resources.

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2.2.3.3 Mitigation

Mitigation recommendations include, but are not limited to:

- Minimize disruption effects to the site and context and avoid construction laydown areas in the vicinity of identified cultural heritage resources on Main Street North and South;
- Photo documentation of the streetscape of Main Street North and South from just north of the GO/VIA line to the Etobicoke Creek in the south;
- Minimize vibration effects to identified built heritage resources during construction activities in the area between Main Street North and South from just north of the GO/VIA railway line to the Etobicoke Creek in the south, and in the vicinity of the Cenotaph at City Hall;
- Consider relocating the bus platform north of Wellington Street to the south of Wellington Street

to minimize the effect on the important viewscape of cultural heritage resources at the Main Street South and Wellington Street intersection; and

- The design for the rapid transit stop at Wellington and Main Street South intersection should be sympathetic to the important built heritage resources and cultural heritage landscapes at this location.
- Consultation with the heritage staff at the City of Brampton to understand whether the City of Brampton requires a Heritage Impact Assessment (HIA) for affected cultural heritage resources that are municipally listed or designated under the *Ontario Heritage Act*.
- Continue to explore technology that does not use overhead wires.





2.2.4 City of Mississauga

The City of Mississauga Heritage Register and the Inventory of Cultural Landscapes (January 2005) indicated there are several municipally listed properties and cultural heritage landscapes and some municipally designated properties located within or adjacent to the Hurontario Street study corridor. As well, three (3) sites have been placed on the federal *Canadian Register of Historic Places*.





2.2.4.1 Indirect Impacts

There will be some disruption impacts, i.e., the introduction of physical, visual, audible or atmospheric elements that are not in keeping with the heritage character and / or setting, as a result of the construction of the rapid transit on Hurontario/Main Street. Potential areas of disruption effects to cultural heritage resources are as follows:



Proposed rapid transit stop at Britannia Road

A proposed rapid transit stop at Britannia Road and Hurontario Street may result in some disruption effects to the Britannia Church and Cemetery located on the southeast corner of the intersection as a result of construction activity.



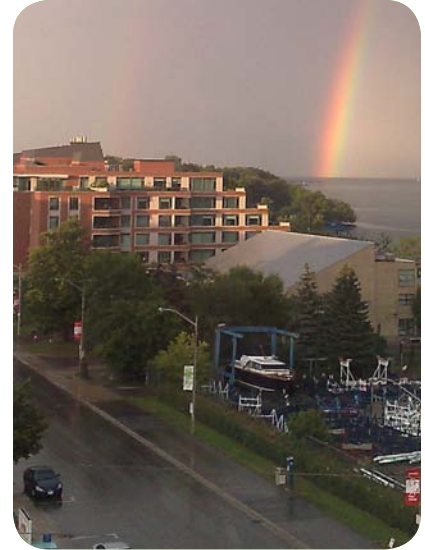
High Street to Park Street on Hurontario Street

A proposed rapid transit stop between High Street and Park Street on Hurontario Street will result in property acquisition on the west side of Hurontario Street due to road widening. The green space to the immediate south of Park Street is a former lawn bowling site and recognized as an open green space in the streetscape. The residence at 90 High Street, which is adjacent to Hurontario Street, is municipally designated under the *Ontario Heritage Act*.



Intersection Lakeshore Road and Hurontario Street

The St. Lawrence Starch Administration Building located on the southeast corner of Lakeshore Road and Hurontario Street is a municipally designated building. There may be some disruption effects to the site as a result of construction activities.



Proposed rapid transit stop on Port Street at Elizabeth Street and exclusive ROW Option B

The proposed rapid transit stop on Port Street at Elizabeth Street and exclusive ROW Option B will result in the use of Port Street, thus disrupting the local road pattern established in the 19th century as part of the village plan of Port Credit.



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2.2.4.2 Mitigation

Mitigation recommendations include, but are not limited to:

- Minimize vibration effects to identified built heritage resources during construction activities;
- Minimize disruption effects to the site and context and avoid construction laydown areas and storage in the vicinity of the Britannia Road Church and cemetery;
- Minimize disruption effects to the west side of the intersection of High Street East and Hurontario Street, in particular to the site and context of the former residence at 90 High Street East consider aligning the transit running way on the east side of the street in this location;
- Minimize disruption effects to the site and context of the former St. Lawrence Starch Administration building; and

- Completion of a cultural heritage evaluation report and photo documentation report if the 1963 concrete rigid frame railway bridge (BHR 26) east of at the Port Credit GO Station over Hurontario Street is to be rehabilitated or removed.

The City of Mississauga may require a Heritage Impact statement for affected cultural heritage resources that are municipally listed or designated under the *Ontario Heritage Act*.

The full Cultural Heritage Assessment Report is located in Appendix 2B.





2.3 Natural Environment

The information on natural features within the project area was largely collected using background data.

Lands adjacent to the Hurontario / Main Street Study Corridor can be divided into:

- Low-density residential areas;
- Medium density commercial areas;
- High density commercial and residential areas;
- Parkland adjacent to Etobicoke Creek; and
- Remnant farmland.

Low-density residential areas are dominated by detached homes with planted grass, trees and shrubs. These areas are found south of the QEW in Mississauga, and south of Queen Street in Brampton. High density commercial and residential areas have multi-storey office towers and apartment buildings, a high percentage of paved surfaces and limited areas of grass, trees and shrubs. High density areas are adjacent to the project from the QEW north to Steeles Avenue. City Park and golf course green areas adjacent to Etobicoke Creek provide relatively natural riparian tree, shrub and ground cover as well as planted trees, shrubs and grass. These green areas occupy a small portion of the project between Steeles Avenue and Queen Street in Brampton. Remnant farmland is limited to a few fallow areas just west of Hurontario Street between Highway 401 and 407.



2.3.1 Methodology

Fauna expected in each of these areas was determined using background data coupled with knowledge of habitats favoured by potential species. For breeding birds, background data was collected for the Ontario Breeding Bird Atlas between 2001 and 2005. For amphibians and reptiles, background data was collected for the Ontario Herpetofaunal Survey from 1984 to the present. For mammals, Mammals of the Great Lakes Region was used to predict species present. All fauna expected within the project area is tolerant of human disturbance and capable of breeding within small areas of suitable habitat.

2.3.2 Existing Conditions

The study area is located within the Etobicoke Creek, Cooksville Creek and Credit River watersheds. Terrestrial habitat present includes abandoned fields, regenerating woodlands, treed areas adjacent to Etobicoke Creek and Mary Fix Creek and small wetlands.

2.3.3 Physiography

The Hurontario/Main Street Corridor falls on land with an agricultural past, now primarily urbanized. The corridor includes sand plains, limestone plains and beveled till plains (from south to north), and lies on Iroquois Plain, South Slope and Peel Plain (also from south to north) (Chapman and Putnam, 1966).



2.3.4 Aquatic

2.3.4.1 Fish Community

- Etobicoke Creek provides habitat for 24 native species of fish, has a fish community which varies from good to poor quality depending upon the location, water quality which is generally fair to fairly poor and a benthic invertebrate community which is fairly tolerant of organic pollution.
- Mary Fix Creek, which crosses the study area south of the QEW, is classified as important, but not critical, fish habitat at this location.
- Cooksville creek is a degraded urban watercourse that has an approximate drainage area of 35 km². It flows southerly for approximately 24 km through the City of Mississauga and discharges directly into Lake Ontario at the Lakefront Promenade Park, near Port Credit. This watercourse provides warmwater fish habitat and serves as a wildlife corridor and linkage to other features in the area. It is considered to have highly variable flows (i.e. flashy conditions) and is subject to erosion and flooding problems. (Aquafor, 2009; Mississauga, 2010).

2.3.5 Terrestrial

The species listed are those that are representative of the type of habitat that is described in the EA report. The species list includes both species that were observed during the site review for this project and from reliable background information that is based on sighting data for the particular area. Where species were identified from background information, if similar, suitable habitat was present, it is very likely that these species would occur and thus were acknowledged to be present in the study area.

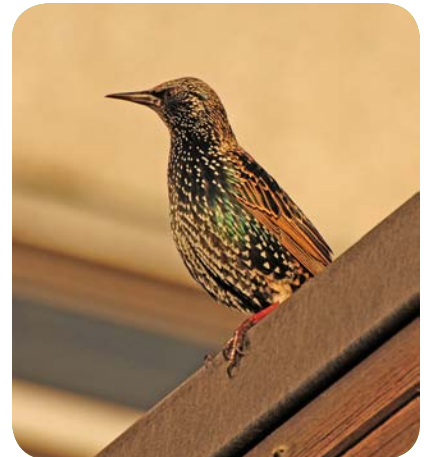
2.3.5.1 Vegetation

- Etobicoke Creek parallels Hurontario Street for two kilometres in the northern portion of the study area and supports riparian vegetation consisting of deciduous and coniferous trees, shrubs and herbaceous vegetation.
- Mary Fix Park, located south west of Queen Elizabeth Way and Hurontario Street, hosts an upland forest community dominated by white pine, red and white oak, with an understory of native species such as sensitive fern and zig-zag goldenrod, and invasive species such as garlic mustard. It also includes a lowland willow forest community that envelops Mary

Fix Creek as it passes through the park.

- Outside Mary Fix Park, the creek is surrounded by manicured lawns and hedges from surrounding residences, with patches of deciduous trees such as willow and maple scattered along its' route.
- Cooksville Creek runs along Hurontario Street from Matheson Boulevard to Lake Ontario, passing through forested areas generally dominated by maple and willow trees, with scattered areas of riparian vegetation.
- There are several small cattail wetlands in the area. The most extensive habitat present is abandoned fields which are dominated by common weedy herbaceous species and invasive plant species.
- Older residential areas at the northern and southern ends of the study area in Brampton and Mississauga support large deciduous and coniferous trees such as red oak, white oak, sugar maple, white birch and eastern white pine.
- The southern portion of the study area or its vicinity supports crested wood-fern, sweet-fern, tall beggarticks, Virginia creeper and jumpseed, each of which is considered rare in the City of Mississauga.





2.3.5.2 Birds

- Vegetated cover along Etobicoke Creek provides nesting, feeding and cover for breeding and migratory birds.
- Forest along Mary Fix Creek provides breeding habitat for the pine warbler, red-breasted nuthatch and common grackle each of which are designated as “species of concern” by Credit Valley Conservation and migratory bird habitat.
- Older residential areas at the northern and southern ends of the study area in Brampton and Mississauga support large deciduous and coniferous trees such as red oak, white oak, sugar maple, white birch and eastern white pine, and this vegetation supports urban tolerant wildlife and migratory birds.

Low-density residential areas: Species expected in this land use type are limited to species which are provincially and regionally common and include:

- Mourning Dove
- Blue Jay
- American Robin
- European Starling
- Cedar Waxwing
- Chipping Sparrow
- Northern Cardinal
- Common Grackle
- Brown-headed Cowbird
- House Finch
- American Goldfinch
- House Sparrow

High density commercial and residential areas: Species expected in this land use type are limited to species which are very tolerant of disturbance and provincially and regionally common and include:

- Rock Pigeon
- European Starling
- House Sparrow



Parkland adjacent to Etobicoke

Creek: Species expected in this land use type are limited to species which are provincially and regionally common. Compared to other land use areas in the project, higher diversity exists in this land use type due to aquatic habitat and more natural conditions. Species expected include:

Species found in residential areas plus:

- Canada Geese
- Mallard
- Spotted Sandpiper
- Downy Woodpecker
- Northern Flicker
- Eastern Kingbird
- Warbling Vireo
- Black-capped Chickadee
- House Wren
- Gray Catbird
- Yellow Warbler
- Song Sparrow
- Baltimore oriole
- Red-winged Blackbird

Remnant farmland:

Species expected in this land use type are limited to species which are provincially and regionally common. Some species found in farmland outside of the GTA are not expected due to the isolation of remnant farmland parcels within the project area from similar habitat. Species expected include:

- Red-tailed Hawk
- Killdeer
- Rock Pigeon
- Mourning Dove
- Eastern Kingbird
- American Robin
- Gray Catbird
- Brown-headed Cowbird
- European Starling
- Chipping Sparrow
- Song Sparrow
- Common Grackle
- American Goldfinch
- House Sparrow

2.3.5.3 Amphibians/Reptiles

Parkland adjacent to Etobicoke Creek: Species expected in this land use type are limited to species which are provincially and regionally common. Compared to other land use areas in the project, higher diversity exists in this land use type due to aquatic habitat and more natural conditions. Species expected include:

- Amphibians:
 - American Toad
 - Green Frog
- Reptiles:
 - Painted Turtle
 - Eastern Garter Snake
 - Brown Snake

Remnant farmland: Species expected in this land use type are limited to species which are provincially and regionally common. Some species found in farmland outside of the GTA are not expected due to the isolation of remnant farmland parcels within the project area from similar habitat. Species expected include:

- Amphibians:
 - American Toad
- Reptiles:
 - Eastern Garter Snake





2.3.5.4 Mammals

Low-density residential areas: Species expected in this land use type are limited to species which are provincially and regionally common and include:

- Gray Squirrel
- Raccoon
- Striped Skunk

High density commercial and residential areas: Species expected in this land use type are limited to species which are very tolerant of disturbance and provincially and regionally common and include:

- Gray Squirrel

Parkland adjacent to Etobicoke Creek: Species expected in this land use type are limited to species which are provincially and regionally common. Compared to other land use areas in the project, higher diversity exists in this land use type due to aquatic habitat and more natural conditions. Species expected include:

- Gray Squirrel
- Raccoon
- Striped Skunk
- Eastern Cottontail Rabbit
- Red Fox

Remnant farmland: Species expected in this land use type are limited to species which are provincially and regionally common. Some species found in farmland outside of the GTA are not expected due to the isolation of remnant farmland parcels within the project area from similar habitat. Species expected include:

- Eastern Cottontail Rabbit
- Red Fox
- Groundhog

2.3.6 Species at Risk

- Federally and provincially designated Species at Risk have occurred within the vicinity of the study area and include the redbird dace, Blanding’s turtle, northern map turtle and milksnake.
- Redbird dace records are 20 or more years old, occurs at the northern and central portion of the study area in the vicinity of Hwy 7 and Derry Road and appear associated with Etobicoke Creek.
- The Blanding’s turtle record is 19 years old, occurs at the southern end of the study area in the vicinity of Lakeshore Road and appears associated with Etobicoke Creek.
- The northern map turtle record is 20 years old, occurs at the southern end of the study area in the vicinity of the QEW and appears associated with the Credit River.
- The milksnake record is more than 50 years old and occurs at the southern end of the study area in the vicinity of Dundas Street.

2.3.7 Designated Areas

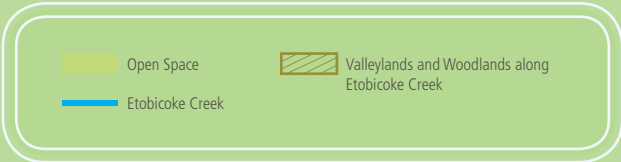
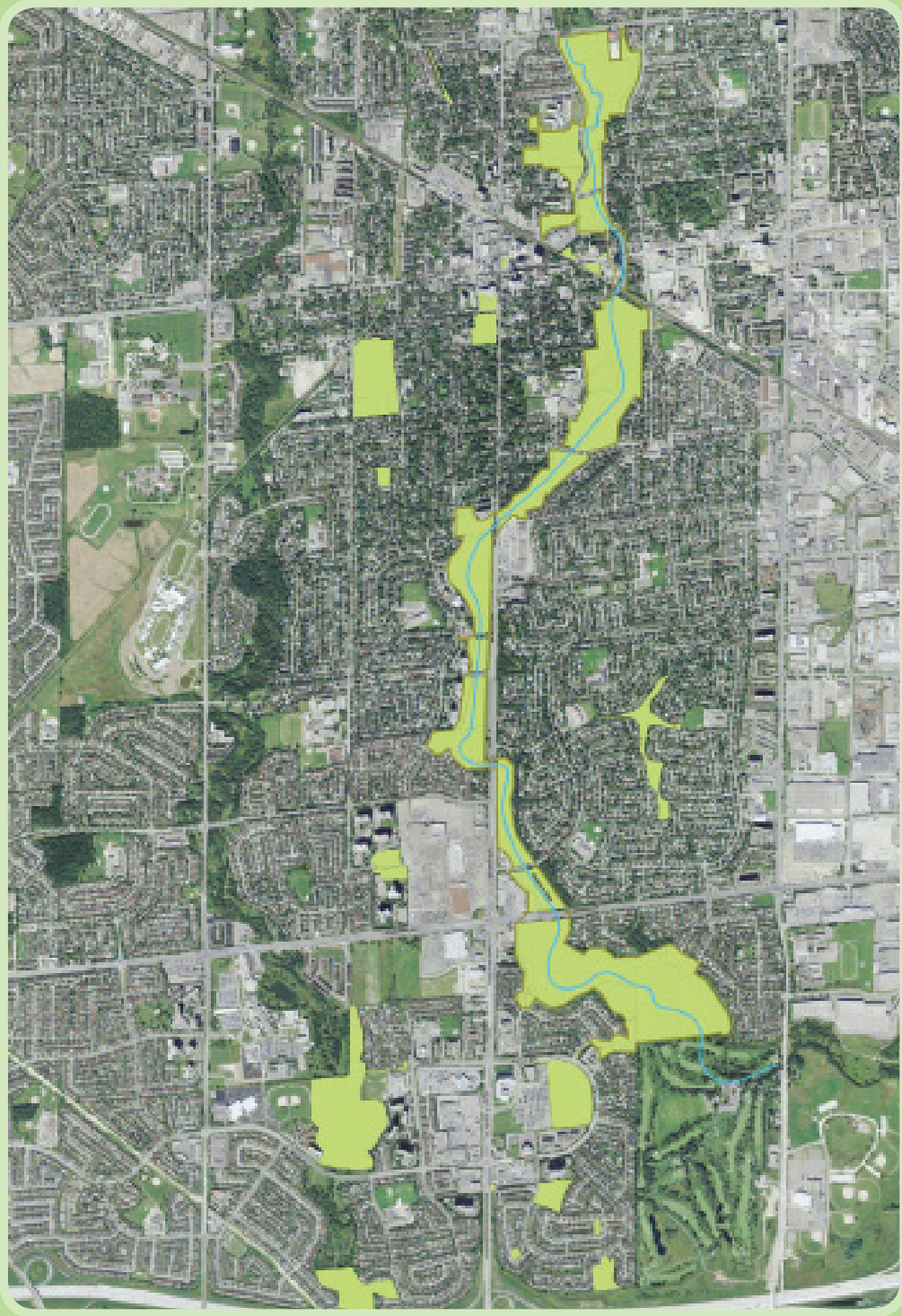
- The valleylands and woodlands along Etobicoke Creek have been designated as Open Space on Schedule A of the City of Brampton Official Plan.
- Mary Fix Park and its associated oak-white pine and willow forests south of the QEW have been designated as a Significant Natural Site during the Natural Areas Survey.
- Older residential areas south of the QEW within the City of Mississauga have been designated as Residential Woodlands by the City’s Natural Areas Survey.
- Areas of Natural and Scientific Interest, Provincially Significant Wetlands and Locally Significant Wetlands do not occur within or in the vicinity of the study area.

Designated areas along the corridor are illustrated in [Figures 2.3.7a-2.3.7d](#).

Field observations were made of the Hurontario/Main Street Study Corridor right of way in the area just north of Eglinton Avenue. This area was selected as it is less developed than other portions of the corridor and houses a variety of vegetation types. The following provides further information on specific vegetation types within the Hurontario/Main Street Study Corridor at the identified location.

BRAMPTON

Figure 2.3.7 a
Brampton



401 AREA

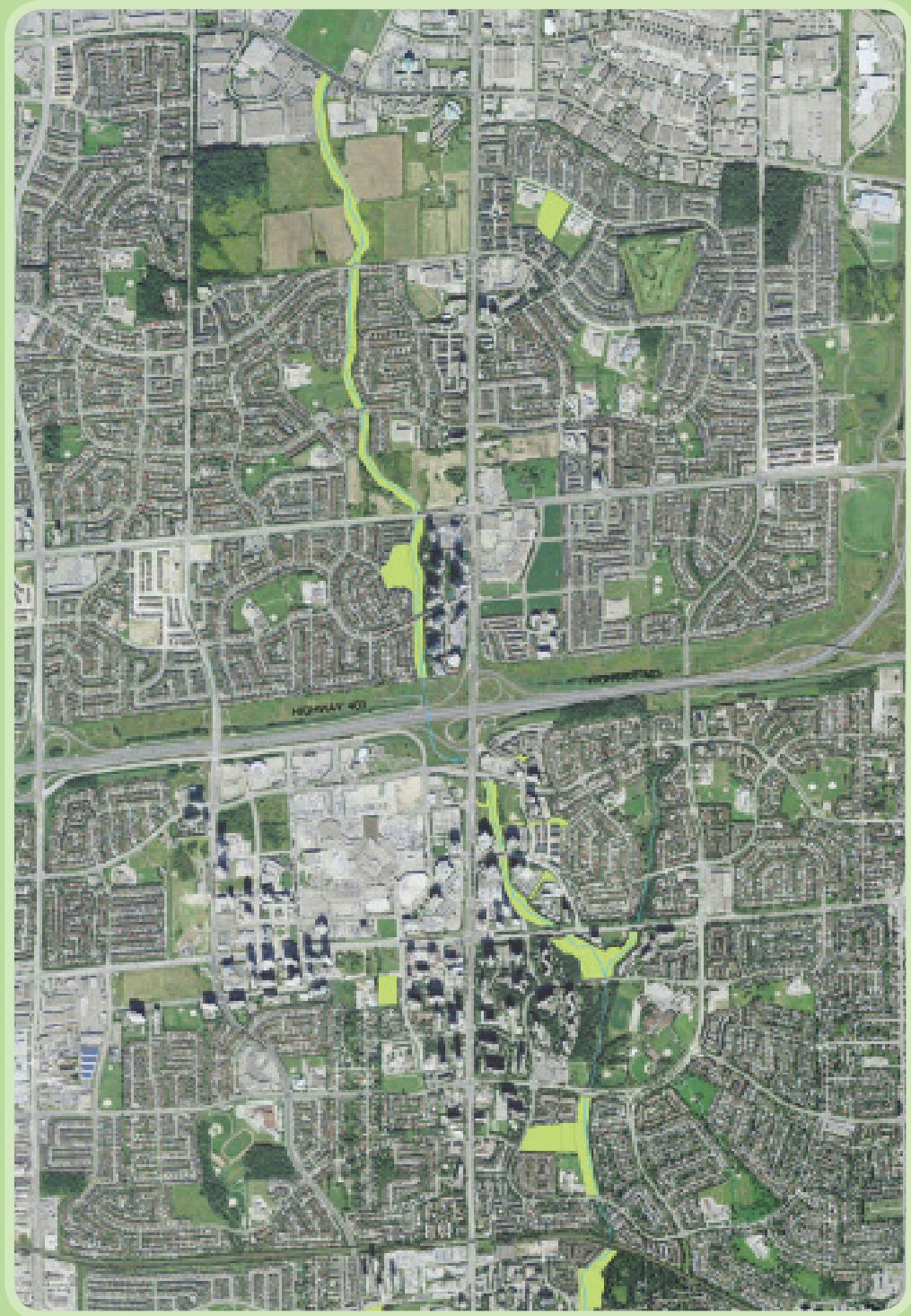
Figure 2.3.7 b
401 Area



Open Space

403 AREA

Figure 2.3.7 c
403 Area



 Open Space

MISSISSAUGA

Figure 2.3.7 d
Mississauga



2.3.7.1 Dry – Moist Old Field Meadow Type (Cum 1-1)

This vegetation type occupies most of the cultural habitat found on the western side of the ROW north of Eglinton. Scattered trees occupy less than 5% of the site and include an ornamental ash (*Fraxinus* sp), eastern cottonwood (*Populus deltoides* ssp. *deltoides*) and pin cherry (*Prunus pensylvanica*). Scattered shrubs occupy less than 5% of the site and the dominant shrub is the common buckthorn (*Rhamnus cathartica*) followed by Tartarian honeysuckle (*Lonicera tatarica*). The dominant ground cover species was an unidentified grass followed by Canada goldenrod (*Solidago canadensis*) and Canada thistle (*Cirsium arvense*). Various other species common to such habitat occur and include heath aster (*Aster ericoides* var. *ericoides*), wild carrot (*Daucus carota*), bird's-foot trefoil (*Lotus corniculatus*), butter-and-eggs (*Linaria vulgaris*), rough-fruited cinquefoil (*Potentilla recta*), prickly lettuce (*Lactuca serriola*), common burdock (*Arctium minus* ssp. *minus*) and cow vetch (*Vicia cracca*).

Portions of this vegetation type are moist as indicated by hydrophyllic plant species such as common reed (*Phragmites australis*), purple loosestrife (*Lythrum salicaria*), reed canary grass (*Phalaris arundinacea*) and broad-leafed cattail (*Typha latifolia*). Moist areas occurred at the southeastern corner behind a gas station and parallel to the ROW between the gas station and the cultural woodland. Moist portions of the site occupy less than 5% of the total area.

This vegetation type is not considered provincially rare (NHIC, 2007). No provincially rare species or species listed by the TRCA as species “of concern” were identified in this community.

2.3.7.2 Cultural Woodland (Cuw)

This vegetation type follows a roughly east-west axis through the central portion of the site starting at the ROW and extending west approximately 50m. It occupies less than 5% of the site. More than other vegetation types, the cultural woodland contains species used to landscape a building formerly occupying the site. The remaining species are frequent colonizers of greenfields.

Tree cover is 20% and is dominated by weeping willow (*Salix babylonica*) followed by silver maple (*Acer saccharinum*). Other tree species include the scots pine (*Pinus sylvestris*), Norway spruce (*Picea abies*), Manitoba maple (*Acer negundo*), black walnut (*Juglans nigra*), trembling aspen (*Populus tremuloides*) and ash sp.

Shrub cover is dense at 70% and is dominated by lilac (*Syringa vulgaris*), Tartarian honeysuckle and common buckthorn. Other shrubs noted were American mountain ash (*Sorbus americana*), juniper (*Juniperus communis*), eastern white cedar (*Thuja occidentalis*), staghorn sumac (*Rhus typhina*) and white mulberry (*Morus alba*).

Ground cover diversity within this community was very low and dominated by the invasive species garlic mustard (*Alliaria petiolata*) as well as motherwort (*Leonurus cardiaca* ssp. *cardiaca*). Other species seen in the ground cover included creeping bellflower (*Campanula rapunculoides*), common burdock, common buckthorn, currant species (*Ribes* sp), late goldenrod (*Solidago altissima*) and yellow avens (*Geum aleppicum*).

2.3.7.3 Cultural Thicket (Cut)

A small cultural thicket is located at the southwestern side of the cultural woodland. Trees within this community provide less than 5% cover and include eastern cottonwood, Manitoba maple. Shrubs are dense with 70% cover and are co-dominated by common buckthorn and Tartarian honeysuckle with smaller amounts of staghorn sumac. Ground cover species are dominated by invasive and field species which have spread from the adjacent cultural meadow. Species observed include late goldenrod, daisy fleabane (*Erigeron annuus*), white sweet clover (*Melilotus alba*), chicory (*Cichorium intybus*), garlic mustard and yellow avens.

2.3.7.4 Duckweed Floating-Leaved Shallow Aquatic Type (Saf 1-3)

This community occupies a small pond located north of the eastern portion of the cultural woodland. Based on its round shape and relatively steep sides, it appears to have been dug. Vegetation within the pond is dominated by duckweed (*Lemna* sp), with small amounts of purple loosestrife. Margins of the pond are dominated by broad-leaved cattail with smaller amounts of purple loosestrife and red-dogwood.

Coarse woody debris from an adjacent weeping willow fills half the pond area.

No frogs, turtle or wetland birds were seen and the small area of the pond (approximately 150 m²) make occupancy by these taxa unlikely.





2.3.8 Impacts

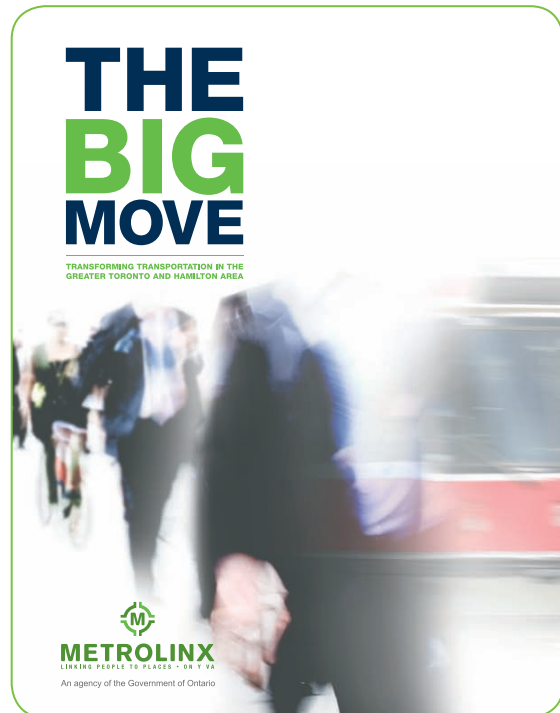
Based on the expectation that fauna within the project area have habituated to various forms of disturbance, impacts to fauna from construction and operation of rapid transit long the Hurontario / Main Street Corridor are not expected.

2.4 Planning Context

2.4.1 Provincial Context

The Province has recently undertaken a number of initiatives for managing and supporting development in the Greater Toronto and Golden Horseshoe Area. As part of this effort, a Provincial agency called Metrolinx was created to coordinate transportation and transit across the region. In November of 2008 they approved their RTP “The Big Move”, which defines improving transit along Hurontario as one of the 15 top priorities for early implementation and supports increased growth and development in the corridor.

The RTP rests on the framework of the Ontario Provincial Policy Statement, Places to Grow plan and Greenbelt legislation. In 2006, the Province outlined how and where development should occur by enacting the Places to Grow legislation and by adopting the Growth Plan for the Greater Golden Horseshoe Area.





Main Street in Downtown Brampton

2.4.2 Places to Grow

The *Places to Grow Act* provides a legal framework for the government to designate any geographic area of the province as a growth plan area, and to develop growth plans in consultation with local officials and stakeholders. The Growth Plan for the Greater Golden Horseshoe (GGH) was released on June 16, 2006 and contains policies that directly affect planning policy in the study area. Growth is to be guided by the following principles:

- Build compact, vibrant and complete communities;
- Plan and manage growth to support a strong and competitive economy;
- Protect, conserve, enhance and wisely use the valuable natural resources of land, air and water for current and future generations;
- Optimize the use of existing and new infrastructure to support growth in a compact, efficient form;
- Provide for different approaches to managing growth that recognize the diversity of communities in the GGH; and
- Promote collaboration among all sectors including government, private and non-profit, and residents to achieve the vision.

In the Growth Plan, Hurontario/Main Street is designated as a proposed Higher Order Transit Corridor through 2031 connecting the two Urban Growth Centres (UGC) in Brampton and Mississauga, both of which are centred on Hurontario / Main Street.

UGCs will be planned as focal areas for investment in public services, to accommodate and support major transit infrastructure, and to serve as high density major employment centres. These UGCs have been directed to accommodate a minimum of 200 residents and jobs combined per hectare. See [Figure 2.4.1: Urban Growth Centres, centred on Hurontario/Main Street](#).

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URBAN GROWTH CENTRES

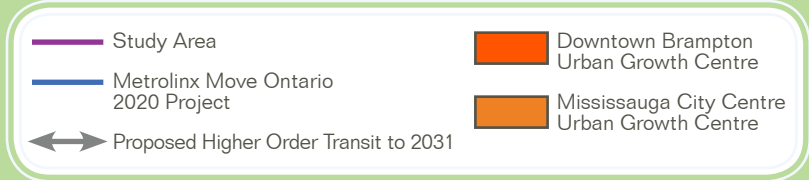
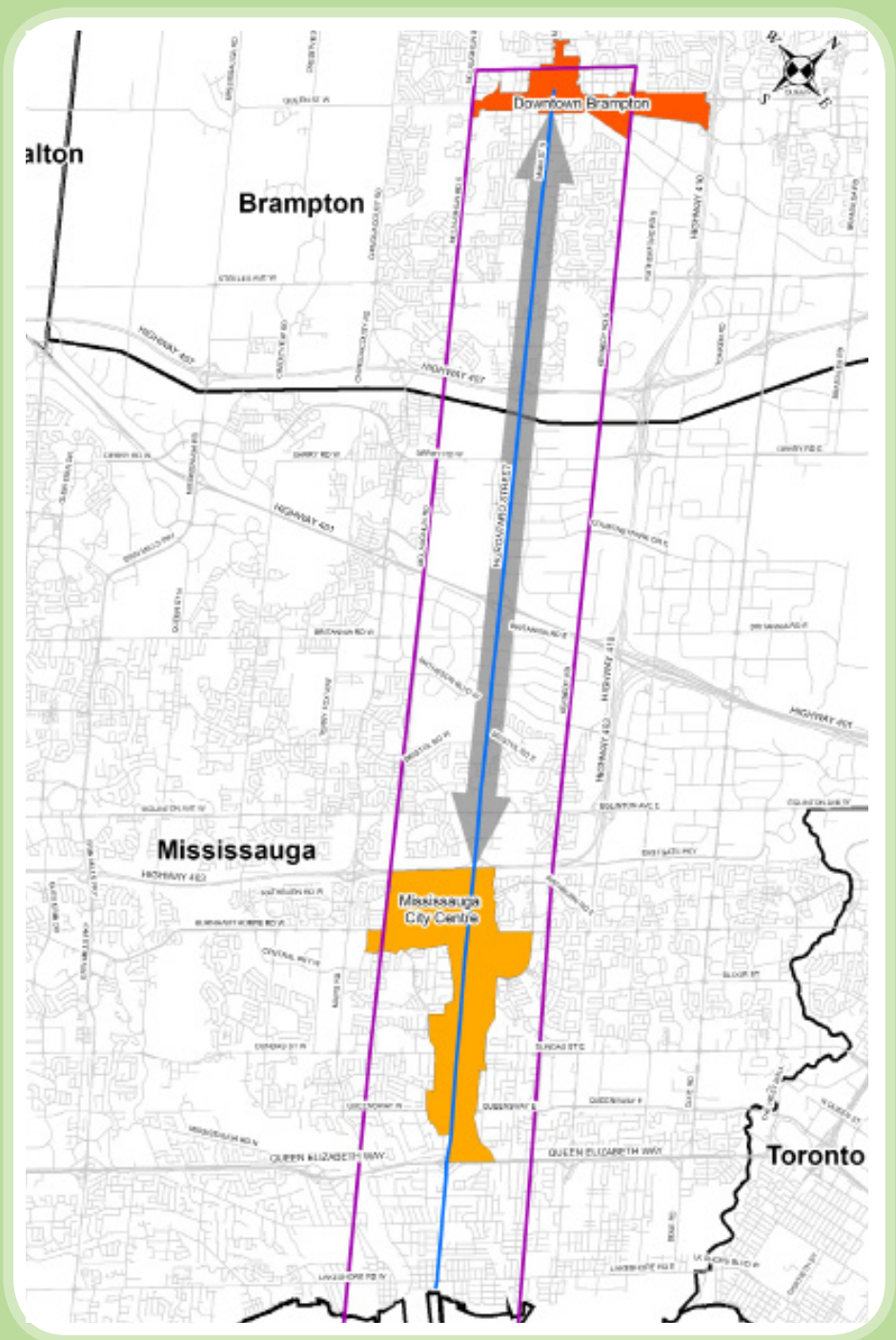


Figure 2.4.1:
Urban Growth Centres,
centred on Hurontario/
Main Street



The Growth Plan recommends that public transit be the first priority for transportation infrastructure planning and major transportation investments. Additionally, the Growth Plan suggests that all decisions concerning transit planning and investment will be made according to the following criteria:

- Using transit infrastructure to shape growth, and planning for high residential and employment densities that ensure the efficiency and viability of existing and planned transit service levels;
- Placing priority on increasing the capacity of existing transit systems to support intensification areas;
- Expanding transit service to areas that have achieved, or will be planned so as to achieve, transit-supportive residential and employment densities, together with a mix of residential, office, institutional and commercial development wherever possible;
- Facilitating improved linkages from nearby neighbourhoods to UGCs, major transit station areas, and other intensification areas;
- Consistency with the strategic framework for future transit investments outlined in the plan; and
- Increasing the modal share of transit.

These criteria are seen to be directly relevant to the Hurontario/Main Street corridor.

The Growth Plan also provides population and employment distribution targets. These targets project the Region of Peel to grow by 290,000 people between 2001 and 2011, then another 170,000 between 2011 and 2021 and an additional 150,000 to 2031, for a total of 610,000 additional people. Forty percent of this growth (244,000 people) must happen within the existing urban boundary. This means that the Region of Peel and the Cities of Brampton and Mississauga will be required to examine higher density redevelopment sites along the Hurontario/Main Street corridor in order to help them meet this target.

2.4.3 Metrolinx

Metrolinx is an agency of the Government of Ontario that was created in response to transportation issues in the Greater Toronto and Hamilton Area (GTHA). Its mandate is to coordinate a Regional Transit Plan (RTP) that aims to create a seamless, integrated transportation network, considering all modes of transportation and in particular, public transit, so that residents in the GTHA have opportunities for enhanced accessibility and movement.

The RTP indicates that improvements to roads and highways, commercial transportation, mobility hubs and transportation demand management will depend on a first class public transit system that is integrated, coordinated and sustainable. Making transit available is not good enough. Transit needs to be vastly improved to

better serve the public and to become a viable choice for all communities. Growth management and land use planning needs to be well-integrated with transportation planning, and should build on the objectives of the Growth Plan. Mobility hubs will also be crucial to the success of a first class public transit system as well as the rapid transit facilities that connect these intermodal transit stations to one another.

Implementation of rapid transit services will require significant investment. Metrolinx is developing, in tandem with the RTP, an Investment Strategy that identifies criteria to evaluate the effectiveness of proposed financing tools and revenue sources in meeting the objectives. Through this initiative, cities such as Mississauga and

Brampton are responsible for identifying transit corridors that will become significant from the GTHA regional perspective in order to position themselves to receive proper funding. One of the objectives of the Hurontario / Main Street Study is to identify the boundaries of the Hurontario / Main Street transit corridor and establish how this corridor will meet the objectives of an integrated and sustainable transportation system.

There are 15 strategic directions outlined in the RTP intended to guide development in the GTHA:

Increase Choices for Travel

1. Build a Comprehensive Regional Rapid Transit Network
2. Promote Active Transportation



Providing rapid transit on the Hurontario/Main Street corridor from Port Credit to Downtown Brampton is one of the Top 15 Transit Priority projects listed in the Regional Transit Plan.

3. Improve the Efficiency of the Road and Highway Network
4. Consider all Modes of Transportation

Reduce Demands on the Transportation System

5. Create and Ambitious Transportation Demand Management Program

Meet the Needs of the Traveller First

6. Create a Customer-First Transportation System
7. Implement an Integrated Transit Fare System

Build Communities that Make Travelling Easier

8. Build Communities that are Pedestrian, Cycling and Transit-Supportive
9. Develop a System of Mobility Hubs
10. Focus Growth and Development Along Transportation Corridors

Commit to Continuous Improvement

11. Improve Transportation Understanding through Research and Innovation
12. Plan for Universal Access
13. Improve Goods Movement Within the GTHA and With Adjacent Regions
14. Develop a National Strategy for Transportation in Urban Regions
15. Develop an Investment Strategy to Ensure Sustainable Funding for Transportation Infrastructure and Supporting Programs

There are two categories for building the Regional Rapid Transit Network: those projects with 15-year capital outlooks and those with 25-year capital outlooks. The Hurontario/Main Street corridor, between the Port Credit GO Station and Downtown Brampton (and potentially north to Mayfield Road), is in the 15-year category. In addition, there are a number of other projects that link with the Hurontario/Main Street project. These include:

- All day express GO Transit service between Union Station and Hamilton, which could potentially stop at the Port Credit Gateway Hub;
- All day express GO Transit service between Union Station and Georgetown which would stop at Downtown Brampton;
- All day GO Transit service between Union Station and Milton which would stop at Cooksville;
- A higher-order transit system along Dundas Street all the way from Waterdown in the west to Kipling Station in the east, which will cross Hurontario Street in Downtown Cooksville;
- The “Mississauga Transitway” which runs along the Highway 403 corridor from Oakville to Renforth which meets Hurontario Street at the Mississauga Downtown Core;
- A higher-order transit system along Lakeshore Road from Hurontario Street to Union Station;
- Brampton’s Züm system along Queen Street; and
- Improved transit service on Hurontario Street between Downtown Brampton and Mayfield Road.

The Hurontario/Main Street corridor higher-order transit system will link all of these projects, making it possible to seamlessly travel from Georgetown to Port Credit, for example, or from Snelgrove to Hamilton, all on public rapid transit with a minimal number of transfers.

The Hurontario/Main Street corridor will be a key link in the transit plan as it directly connects two UGCs. Land uses along the corridor will have to support transit use and serve as trip origins and destinations, resulting in a mix of uses with higher densities.

The Metrolinx RTP shows a number of mobility hubs along the Hurontario/Main Street corridor. There are anchor hubs at Downtown Brampton and Mississauga’s Downtown Core and gateway hubs at Steeles Avenue, Port Credit and Downtown Cooksville. Mobility hubs are locations where two or more transit lines meet and where people should be able to move from one line to the other with ease. They are also places that can be easily reached by transit from a number of directions and therefore they are places where there should be a lot of other activity such as retail and employment uses. They should also be centres for higher-density residential. Although both anchor hubs and gateway hubs should have a good mix of uses, anchor hubs are more likely to be destinations, whereas gateway hubs are more likely to be entry points into the transit system.

Short trips, which involve walking and cycling, should be encouraged over the use of cars, by promoting higher densities and creating pedestrian and bicycle friendly environments. This is referred to “Active Transportation” in the RTP and a goals are set for each area within the GTHA using trips per hectare as the measure. Where the Hurontario / Main Street corridor passes through the Mississauga’s Downtown Core and south to the Queen Elizabeth Way (QEW), the target is 100 trips per hectare; Only downtown Toronto has a higher target rate. Outside of the Mississauga’s Downtown Core area the targets are lower, but locating higher-density residential, jobs, retail areas and other destinations near or along the transit corridor is still a priority throughout the entire study area.

The Draft Investment Strategy outlines how Metrolinx will implement the measures outlined in the RTP through various funding mechanisms. Rapid transit along the Hurontario/Main Street corridor will be a high priority to receive funding since it is one of the top 15 priorities for the next 15 years. Metrolinx is expected to contribute a significant amount of funding to this rapid transit initiative through the Province’s MoveOntario 2020 program, which anticipates funding from both the provincial and federal governments.



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2.4.4 Regional Context

2.4.4.1 Region of Peel Official Plan

The Region of Peel's Official Plan (June 2005) identifies Queen Street in Brampton from Hurontario Street east to Dixie Road, and the Mississauga's Downtown Core as Regional Urban Nodes. These are major locations of compact urban development providing a range and mix of housing, employment, recreation, entertainment, civic, cultural and other activities for Peel residents and employees and other residents of the GTA. The Region's objectives are to:

- Achieve nodes that are linked by public transit, and include a range and mix of high intensity compact forms and activities while taking into account the characteristics of existing communities and services;
- Support safe and secure communities, public transit, walking and cycling; and
- Incorporate a range and mix of residential and employment opportunities.

Hurontario/Main Street is identified in the Official Plan as a 'Major Roadway', although it is not given a specific required width. Hurontario/Main Street is also recognized as a 'Major Bus Transit Corridor' and is shown to be a candidate for high-occupancy vehicle (HOV) lanes north of Steeles Avenue to Bovaird Drive and reserved bus lanes south of Steeles to the QEW.

It should be noted that Hurontario/Main Street is under the jurisdiction of the local municipalities. Queen Street is under the jurisdiction of Brampton between McMurchy Avenue and Highway 10 and the rest is under the jurisdiction of the Region of Peel.



2.4.4.2 Peel Regional Official Plan Review

As part of Peel Region’s ongoing Official Plan review process, the Region has identified various areas of discussion, one of which is transportation. In May 2007, Peel Region hosted a workshop discussing the Region’s transportation issues and challenges. The workshop revealed that passenger and goods trips were rapidly growing in the Region and the predominance of the modal share was for auto trips versus transit. This has led to increased congestion.

As a result of this workshop, the organizers suggested that Peel requires a combination of:

- Smarter growth through better integration of transportation and land use planning;
- Vastly improved transit and better use of technology;
- Aggressive implementation of Transportation Demand Management (TDM); and
- Changing people’s travel behaviour through education.

This work led to the development of Regional Official Plan Amendment (ROPA 22) which was adopted by Council on November 19, 2009. The purpose and effect of the ROPA was to revise the Regional Official Plan policies as they related to transportation and to ensure

these policies conformed to all of the current provincial plans, policies and legislation. In addition, the Region was also proactive in incorporating policy direction from the Metrolinx Regional Transportation Plan into the amendment. This amendment serves as an update to the policies contained in ROPA 16 and responds to the unique challenges of transportation planning in the Region.

2.4.5 Municipal Context

2.4.5.1 City of Mississauga Official Plan

Mississauga's Official Plan, known as Mississauga Plan, was adopted by City Council in July 2002 and approved by the Region of Peel in May 2003. Hurontario Street is identified as an arterial road with a Major Transit Corridor designation along it. Its desired width ranges from 30 metres south of the QEW to 50 metres through the Mississauga Downtown Core. Between the QEW and the Cooksville railway underpass, Hurontario Street has a desired width of 35 metres.

The plan shows four nodes along Hurontario Street: at Highway 401, at Eglinton, at Dundas and at Lakeshore, in addition to the Mississauga Downtown Core area around Burnhamthorpe Road. The policies state that a mix of medium and high density housing, employment, and commercial uses, including mixed use residential/commercial buildings and offices will be encouraged to locate in City Centre Nodes and Corridors, reflective of the urban form hierarchy. City Centre Nodes and Corridors will accommodate a greater variety and concentration of uses than their surrounding areas and will:

- Act as a focus for more compact, mixed use and higher intensity transit-oriented development (TOD);
- Provide a community focus and identity;
- Maximize the use of existing infrastructure;
- Provide access for more people to a wider variety of community and commercial services and facilities, and employment opportunities;
- Protect the stability of existing neighbourhoods;

- Be developed and designed to be attractive, pedestrian friendly and supportive of the amenity and spatial needs of the transit uses, and compatible with the surrounding local urban form and community; and
- Enhance the use of transit, walking, and cycling.

Nodes will be served by transportation corridors containing roads and transit, and may contain rapid transit and Bus Rapid Transit (BRT) facilities. Transportation facilities with the greatest capacity will serve the Downtown Core and provide connections to neighbouring municipalities.

The Mississauga Downtown Core is the focal point of the urban form hierarchy and should contain the highest level of development in terms of height and density. Other nodes and corridors are intended to have less height and density than the Mississauga Downtown Core, but at greater levels of development than in other areas.

The Hurontario/Main Street study is generally consistent with and supportive of the Mississauga Plan land use and transit policies, as well as policies for the individual corridors mentioned above, since it is environmentally sustainable, assists with completing neighbourhoods, encourages growth in targeted areas, promotes a strong economy, and advances collaborative efforts across the City.



2.4.5.2 Mississauga’s Response to the Growth Plan for the Greater Golden Horseshoe

A review of the Official Plan is currently being undertaken to ensure conformity with Provincial and Regional initiatives and to address emerging issues. The goal is to develop a plan that is based on the principles of sustainability, public health and compact urban form. The Plan will help guide the City as it transitions from a Greenfield municipality to an urban centre, which will need to focus on intensification and redevelopment for future growth. The draft comprehensive Official Plan was released for public review and comment on March 22, 2010 and is expected to be approved in June 2010.

On September 7, 2006, Mississauga Council approved OPA 58, which established an Interim UGC for the City of Mississauga, based on the Province’s suggested changes to the City’s Interim UGC to be more consistent with the existing boundaries of the City Centre Planning District. The UGC has been extended southward to the QEW highway, consistent with the southern extent

of the interim UGC. These lands have a mix of uses and intensity of development that are consistent with a growth centre and are clearly defined by the lands between the QEW and Highway 403, centred along Hurontario Street. The Province accepted this proposal and has updated its mapping to reflect Mississauga’s wishes.

2.4.5.3 Mississauga Studies and Initiatives

The City of Mississauga has recently completed, or is in the process of completing several special planning studies to provide direction for growth in the future and to provide input into the Mississauga Plan Review. Studies and initiatives that are relevant to the Hurontario Street are:

- **Mississauga Strategic Plan Update** – The City recently completed its update of the 2001 Strategic Plan. The Strategic Plan known as “Our Future Mississauga” will guide the overall vision for the future of the City. The backbone of the Plan is its five pillars for the City’s future: developing a transit-oriented City; completing neighbourhoods; living green; cultivating and creating innovative business; and ensuring youth, older adults and new immigrants thrive. The Hurontario/Main Street study supports each of these important pillars.
- **Mississauga Transportation Master Plan** – The City is creating a Transportation Master Plan to bring together and supplement various background studies being undertaken for the current Official Plan review into a comprehensive document. These other studies include the Strategic Transit Network Opportunities Study, Cycling Master Plan, Mobility Hubs, and the Road Functional Classification and Road Network Review.
- **Mississauga Strategic Transit Opportunities Study** – This study examines the current road and transit network of Mississauga as a whole, to identify a higher-order transit network for the City to include in its Official Plan. The study uses the mobility hubs and higher-order transit initiatives described in the Metrolinx RTP as starting points, and recommends several additional locations with the potential to act as mobility hubs or other higher-order transit corridors.

There is a specific recommendation to include BRT or LRT on Hurontario Street in Mississauga’s long term transit network, supporting mobility hubs at the Mississauga Downtown Core, Downtown and Port Credit and connecting to other recommended transit initiatives on Highway 403, Dundas Street and Lakeshore Road. Additionally, the study recommends updates to land use policies in Mississauga’s Official Plan to better address the relationship between land use, development and transit.

- **Growth Forecasts** – The City is undertaking an update to the municipal growth forecasts to address evolving needs and growth potential within nodes and corridors.
- **Mississauga Growth Management Study** – To assist in the Official Plan review, staff have undertaken a study to examine and assess key nodes and corridors within the City. A Report was released for discussion in October 2008. The report outlines a strategic approach to growth management which builds upon the City’s existing development and growth patterns. It is anticipated that new residential growth will largely be accommodated through redevelopment and intensification within existing communities (i.e. along Hurontario).
- **Employment Lands Study** – The study assesses the demand for employment lands by reviewing the employment land development in the last six years and comparing it to vacant employment land supply. The Growth Plan requires that a municipality have adequate supply of land to accommodate growth forecasts and that employment uses be located in UGCs or near transit services. The results of this study will assist in determining the appropriate type and location of land uses for the corridor.

- **Green Development Strategy** – Mississauga has recently approved “Stage One Green Development Standards” that are used as the benchmark for new private development. New development will include best sustainable technologies and policies as part of the development approval process with green development standards influencing site works, building design and construction methods.
- **Port Credit/Lakeview District Plan Reviews** – The City of Mississauga is reviewing the District Plan policies as part of a process to keep Mississauga Plan valid and current. A major component of the project will be a public consultation process to engage the community to create practical and realistic visions. The vision will then be translated into an Official Plan Amendment, Urban Design Guidelines, and a Community Improvement Plan.
- **Upper Hurontario Street Corridor (OPA 40)** – The study addressed both sides of Hurontario Street from Matheson Boulevard north to the border with Brampton and investigated the long term land uses and urban design vision for the area, and reviewed whether

or not the land use and urban design policies complied with the Mississauga Plan. The long term goal was to develop the corridor as a major civic boulevard, a focal point for high density employment uses, and an entry point that reinforces a quality image. The study has resulted in amendments to the Mississauga Plan, approved on February 13, 2008, as well as proposed amendments to the Zoning By-laws for land in the area.

- **Mississauga Office Strategy** – The purpose of the study is to maintain and enhance Mississauga’s competitiveness as an office location, complete its goals for a vibrant mixed-use Downtown Core, realize its vision for City-building, and determine a policy framework to support this initiative. The study was undertaken as part of the Mississauga Plan Review.
- **Downtown21 – Master Plan for Downtown Mississauga** – In March 2009, the City of Mississauga formally begin the process of undertaking a comprehensive master plan for its downtown. The Downtown21 project is intended to develop a Master

Plan for the phased development, redevelopment and evolution of Mississauga’s Downtown Core into a vibrant, walkable, compact, urban downtown. This effort is intended to yield a technically and financially feasible plan that meets the social needs of a diverse population, while improving and building upon or maintaining quality infrastructure and economic conditions required to capture or retain world-class businesses and academic, recreational and cultural institutions. At the conclusion of the process the City and major stakeholders shall be provided with a detailed plan of short-, medium- and long-term actions necessary for implementing the Master Plan. The Master Plan will provide a clear guide and predictable framework for the City of Mississauga, landowners, developers, stakeholders and the public and will ensure that all future public and private investments in the Downtown Core will contribute to the realization of the Master Plan.

- **Road Classification Review** – Staff are undertaking a review of the road classifications and related right-of-way widths. This may impact on Hurontario Street.



2.4.5.4 Brampton Official Plan

The City of Brampton recently completed an extensive review of its Official Plan, which was adopted by Council in October 2006. The Region of Peel approved the City of Brampton's 2006 Official Plan on January 17, 2008 and the Ontario Municipal Board approved the Official Plan on October 7, 2008.

The 2008 Brampton Official Plan designates Hurontario/Main Street one of its two Main Street Primary Corridors (the other being Queen Street) on Schedule 2. The street is identified as an Arterial Road with a 36 metre right-of-way width south of Harold Street and a 26 to 30 metre width north of Harold Street on other schedules. Main Street is designated as part of the City's Flower City Strategy to receive the highest level of design treatment. It is also identified as a potential BRT corridor. According to the Official Plan, this transit corridor should be designed to have the flexibility to be operated as a Light Rail Transit (LRT) corridor linking major destinations both within and beyond the City, have peak headways of five minutes or less, and should be given priority over other vehicular traffic.

The Official Plan also describes the City's vision for its physical structure which is illustrated in Schedule 1, City Concept. Hurontario/Main Street is identified on this Schedule as an Intensification Corridor that links districts and communities with nodes and provides the focus for intensification and transit-supportive development. Within the study area, three Transit-Supportive Nodes have been clearly depicted, one at Ray Lawson Boulevard, another at Steeles Avenue and the last node at the intersection of Queen Street and Main Street, in the heart of the City. The designation of this street as an Intensification Corridor and establishment of major transit stations at the identified transit nodes provide further potential for more intensive, transit-supportive,

pedestrian-friendly development. The study will reinforce the City Concept vision of providing a network of attractive, integrated and sustainable communities that are linked by transit and supported by appropriate densities and built form. The designation of Downtown Brampton as an Urban Growth Centre as described above further attests to the importance of Downtown Brampton in the Regional Urban Structure; it should be recognized equally with Mississauga’s UGC in the project’s policy recommendations.

Land use designations are also described in the Official Plan. Along the corridor, the designation between Highway 407 and Steeles Avenue is generally residential. The South Fletcher’s Courthouse Area Office Centre designation abuts Hurontario Street midway between Highway 407 and Steeles Avenue and contains a number of institutional buildings, including the A. Granville & William Davis Courthouse, the Provincial Offences Court and the Peel Regional Police Headquarters, in addition to a number of office buildings. North of Steeles Avenue, there is a Regional Retail Centre (Shoppers World) designation in the northwest quadrant of the intersection of Hurontario/Main Street and Steeles Avenue. The lands on the west side of Main Street between Shoppers World and the southern boundary of the Central Area designation are generally designated Open Space (Valleyland). The lands on the east side of Main Street between Steeles Avenue and the Central Area are mainly designated residential.

As an Intensification Corridor, Hurontario/Main Street offers significant opportunities for accommodating future growth through revitalization and infill/intensification that is transit oriented. The node at Ray Lawson/ County Court Boulevard is not identified on other schedules, although another transit node is shown just south of Highway 407 on the transportation schedule.

The 2006 Official Plan policies state that the Central Area designation identifies a mixed use area intended to accommodate the fullest range and concentration of commercial, cultural and civic uses and compatible residential uses.

A portion of Main Street is immediately adjacent to Etobicoke Creek, which is a designated valleyland/ watercourse area. This designation means the area is intended primarily for preserving and conserving its natural features, functions and linkages. This may be a significant constraint to approving any proposals to extend the existing right-of-way along this section of the corridor due to the significance and vulnerability of the environmental features, including a fairly substantial waterway, valleyland and vegetation. Special care and consideration for these environmental features must be taken in this area if any modifications to the right-of-way are proposed.

The Brampton Official Plan also puts forward a range of policies regarding the identification, retention and ongoing conservation of significant cultural heritage resources, including buildings, streetscapes, neighbourhoods, archaeological resources and cultural landscapes. The heaviest concentration of standing heritage resources in Brampton (and very likely all of Peel Region) is within Brampton’s downtown and Central Area, with well over 900 heritage properties currently identified and documented.

Significant heritage resources are within the Hurontario/ Main Street study area in Brampton. The Main Street South corridor between Wellington Street West and Harold Street, along with Gage Park, the footbridge in Joyce Archdekin Park, Armbro Heights stone gates at Elgin and Main Street South, Cheyne Cemetery just south of County Court Boulevard and 24 other properties

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2.4.5.5 Brampton's Response to the Growth Plan for the Greater Golden Horseshoe

are listed in the Municipal Register of Cultural Heritage Resources. Approximately ten properties along Main Street are either designated under Part IV of the *Ontario Heritage Act* or designation is pending.

In a recently completed heritage district feasibility study, Main Street South, the neighbourhood surrounding the Peel Heritage Complex and six other neighbourhoods in the Central Area were identified as being of the utmost cultural heritage value and are deemed suitable for heritage district designation under Part V of the *Ontario Heritage Act*. The Main Street South corridor is already a designated special policy area and planning provisions are in place to help ensure that the predominant character and identity of the corridor is maintained.

In October 2007, the City of Brampton approved OPA 93-289 and OP 2006-010, which added interim growth management policies to both the 1993 and 2006 Official Plans, to guide applications for high-density residential intensification. The policies limit the magnitude of residential intensification and provide area-specific and general intensification policies to guide applications in advance of the completion of the Growth Plan Conformity exercise. These policies also deem employment land conversion premature pending the Council adoption of the Growth Plan Conformity exercise and resulting amendments to the Official Plan.

The Hurontario/Main Street corridor is within the Intensification Corridor and Transit Supportive Nodes area as identified in the 2006 Official Plan. Proposals for residential intensification along the Hurontario/Main

Street corridor, outside the Central Area, are limited to a maximum building height of ten storeys, and a maximum density of 200 units per net residential hectare. These policies would not apply to the Central Area in keeping with the City’s special vision for that area.

On September 9, 2009, Council received a draft Official Plan Amendment that will bring the City’s Official Plan into conformity with the Growth Plan. As part of Brampton’s response to the Provincial Growth Plan, undertook a variety of studies as noted in Section 2.4.5.6 and held several public consultation sessions. The City is also currently completing their Market Demand and Development Feasibility Study for Employment Lands. Final consideration of the findings of these studies, together with consideration of the submissions received from the consultation sessions, will enable the completion of a final Official Plan Amendment for Council consideration.



2.4.5.6 Growth Plan Conformity Studies

The City of Brampton also has a series of existing and ongoing planning studies that are relevant to this initiative, which include:

- **Assessment of Planned and Potential Growth in Greenfield Areas** – An inventory of Greenfield land in Brampton to assess the ability to of these lands to accommodate population and employment growth and to determine available density options.
- **Employment Land Strategy** – This study inventoried vacant, underdeveloped, developed and planned employment land in Brampton and assessed land required to accommodate employment growth to 2031 and to improve the City’s population/employment ratio. The study assessed employment land location relative to Growth Plan policies and addressed issues related to employment land conversion.
- **Market Demand and Development feasibility Study for Brampton Employment Lands** – This study reviewed the long-term employment land allocations and employment forecasts contained in several reports previously prepared for the City of Brampton and analyzed trends in the GTA industrial and office markets. The study provided a market-based assessment of the future demand for employment land in Brampton.
- **Inventory and Assessment of Intensification Opportunities** – A key study that reviewed intensification opportunities throughout the City with a goal of identifying Brampton’s potential to accommodate future intensification. The 2006 Official Plan outlines Brampton’s Central Area, Transit Supportive Nodes and Intensification Corridors as focus areas for intensification. This study reviewed these areas in detail and made recommendations on their appropriateness for intensification.

- **Infrastructure Capacity Review of Utilities and Hard Services** – This study considered the capacity requirements for municipal utility services (hydro, telephone, gas, water, and wastewater and stormwater management) to support forecast growth to 2031.
- **Transportation and Transit Master Plan Sustainable Update** – The Transit and Transportation Master Plan (TTMP) updated the original 2004 TTMP's goal of providing policies and long-term infrastructure to meet future transportation demands in an economical, efficient and environmentally sustainable manner, while also reflecting recent development trends, growth management planning, development charges by-law update, Provincial Growth Plan objectives and other planning legislative changes.
- **Natural Systems and Conservation Policy Review** – A policy review was conducted by comparing the Growth Plan policies to the policies included within the 2006 Official Plan to determine if additional changes were necessary to fully implement the Growth Plan.
- **Financial and Municipal Management Review** – The City also undertook a review and analysis of financial impacts of growth.

Based on the recommendations of the above-noted studies and input from the extensive public consultation a draft Growth Plan conformity official plan amendment has been prepared addressing the following key components:

- Updating population, household and employment forecasts;
- Recognizing intensification as an important part of the City's Growth Management Strategy;
- Ensuring that stable residential areas are preserved and requiring measures to ensure that new development is compatible with existing neighbourhoods;
- Emphasizing the importance of the sustainable city structure and the role of key intensification areas in accommodating higher density development;
- Introducing the key areas of intensification which include the Urban Growth Centre in addition to the Central Area; a reclassification of intensification corridors into primary and secondary intensification corridors and a reclassification of transit supportive nodes into mobility hubs and major transit station areas;
- Establishing a policy framework related to densities and heights in the key focus areas of intensification as well as a policy framework for intensification outside of these focus areas of intensification;
- Including a new chapter devoted solely to policies on the Central Area;
- Refining policies related to the conversion of employment lands to non-employment uses;
- Including new policies which acknowledge that employment growth to 2031 in the order of 70,000 to 90,000 jobs need to be accommodated on existing vacant or new employment land;
- Including new policies which encourage higher employment densities on lands within North West and North East Brampton;
- Refining policies on the North-South Transportation Corridor;
- Enhancing policies on active transportation and goods movement; and
- Updating policies to recognize Brampton's natural heritage system.

Other relevant programs and studies undertaken by the City that are relevant to this initiative include:

- **Growth Management Program** – Due to unprecedented growth, the City initiated the development of a growth management program.

The program is a 'Smart Growth' initiative that coordinates infrastructure and growth in a manner that maintains service levels and is financially sustainable. The Program is implemented through the Development Allocation Strategy. This Strategy includes a cap on approvals of residential developments of 5,500 units per year, excluding the Downtown and Central Area, where intensification is being encouraged. A two-stage block plan approval process is in place for emerging Greenfield development areas.

- **Development Design Guidelines** – The City-wide Development Design Guidelines reviews the design of commercial, industrial, institutional and residential areas. The Guidelines intend to guide the development of communities from a design perspective, to guide Secondary Planning and, more specifically, to guide the preparation of Community Block Plans. As well, a submission of a Design Brief will be required for development outside the Block Plan process prior to the enactment of Zoning By-laws. The City-wide Development Guidelines have been implemented through various amendments to the Zoning By-law.
- **Central Area Vision** – The Vision is intended to represent a realistic approach to redevelopment in the Central Area. The Central Area includes Brampton's Downtown, the Queen Street Corridor and the Bramalea City Centre. The vision for Downtown is to create a destination and a cultural centre based on mixed use, mid-rise, and street-oriented built forms, with an emphasis on pedestrians and transit.



- **Downtown Built Form Study** – The intent of the study was to identify the preferred built form, heights, and potential development yields of several character areas in the Central Area. The study is now complete and a Zoning By-law amendment has been adopted based on its results.
- **Central Area Community Improvement Plan** – The Draft Central Area Community Improvement Plan (CIP) was completed in April 2007 and approved in November 2007. The Downtown CIP has been active since January 2008. This update to the original Plan approved in 2000 outlines potential financial incentives intended to stimulate development and redevelopment within the City's Central Area. A "toolbox" of incentive programs is proposed that can be used through the approval of specific implementation guidelines, requirements, criteria and budget for each particular program. The CIP contains goals and objectives and describes the general area subject to the plan as well as the general requirements and criteria.
- **Downtown Heritage Strategy** - approved by Council in October 2007, includes provisions for heritage preservation and planning, and adaptive reuse of existing heritage buildings. Significant work is being done to expand the number and scope of heritage designations, register heritage properties, improve heritage incentives, institute a new plaque program and improve communication with the public on heritage information and issues.

Figure 2.4.2 Züm Phase 1 (to 2012)



2.4.6 Transit Plans

2.4.6.1 ZÜM BRT Strategic Implementation Plan

2.4.5.7 Zoning and Land use

For the most part, the city’s existing zoning classifications reflect the current land-use and built form. The exception to this is the ‘D’ zone that the City of Mississauga uses which only allows existing uses until a new development application is approved. Additionally, the categories in the Downtown Core area are intended to promote higher-density, street-related built form with a variety of uses.

Züm (formerly known as AcceleRide) BRT is an initiative of the City of Brampton and Brampton Transit to introduce enhanced, uniquely branded BRT services on the City’s key north-south and east-west arterial corridors. It is intended to significantly improve the reliability, speed, frequency, and quality of transit service and provide better connectivity within and beyond Brampton’s boundaries. One, illustrated in [Figure 2.4.2](#), will see Züm services implemented along Queen Street, Main Street and Steeles Avenue beginning in 2010. In the short term, Züm will be a limited-stop express and local service operating in mixed traffic with queue-jump lanes and transit signal priority; long-term, the system will be expanded and will operate within dedicated rights-of-way in corridor medians.

The Züm system will be fully integrated with the City-wide transportation and transit network and will have connections to major destinations across the GTA, including the Vaughan Corporate Centre, York University, York Region's VIVA system, Square One in Mississauga and GO Transit. As Brampton continues to grow and demand increases, BRT services will be expanded to other corridors, improving connectivity within and beyond the City's boundaries.

The Main Street Züm route is expected to begin service in 2011 and (prior to the subject study) was conceived as operating along Hurontario/Main Street from just north of Bovaird Drive to Square One in Mississauga with connections to major corridors and other modes of transportation at major stations. The details of this plan will be subject to discussion between the two municipalities.

The Main Street service planned by Brampton, in addition to existing and proposed express Mississauga transit services, can fit into the vision of an "early start" for rapid transit on Hurontario/Main Street. There is a need for coordination of the Züm plans with the emerging vision from this project, to minimize "throw-aways" as the system evolves. While the focus of this report is on defining the ultimate rapid transit concept for Hurontario/Main Street, this early start will be important in creating the orientation to transit. The details of the interim service plan for the corridor are to be defined with Brampton and Mississauga.





Proposed Mississauga BRT System

2.4.6.2 Mississauga BRT

The Mississauga Bus Rapid Transit (BRT) busway is planned to be a high-efficiency transit-only corridor running east-west across Mississauga parallel to Highway 403, Eastgate Parkway and Eglinton Avenue from Winston Churchill Boulevard to Renforth Drive. It will support all-station stop and express bus service making it faster and easier to travel to, from and through Mississauga and the GTA.

The BRT system will encompass 12 stations along the corridor, many of which will feature kiss-and-ride and/or park-and-ride facilities, making transit easier and more convenient to use. The 18km corridor in Mississauga will be part of a larger 100km BRT corridor connecting communities from Oakville to Pickering. The Mississauga BRT will be integrated with local bus service as well as inter-regional and intermodal transit systems including the bus bypass shoulders along Highway 403, GO Transit bus and rail operation, and the TTC subway system. Construction is expected to begin in late 2010/2011 and full operation is scheduled to begin in 2013.

Riders will benefit from the Mississauga BRT through increased reliability, reduced travel time, greater convenience and greater accessibility. It will improve Mississauga and the surrounding communities through increased capacity, reduced automobile traffic, reduced emissions, increased density and increased safety. The link to the Airport Employment Area will support further intensification along the corridor, particularly in the Mississauga Downtown Core, with its potential for additional high-density residential development.

The Mississauga BRT will cross under Hurontario Street via Rathburn Road, with a major station planned at the Mississauga Downtown Core, which is currently conceived to be an extension of the existing City Centre Transit Terminal.

2.4.7 Other Regulations

2.4.7.1 Noise Exposure Forecasts (NEF) Contours, Flight Path Building Obstacles and Restrictions

The section of Hurontario Street and the surrounding area between Highway 407 and a point south of Matheson Boulevard is within the federally regulated operating area for Lester B. Pearson International Airport. Within this zone, no residential development can occur and there are various height restrictions placed on all buildings, limiting potential development scenarios that can be recommended by this study.

2.4.8 Transportation Planning Context Summary

The existing policies and plans guiding development in the study area support the implementation of a rapid transit system, supportive land uses and high quality urban design features along the corridor. The provincial, regional and local planning frameworks encourage and even require more compact urban form including transit-supportive land uses, provisions for active transportation and enhanced transit. The five key initiatives supporting this direction are: Places to Grow, Metrolinx, the Region of Peel Official Plan, Mississauga Plan (the City of Mississauga’s Official Plan) and the City of Brampton Official Plan. The following points summarize this chapter:

- Hurontario/Main Street is a key transit corridor in the Regional Structure proposed by the Provincial Growth Plan and Metrolinx, linking Mississauga’s Downtown Core and Brampton Central Area UGCs. The corridor is also significant in the Mississauga and Brampton Official Plans;
- The Province identifies Hurontario as a logical corridor for higher-order transit. New Provincial policy requires intensification along the corridor and in the UGCs;
- Intensification is already happening in the corridor. A number of development applications proposing higher densities have been recently approved or are under review. To support intensification, the transportation system cannot rely on growth in auto traffic alone. Planning for intensification must address alternative transportation modes; and
- Sustainable land use patterns envisage a mix of land uses in proximity to or connected by efficient and comfortable transit service.



ANALYSIS OF THE ALTERNATIVES



3 ANALYSIS OF THE ALTERNATIVES

This chapter summarizes the analysis related to Phase 2 of the Environmental Assessment (EA) process – the assessment of alternatives.



3.1 Definition of the Undertaking

The Directions Report (February, 2009) has documented the process of developing the vision for the corridor and the principles for its evolution to a 21st century main street. Through that work, Phase 1 of the EA process (addressing Need and Justification, as well as documentation of existing conditions) has been completed. The culmination of Phase 1 is the definition of the problem or opportunity statement, which encapsulates the goals of the undertaking. The problem/opportunity statement for the Hurontario/Main Street corridor is:

Rapid transit is needed to facilitate projected growth in development and travel in accordance with the concept of city-building to which both municipalities are committed. There are substantial opportunities which are expected to result from the planned rapid transit service, to realize the vision of a mixed-use, pedestrian-oriented corridor.

The undertaking can be described as the introduction of on-street rapid transit service, from Port Credit to the Brampton Downtown Transit Terminal / Brampton GO Station, on Hurontario / Main Street. The service is envisioned as being primarily or exclusively at-grade. Deviation from Hurontario Street may be considered through Downtown Mississauga, and at the north and south termini.



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3.2 Road-Based Alternatives

Alternatives to this undertaking are described and assessed in the following sections. These alternatives do not include road widenings or major new roads, as such alternatives are not seen as being compatible with the goals of the corridor's problem/opportunity statement. Road-based alternatives would be extremely difficult to achieve in this corridor, as the road cross-section has been largely developed to its maximum extent within the available right-of-way. In the Port Credit and Downtown Brampton segments, widening would require elimination of existing developments along the street. Further widenings of the existing six-lane sections would result in a streetscape that is not pedestrian-supportive, and hence is not supportive of an on-street at-grade transit solution. There are no alternative unused corridors that are continuous throughout the length of the study area that could fulfill the mandate of supporting growth along Hurontario / Main Street, particularly in the two Urban

Growth Centres. The nearest arterials on the east and west are illustrated in [Figure 3.2.1](#). These fall outside the Urban Growth Centres in both cities. These arterials have also generally been widened to the maximum feasible cross-section. This figure also illustrates the discontinuous nature of the collector and arterial road system parallel to the Hurontario corridor, throughout the section spanning both cities. The presence of the four grade-separated expressways, established neighbourhoods, railways and natural features limit the ability to develop a more intensive road network which could accommodate the growth required under Places to Grow.



Figure 3.2.1: Road Network around the Hurontario/Main Street Corridor



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3.3 Do-Nothing Alternative

The alternative of “doing nothing” must be considered, both as an alternative to the undertaking and as a baseline for comparison of effects with the other alternatives.

The do-nothing alternative was modeled for the 2031 horizon year. The network for this alternative included:

- The existing GTHA road network, plus any proposed road improvements scheduled for completion by the horizon year;
- The existing transit lines in the GTHA, including those on the Hurontario/Main Street corridor; and
- All Metrolinx proposed “Big Move” projects complete and operating, except for the Hurontario/Main Street RT. These include Brampton’s Zum service on Main Street, Queen Street and Steeles Avenue.

This is an appropriate depiction of the do-nothing case. It reflects a “business-as-usual” approach on the part of the Cities and Metrolinx related to the corridor itself, but still accounts for improvements to the surrounding network over time.

The projected auto and transit demands are shown in [Table 3.3.1](#). Also included in this table for comparison to 2031 are the current auto volumes.

The demands shown in [Table 3.3.1](#) illustrate that:

- Without rapid transit on Hurontario / Main Street, traffic demands will continue to grow;
- These demands will approach or exceed the capacity of the arterial and collector network in most of the road sections;
- This will also increase the potential for traffic infiltration on neighbourhood streets;
- There would be little or no opportunity to enhance the space dedicated to pedestrians or cyclists along the corridor – it would remain an auto-focused transportation route, with little supportive activity for the Cities’ Urban Growth Centres; and
- If traffic reaches these levels, transit in mixed traffic will become increasingly unreliable, and hence increasingly less attractive to “choice” riders, reducing the transit modal split.

In summary, this alternative does not provide an effective solution to the transportation needs in the Hurontario / Main Street corridor; it results in a degradation of conditions.

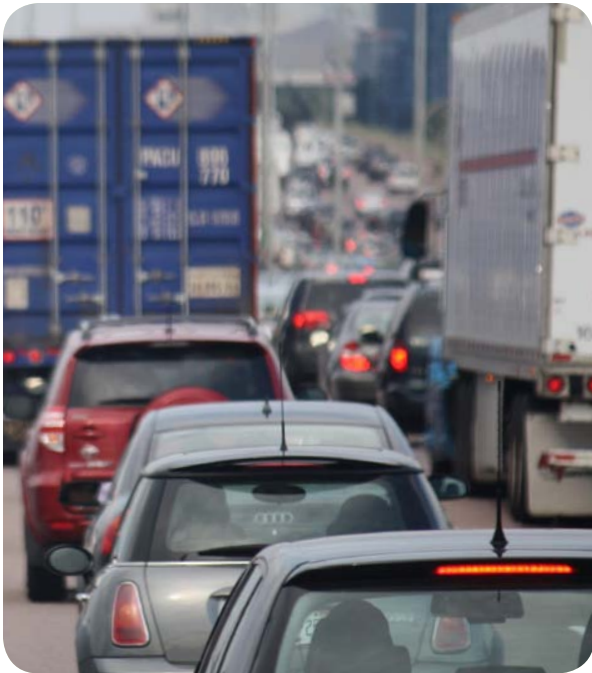
**Table 3.3.1:
Do Nothing Scenario 2031 AM Peak Hour Transit Demand and Auto Volumes**

a) Demand

Section	2031 Transit Ridership		Current Auto Volume		2031 Auto Volume	
	Southbound	Northbound	Southbound	Northbound	Southbound	Northbound
Brampton GO to Steeles	1,965	325	1,170	541	1,545	820
Steeles to Hwy 407	1,680	610	1,609	883	2,220	1,235
Hwy 407 to Hwy 401	1,785	685	2,182	929	2,715	1,515
Hwy 401 to Hwy 403	1,205	1,375	2,412	1,773	2,440	2,585
Hwy 403 to Burnhamthorpe	1,255	1,540	2,686	2,628	2,390	2,560
Burnhamthorpe to Dundas	1,690	1,565	1,621	1,748	1,700	1,985
Dundas to QEW	1,300	880	1,738	1,951	1,810	2,370
QEW to Port Credit	1,365	730	1,273	1,017	1,315	1,395

b) Utilization

Section	Current Auto Utilization			2031 Auto Utilization		
	Peak Direction Volume	Peak Direction Capacity (veh/hr)	Utilization	Peak Direction Volume	Capacity (veh/hr)	Utilization
Brampton GO to Steeles	1,170	2,400	48.8%	1,545 (SB)	2,400	64.4%
Steeles to Hwy 407	1,609	2,400	67.0%	2,220 (SB)	2,400	92.5%
Hwy 407 to Hwy 401	2,182	2,700	80.8%	2,715 (SB)	2,700	100.6%
Hwy 401 to Hwy 403	2,412	2,700	89.3%	2,585 (NB)	2,700	95.7%
Hwy 403 to Burnhamthorpe	2,686	2,700	99.5%	2,560 (NB)	2,700	94.8%
Burnhamthorpe to Dundas	1,748	2,700	64.7%	1,985 (NB)	2,700	73.5%
Dundas to QEW	1,951	2,700	72.3%	2,370 (NB)	2,700	87.8%
QEW to Port Credit	1,273	1,800	70.7%	1,395 (NB)	1,800	77.5%



3.3.1 Limiting Growth as a Sub-Alternative

The above analysis indicates that a sub-alternative to “do-nothing” would be to limit growth in the corridor – this would be a way of avoiding the traffic and other impacts. However, based on the direction provided by the Province through Places to Grow, and the resulting designation of the Urban Growth Centres as the appropriate locations for higher-density urban growth by the two Cities along the corridor, this is not a viable option. This re-affirms the conclusion that the preferred set of alternatives for the corridor will encompass those proposing some form of rapid transit.

The do-nothing alternative will be the de facto limit to growth, as development and investment will move elsewhere if the road network becomes overly congested.



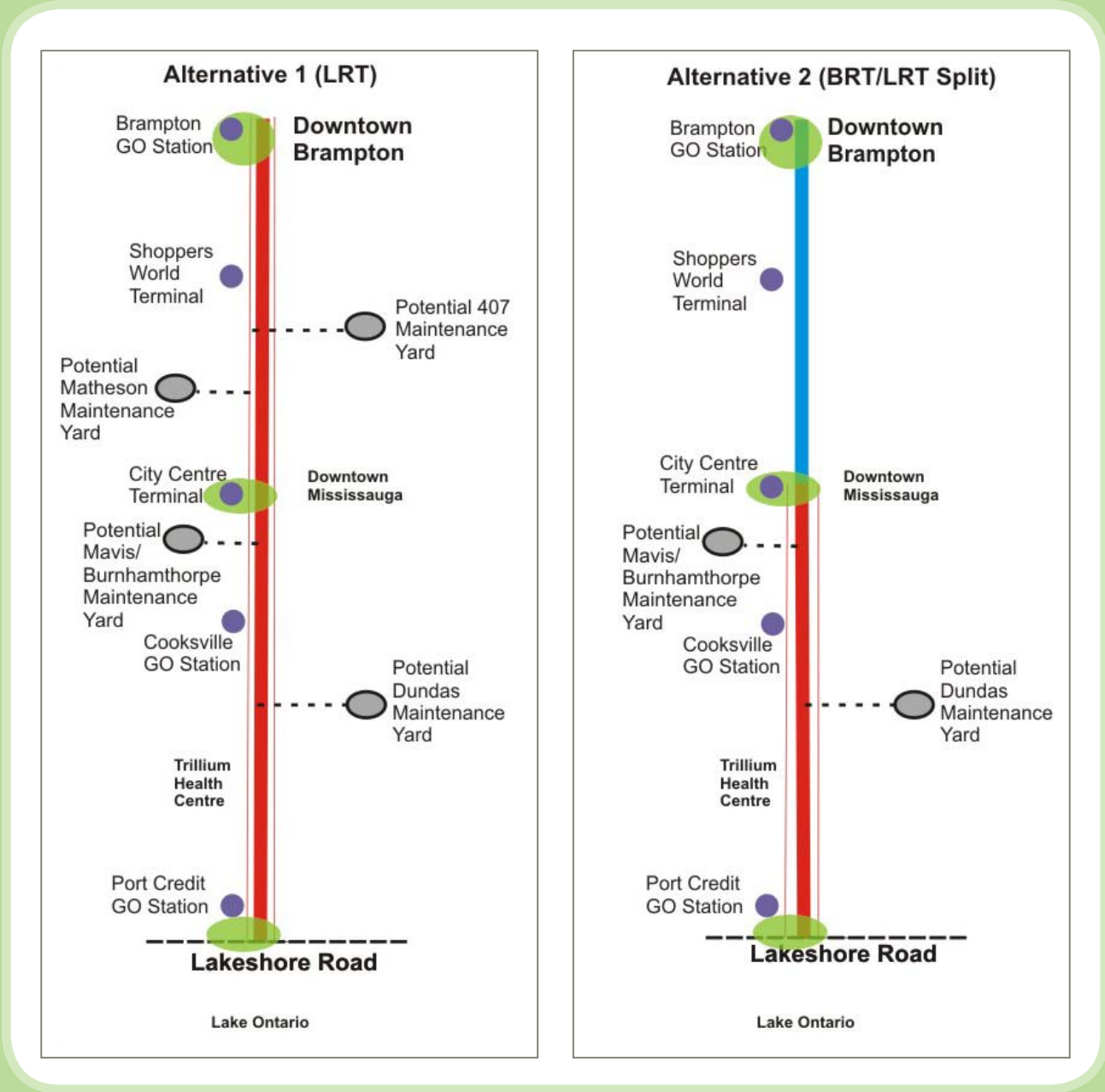
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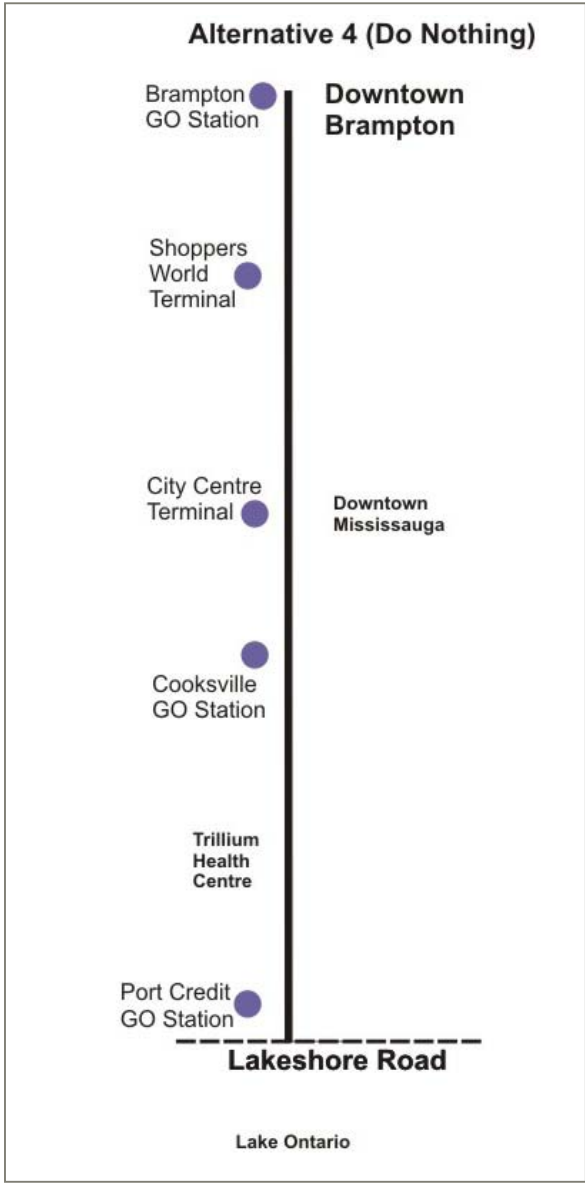
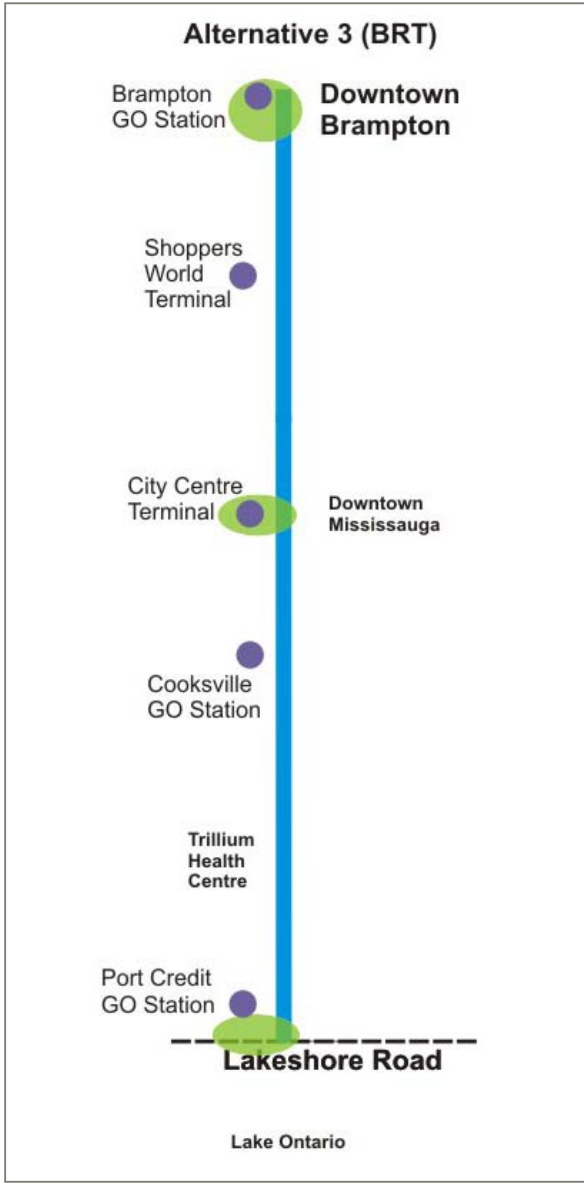
3.4 Technology Alternatives

The Hurontario/Main Street Study has examined a choice between two technologies for use on the Hurontario/Main Street corridor Light Rail Transit (LRT), or Bus Rapid Transit (BRT), short listed during the visioning process documented in the February 2009 Directions Report, in which the options of subway, monorail and AGT were prescreened and eliminated. The use of the latter option on Hurontario/Main Street would be different from Mississauga’s Highway 403 BRT system; on Hurontario/Main Street, BRT or LRT would generally be in a reserved transit lane, referred to as a “semi exclusive” right-of-way, while the Mississauga BRT will operate in a completely exclusive right of way with grade separations at all crossing roadways. At intersections on Hurontario/Main Street, transit priority measures will be in place to minimize delay to transit vehicles and ensure their rapid and effective progression. The alignment alternatives for the corridor are those which have been identified through the Metrolinx planning process as well as the subject study. These alternatives are shown in [Figure 3.4.1](#) along with the base case scenario. They are:

- Alternative 1: LRT for the entire route
- Alternative 2: LRT from Port Credit to downtown Mississauga, BRT from that point north to downtown Brampton
- Alternative 3: BRT for the entire route

**Figure 3.4.1:
Corridor Rapid Transit Alternatives**





Legend

- LRT
- BRT
- Local Bus
- Mobility Hub (as per the Metrolinx Big Move)
- Multiple Alignment Options Examined

3.5 Methodology for Transportation Analysis of Alternatives

This section documents the analysis of the Hurontario/Main Street corridor, with respect to transportation aspects of the alternatives. These include the technology, alignment and concept for the rapid transit service throughout the corridor, particularly in segments that feature limited space for the accommodation of infrastructure, or that present opportunities to divert the service off the corridor to increase access to adjacent trip generators. These include Downtown Brampton, the Main Street South Heritage Area, Downtown Mississauga, Mineola and Port Credit.

This analysis deals with the “ultimate” planning horizon of 2031 – that horizon will be used to define the ultimate transit solution, but the assessment also addresses an “opening day” scenario in 2016.

3.5.1 Overview of Analysis Methodology

The analysis has been based on a number of elements, reflecting the measures of performance defined for the project through the Phase 1 analysis. These are documented below, in Section 3.8, together with the overall evaluation of each. These measures meet the requirements of the EA process, encompassing the categories of transportation performance, each relevant component of the natural and social environments, and cost, benefits relative to cost have been taken into account as well.

The methodology has included the following major steps:

- Future transportation demands have been projected using a detailed, region-wide forecasting model tailored for this project. The demand forecasting process has moved through these steps:

- Calibration of the model to 2006 conditions as a baseline. 2006 was chosen because comprehensive travel and demographic databases existing for that year;
 - Projection of 2031 travel demands, based on estimates of future land use, allocated to a fine geographic zone system. 2031 represents an anticipated horizon of approximately full build-out. The model projects auto and transit demands based on relative costs (reflecting time, distance and transfers) and opportunities for travel by individual route;
 - Testing of each transit alternative for the corridor for projected 2031 conditions;
 - Addition of demands related to the proposed Sheridan College campus in downtown Mississauga (added separately due to the unique nature of this development);
 - Review and adjustment of the resulting demands with respect to the minor biases inherent in the model. These related to some overprediction of demands on the corridor in Brampton linked to demand on the Georgetown GO rail corridor, and some over-prediction of demands south of the Queen Elizabeth Way. These adjustments were completed using appropriate factors from the travel behaviour relationships observed and predicted;
 - Estimation of peak hour, daily and annual ridership based on the adjusted a.m. peak period demands, using appropriate expansion factors from other GTHA transit systems and in use by the Urban Transportation Emissions Calculator.
 - The adjusted transportation demands were used to assess the functionality of each alternative, in terms of:
 - The feasibility of transit operations throughout the corridor, in terms of the capacity and peak period headways;
 - traffic operations at signalized intersections, expressway ramp terminals, and section by section with respect to link volumes relative to capacity;
 - accommodation of traffic demands on a screenline (link) basis, extending across the municipalities, and on a finer basis, to the adjacent arterials; and
 - potential need for grade separation at key intersections.
- The technology alternatives were assessed against an array of socio-economic and mobility factors. The technology and route options were subsequently examined in more detail against a more extensive set of criteria related to the EA process. Bicycle and pedestrian needs were assessed based on strategic planning factors, as the model was not designed to generate these demands in sufficient detail for network planning purposes.

**Table 3.5.1:
Land Use Data Projections**

Data Sources: City of Mississauga, City of Brampton, Region of Durham, York Region Transportation Master Plan Model (MMM Group).

Area	2006		2016		2031		2031 High Growth	
	Population	Employment	Population	Employment	Population	Employment	Population	Employment
Toronto	2,405,602	1,082,882	2,530,589	1,164,798	2,615,349	1,265,670	2,615,349	1,265,670
Toronto CBD	190,937	451,065	229,585	502,395	266,165	568,605	266,165	568,605
Durham	606,396	223,403	751,173	262,932	1,000,009	434,100	1,000,009	434,100
York	893,992	467,991	1,200,148	658,800	1,507,490	798,958	1,507,490	798,958
Caledon	57,725	21,936	75,718	29,004	78,962	30,861	78,962	30,861
Rest of Brampton	332,641	130,381	460,380	204,384	597,361	283,583	597,361	283,583
Corridor	451,038	156,929	477,890	179,621	518,531	190,722	548,010	205,587
Rest of Mississauga	366,721	299,121	383,700	345,485	391,221	354,997	404,124	348,689
Halton	429,903	193,999	540,192	248,871	703,387	389,646	703,387	389,646
Hamilton	514,994	199,605	548,497	220,675	597,268	248,150	597,268	248,150
Total	6,249,949	3,227,312	7,197,872	3,816,965	8,275,743	4,565,292	8,318,125	4,573,849
Growth from 2006 (GTHA)	–	–	15.17%	18.27%	32.41%	41.46%	33.09%	41.72%
Growth from 2006 (Corridor)	–	–	5.95%	14.46%	14.96%	21.53%	21.50%	31.01%

3.5.2 Land Use Projections

The assessment of the alternatives has been based on forecasts of future land use for the corridor and the entire Greater Toronto and Hamilton Area. Land use data was provided by the Cities of Mississauga and Brampton, as well as Durham and York Regions. The remaining data for the GTHA was obtained from census-based data used for York Region’s transportation model. The City of Mississauga also provided additional data describing a high future growth land use scenario. Model runs were performed on both the base and high growth scenarios, based on the work completed by Hemson for the Cities.

Table 3.5.1 summarizes the input data used by region as defined in the Transportation Demand Model. For 2016 and 2031; a more detailed breakdown by ensemble is in Appendix 3A.

Table 3.5.1 breaks out the corridor land use as well. By 2016, population is forecast to grow by 6 percent, and employment by 14 percent in the corridor. By 2031, under the base forecast, population is expected to grow by 15 percent, and employment by 22 percent. Under the high growth scenario by 2031, population is expected to grow by 21 percent (6 percent more than under the base) and employment by 31 percent (9 percent over the base forecast).

It is clear from these numbers that the Hurontario/Main Street corridor is a significant centre of population and employment. It is also a primary transportation corridor connecting numerous origins and destinations in Peel Region and the GTHA, and thus enables growth in a broader area.

3.5.2.1 What will this growth look like in the Corridor?

These projections have been analyzed with respect to their height and density implications along the corridor, taking into account the appropriate forms of development for each character area. The results are shown in Figure 3.5.1. They indicate that a variation in development is expected along the corridor; the greatest increase will be in Downtown Mississauga (UGC), with proportionately lower values in other nodes and little or no change in stable residential communities.

PROJECTED DEVELOPMENT

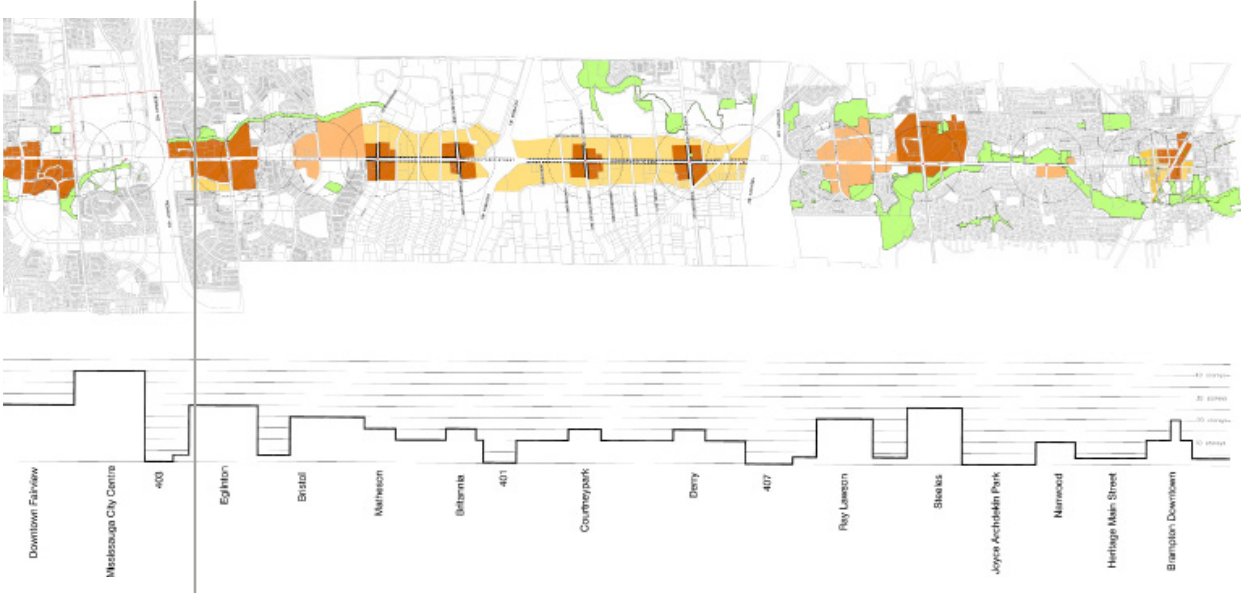
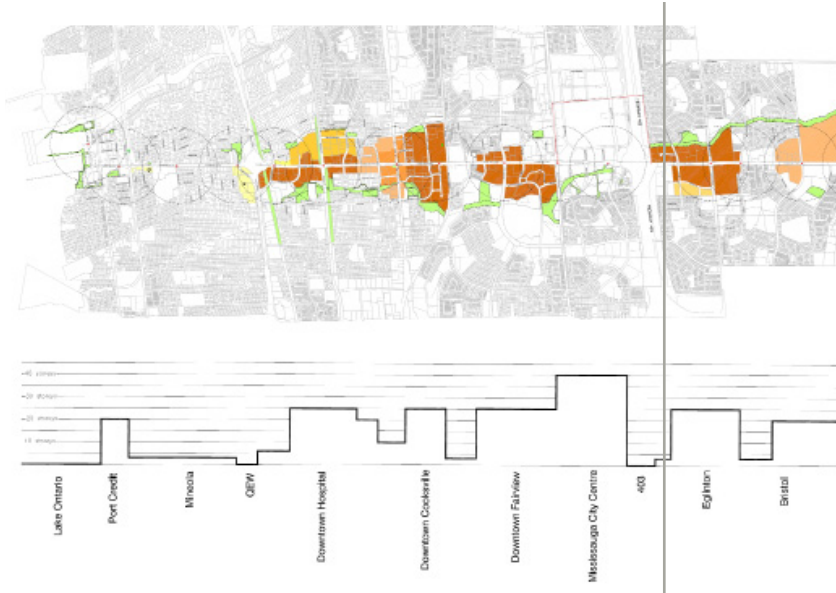


Figure 3.5.1: Projected development along the Hurontario / Main Street Corridor

3.5.3 Demand Forecasting Model

A key element of the analysis is the use of an EMME travel demand forecasting model as the basis for predicting future travel demands, developed specifically for the project's requirements. EMME is a comprehensive software package, used by municipalities throughout the world for large-scale, macroscopic demand forecasting. The model developed on this platform is a standard four-stage process, encompassing trip generation, distribution and modal split, and assignment to the road and transit networks, and has been calibrated to the screenline level. The model is not intended for use in defining pedestrian or cycling trips.

The aspects of the model which make it an appropriate and accurate tool for this analysis are as follows:

- **The model is based on the most comprehensive and recent demographic and travel demand pattern data available.** Data was obtained from the 2006 Canadian Census, 2006 Transportation Tomorrow Survey (TTS), and land use data provided by the Cities of Brampton and Mississauga. For horizon year modeling, land use projections were provided by Mississauga and Brampton for 2031. The Hemson reference or "base case" scenario from each city was used in initial modeling, with Mississauga's "high growth" scenario representing the revised 2008 Hemson Forecast that was approved and used in additional tests;
- **The model has been based on a tested and accepted series of methodologies.** This model has been programmed using the EMME demand forecasting package, in a collaborative process with Dr. Eric Miller of the University of Toronto's Department of Civil Engineering. The model was based on previous models developed by Dr. Miller, which have been successfully applied on other area studies and corridor analyses. The full specifications of the model have been documented in the "Model Architecture and Validation" document;
- **Consistency with other models.** The model uses 2031 as the horizon year for travel projections; this is consistent with the Metrolinx "Big Move" regional transportation plan for the GTHA. Forecasts of AM peak hour and peak period auto volumes, transit ridership, travel times and travel costs generated by the model have been used to evaluate alternatives for traffic operations and transit alignment, routing, and station locations;
- **Comprehensive depiction of networks.** The model incorporates the entire 2031 GTHA road and transit network, to comprehensively model the interaction between future traffic and transit on the Hurontario/Main Street corridor with the rest of the GTHA network. The model network reflects the expected completion of all currently proposed municipal road improvements for Mississauga and Brampton as well as all major highway and transit projects in the GTHA;



- **Detailed modeling of technology options.** The model considers detailed operating parameters in order to facilitate comparison between available modes in the modal split stage of modeling. Both BRT and LRT modes of travel were assumed to operate at three minute headways to reflect the desirability of these modes over conventional buses. The actual recommended headway will be determined to accommodate the projected ridership based on the model results. As BRT and LRT share many operating characteristics, average operating speed was used to differentiate the two modes for the purposes of modeling. As per the Metrolinx benefits case, higher order transit on the Hurontario/Main Corridor has been modeled as having an average operating speed of 35 km/h for LRT and 30 km/h for BRT. The speed of LRT was dropped to 30km/h on the segment through Downtown Mississauga, to reflect the tighter geometry and higher density of traffic signals compared to the rest of the corridor. Segments not in reserved lanes have been modeled with a speed of 25 km/h to reflect the reduced speed and capacity of this type of operation;

- **Incorporation of other planned transit network elements.** The model also assumes that all 51 other proposed Metrolinx “Big Move” projects, as well as the full extent of Brampton’s Züm have been implemented by the 2031 horizon year. Each of these new lines have been modeled at speeds and headways appropriate to the technology and corridor proposed. These speed and headway parameters have been documented in [Table 3.5.1](#) of Appendix 3A;
- **Updates to the corridor appropriate to the project.** The model assumes that all currently existing local transit service in the GTHA is still in place for 2031 and is operating at a similar level of service as it is currently. On the Hurontario/Main corridor, existing bus routes that serve the corridor exclusively have been assumed to be removed and replaced with an LRT or BRT system (Mississauga Route 19) or truncated (Brampton Route 2) to serve only the area outside of the BRT or LRT alignment. The model also includes a transit link extending north from the Brampton Downtown Transit Terminal into Caledon, in accordance with Brampton’s updated Transportation and Transit Master Plan (draft, 2009) and Caledon’s proposals, to be finalized in the development of their Transportation Master Plan;



- **Use of appropriate cost factors.** Where applicable on the Hurontario/Main Street corridor, the model assumes a parking cost of \$10/day in 2006 dollars;
- **Strategic enhancement to reflect developments specific to the corridor.** After the development of the model, plans were announced for a new campus of Sheridan College to be located in downtown Mississauga. This campus will be located to the north of the Living Arts Centre along Duke of York Boulevard, and is planned to accommodate 5,000 full time students, plus additional continuing education students. Consequently, the campus will act as a major trip generator for Downtown Mississauga, and has the potential to generate ridership for a higher order transit system along the Hurontario/Main Street corridor. In order to reflect the effect of the new campus in ridership forecasts from the model, it was assumed that the total campus population would be 6,000 including students, faculty, and staff, and that the transit mode share for this population would be 47%. This results in 1,100 additional peak period LRT trips that were added to the model, half of which was added to the transit ridership travelling towards downtown Mississauga from each of the north and south directions; and
- **Projection of interim “opening day” demands.** Again using land use supplied by the municipalities, demands at a 2016 horizon were projected to gauge ridership demand at the potential opening of rapid transit service, and to understand the trend in ridership growth from current conditions to the ultimate horizon.



Summary of the Level of Calibration and Validation

The EMME model has been calibrated to accepted standards of accuracy for auto and transit demand modeling. Key aspects of the calibration and validation are as follows:

- **Trip Distribution** – the modelled trip distribution results combined for all trip purposes is within approximately 1% of the observed trip distribution;
- **Modal Split** – heavy rail modes (GO and subway) combined are modelled within 1% of the observed trips. Non-motorized, school bus, transit, and subway-auto mode shares are consistent with what is observed in the 2006 TTS data;
- **Assignment Results** – The model produces auto loadings-, within 15% of what is observed this is consistent with accepted transportation demand modelling standards. Slightly higher transit volumes are reported than observed in some sections, due to the attractiveness of the Lakeshore GO line, drawing higher local transit use. This over/undersimulation of traffic have been accounted for in the development of the forecast turning movement counts for 2031. Details of this process are listed in the modeling appendix and traffic appendix.

3.6 Analysis of Transportation Elements

3.6.1 Corridor Demand Forecasts



Travel demand forecasts for horizon 2031 have been prepared for each of the mainline alternatives and for a representative range of options for downtown Mississauga, documented in Section 3.11.3.2. The other sub-areas of interest are either not large enough in terms of growth, or do not offer opportunities for variation in alignments significant enough to cause demand variations to be captured within the EMME model.

Key results are shown in [Table 3.6.1](#) for the direct north/south alternatives, by major section. The 2031 ridership forecasts for the direct north/south alternatives, based on the base land use forecast, are displayed in [Figure 3.6.1](#).

The high growth land use scenario does provide some growth in transit ridership over the standard scenario, but this is small compared to the growth in ridership caused by the implementation of the higher order transit in and of itself in both cases.

Opening Day Demands

The demands associated with the 2016 horizon are shown in [Table 3.6.2](#).

The road and transit networks for this horizon reflect current road network improvements as well as several Metrolinx transit improvement projects slated for completion by this time; these are documented in Appendix 3A.

**Table 3.6.1:
Projected 2031 Transit AM Peak Hour Demand for Hurontario Mainline Alternatives**

a) Base Land Use Scenario

Peak Hour and Peak Point – 2031 Ridership Forecasts	Alternative 1 (Hurontario LRT)			Alternative 2 (Hurontario – LRT/ BRT Split)			Alternative 3 (Hurontario BRT)		
	Ridership		Technology	Ridership		Technology	Ridership		Technology
	South-bound	North-bound		South-bound	North-bound		South-bound	North-bound	
Brampton GO to Steeles	3,375	500	LRT	2,800	385	BRT	2,820	385	BRT
Steeles to Hwy 407	3,225	900	LRT	2,625	700	BRT	2,660	700	BRT
Hwy 407 to Hwy 401	3,030	1,515	LRT	2,315	1,175	BRT	2,465	1,180	BRT
Hwy 401 to Hwy 403	2,500	2,425	LRT	1,255	2,040	BRT	1,810	2,050	BRT
Hwy 403 to Burnhamthorpe	2,665	2,280	LRT	1,200	1,625	LRT	1,960	1,845	BRT
Burnhamthorpe to Dundas	3,300	2,205	LRT	3,010	2,045	LRT	2,550	1,745	BRT
Dundas to QEW	2,520	1,360	LRT	2,510	1,340	LRT	1,735	1,205	BRT
QEW to Lakeshore	2,640	1,085	LRT	2,650	1,080	LRT	1,870	925	BRT

b) High Growth Land Use Scenario

Peak Hour and Peak Point - 2031 Ridership Forecasts	Alternative 1 (Hurontario LRT)			Alternative 2 (Hurontario - LRT/ BRT Split)			Alternative 3 (Hurontario BRT)		
	Ridership		Technology	Ridership		Technology	Ridership		Technology
	South-bound	North-bound		South-bound	North-bound		South-bound	North-bound	
Brampton GO to Steeles	3,415	510	LRT	2,830	395	BRT	2,850	395	BRT
Steeles to Hwy 407	3,275	980	LRT	2,660	760	BRT	2,695	760	BRT
Hwy 407 to Hwy 401	3,080	1,640	LRT	2,350	1,270	BRT	2,500	1,275	BRT
Hwy 401 to Hwy 403	2,550	2,545	LRT	1,280	2,140	BRT	1,845	2,145	BRT
Hwy 403 to Burnhamthorpe	2,665	2,530	LRT	1,200	1,795	LRT	1,960	2,040	BRT
Burnhamthorpe to Dundas	3,635	2,540	LRT	3,310	2,355	LRT	2,810	2,005	BRT
Dundas to QEW	2,820	1,435	LRT	2,810	1,410	LRT	1,945	1,265	BRT
QEW to Lakeshore	2,850	1,205	LRT	2,860	1,195	LRT	2,015	1,020	BRT

Legend

- Option 1 (LRT)
- Option 2 (LRT/BRT Split)
- Option 3 (BRT)

Figure 3.6.1:
AM Peak Hour Peak Point
Ridership – 2031
High Growth Forecast



**Table 3.6.2:
2016 (Potential Opening Day) Transit Demands**

Peak Hour and Peak Point - 2016 Ridership Forecasts	Alternative 1 (Hurontario LRT)			Alternative 2 (Hurontario - LRT/ BRT Split)			Alternative 3 (Hurontario BRT)		
	Ridership		Technology	Ridership		Technology	Ridership		Technology
	South-bound	North-bound		South-bound	North-bound		South-bound	North-bound	
Brampton GO to Steeles	2,050	580	LRT	1,715	450	BRT	1,730	450	BRT
Steeles to Hwy 407	2,205	875	LRT	1,810	675	BRT	1,835	675	BRT
Hwy 407 to Hwy 401	2,185	1,315	LRT	1,685	1,020	BRT	1,790	1,020	BRT
Hwy 401 to Hwy 403	1,925	2,210	LRT	1,000	1,860	BRT	1,410	1,865	BRT
Hwy 403 to Burnhamthorpe	1,790	1,930	LRT	855	1,390	LRT	1,340	1,570	BRT
Burnhamthorpe to Dundas	2,100	1,845	LRT	1,915	1,720	LRT	1,620	1,475	BRT
Dundas to QEW	2,100	1,175	LRT	2,095	1,155	LRT	1,450	1,045	BRT
QEW to Lakeshore	2,145	850	LRT	2,150	845	LRT	1,515	735	BRT

3.6.2 Assessment of Transit Ridership Demand Patterns



The key conclusions based on the EMME forecasting are summarized as follows.

In the corridor overall by 2031, with the base land use forecast:

- Peak point peak hour demands for the mainline options in one direction are: 3,375 (LRT), 3,010 (LRT/BRT combination) and 2,820 (BRT). These are demands without a supplementary link through downtown Mississauga. These demands are high enough to justify rapid transit in reserved on-street lanes.
- This translates into respective daily ridership levels of 102,000, 91,000 and 86,000, and respective annual demands of approximately 30.7 million, 27.4 million and 25.7 million trips.

With the high land use forecast:

- Peak point peak hour demands for the mainline options in one direction are: 3,635 (LRT), 3,310 (LRT/BRT combination) and 2,850 (BRT).
- This translates into respective daily ridership levels of 110,000, 100,000 and 86,000, and respective annual demands of approximately 35.2 million, 28.7 million and 24.7 million trips.

What does this indicate with respect to preferred technology?

- LRT attracts an average of 17 percent more riders than the combination or BRT alternatives, based on the factors reflected in the model. Additional factors (discussed in subsequent sections) suggest that this is conservatively low, because LRT has been shown to be much more attractive for choice riders due to the significantly better quality of ride, and reliability.
- Transit mode share for each segment of the corridor described in the above tables currently ranges between 5% and 21% of all trips. In 2031, the implementation of LRT is forecast to increase the transit mode share to 37%-73%, while BRT will increase the range to 31%-69%. The forecast transit mode share by section is listed in [Table 3.6.3](#).

Table 3.6.3

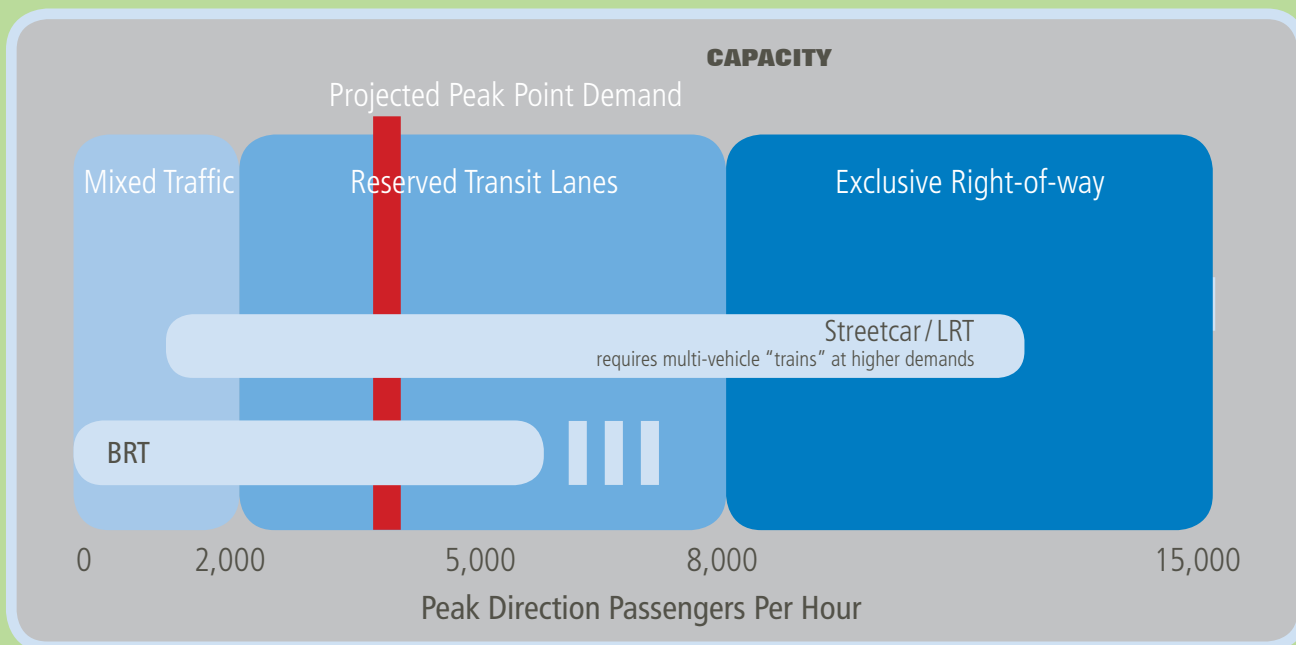
Section	Existing		2031 Base LRT		2031 Base BRT		2031 High LRT		2031 High BRT	
	Transit Mode Share		Transit Mode Share		Transit Mode Share		Transit Mode Share		Transit Mode Share	
	South-bound	North-bound	South-bound	North-bound	South-bound	North-bound	South-bound	North-bound	South-bound	North-bound
Brampton GO to Steeles	8.4%	9.1%	71.1%	38.3%	67.2%	32.5%	72.6%	36.7%	68.8%	31.2%
Steeles to Hwy 407	4.6%	6.1%	61.9%	43.2%	57.0%	37.3%	64.1%	44.7%	59.4%	38.7%
Hwy 407 to Hwy 401	13.9%	9.4%	64.1%	52.7%	59.4%	46.2%	57.6%	53.7%	52.6%	47.1%
Hwy 401 to Hwy 403	9.9%	9.8%	56.1%	50.6%	47.8%	46.0%	55.6%	51.4%	47.2%	46.6%
Hwy 403 and Burnhamthorpe	10.9%	12.7%	57.1%	54.2%	49.3%	48.1%	57.7%	55.1%	49.9%	49.0%
Burnhamthorpe to Dundas	11.8%	14.0%	64.8%	61.3%	57.7%	55.7%	71.8%	61.5%	65.2%	55.7%
Dundas to QEW	14.9%	13.6%	64.9%	42.8%	57.2%	40.2%	62.7%	39.4%	54.9%	36.8%
QEW to Port Credit GO	17.5%	21.3%	56.5%	48.5%	59.6%	44.9%	67.2%	45.6%	61.5%	41.8%

- Figure 3.6.2 illustrates the ranges of demand which can be accommodated by transit in shared lanes, BRT and LRT. This indicates that the projected demands are at the high end of the BRT range. This indicates that LRT would be a preferred technology – should demands grow beyond the level estimated for 2031 (which does not reflect “full build-out” of the corridor parcels), BRT would not be able to accommodate them;
- The demands have been compared to other existing and proposed systems, to provide context. It should be noted that comparisons are limited by factors such as length of the corridor – a 5 km long LRT system will not have the population density or daily ridership that a 20 km long LRT does. They are also limited by

the availability of current and long-term demand data. These comparator data are as follows:

- UK and French systems show some similarity, within the limits of the context of these systems (most of them have a much lower adjacent population density, though they are of similar length to Hurontario [e.g. 15 – 20 km]). Having been in service between 10 and 15 years, the Montpellier LRT has a daily ridership of 65,000, the Rouen LRT has a daily ridership of 60,000. Nottingham, which has been in service only since 2003, has a daily ridership of 30,000
- In the United States, the Hiawatha Line in Minneapolis, Minnesota is a 19.3 km, 17-station LRT line linking downtown to the southern

Figure 3.6.2:
Rapid Transit Capacity by Technology and Running Way Type



suburbs. In 2007, it had daily ridership of almost 33,000; this equates to 12% of the transit system's passengers overall throughout the entire year, exceeding the system's goal for the 2020 horizon year. In addition, more than 50% of the riders on this line were new transit users.

- The proposed Transit City Eglinton-Crosstown LRT route is currently served by TTC routes 32 and 34. At over 30 km in length, the LRT has a projected annual ridership of 52 million riders, compared to 32 million annual riders in 2006.
- The proposed Transit City Sheppard East LRT route, which will extend from Don Mills subway station to Scarborough, is currently serviced by TTC routes 85 and 190. Funded for construction and proposed to open in 2014, the 14 kilometre, \$944.5 million line is expected to have an annual ridership of 20 million by 2021, compared to 9 million annual riders in 2006.
- The demands segment by segment are fairly consistent, which also supports introduction of the LRT technology in the corridor;

Segment by segment:

- The demands from downtown Brampton to Highway 407 reflect the attractiveness of the future Highway 407 Transitway, which will link large residential areas to employment zones along the highway;
- Using an alignment that diverts into downtown Mississauga will increase the mainline demands further, particularly in sections featuring transfers to other higher order transit lines. Options tested for the LRT mode featuring diversions through Downtown Mississauga increased the annual demand projection up to as much as 2.7 million riders;
- South of the QEW, the demands are heavily influenced by the attraction of frequent GO rail service. The demands indicate that reserved lanes will be required by 2031 irrespective of technology, based on upon the implementation of service improvements on the Lakeshore West GO Rail corridor and higher-order transit on Lakeshore Road; and
- While the transit service north of Nanwood Drive to downtown Brampton has been modeled as operating in mixed traffic, the projected demands still suggest that a higher capacity transit priority service would be needed. Enhancements to local transit service on parallel routes may also be able to supplement the demand on Main Street to a small degree. If the transit service does remain as mixed traffic operation in this section, the associated delays from congestion would make it difficult to accommodate the forecast southbound AM peak hour ridership of up to 3,415 (High Growth Scenario).



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3.6.3 Opening Day Demands

The year 2016 was used as an estimate of when “opening day” might occur. The projected 2016 demands for the peak hour show that:

- Rapid transit in reserved lanes is justified, based on the ranges of demand that can be accommodated in shared lanes;
- The demands are fairly consistent segment by segment. Only the segment south of the QEW is somewhat below the threshold of 2,000 peak hour riders for reserved lanes. This can be an indicator of staging strategies for construction;
- The demands are on average 25 percent less than the 2031 demands, indicating a high potential for moving ahead with rapid transit in the short term.

Substantial transit ridership growth is projected by 2016 from the current level, while growth from 2016 to 2031 is not expected to occur at the same rate. This pattern of ridership growth has been observed on other transit systems, such as:

- Phoenix LRT: prior to opening, daily transit ridership was less than 5,000. This grew to 35,000 after the opening of the LRT ridership continues to grow today;
- VIVA rapid transit service on Yonge Street: Since the start of service, VIVA Blue along Yonge Street has increased its ridership from 4.2 million annual riders in 2006 to over 4.9 million riders in 2008, or over 15,000 riders per day;
- The Region of Waterloo, which has recently approved a plan to build an LRT through the cities of Kitchener and Waterloo, has a ridership projection of 26,850 on opening day. The system’s current iXpress system, which the LRT system will be replacing, has ridership between 8,000 and 10,000 per day.



3.6.4 Auto Volumes

The model also provides projections of the auto volume on the remaining traffic lanes of the corridor, summarized in Table 3.6.4.

As the removal of one traffic lane in each direction to accommodate higher order transit is common to both technology options, it follows that the impact on traffic should be similar for each, with most vehicles utilizing most of the remaining capacity on the corridor and some being diverted to other routes. The forecast auto demands on the corridor do follow this trend, with little

difference based on the transit technology. The do nothing alternative shows much higher auto demands than those with BRT or LRT, reflecting the lack of transit capacity in the corridor.

Table 3.6.4:
2031 AM Peak Hour Auto Volumes

AM Peak Hour and Peak Point - 2031 AuOto Volumes	Alternative 1 (Up/ Down Hurontario - LRT Service)			Alternative 2 (Up Down Hurontario - LRT/BRT Split)			Alternative 3 (Up Down Hurontario - BRT Service)			2031 Base Case	
	Volume		Tech- nology	Volume		Tech- nology	Volume		Tech- nology	Volume	
	South- bound	North- bound		South- bound	North- bound		South- bound	North- bound		South- bound	North- bound
Brampton GO to Steeles	1,170	800	LRT	1,170	795	BRT	1,175	790	BRT	1,545	820
Steeles to Hwy 407	1,665	1,100	LRT	1,675	1,105	BRT	1,675	1,095	BRT	2,220	1,235
Hwy 407 to Hwy 401	2,060	1,285	LRT	2,010	1,300	BRT	2,045	1,300	BRT	2,715	1,515
Hwy 401 to Hwy 403	1,850	2,190	LRT	1,865	2,215	BRT	1,870	2,230	BRT	2,440	2,585
Hwy 403 to Burnhamthorpe	1,775	1,875	LRT	1,765	1,885	LRT	1,785	1,930	BRT	2,390	2,560
Burnhamthorpe to Dundas	1,300	1,445	LRT	1,325	1,455	LRT	1,360	1,450	BRT	1,700	1,985
Dundas to QEW	1,520	2,010	LRT	1,485	1,985	LRT	1,450	1,975	BRT	1,810	2,370
QEW to Lakeshore	1,260	1,305	LRT	1,190	1,300	LRT	1,145	1,290	BRT	1,315	1,395

3.6.5 Projected Travel Times



The demand forecasts also provide travel time projections for each of the technologies, summarized in Table 3.6.5.

**Table 3.6.5:
Projected Transit Travel Times**

Corridor Segment	Travel Time (Min)		
	LRT	Split*	BRT
Brampton GO to Steeles	6.8	8.0	8.0
Steeles to Highway 407	3.6	4.8	4.8
Highway 407 to Highway 401	6.4	8.3	8.3
Highway 401 to Highway 403	8.4	9.9	9.9
Highway 403 to Burnhamthorpe	2.0	2.6	3.2
Burnhamthorpe to Dundas	3.7	3.7	5.2
Dundas to QEW	3.3	3.3	4.4
QEW to Lakeshore	5.0	5.0	5.1
TOTAL	39.2	45.6	48.9

*Split option assumes a 2 minute wait time for transfer from LRT to BRT between Highway 403 and Rathburn Road.

**Boarding and alighting times may add to these travel times, depending on the demands and type of ticketing system implemented.

LRT will provide a time savings of approximately twelve minutes over BRT along the corridor; this is a substantial advantage. The split option falls in between the two single technology options; the wait time for the transfer between the two modes will add additional time to the journey.

3.6.6 Headway Analysis

The model initially assumed three minute headways for rapid transit service using either BRT or LRT technology on the corridor; the resulting demand forecasts are based on the availability of service at this frequency on the corridor. Based on the demand forecasts and travel time estimates provided by the model, an analysis was performed to determine the headways necessary for each technology to accommodate the ridership demand and evaluate the headway assumption used in the model. Operational headways may differ from the model assumptions.

3.6.6.1 Projected LRT Headway

LRT headway is based on a peak point demand of approximately 3,635 peak hour peak direction riders, this was the peak demand observed from all of the LRT scenario model runs. Using light rail vehicles (LRV's) with a desirable load of 138 passengers, headways of 2.5 minutes would be required to meet the peak point demand, requiring a fleet of 40 vehicles to provide this level of service to the whole corridor. As this headway requirement is short and has the potential to result in vehicle bunching, vehicles would be coupled into two car trains to run at more manageable headways.

3.6.6.2 Projected BRT Headway

BRT headway is based on a forecast peak point demand of 2,850 peak hour peak direction riders. Using 60 foot articulated buses with a capacity of 90 passengers, headways of 1.58 minutes would be required to meet this demand, resulting in a fleet of 75 busses, including spare vehicles, required to provide this level of service to the whole corridor. This headway is significantly less than the assumption for the model, and less than the cycle length of traffic signals along the corridor; this is likely to lead to vehicle bunching in the transit lanes from vehicles being stopped at platforms and traffic signals. This north/south green time requirement would have a much greater impact on east/west green time availability than LRT, providing a further reason to support LRT.

The BRT headways are also likely to have an impact on pedestrian activity and storage on the station platforms – if bunching begins to occur, platforms would become crowded and movement could be constricted. This could be a safety issue given the location of the platforms in the centre of the street.

3.7 Technology Assessment



The demand forecast is only one element in the choice of technology. The technology must fit with the operational strategy for the corridor, and it must also consider social and economic benefits, and the contextual technical requirements of the system.

An analysis has been undertaken of the benefits of BRT and LRT systems. This analysis examined many existing systems both in North America and internationally to gauge similarities between successful corridors and the Hurontario/Main Street corridor. The analysis has also examined unsuccessful systems, to better understand the factors which can contribute to success or failure. The “Comparison of the Social, Technical and Economic Benefits of BRT and LRT” report has been appended to this report as Appendix 3B.

Key findings from the case studies and other literature reviewed are as follows:

- LRT provides a greater certainty in the eyes of the development community that the municipality is committed to rapid transit, and this certainty, combined with other factors, tends to result in greater development uplift along transit corridors than would result from BRT;
- LRT is much more attractive to “choice” riders due to the better quality of ride, speed profile and other less quantifiable factors. In formats as proposed for this corridor, LRT systems have been shown to be more successful than BRT in enticing drivers to change their mode of travel;
- Both LRT and BRT provide a high level of increased mobility for urban residents, workers and visitors.



There are many examples of successful LRT systems on corridors similar to Hurontario / Main Street, and relatively few examples of successful BRT systems on similar corridors. Successful LRT systems include Phoenix and Minneapolis, on corridors which are striking in their similarity to Hurontario. The Phoenix LRT has generated over \$7 billion (US) in investment along the corridor, and ridership continues to exceed targets by a substantial amount. There are also many successful European examples.

The BRT experience is that this technology is most often applied in separate exclusive busways that are not designed as “street-oriented”, as per the mandate for this corridor; these are generally more related to highway-type right-of-ways, for long haul trips. Cleveland is one successful exception to this rule, but there are few others. Another issue for BRT is the situation in which demand is projected to be in the range where there is some uncertainty as to whether BRT has sufficient capacity for the long term. Future conversion from BRT to LRT would be very difficult in a corridor – during the

construction upgrade, it would be very challenging to maintain a high level of transit service, which could erode gains in ridership to that point. This would also result in double the amount of disruption to businesses and residents, if BRT is converted to LRT.

BRT offers an advantage in situations where it is desired to serve several bus routes which can merge onto and diverge from the rapid transit lanes. The connections on the Hurontario corridor and the grid network envisaged by the two Cities suggest that this flexibility would not provide a distinct advantage here. The required service frequency would be extremely difficult to operate with buses as well, particularly given the difficulty in obtaining sufficient width to provide bus bypass lanes at stations on the street.

Based on the assessment of demands in the corridor and the benefits of the two technology options, it is concluded that LRT will provide greater socio-economic benefits than BRT.

3.8 Multi-disciplinary Environmental Assessment

The corridor alternatives have been assessed with respect to the multi-disciplinary list of criteria and factors defined for the Class EA process. The multi-disciplinary approach reflects the nature of the project, taking urban design, land use planning and transportation components into account. The alternatives have been evaluated through public consultation. This assessment of each technology option based on the final list of evaluation criteria is shown in [Table 3.8.1](#).

As part of environmental assessment requirements, a base case or 'do nothing' approach must be considered. In this case, the option of not constructing any new rapid transit on the Hurontario / Main Street Corridor is evaluated. In addition to the 'do nothing' option, the three other alternatives described above are considered and evaluated:

- **Alternative 1:** LRT only
- **Alternative 2:** LRT for south portion of the corridor, BRT for north portion
- **Alternative 3:** BRT only



In order to evaluate the alternative technologies, detailed criteria was developed representing the broad definition of the environment as defined in the Environmental Assessment Act. Within each category, the project-specific evaluation criteria were developed based on the existing characteristics of the study area, and the alternative technologies. The evaluation criteria fall under four main disciplines:

- Natural Environment Impacts;
- Social Impacts;
- Transportation Impacts; and
- Economic Impacts.

Using the evaluation criteria identified, the four alternative solutions to the problem (including the 'do nothing' option) were subject to a net effects comparative evaluation. The advantages and disadvantages of each alternative were compared in

order to establish a ranking of the alternatives and identification of the recommended alternative. The point system developed for scoring and ranking the alternatives includes the following:

- 5 points were assigned to alternatives with no negative effect or a major positive effect;
- 4 points were assigned to alternatives with very little negative effect or some positive effect;
- 3 points were assigned to alternatives with little negative or positive effects;
- 2 points were assigned to alternatives with some negative effect, or very little positive effect; and
- 1 point was assigned to alternatives with major negative effect or no positive effect.

This evaluation is summarized in [Table 3.11.1](#), and the results are described below, with the options ranked and presented highest to lowest.

Table 3.8.1:
EA Alternatives Assessment



Legend

Major negative effect / No positive effect	1
Some negative effect / very little positive effect	2
Fair (little negative or positive effect)	3
Very little negative effect / some positive effect	4
No negative effect / Major positive effect	5

Natural Environment

Criteria/Factors	Corridor				Notes
	Base case ("do nothing")	Alternative 1: LRT	Alternative 2: LRT (S); BRT (N)	Alternative 3: BRT	
Air Quality	1	5	4	3	Electric powered LRT vehicles cause no direct greenhouse gas emissions. The severity of BRT emissions depends on the type of fuel used. The mode shift from auto to transit will mitigate some of the growth of emissions by removing some vehicles from the road.
Greenhouse gas emissions (carbon footprint)	1	5	4	3	
Emissions associated with photochemical smog	1	5	4	3	
Water quality	1	4	4	3	Existing runoff from hard surfaces can be mitigated to some extent under any of the options (through road reconstruction). LRT may offer the opportunity for planted ROW, which would further reduce runoff and improve quality
Surface water quality and quantity	1	4	4	3	
Groundwater level, quality and quantity, and flow, including other aquifers	1	3	3	3	
Aquatic Biology	1	3	3	3	The Hurontario/Main Street corridor is already well separated from surrounding aquatic ecosystems, the implementation will have no effect on the surrounding aquatic biology.
Fish communities and aquatic habitat	3	3	3	3	
Terrestrial Biology	3	3	3	3	
Vegetation	3	3	3	3	
Wildlife (breeding birds, anuans, reptiles, mammals and wildlife habitat)	3	3	3	3	



Criteria/Factors	Corridor				Notes
	Base case ("do nothing")	Alternative 1: LRT	Alternative 2: LRT (S); BRT (N)	Alternative 3: BRT	
Environmental Regulations	3	3	3	3	The Hurontario/Main Street corridor is predominantly built up, with few unaffected areas of natural or scientific interest.
Provincially designated areas (Provincially Significant Wetlands, Areas of Natural and Scientific Interest)	3	3	3	3	
Federal and provincial Species of Concern (Species at Risk Act)	3	3	3	3	
Provincially rare, regionally rare species	3	3	3	3	
Environmental Policies: Provincial	3	4	4	4	All of the options are supportive of protection of natural heritage, and do not have any direct impacts on it.
Conformance with Natural Heritage-Provincial Policy Statement	3	4	4	4	
Environmental Policies: Local	2	4	4	4	The Official Plans establish objectives and policies relating to the natural environment and open spaces that are more likely to be satisfied by the introduction of either LRT, BRT or a combination of the two than continuing with the current transit system and traffic congestion.
Peel Region Official Plan (ROPA 13)-Greenland System Core Areas	2	4	4	4	
City of Mississauga Official Plan - Schedule 3 Environmental Areas	2	4	4	4	
City of Brampton Official Plan - Schedule D Natural Heritage areas and Schedule E Major Recreational Open Space	2	4	4	4	
City of Brampton Official Plan - Section 3.1 Sustainable Planning Framework: Natural Heritage and Environmental Management	2	4	4	4	

Table 3.8.1:
EA Alternatives Assessment (Continued)



Legend

Major negative effect / No positive effect	1
Some negative effect / very little positive effect	2
Fair (little negative or positive effect)	3
Very little negative effect / some positive effect	4
No negative effect / Major positive effect	5

Social

Criteria/Factors	Corridor				Notes
	Base case ("do nothing")	Alternative 1: LRT	Alternative 2: LRT (S); BRT (N)	Alternative 3: BRT	
Supports local, regional and provincial policies	1	5	3	4	The implementation of higher order transit will spur development along the corridor as a whole, which will facilitate the achievement of growth and density set for Mississauga and Brampton. A seamless LRT system will be the most effective for this purpose over a BRT or split mode.
Development potential measured against accepted growth and density targets	1	5	3	4	
Land use planning: Growth potential	1	5	3	4	The implementation of higher order transit has been observed to spur development and increase property values along transit corridors. LRT is slightly more successful in the regard.
Potential development levels in each major corridor segment	1	5	3	4	
Potential difference in development levels based on various transit technologies and routes	1	5	3	4	
Enhancements to the Public Space	1	5	4	5	At grade higher order transit will create strong connections between communities along the transit corridor and will be an integral part of the pedestrian environment. Implementation of higher order transit creates opportunities for the enhancement of the use and aesthetics of the public space
Increase in the potential use of the public space	1	5	4	5	
Increased aesthetics of the surrounding area	1	5	5	5	
Opportunity to promote community cohesion	1	5	4	5	
Support for strong pedestrian environment	1	5	4	5	

Criteria/Factors	Corridor				Notes
	Base case ("do nothing")	Alternative 1: LRT	Alternative 2: LRT (S); BRT (N)	Alternative 3: BRT	
Sidewalks/Streetscape	1	5	5	5	At-grade higher order transit will increase the accessibility of the corridor to pedestrians, and will enhance connections between pedestrian routes intersecting with the corridor. The BRT/LRT split will be less desirable for transporting riders across the transfer point to access destinations by foot.
Projected increase in pedestrian activity	1	5	5	4	
Continuity of pedestrian routes	1	5	5	5	
Effects on Neighbourhoods	1	3	3	3	At grade higher order transit will increase access to all amenities along the corridor. The BRT/LRT split option will be slightly less effective due to the necessity of a transfer for those travelling longer distances. The proposed centre of street transitway will necessitate u-turn movements at signalized intersections to provide full property access.
Improvements in access to amenities	1	5	5	4	
Change in access to properties on Hurontario/Main	1	2	2	2	
Potential for neighbourhood traffic infiltration	1	2	2	2	
Neighbourhood compatibility	1	4	2	3	
Archaeological Cultural Resources	3	3	3	3	No effects from choice of transit technology.
Built Heritage & Cultural Heritage Landscapes	3	3	3	3	No effects from choice of transit technology.
Other Social Effects	3	3	3	3	No effects from choice of transit technology.
Potential effect on safety, health and security	3	3	2	2	
Potential disruption of other existing interests - residences, businesses, agricultural activities, institutions or community amenities	3	3	3	3	
Enhancements to other existing interests - residences, businesses, agricultural activities, institutions or community amenities	3	3	3	3	
Nuisance - outdoors, noise, vibration, traffic, dust and mud, illumination, visual	3	3	2	2	

Table 3.8.1:
EA Alternatives Assessment (Continued)



Legend

Major negative effect / No positive effect	1
Some negative effect / very little positive effect	2
Fair (little negative or positive effect)	3
Very little negative effect / some positive effect	4
No negative effect / Major positive effect	5

Transportation

Criteria/Factors	Corridor				Notes
	Base case ("do nothing")	Alternative 1: LRT	Alternative 2: LRT (S); BRT (N)	Alternative 3: BRT	
Contribution to City-building	2	5	3	4	Both BRT and LRT will spur the development of homes, workplaces, shopping and attractions along the corridor. A continuous LRT system will be the most successful, while a split option that necessitates a transfer to through movement will be less attractive.
Balancing jobs and housing along the corridor to increase live-work opportunities	2	5	3	4	
Providing a mix of employment uses, including industrial, office and retail and institutional uses	2	5	3	4	
Support for Active Transportation relative to the Metrolinx Regional Transportation Plan	1	5	4	5	
Transportation Mobility	1	5	4	4	LRT provides a higher rider capacity than BRT, and will accommodate the forecast 2031 demand at manageable headways. BRT must operate at low headways in order to accommodate the forecast demand, which will be difficult to manage and lead to vehicle bunching and delays in transit lanes.
Transportation capacity (person/hour), considering transit and other modes	1	5	4	3	
Transit ridership relative to the capacity of the service	n/a	5	4	4	
Travel time, comparing auto to transit between key origins and destinations	1	5	4	3	
Accessibility for the disabled	1	5	4	4	



Criteria/Factors	Corridor				Notes
	Base case ("do nothing")	Alternative 1: LRT	Alternative 2: LRT (S); BRT (N)	Alternative 3: BRT	
Transit Service	1	5	4	4	Higher order transit in a semi-exclusive right-of-way will provide travel time savings over conventional transit by preventing delays due to traffic congestion. LRT will provide more manageable headways and a slightly faster average operating speed than BRT.
Travel time savings relative to auto, for major origin/destination pairs	1	5	4	4	
Reliability, frequency and quality of service	1	5	4	4	
Travel time	1	5	4	4	
Short walking distance to transit	n/a	5	5	5	
Mobility for Pedestrians	2	4	4	4	Changes to enhance pedestrian access along the corridor can be incorporated with changes in the streetscape during the implementation of higher order transit.
Improvement in pedestrian access	1	4	4	4	
Change in intersection crossing and wait times	2	3	3	3	
Change in intersection crossing facilities for wide streets	2	4	4	4	
Mobility for Cyclists	1	4	4	4	Most modern higher order transit vehicles do feature facilities for carrying bicycles. On street bicycle lanes can be considered as part of changes to the streetscape during the implementation of higher order transit.
Opportunity to improve cycling along Hurontario	1	5	4	5	
Ability to integrate cycling facilities and east/west routes at stations	2	5	5	5	
Ability to integrate bike-carrying capacity on vehicles	1	5	4	4	

Table 3.8.1:
EA Alternatives Assessment (Continued)



Legend

Major negative effect / No positive effect	1
Some negative effect / very little positive effect	2
Fair (little negative or positive effect)	3
Very little negative effect / some positive effect	4
No negative effect / Major positive effect	5

Transportation

Criteria/Factors	Corridor				Notes
	Base case ("do nothing")	Alternative 1: LRT	Alternative 2: LRT (S); BRT (N)	Alternative 3: BRT	
Safety for All Road Users & Others in the Corridor	3	5	4	4	Congestion under the do nothing option will impede emergency vehicle access. The design of a higher order transit running way may be able to incorporate provision for use by emergency vehicles.
Improvement in number and design of controlled pedestrian street crossings	3	4	4	4	
Emergency vehicle access	3	5	4	4	
Impact on the Existing Transportation System	n/a	3	2	2	The conversion of one mixed traffic lane in each direction to dedicated transit use will reduce the overall capacity of the road for mixed traffic, and will likely redirect some auto trips to parallel routes. The implementation of transit phases at intersections will decrease the level of service at some intersections for both north/south and east/west traffic, the magnitude of the effect depending on the frequency of transit vehicles and transit signal phase calls. However, this will be mitigated by the overall drop in auto traffic from decreased mode share and redirected trips.
Degree to which access is affected (changes to traffic routings)	n/a	4	4	4	
Change in level of service by section of the corridor	2	2	1	1	
Performance of key intersections relative to the do-nothing condition	n/a	2	1	1	
Staging/Phasing Potential	n/a	3	3	4	Phasing for LRT will depend on location chosen for maintenance facility.
Ability to stage implementation by section	n/a	4	4	5	
Construction feasibility	n/a	3	3	3	
Impact on utilities	n/a	3	3	3	

Economic Impacts

Criteria/Factors	Corridor				Notes
	Base case ("do nothing")	Alternative 1: LRT	Alternative 2: LRT (S); BRT (N)	Alternative 3: BRT	
Costs & Benefits	n/a	5	4	4	LRT is the most costly option to construct, but provides the most benefit in terms of property value uplift and support from developers.
Order-of-magnitude costs relative to estimate of benefits (including quantifiable benefits such as property value uptake and tax income)	n/a	5	4	4	
Operating Costs	3	5	4	4	LRT features operation and maintenance costs approximately 40-50% less than that of BRT per passenger-km travelled
Economic Effects on Adjacent Businesses	1	5	4	5	Both BRT and LRT will increase the accessibility and attractiveness of the Hurontario/Main Street corridor as a pedestrian realm to support business. The implementation of higher order transit may affect sections of the corridor with on street parking, the extent of this will be addressed during detailed design in later phases of the study. The provision of additional. On street parking may be considered as part of streetscape improvements where right-of-way is available.
Projected change in commercial/retail viability based on changes to transit access, vehicular access as well as access by other modes	1	5	4	4	
Projected change in sidewalk commercial activities	1	5	4	5	
Estimate of business attractiveness due to improved streetscape	1	5	5	5	
Quantity/location of parking	3	4	4	4	
Economic Effects on Residential Properties	2	5	4	4	All options are expected to boost value of properties along the corridor. Evidence from case studies suggests that LRT has the greatest effect



**Table 3.8.1:
EA Alternatives Assessment (Continued)**



Legend

Major negative effect / No positive effect	1
Some negative effect / very little positive effect	2
Fair (little negative or positive effect)	3
Very little negative effect / some positive effect	4
No negative effect / Major positive effect	5

Overall Ranking

Criteria/Factors	Corridor			
	Base case ("do nothing")	Alternative 1: LRT	Alternative 2: LRT (S); BRT (N)	Alternative 3: BRT
Overall Ranking	87	259	223	233
	4th	1st	2nd	3rd

Alternative 1: LRT.

The evaluation indicates that LRT is the technically preferred alternative. The alternatives are expected to have similar effects for many of the criteria, because the designs are proposed to be essentially identical – only the technology differs. Given this similarity of effects, LRT is ranked the highest primarily because of three factors:

- It is better able to meet the projected ridership demands. BRT would have to run at headways lower than intersection cycle lengths in order to meet projected demand; this would create delays due to vehicle bunching in the transit lanes. LRT vehicles can be coupled into trains of two or three cars to reduce headways to manageable levels while still meeting ridership demand;
- It will provide the highest quality of service. LRT will provide travel time savings over BRT, with less of a chance of delays due to vehicle bunching; and
- The expected ability to attract transit oriented development, LRT has been observed to attract a large amount of development to the area surrounding a corridor, even before the system begins operation.

Alternative 2: LRT and BRT.

This option offers a combination of LRT and BRT service. While this option provides a number of the benefits of the exclusive LRT and BRT options, it also features all of the disadvantages of BRT as compared to LRT for a significant portion of the corridor length. The transfer between modes in the middle of the line goes against the vision of a seamless transit line, and presents challenges for land use planning and city-building, which are more streamlined with exclusive rapid transit services.

Alternative 3: BRT.

This option ranks high, but falls short of the LRT option. Like the LRT option, BRT ranks high for its ability to enhance public space and provide sidewalk and streetscape improvements, and provides greater mobility options for cyclists. BRT can be implemented in stages, which is an advantage over LRT. However, BRT does not offer the same environmental benefits, particularly with respect to air quality. BRT also ranks lower than LRT in terms of transportation mobility, transit service and community growth potential.

Base Case ('Do-Nothing') option.

This option provides no benefits over the rapid transit alternatives and falls well short in ranking.

3.9 Preferred Technology



The analysis presented above indicates that LRT is the technology that will provide the most benefit if implemented in the Hurontario/Main Street corridor. It is best suited to the projected ridership demands, and will provide the fastest travel times, highest passenger carrying capacity, best quality of ride, and generate the most ridership of all of the alternatives. LRT is also the clear frontrunner of the technology options in terms of growth potential around the corridor and environmental impacts from its operation.

The lower number of passengers carried by BRT buses would require operation at very low headways to meet projected demands; this would make providing reliable service difficult due to “bunching” of buses in the transit lanes. These low headways would also necessitate more frequent transit priority signal calls at intersections, resulting in a lower average operating speed than LRT.

The BRT/LRT split option will result in the benefits of rapid transit along the corridor, but will also suffer due to the weaknesses of BRT in the segment north of Downtown Mississauga. The transfer between modes necessary for trips through Downtown Mississauga also acts as a disincentive for riders making these trips, as indicated by the lower number of forecast trips compared to LRT and BRT alone.

3.10 Sub-Areas for Consideration of Options

The Hurontario/Main Street corridor includes several areas where consideration has been given to alternatives to reserved lanes and to transit operating strategies that divert from an alignment along the corridor. These areas and the issues (including potential merits of diverting from the corridor) are as follows:

- **Downtown Brampton** – The section of Main Street in Downtown Brampton has a right-of-way only 20m in width, much narrower than the 35-45m right-of-way in the rest of the corridor. There are also numerous adjacent heritage buildings, built to the property line, which would not allow for road expansion to accommodate semi-exclusive transit lanes. This section of the street also features on-street parking for the surrounding retail businesses, the preservation or removal of which needs to be carefully considered. Options for Downtown Brampton include the use of parallel streets or a one-way loop to decrease the amount of right-of-way required by transit and limit the effect of the transit service on the area's existing character.
- **Main Street South Heritage Area** – the right-of-way width is 26m in this section, and there are numerous driveways providing access to individual residential properties. The entire area is a Heritage District. Any solution involving semi-exclusive transit lanes would have to be sensitive to these issues, in terms of road widenings, vehicle access and streetscape design;



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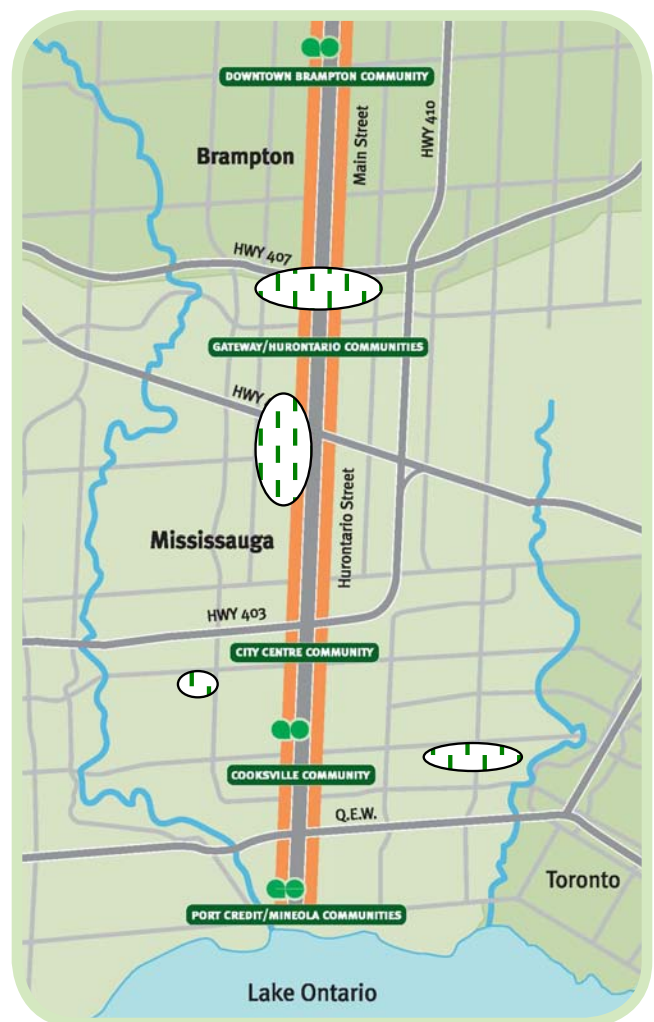
- **Downtown Mississauga** – Most of Downtown Mississauga is situated west of the Hurontario/Main Street corridor. This area features a large amount of retail activity in and around Square One mall, a large amount of employment activity in the surrounding commercial and civic offices, and a large population housed in a rapidly increasing number of condominium towers and other developments. Downtown Mississauga has the potential for significant future growth, as described in the Downtown 21 Plan. This area also includes transit terminals for Mississauga Transit and GO Transit bus services, as well as the Mississauga BRT currently under development. Providing transit service through this area could result in significant ridership due to the increased access to the large number of trip producers and attractors in the area. However, this benefit would need to be weighed against the increase in travel time for passengers travelling straight through north/south;
- **Mineola** – the right-of-way width is 30m in this section, with numerous driveways providing access to individual commercial (and a few residential) properties. The area is a designated cultural landscape, and many mature trees line the street. Any solution involving semi-exclusive transit lanes would have to be sensitive to these issues, in terms of road widenings, vehicle access and streetscape design;
- **Port Credit** – the Port Credit waterfront was recognized as a significant commercial and recreational destination from feedback received during public consultation. Extending rapid transit south of Lakeshore Road to the waterfront would cater to the demand for travel to this area and support future development, but the narrow road rights-of-way available in this area present a challenge for traffic and transit operations.

3.10.1 Storage and Maintenance Facility

One issue to be resolved is the location of a storage and maintenance facility, which will be needed if LRT is the preferred technology. (The transit operators have indicated that a separate facility would not be required if bus is the technology.) The facility should be in close proximity to the corridor, to minimize deadhead (out-of-service) time. Only a limited number of sites of sufficient size are available in locations that are close enough to the corridor to accommodate LRT, and will not impact

any residential communities. The availability of sites may effect the location for passenger transfers between LRT and BRT, shown in Alternative 2 as occurring in downtown Mississauga. Figure 3.10.1 indicates the locations of potential maintenance facility sites under consideration. A site of between 10 and 30 hectares is expected to be needed. Appendix 3D provides a discussion on the alternative sites.

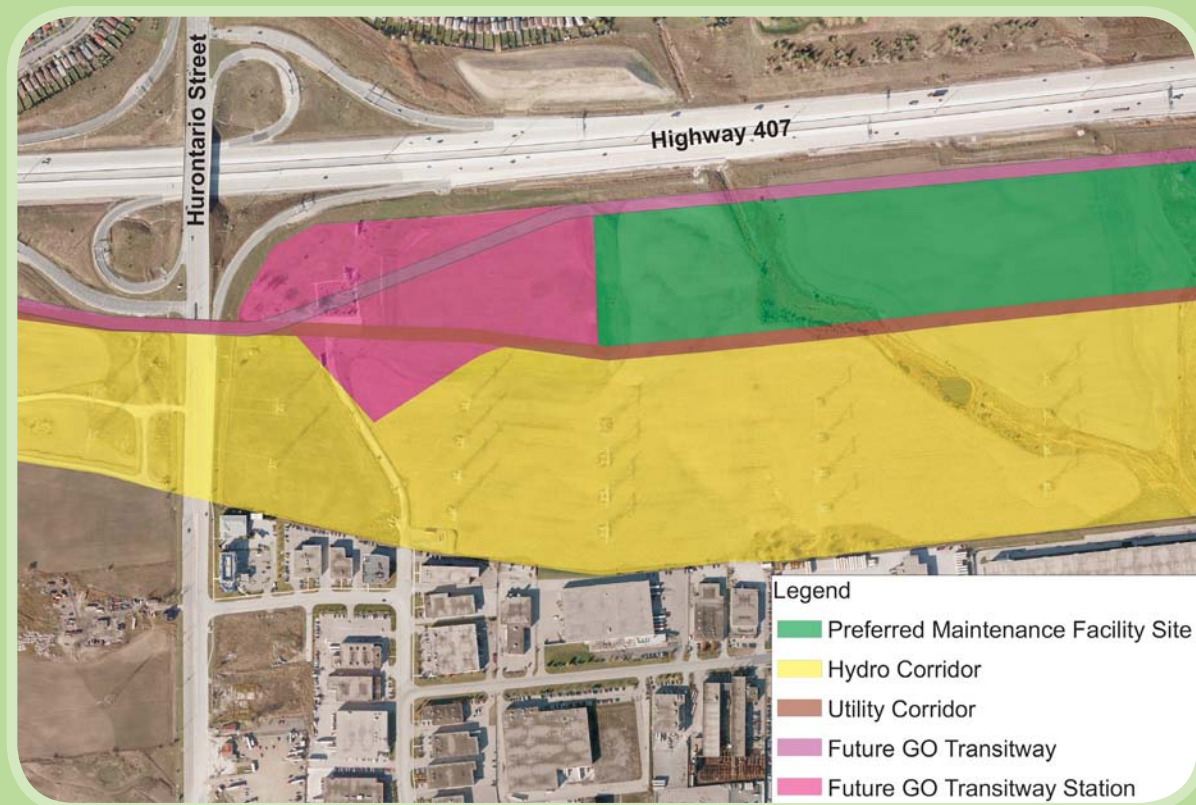
Figure 3.10.1:
Potential Storage and Maintenance Facility Locations



The preferred site is in the southeast quadrant of the interchange between Highway 407 and Hurontario Street. This site, owned by the Ontario government, is shown in Figure 3.10.2. This site is preferred because of the size (13.9 ha), location away from residential development, proximity to the corridor, and expected cost. The location of the site, towards the northern end of the corridor, is also expected to be advantageous in terms of bringing vehicles into service in the morning. Much of the demand is expected to be southbound at this time, and this location would minimize travel in low revenue segments.

The site is shown as open space in Figure 3.10.2, to the east of the proposed Transitway Station. The presence of the proposed Transitway will also be an advantage for this site, in terms of connectivity potential between the rapid transit services. Access from Hurontario Street is expected to be workable for the needs of both services. An appropriate access through the Hydro corridor immediately to the south will be defined in subsequent EA phases. A study of electrical issues and consultation with Hydro One would be required as part of the analysis, as the LRT power system would have to pass under the Hydro wires.

Figure 3.10.2:
Preferred Maintenance Facility Site – ORC Lands South of Highway 407





DOWNTOWN BRAMPTON

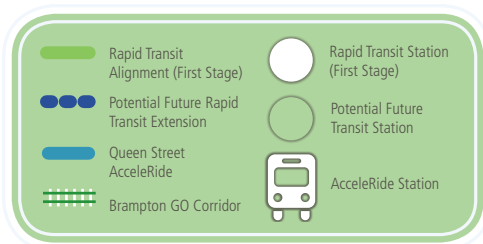
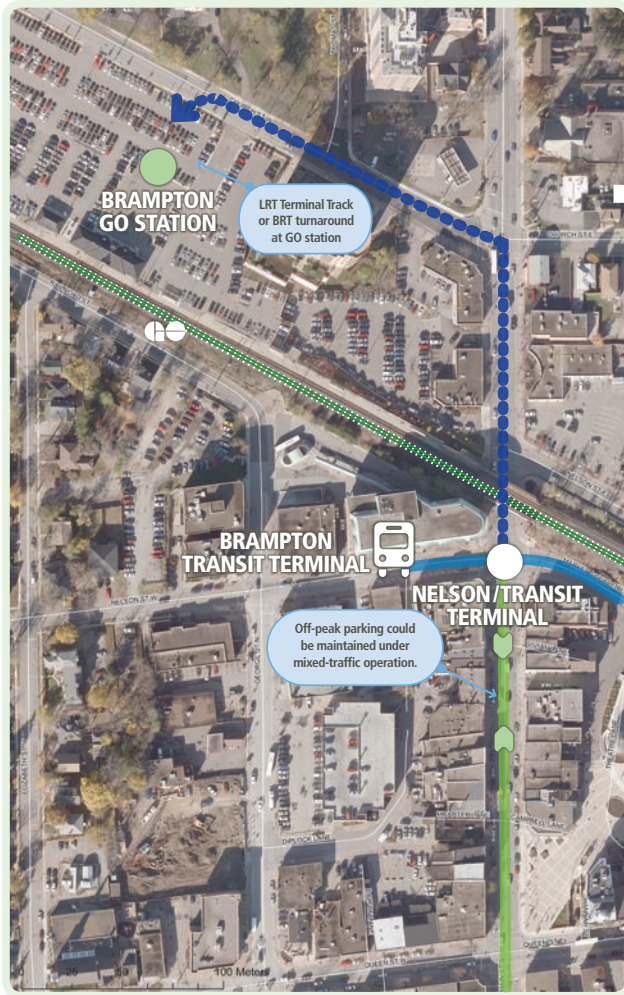
3.11 Analysis of Subareas

3.11.1 Downtown Brampton

The analysis of transit routing and operations through Downtown Brampton will be significantly affected by the ability to physically accommodate transit vehicles on the downtown streets. Due to the limited right-of-way width on the streets downtown, the City of Brampton has specified a preference for shared lane transit operation through the downtown rather than exclusive transit lanes. Preliminary analysis of the road network in Downtown Brampton identified three potential routing options for detailed consideration. These are illustrated in [Figure 3.11.1](#) through [Figure 3.11.3](#).

The 2031 peak direction traffic volumes to be accommodated on Main Street are in the range of 740 to 850 vehicles during weekday peak hours. These could be accommodated in one general purpose lane but this would leave very little flexibility for the accommodation of turning movements. The peak direction traffic volumes on George Street and Wellington Street are in the range of 225 to 380, and could be accommodated in one lane per direction.

Figure 3.11.1:
Downtown Brampton Option 1 – Main Street



Option 1:

The transit line is on Main Street, with the route ending at Nelson Street near the Downtown Transit Terminal. This route could be extended to the Brampton GO Station in the future via Main and Church Streets, as well as further north along Main Street.

Main Street features only 20m of available right-of-way between the existing buildings along the roadway. Main Street currently features a four lane cross section, with on-street parking available in the curb lanes during off-peak times. The implementation of bidirectional LRT on Main Street would require a centre transit stop platform on Main Street near Nelson Street. A track crossover would also be needed south of the station to allow LRT vehicles to enter and leave on both tracks, as well as a tail track north of the platform for vehicle storage. These would have to be located in a dedicated median transit right of way in order to operate safely.

Two transit lanes and two traffic lanes would be used for this alignment, with the existing on-street parking prohibited. This takes up approximately 15m of the existing right-of-way, leaving only 5m for sidewalks and platform space. This does not leave room for sidewalks and a platform of sufficient width on Main Street to act as the line terminus and a stop to service the Downtown Brampton Transit Terminal. However, extension into the GO Station via Church would provide sufficient space on the existing GO Station parking lot for the infrastructure required to terminate the line and access to the Downtown Brampton Transit Terminal and the Züm BRT system via the tunnel under the GO Corridor.

Option 2:

LRT vehicles in both directions would be routed away from Main Street and would use Wellington Street and George Street to travel through the downtown. George Street features a right-of-way of approximately 15m, with one lane in each direction and room for on street parking on both sides of the street. It would be necessary for LRT to operate in mixed traffic for this section, as there is not sufficient room for parallel transit and traffic lanes in each direction without complete elimination of the existing sidewalks. This also means that there would not be sufficient room for the implementation of a centre transit platform to service the Downtown Brampton Transit Terminal; a side of street alignment would be feasible for this section if the on street parking was eliminated. However, the available right of way and a side of street alignment does not allow for the installation of a crossover track to terminate the line. Therefore, this option is not feasible for further examination as a potential line terminus.

Figure 3.11.2:
Downtown Brampton Option 2 – George Street

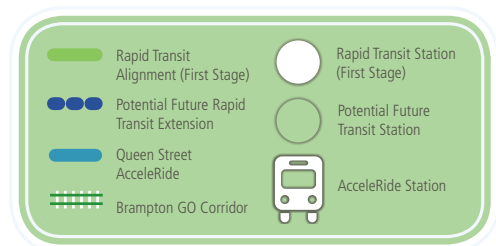
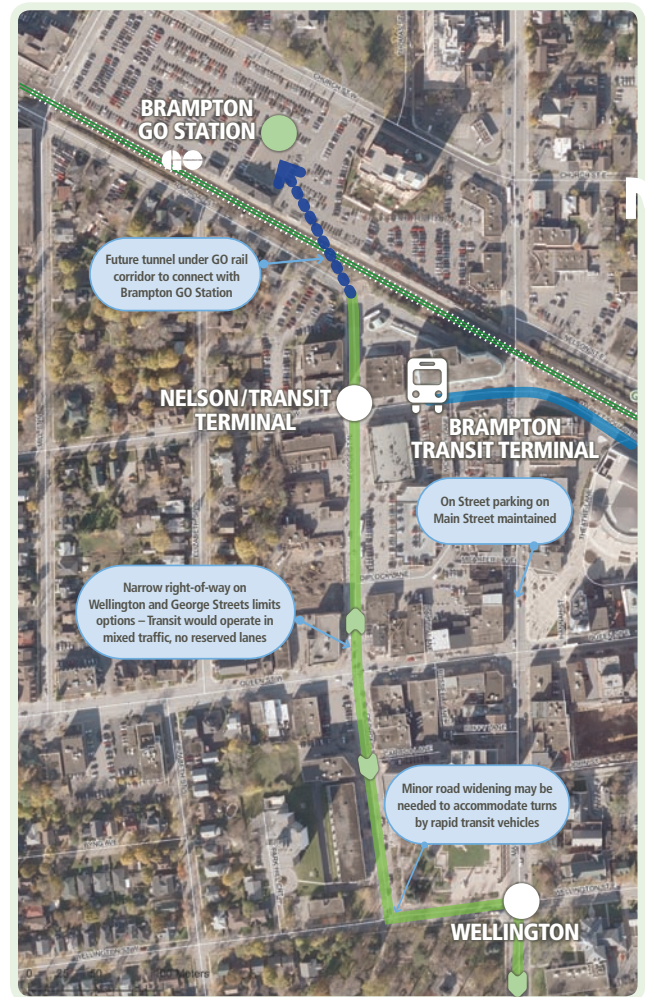


Figure 3.11.3:
Downtown Brampton Option 3 – One Way Loop



Option 3:

Transit vehicles would travel in a one-way loop, turning west on Wellington Street and then north on George Street. They would then pass through a tunnel under the rail corridor, with a station integrated with the GO station, and return to Main Street southbound via Church Street. Figure 3.11.3 shows this option as it was initially proposed; it has been subsequently amended through design analysis as shown in Section 5.7.

Running transit in one direction on each of Main and George Streets in a loop eliminates the need for the on-street crossover track in reserved lanes to turn LRT vehicles around, which provides more flexibility for the allocation of the road right-of-way to sidewalks or on street parking. However, there will still not be sufficient room on George Street to accommodate a centre transit platform; it will be beneficial to consider a side of street alignment in this section, although this will have to operate in mixed traffic to preserve the use of the numerous accesses to the street.

3.11.1.1 Assessment of Options

Each of the three options provides approximately the same level of transit service and walking accessibility to Downtown Brampton. The determinants for selecting a preferred option are thus physical fit, accommodation of traffic, the option’s suitability with the City of Brampton’s aspirations for downtown, flexibility of future service extensions and cost. Table 3.11.1 summarizes each option’s advantages and disadvantages with respect to these factors.

**Table 3.11.1:
Downtown Brampton Route Alternatives Analysis**

	Option 1	Option 2	Option 3
Capital Cost	<ul style="list-style-type: none"> Lowest of three options 	<ul style="list-style-type: none"> Significant cost of tunnel under GO Rail corridor if line is extended 	<ul style="list-style-type: none"> Most costly due to amount of infrastructure, necessity of constructing tunnel under GO Rail corridor for initial implementation
Transit Operations	<ul style="list-style-type: none"> Directness of routing, an advantage in terms of minimizing travel times and attracting riders. This will also be an advantage if the line is extended farther north No space to accommodate stop platform or crossover track on George Street, needs to extend to GO station to function as line terminus 	<ul style="list-style-type: none"> Necessary to operate in mixed traffic due to space constraints One turn off Main Street at Wellington Street Expansion of Wellington Street may be necessary to accommodate LRT turning radius No space to accommodate stop platform or crossover track on George Street, needs to extend to GO station to function as line terminus 	<ul style="list-style-type: none"> One way loop north on Main Street, south on George Street via Church Street and Wellington Street LRT turning radius cannot be accommodated on the intersections of Nelson Street with Main Street and George Street without disrupting existing buildings Ease of introducing reserved lanes in future due to lesser amount of right-of-way required
Integration with Transit Terminal/ Queen Street Züm	<ul style="list-style-type: none"> Access to terminal via tunnels under GO Rail corridor 	<ul style="list-style-type: none"> Access to terminal via tunnels under GO Rail corridor 	<ul style="list-style-type: none"> Access to terminal via tunnels under GO Rail corridor
Traffic	<ul style="list-style-type: none"> Impacts through traffic on Main Street 	<ul style="list-style-type: none"> Transit route travels through George Street No impact to traffic on Main Street 	<ul style="list-style-type: none"> Unidirectional transit on each street creates much less impact on traffic and right-of-way allocation than Options 1 and 2
Relationship between transit and road roles	<ul style="list-style-type: none"> Prominence at putting transit first within the Downtown Would eliminate existing on street parking through the Downtown along Main Street No room for accommodation of platforms near transit terminal 	<ul style="list-style-type: none"> Transit hidden from Main Street; does not put transit first within the Downtown No impact on traffic and on street parking on Main Street Potential necessity for widening on Wellington Street to accommodate turns Impact on use of the George Street right-of-way. This would eliminate the ability to create widened sidewalks or redesign the on-street parking supply No room for accommodation of platforms near transit terminal 	<ul style="list-style-type: none"> Prominence at putting transit first within the Downtown Moves transit closer to geographic centre of the Downtown Street parking on Main Street may need to be removed Potential necessity for widening on Wellington and Church Streets to accommodate turns
Noise	<ul style="list-style-type: none"> No issues related to "wheel squeal" from LRT vehicles turning 	<ul style="list-style-type: none"> Potential for LRT "wheel squeal" at the intersections of Wellington/Main and Wellington/George 	<ul style="list-style-type: none"> Potential for LRT "wheel squeal" at the intersections of Wellington/Main, Wellington/George and Main/north access from GO station

As noted earlier, the parallel routes in the Corridor are discontinuous and do not present viable routing alternatives. However, on the request of City of Brampton the Consultant team also analyzed the potential to divert the LRT through Meadowlands Park and up to the Peel Memorial Hospital (PMH) site south of Queen Street via Fletcher's Creek as shown in [Figure 3.11.4](#). A preliminary analysis completed for this diversion indicated that a number of problems would arise under such a scenario. These are:

- A major component of building a successful rapid transit system requires it to be developed in conjunction with transit oriented development along its corridor. Aligning a rapid transit route along a valley corridor that is currently being used for recreation uses and serves as a 100-year floodplain would jeopardize this objective. In particular the opportunity for revitalizing Downtown Brampton with a lively pedestrian-oriented streetscape along George Street and Main Street South would be lost;
- This alignment is expected to have significant impacts on infrastructure requirements. The alignment would be located in a natural area protected as a floodplain for much of its length. This warrants an elevated structure that would allow the LRT to operate above the 100-year floodline. Further, the structure would have to be built so as to not impede the flow of water in a flood situation. Although, much of downtown Brampton is located within this same floodplain, the extra structural requirements and costs for this diversion would weaken the benefit case for implementing a LRT in the Corridor;
- The elevated structure is expected to bring significant visual and noise impacts on the residential properties bordering the valley with few options for attenuation. As a result significant public opposition can be expected for the valley route;
- There are a number of existing recreation facilities in the valley. Access to these facilities will be severely impacted. A significant number of soccer pitches and ball diamonds will have to be removed and trails re-routed to accommodate the LRT;
- Obtaining approval for an elevated LRT line within a protected natural floodplain area will be difficult and involve protracted negotiations with several Provincial agencies and the TRCA. The timelines associated with obtaining such approvals could significantly delay the construction of the LRT with no guarantee that approval would eventually be forthcoming;
- The requirement for an elevated structure will add significantly to the capital costs of the system. The capital cost premium would be upwards of \$10 million. In addition, maintenance fees will also rise substantially, because the elevated structure would require significantly more upkeep than the at-grade line proposed on Main Street;
- Crossing the CN Rail corridor will add to the height, visual impact and cost of this alignment. As a result of the vertical alignment, introduction of an appropriate station at the PMH site will be technically challenging and would increase costs;
- The Four Corners area, generally including the Downtown GO Station to the north, Wellington Street to the south, the ORDC rail line to the west and the Etobicoke creek to the east will not be well served by the valley route. This is a key area with a high potential for transit-oriented urban development within the Urban Growth Centre. The introduction of the LRT in this area is an important component in the vision for the Four Corners;
- The valley route is expected to only benefit the Hospital land in terms of development uplift. However, much of that area would be occupied by the LRT and GO Station. The Main Street route would provide the basis for

creating a more intensified and successful downtown node, whereas the valley route would disperse this development within the Urban Growth Centre;

- The added length of this alignment would also add to the cost of future extensions to the north. The line would have to divert back to Hurontario Street, either along Queen Street (creating a potential overload situation with the Queen BRT service already planned) or continuing through the valley lands. This is expected to expand the magnitude of environmental and infrastructure cost impacts; and
- Relocating the Downtown GO Station will require the approval of GO Transit, CN Rail, PMH, VIA Rail and the Province. A number of these agencies would be hesitant to relocate the station, specifically GO Transit.

As a result of these issues, it was determined that an LRT route serving Downtown Brampton would be more beneficial than the valley alignment.



**Figure 3.11.4:
Valley Diversion to Peel Memorial Hospital Site**





3.11.2 Main Street South Heritage Area

3.11.1.2 Preferred Option

The selection of the preferred option reflects the choice of LRT technology for the entire corridor, as discussed above.

Based on the assessment presented above, the preferred option is number 3 – the one-way loop. This option minimizes the potential negative effects on right-of-way use, and provides flexibility for future service options, while still “putting transit first” on Main Street.

However, this option is predicated on being able to redesign the GO station and tunneling under the CN rail line. A detailed feasibility analysis of the construction of this tunnel will be carried out in a later stage of the project. Should it become evident during this analysis that these actions are not possible, Option 1 is the most logical in terms of providing service to the downtown in the short term and making provision for longer-term service extensions to the north.

The Main Street right-of-way is 26m in this section, with two traffic lanes per direction, constraining the space available for accommodating both vehicular traffic and dedicated transit lanes. A widening would be required to provide a 4m traffic lane plus an exclusive transit lane in each direction.

This section of Main Street is predominantly residential, and features numerous driveway accesses onto Main Street that would be impacted by the presence of dedicated transit lanes – with reserved lanes, driveway movements would be limited to right-in/right-out only. Projected peak direction traffic volumes during weekday peak hours are in the range of 680 to 750 vehicles per hour in this section. These can be accommodated in a single general purpose lane, but this will leave very little flexibility for the accommodation of turning movements and will restrict the accessibility of the numerous driveways serving individual residential properties.

This would require creating left turn lanes to create opportunities for u-turn movements at the signalized intersections in the area, to allow drivers access to Main Street both northbound and southbound. While this access system has been successfully implemented on many corridors (e.g. St. Clair Avenue in Toronto), it would be more difficult to accommodate in this right-of-way. (Though it should be noted that the Region of Waterloo's proposed LRT has been designed to operate on reserved lanes in some similar four-lane sections.) As this is a Heritage Area, acquiring the property necessary to expand the roadway to build the u-turn lanes would be difficult. As a result, it is recommended that transit in this section operate in shared lanes to minimize the effect on the surrounding properties. This section is fairly short (1.4km) and does not contain any proposed transit stops, which will keep the negative effects on transit reliability to a minimum.

Under the existing traffic conditions, the northbound and southbound through movements operate at excellent levels of service and experience minimum delays (less than 18 seconds) at all intersections located in the subject area. Under the future total 2031 traffic conditions, no substantial increase in traffic volumes is anticipated due to the mode shift to transit associated with the planned Metrolinx transit projects. Therefore, it is anticipated that transit vehicles will experience nominal delays and that adequate traffic operations will be maintained under future 2031 traffic conditions.

This area also features two bridge crossings over Etobicoke Creek, one north of Charolais Blvd and the other north of Nanwood Drive. Based on examination of the structural drawings provided by the City of Brampton, it is recommended that these bridges be replaced as part of the implementation of LRT on the corridor, due to their current capacity and age. A more detailed analysis of the cost and extent of this bridge replacement will be undertaken during detailed design, the third phase of the EA process.





3.11.3 Downtown Mississauga

Ten options for LRT diversions serving Downtown Mississauga have been generated over the course of the study. These options are illustrated in Figure 3.11.5 to Figure 3.11.14.

LRT DIVERSIONS OPTIONS

downtown mississauga

OPTION 1



Figure 3.11.5:
Option 1 – Mainline via
Hurontario

downtown mississauga

OPTION 2



Figure 3.11.6:
Option 2 – Mainline via
City Centre Drive with new
Highway 403 Crossing

downtown mississauga

OPTION 3



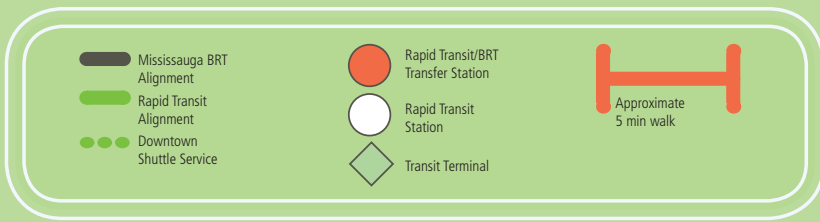
Figure 3.11.7:
Option 3 – Mainline via
City Centre Drive with
Downtown Circulator

downtown mississauga

OPTION 4



Figure 3.11.8:
Option 4 – Mainline via
City Centre Drive with
Downtown Circulator



LRT DIVERSIONS OPTIONS

downtown mississauga OPTION 5

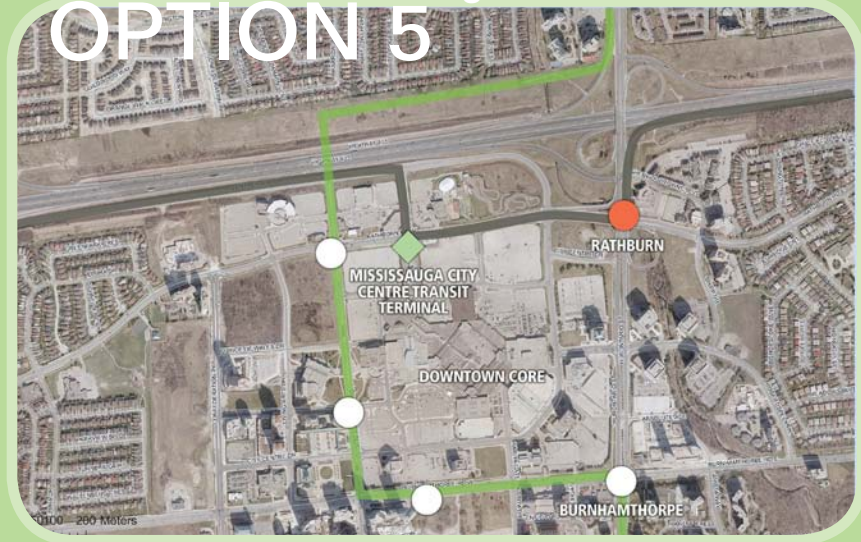


Figure 3.11.9:
**Option 5 – Downtown
Diversion Via Duke of York**

downtown mississauga OPTION 6



Figure 3.11.10:
**Option 6 – Direct Downtown
Service via Living Arts with
new Highway 403 crossing**

downtown mississauga

OPTION 7



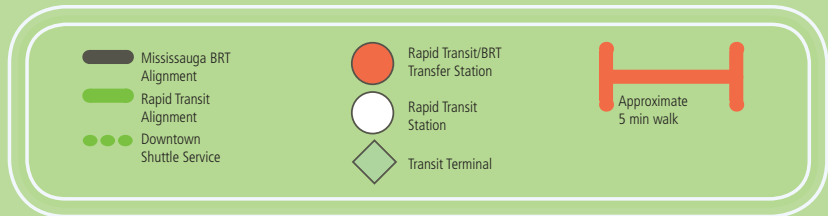
Figure 3.11.11:
Option 7 – Combined Mainline and Downtown Service with new Highway 403 crossing

downtown mississauga

OPTION 8



Figure 3.11.12:
Option 8 – Combined Mainline and Downtown Service with new Highway 403 crossing



LRT DIVERSIONS OPTIONS

downtown mississauga

OPTION 9

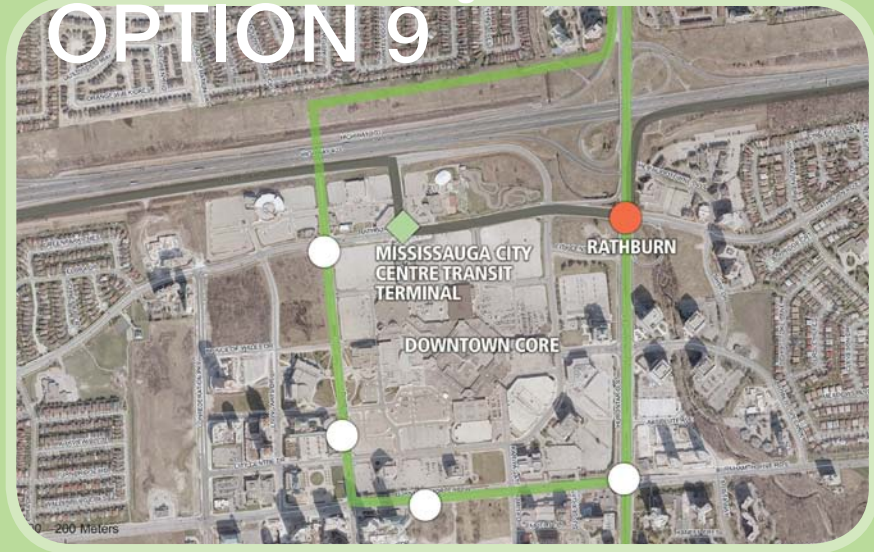


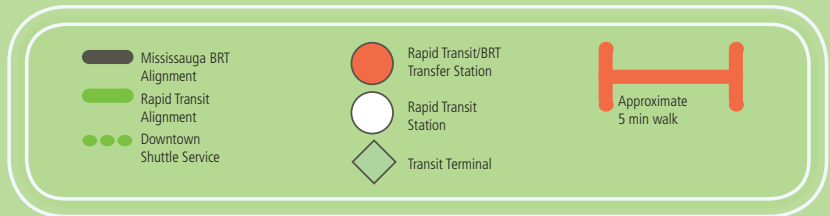
Figure 3.11.13:
Option 9 – Combined Mainline and Downtown Service with new Highway 403 crossing

downtown mississauga

OPTION 10



Figure 3.11.14:
Option 10 – Combined Mainline and Downtown Service



3.11.3.1 One or Two Transit Corridors?

A key consideration for transit routing in Downtown Mississauga is whether one rapid transit corridor or two are required to service the area. Options 1, 2, 5 and 6 (Figures 3.11.5, 3.11.6, 3.11.9 and 3.11.10) illustrate a single corridor approach, following one path either straight along Hurontario Street or diverted into the Downtown area. The other options illustrate two corridor configurations, featuring a mainline route either along Hurontario Street or on a short diversion, and a supplementary route serving the trip generators farther to the west of the Hurontario Street corridor.

A two corridor system will also provide more flexibility for the operator and for riders by allowing for service plans with alternate vehicles either passing directly through or looping around downtown. This would cater to both the

significant number of riders who will be merely passing through downtown and those who have trip origins and destinations in Downtown Mississauga. Thus transit accessibility throughout downtown Mississauga will be much greater if two corridors are constructed.

Additional reasons to support the implementation of two transit corridors in this area:

- Two transit routes through the Downtown will provide a high level of flexibility in terms of service options. Options can include those which travel only to the north or south, as well as different options for different times of day or days of the week;
- During special events in the area of City Hall, two corridors will ensure better transit access, thus



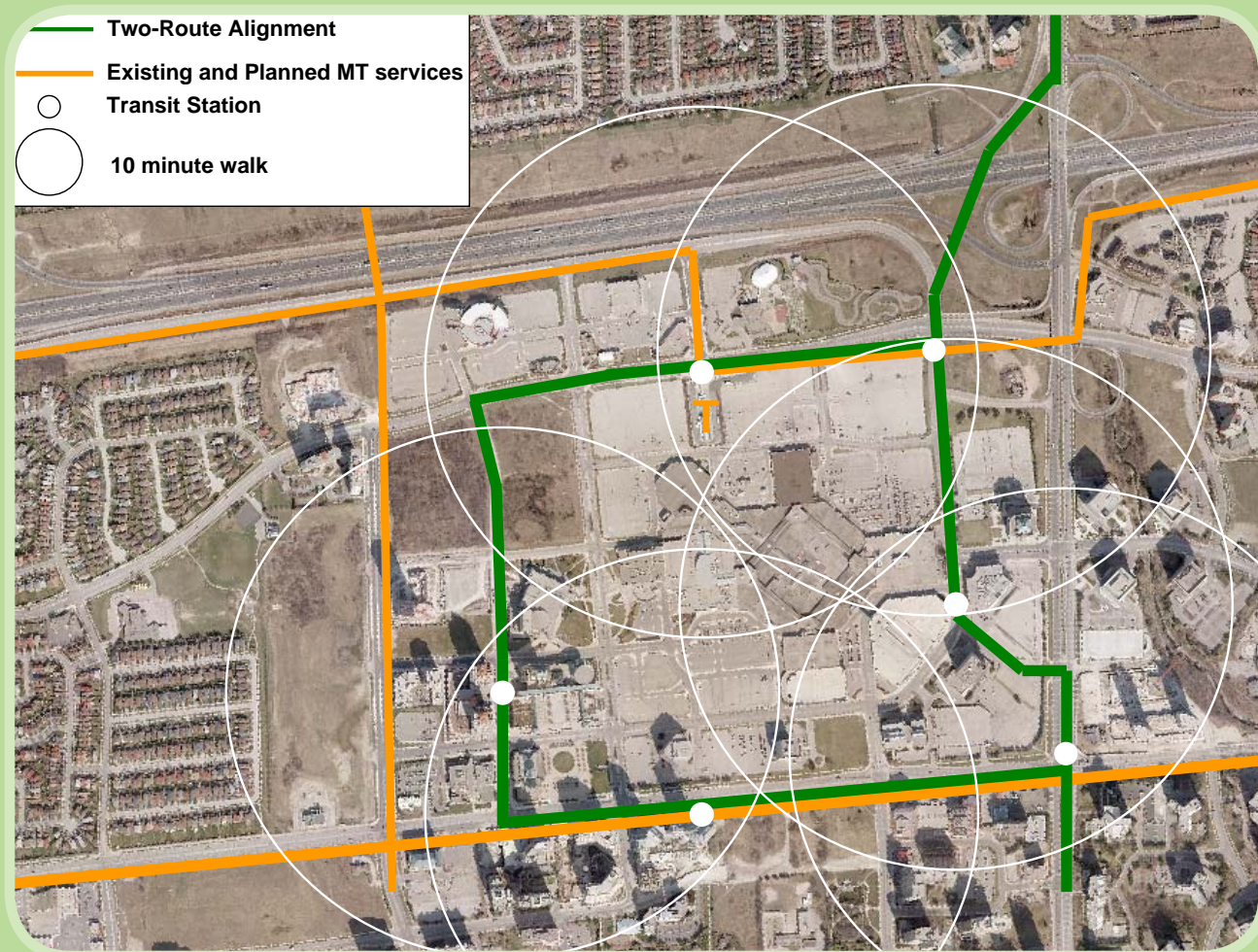
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allowing transit riders to continue to travel while minimizing traffic congestion;

- Two corridors can provide better connections to the Transit Terminal, while preserving a faster route for riders wishing to bypass Downtown Mississauga; and
- Two corridors will place rapid transit service within a reasonable walking distance (500m) of virtually all of

the downtown area, as illustrated in [Figure 3.11.15](#). Without a second line passing through the western portion of Downtown, a large proportion of the proposed development would be outside an acceptable walking distance to transit (for example, the Amicon lands west of Confederation Parkway, north of Burnhamthorpe, which are proposed to accommodate 10,000 residents).

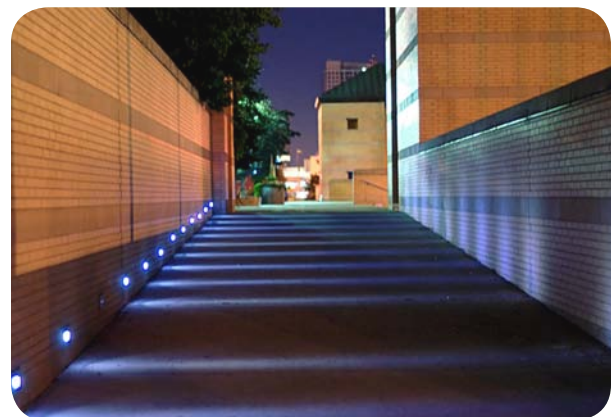
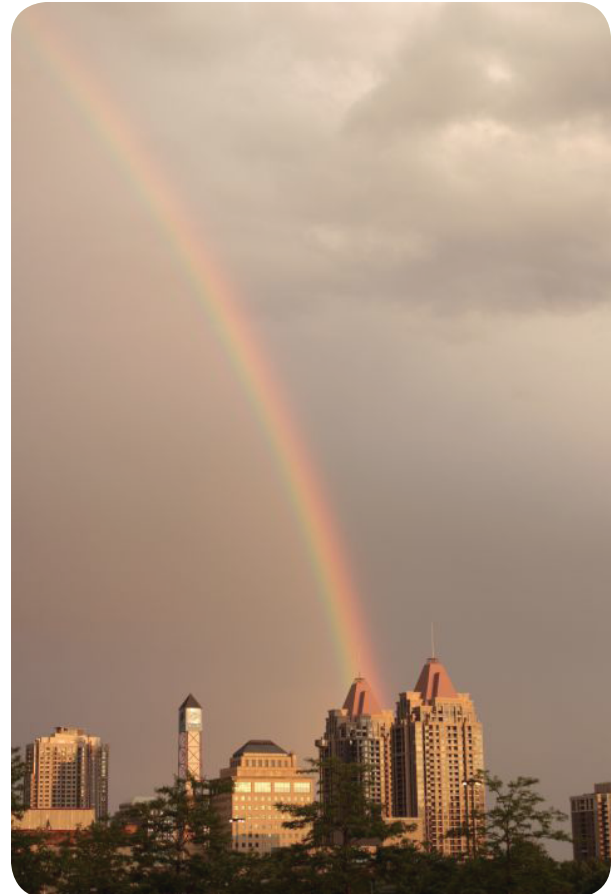
Figure 3.11.15:
Example of Pedestrian Service Area Capture in Downtown Using a Two Corridor System



3.11.3.2 Downtown Mississauga Routing Alternative Analysis

In addition to the mainline LRT alignment (Option 1 above), Options 5, 6 and 8 illustrated in [Figures 3.11.9, 3.11.10 and 3.11.12](#) were also tested with the EMME/2 model; as the model is not sensitive to detailed variations in routing, it was determined that these four options would be sufficient as a representative sample to gauge the behaviour of all ten options proposed.

The LRT ridership demands predicted by the model for each of these options are listed in [Table 3.11.2](#) for the 2031 horizon and [Table 3.11.3](#) for the 2016 “opening day” horizon. Network assumptions for these scenarios are the same as described above for the technology scenarios.



**Table 3.11.2:
Projected Transit Demand for Downtown Mississauga Diversion Alternatives**

a) Base Land Use Scenario

Peak Hour and Peak Point - 2031 Ridership Forecasts	Option 5 (Downtown Service Via Duke of York Blvd)			Option 6 (Downtown Service Via Living Arts Dr)			Option 8 (Alternate Service - Direct and Through Downtown)		
	Ridership		Technology	Ridership		Technology	Ridership		Technology
	South-bound	North-bound		South-bound	North-bound		South-bound	North-bound	
Brampton GO to Steeles	3,370	500	LRT	3,670	545	LRT	3,375	500	LRT
Steeles to Hwy 407	3,225	905	LRT	3,520	980	LRT	3,225	905	LRT
Hwy 407 to Hwy 401	3,060	1,530	LRT	3,310	1,700	LRT	3,060	1,525	LRT
Hwy 401 to Hwy 403	2,215	2,480	LRT	2,215	2,735	LRT	2,270	2,475	LRT
Hwy 403 to Burnhamthorpe	2,970	2,510	LRT	3,170	2,465	LRT	3,105	2,540	LRT
Burnhamthorpe to Dundas	3,560	2,205	LRT	3,685	2,375	LRT	3,625	2,290	LRT
Dundas to QEW	2,705	1,350	LRT	2,740	1,460	LRT	2,725	1,370	LRT
QEW to Lakeshore	2,840	1,080	LRT	2,875	1,180	LRT	2,855	1,090	LRT

b) High Growth Land Use Scenario

Peak Hour and Peak Point - 2031 Ridership Forecasts	Option 5 (Downtown Service Via Duke of York Blvd)			Option 6 (Downtown Service Via Living Arts Dr)			Option 8 (Alternate Service - Direct and Through Downtown)		
	Ridership		Technology	Ridership		Technology	Ridership		Technology
	South-bound	North-bound		South-bound	North-bound		South-bound	North-bound	
Brampton GO to Steeles	3,410	515	LRT	3,715	560	LRT	3,410	515	LRT
Steeles to Hwy 407	3,270	990	LRT	3,570	1,065	LRT	3,270	990	LRT
Hwy 407 to Hwy 401	3,105	1,645	LRT	3,365	1,835	LRT	3,105	1,650	LRT
Hwy 401 to Hwy 403	2,320	2,600	LRT	2,265	2,865	LRT	2,320	2,595	LRT
Hwy 403 to Burnhamthorpe	3,030	2,830	LRT	3,170	2,740	LRT	3,105	2,820	LRT
Burnhamthorpe to Dundas	3,805	2,610	LRT	4,055	2,740	LRT	3,990	2,645	LRT
Dundas to QEW	2,995	1,395	LRT	3,070	1,540	LRT	3,050	1,440	LRT
QEW to Lakeshore	3,030	1,170	LRT	3,105	1,310	LRT	3,085	1,210	LRT

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**Table 3.11.3:
2016 (Potential Opening Day) Transit Demands**

Peak Hour and Peak Point - 2016 Ridership Forecasts	Option 5 (Downtown Service Via Duke of York Blvd)			Option 6 (Downtown Service Via Living Arts Dr)			Option 8 (Alternate Service - Direct and Through Downtown Via Duke of York Blvd)		
	Ridership		Technology	Ridership		Technology	Ridership		Technology
	South-bound	North-bound		South-bound	North-bound		South-bound	North-bound	
Brampton GO to Steeles	2,045	585	LRT	2,220	635	LRT	2,045	585	LRT
Steeles to Hwy 407	2,205	880	LRT	2,400	950	LRT	2,205	880	LRT
Hwy 407 to Hwy 401	2,205	1,325	LRT	2,380	1,475	LRT	2,205	1,325	LRT
Hwy 401 to Hwy 403	1,715	2,265	LRT	1,715	2,495	LRT	1,755	2,260	LRT
Hwy 403 to Burnhamthorpe	1,980	2,120	LRT	2,110	2,085	LRT	2,070	2,145	LRT
Burnhamthorpe to Dundas	2,265	1,850	LRT	2,340	1,990	LRT	2,305	1,920	LRT
Dundas to QEW	2,260	1,170	LRT	2,285	1,260	LRT	2,275	1,180	LRT
QEW to Lakeshore	2,305	845	LRT	2,335	920	LRT	2,320	855	LRT

Transit ridership demand projections obtained from the model indicate that a route featuring a diversion through Downtown Mississauga will generate a great deal more ridership than one that stays on Hurontario Street. The total ridership on a two-corridor system will be approximately equal to that of a one corridor system that diverts through the city centre. Of the 3,105 peak

hour peak direction riders projected by the model for the split option passing through Downtown Mississauga, approximately 1,660 chose the downtown route, while 1,445 chose the mainline route. This indicates that a split corridor option can adequately accommodate both the high number of people looking to board and alight the system in Downtown Mississauga and the sizeable number of riders bypassing the downtown area.

Projected traffic volumes within Downtown Mississauga may change substantially as development proceeds and if the Downtown 21 road network changes are implemented. Estimated a.m. peak hour volumes in the Downtown area are shown in Figure 3.11.16.

Figure 3.11.16:
Projected A.M. Peak Hour Traffic Volumes in Downtown Mississauga





In addition to ridership demand, each of the ten alignment options through Downtown Mississauga has been evaluated on numerous other transportation factors, including:

- **Support for development** – development (existing and planned) within 500m walking distance;
- **Transit operations** – how well is the transit service expected to operate? This relates to number of turns, availability of sufficient green time at traffic signals, and other factors;
- **Integration with transit terminal** – the transit terminal is a key destination, for connection with other transit services. Is the nearest Hurontario HOT station within an acceptable walking distance?
- **Integration with BRT** – the BRT is the key east/west service. Is a direct connection possible?
- **Traffic** – what is the effect on traffic circulation within the Downtown?
- **Relationship of the transit service** to the existing and proposed roles of streets within the Downtown; and
- **Harmony with the Downtown 21 plan** for land use and urban structure.

The analysis is summarized in [Table 3.11.4](#).

**Table 3.11.4:
Downtown Mississauga Route Alternatives Analysis**

	Option 1	Option 2	Option 3
Transit Operations	<ul style="list-style-type: none"> No turns on route, most direct Few transit stops reduce delay from dwell and loading time 	<ul style="list-style-type: none"> One turn on route, but new link can be transit-only, minimizing interference Diversion from Hurontario north of Hwy 403 will increase transit travel time 	<ul style="list-style-type: none"> Turnson main route, but new link via Absolute Ave can be transit-only, minimizing interference Diversion from Hurontario north of Hwy 403 will add time Loop through Downtown contains numerous turns which will slow operations Proposed Square One Drive link can be designed for efficient operations
Integration with Transit Terminal	<ul style="list-style-type: none"> No integration, 600m+ walk required for transfer 	<ul style="list-style-type: none"> No integration, 400m+ walk required 	<ul style="list-style-type: none"> Integrated via downtown circulator loop
Integration with BRT on Rathburn road	<ul style="list-style-type: none"> Transfer point at Rathburn Road, BRT is on Rathburn, one level below Hurontario, design could be a challenge 	<ul style="list-style-type: none"> Effective transfer point at City Centre Drive/Rathburn, but this is very close to Terminal (two BRT stops not effective – should try to move this option west to improve this) 	<ul style="list-style-type: none"> Transfer at Rathburn/City Centre and also at Terminal
Traffic	<ul style="list-style-type: none"> Removes two through lanes from busiest segment of corridor, including Hwy 403 interchange Some traffic can divert to Confederation Parkway No delay due to turning movements 	<ul style="list-style-type: none"> Avoids most traffic impact on Hurontario in this section Will reduce capacity on City Centre Drive Turns on/off at 403 and Absolute Ave can be accommodated 	<ul style="list-style-type: none"> Avoids most traffic impact on Hurontario in this section Will reduce capacity on City Centre Drive and Burnhamthorpe Turns on/off at 403 and Absolute Ave can be accommodated
Relationship between transit and road roles	<ul style="list-style-type: none"> Reflects Hurontario Street's status as a major arterial route and transit corridor – "puts transit first" in terms of through travel Does not put transit first within the Downtown 	<ul style="list-style-type: none"> Moves transit closer to geographic centre of the Downtown 	<ul style="list-style-type: none"> Moves transit closer to geographic centre of the Downtown Makes transit more prominent in the Downtown
Service to development areas/ Harmony with Downtown21 Plan	<ul style="list-style-type: none"> Poor, no connection to development areas 	<ul style="list-style-type: none"> Fair - moves transit closer to geographic centre of the Downtown, but western areas are beyond acceptable walking distance to rapid transit 	<ul style="list-style-type: none"> Good - moves N/S transit closer to geographic centre of the Downtown and services entire area within acceptable walking distance to rapid transit

**Table 3.11.4 (continued):
Downtown Mississauga Route Alternatives Analysis**

	Option 4	Option 5	Option 6
Transit Operations	<ul style="list-style-type: none"> • Turns on through service, but new link via Absolute Ave can be transit-only, minimizing interference • Diversion from Hurontario north of Hwy 403 will add time • Loop through Downtown contains numerous turns which will slow operations • Use of Rathburn may result in congestion due to high number of BRT buses (requires redesign of Rathburn) 	<ul style="list-style-type: none"> • Turns at major intersections likely to result in delays • Segment running through Parkway Belt will be unencumbered, but long stretch with no revenue potential 	<ul style="list-style-type: none"> • Potential to share BRT ROW for portion on Rathburn • Many stops will cause delays from dwell and loading time
Integration with Transit Terminal	<ul style="list-style-type: none"> • Integrated via downtown circulator loop 	<ul style="list-style-type: none"> • No direct integration, 200m walk required for transfer 	<ul style="list-style-type: none"> • Direct access to transit terminal
Integration with BRT on Rathburn road	<ul style="list-style-type: none"> • Transfer at Rathburn/City Centre and also at Terminal 	<ul style="list-style-type: none"> • Transfer point at Transit Terminal, will require 200m walk from proposed stop. 	<ul style="list-style-type: none"> • Direct transfer at transit terminal
Traffic	<ul style="list-style-type: none"> • Avoids most traffic impact on Hurontario in this section • Will reduce capacity on City Centre Drive and Burnhamthorpe • Turns on/off at 403 and Absolute Ave can be accommodated 	<ul style="list-style-type: none"> • Competition for green time approaching Burnhamthorpe and the Highway 403 north ramp terminal 	<ul style="list-style-type: none"> • Competition for green time approaching Burnhamthorpe and the Highway 403 north ramp terminal • Numerous transit turns will affect traffic operations
Relationship between transit and road roles	<ul style="list-style-type: none"> • Moves transit closer to geographic centre of the Downtown • Makes transit more prominent in the Downtown 	<ul style="list-style-type: none"> • Placing transit on Duke of York would interfere with its proposed functions as parade route and festival area (consider alignment along east side on Square One property) 	<ul style="list-style-type: none"> • Living Arts is designated as a minor collector, transit will not interfere with any special designation or use • However, Living Arts is the "back door" to some uses and a four-lane cross-section is required to avoid blocking transit
Service to development areas/ Harmony with Downtown21 Plan	<ul style="list-style-type: none"> • Good - moves N/S transit closer to geographic centre of the Downtown and services entire area within acceptable walking distance to rapid transit 	<ul style="list-style-type: none"> • Good - ties in with Downtown21 development vision; n/s link lies in the centre of Downtown, close to proposed "high street" • Alignment on Duke of York 	<ul style="list-style-type: none"> • Good service to development areas, within acceptable walking distances • Good linkage with DT21 vision

	Option 7	Option 8	Option 9	Option 10
Transit Operations	<ul style="list-style-type: none"> Turns on main route, but new link via Absolute Ave can be transit-only, minimizing interference Diversion from Hurontario north of Hwy 403 will add time Loop through Downtown contains numerous turns which will slow operations Use of Rathburn may result in congestion due to high number of buses (requires redesign of Rathburn) 	<ul style="list-style-type: none"> High density of transit vehicles on Rathburn may be an issue in terms of reliability, service level Longer headways through Downtown make vehicle “bunching” less probable Potential need for grade separation at Burnhamthorpe 	<ul style="list-style-type: none"> Turns at major intersections likely to result in delays Segment running through Parkway Belt will be unencumbered, but long stretch with no revenue potential 	<ul style="list-style-type: none"> Turns at major intersections likely to result in delays
Integration with Transit Terminal	<ul style="list-style-type: none"> Direct access to transit terminal for downtown service only 	<ul style="list-style-type: none"> Direct access to terminal for downtown service only 	<ul style="list-style-type: none"> No direct integration, 200m walk required for transfer 	<ul style="list-style-type: none"> Direct access to transit terminal
Integration with BRT on Rathburn road	<ul style="list-style-type: none"> Direct transfer at transit terminal for downtown service only 	<ul style="list-style-type: none"> Direct transfer at terminal for downtown service only 	<ul style="list-style-type: none"> Transfer point at Transit Terminal, will require 200m walk from proposed stop 	<ul style="list-style-type: none"> Transfer point at Rathburn Road, BRT is on Rathburn, one level below Hurontario, design could be a challenge
Traffic	<ul style="list-style-type: none"> Competition for green time approaching Burnhamthorpe and the Highway 403 north ramp terminal Numerous transit turns will affect traffic operations (option 7 has one of the highest number of turns) 	<ul style="list-style-type: none"> Competition for green time approaching Burnhamthorpe and the Highway 403 north ramp terminal Numerous transit turns will affect traffic operations(option 8 has one of the highest number of turns) 	<ul style="list-style-type: none"> Competition for green time approaching Burnhamthorpe and the Highway 403 north ramp terminal 	<ul style="list-style-type: none"> Competition for green time at Burnhamthorpe due to transit operating in two directions Also competition for green time at Square One Drive
Relationship between transit and road roles	<ul style="list-style-type: none"> Living Arts is designated as a minor collector, transit will not interfere with any special designation or use However, Living Arts is the “back door” to some uses and a four-lane cross-section is required to avoid blocking transit 	<ul style="list-style-type: none"> Living Arts is designated as a minor collector, transit will not interfere with any special designation or use However, Living Arts is the “back door” to some uses and a four-lane cross-section is required to avoid blocking transit 	<ul style="list-style-type: none"> Placing transit on Duke of York would interfere with its proposed functions as parade route and festival area (consider alignment on Square One property) 	<ul style="list-style-type: none"> Placing transit on Duke of York would interfere with its proposed functions as parade route and festival area (consider alignment on Square One property, or use of Living Arts)
Service to development areas/ Harmony with Downtown21 Plan	<ul style="list-style-type: none"> Good, incorporates alignment suggested by Downtown21 team coupled with a direct corridor option 	<ul style="list-style-type: none"> Good, incorporates alignment suggested by Downtown21 team coupled with a direct corridor option 	<ul style="list-style-type: none"> Good - ties in with Downtown21 development vision; n/s link lies in the centre of Downtown, close to proposed “high street Alignment on Duke of York may interfere with use as a parade route (could place transit on Living Arts) 	<ul style="list-style-type: none"> Good - ties in with Downtown21 development vision; n/s link lies in the centre of Downtown, close to proposed “high street” Alignment on Duke of York may interfere with use as a parade route (could place transit on Living Arts)

3.11.3.3 Preferred Downtown Mississauga Options

A number of options can be eliminated based on the assessment shown above. These are:

- **Corridors using a new crossing of Highway 403 at Duke of York Boulevard.** This far western option requires a long distance for transit through the Parkway Belt utility corridor with no adjacent development and therefore no revenue potential. The future Duke of York crossing is also envisaged by the City as primarily an auto route (Options 5 and 9);
- **Corridors with multiple turns in the Downtown.** These would slow the service, making it unattractive and also negatively affect traffic operations (Options 3, 4 and 7). There are other options with fewer turns that provide an equal level of transit coverage based on walking distance;
- **Corridors with no direct north/south routing either on or in proximity to Hurontario Street** (Options 5 and 6); and
- **Corridors that do not provide an effective connection to the transit terminal** and Mississauga BRT system (among those listed above).

The service operation patterns for the options which include a downtown circulator or supplementary route through the Downtown have also been considered. Many of these are similar. Option 8 appears to be the option which involves the least “doubling back” through the Downtown, even though it actually involves more turns than some of the other options (such as 7).

The preferred options for further consideration have been selected based on this assessment. These are:

- **Option 8**, the Downtown transit corridor via Living Arts Drive and Rathburn Road coupled with a through corridor via City Centre Drive (shown in [Figure 3.11.12](#), above). The use of Square One Drive and Duke of York Boulevard could also be considered as alternatives to Rathburn Road and Living Arts Drive, respectively for the downtown corridor.

Reasons for short listing this option:

- The N/S through route along City Centre Drive puts transit close to the geographic centre of the Downtown, which is attractive for capturing more transit riders and supports the Downtown21 vision;
- It uses the wide right-of-way along Burnhamthorpe to advantage, and its placement there will attract riders from the residential south side of Burnhamthorpe;
- It provides good options for alternative transit routing strategies to and from the north and south in the Hurontario/Main Street corridor;
- It takes advantage of the unopened right-of-way connecting City Centre Drive to Hurontario Street through the Morguard property opposite Absolute Avenue. This could be a transit-only link, which would facilitate faster operations; and
- A range of locations for the bridge across Highway 403 could be considered to provide a close connection with an acceptable walking distance to the Transit Terminal. With the Terminal expanding to the east to accommodate the BRT, this is a logical progression or evolution on Rathburn.

Option 8 features a new grade separated crossing of Highway 403. Details of this crossing, including whether it is above or below grade and its location relative to the existing Hurontario Street overpass, will be determined in the next stage of the study through consultation with the Ministry of Transportation of Ontario.

- **Option 10**, the transit corridor via Duke of York Blvd (or Living Arts Drive as an alternate) and Square One Drive coupled with a direct corridor via Hurontario Street (shown in [Figure 3.11.14](#), above). This option is contingent on the extension of Square One Drive, as a connection to Hurontario Street could not be made at Rathburn Road, due to the difference in grade.

Reasons for short listing this option:

- The downtown circulator component provides flexibility for alternative transit operations strategies, on a simple, understandable route. The north/south leg could be located on either Living Arts Drive or Duke of York Boulevard - either provides transit access within an acceptable walking distance for the western blocks of the Downtown;
- The downtown corridor also supports the Downtown 21 vision, and provides a direct connection to the Transit Terminal;
- Use of the extended Square One Drive avoids overloading Rathburn Road with transit vehicles; this section will already be in use by conventional Mississauga Transit buses as well as the future Mississauga BRT service. The conversion of Rathburn Road in to a transit only street in this case could be considered, but experience has shown that these are not conducive to supporting strong urban development. (Note that if the Sheridan College site plan north of the Living Arts Centre precludes the use of a Square One Drive extension through the block between Living Arts and Duke of York, the Duke of York option should be pursued – it may be possible to locate the transit corridor on the east side of Duke of York, on property obtained from Square One); and
- Traffic using City Centre Drive on the east side of Square One can be redistributed to the north, west and south of the mall.

Options 8 and 10 represent two logical choices. The basic question between them is whether the added cost for Option 8 (due to the Highway 403 crossing) is worth the additional ridership and convenience of connections that will result from bringing the service through the Downtown.

The demand forecasts show that a significantly higher number of a.m. peak period peak direction riders are attracted with the options that circulate through the Downtown. The fact that the model reflects the a.m. peak period should also be re-emphasized; during other times of day, the service through the west side of downtown would be expected to be quite attractive in terms of shopping trips, trips to City Hall, the Living Arts Centre and other destinations, and for outbound trips from the thousands of residents expected to live in this area. Also, the proposed Sheridan College location on the west side of the Downtown should be noted – that alone will result in substantial ridership throughout the day and evening.

Other factors in addition to demand, transit operations and connectivity must be considered. Key among these are traffic and cost. The geometric concept on each street, and consideration for interaction with traffic, is shown in [Figure 3.11.17](#), and discussed as follows:

- City Centre Drive: there is currently a five-lane cross-section on the easterly (north/south) segment, which has a ROW of 27.5 m. Peak direction traffic volumes are expected to be in the range of 600-800 vehicles per hour during the peak weekday times. It is recognized that this link provides a role in distributing traffic for Square One and other uses on the street, and for circulation around the Downtown. The concept for this link would be for transit to operate in reserved lanes, with one general purpose lane and a bike lane in each direction. There would be exclusive left turn lanes at signalized intersections. Based on the traffic volumes, this configuration is expected to result in adequate traffic operations. It should also be noted that the introduction of the rapid transit service on this link will provide significant additional person-carrying capacity to Square One and the other uses along this section;

- New link between City Centre Drive and Hurontario Street: this unopened road allowance, secured through the City Centre District Plan, could be constructed as a transit, pedestrian and cyclist only link. As such, traffic operations would not be an issue;
- Hurontario Street: between the new link noted above (opposite Absolute Avenue) and Burnhamthorpe Road, the projected peak direction traffic volumes are in the range of 1,600 to 1,700 vehicles per hour during peak weekday times. The constriction on traffic capacity north of Highway 403 and south of Burnhamthorpe Road which will result from the conversion of one traffic lane per direction should be noted – this will limit the ability of traffic to reach this section, which should assist in maintaining an adequate level of traffic operations. The concept is for dedicated transit lanes in the centre of the street;
- Burnhamthorpe Road: Projected peak direction traffic volumes are in the range of 1,300 to 1,700 during peak hours. The ROW width of 60 m is sufficient to accommodate four traffic lanes plus the concept of two dedicated transit lanes in the centre of the street;
- Intersection of Hurontario Street at Burnhamthorpe Road: at various times, depending on the transit operations strategy,

the intersection will need to accommodate LRT vehicles moving north/south, as well as turning between the north and west legs, or the south and west legs. This could consume a certain amount of green time at the intersection, and together with the traffic volumes, is the key determinant of whether grade separation will be needed. The traffic analysis (documented in Chapter 5) indicates that grade separation is not needed;

- Living Arts Drive: the current cross-section includes four traffic lanes plus a parking bay on the east side, in a 27.5 m ROW. The projected peak direction traffic volumes are in the range of 200 to 360 during the a.m. peak hour. During the p.m. peak hour and during events at the Living Arts Centre, traffic volumes may be higher. It should be noted that this street provides the parking and loading access for the Living Arts Centre and the loading access for City Hall. The concept is for reserved transit lanes; mixed-traffic operation could result in excessive delays to the LRT vehicles because of the turns associated with the adjacent uses. These lanes and the platform locations should be designed so as not to interfere with loading movements. Traffic operations are expected to be adequate with this concept in place;

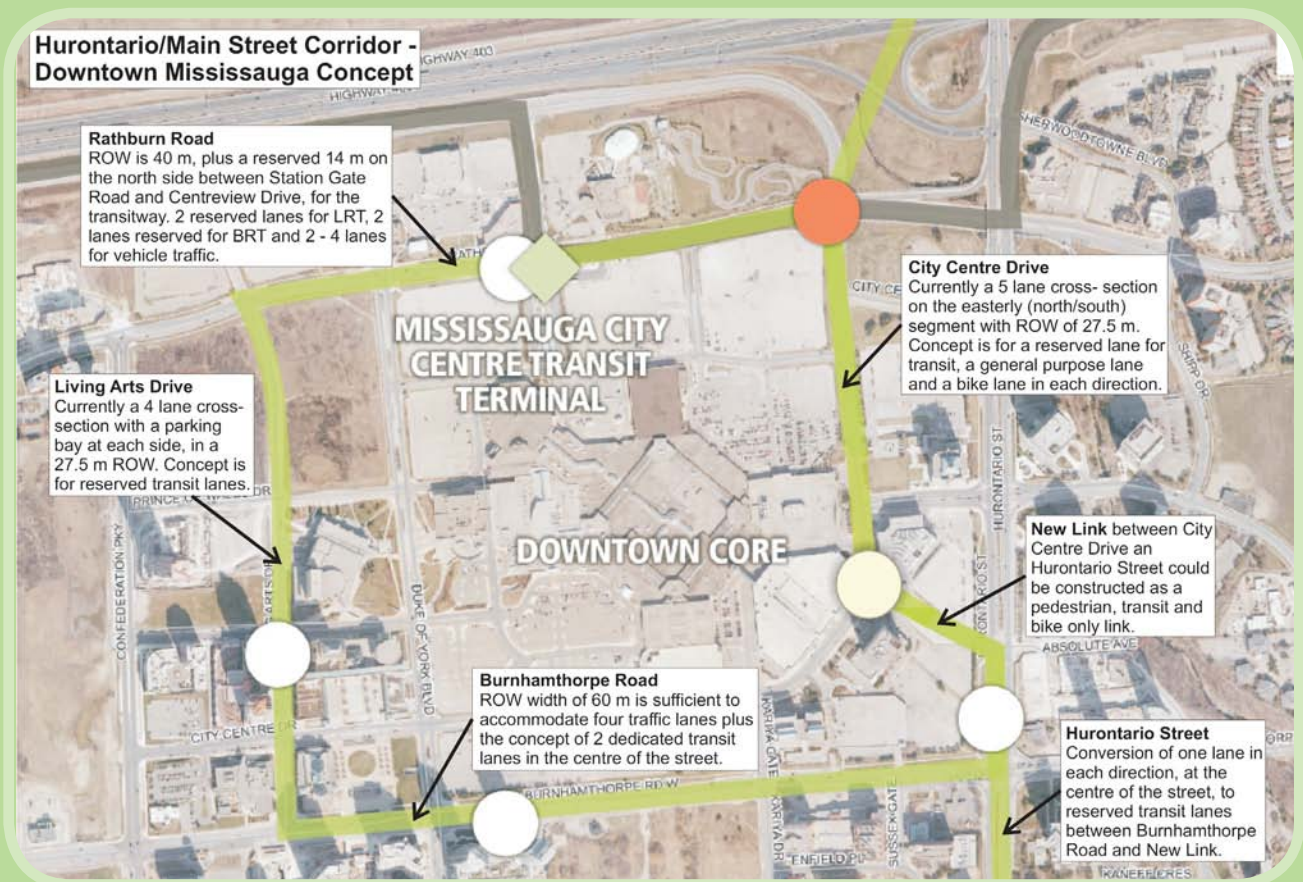
- Rathburn Road: in the short term, Rathburn Road will accommodate the BRT in reserved centre lanes. The long term concept had been for the BRT transitway to be constructed in a trench on the north side of Rathburn. The right-of-way is 40 m, plus a reserved 14m on the north side between Station Gate Road and Centreview Drive, for the transitway. With the proposal for LRT, the concept would involve two general purpose lanes, two lanes for LRT and two lanes for the BRT transitway. Alternatives for the design have been considered, and are shown in Section 3.8.3. The peak direction traffic volumes projected for Rathburn Road under this condition would be in the range of 420 to 560 vehicles during peak hours. Rathburn would be primarily focused on transit; the parallel routes of Centreview Drive and Square One Drive would accommodate additional auto volume. The proposal to enhance Square One Drive as a through road north of Square One, linking across the Downtown, would be an important component in the success of this concept; and
- The cost for a new grade separated Highway 403 crossing and associated changes to Hurontario Street will be in excess of \$10 million. However, by removing transit from Hurontario Street through Downtown

Mississauga, the most heavily trafficked section of the corridor, the preservation of traffic capacity in this section will result in a significantly higher level of service for cars traveling between Downtown Mississauga and the Highway 403 interchange. The transit link via the new bridge would place the LRT within convenient walking distance of the Mississauga City Centre Transit Terminal. It would also permit an effective transfer point with the east/west BRT services to be created – something that would not be possible if the LRT were on Hurontario. It should

be noted that an LRT north of Highway 403 will require permission from Hydro One and TransCanada Pipelines, and likely re-alignment of some of the utilities in this area.

For these reasons, Option 8 including a Highway 403 crossing is the recommended route through Downtown Mississauga. The next stage of the study will undertake a more detailed analysis of specific right-of-way configurations and Highway 403 crossing options.

Figure 3.11.17:
Design Concept for Downtown Mississauga





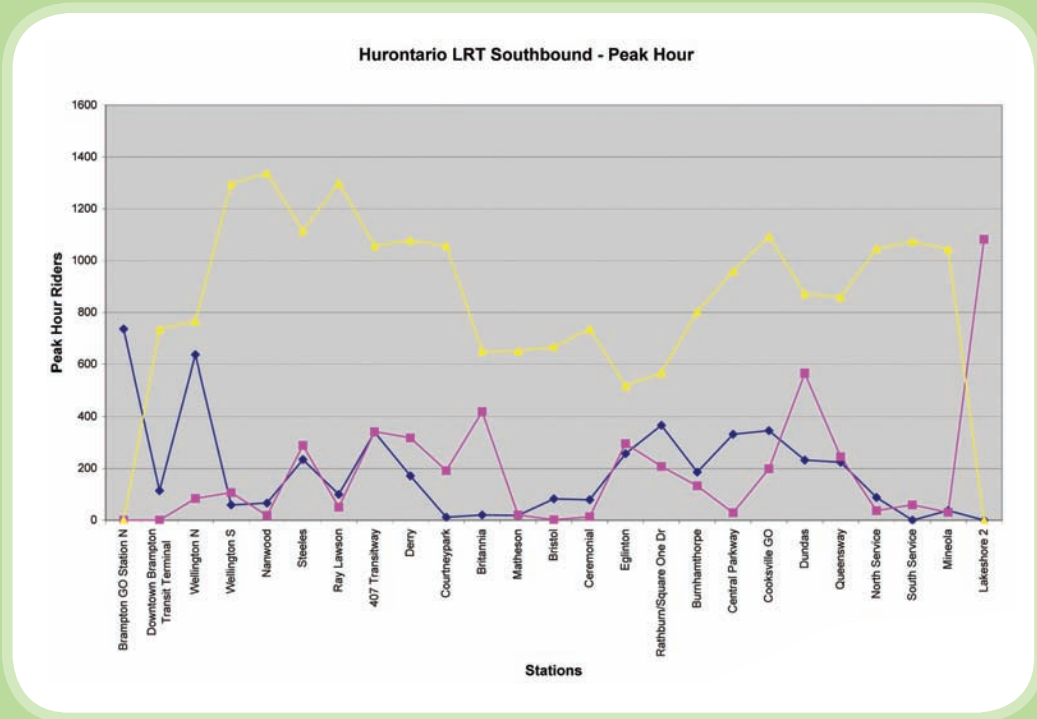
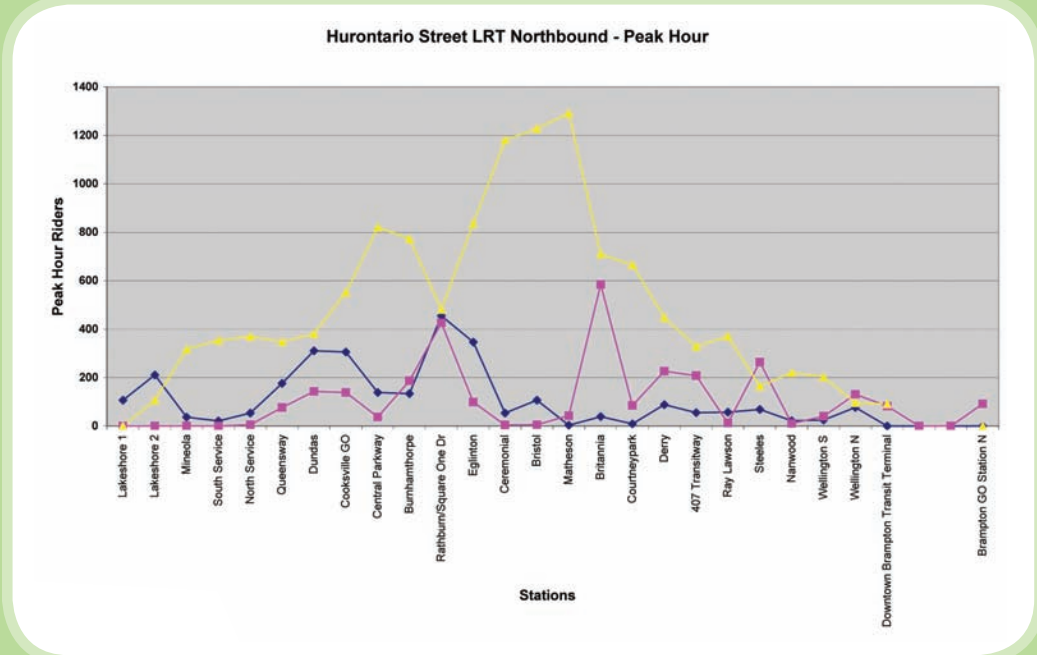
3.11.3.4 Reserved Lanes in Downtown Mississauga

The provision of reserved transit lanes throughout downtown Mississauga is an essential part of the plan. This element is based on numerous factors:

- One of the key study planning principles is to “put transit first”. To accommodate the projected demands documented in this report, transit in reserved lanes is essential. Mississauga Transit currently operates in mixed traffic, and it is not attracting high ridership. Numerous other cities have shown the benefit of providing effective rapid transit service in reserved lanes. To justify the investment in LRT vehicles and achieve a positive relationship between benefits and costs, transit priority in the form of reserved lanes is essential. The example of Portland is often used to attempt to demonstrate that a mainline reserved service and non-reserved downtown circulator works; however, Portland is now moving to put the downtown service in reserved lanes, to cope with demand and avoid traffic congestion;
- The demand patterns for the LRT service which is proposed to run through the Downtown show that this service component is an important element in the overall corridor. The demands are shown in [Figure 3.11.18](#), which illustrates boardings, alightings and through trips at each stop. They show a strong demand relationship with the Downtown area from Dundas Street up to Highway 407. This shows that the Downtown LRT service is not simply a circulator – it is an important mainline, working in parallel to the mainline service via Hurontario;

LRT LINES DEMANDS

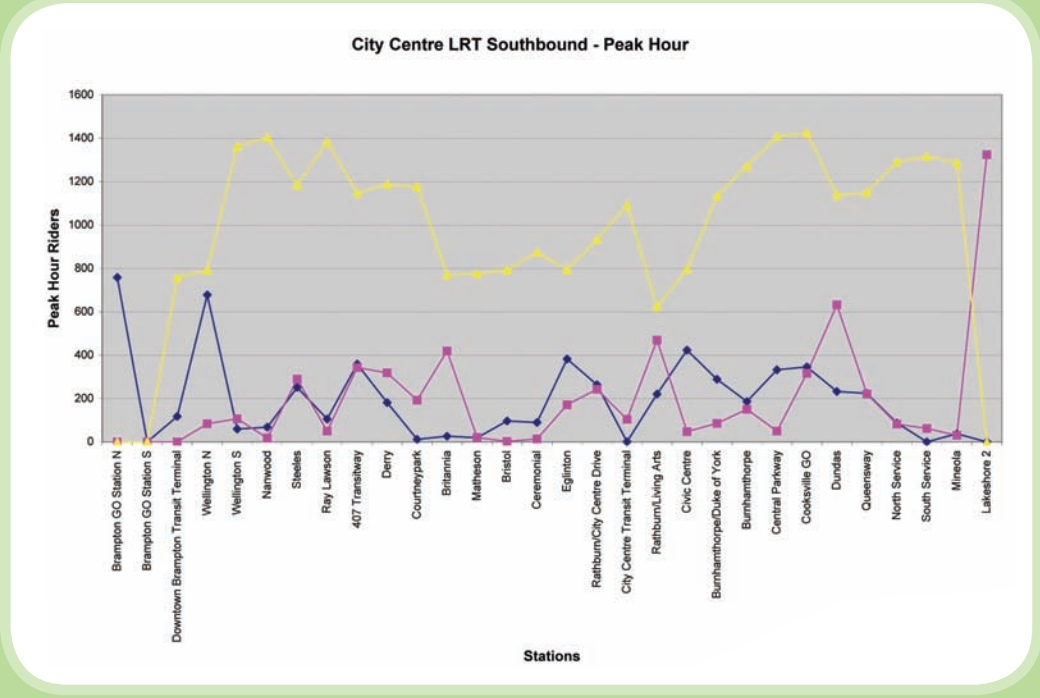
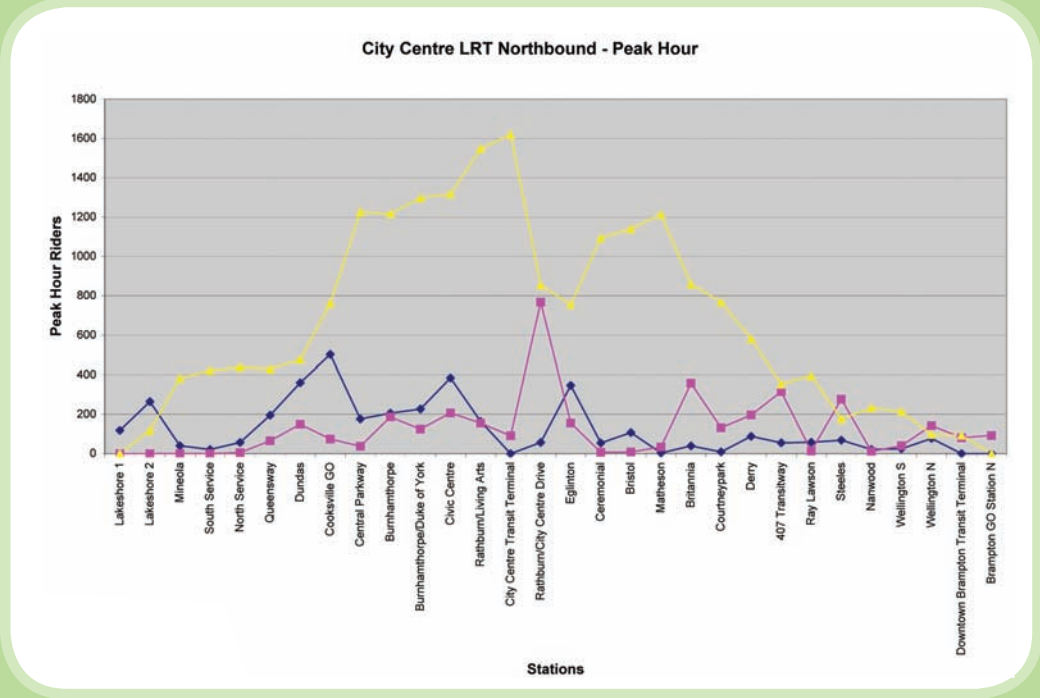
Figure 3.11.18:
Demands on
the Two LRT
lines through
Downtown
Mississauga



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LRT LINES DEMANDS

Figure 3.11.18
(continued):
Demands on
the Two LRT
lines through
Downtown
Mississauga



- The route through Downtown involves numerous turns. This adds delay to the system even before it begins; reserved lanes are needed to avoid adding more delay due to traffic congestion;
- The short blocks in Downtown Mississauga mean that the LRT must pass through numerous signals, which will cause more delay than in other parts of the corridor;
- The reliability which results from reserved lanes is essential in attracting choice riders. This is a fundamental goal of the concept. With stops spaced more widely than local service, riders need to know when the LRT is coming, to plan their trip. Reliable service is crucial to that operational model;
- There will be times in Downtown Mississauga when traffic volumes can be expected to show very high peaks, which would interfere with transit movements. These include peak shopping seasons associated with Square One, as well as Living Arts Centre events, both pre-show and post-show. This reinforces the need for reserved lanes;
- Students at the proposed Sheridan College campus can be expected to have low auto ownership, and depend on transit. Moving these large numbers of riders effectively will be important to ensure that the entire system functions reliably;
- Many other stops in the Downtown are also projected to have high numbers of boardings and alightings, reinforcing the need to ensure that transit moves reliably and effectively so as to minimize delay;

- The convergence of auto, BRT buses and LRT on Rathburn creates an enormous potential for significant delay if they must overlap. Buses operating at approximately one minute headways leave no room for LRT operations. LRT needs to be in a separate lane here, to avoid being trapped behind BRT buses and also to avoid delaying the BRT; and
- If the LRT operational strategy involves separate services from the north and from the south, this will mean more LRT vehicles in operation through the Downtown, creating more potential for bunching if the LRT is not in reserved lanes. Bunching is not an attractive or effective operation for riders – it results in high levels of frustration, and eventually a distrust of the transit operator.

In summary, the operational strategy in Downtown Mississauga must be planned as part of the overall concept for the corridor – it is all part of an interconnected system.

It should also be noted that other transit operators are not building shared LRT lanes – they are perceived to be not worth the investment if these vehicles cannot move effectively and reliably. The Toronto Transit Commission, which has extensive local experience with this issue, has adopted this policy. Portland Oregon, often held up as an example of making transit in mixed traffic work, is understood to be now considering how to put their streetcar service in reserved lanes, due to the levels of demand they experience.



3.11.3.5 Potential Operating Strategies

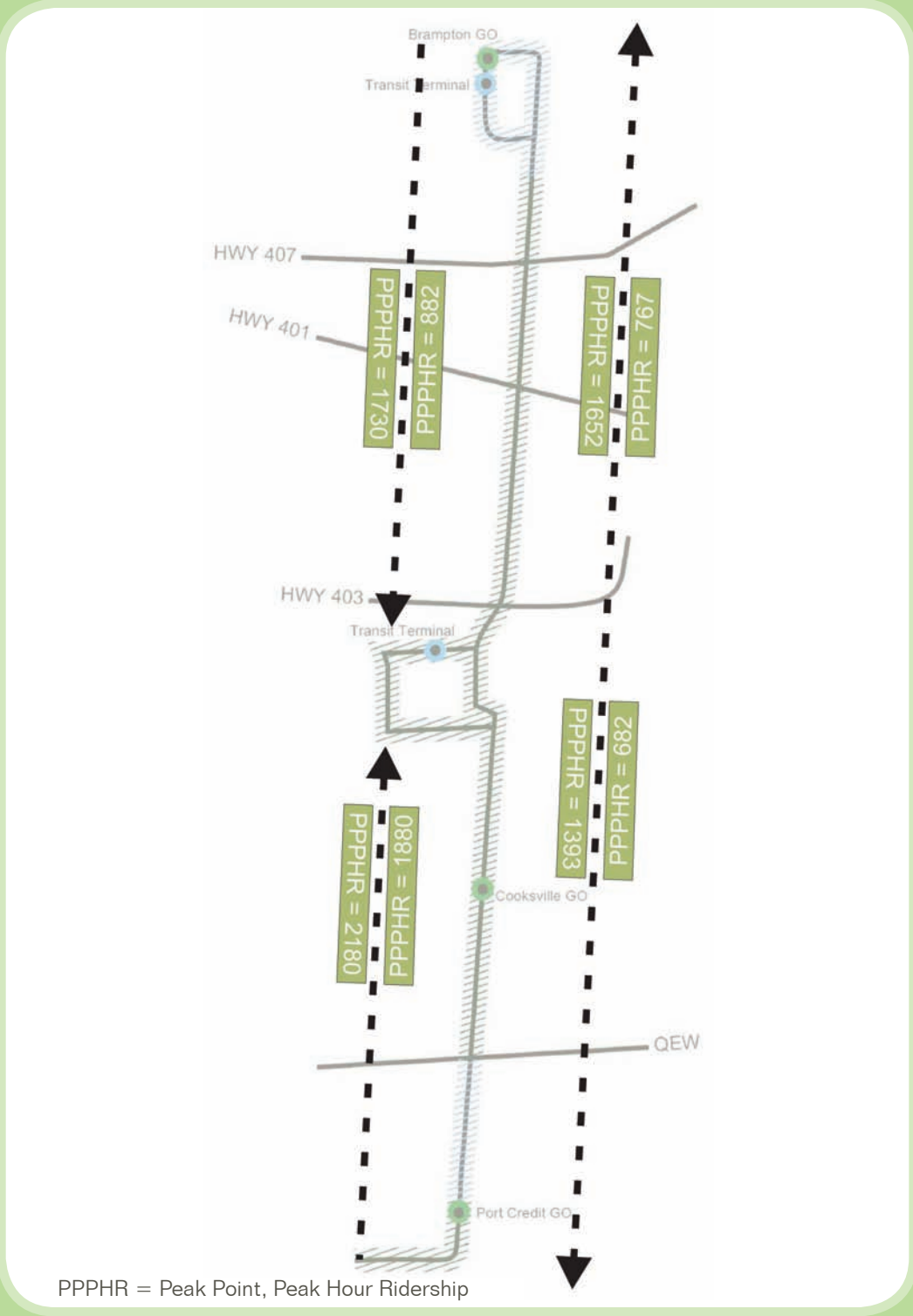
The concept of having two potential routes (one directly north/south on Hurontario Street, or close to it, and a second which directly serves Downtown Mississauga) has been reviewed to determine the need for these two lines. Each corridor has been modeled separately in EMME.

This concept would allow the operator to run a variety of operating strategies. One option would be to alternate trains: Train A would run on the direct n/s line, and Train B would run through the Downtown. A second option would be to run one loop that only serves demand from the south, and a second loop that serves demand from the north.

The peak point riderships on each service are shown in the [Figure 3.11.19](#). They illustrate that substantial volumes are expected to use each of the two LRT lines. Both lines are expected to be needed, and to require semi-exclusive transit lanes. They suggest that a fairly even split of service between line A (on Hurontario or close to it) and line B (through the Downtown) will be needed. Demands to and from north and south are fairly well-balanced, suggesting that both services should continue all the way from Brampton to Port Credit.

Further discussion of the issues is provided in Section 3.11.4 below.

Figure 3.11.19
Peak Hour Ridership through Downtown Mississauga



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3.11.4 Mineola



The projected transit demands for Mineola suggest a need for the provision of dedicated transit lanes, due to the high demand of passengers traveling to and from Port Credit GO Station. Mineola has a narrower right-of-way than much of the corridor and there are numerous driveways, but the 30 m ROW allows more flexibility for small expansions to accommodate higher order transit infrastructure.

The peak direction traffic volumes projected for this section are in the range of 1,040 to 1,100 vehicles in the peak hours; these may be able to be accommodated in one lane, but this would be a demand roughly equal to capacity, indicating a potential for rerouting or traffic infiltration. This would need to be considered further during Phase 3 of the EA.

Preliminary design concepts indicate that it may be feasible to accommodate dedicated transit lanes through much of this area with limited effects on traffic operations. Through the QEW interchange and south to Pinetree Way, only a partial section of reserved lanes may be possible. South of Inglewood Drive to Park Street, exclusive transit lanes are recommended for traffic safety reasons, because the platforms at Park Street must be on the south side of the intersection. Having cars follow the transit vehicles south and stop at a far-side stop just south of the rail underpass would not be optimal from a safety perspective. The concept is shown in [Figure 3.11.20](#). It may be desirable to explore other options as part of Phase 3; these should balance the goals of walking distance to the GO station, connectivity to the waterfront and connectivity to a future Lakeshore Road rapid transit service.





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Figure 3.11.20: Mineola Transit Concept



3.11.5 Port Credit

In Port Credit, the options are to either terminate the service on Hurontario Street near the Port Credit GO Station, or to continue on to the waterfront. Key factors to consider are:

- Demand – both for commuters and for the full spectrum of trips, including recreation and tourism
- Support for transit oriented development
- Connectivity to other future rapid transit services
- Community impacts

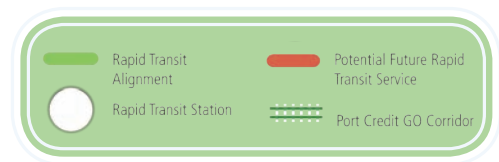
Option 1: Terminate at Port Credit GO Station

This option is the less costly, extending the LRT service only to Park Street to service the Port Credit GO Station. This is a key connection to the regional rapid transit network, and will facilitate key demands for the Hurontario LRT, future Lakeshore Rapid Transit and Lakeshore GO Rail lines. This option will also spare the community south of Lakeshore Road from the effects of LRT operations and construction. However, this option increases the walking distance from the LRT terminus to the retail, commercial and residential areas along the waterfront, which are key destinations of the area. In addition, this option will reduce the segment of Hurontario Street between Park Street and Lakeshore to one lane in each direction to accommodate the terminal station, crossover and tail track. This concept is illustrated in Figure 3.11.21.

Figure 3.11.21:
Port Credit Option 1 – Line Terminates at Port Credit GO Station



Terminate at Port Credit GO Station



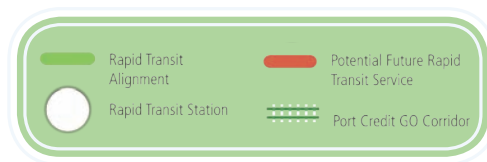
Option 2: Continue to the Waterfront via Port Street

The option to extend the LRT service to the Port Credit waterfront will have a higher cost, but will provide a higher level of support for waterfront development; this could be significant based on existing cases in other cities which implemented LRT. It also improves connectivity to the potential Lakeshore Road rapid transit service as well as servicing the Port Credit GO Station from the Park Street stop. This option provides direct access to the LRT for residents living south of Lakeshore Road, and direct access to the community's commercial area and waterfront recreation areas for visitors. However, this option will expose the community south of Lakeshore Road to the effects of the operation and construction of the service. The streets south of Lakeshore Road in Port Credit have a narrower right-of-way, and will not be able to accommodate on-street stop platforms, crossover and tail track without pavement widening. The City of Mississauga is currently planning for the development of the Port Lands site located in the Port Credit community. A potential extension to the waterfront would use this site to accommodate the LRT terminus station and supporting infrastructure; this will have to take developments in this redevelopment into account as the planning for this segment continues. This concept is illustrated in Figure 3.11.21.

Figure 3.11.22:
Port Credit Option 2 – Continue to the Waterfront via Port Street



OPTION 2
 Continue to the Waterfront
 via Port Street



Preferred Option

The preferred option in Port Credit is to extend the service to the waterfront, for the following reasons:

- This is a uniquely exciting development opportunity for the City of Mississauga. Extension of the LRT to the waterfront creates the opportunity to develop a higher-intensity, more active waterfront;
- Extension to at least Lakeshore Road is needed in order to be able to connect to the proposed Lakeshore rapid transit service in the Metrolinx RTP;
- The extension to the waterfront is expected to increase the attractiveness of the transit service for tourism and recreational trips during non-peak commuter travel times, making the service more economically viable; and
- This option was strongly supported by attendees at the public consultation sessions.

The peak direction traffic volumes on Hurontario Street in this section are projected to be in the range of 720 to 950 vehicles during the peak hour. These can be accommodated in one through lane. On Port Street, the peak direction traffic volumes are projected to be in the range of 200 to 280 vehicles during the peak hour. These can also be accommodated in one lane. The concept consists of mixed traffic operation on St. Lawrence Drive and Port Street, with a section of reserved lanes farther west on Port Street to accommodate the stop platform, crossover, and tail tracks. It will be necessary to obtain some additional property along the south side of Port Street to allow room for this section of reserved lanes.



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3.12 Preferred Corridor Alternative

Figure 3.11.23:
Preferred Corridor Concept



The preferred alternative is Light Rail Transit, extending from the Port Credit waterfront south of Lakeshore Road to the Brampton Downtown Transit Terminal / Brampton GO Station. The overall pavement width along most of the corridor is retained; the alignment of the rapid transit service is in the centre of the street in the majority of the corridor, in reserved lanes converted from the two existing median traffic lanes. Mixed traffic will use the remainder of existing pavement width; widenings will only be considered on locations where median transit stop platforms need to be accommodated. The reserved lanes would be designed so as to prohibit other vehicles from travelling on them (though emergency service vehicles would be permitted to use the lanes). The concept is illustrated in Figure 3.11.22.

The preferred alignment in Downtown Brampton is a loop option via Wellington and George Streets, connecting into the GO Station through a tunnel under the rail corridor, and re-connecting to Hurontario Street at Church Street. Several potential cross sections featuring higher order transit infrastructure on Main Street have been generated and will be examined in more detail in subsequent EA phases.

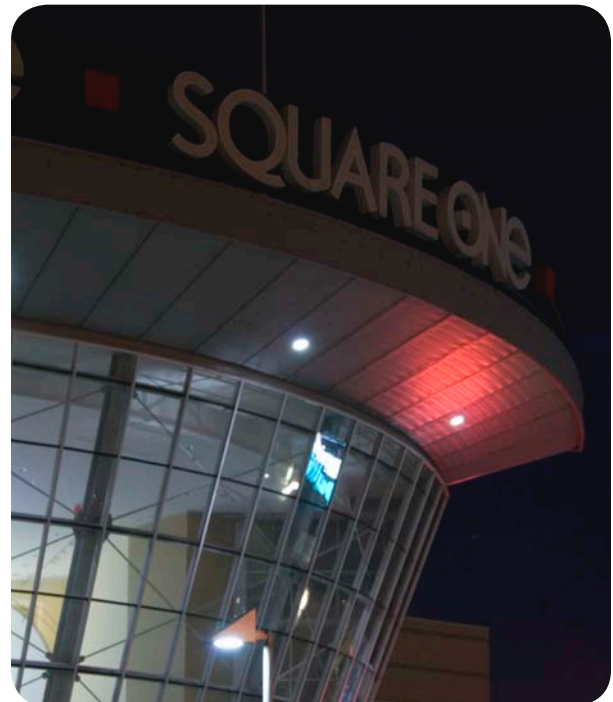
From Downtown Brampton to Nanwood Drive, the service is proposed to operate in shared lanes due to the issues of land use form in the Heritage District.

South of Nanwood Drive, the service will be in reserved lanes in the centre of the road.

In Downtown Mississauga, the preferred option is for a route which uses City Centre Drive for the north/south connection and also includes a route circulating through the Downtown, via Burnhamthorpe Road, Living Arts Drive, and either Square One Drive or Rathburn Road. This will provide for flexibility in terms of service options, and will serve the Downtown area well in terms of walking distance. This requires a new transit bridge across Highway 403. This is expected to require consideration for grade-separation of the service through the Burnhamthorpe Road intersection. An analysis can be found in Chapter 5, Section 5.3.4.

Through the Queen Elizabeth Way interchange, the service is proposed to operate in mixed traffic with the transition from reserved lanes being located as close to the interchange as possible; this is due to the restricted space available in the underpass below the highway. Transit priority will be provided at the surrounding signals to facilitate the transition to and from the mixed traffic section.

In Mineola, the service is proposed to operate in mixed traffic, with sections of reserved lanes to improve service around stop platforms where space permits (with localized widenings).





THE VISION FOR THE CORRIDOR



4 THE VISION FOR THE CORRIDOR

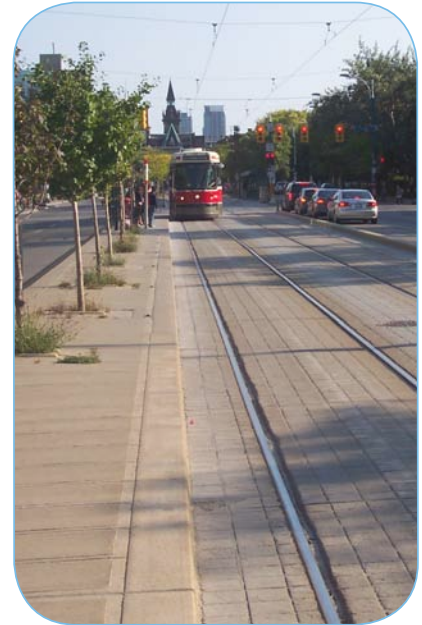
4.1 The Vision



The vision for the Hurontario/ Main Street corridor is one of a unified concept for mobility in the 21st Century, integrating urban design, land use planning and transportation. This builds on the Directions Report prepared for this project, which was presented to Brampton City Council and Mississauga City Council in March of 2009. The vision is fundamentally one of city-building and sustainability, centred on rapid transit as a key mode of travel on a beautiful street.

Three key statements capture the vision:

- **Easy, reliable, frequent, comfortable and convenient light rail transit service is provided throughout the corridor**, with effective connections to other links in the inter-regional transit network. (Subsequent chapters describe the analysis leading to selection of LRT as the preferred technology);
- **Hurontario / Main Street is a beautiful street**, with attractive “places” along the corridor featuring expanded mobility, vibrant economic activity, and liveable, connected, mixed-use neighbourhoods, integrated with the transportation infrastructure;
- **The Regional Urban System and the planned urban structure of each City are recognized and reinforced**, and accordingly, mixed-use, compact, intensified Transit Oriented Development is present along the corridor, customized to suit the varying and distinct nature of each existing community and sensitive to the presence of adjacent stable residential neighbourhoods.



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This vision is progressive yet fundamentally attainable. It is one that has been successfully implemented in similar corridors in North America and Europe:

- It involves a re-balancing of the space within the right-of-way to an allocation which is reflective of the number of people who will be moving via each mode.
- The development typically supporting this form of at-grade light rail transit is illustrated above (the T3 tram line in Paris, France). Three to six-storey buildings, with retail at-grade, line landscaped boulevards, with little or no setback from the street.
- Variation in development height and form along the corridors reflects local community opportunities and constraints.

The street is envisioned as putting the pedestrian first, with effective access to surrounding development and public transit at street level. The street provides an effective mix of uses at a scale that reflects the character of each distinct community along the corridor, and includes inviting and engaging places for pedestrians and cyclists as they live, work and play along the corridor. In this vision:

- Pedestrians have a safe, continuous, clear and expansive network in which to move, with wide

sidewalks, featuring buildings close to the street edge with minimal gaps between buildings;

- The private car continues to play a role along Hurontario, but its prominence is reduced. In much of the corridor, one vehicular lane in each direction will be converted to an exclusive transit lane, creating significantly more person-carrying capacity. There is more focus on ensuring that access is maintained via auto, rather than adding more through capacity. Some flexible parallel routes and a finer grid of streets will be created in intensification areas to distribute traffic more effectively, where possible;
- Where possible, cyclist needs are accommodated and integrated into the overall cycling network in conjunction with the Cycling Master Plans of the two Cities. In much of the corridor, on-street bike lanes or boulevard facilities are provided as opportunities permit. Safe and secure parking at stations, and effective connections to east/west and parallel bike routes are provided;
- There are attractive and efficient pedestrian connections to the GO stations and other rapid transit services from the Hurontario/Main service;
- Major junctions with other transit services are designed and planned as mobility hubs, with attractive

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VARIATION IN MAXIMUM DEVELOPMENT HEIGHT ALONG THE CORRIDOR

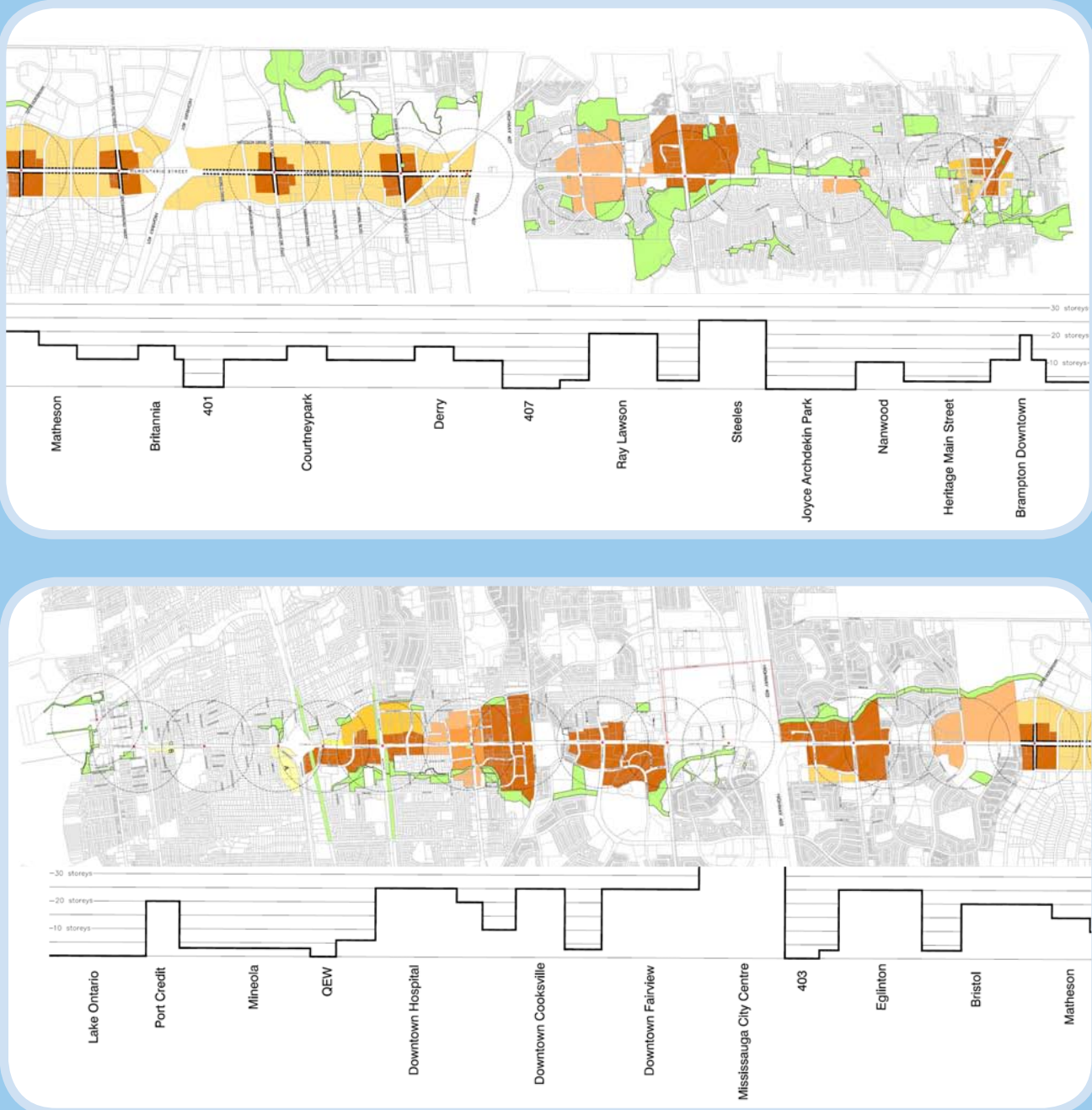


Figure 4.1.1: Variation in Maximum Development Height Along the Corridor

transit connections, and integrated with development. Within the mobility hubs, there is an even greater level of pedestrian and bicycle access, in a well-designed environment promoting active living;

- Consistent with the Regional Urban System and the planned urban structure of the two Cities, distinct “places” along the corridor are created, with expanded mobility, vibrant economic activity, and liveable, mixed-use neighbourhoods, and these are integrated with the transportation infrastructure to make walking and transit the natural first choices for travel;
- Mixed-use, compact, intensified TOD is directed along the corridor, customized to suit the varying and distinct nature of each existing community and sensitive to the presence of adjacent stable neighbourhoods. Development height and density will vary along the corridor, as illustrated in [Figure 4.1.1](#);
- The highest residential and employment densities are located near the major transit nodes. Densities will remain high within a convenient walking distance of the station and then gradually drop to blend in with the surrounding neighbourhoods;
- Variety, creativity and innovation are encouraged. Each station area and neighbourhood will strive to be a unique, vibrant and memorable place.

Thus the vision for the Hurontario / Main Street corridor combines rapid transit, land use and urban design to create a ‘21st Century Main Street’. The fundamental goal of bringing higher-order transit to the Hurontario / Main Street corridor is to facilitate the corridor’s evolution from a suburban arterial thoroughfare into a central urban spine, which is the focus for growth in the two Cities. The corridor will transition from being auto-dominated to one

that promotes active transportation and transit use, while balancing the unique characteristics and purposes served in different areas. A higher-order public transit system is a critical component of this evolution. Without it the corridor will suffer from ever more traffic congestion which will drive people and employers elsewhere. A higher-order transit system will provide a fast and convenient connection between Downtown Mississauga, Downtown Brampton, the Port Credit Waterfront, and the five mobility hubs, allowing many more people to comfortably live, work and play along the corridor.

The study planning horizon extends to 2031, but it is expected that much of this vision can be realized with a shorter timespan. Introduction of the rapid transit service is proposed for the period 2016 to 2021, based on the demand forecasts and potential construction timelines.

Finally, it should be noted that in keeping with the Environmental Assessment process, there will be either no net negative effect or an overall positive effect on the environment as a result of the project. Mitigating measures will be employed to minimize any negative impacts.

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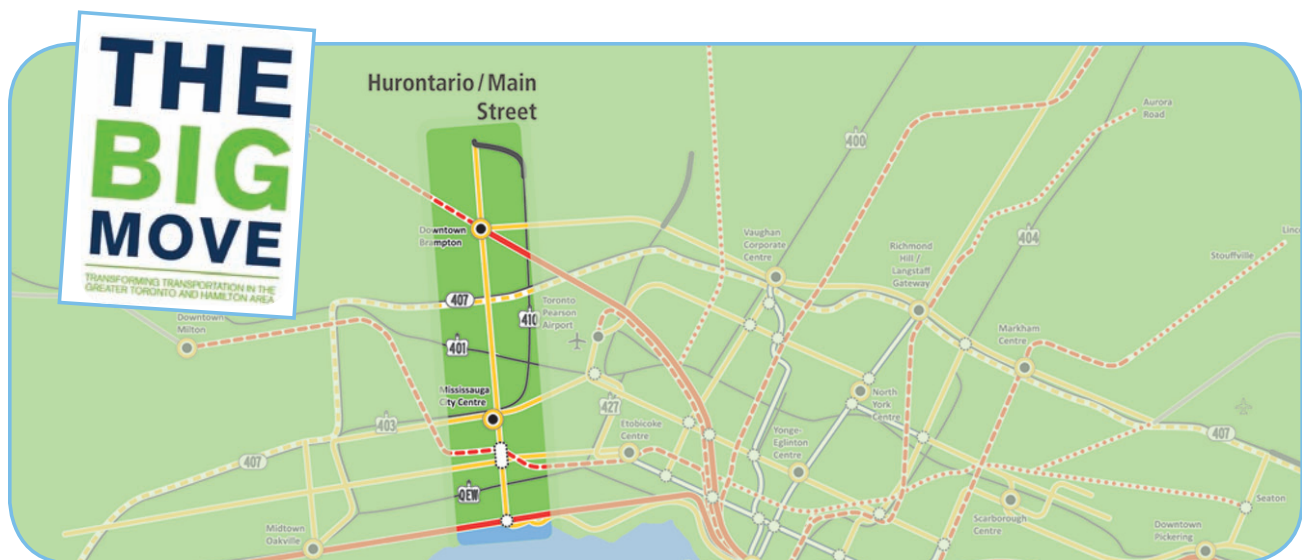
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4.1.1 The Vision is strongly supported by the broader planning context

The vision for the Hurontario / Main Street corridor is being guided by the Cities of Brampton and Mississauga, and also by the Province of Ontario and Metrolinx. Guided by its Provincial Policy Statement, the Province is actively promoting higher-density, pedestrian and transit friendly development throughout the entire GTA, through its Places to Grow legislation and has specifically designated large portions of the Hurontario / Main Street corridor as places where this kind of development should be located. Investment in transit is to support this development as an important part of the Province’s growth plans, as identified in the MoveOntario 2020 and Metrolinx Big

Move Plans. The Cities of Brampton and Mississauga have supported this idea and have in fact shown a desire to go beyond what the Province has suggested, to create a showcase for integrated planning and creation of a form of development that is new to the two Cities. This is a critical city-building action that will help them remain socially, environmentally and economically sustainable.

The Metrolinx Regional Transportation Plan (aka “The Big Move”) includes a rapid transit link on this corridor. The Big Move cites rapid transit on Hurontario as being one of the 15 top priorities in the GTA.



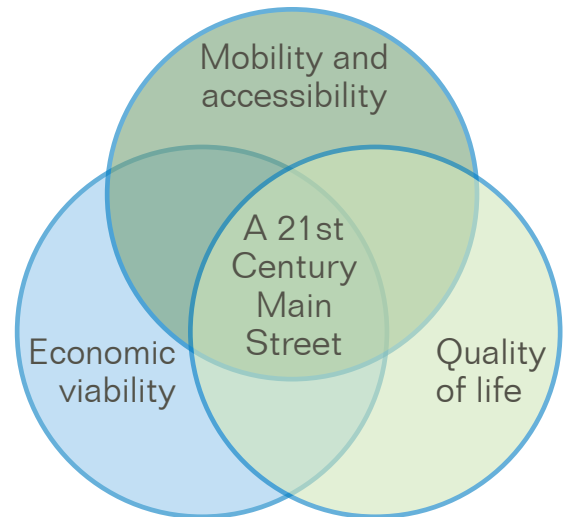
4.2 Guiding Principles

In order to achieve the goal of re-imagining and re-balancing the street, guiding principles are needed. These have been drawn from transit planning best practices, case studies, seminal TOD literature, municipal and provincial guidelines and policies, and stakeholder input. These principles establish a framework to be used to direct growth and development in such a way as to create desirable places with expanded mobility, vibrant economic activity, environmental sustainability and liveable, mixed-use neighbourhoods and places.

Maintain Focus on the “Big Picture”

The Hurontario / Main Street corridor should enhance the overall identity and vitality of Mississauga and Brampton, as well as the quality of life of its residents and employees, in keeping with the Regional Urban System and the planned urban structure of the two Cities.

The Hurontario/Main Street corridor should be viewed as an interconnected, dynamic and diverse urban environment that straddles a number of neighbourhoods, two municipalities, and has a significant role and function within the GTA. The corridor links the Urban Growth Centres in Mississauga and Brampton and is identified as a proposed Higher Order Transit Corridor in the Growth Plan. Individual decisions made along the corridor will impact the corridor as a whole.



Make it Sustainable and Integrated

All new developments and all investments in infrastructure and the public realm should serve to be sustainable, and to integrate the objectives of transit, urban planning, urban design, and environmental conservation and enhancement.

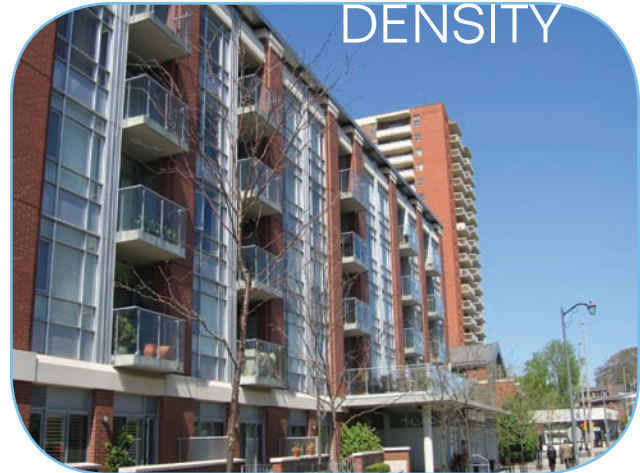
The transit system and transit stops should be designed in conjunction with a supportive land use and built form. Planning and engineering decisions affecting the corridor must consider the intimate relationships between transportation, transit, land use, and urban design and how these disciplines influence built form and the overall quality of life. A true collaboration between these disciplines is necessary to realize a strengthened, more liveable built environment. The corridor can thus be a showcase for sustainability, through application of “green” planning practices and technology.

Support Transit through Built Form and Densities

A critical mass of population and activities must be achieved to support transit use.

A direct correlation exists between the built form of an area, the concentration and density of people, and the nature and level of service for transit. The effectiveness of transit will grow as the number of users grows. It is imperative that the transit system be developed in conjunction with a built form and cityscape that can sustain a population level which makes the transit system viable, and an attractive built form that is conducive to people using transit and leaving their cars behind for the full range of trip purposes. Typically, transit-supportive environments are successful if they can operate at a pedestrian scale.

The best transit systems have multimodal connections, and link multiple activity hubs. A hierarchy of hubs/ nodes has been defined, reflecting both the Metrolinx Regional Transportation Plan and the planning regimes of the two Cities. Transit stops along the corridor should define a multiplicity of urban centres that operate at a pedestrian scale (500m radius / 10 min walk). Urban centres will vary in scale, design, and character, and should integrate transit supportive uses, densities, and transit connections, and ensure that the urban form is well integrated with and into the surrounding area.



Put Pedestrians First

Pedestrians should be at the forefront of any decision and design, shifting the balance away from the historic auto-dominated urban form.

The last several decades have seen a form of urban development and transportation policies that encouraged movement by car. Now is the time to shift to a more compact, mixed and complete built form, which is attractive and can function at a pedestrian scale.

All actions along the corridor should prioritize pedestrians and be designed and oriented to a human scale. Great places are designed with the pedestrian in mind and create a pedestrian culture that includes places to meet,

relax and socialize. The transit system and the supporting built form should be designed at a human scale, with a quality streetscape and a critical mass and fine grain of uses that can support and encourage walking. Such environments can provide vitality and create comfortable, convenient, and successful places.

Plan for Development that is Compact and Complete

Development and growth throughout the corridor should be developed in a compact form and with sufficient density to support the transit ridership within walking distance, wherever possible.

Growth in all appropriate areas along the corridor should be directed and designed to create compact and complete environments, where people are able to reach multiple destinations within a short walking distance or transit ride, to make each type of area liveable at a pedestrian scale.



Facilitate Multimodalism

The Hurontario / Main Street corridor should support and connect all forms of movement, including pedestrians, cyclists, transit, cars and trucks.

There is no one best transportation mode – each mode has a role, and they are to some extent interdependent. The street must accommodate each mode as appropriate, balancing needs and opportunities across the corridor as well as some adjacent areas and parallel streets. The road network should accommodate a variety of transportation modes (walking, cycling, transit, car and truck), which integrate as seamlessly as possible to maximize efficiency, ridership experience, overall viability, and a sustainable modal split. It is recognized that priorities and choices will need to be made with the available right-of-way and it is imperative that the development of the corridor be supported by and connected to the overall municipal cycling networks.

Create Connectivity

New development and infrastructure should improve the connectivity of the overall transportation system, recognizing and building on the Metrolinx RTP, and the connections should link activities and destinations along the corridor.

Transit on Hurontario/Main Street must be designed and operated as part of a larger transportation network and urban context, in keeping with the Metrolinx RTP. Transit on this street will be supported to the extent that people are able to link their origins and destinations to this corridor, through other transit links, walking, cycling or driving.

Create



connectivity

To support a network-focused, connected multi-modal system, the transit and transportation system needs to be seen in its entirety (present and future). The quality and experience of the connections need to be enhanced through the mix and density of uses around transit stops, accessibility to alternative modes of transportation, transit and pedestrian friendly design features, an interconnected network of streets, walkways and open spaces to encourage active transportation, public uses, and a public realm that is safe and attractive.

PLACE-MAKING



The rapid transit service, and the larger transit system, must provide connections to key destinations along the corridor (e.g. schools, jobs, parks, retail, institutions, and homes), to activity hubs (areas that concentrate a critical mass of population and activities) and to the Anchor and Gateway Mobility Hubs defined in the Metrolinx RTP (and others to be defined by the two Cities).

Focus on Place-making

All actions along the corridor will contribute to 'place-making', by building areas with a strong sense of identity and character, which are attractive, safe, and welcoming.

Transit that is integrated, well planned and designed can offer multiple additional benefits, and fulfill several municipal objectives. Well-planned public transit systems that are carefully integrated into the urban form can be a catalyst for attaining city-building objectives. Intelligently designed public transit systems not only offer an effective, economical, fast transportation option for city dwellers, they provide better access to jobs, health care facilities, education, and other cultural and recreational amenities. This will also add aesthetic and monetary value to each neighbourhood.

Furthermore, the co-dependent relationship of transit and TOD means that the success of both elements hinges on the ability to attract users (primarily pedestrians) to transit, and to transit-accessible destinations. Creating attractive, welcoming, safe environments in and around the stations, with a strong sense of place and identity, is key. This should include pedestrian-focused design, public art and public amenities.

Ensure that the Plan is both Visionary and Attainable

Hurontario / Main Street should be transformed to achieve the desired vision, through a practical implementation strategy, adding value to both cities, and with the participation of all stakeholders.

Protect Stable Neighbourhoods

Stable residential neighbourhoods, including Mineola and the Main Street South Heritage Area, should be protected as part of the vision for the Corridor. These two areas require special consideration because of the form of development, streetscape and access points that exist.

The transit, land use and urban design components should work in unison to protect these areas, and adjacent neighbourhoods that form transition areas, while striving to accommodate mobility needs in keeping with the idea of "pedestrians first".



4.3 Transit and Transportation

Transit and transportation-specific concepts are needed in order to achieve the Vision and to implement the Guiding Principles described above. These include:

1. Design the public transit service to increase transit ridership by offering a viable alternative to the private auto, and thereby attracting riders who have a choice of modes, in order to achieve ridership levels that support rapid transit.

This can be accomplished by:

- Reducing travel times and distances for transit trips along the corridor relative to auto;
- Increasing transit reliability;
- Offering a high quality ride;
- Making the transit service easy to use;
- Servicing the necessary origins and destinations of trips along the corridor with appropriate frequencies, including stations of other transit services; and
- Increasing safety, efficiency and accessibility.



2. Put pedestrians first in planning the corridor.

To achieve a balanced system and a high transit modal share, emphasis needs to be placed on improving pedestrian access. Every transit trip begins and ends as a walking trip. Consider policies that are disincentives to auto use to support rapid transit in the corridor. Design pedestrian corridors and spaces that accommodate pedestrian needs such as amenity, comfort and safety, inclusive of a transit system that appropriately facilitates the users.

3. Allow transit vehicles to bypass the congestion associated with mixed traffic operation.

Provide reserved transit lanes wherever possible to increase the person carrying capacity of the corridor. Keeping the transit alignment at grade will facilitate access between transit and surrounding development, supporting the “Main Street” concept. Consider limited grade-separated sections where beneficial to the overall project plan and transit reliability.

4. Provide effective connections to intersecting transit systems.

Make the connections between the Hurontario higher-order transit system, Mississauga and Brampton local transit, Mississauga BRT and Brampton Zum and other higher-order transit systems proposed in the Metrolinx RTP as convenient as possible, minimizing transfers. Integrate multimodal terminals and fares to facilitate direct and rapid movement to, from and within the Hurontario / Main Street corridor.

5. Balance the modes - maximize the person-carrying capacity in the corridor, while maintaining accessibility for vehicular traffic.

Providing an exclusive transit right-of-way requires the conversion of mixed traffic lanes to reserved transit lanes throughout much of the corridor. Minor road widenings may be needed in some areas, but these should be minimized, to maintain a streetscape that is pedestrian-supportive. Access management should be implemented in the remaining mixed traffic lanes to ensure that traffic can move effectively.

6. Consider the needs of other transportation modes. These include goods movement, cyclists, taxis, HOVs and parking.

All modes need to function efficiently in the corridor. Loading and parking accesses must function effectively to support development. Pursue opportunities in the design of stations to support connectivity with cyclists, taxis, and pick-up/drop-off activity.

7. Support and build on the system of mobility hubs.

The presence of existing GO rail stations with the proposed improved service schedule, the planned Mississauga BRT and Brampton’s planned Züm system provide the ability to create mobility hubs based on connections between transit services. Build on the Metrolinx plan for gateway and anchor mobility hubs (at Port Credit GO, the Cooksville portion of corridor from the GO station to Dundas Street, Downtown Mississauga, Steeles Avenue, and Downtown Brampton) by defining and implementing additional hubs. Highway interchanges can serve as auto/transit gateways to the system.

8. Plan station spacings based on reasonable pedestrian access distances.

Transit stops will be the focal points of activity along the corridor. These should be planned at a pedestrian scale (500m radius / 10 min walk), and be well distributed to promote a continuous pedestrian environment, as illustrated in Figure 4.3.1. Stations at regular intervals will promote a “ribbon of intensification and activity” along the street, and frequent stops will act to reduce clustering of high-density development, as shown in the upper half of the illustration. Urban centres will feature mixed-use and compact TOD at a scale and appearance that reflect the character of the surrounding neighbourhoods.

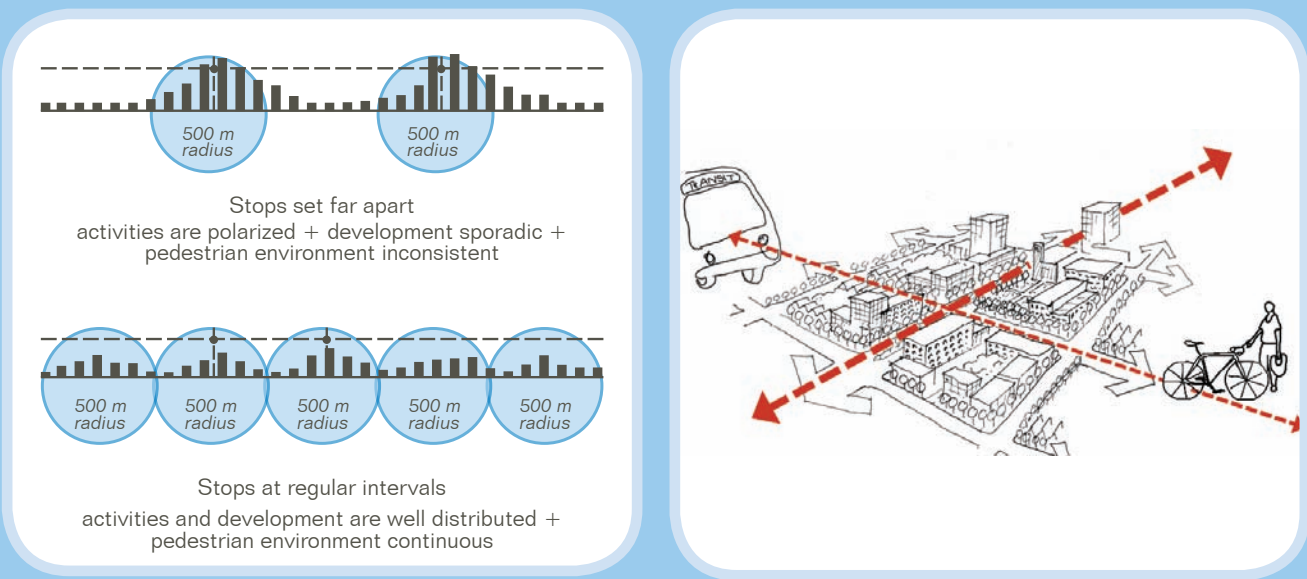
9. Create a transit-focused multimodal corridor.

The corridor should integrate to the maximum extent possible all forms of movement (walking, cycling, automobile, transit and commercial vehicles) to maximize mobility opportunities, provide an enjoyable travel experience, promote a sustainable modal split, and optimize overall viability of the corridor land uses.

10. The public transit service should support the overall vision of integration with land use and urban design.

The public transit service should support the the vision of higher density surrounding the corridor in areas where it is proposed, and at the same time support stable residential areas such as the Main Street South Heritage Area and Mineola.

Figure 4.3.1: Effects of Station Spacing on the Distribution of Activity and Development





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4.4 Planning Goals and Public Policy Initiatives

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This document lays out the multi-disciplinary framework for implementation of the rapid transit service (up to the completion of Phase 2 of the EA process) together with the planning and urban design support systems which have been designed in tandem with the transportation concept. The framework is intended to support and encourage the development of transit-oriented development along the street, combined with a streetscape that is pedestrian-friendly. The two Cities (and Metrolinx) will need to take that framework and develop it further, to ensure its success.

Public policy initiatives will be important in the stages leading to implementation. These must be designed to build support for the initiative – this is particularly important during the construction phase, when the disruption to traffic and access will peak. It will also be important after the rapid transit service begins, to maximize the utility of the rapid transit service in creating a vibrant urban corridor, linking focus areas of activity. The details of the planning and urban design strategy are documented in subsequent chapters, but there are two strategic initiatives that should be noted as part of the vision for proactive engagement with the corridor and the communities. These are documented as follows.

4.4.1 Place-Making



Activity

An important aspect of the planning strategy is the concept of place-making. The principles described above articulate the core concept of Transit Oriented Development. Place-making builds on this concept, and in a way, takes it a step further in creating a corridor that is oriented to pedestrian movement and activity, not simply in terms of private sector developments, but in the larger sense of the community: residents, workers and visitors being active and visible on a civic scale, participating in the life of the city. Fred Kent, of the organization Project for Public Spaces, describes the power of place-making as the ability to “transform public spaces from uninhabited, unsafe zones of little activity, to active and vibrant places that people want to inhabit and that they take pride in”.

The two Cities should be cognizant of opportunities for place-making along the corridor, as a means of fostering a sense of ownership and activity along the street. These can be low-cost initiatives, which are designed to build on community activism. An excellent example is that of public markets. Public markets can act as community gathering points, and as the spark for further development and activity. There are various opportunities along the Hurontario / Main Street corridor for a range of types and scales of markets. It would be premature to be entirely definitive of these, given that there are two phases of the EA process remaining (also other studies underway in parallel), which may result in different outcomes in terms of uses for various pieces of property. However, the “places” should not be limited to markets – a wide range of places can be developed, some through minor interventions and others through larger public actions.

The agenda of place-making can and should begin now, as the two Cities begin the task of evolving Hurontario / Main Street into the 21st century main street. There are under-used spaces along the street now. Ideally, active areas should be planned in spaces that will either remain with the rapid transit service in place, or where new spaces can be created for them. Potential locations include Shoppers World (if there is under-used parking), the green space adjacent to the Provincial Courthouse in Brampton (could be used as a weekend community space for seasonal festivals), Cooksville GO Station, the small park in the southeast quadrant of the intersection of Dundas Street at Hurontario, and the Port Credit GO Station.

4.4.2 Social Marketing and Public Education

The change to a rapid transit network in Brampton and Mississauga (reflecting not only the Hurontario service but also the Züm BRT service in Brampton and the BRT Transitway in Mississauga) represents a major transportation change in the two cities. This also has a social implication for residents and workers. The two Cities should assist residents and workers in adjusting to this new reality of expanded mobility through social marketing campaigns, intended to build support and ridership for these services.

The campaigns should include concepts designed to make people see the corridor in a different light than just as a corridor for cars.

When you design your city around cars....
you get more cars.
When you design your city around people...
you get more people.

— Fred Kent, *Project for Public Space*



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THE PREFERRED TRANSIT ALTERNATIVE



5 THE PREFERRED TRANSIT ALTERNATIVE

5.1 Technology



The preferred technology for the Hurontario / Main Street corridor is Light Rail Transit (LRT), based on the demand profile of the corridor, the social and environmental benefits, and the ability of LRT to attract development. LRT vehicles can operate on exclusive or semi-exclusive lanes, or in shared lanes with other traffic. Due to the cost of the vehicles and support systems, funding agencies typically seek to operate on exclusive or semi-exclusive lanes to the maximum extent possible.

Other key characteristics are as follows:

- Maximum operating speeds for electric-powered vehicles are 65 to 105 km/h (30 km/h average operating speed including stops), which facilitates a rapid, attractive system;
- Vehicles can operate on grades of 6 to 7%, and so LRT is feasible on the conditions found in the Hurontario corridor;
- On-street LRT vehicles travel on steel rails embedded in concrete;
- The design of the transit lanes will be defined through subsequent Phases of assessment. These can be an attractive feature, and should be treated as an integral part of the urban design for the corridor; and
- An overhead power supply is the current design, though research and test trials of underground power by manufacturers are underway in Europe. These new power systems may be available by the time LRT is constructed on Hurontario / Main Street. The power poles can also be an attractive urban design element, and should be treated as part of the overall streetscape design. Power poles can either be located in the centre of the street or at the sides, with wires strung across the street.



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5.2 Vehicles

Light Rail Transit vehicles are recommended for the Hurontario / Main Street corridor – essentially, modern electric-powered streetcars. Unlike the streetcars currently in operation in older North American cities such as Toronto, these new LRT vehicles are low-floor – the passengers enter and exit via a platform which is at the height of the vehicle floor. This provides much greater accessibility for those with mobility challenges and riders with strollers, bikes and other gear. The vehicles include modern features such as electronic signs indicating approaching stations. There are a number of manufacturers of these vehicles, operating within and beyond North America. Vehicles can be customized to suit the operator’s needs. Examples of the LRT vehicle are shown on this page.

These vehicles should be double-ended (i.e. able to drive in either direction), in order to avoid the need for turn-around loops at the terminus or short-turn points. This is the generally accepted form of these vehicles.



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5.3 Station Locations

Based on the demand projections for the Hurontario corridor, it is recommended that the service infrastructure be designed to accommodate two-car “trains” (i.e. two cars coupled together). These trains would be approximately 60m in length (two cars at 30m each), and could be accommodated by the existing intersection spacing and other spatial constraints on the corridor. There are locations which cannot accommodate a three-car train, based on block spacing; that is not expected to be an issue, based on the projected 2031 demands. Appendix 5A summarizes the intersection and block spacing available along the corridor to accommodate the LRT trains.



Potential station locations were developed based on optimal walking distances, proximity to mobility hubs, integration with east/west transit services, and consideration for the input obtained through various working committee meetings and workshops conducted throughout this study. The considerations for locating stations are discussed below:

- Transit stops along Hurontario/Main Street must be placed to ensure connectivity to surrounding developments while maintaining an acceptable running speed for transit vehicles. Station placement was based on the principle that pedestrians should generally not have to walk more than 500 metres or 10 minutes to a rapid transit stop; and
- The Metrolinx Regional Transportation Plan shows a number of mobility hubs along the Hurontario/Main Street corridor. Mobility hubs (including both anchor and gateway hubs) are key station locations.

A map of all of the proposed transit stops and corresponding 500m walking distance transit service areas is shown in [Figure 5.3.1](#). The station spacing is listed in [Table 5.3.1](#) below.

PROPOSED STATION LOCATIONS



Figure 5.3.1: Proposed Transit Stops

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Table 5.3.1: Distances between Proposed Stations

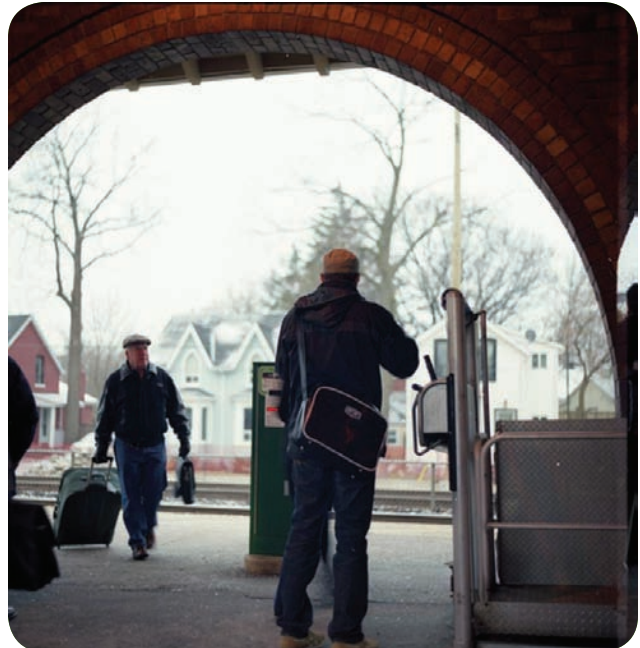
Station-to-Station	Distance (Km)
Brampton Terminal to Wellington	0.4
Wellington to Nanwood	1.3
Nanwood to Shoppers World	1.4
Shoppers World to Sir Lou	0.9
Sir Lou to Ray Lawson	0.5
Ray Lawson to Highway 407	1.2
Highway 407 to Derry	0.8
Derry to Courtneypark	1.4
Courtneypark to Britannia	1.7
Britannia to Matheson	1.1
Matheson to Bristol	0.8
Bristol to Ceremonial	0.8
Ceremonial to Eglinton	0.4
Eglinton to City Centre	1.4
Mississauga Downtown Core to City Centre	1.0
City Centre to Burnhamthorpe	0.6
Burnhamthorpe to Central Pkwy	0.7
Central Pkwy to Hillcrest	0.8
Hillcrest to Dundas	0.7
Dundas to Queensway	1.0
Queensway to Harborn	0.7
Harborn to South Service	0.4
South Service to Mineola	0.8
Mineola to Port Credit GO (Park)	0.6
Port Credit GO (Park) to Elizabeth	0.9
Total Distance (Km)	22.0
Average Station Spacing (Km)	0.8

The proposed stations have been reviewed in terms of their coverage of existing ridership. In Brampton, 77% of the current daily riders boarding or alighting in the corridor south of Brampton GO Station do so at one of the proposed LRT stations. In Mississauga, 70% of the current daily riders board or alight at one of the proposed LRT stations. This indicates that overall in both cities, 71% of existing riders are served by the proposed stops; the remaining 29% of current riders will have to walk further to a stop. However, the increased walking distance will be offset by improved reliability, speed and quality of ride.

The stop spacing is comparable to many successful European and American systems. For example, the average stop spacing in Phoenix is 0.75 km, on a comparable corridor. The average existing spacing for all bus services combined in Mississauga and Brampton on the corridor is 0.3 km. The increase in station spacing is expected to be offset (in terms of attractiveness to riders) by the improvement in quality of ride, frequency of service and reliability.

As development proceeds in the corridor, there may be justification for a small number of additional stations. Potential future station locations include a site immediately north of Highway 401, where the collector network is proposed to connect with the north ramp terminal and a commuter parking lot is planned, and additional stations in south Brampton.

The modeling analysis has projected boarding and alighting counts at a representative range of proposed stations for higher order transit on Hurontario/Main Street in 2031, summarized in [Table 5.3.2](#). The boardings and alightings are for trips in both directions.



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Table 5.3.2: Projected 2031 AM Peak Hour Boardings and Alightings at Proposed Transit Stops for the Preferred LRT Alignment

Station	Boardings	Alightings
Brampton GO Station N	1,900	300
Brampton Transit Terminal	1,500	600
Wellington	200	300
Nanwood	100	100
Charolais	400	0
Shoppers World	600	1,300
Sir Lou	300	200
Ray Lawson	200	0
Highway 407	800	1,200
Derry	500	1,100
Courtneypark	0	600
Britannia	100	1,800
Matheson	0	100
Bristol	500	0
Eglinton	1,600	1,000
Rathburn*	1,100	1,000
Transit Terminal Mississauga*	400	500
City Centre Dr*	100	600
Living Arts*	800	200
Main St*	500	200
Burnhamthorpe	700	600
Central Parkway	1,000	100
Cooksville GO	1,600	600
Dundas	1,300	1,800
Queensway	800	600

Station	Boardings	Alightings
North Service QEW	300	100
South Service QEW	100	100
Mineola	200	0
Port Credit GO	900	3,100
Total Hourly	18,500	
Total Daily	121,000	
Total Annual	36,300,000	

**Downtown routing only. All downtown stops featured the same connections to surrounding zones in the modeling process. As a result the model was not sensitive to the choice of downtown stops for riders in this area.*





The results show that all of the stops listed experience high enough peak hour passenger activity to validate their selection, either as a boarding or alighting point. The stops with the lowest projected activity are Mineola and Bristol, but these are recommended in order to preserve transit coverage along the whole corridor; these stops provide service to an area that lies outside of the 500m walking radius of other stops. The high peak hour passenger volume at Burnhamthorpe Station shows a strong concentration of passengers using the service to access downtown, suggesting that stations on Burnhamthorpe Road and Living Arts Drive will be justified for an alignment through Downtown Mississauga.



Three stations stand out in terms of having very high numbers. The 407 future GO Transitway station attracts a large number of boardings and alightings, indicating a large number of transfers to and from the Transitway. This reflects a strong desire line for transit east/west across Highway 407. This desire is also visible at the Port Credit GO Station, where there are a large number of boardings and alightings, suggesting transfers between the LRT, Lakeshore West GO Corridor, and future Lakeshore Rapid Transit Corridor. In the case of the split option, there is a very high transfer level at the Mississauga City Centre Terminal – this would be a difficult number of passenger movements to accommodate in this already busy terminal, but may be mitigated by the LRT replacing existing bus routes using the facility and having the stop platform construction on Rathburn Road instead of in the terminal itself.

5.4 Station Concept

Far side transit stations or stops are proposed, because these are the most effective for transit vehicle progression along the corridor. Under the far side stop option, each transit vehicle has a platform on the “departing” side of the intersection, with boarding and alighting passengers accessing the platform as the traffic signal at the intersection permits. The geometry of the far side transit stop makes it relatively simple to include a u-turn/left turn lane on the approach leg. This option is advantageous for transit priority in conjunction with ITS features, listed in section 5.5. Typically 3m wide platforms, 60m in length would be provided, though this may be changed to suit circumstances at particular intersections. Platform heights would be sufficient to permit level boarding at all stops.

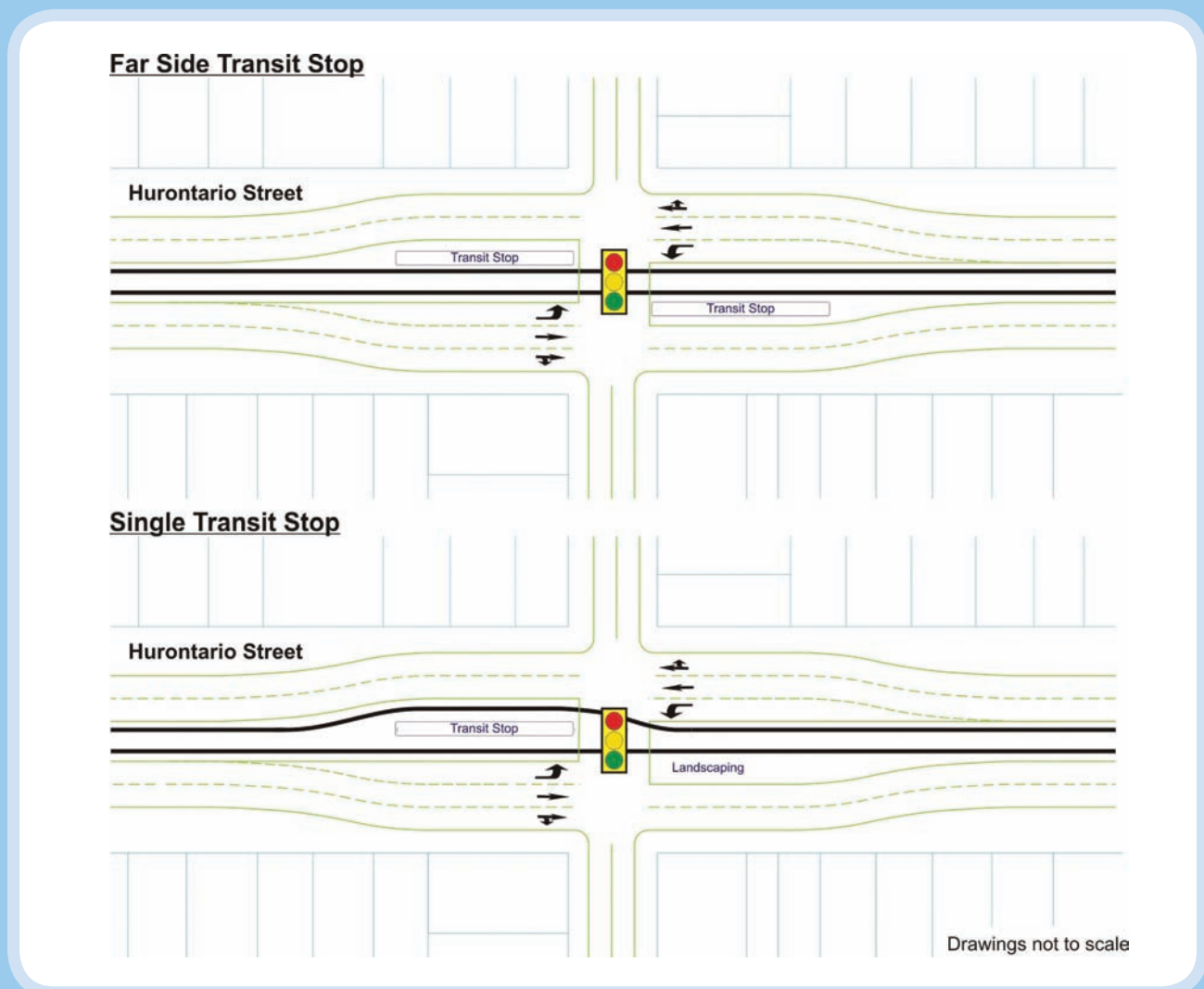
In some locations, a single platform for both directions may be considered due to spatial or sightline constraints. Under the single platform scenario, passengers travelling in both directions would share a transit stop. (This is dependent on use of vehicles with doors on the left side, to accommodate a centre platform). Generally this will require a wider platform, to accommodate bi-directional loading and unloading – a 4 to 5 m wide platform should be considered. The geometry of the single transit stop creates a space on the leg of the intersection opposite to the transit stop. This open space provides an opportunity for a small landscaped median or a left turn / u-turn lane.



Figure 5.4.1 is intended to conceptually illustrate the intersection lane configurations for the far side and single transit stop options. The dimensions of the transit stop have been assumed based on experience with previous projects. The geometry of the intersection and platform will vary depending on the available ROW, existing road alignment and the desired lane configuration.

The concept for the shelters will be developed at the detailed design stage. These should offer protection from the weather and splashing from traffic during wet periods. They should be designed to be iconic features in the landscape, as one part of a unified corridor streetscape strategy, and made of durable materials. Examples of possible designs are shown on the next page.

Figure 5.4.1:
Transit Platform Concepts at Stops/Major Intersections





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5.5 ITS Strategy

Intelligent Transportation Systems (ITS) will be an integral component of the LRT. Elements will include:

- **Traffic control systems:**

- These will be designed to permit active transit priority, in order to facilitate effective progression of transit vehicles along the corridor;
- This would permit transit vehicles to control signal timings as they approach an intersection. The approaching LRT vehicle would signal the system to able to either extend the green time if the signal is green as they approach, or to truncate the east/west red time in order to advance the north/south green phase;
- This would involve systems on the vehicle and upgrades to the existing signal controller technology;
- Typically, the LRT vehicles would advance along with vehicular traffic (as it does in Toronto and

other cities). This minimizes the effect of the LRT vehicle movements on traffic progression;

- Left turn and u-turn vehicular movements would occur during protected phases;
- In some locations, there may be a need for a transit-only phase where LRT vehicles turn through an intersection;
- **Ticketing:** ticketing should occur off-vehicle (via machines on the platform), to minimize delays at the stations;
- **Traveller information systems:** real-time displays should be provided at stations to indicate the expected arrival times of oncoming vehicles. This requires an Automatic Vehicle Location (AVL) system.

These systems would require upgrades to the traffic control systems in place currently. A detailed ITS strategy addressing these issues on a system-wide basis should be conducted as part of the next study phases.

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5.6 Integration with Other Rapid Transit Services

The proposed concept for integration with other planned rapid transit services along the corridor is as follows:

- **Georgetown GO Rail service:** the preferred alternative connects directly into the Brampton GO rail station;
- **Brampton Züm services:** the Queen Street service and service extending northerly on Hurontario Street will connect to the preferred alternative at the Downtown Transit Terminal or redesigned Brampton GO / Brampton Transit Terminal. The Steeles Avenue service will connect at the relocated Shoppers World Terminal;
- **Highway 407 Transitway:** a Hurontario transit station is planned at a new intersection just south of Highway 407, to provide a connection to the east/west services on the Transitway. It would not be logical to divert the Hurontario service into the proposed station in the southeast quadrant of the interchange – this would have a negative effect on travel times and hence on ridership;
- **Mississauga BRT Transitway:** the preferred alternative makes a direct connection with the BRT alignment along Rathburn Road;
- **Mississauga City Centre Transit Terminal:** the preferred alternative makes a direct connection with the BRT alignment along Rathburn Road. Square One Drive has been considered as an alternate to Rathburn Road;
- **Milton GO Rail service:** a Mobility Hub Master Plan is now under development for the Cooksville GO station area, by the City of Mississauga and Metrolinx. The intention of that Master Plan is to create an attractive and functional pedestrian link between the two transit services, to maximize integration. One component of this is the pedestrian bridge across Hurontario Street, already funded by Metrolinx;
- **Dundas Street rapid transit:** service on Dundas Street would connect to the Hurontario service at-grade, resulting in a busy pedestrian area at the intersection. It is possible that vehicles for the Dundas service would be stored and maintained on a site accessed via Hurontario. Rail connection should be planned to link into each other.
- **Lakeshore GO Rail service:** a Mobility Hub Master Plan is now under development for the Port Credit GO station area, by the City of Mississauga and Metrolinx. The intention of that Master Plan is to create an attractive and functional pedestrian link between the two services;
- **Lakeshore Road rapid transit:** it is possible that some service would be continuous along Lakeshore and Hurontario. If so, a rail connection should be planned to link into each other. Irrespective of technology, a convenient passenger transfer should be provided.



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5.7 Conceptual Design

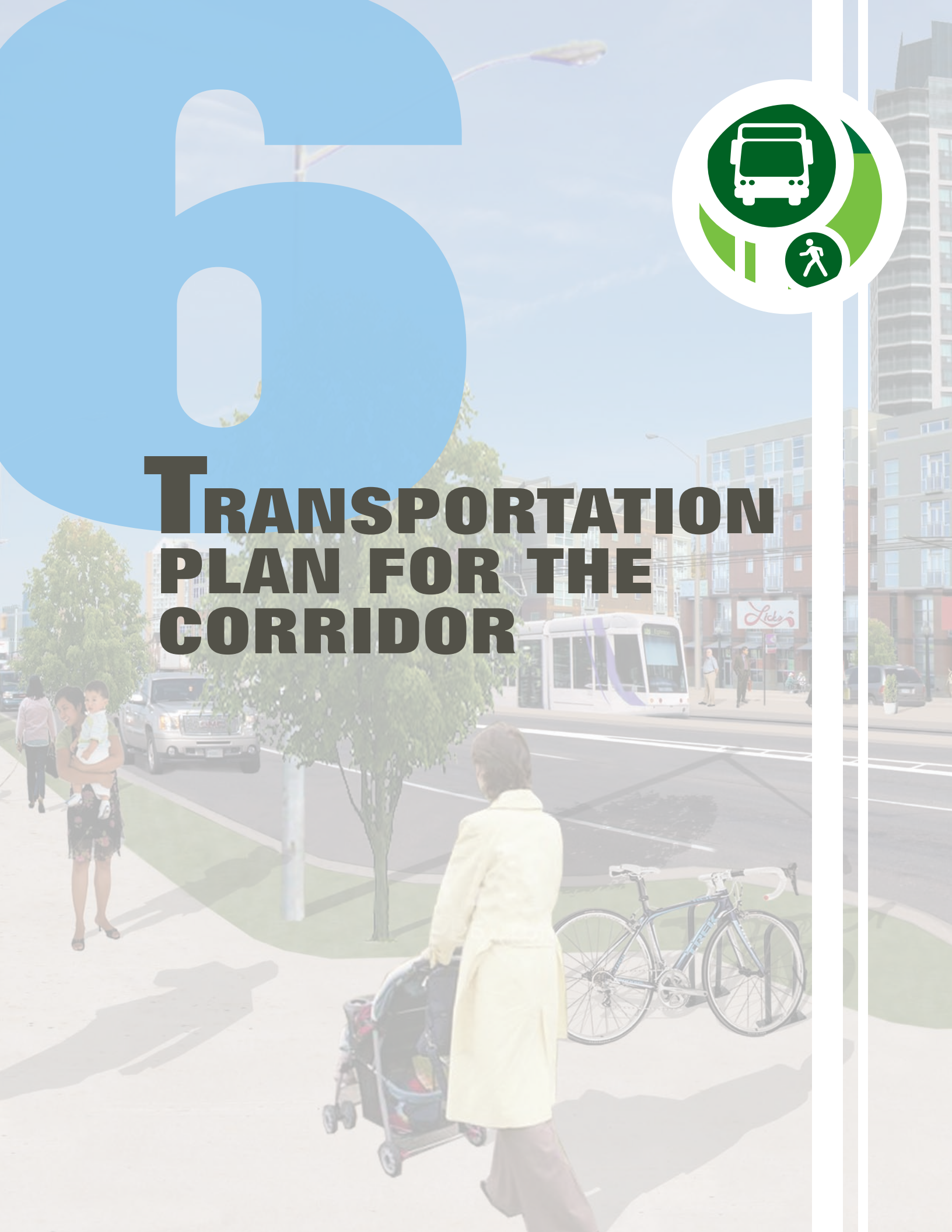
The conceptual plates are shown in appendices 5B and 5C. These reflect the geometric design standards of the two Cities, as well as an effort to fit the LRT into the existing pavement width as much as possible, while maintaining sufficient lane widths for safe transit and traffic operations.

Typical lane widths used are 3.5m for through traffic lanes and 3.0m for exclusive turning lanes; through lanes with a minimum width of 3.25m are used in sections of the corridor with a narrower right-of-way. For the transit lanes, the standard turning radius of 40m has been used in virtually all locations. In downtown Brampton and Port Credit, it was necessary to use a tighter radius of 30m at the corners of Wellington and George Street and St. Lawrence Avenue and Port Street, respectively, in order to minimize impact on the surrounding property. It is acknowledged that “wheel squeal” or “wheel howl” are possible at these locations, and may require mitigation (to be identified in subsequent phases).

The objective of this analysis, in keeping with the Class EA requirements, has been to identify a functional solution to the design requirements of provision of rapid transit on the corridor. Future stages may reflect minor adjustments to this design, in response to stakeholder issues or other changes along the corridor. In particular, the crossing of Highway 403 and the configuration of rapid transit on Rathburn Road west of Hurontario Street are expected to evolve as the City of Mississauga continues to pursue the Downtown 21 Plan. Functional options have been defined for the interrelated issues of the Highway 403 crossing and the transit lane configurations on City Centre Drive (or Hurontario Street, as an alternate) and Rathburn Road. In Brampton, the terminus solution at the GO Station and the form of Main Street may evolve depending on other City initiatives. These issues will be addressed in the next phases of the EA, and a preferred solution identified.



T RANSPORTATION PLAN FOR THE CORRIDOR



6 TRANSPORTATION PLAN FOR THE CORRIDOR

This chapter documents the transportation strategies for the non-transit elements of the plan.



6.1 Pedestrian First Strategy

The pedestrian strategy is a core element of the plan, to ensure that pedestrians can effectively interact with the transit system and are able to choose to live a pedestrian-oriented life within the corridor. The pedestrian system must provide for:

- **Connectivity:** porous, well-connected streets, trails and pathways help to minimize distances to transit, thus encouraging ridership and promoting active living in the corridor. Connectivity also means creating a continuous network of unobstructed pedestrian routes on both sides of the street wherever possible, with connections across the street;
- **Capacity:** the sidewalks and pathways should provide sufficient capacity for the pedestrian demands; and
- **Safety and security:** the system should be developed according to CPTED (Crime Prevention Through Environmental Design) principles.

The pedestrian strategy is also addressed from a planning perspective in Chapter 7.

The elements that are needed to achieve the three goals of connectivity, capacity and safety are defined as follows. In defining these, it is assumed that the street will evolve over time through the typical cycle of reconstruction and redevelopment, and that pedestrian improvements will be integrated with capital works projects. However, the Cities should be pro-active in terms of meeting these goals prior to (or at least in concert with) improved transit service in the corridor to build an orientation to active transportation in the corridor, and should be prepared to address pedestrian deficiencies as part of the interim service plan.



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6.1.1 Connectivity

Sources which have been consulted in the development of the pedestrian plan include the City of Calgary Pedestrian Policy and Design Report (draft 2008) and Promoting Sustainable Transportation through Site Design, Institute of Transportation Engineers (ITE) Proposed Recommended Practice, 2004.

Existing sidewalks are generally continuous on both sides of the street throughout the corridor. There are some segments where the sidewalk has not been completed (e.g. south of Britannia Road, north of Highway 401 on the west side, across Highway 407).

Challenging areas for connectivity include the provincial highway interchanges, where ramps create discontinuities. At the QEW, the spatial limits under the bridge also limit the sidewalk to one side of the street; the pedestrian tunnel to the east compensates for this to some degree. The Cities should work with MTO to enhance the pedestrian connections across the remaining 400-series highways (i.e. 403, 401, 407) where possible, through design (i.e. introduction of sidewalks where these are missing, curb cuts at crossings, etc.), signage and pavement markings.

Intersections with channelized right turn lanes create another challenging area for pedestrian connectivity. These include Steeles Avenue and the Queensway, which are both Regional roads, as well as Burnhamthorpe Road, Eglinton Avenue and minor streets. The Cities should work with the Region to eliminate the Region-

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controlled channelized right turn lanes, and eliminate those under municipal control through the EA and design processes, except where needed to facilitate transit operations. There are also channelized ramp connections in Downtown Mississauga, which are recommended for minimization or elimination by the Downtown 21 plan. The prevention of the installation of channelized right turn lanes on future road projects should be considered as an amendment to both Cities' Official Plans.

Connectivity across the street is also an issue to be addressed. The City of Calgary guidelines suggest a block length or distance between pedestrian crossings of 90 to 150 m. In active pedestrian areas, this is a logical objective which the Cities should consider when planning additional signalized crossings for pedestrians as the corridor evolves. However, there must be a balance between progression of the LRT and pedestrian connectivity, as each signalized intersection will slow the LRT to some degree. The Planning and Urban Design strategy includes recommendations for additional new street connections in a number of areas; the Cities should seek to obtain the required rights-of-way through redevelopment or expropriation processes, as appropriate, and introduce these roads, including enhanced pedestrian connections across Hurontario Street.

Facilitation of pedestrian access across the street at traffic signals is also to be considered. Push-button activation of pedestrian walk phases should be eliminated in areas of moderate to high pedestrian activity, with the intersection control reconfigured so that the pedestrian phase is called automatically. This should be implemented at least from the morning peak through to late evening (push-button control could be retained overnight, so as to reduce pedestrian interference with flows during that period).

6.1.2 Capacity

A key design parameter is the sidewalk width. It is recognized that in parts of the corridor (e.g. the Main Street South Heritage Area), there is little opportunity to widen the sidewalks. However, in general, the sidewalk widths should be sufficient to accommodate larger volumes of pedestrians, in keeping with the concept of the pedestrian-oriented street. The sidewalk width along Hurontario Street should be 3.0 m at minimum; in retail/restaurant areas, greater widths of 4.0 to 6.0m should be considered, to facilitate outdoor activities such as cafes.

Additional sidewalk width can be obtained when redevelopment occurs, through negotiation with the landowners. This is expected to be the primary means of obtaining additional sidewalk width, where it cannot be obtained within the existing right-of-way.

6.1.3 Safety and Security

Creating an active street, as proposed through the Planning and Urban Design framework in Chapters 7 and 8 below, is a key element in the creation of a safe and secure pedestrian environment.

Other elements that should be addressed with respect to this goal are as follows:

- Highway interchanges: the Cities should work with MTO as the corridor evolves to improve pedestrian safety across directional ramps, through signage, pavement markings and design improvements;
- Implement enhanced pedestrian crosswalks, using zebra striping, to provide more prominence for pedestrians. In areas of urban design focus, consider distinct materials for crosswalks to increase the level of visibility and prominence for pedestrian movement. These materials should be selected as part of a unified urban design/streetscaping strategy, encompassing street furniture, the LRT infrastructure, sidewalks and bike infrastructure;
- Eliminate channelized right turn lanes (discussed above);
- Introduce audible signals in areas where there is an identified need; and
- Consider signalized pedestrian crossings in high activity areas as the corridor evolves (discussed above).

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6.2 Cycling Strategy

The cycling strategy encompasses consideration for cycling priority along Hurontario Street, as well as facilities for cyclists at stations and general access for cyclists. These facilities will support Brampton and Mississauga's evolving cycling networks, and together with current and future transit vehicles being able to accommodate bicycles, will increase the profile of cycling as a viable mode of transportation.

The EMME model does not provide demand estimates for cycling. The cycling plan has been based on the strategic planning goals of connectivity and maximizing access to the transit system, balanced against the pragmatic considerations of available space and network planning in relation to other existing and/or currently planned facilities.

6.2.1 Cycling Priority along Hurontario and Main Street

The assessment of whether bicycle lanes should be provided on Hurontario Street has been based primarily on:

- The project’s primary goal, to develop a plan for a “21st century main street”;
- The existing cycling network;
- Mississauga’s draft Cycling Master Plan;
- Brampton’s Pathways Master Plan, as shown in Appendix 6A;
- Analysis with respect to use of the available and potential right-of-way on Hurontario Street; and
- Public and stakeholder input.

Based on the goals noted above, the primary direction proposed for Hurontario/Main Street is to plan for an enhanced level of bicycle priority, as continuous as possible along the corridor. The nature of the cycling improvements can deviate from various on-street or boulevard treatments and are governed by criteria such as intended function, safety and network connections. Where possible, due to the auto volumes and speeds, on-street treatment should consider the use of protected bicycle lanes. The review has identified significant long-term infrastructure constraints including at the highway crossings and the CN rail structure in Port Credit. Furthermore, the space or available municipal right-of-way is a significant factor as the implementation of new cycling lanes must be weighed against other existing or potential uses such as rapid transit lanes and stations, traffic lanes, parking, sidewalks, utilities and landscaping.

Proposed parallel bicycle routes on Kennedy Road and Confederation Parkway/McLaughlin Road in Mississauga, connected to the Hurontario/Main Street Corridor by bicycle routes on crossing arterials, will offer alternative routes for cyclists through the area and support the corridor’s role as part of the city wide cycling network.

The proposed cycling strategy for the Hurontario/Main Street corridor is described below and illustrated in [Figure 6.2.1](#):

- **North of Steeles Avenue:** The City of Brampton has indicated that the existing parallel off-road bicycle routes form sufficient linkages through the study area. The narrow right-of-way on Main Street north of Nanwood Drive would make introduction of bicycle lanes very difficult – this would require a road widening;
- **Steeles Avenue to Brampton South Boundary:** plan for introduction of bike lanes starting just north of Steeles Avenue. This would be implemented as the street is reconstructed. Bike lanes would be discontinuous across the Highway 407 bridge;
- **Brampton Boundary to Bristol Road:** there is sufficient right-of-way available to plan for introduction of bike lanes. This would be implemented as the street is reconstructed. However, the Highway 401 bridge does not feature provision for bicycle lanes. This crossing can be best served in the interim by the parallel routes on McLaughlin and Kennedy Roads;
- **Bristol Road to Highway 403:** on street cycling facilities are proposed from Bristol Road to Kingsbridge Garden Circle/Elia Avenue, supported by a proposed parallel off road route along Cooksville creek to the west. The potential for a connection to Downtown Mississauga to the will be examined in further detail in the next stages of the study;
- **Highway 403 to Cooksville GO Station:** the next stage of the study will examine potential LRT crossings of Highway 403, the feasibility of cycling facilities on this alignment and connections into the Downtown area will be examined as part of this process. Parallel routes exist on Confederation Parkway to the west and along Cooksville Creek to the east. This will build upon the vision of the Downtown 21 Master Plan. A boulevard route is proposed south of Burnhamthorpe to Cooksville GO Station;
- **Cooksville GO Station to the Queensway:** bicycle lanes are not proposed on Hurontario Street, recognizing the investment in the existing cycling facilities on Confederation Parkway and the anticipated levels of on-street parking activity and pedestrian movement in Cooksville. The existing Cooksville Creek offers another parallel route to the east of the corridor in this section extending to Queensway. Bicycle priority on the extension of Cook Street, envisaged as part of the introduction of new road links, and/or Camilla Road/Kirwin Avenue should also be considered.
- **Queensway to North Service Road:** a boulevard bicycle route is proposed for this section, as no viable alternatives exist in proximity to Hurontario Street. A multi-use trail in this section will enhance connectivity between Mineola and off-road lanes on the Queensway. This would be implemented as the street is reconstructed, once sufficient right-of-way width is available;



PROPOSED CYCLING LANES

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Legend

- Existing On Road Route █
- Existing Boulevard Route █
- Proposed On Road Route █
- Proposed Boulevard Route █
- Existing Off-Road Route █
- Proposed Off-Road Route █
- Infrastructure Constraints ●

Figure 6.2.1:
Proposed Corridor Cycling Lanes

- **North Service Road to South Service Road:** no additional bicycle facilities are proposed in this section, as no additional space is available through the QEW interchange. The existing pedestrian tunnel under the QEW will be maintained;
- **South Service Road to Lakeshore Road:** build on the presence of the multi-user trail in part of this section, that provides an essential connection to Port Credit Secondary School to provide continuous priority access down to Lakeshore Road and the waterfront. If the street is to be reconstructed, provision of on-street bike lanes should be considered, because the multi-use trail is not an optimal design for a commuter route (it requires riders to stop at each intersection). Consider exclusive bike lanes if possible, in connection with creation of new pedestrian tunnels below the CN/GO Lakeshore rail line. The public expressed support for bike lanes in Mineola. Examine the opportunities to provide enhanced bike and sidewalk space under the CN Rail overpass, by creation of new multi-use tunnels through the embankment on both sides of Hurontario Street.

In consultation with the development of the Mississauga Cycling Master Plan and public input, there was a strong desire to

ultimately protect for bike lanes along most of the corridor within Mississauga including south of Burnhamthorpe and through the Cooksville area. As it is recognized that the proposed right-of-way in Cooksville is insufficient to accommodate all the desired requirements, further examination should be undertaken during the detail design phase to determine what increases to the right-of-way should be considered by the municipality. If the City elects to pursue general increases in the proposed right-of-way for bike lanes in these segments of the corridor, it would require a re-designation of the roadway in the Official Plan and the properties would need to be acquired through redevelopment, purchase and/or expropriation.

As seen in [Figure 6.2.1](#), there are many existing and planned east/west bicycle routes that intersect the Hurontario/Main corridor. At the locations where these east/west routes connect to stations on the Hurontario LRT system, it will be important during the detailed design process to consider any specific design treatments that are needed to provide effective connections to the rapid transit service.

Enhancing the cycling network along the corridor will require adjustments to the right-of-way/pavement width in some locations. However in many

locations, where redevelopment with retail-at-street-level is anticipated, it may be possible to 'obtain' an extra 2.5m of space to allow an adequate sidewalk space, on-street parking and bike lanes within the public right-of-way by setting back buildings by an extra 2.5m. This space immediately in front of the building would not necessarily need to be part of the publicly owned right-of-way. It could remain in private ownership as long as it was hard surfaced and publicly accessible for pedestrian sidewalk use. In retail situations this would not be difficult to do. The space could be used for outdoor café seating or outdoor display areas by the retailers and other street amenities.



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6.2.2 Bicycle Facilities at Stations

The LRT stations will consist of three to five metre-wide platforms in the middle of the street. As such, bicycle parking would not be provided on the platforms. The safety of cyclist and pedestrian movement is another reason for locating bike parking elsewhere; bike parking on the platforms could result in pedestrian/cyclist conflicts, or conflicts between cyclists and LRT vehicles or cars. Bicycle parking should be provided in a combination of facilities in and outside the public right-of-way. At most stations, this bike parking should be provided along the sidewalk. Areas with curb bump-outs accommodating parking bays are ideal locations for providing bike parking racks.

In the mobility hubs (Port Credit GO, Cooksville, Downtown Mississauga, Steeles and Downtown Brampton) and at intersections with major east/west bike routes, there should be consideration for integrating off-street bike parking with development and/or creating off-street surface lots for bikes. Generally, it is expected this would take the form of bike parking integrated with development, due to the spatial constraints and the goal of creating dense, active development in these locations.

Off-street bike parking should be designed in accordance with CPTED principles – it should be safe, secure, and well-lit.

The number of bike parking spaces should be determined during the detailed design stage. There is little documented science with respect to determining the number of spaces to provide. In the San Francisco area, there is a wide range of bike parking supply, depending on the type of transit facility and its location. In general, for on-street LRT facilities, no bike parking is provided, but at major stations, up to 100 spaces or more are provided. The number of spaces should be site-specific and designed for flexible implementation – for example, in a parking garage where the spaces could be converted from vehicular parking as needed.

Some existing LRT systems have implemented private bicycle facilities at transit stations known as Bikestations™. These facilities lease space at the transit facility and offer services for cyclists including secure parking, bicycle rentals, bicycle repair, showers and change rooms, and assistance with trip planning. It is recommended that the feasibility of the integration of such facilities be examined during the continued design of transit and bicycle facilities for the Hurontario/Main Street corridor, at key “gateway” stations. This includes the stations in the mobility hubs, and it may include stations located on the east/west bike routes. Examples of transit facilities using these facilities can be found at www.bikestation.org.

6.3 Traffic Impacts

The vision for traffic is one of a street where the emphasis is on ensuring good access to development, and maintaining an adequate level of service for necessary through trips, within the context of the overall goal of “putting transit and pedestrian first”.

In addressing the traffic impacts of the project, it is important to first understand the context and scope of what has been done in terms of analysis:

- The projections of traffic are for horizon 2031. Projection of turning movements at a 20+ year horizon can only be done to a certain level of accuracy. Typical traffic analysis based on turning movements addresses a 5 to 10 year horizon;
- The analysis reflects a substantial investment in transit infrastructure, not just on Hurontario / Main Street, but throughout the Greater Toronto and Hamilton Area, as part of the Metrolinx Big Move;
- By removing one traffic lane per direction on Hurontario Street, a significant change in travel “cost” is reflected in the model. The dynamic nature of the model, in terms of both modal split to transit vs. auto, and assignment to alternative routes, results in a broad re-allocation of trips in the network, by mode and route. It should be emphasized that the model is not based on “assumptions” of how travelers will behave as might be projected through use of modal split targets; it is calibrated (based on actual TTS data) to reflect how travelers make their decisions currently based on the relative costs of travel by each mode. It then applies those patterns to the networks which are expected to be available in 2031.



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6.3.1 Effects on Hurontario Street

This section assesses the traffic impact associated with the implementation of LRT service along the Hurontario/Main Street corridor. The assessment was conducted assuming that for the most part transit vehicles will operate in the dedicated transit lanes (in a centre of the street alignment) throughout the corridor. Providing a dedicated transit corridor requires the conversion of one general purpose traffic lane per direction into a reserved transit lane. However, it was recognized that operations in mixed traffic are proposed in some sections of the corridor due to the right-of-way widths and specific traffic conditions such as presence of numerous residential and commercial driveways, where accessibility will be considerably limited by implementation of dedicated transit lanes (as described in Section 4.8.4). In consideration of perceived right-of-way and traffic operations constraints, the following transit operation strategies were assumed in the analysis:

- **North of Nanwood Drive** – shared transit/vehicular lanes (mixed traffic operations);
- **Between Nanwood Drive and QEW North Ramp terminal** – dedicated transit lanes;
- **Between QEW Ramp terminals** – shared transit/vehicular lanes (mixed traffic operations). The intent along this section is to provide at least two continuous through lanes in each direction for general traffic along this section of the road while assuring that proper accommodation of turning traffic to/from QEW is maintained;
- **Between the QEW South ramp and Hampshire Crescent** – dedicated transit lanes between the QEW South Ramp and Pinetree Way in both directions, surrounding the South Service Road Station. South of Pinetree Way, a dedicated transit lane in the northbound direction and a shared transit/vehicular lane (mixed traffic operations) in the southbound direction;
- **Between Hampshire Crescent and the CN rail bridge** – shared transit/vehicular lanes in both directions (mixed traffic operations);
- **Between the CN rail bridge and Park Street** – a dedicated transit lane in the southbound direction and a shared transit/vehicular lane in the northbound direction. The transit stop is proposed to be located on the south leg of the Park Street intersection.
- **Between Park Street and the southern LRT terminus** – shared transit/vehicular lanes.



6.3.1.1 Downtown Mississauga

The impact of implementation of LRT service from Hurontario Street through Downtown Mississauga was also analyzed. It was assumed that the north point of the diversion of the rapid transit service from Hurontario Street will be at one of the Highway 403 ramp terminals. In the first option, at the Highway 403 WB Off-Ramp intersection, the LRT will be diverted onto a parallel bridge, allowing for the existing lane configuration to be maintained south of the intersection. In the second option, the LRT will remain on the existing bridge structure and the diversion will be facilitated at the Highway 403 EB Off-Ramp intersection. The southbound right and eastbound left turn transit movement will have to be accommodated at the intersections.

The south diversion point will be at the Burnhamthorpe intersection or immediately north of this intersection. In either case it was assumed that the north/south through, northbound left, southbound right and eastbound right transit movements will need to be accommodated at the Hurontario/Burnhamthorpe intersection.

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6.3.1.2 An Improvement in Multi-modal Mobility

It is important to consider the traffic impact analysis in the context of one of the key project goals – to enhance the person-carrying capacity of the corridor. Focusing on a multi-modal assessment of level of service is a methodology which has been gaining acceptance in the transportation community. Montgomery County (Maryland), San Francisco and San Jose (California), among others, have all moved to base transportation analysis to a method which reflects transit as well as auto movement.

When the significant expansion of person-carrying capacity through rapid transit is taken into account, the corridor will provide a greatly increased level of mobility along Hurontario / Main Street. This concept is illustrated in [Table 6.3.1](#) by key section and direction in the corridor. The percentage increases in person carrying capacity between the 2006 and 2031 conditions range from 28% to 166% in the peak direction. This benefit can be seen in the larger sense as mitigating potential decreases in auto-based level of service.

Table 6.3.1: Increases in Multi-Modal Capacity

Person Capacity – Total	2006		2031		Percent Difference	
	Capacity		Capacity			
Section	Southbound	Northbound	Southbound	Northbound	Southbound	Northbound
Brampton GO to Nanwood	1,712	1,647	4,552	4,487	166%	172%
Nanwood to Steeles	1,937	1,861	4,777	4,701	147%	153%
Steeles to Hwy 407	3,904	3,773	5,002	4,916	28%	30%
Hwy 407 to Hwy 401	3,941	3,795	5,228	5,130	33%	35%
Hwy 401 to Hwy 403	3,941	3,795	5,228	5,130	33%	35%
Hwy 403 and Burnhamthorpe	3,941	3,795	5,228	5,130	33%	35%
Burnhamthorpe to Dundas	3,941	3,795	5,228	5,130	33%	35%
Dundas to QEW	3,941	3,795	5,228	5,130	33%	35%
QEW to Port Credit GO	2,928	2,830	5,228	5,130	79%	81%

*Person Capacity = number of lanes x lane capacity x 1.09 average vehicle occupancy + transit capacity;
increase = (2031 – existing)/existing



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6.3.1.3 Volumes and Intersection Performance

The traffic analysis was conducted for the horizon 2031. Projection of turning movements at a 20+ year horizon can only be done to a certain level of accuracy. Typical traffic analysis based on turning movements addresses a 5 to 10 year horizon. Therefore two scenarios were considered, representing a range of conditions:

- **The potential “best case”.** The forecast future 2031 traffic link auto volumes from the EMME model were utilized in the “best case” scenario. The existing trip distribution (the attraction/production principle) was taken into consideration in establishing turning movement volumes at intersections based on the forecasted link volumes. The traffic assessment has been based on the high land use forecast. The link traffic volumes projected by the model have been critically reviewed in relation to the historical traffic patterns along the corridor. Left and right turn volumes are maintained at the appropriate level, reflecting the existing traffic patterns. Through volumes were also checked to ensure that they are consistent from intersection to intersection.
- **The potential “worst case”.** “Worst case” scenario assumes the maximum amount of through traffic which can be accommodated on the remaining

general purpose lanes along the Hurontario/Main Street corridor, optimized for progression and phasing. The maximum corridor link volumes were established based on the assumption that at the link level the remaining lanes will have the maximum capacity of 900 vphpl and will operate at a v/c ratio of 0.90. A volume to capacity ratio (v/c) threshold of 0.9 represents the conditions where the beginning of the significant traffic congestions is being experienced with very limited road surplus capacity. The existing cross street traffic volumes were utilized, as their capacity will not be affected by the implementation of the LRT.

The detailed overview of the methodology used to establish the 2031 turning movement volumes for the “best case” and “worst case” scenarios is shown in Appendix 6B.

As indicated above, it is difficult to project horizon 2031 conditions precisely, and that is why a range is presented. There is uncertainty about whether the entire slate of Metrolinx projects will be completed by 2031, and also with respect to the cumulative impact of the planning and transportation changes proposed for the Hurontario corridor. Therefore, the best case can be regarded as the optimistic outcome if the Cities implement assertive Travel Demand Management programs, and Metrolinx and its municipal partners succeed in developing the complete regional long-term transit network.

Generally, traffic will tend to use available capacity to the maximum at peak times, and thus the worst case can be regarded as being most likely to occur during construction, and in the short to medium term following implementation. Once two mixed traffic lanes are converted to transit and as the other planned transit initiatives are implemented, traffic is expected to gradually decrease due to the mode shift to transit and from some drivers finding alternate routes to avoid congestion. This is likely to begin during the construction process. That will mitigate further deterioration of the level of service. Therefore, it is reasonable that in 2031, the intersections will operate at levels of service in a range between what is indicated in the “worst case” scenario and the model forecasts.

The premises used in the analysis represent a logical basis for project planning at this stage.



6.3.2 2031 Traffic Operations

The focus of the capacity analysis was to evaluate traffic impacts associated with the implementation of different LRT operational strategies along the corridor. Intersection capacity analyses were conducted using the Synchro 7 traffic analysis software. This software incorporates the methodology outlined in the Highway Capacity Manual (HCM), Transportation Research Board, 2000.

An intersection capacity analysis provides an indication of traffic operations based on calculations of a volume-to-capacity ratio (v/c) and delays for individual movements at an intersection. The Level of Service (LOS) provides an indication of the quality of traffic operations, relating to a control delay per vehicle for an analysis period. LOS denoted by letter grades 'A' through 'D' indicate a satisfactory level of operations, while levels designated 'E' and 'F' represent congested traffic conditions. Further definitions of Levels of Service related to intersection operations are contained in Appendix 6C.

Synchro 7 cannot directly assess transit vehicle operations; however transit rapid service operations were taken into account in the Synchro 7 analysis by removing two general purpose lanes for the corridor sections with dedicated transit lanes, adjusting the intersection lane configuration appropriately and modifying the signal timing plan. The following assumptions were also utilized in the analysis:

- The existing cycle lengths were utilized in the analysis. The phasing structure and green splits were optimized to account for the proposed changes in traffic conditions;



- Along the road sections with the dedicated transit lanes, left turn and u-turn movement will be allowed at signalized intersections. Between signalized intersections, left turns will be blocked by the median transit lanes so that only right turn to and from unsignalized intersections and driveways will be possible along the Hurontario/Main Street corridor. No turning movement restrictions will be implemented along the road sections with the mixed traffic operations.
- A peak hour factor of 1.0 and a one hour analysis period were used;
- The default saturation flow rates of 1,900 vehicles per hour (vph) were used in the analysis. However, to account for the impact of transit vehicles on the road capacity, a bus blockage adjustment factor was utilized as per the HCM methodology. This factor accounts for the impact of transit vehicles that stop to discharge and pick-up passengers at the transit stop. The bus blockage adjustment factor was not utilized at intersections with the dedicated transit lanes, since it should be applied only when stopping vehicles block traffic flow in the subject lane group. To utilize this factor, it is required to determine the number of transit vehicles stopping at the transit stops during the hour. Assuming the transit headway of 2.7 minutes,

it was determined that 23 transit vehicles will arrive and stop at transit stops during the hour.

- Left turn and u-turn vehicular movements would occur only during protected phases. In accordance with the existing signal timing policies, two-seconds all red interval was introduced for all new protected left turn movements;
- Transit signal priority will be implemented in order to facilitate effective progression of transit vehicles along the corridor. However, transit vehicles will for the most part operate in the dedicated transit lanes without being impeded by the regular traffic and will advance through signalized intersections along with the vehicular through traffic, without requiring a separate transit phase. As such, the need to activate transit signal priority will be minimized comparing to typical mixed traffic operations. Moreover, even when triggered, the transit signal priority will mostly impact the phasing sequence to improve the transit progression, while the impact on the green time allocations for the minor traffic movements and overall intersection performance will be minimized. As such, it was not required to account for the impact of the traffic signal priority in the analysis.

The exceptions are several intersections where transit signal priority will be required to either facilitate transit turning movements or to mitigate the conflict with regular traffic at points where there will be a transition from a dedicated transit lane to a shared transit/vehicular lane. To account for the impact of the transit signal priority at these intersections, the following was assumed in the analysis:

- It was assumed that the minimum duration of the transit phase will be 10 seconds;
- In order to facilitate the southbound right and eastbound left turn transit movements, a transit only phase was introduced at the Highway 403 Ramp intersections (depending on which one of two intersections is utilized for the link of the LRT to Downtown Mississauga). The phasing structure was set up in way that the transit phase could be provided twice per cycle, but with a maximum number of 24 activations during one hour (based on the headway of 2.7 minutes).
- Due to the link into Downtown Mississauga it will be necessary to accommodate the northbound/southbound



through, northbound left, southbound right and eastbound right transit movements at the Hurontario/Burnhamthorpe intersection. The implementation of the transit only phase will not be required, since the intersection geometry will allow regular traffic movements to advance through the intersection along with transit vehicles. Due to multiple transit movements, it is expected that the transit signal priority will be triggered more frequently than at other intersections to reduce delays for transit vehicles. It is not expected that this will have a considerable impact on the performance of the regular traffic movement. However, a 6-second transit only phase was introduced to account for the potential capacity reduction of the regular traffic movements.

- At the intersection of Hurontario/QEW WB Off-Ramp, a short advanced southbound transit phase of 6 seconds was introduced to ease the merging and avoid conflicts between transit and auto traffic south of the intersection where the transit vehicles will start operating in a shared transit/car lane. The phasing structure was set up in way that the transit phase could be provided twice per cycle, but with a maximum number of 24 activations during one hour (based on the headway of 2.7 minutes).
- Similar to the intersection with QEW WB Off-Ramp a short advanced southbound transit phase of 6 seconds with identical characteristics was introduced at the Hurontario/Pinetree intersection.

It should also be noted that new road connections are proposed in many sections of the corridor, which will aid in distributing traffic (these are documented in Chapter 7, Planning Strategy). It is not possible to identify the specific effects of the minor streets in this traffic analysis, as the model would not be sensitive to their function. These areas include Cooksville from Dundas Street to Hillcrest Avenue, the ramp-collector connections at Highway 401, the Queensway, Brampton Gateway, Eglinton/Bristol, the south end of Downtown Mississauga, and internal roads within the core area of Downtown Mississauga.

Table 6.3.2 shows the level of service (LOS) and maximum volume-to-capacity ratio (V/C) for traffic operations at major intersections along the Hurontario/Main Street corridor under existing traffic conditions and 2031 traffic conditions with the rapid transit service in place. These are the key intersections (arterial/arterial and arterial/highway ramp) that will define the traffic capacity of the Hurontario/Main Street corridor to a large degree. The results of the capacity analysis at all intersections are shown in Appendix 6B.

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Table 6.3.2:
Capacity Analysis – 2031 A.M. Peak Hour Conditions with LRT, Existing Conditions

Hurontario/ Main Street Intersections	Existing Traffic Conditions		2031 Traffic Conditions with LRT			
			Worst Case Traffic Conditions		Best Case Traffic Conditions	
	LOS (Delay in sec.)	Critical Movement (v/c) ¹	LOS (Delay in sec.)	Critical Movement (v/c) ¹	LOS (Delay in sec.)	Critical Movement (v/c) ¹
Queen Street	C(22)	—	C(23)	—	B(18)	—
Steeles Avenue⁵	F(149)	EB-T(1.06) WB-L(1.32) SB-L(1.12) SB-T(0.99)	F(92)	EB-T(1.03) WB-L(1.02) SB-L(1.03) SB-T(1.03)	E(57)	EB-T(0.99) WB-L(0.87) SB-L(0.99)
Highway 407 WB Off-Ramp	B(13)	—	B(17)	—	B(16)	—
Highway 407 EB Off-Ramp	C(22)	EB-R(0.94)	C(22)	EB-R(0.91) SB-T(0.88)	C(33)	EB-R(0.94) SB-T(0.88)
Derry Road^{4 5}	F(179)	EB-TR(1.15) WB-L(1.30) NB-L(1.15) SB-L(1.17) SB-TR(0.99)	F(179)	EB-TR(1.12) WB-L(1.17) NB-L(1.03) SB-L(1.07) SB-TR(1.07)	E(74)	EB-TR(0.98) WB-L(0.99) NB-L(0.96) NB-TR(0.93) SB-L(1.02) SB-TR(0.95)
Highway 401 WB Off-Ramp⁴	D(35)	WB-L(0.94) SB-T(0.95)	D(38) ⁷	WB-L(0.95) SB-T(0.94)	C(31) ⁷	—
Highway 401 EB Off-Ramp⁴	B(12)	SB-T(0.88)	B(12)	—	B(17)	—
Britannia Road⁵	F(238)	EB-L(1.35) WB-L(1.18) NB-TR(1.03) SB-L(1.41)	F(307)	EB-L(1.47) WB-R(1.06) NB-TR(1.14) SB-L(1.20)	F(88)	EB-L(1.06) WB-T(0.89) WB-R(0.95) NB-TR(0.97) SB-L(0.98)
Matheson Boulevard	F(86)	EB-TR(0.91) NB-T(1.06)	E(77)	EB-TR(1.04) WB-L(0.90) NB-L(0.87) NB-T(0.97) SB-L(0.99)	D(38)	—
Eglinton Avenue	F(86)	EB-T(1.09) NB-T(0.88) SB-L(0.90)	F(124)	EB-T(1.08) WB-L(0.92) NB-T(1.06) SB-L(1.07)	D(48)	EB-T(0.90) SB-L(0.86)
			E(64) ⁶	EB-T(0.98) WB-L(0.92) NB-T(0.99) SB-L(0.99) SB-T(0.89)	D(46) ⁶	EB-T(0.85)

Hurontario/ Main Street Intersections	Existing Traffic Conditions		2031 Traffic Conditions with LRT			
			Worst Case Traffic Conditions		Best Case Traffic Conditions	
	LOS (Delay in sec.)	Critical Movement (v/c) ¹	LOS (Delay in sec.)	Critical Movement (v/c) ¹	LOS (Delay in sec.)	Critical Movement (v/c) ¹
Highway 403 WB Off-Ramp	E(59)	WB-LR(1.06)	E(64) ²	WB-LR(0.99) NB-T(0.86) SB-T(1.02)	C(26) ²	WB-LR(0.85)
			D(35) ³	WB-LR(0.96) NB-T(0.89) SB-T(0.88)	C(27) ³	WB-LR(0.85)
Highway 403 EB Off-Ramp⁴	B(11)	—	C(31) ³	SB-T(0.97)	B(18) ³	—
			B(16) ²	SB-T(0.86)	B(15) ²	—
Burnhamthorpe Road	D(47)	EB-L(0.88) WB-L(1.01) NB-T(0.87)	F(131)	EB-L(1.05) EB-TR(1.10) WB-L(1.03) NB-L(0.96) NB-T(1.01) SB-L(1.01) SB-T(1.02)	E(59)	EB-L(0.86) EB-TR(0.98) WB-L(0.89) NB-T(0.95) SB-L(0.92)
Dundas Street	C(32)	EB-T(0.96)	F(103)	EB-T(1.03) NB-L(0.95) NB-TR(0.98) SB-L(0.98) SB-TR(1.03)	D(45)	EB-T(0.89)
Queensway	C(33)	EB-R(0.88) NB-L(0.89)	D(45)	EB-R(0.93) NB-L(0.92)	D(37)	WB-L(0.91)
QEW WB Ramps	B(18)	—	B(18)	—	B(16)	—
QEW EB Off-Ramp	C(23)	—	C(25)	—	B(19)	—
Lakeshore Road	C(21)	—	D(38)	EB-L(0.91)	C(31)	—

Notes:

1. Critical movements are those with a volume-to-capacity ratio exceeding 0.85.
2. Transit signal phase provided at the Hurontario/Hwy. 403 WB Off-Ramp intersection.
3. Transit signal phase provided at the Hurontario/Hwy. 403 EB Off-Ramp intersection
4. Intersections with new (updated) traffic volumes
5. Intersections with potentially questionable data (inflated traffic volumes)
6. LOS with the road improvements in place as per the ITrans Report "Hurontario Street and Eglinton Avenue Area Traffic Impact Report", April 2009.
7. With Proposed Ramp Improvements



The results of the capacity analysis indicate that some study area intersections operate with v/c ratios greater than 1.0 under existing traffic conditions. The TMC volumes are intersection volumes that have been counted at the stop lines and that the intersection was able to accommodate; therefore the existing v/c ratios should not be greater than 1.0. The v/c ratios slightly above 1.0 might be due to the fact that the software default parameters do not accurately reflect the actual field conditions; however, the excessive v/c ratios suggest that the traffic volumes at the subject intersection were likely overcounted during the survey. The other reason for the excessive v/c ratio could be that the traffic patterns considerably changed after the implementation of the traffic signal plan and that the optimization of the traffic signal plans is required. The result of the capacity analysis with the optimized traffic signal plans are shown in [Table 6.3.3](#).

Table 6.3.3:
Capacity Analysis – 2031 A.M. Peak Hour Conditions with LRT, Optimized Signal Timing

Hurontario/ Main Street Intersections	Existing Traffic Conditions		2031 Traffic Conditions with LRT			
			Worst Case Traffic Conditions		Best Case Traffic Conditions	
	LOS (Delay in sec.)	Critical Movement (v/c) ¹	LOS (Delay in sec.)	Critical Movement (v/c) ¹	LOS (Delay in sec.)	Critical Movement (v/c) ¹
Queen Street	C(22)	—	C(23)	—	B(18)	—
Steeles Avenue⁵	F(141)	EB-T(1.06) WB-L(1.23) SB-L(1.22) SB-T(0.96)	F(92)	EB-T(1.03) WB-L(1.02) SB-L(1.03) SB-T(1.03)	E(57)	EB-T(0.99) WB-L(0.87) SB-L(0.99)
Highway 407 WB Off-Ramp	B(12)	—	B(17)	—	B(16)	—
Highway 407 EB Off-Ramp	B(18)	EB-R(0.86)	C(22)	EB-R(0.91) SB-T(0.88)	C(33)	EB-R(0.94) SB-T(0.88)
Derry Road^{4 5}	F(159)	EB-TR(1.09) WB-L(1.28) NB-L(1.13) SB-L(1.12) SB-TR(1.05)	F(179)	EB-TR(1.12) WB-L(1.17) NB-L(1.03) SB-L(1.07) SB-TR(1.07)	E(74)	EB-TR(0.98) WB-L(0.99) NB-L(0.96) NB-TR(0.93) SB-L(1.02) SB-TR(0.95)
Highway 401 WB Off-Ramp⁴	C(33)	WB-L(0.94) SB-T(0.95)	D(38) ⁷	WB-L(0.95) SB-T(0.94)	C(31) ⁷	—
Highway 401 EB Off-Ramp⁴	B(11)	SB-T(0.88)	B(12)	—	B(17)	—
Britannia Road⁵	F(206)	EB-L(1.25) NB-TR(1.16) SB-L(1.15) SB-T(0.88)	F(307)	EB-L(1.47) WB-R(1.06) NB-TR(1.14) SB-L(1.20)	F(88)	EB-L(1.06) WB-T(0.89) WB-R(0.95) NB-TR(0.97) SB-L(0.98)
Matheson Boulevard	D(52)	EB-TR(0.96) WB-L(0.90) NB-T(0.89) SB-L(0.92)	E(77)	EB-TR(1.04) WB-L(0.90) NB-L(0.87) NB-T(0.97) SB-L(0.99)	D(38)	—
Eglinton Avenue	D(52)	EB-T(0.96) WB-L(0.92) NB-T(0.91) SB-L(0.90)	F(124)	EB-T(1.08) WB-L(0.92) NB-T(1.06) SB-L(1.07)	D(48)	EB-T(0.90) SB-L(0.86)
			E(64) ⁶	EB-T(0.98) WB-L(0.92) NB-T(0.99) SB-L(0.99) SB-T(0.89)	D(46) ⁶	EB-T(0.85)

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Hurontario/ Main Street Intersections	Existing Traffic Conditions		2031 Traffic Conditions with LRT			
			Worst Case Traffic Conditions		Best Case Traffic Conditions	
	LOS (Delay in sec.)	Critical Movement (v/c) ¹	LOS (Delay in sec.)	Critical Movement (v/c) ¹	LOS (Delay in sec.)	Critical Movement (v/c) ¹
Highway 403 WB Off-Ramp & Hurontario Street ⁴	D(37)	WB-LR(0.97) SB-T(0.91)	E(64) ²	WB-LR(0.99) NB-T(0.86) SB-T(1.02)	C(26) ²	WB-LR(0.85)
			D(35) ³	WB-LR(0.96) NB-T(0.89) SB-T(0.88)	C(27) ³	WB-LR(0.85)
Highway 403 EB Off-Ramp ⁴	B(12)	—	C(31) ³	SB-T(0.97)	B(18) ³	—
			B(16) ²	SB-T(0.86)	B(15) ²	—
Burnhamthorpe Road	D(41)	EB-T(0.91) WB-L(0.87)	F(131)	EB-L(1.05) EB-TR(1.10) WB-L(1.03) NB-L(0.96) NB-T(1.01) SB-L(1.01) SB-T(1.02)	E(59)	EB-L(0.86) EB-TR(0.98) WB-L(0.89) NB-T(0.95) SB-L(0.92)
Dundas Street	C(34)	EB-T(0.92)	F(103)	EB-T(1.03) NB-L(0.95) NB-TR(0.98) SB-L(0.98) SB-TR(1.03)	D(45)	EB-T(0.89)
Queensway	C(30)	—	D(45)	EB-R(0.93) NB-L(0.92)	D(37)	WB-L(0.91)
QEW WB Ramps	B(16)	—	B(18)	—	B(16)	—
QEW EB Off-Ramp	C(23)	—	C(25)	—	B(19)	—
Lakeshore Road	C(21)	—	D(38)	EB-L(0.91)	C(31)	—

Notes:

1. Critical movements are those with a volume-to-capacity ratio exceeding 0.85.
2. Transit signal phase provided at the Hurontario/Hwy. 403 WB Off-Ramp intersection.
3. Transit signal phase provided at the Hurontario/Hwy. 403 EB Off-Ramp intersection
4. Intersections with new (updated) traffic volumes
5. Intersections with potentially questionable data (inflated traffic volumes)
6. LOS with the road improvements in place as per the ITrans Report "Hurontario Street and Eglinton Avenue Area Traffic Impact Report", April 2009.
7. With Proposed Ramp Improvements

6.3.2.1 Traffic Analysis Discussion

The capacity analysis reveals that existing traffic conditions are generally constrained along the Hurontario/Main Street corridor; approximately 20% of intersections within the study area operate close to or over capacity under existing traffic conditions. As the Hurontario/Main Street corridor crosses four major highways, it is likely that high inter-regional traffic volumes contribute significantly to congested traffic conditions. The capacity analysis results shows that even with the optimized signal timing plans, some movements at the intersections of Hurontario/Steeles, Hurontario/Derry and Hurontario/Britannia operate with v/c ratios considerably higher than 1.0, suggesting that traffic volumes for these movements might have been overstated.

The results of the capacity analysis based on the forecast numbers can be considered a “best case”; these indicate that traffic operations within the study area are not expected to deteriorate. All major intersections, except for the intersections of Hurontario/Derry and Hurontario/Britannia, are expected to operate with sufficient capacity and at levels of service comparable to existing traffic conditions. The intersections of Hurontario/Derry and Hurontario/Britannia are expected to operate with only a single movement slightly exceeding capacity. The results suggest that the reduction in the capacity associated with the removal of two general purpose lanes along Hurontario/Main Street will be offset by the reduction of an auto demand due to the planned transit improvement within the GTA. This may be an optimistic forecast, as it is based on the assumption that the other Metrolinx transit projects have been implemented; however, that is the most logical assumption to make at this point in the planning process for rapid transit expansion across the GTHA.



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6.3.3 Effect on Green Time at Intersections

Compared to existing conditions, traffic operations at the majority of study area intersections under the “worst case” scenario are generally expected to slightly deteriorate. Under this scenario close to 30% of intersections within the study area are expected to operate close or over capacity. Experience shows that vehicular capacity in a busy urban corridor will generally be used to the maximum during peak periods. However, it is also worth noting that over the time required to plan and build the transit system, driver behaviour will change incrementally – the change to these projected volumes would not be required to happen in an unreasonably short period of time – it would happen over a period of years.

As the level of service for traffic on the Hurontario/Main Street corridor will be dependent on numerous factors once LRT has been implemented, it will be important for City and Regional traffic staff to monitor the effects of transit operations and surrounding development on traffic patterns on the Hurontario/Main Street corridor, and adjust signal timing as appropriate. It will also be important to develop and implement a strong travel demand management and marketing strategy, to shift as much demand to transit as possible, and minimize peak period traffic loadings.

The implementation of the rapid transit service will be accommodated without taking up a proportion of the total green time that is now available for mixed traffic, as the provision of transit only signal phases is generally not expected to be required. The green time allocation for vehicular traffic would be affected only by the triggering of transit signal priority; where some green time will be reallocated from the east/west phases to the north/south phase. Transit vehicles will operate in the dedicated transit lanes, which will minimize transit delay and eliminate the need for the implementation of transit signal phases along the Hurontario/Main Street corridor. The exceptions are several intersections where transit signal priority will be required to either facilitate transit turning movements or to mitigate the conflict with regular traffic at points where there will be the transition from a dedicated transit lane to a shared lane. The effect of transit signal priority on mixed traffic operations at these intersections is expected to be insignificant.

6.3.4 Consideration for Potential Grade Separations

At intersections where the implementation of the rapid transit service is expected to cause a considerable deterioration of traffic operations or to result in unsafe traffic conditions, a grade separation may be considered as a mitigation measure. However, grade separations must also be evaluated with regard to the impact they may have on the quality and character of the street and streetscape, as well as on the impact to the pedestrian environment and to adjacent land uses. Given existing traffic conditions, it was initially anticipated that a grade separation may be warranted at the Hurontario/Burnhamthorpe and/or Hurontario/Eglinton intersections.

6.3.4.1 Hurontario/Burnhamthorpe Intersection

The Hurontario/Burnhamthorpe intersection experiences considerable left turn volumes, which are currently served with protected/permissive phases on all approaches of the intersection. Upon the implementation of dedicated transit lanes, left turn movements will be allowed only during the protected portion, which will restrict their capacity. Additionally, due to the LRT link into Downtown Mississauga it will be necessary to accommodate multiple transit turning movements: the northbound/southbound through, northbound left, southbound right and eastbound right. However, to accommodate transit operations, a transit only phase is not required, as the intersection geometry will allow regular traffic movements to advance through the intersection along with LRT vehicles. For example, the north/south left turn movements or the northbound through movement could be accommodated during

the northbound left turn transit phase, and the east/west left turn movements or the northbound through movement during the southbound right turn transit phase. It is not expected that transit operations will have a considerable impact on the performance of the regular traffic movements. However, a transit only phase of 6 seconds was introduced in the analysis to account for the potential capacity reduction of the regular traffic movements. Additionally, Burnhamthorpe Road will accommodate a dedicated transit corridor west from Hurontario Street, which will require the removal of the eastbound right turn lane and channelized right turn islands on all approaches. To account for this, the approach volumes on Burnhamthorpe Road were conservatively reduced by 10%.

Under the “worst case” scenario, this intersection is expected to operate at a level of service F, and with multiple movements exceeding capacity. It should be noted that due to the extensive road network in this area, the left and right turn movement will have a possibility to divert to adjacent intersections (e.g. via Absolute Avenue, Matthews Gate, Sussex Gate) which will likely improve traffic operations at this intersection considerably. The results of the capacity analysis under the “best case” modeled scenario indicate that this intersection is expected to operate at a level of service E, and with all movements experiencing sufficient capacity during the peak hour. It should be noted that under both scenarios, the analysis likely is conservative, as it is assumed that the regular traffic will be restricted during the transit phase, which will not be the case.

It should be noted that due to the intersection’s status as a major crossroads for traffic and transit, the best case

scenario is likely optimistic, and it is feasible that the traffic operations at this intersection could deteriorate after the implementation of the LRT. However, constriction of traffic capacity at upstream intersections will limit the amount of traffic arriving at this intersection, and it is expected that adequate traffic operations will be maintained at this intersection. As such, it is anticipated that the future traffic conditions at this intersections with the rapid transit in place will not warrant the provision of a grade separation.

6.3.4.2 Hurontario/Eglinton Intersection

The LRT will only be travelling north and south through this intersection, and this can occur as part of the general north/south green phase. The results of capacity analysis indicate that this intersection is expected to operate at an acceptable level of service D under the “best case” case scenario. Under the “worst case” scenario the eastbound through, northbound through and southbound left turn movements are expected to operate above capacity.

This intersection currently has dual northbound and westbound left turn lanes. In the “Hurontario Street and Eglinton Avenue Area Traffic Impact Report” report, dated April, 2009, prepared by iTrans (for the Pinnacle development), the implementation of additional eastbound and southbound left turn lanes is recommended in order to improve future traffic conditions (2018) at the Hurontario/Eglinton intersection. Based on the review of the available right-of-way, it appears that these recommended geometrical improvements could be accommodated at this

intersection. There is already an existing hatched lane on the eastbound approach that could be converted into a left turn lane. On the north leg of the subject intersection there appears to be sufficient space to accommodate two general purpose traffic lanes per direction, a southbound right turn lane, a double southbound left turn lane, two transit lanes, and a transit platform. With the recommended geometrical improvements in place, this intersection would operate under capacity for all movements and the overall “worst case” intersection delay will be reduced from 124 seconds to 64 seconds.

The intersection is expected to function adequately with these improvements in place, and with the LRT in operation. As such, it is recommended that these improvements are considered in the future design of the subject intersections with the LRT in place, which would alleviate the need for the provision of a grade separation.



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6.3.5 Provincial Highway Crossings

The proposed concept at each provincial highway crossing is as follows:

- **Highway 407:** transit in reserved lanes in the centre of the street, involving a conversion of two traffic lanes. The structure is understood to be sufficient for the LRT loading;
- **Highway 401:** transit in reserved lanes in the centre of the street, involving a conversion of two traffic lanes. The structure is being rebuilt to accommodate LRT loading;
- **Highway 403:** The City of Mississauga, in conjunction with the Ministry of Transportation of Ontario, will generate alternatives for the LRT to cross Highway 403 and tie in with both the mainline and downtown routings. The use of the existing bridge, as well as the construction of a new bridge or below grade crossing will all be examined during this process. The lane configurations and traffic operations in the surrounding area as a result of the chosen crossing will also be examined during this process.
- **Queen Elizabeth Way:** the LRT service will operate partially in shared lanes through the underpass, balancing transit and traffic operations.

All Ontario Ministry of Transportation (MTO) highway ramp intersections are projected to have sufficient capacity to accommodate traffic demand under 2031 traffic conditions. The Highway 407 north and south ramp intersections are expected to operate at levels of service B and C under 2031 traffic conditions under both scenarios.

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6.3.6 Effects on Parallel Routes: Screenline Analysis

The planned road improvements in the vicinity of the Highway 401/Hurontario Street interchange were taken into consideration in the analysis by assuming that two through general purpose lanes in each direction will be maintained in addition to one dedicated transit lane in each direction. The WB off-ramp is proposed to be reconstructed; the existing channelized right turn lane is proposed to be replaced with a dual right turn lane. Capacity analysis shows that Highway 401 north and south ramp intersections are expected to operate at acceptable levels of service under both scenarios.

Under the “best case” conditions the Highway 403 WB Off-Ramp intersection will operate a level of service C under both diversion scenarios. With the provision of the transit signal phase, traffic operations at this intersection are expected to deteriorate to a level of service E under the “worst case” scenario. The Highway 403 EB Off-Ramp intersection will operate at acceptable levels of service B under all 4 traffic volume and diversion scenarios

The results of the capacity analysis show that QEW north and south ramps are expected to operate at overall levels of service C or better under both scenarios.

As the conversion of two existing mixed traffic lanes to dedicated transit lanes will reduce the capacity of the Hurontario/Main Street corridor for private vehicles, the diversion of traffic to parallel routes is an important consideration in traffic forecasting. Experience on other corridors shows that traffic on Hurontario/Main Street and its neighbouring parallel corridors can be expected to evolve through the following phases:

1. The construction period:

- The construction period may last for two to five years, depending on phasing of the sections
- This period requires a pro-active communications plan for the public and businesses along the corridor and in the adjacent neighbourhoods, to communicate when construction will take place and re-emphasize the longer-term benefits of the project
- The agency building the LRT should ideally have a community coordinator who works with business and residents along the corridor to ensure that the construction timing is considerate of local issues (for example, if there are segments with outdoor cafes, avoiding construction during high summer if possible in those segments)



- Transportation effects during the construction period:
 - Two lanes of the street will be closed to traffic, creating a substantial reduction in traffic capacity.
 - Other lanes will be periodically encumbered by construction activity, further reducing traffic capacity.
 - During this period, some of the traffic will divert to parallel routes due to the lack of capacity. The projected diversion is based on the amount of traffic that would need to divert in order to maintain the Level of Service at approximately today's level. The range of traffic volumes which are expected to divert initially is projected to be up to 900 vehicles per hour in the peak direction.
 - The diversion will have a broad ripple effect, as traffic on parallel streets across the Region adjusts to this temporary condition
 - This will primarily affect traffic during the peak commuter periods. During most times of day, traffic on Hurontario/Main and parallel streets is well within the capacity, and less diversion would be expected.

2. Once the LRT service begins:

- Some trips in the corridor will convert from auto to transit, to take advantage of the new service
- Some of the diversion that began during construction will also continue, because capacity in most of the corridor will have been reduced by one lane per direction
- However, at this horizon (perhaps 2-5 years from the beginning of construction), the traffic demands across the network within the Cities will have stabilized within the available capacity
- Only a portion of the auto trips that diverted to other routes will return to the now reduced Hurontario capacity, as drivers continue to seek the optimum route for their trip
- Travellers to and from existing development along the corridor can be expected to take advantage of the improved transit mobility, and exhibit a much more balanced modal split
- As development continues along the corridor, residents and workers at the new developments will also exhibit a much more balanced modal split.

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Thus the potential for diversion is focused during the construction period. The EA should define mitigating measures for this period in Phases 3 and 4, if needed. It is recommended that the construction process be kicked off as soon as it is feasible to do so; delaying implementation will give rise to further complexities as traffic growth and intensification increases.

It is also important to remember that some level of traffic congestion is necessary to encourage transit use. Attempting to replace the traffic capacity lost due to the lane conversion on Hurontario / Main would be counter to the goal of encouraging and supporting more transit use.

Furthermore, it should be noted that without the introduction of LRT, traffic demand would be expected to continue to grow, as there would not be a viable competitor to the private vehicle. That condition could also result in traffic infiltration through neighbourhoods, on an ongoing and increasing basis.

6.3.6.1 Screenline Analyses

Two screenline analyses have been conducted:

1. **Reflecting the worst case** – as described above, the worst case is expected to occur during or immediately after construction. This short term horizon is expected to be the worst case because most travelers will still be adjusting to the new reality of the modal choices available, and the rapid transit network in Mississauga and Brampton may be limited.
2. **Reflecting the best case** – 2031 volumes projected from the model. This case is expected to result in the long term, as transportation patterns adjust to the expanded transit mobility across the GTHA.

6.3.6.2 Short Term Horizon – Construction / Implementation Phase (Worst Case)

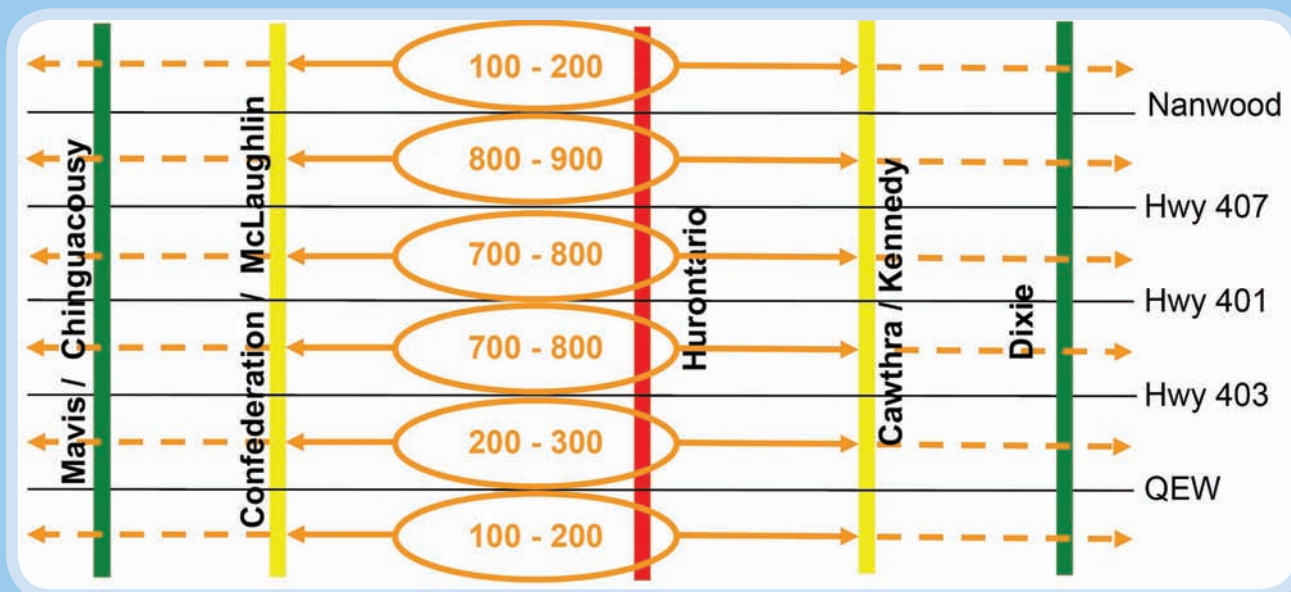
The volume diversion by section is shown in [Figure 6.3.1](#). As noted above, the expected range of peak hour, peak direction vehicles that are expected to divert is between 100 and 900.

The screenline analysis has shown that these volumes can be accommodated in most sections of the parallel arterials of Confederation Parkway/ McLaughlin Road to the west and Cawthra Road and Kennedy Road to the east, with a small amount of spillover onto the next major parallel routes, Mavis Road/Chinguacousy Road and Dixie Road. Traffic congestion may be experienced most notably in the section between Steeles Avenue and Highway 401; this issue will be addressed in detail during the next phase of the study and mitigating measures will be defined if needed.

There is little potential for widespread ongoing traffic infiltration through established communities because of the LRT project. There is always some potential for infiltration during a major construction project, as routings can be disrupted on short notice for intermittent periods.

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Figure 6.3.1:
AM Peak Hour Volume Diversion





6.3.6.3 Long Term Horizon (Best Case)

The travel demand forecasting model projects volumes on all highway, arterial and collector links within the two cities, based on the relative cost of travel between modes (not based on any assumptions or mechanical intervention in the assignment). This information for 2031 has been used to project traffic conditions on Hurontario / Main Street and the adjacent arterials, in comparison to the base case (2031 demands on the 2006 road and transit network), which is summarized in [Figure 6.3.2](#) to [Figure 6.3.4](#). The comparison between the base case and the case with LRT in place show the predicted traffic volume increase or decrease caused by the LRT availability.

These charts show the following results:

- Auto volumes with LRT decrease by up to 650 vehicles during the a.m. peak period compared with the Base Case on Hurontario/Main Street;
- None of the parallel arterials are expected to be overloaded with auto traffic based on the projected demand – the increases in auto volume are marginal;
- There are short lengths along Kennedy and Mavis Roads which are projected to experience increases in auto volume of up to 200 vehicles. However, these are localized occurrences that cannot be directly attributed to the implementation of LRT on Hurontario/Main Street. They are likely modeling anomalies;

This analysis indicates that in the long term, Kennedy, McLaughlin and Mavis Roads are expected to function adequately despite any diversion of traffic caused by the conversion of lanes on Hurontario/Main Street.

DOWNTOWN BRAMPTON TO HIGHWAY 407 COMPARISON

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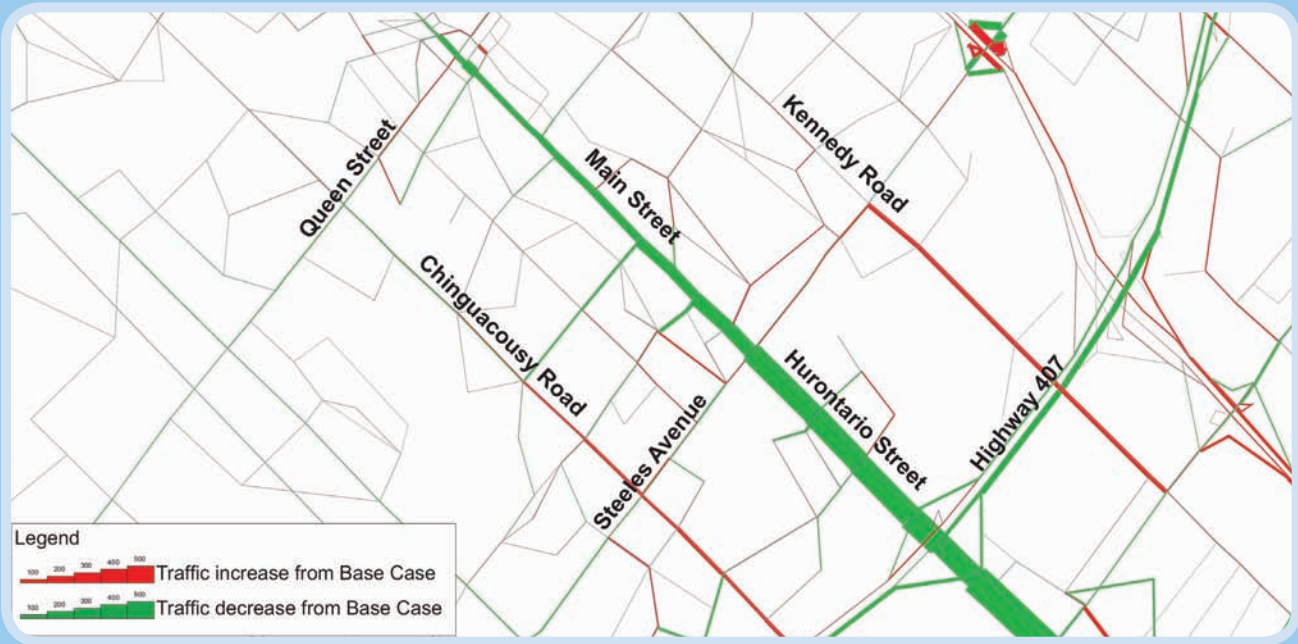


Figure 6.3.2:
Traffic Comparison to Base Case –
Downtown Brampton to Highway 407

HIGHWAY 407 TO HIGHWAY 403 COMPARISON

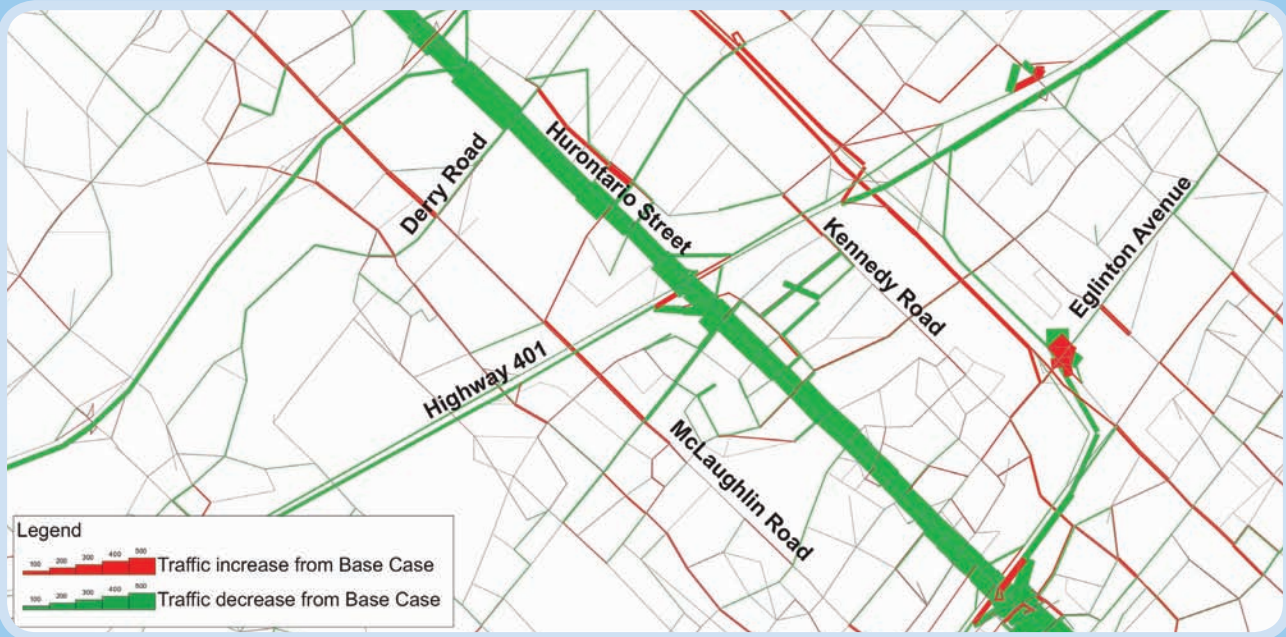


Figure 6.3.3:
Traffic Comparison to Base Case –
Highway 407 to Highway 403

HIGHWAY 403 TO LAKESHORE COMPARISON

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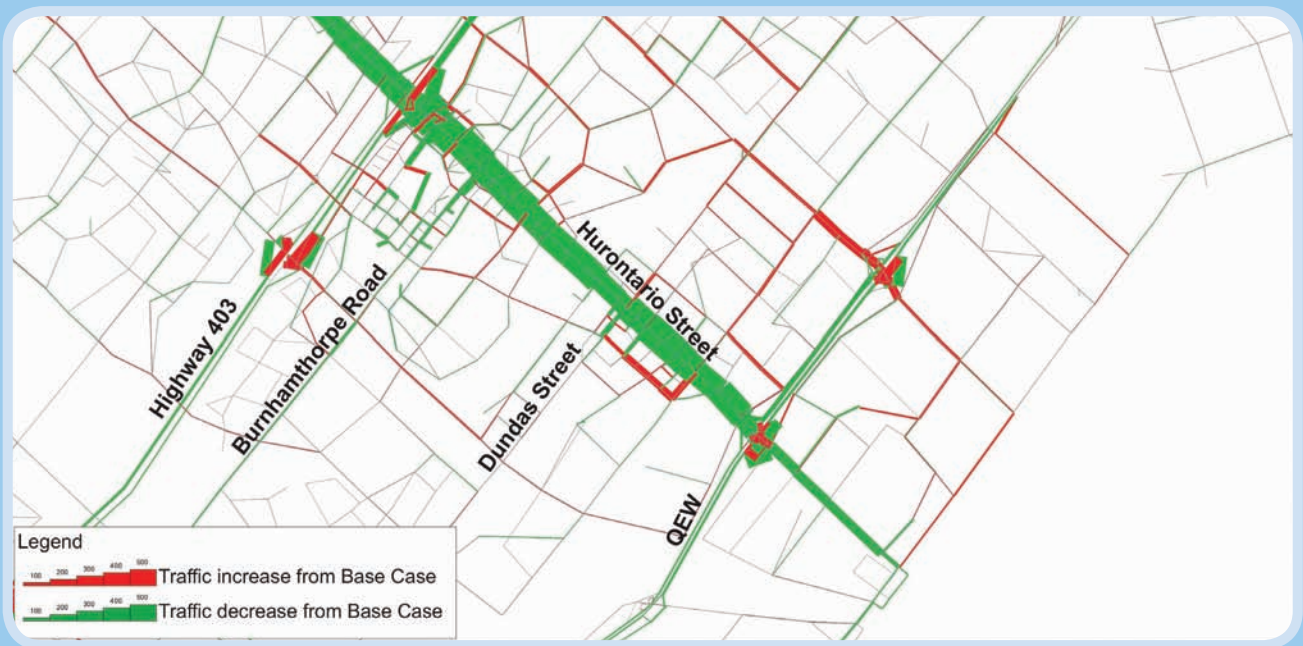
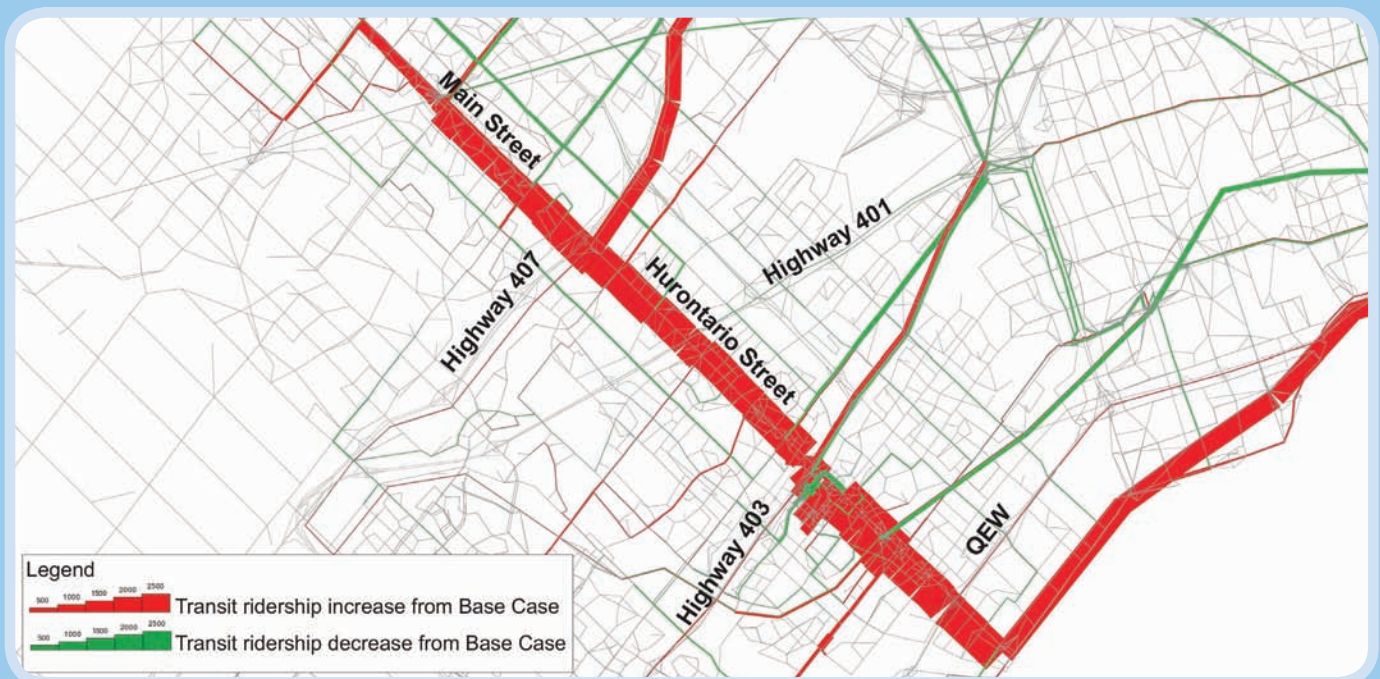


Figure 6.3.4:
Traffic Comparison to Base Case –
Highway 403 to Lakeshore

The mode shift to transit between the 2031 base case and 2031 preferred LRT scenario is illustrated in [Figure 6.3.5](#). It is notable that there is a substantial increase in transit ridership with the implementation of LRT on the Hurontario/Main Street corridor, as well as the intersecting corridors on Queen Street, Highway 407, Highway 403 and Dundas Street that provide connections to the GTHA network as a whole. It is notable that transit ridership on Eglinton Avenue through Mississauga is projected to drop, likely due to the future availability of higher order east-west transit on nearby parallel routes (BRT).

Figure 6.3.5:
Transit Effects on Surrounding Network



6.3.7 Neighbourhood Traffic Management

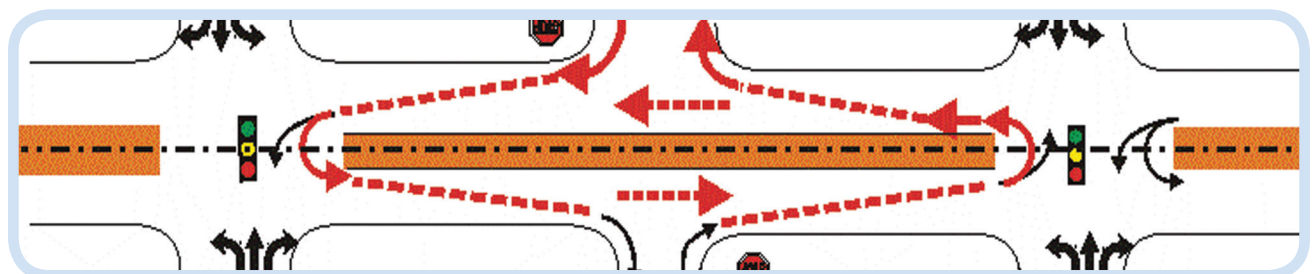
Neighbourhood traffic management should be addressed in detail as part of Phases 3 and 4 of the EA, as part of the assessment of effects of the preferred undertaking (and potentially mitigation measures). However, the intersection and screenline analyses discussed above have shown that the potential for neighbourhood traffic infiltration – having non-local traffic divert through neighbourhood collectors to avoid arterial traffic – is low, since the main arterial routes are not expected to become overly congested, with or without LRT implementation.

6.3.8 Access Management

In the sections of the corridor where reserved transit lanes are proposed, these lanes will prohibit left turns into and out of side streets and driveways through the design of these lanes (i.e. curbs, a raised right-of-way, or other designs will be considered). Left turns onto and from Hurontario Street in segments with reserved lanes will be permitted only at signalized intersections; drivers who wish to make a left turn from a driveway or side street onto Hurontario Street will be required to turn right, then make a legal U-turn at the nearest signalized intersection. [Figure 6.3.6](#) illustrates the access arrangement. Signs at the signalized intersections should indicate that U-turns are permitted, and turning lane storage should be designed to accommodate both the anticipated U-turns and left turns, as much as possible. A very similar configuration is located along Spadina Avenue in Toronto, which has a newly-constructed designated right-of-way for streetcars running along that route.

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Figure 6.3.6:
Access to and from Side Streets and Driveway





Most of the Hurontario / Main Street corridor already has restricted driveway access. Many blocks between Nanwood Drive and the Queen Elizabeth Way have either no driveways or unsignalized accesses onto Hurontario Street, or the few driveways present are restricted to right-in/right-out only movements only. This indicates that the changes in traffic turning movements resulting from the introduction of exclusive transit lanes will be limited in most areas.

Areas with unsignalized driveways or intersections onto Hurontario Street are the Main Street South Heritage Area, Cooksville, and Mineola neighbourhoods.

In the Main Street South Heritage Area, the predominant single-family residential uses, each with its own driveway, pose a challenge for introduction of reserved transit lanes. If reserved transit lanes were to be implemented, all access would be right-in/right-out only. To facilitate turns in the other direction, U-turn lanes would be required at conveniently spaced signalized intersections. That would require a widening of Main Street, which is problematic in this designated heritage area. This is one of the factors which have resulted in the recommendation to operate the transit service in shared traffic lanes in this section, from Wellington Street to Nanwood Drive.

In Cooksville, redevelopment is anticipated on some of the blocks which now have driveway access onto Hurontario Street. The site planning process for these developments will take the access limitation into consideration; joint access to parking via rear driveways or laneways should be encouraged. These initiatives will also assist in minimizing U-turns at signalized intersections. Left turn and U-turn lanes will be maintained at signalized intersections.

In the Mineola neighbourhood, there are generally individual lots (primarily commercial), again with individual driveways. Further consideration will be needed for this area, depending on whether full-time or peak period reserved transit lanes are implemented.

6.3.9 Transportation Demand Management Strategies

A Transportation Demand Management (TDM) strategy will be defined in Phases 3 and 4 of the EA process. This typically would form one of the mitigating measures. It should address conditions during construction (when traffic impacts are expected to be the most severe), and also during the initial years of operation while traveller behaviour is adjusting to the new corridor configuration.



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PLANNING & URBAN DESIGN STRATEGY



7 PLANNING & URBAN DESIGN STRATEGY

7.1 Introduction



The Cities of Brampton and Mississauga have grown rapidly over the last fifty years and new growth is anticipated to continue for at least another twenty-five years. As directed by the Province of Ontario through their urban growth policies outlined in the Provincial Growth Plan for the Greater Golden Horseshoe (Growth Plan), as well as the Metrolinx Regional Transportation Plan (RTP), this growth should be focussed largely in higher density nodes and corridors. These areas are expected to continue to evolve into vibrant, self-sustaining, walkable mixed-use urban spaces, linked by attractive and efficient transportation. In order to accommodate this, the Cities of Mississauga and Brampton have identified Hurontario/Main Street as an Intensification Corridor in their Official Plans, in keeping with recent Provincial legislation, as well as recognition that this corridor serves as an ideal location for future growth in transit-oriented development and sustainable community design. This Corridor will have a broad mix of uses along its length, which will provide a wide variety of residential, commercial, institutional, employment, recreational and institutional opportunities at relatively high densities, located in a series of urban corridors and secondary nodes. The Cities of Mississauga and Brampton see this Corridor as a crucial city-building opportunity that will maintain and enhance their positions as sustainable and competitive communities. The Corridor will connect the two urban growth centres (UGC) in Brampton and Mississauga, both of which are centred on Hurontario/Main Street and are planned as the focal area for investment in public services, to accommodate and support major transit infrastructure and to serve as higher density residential and employment centres accommodating a minimum of 200 residents and jobs combined per hectare.

More people living and working along the Corridor means there will be more people to move. If the Cities rely on the existing automobile and bus infrastructure, the resulting gridlock will deter development, making the target densities very difficult to reach. Therefore these major urban centres and secondary nodes must be linked with a higher-order transit system that will allow large volumes of residents and workers to move from one area of the Corridor to other areas of the Corridor quickly and efficiently without



LRT in Houston, TX

automobiles. In addition, this higher-order transit system will connect to various other existing and proposed transit lines, including the GO Transit rail system at three points, which will allow people to move throughout central southern Ontario seamlessly on rapid transit. Connecting Brampton and Mississauga to this larger transit network is essential to the continued sustainable development of both the Cities of Brampton and Mississauga and of the entire region.

A higher density urban corridor served by higher-order transit will create more pedestrian activity as people will be able to walk between their homes, places of work, shops, schools or recreational facilities and the transit stations in a reasonable amount of time. A critical factor to the success of this new urban environment will be to ensure that it is pedestrian-friendly. Pedestrian-friendly streetscapes are ones that welcome pedestrians and make them feel safe and comfortable. There are many ways to create pedestrian-friendly environments. In general, a higher standard of urban design that helps to animate the street with retail and other commercial uses that line the street with very few gaps will ensure people feel safe, comfortable and welcome. Therefore this evolution is more than just adding transit and density



Transit Oriented Development. Paris, France

– it involves creating a new urban design and streetscape strategy for the Corridor.

Over the next few decades, the Hurontario/Main Street Corridor will be transformed from a suburban arterial thoroughfare to a corridor that includes pedestrian and transit-friendly environments, providing a series of destinations for the resident, visitor and employer alike and supporting the character and vibrancy of surrounding neighbourhoods. For residents, the Corridor will become a public living space rather than a barrier. For automobile traffic, the Corridor will become a series of destinations rather than simply an arterial road. For employers, the Corridor will become a prestige address rather than

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LRT in Adelaide, Australia



Sidewalk Café, Berlin, Germany

another street or business park. The Planning and Urban Design Strategy seeks to guide this evolution from suburban to urban by communicating a clear concept for the Corridor to the year 2031 and beyond.

7.1.1 Purpose



Lake Ontario at Port Credit

The primary purpose of the Planning and Urban Design Strategy is to manage change along the Corridor, providing guidance on the use of the land, as well as the configuration and design of the public realm and built form. It is anticipated that both public and private projects will contribute to the types of urban form, scale and visual character that result in high-quality, transit-supportive, vibrant environments. This Strategy, as well as the overall Master Plan, is also intended to promote creativity, interest and variety that builds upon local character and heritage to create attractive, efficient, sustainable and liveable places.

7.1.2 Background

The Hurontario/Main Street Study provides an unparalleled opportunity to support the urban growth policies outlined in the Province’s Growth Plan and the Metrolinx Regional Transportation Plan (RTP). The Growth Plan has identified the Corridor as having great potential for accommodating intensification, while providing the opportunity to combine transportation planning and land use planning. The Growth Plan also recommends that public transit be the first priority for transportation infrastructure investment. The Cities of Mississauga and Brampton have endorsed these concepts and have demonstrated a desire to exceed the Province’s minimum requirements and recommendations by initiating this study. This initiative is seen as a crucial city-building project that will maintain and enhance Mississauga’s and Brampton’s positions as sustainable and competitive communities.

7.1.3 Study Area

The study area includes Hurontario and Main Street and properties within approximately 500 metres of these roadways. Using the principles of transit-oriented development (TOD), the boundaries of the study area along the Hurontario/Main Street Corridor were determined using a 10-minute walking distance (500 metre) formula. This formula has been widely accepted as an appropriate and acceptable walking distance to a transit stop. Walking distances were calculated to follow logical physical element routes and barriers (streets, valleys, etc.).

For planning purposes, the Study Area includes eleven smaller areas that have been identified based on their distinguishing characteristics. These smaller areas are referred to as “Character Areas” and are further described and illustrated in Section 8. Each Character Area entails a unique approach, sensitive to the existing context and to an area specific vision. As such, the boundaries of each Character Area recognize unique features of the landscape and built form and focuses on the areas where most change is either anticipated or desired.



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7.1.4 Population and Employment Forecasting

The policies found in this Master Plan are based on the potential for population and employment growth within the Hurontario/Main Street Corridor. As required by Provincial regulations, the municipalities have defined urban growth areas and general population and employment targets to be achieved by 2031. Additionally specific growth targets for many locations have been set. Mississauga City Centre and Downtown Brampton have been identified as Urban Growth Centres and therefore have an expectation to achieve a minimum of 200 residents and jobs combined per hectare. The Hurontario/Main Street Corridor has been identified as an intensification corridor where growth shall be directed.

The following table shows the existing and projected population and employment numbers for each Character Area as determined by the municipalities. This Master Plan is intended to help guide and promote new development along the Corridor so that these targets can be reached or exceeded.

	Population			Employment		
	2008	2031	Change	2008	2031	Change
Port Credit	11,800	13,700	1,900	3,420	4,000	580
Mineola	9,720	10,200	480	1,370	1,450	80
Downtown Hospital*	14,210	16,150	1,940	6,440	8,000	1,560
Downtown Cooksville*	10,690	21,800	11,110	3,170	3,800	630
Downtown Fairview*	20,700	22,400	1,700	1,100	1,250	150
City Centre*	24,870	47,450	22,580	24,710	33,900	9,190
Eglinton-Bristol	62,530	68,550	6,020	6,160	7,700	1,540
Mississauga Employment	0	0	0	59,350	70,700	11,350
Brampton Gateway	14,550	21,050	6,500	4,990	7,750	2,760
Brampton Main Street South Heritage Area	9,820	11,300	1,480	840	1,000	160
Brampton Downtown*	4,700	10,200	5,500	5,680	9,200	3,520
Total	183,590	242,800	59,210	117,230	148,750	31,520

* Part of an Urban Growth Centre

7.1.5 Structure of the Planning & Urban Design Strategy

The Planning and Urban Design Strategy provides a framework and recommended policies for guiding development within the Corridor over the next twenty-five years. To begin, Section 7.2 discusses the “core elements” of this Strategy and how they are applied throughout the Corridor and also provides rationale and narrative to support interpretation of the policies in Section 7.3. Section 7.3 provides recommended policies to guide development throughout the Corridor and achieve development that creates a pedestrian-oriented built form and public realm. Section 7.3 represents a “model” official plan amendment that is intended to be incorporated into the Official Plans of each municipality, either as a stand-alone secondary plan, or as added policies to existing secondary plans.

The Character Areas (Chapter 8) includes specific policies to guide development within each of the eleven Character Areas of the Corridor, recognizing that there are distinctive strengths, weaknesses, opportunities and challenges facing the development of the vision for each Character Area.

In order to provide a full understanding of the intent and purpose of this Strategy, all elements (the Planning and Urban Design Framework, Planning and Urban Design Policies and Character Area Policies) should be read in combination with one another. The support of the additional information presented in this Strategy will help to clarify the intent of the policies.

This Strategy also includes recommendations for Community Improvement Plans to help achieve the vision of this Strategy (Section 10.2.6).



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7.2 Planning & Urban Design Framework

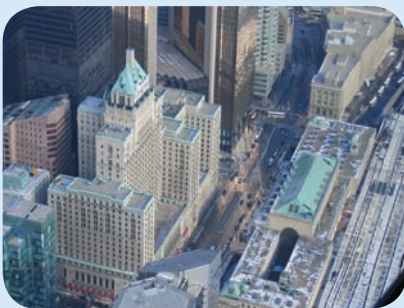
The realization of the vision for the Hurontario/Main Street Corridor, including among other things, pedestrian-oriented and vibrant urban places, can only be achieved through appropriate regulation of new development. The following section outlines the strategy's "core elements" that are intended to ensure that new development contributes to the consolidation of the Vision and a form of development that supports new investments in transit facilities. The section establishes a more specific framework for the public realm and the built form of the Corridor. It is important to recognize that no one element discussed below is considered more significant than another and that the framework does not form part of the policies; rather, it is intended to provide a better understanding of the intention behind the planning and urban design policies presented in Section 7.3 and to assist in the interpretation of those policies. This framework is based on the Vision and Guiding Principles provided in Section 4 of this Master Plan.

MOBILITY HUBS



Gateway Hubs

Gateway Hubs are major transit station areas that are located at the interchange between two or more current or planned regional rapid transit lines, and that have 4,500 or more forecasted combined boardings and alightings in the morning peak period by 2031. In addition, these areas are generally forecasted to achieve or have the potential to achieve a minimum density target of approximately 10,000 people and jobs combined within 800 metres.



Anchor Hubs

Anchor hubs are primary major transit station areas in an urban growth centre. Anchor Hubs have strategic importance due to their relationship with urban growth centres. Anchor Hubs contain current or planned major regional destinations such as major institutions, employment centres, town centres or regional shopping centres, and they have significant potential to attract and accommodate new growth and development. Anchor Hubs have the potential to transform the regional urban structure and act as anchors of the regional transportation system.

7.2.1 Mix of Land Uses

Vibrant communities and neighbourhoods are generally ones with a broad and healthy mix of uses, all located within close proximity to each other. Encouraging a mix of jobs, shopping, offices, residential and recreational uses all within a walkable area reduces the need for automobiles and creates the energy and vitality that is found in most successful urban cores. Therefore, for most of the Corridor this Strategy recommends fostering the tightly knit mix and broad range of land uses that is typical in a vibrant urban context. As part of this urbanization, automobile-oriented uses should not be allowed to locate along the Corridor and are directed to the periphery of the Corridor area where creating a pedestrian-oriented environment is less of a priority.



MIXED LAND USE

7.2.2 Built Form Framework

The Built Form Framework establishes principles to guide the quality and character of the built environment of the Corridor, as shaped by the massing, scale and architectural treatment of its buildings. The following detailed description of each component or characteristic of the Corridor's preferred built form is intended to inform the Planning and Urban Design policies of Section 7.3.

The proposed urban structure along Hurontario/Main Street is comprised of a system of Transit-Oriented Development Nodes and Connecting Corridors. These are the priority areas where growth and intensification will be directed to support higher-order transit and create a 'sense of place'.

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7.2.2.1 Transit station areas

Transit stations provide the highest level of potential to build sustainable, higher density, vibrant communities. They offer high accessibility and provide the most potential for residents to shop, work and play without the need to drive. Areas located within walking distance of a transit station should be built as transit-oriented development (TOD) nodes. TOD nodes emphasize transit and active modes of transportation such as walking and cycling as the primary mode of transportation. It is in transit station areas that people will most likely be able to live without owning a vehicle. TOD nodes should stand out in a distinctive manner and possess features which contribute to a 'sense of place' such as: a pedestrian-oriented streetscape, unique street lighting, coordinated and distinctive sidewalk and pavement treatment.

In line with the recommendations of the Metrolinx Plan, there are three kinds of station areas along the Corridor which will affect the size and scale of the TOD around them. Downtown Brampton and Mississauga City Centre are Anchor hubs, where BRT lines and local transit services intersect with the Hurontario/Main Street transit line. Anchor hubs can support a larger number of transit riders than a station served by just one line. Gateway hubs are located at Port Credit, Cooksville and Steeles, which are the proposed locations for future higher order east-west transit lines. Finally, there are intermediate stations that serve a more local area.



LYNX Blue Line in Charlotte, NC



7.2.2.2 Connecting corridors

As a whole, Hurontario/Main Street is considered the primary Corridor of this study. However, the Hurontario/Main Street Corridor can be broken up into smaller, north-south corridors that connect each individual node. The key function of these smaller, connecting corridors is to link the Nodes with adjacent local streets and the public higher-order transit system.

Additionally, there are east-west connecting corridors, which include primarily major arterial and collector roads that intersect with the Hurontario/Main Street Corridor. The key function of the east-west connecting corridors is to link Hurontario/Main Street and its higher-order transit system with other intersecting transit routes and destinations.

All connecting corridors should have a comfortable, interesting and safe pedestrian environment along the street and be characterized by a harmonious built form. Development along the north-south and east-west connecting corridors should be human-scaled and address the appearance, comfort and safety of the street. Opportunities to link transit routes on east-west connecting Corridors and the higher-order transit system of the north-south connecting corridors – and to enhance the quality and appeal of the corresponding pedestrian environment – should be pursued.

7.2.2.3 Critical mass

Critical mass relates to the concentration of people and activities in an area. Properly designed, dense environments are generally the most vibrant, exciting and diverse urban areas. It is in these higher density environments that the exchange of goods and services, as well as opportunities that propel the economy and encourage sustainable forms of living, are notable.

Density generally refers to the intensity of land uses. Higher densities mean a greater number of residential units, more gross floor area or more jobs within a given area of land. Throughout this Strategy, density will be measured using Floor Space Index (FSI). FSI is defined as the total building area divided by the site area.

Generally, the Hurontario/Main Street Corridor is an ideal location for intensification and growth within Brampton and Mississauga. Significant portions of its length have the potential to evolve into a higher density urban corridor, which will contain the critical mass of activities and people necessary to create a pedestrian-friendly place where people can live, work and shop.

safe pedestrian environment



16th Street Mall, Denver, CO



High-density street related-development, Etobicoke

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The highest densities will be located within key nodes along the Corridor, in close proximity to the transit stations, which will allow the greatest number of people to conveniently walk between their homes, shopping, work and other destinations. Locating high density development near the transit stations, linked by pedestrian-friendly connections, increases the likelihood that people will use the transit system, which in turn improves the efficiency of the system, allowing transit vehicles to run more frequently and at a lower cost-per-rider. Concentrating more density near the stations is therefore a key tool in ensuring the success of a higher-order transit system. Accordingly, specific densities will be provided in the policies for the individual Character Areas to recognize the varying contexts along the Corridor.

This Strategy sets out maximum densities which are capable of being increased by bonusing in some areas. While a specific minimum density will not be required throughout the Corridor, building form and urban design policies will effectively require the building of a certain level of development in the key, street-side locations. A minimum density requirement will be achieved through the requirement for a minimum building height of 3 storeys in combination with the requirement to build a continuous street wall at the street edge (ranging from 70% to 95%) for many areas along the Corridor.



High-density street related-development, National Harbor, Maryland

7.2.2.4 Bonusing framework

Height and density bonusing can be used as a mechanism to achieve public benefits by granting additional density and additional height to development proposals in select areas. Specific policies for bonusing can be found under Section 7.3.11 of this Plan. Height and density bonusing is a power granted to municipal councils under Section 37 of the *Planning Act*. Section 37(1) states:

37.(1) The council of a local municipality may, in a by-law passed under section 34, authorize increases in the height and density of development otherwise permitted by the by-law that will be permitted in return for the provision of such facilities, services or matters as are set out in the by-law.

Under the *Planning*, a bonusing program can only be implemented where the municipal Official Plan contains policies to authorize and guide the program. Both Brampton and Mississauga have enabling policies in their Official Plans that allow density bonusing to occur.

Properly implemented, a Bonusing Framework should contribute to achieving the goal of attaining a critical mass of people near transit stations and services and more efficient use of land and infrastructure.



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Connectors

A bonus may be approved, by each City:

- where the urban design of a site may accommodate additional density and height with no undue impact on adjacent properties. Bonuses should only be approved if an application obtains site plan and urban design review approval;
- where the additional density and/or height is respectful of the existing character of adjacent stable neighbourhoods; and
- only if the benefits and bonused density and/or height meet the objectives of this Strategy and the objectives and policies of other applicable Plans and municipal regulations.

The following criteria will be used to evaluate eligible benefits:

- Bonuses will not be provided for that which is already required in this Strategy. For instance, gateway treatments, design excellence and bicycle facilities are examples of elements which are already required by this Strategy and will not be considered as contributions towards attaining additional density or height;
- Benefits must be enduring. Buildings have long life spans and, correspondingly, the resulting contribution must have a long-term effect. The benefits of programming a performance space, for example, may expire in the short term;
- Benefits must remain in public control or ownership as part of ensuring the longevity of public benefits;
- Benefits should preferably remain on site or in close proximity to the site and the community which will interact with the new building;

- Benefits should have community support. It is the broader community who should benefit from the amenity and who will need to live with the outcomes of a bonusing negotiation. Bonusing must respond to a real community need and will be subject to approval of Council; and
- Benefits should fit with the priorities and interests of the City.

Bonusing, as a mechanism that provides value to both the municipality and the developer, needs to be continually refined as market conditions change, to ensure that the benefit extracted equates with the value generated through additional density.

A case-by-case approach to density and height bonusing should be adopted and implemented. A case-by-case approach requires a site-specific review of each development requesting bonus development rights beyond the permitted baseline levels. Based on an established list of acceptable public benefits, the municipality and the developer would negotiate the value of the requested bonus development rights and the value of the contributions being requested in exchange for those rights. This negotiation necessarily requires knowledge of urban land economics and pro-forma analysis.

It is recommended that each City create a list of public benefits, projects and initiatives, which are eligible to be exchanged for bonuses as a step in adding transparency and predictability to the system. The list should be adopted by Council, separately from the Official Plan, and updated as needed. The list is important to ensure that the benefits of a bonusing system are not diluted by amenity contributions that produce little public benefit. The list of public benefits which are eligible for bonusing can be short or long:

- a smaller list of bonusable public benefits will allow each City to aggressively pursue a few specific public policy goals; or
- a larger range of acceptable contributed public benefits provides greater flexibility to developers who may face site-specific constraints.





City building, Mississauga

The list of bonusable public benefits should evolve overtime as priorities change. Initially, a broader approach may be adopted, providing developers with a greater opportunity to participate in the bonusing program. This list may be updated on an ongoing basis, as community objectives change. For example, a daycare may be listed as a bonusable public benefit. However, once one is built, it would no longer be needed in the immediate surrounding area and the list may be edited accordingly. For this reason, the list of bonusable public benefits should be managed separately from the Official Plan Bonusing Framework and edited on an ongoing basis.

It is also recommended that each City consider phasing in the bonusing framework rather than implementing it across the entire Corridor. Offering incentives to the whole Corridor may encourage the development of isolated development proposals in non-priority areas. The incentives therefore should be focussed to key development areas that will provide the necessary critical mass to support the transportation system. Bonusing is recommended for only the Urban Growth Centres and Anchor hubs as outlined in the specific character area policies.

7.2.2.5 Density transfers

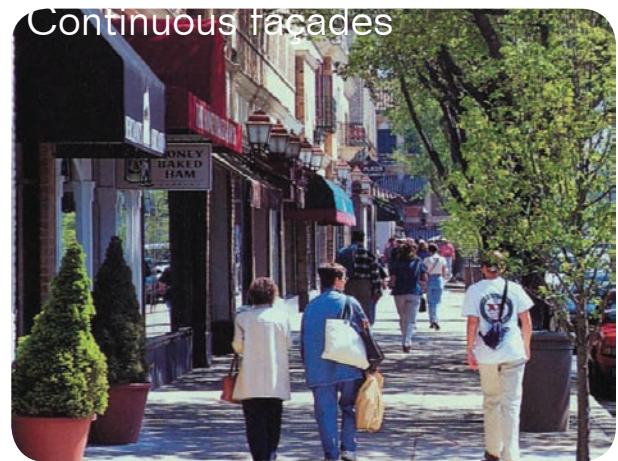
The transfer of density from one site to another should be discouraged, as it will result in developers receiving additional density without any site specific negotiation and analysis of the correlation between the proposed site plan and the public benefit. Exceptions may be allowed for important community building initiatives such as heritage preservation or the creation of public open spaces.

7.2.2.6 Continuous building façades

A continuous, largely unbroken building façade is vital to establishing and maintaining a pedestrian-oriented streetscape. Pedestrians generally feel safer in an enclosed, well-lit area, where there are “eyes on the street” from the windows of stores and apartments and offices above. Façades that are broken up by too many alleyways, driveways, parking lots and other surface features reduce the visual interest of the street, taking away the vibrancy and viability of the street. They also create opportunities for hiding spots or places that are out of view, contributing to the perception of an unsafe streetscape (CPTED). Furthermore, a continuous building façade provides opportunities to improve the vibrancy of the streetscape, offering the potential for “window shopping,” up-close architecture and animation. Continuous frontages are therefore discussed further in the framework and policies of this Strategy. In general, continuous building façades will be promoted throughout the Corridor.

7.2.2.7 Relationship of building to street

The distribution of the buildings on the site should result in a good relationship to the street. For the majority of the sites along the Hurontario/Main Street Corridor this will mean bringing the building mass to the street edge, however, in some site-specific cases, such as the Brampton



Lincoln Museum

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Heritage Character Area, it could be more appropriate to have the building set back in order to fit in with the character of the neighbourhood and the intent of the policies. In either case, all buildings should relate to the pedestrian realm and ensure the pedestrian environment is maintained and promoted.

The term “pedestrian-scaled” refers to the development of buildings that are in proportion to the width of the street and sidewalks and that do not overwhelm pedestrians with either disproportionate buildings or wide open space.

Pedestrian-oriented development refers to the creation of streets, spaces and buildings that are oriented towards attracting and facilitating pedestrian movement and activity, rather than principally automotive activity. The provision of amenities such as street furniture, high design standards, pedestrian-scaled streets and buildings, traffic calming measures, bicycle parking, shade, vegetation and wind breaks, helps to create pedestrian-oriented streets and spaces. Furthermore, the location of buildings can not only encourage pedestrian activity, but can also frame public spaces for informal gathering. Such public spaces also make attractive transit facilities, where the transit customer can wait in a safe, comfortable setting.

It should be noted that density alone does not create great pedestrian-oriented streets. It is important to design the entire street in a way that encourages its use by pedestrians.



Pedestrian scaled street, Pasadena CA

7.2.3 Public Realm Framework

The public realm is comprised by a wide range of public spaces and amenities, including streets, sidewalks, public amenities, open space, parks, plazas and public spaces – and functions as a network, where individual parts are connected and interdependent. Decisions affecting the Corridor – whether relating to public works, streetscape improvements and even private development and built form – will most likely have an influence on the quality, character and connectivity of the Public Realm Framework.

7.2.3.1 Pedestrian-scale streetscapes

Streets are a primary component of the public realm and supplement the Open Space Framework by providing connectivity, as well as pedestrian and green amenity. High-quality streetscapes strengthen communities by reinforcing and enhancing visual and physical connections. The design of streetscapes should enhance the Hurontario/Main Street Corridor experience and nurture a culture of active transportation, such as walking and cycling, while maintaining options for other modes of transportation, including vehicles and public transit. While all streetscapes are important elements of the public realm, the highest level of streetscape quality should be visible along Hurontario/Main Street.

It is particularly important to have high-quality streetscapes and appropriate urban design standards for cities that are located in cold and snow climate regions in order to ensure that they are well used throughout the year. Consequently, this Strategy has considered the pedestrian experience by addressing winter conditions. Bringing buildings to the street edge, locating outdoor amenities such as open spaces and street furniture in areas that are protected from the wind, providing shelters and making snow clearance a priority are all elements that minimize the discomfort of the cold and allow the streets to be animated in the winter months.

Pedestrian-scale

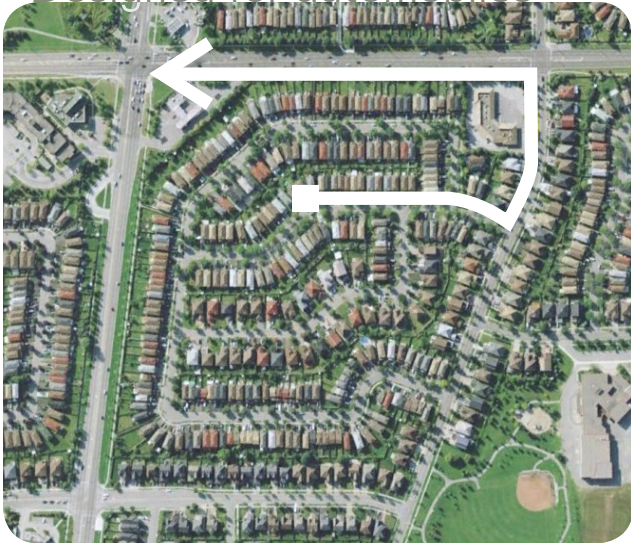


Glendale CA

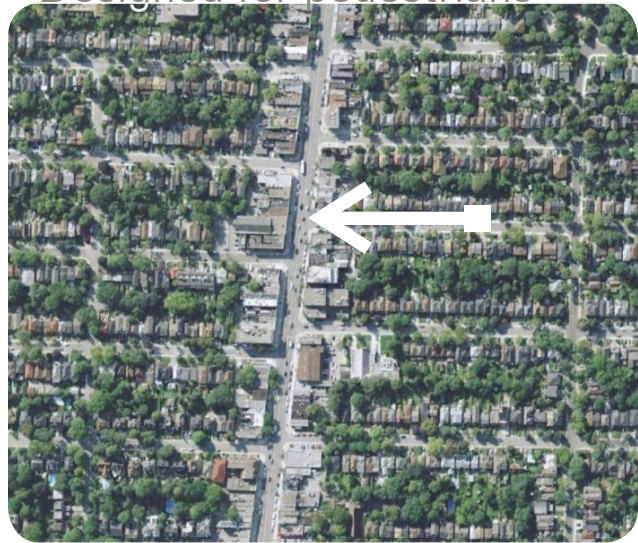


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Designed for automobiles



Designed for pedestrians



7.2.3.2 Street configuration

The street network around Hurontario/Main Street is largely based on a “trunk and branch” model where local “branch” streets feed into an arterial “trunk”, in this case, Hurontario/Main Street. This is quite distinct from an interconnected grid of streets, found in areas developed before modern transportation planning. An interconnected network of streets distributes traffic among all streets, rather than concentrating it on the arterial streets. Such a system improves the mobility for all users: pedestrians, cyclists, public transit and motorists, by providing multiple routes.

Improved connectivity between streets, pathways, amenities, buildings and transit stops/stations is essential to improve the vibrancy of the streetscapes by reducing walking distances and times and opening up opportunities for exploration. Having more pedestrian connections effectively increases the size of the area from which people will walk to the transit stations. Pedestrian connectivity is discussed throughout this

Strategy in terms of maximizing street connectivity with inter-connected open space and trail networks.

Streets should provide the public with maximum options for movement throughout the Hurontario/Main Street Corridor. Streets, wherever possible, should be structured on a grid pattern and link and lead to destinations (e.g., other streets, transit stations, parks, community facilities and trails). However, streets should not be strictly viewed as movement systems, but as vital contributors to the quality of the public realm. A regular, street grid system enhances accessibility, order and convenience. It also provides more opportunities for new development and the introduction of high-quality design.

This Strategy encourages the creation of complete streets that are designed to safely and conveniently balance the needs of all users, while fostering a sense of place in the public realm and contributing to the overall vitality and animation.

7.2.3.3 Interconnected open spaces

Open spaces include a broad range of parks, public squares and plazas, trails and private open spaces. An interconnected network of open spaces facilitates and encourages cycling and pedestrian activity. This in turn generates vitality and can provide exposure to a natural experience within an urban area. Such a network creates comfortable, inviting, diverse and economically successful environments.

An interconnected system of open spaces also contributes to physical continuity, accessibility and the freedom of pedestrian and cyclist movement. Properly designed open spaces invite residents and visitors to actively occupy a vibrant, safe environment at all times of the day.

The design of all development proposals and public works should incorporate parks, squares and plazas, as well as trails and other open spaces to contribute to an overall network. New development should provide new connections or enhance open space connections. Streetscape design, including lighting, should provide visual and physical connections to open spaces.

7.2.3.4 Conserving sensitive habitats and tree canopy

The Hurontario/Main Street Corridor contains sensitive habitats including two major creeks, Cooksville and Etobicoke and their associated riparian zones, as well as other open spaces and their associated flora and fauna. These habitats should be conserved. As the Hurontario/Main Street Corridor intensifies, access to the outdoors becomes more important, and these habitats will increasingly require protection and enhancement.



Mid-block connection, Toronto



Tree Lined Street in Charlotte, NC

Interconnected

Tree lined street

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Tree canopy preservation and improvement is equally as important as conserving ecological habitats. Trees provide habitat to urban wildlife. They also add aesthetic value and improve the quality of life, while offering protection from the natural elements during all seasons. Trees should be provided along key pedestrian routes and streetscape design should provide enough room for maximum soil area for roots to spread and water and air to penetrate. Trees that are well adapted to harsh urban conditions should be used. Native species are preferred.

Street design should also take into consideration the configuration of buildings and other streetscape elements so as to not interfere with the vitality of trees and provide sufficient room for continuous tree canopies to grow and develop without conflict. In high traffic areas, tree guards should be used to protect trunks from damage.



Preserved tree canopies

Safety through design elements



Shops at Don Mills



7.2.3.5 Safety

It is critical to ensure that people feel safe and comfortable in the public realm. Accordingly, the principles of Crime Prevention Through Environmental Design (CPTED) should be applied to all public open spaces.

CPTED is a pro-active crime prevention strategy utilized by planners, architects, police services, security professionals and everyday users of space. CPTED advocates the proper design and effective use of the built environment to lead to a reduction in the incidence and fear of crime and to an overall improvement of quality of life.

CPTED principles encourage:

- **active building frontages facing public spaces**, including entries and windows to ensure people’s “eyes” are on the space, enhancing the sense of safety and discouraging inappropriate behaviour;
- **facilitating active uses within public spaces** such as sidewalk patios, outdoor display, buskers, festivals and the like;
- **designing the public realm to enable ease of access and egress** and avoid the creation of entrapment spots that are not highly visible or well used;
- **including a variety of activities and a mix of surrounding uses** to facilitate constant public use and/or surveillance of the space in all hours and seasons;
- **ensuring clear views of surrounding areas** and of streets and open spaces;
- **incorporating adequate lighting** to ensure all areas of circulation, entrance and connection are lit; and
- **making use of legible signs** and orienting devices such as landmarks and pathways.

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Tactile Street Material



Accessibility

7.2.3.6 Accessibility

All residents, employees and visitors should have barrier-free accessibility. Careful attention must be directed to ensure smooth grading of surfaces, clear routes and obvious wayfinding cues. Ground surfaces should be paved, stable, firm and slip-resistant. Access and navigation can also be enhanced by ensuring that circulation routes and building entrances are barrier-free and utilize contrasting materials, textures and/or colours for visual guidance.

While street furniture is an important component of streetscapes and contributes to the quality of the public realm, if not properly located, it can hinder accessibility. Street trees, benches, poles, utilities and other streetscape elements should be located outside of main circulation routes.

Key components of good accessibility are sidewalks, walkways, crosswalks and open spaces. These should be linked in a continuous network and provide connections to buildings and parking and be wheelchair accessible.

PEDESTRIAN CROSSING



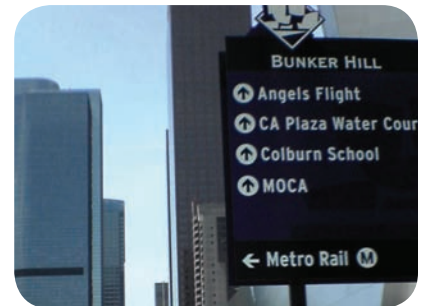
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7.2.3.7 Wayfinding

Wayfinding is the creation of a sense of orientation for people so they know where they are and can move about easily and confidently. Wayfinding elements include the street network itself, signs, graphic communications, spatial markers, streetscape elements, building design, and space planning. All elements should work together to ensure that routes are easily understood and navigated and destinations are clear.

Of particular assistance to visitors are graphic communications, including street signs, directional signage and maps. All graphic communications should be easily legible for pedestrians, cyclists and transit users.

Los Angeles
Downtown
Pedestrian
Wayfinding Signs



City of Vancouver
Wayfinding Kiosk



7.2.3.8 A system of trails

For the purposes of this study, trails are differentiated from pathways and sidewalks by their typical presence in more ecologically sensitive or natural settings. The majority of trails within the Hurontario/Main Street Corridor run alongside the two waterways: Cooksville Creek and Etobicoke Creek. Trails are an important component of the public realm structure because they are highly visible and cater to a variety of users.

Trails serve as important linkages to transit stations, open spaces, neighbourhoods, services and other key destinations. Trails also offer a structure for the establishment of a larger system of connections to sidewalks and streets throughout the Hurontario/Main Street Corridor.

New development adjacent to existing or proposed trails should enhance visual and physical connectivity to the trails through ample pedestrian and cycling connections. It is vital for new development adjacent to trails to complement the trail system and improve its function as an alternative mode of transportation.



Waterfront Trail, Port Credit





Shared Bike and Pedestrian Trail, Manchester, UK

7.2.3.9 Integrated cycling infrastructure

The provision of cycling infrastructure should be mandatory at any site that is likely to attract or generate bicycle trips (e.g., major transit stations, office buildings, community facilities, shopping, employment uses, schools and parks).

Cycling infrastructure includes on-street bicycle lanes, independent bicycle paths, bicycle racks, bicycle lockers and bicycle parking stations. All new development should integrate cycling infrastructure while balancing high-quality urban design standards and cyclist needs. All streets should be considered 'cycling streets' and should be cleared of snow and ice during winter months to ensure safety and usability.



Urban Cyclists, San Francisco, CA

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7.3 Planning & Urban Design Policies



Mixed-use development,
Portland Oregon

The following policies are intended to be adopted as Official Plan policies by Brampton and Mississauga. They are written in a format that could easily be adopted as a Hurontario/Main Corridor Secondary Plan or alternatively, elements of these policies could be incorporated into existing secondary plans in each community. These policies should be read in conjunction with the Planning and Urban Design Framework in order to gain a thorough understanding of the intention of these policies.

7.3.1 Permitted uses

A complete community is one that meets the needs of people for daily living through an entire lifetime by facilitating convenient access to a mix of jobs, services, housing and community infrastructure such as affordable housing, schools, recreation and open space. Complete communities prioritize walking as a preferred mode of transport. In general, the Hurontario/Main Street Corridor will have a broad mix of uses that provide a wide variety of residential, commercial, institutional, employment, recreational and civic opportunities. Non-residential uses will be concentrated closer to Hurontario/Main Street or along major cross streets. Automobile-oriented uses that do not create a pedestrian-friendly environment such as gas stations, car washes, warehousing and storage and commercial uses with drive-through facilities are not permitted on the Hurontario/Main Street frontage or along major cross street frontages in the vicinity of Hurontario/Main Street.

Lands within the Mississauga Employment Area are subject to the regulations of the Federal Government's Lester B. Pearson Airport Operating Area which prohibits new residential uses and other sensitive land uses. Therefore, employment uses will dominate this Character Area with commercial, institutional, recreational and civic uses being concentrated immediately adjacent to Hurontario/Main Street, as well as along major cross streets.

Recommended Policies and Guidelines:

- i. Permitted uses shall include the full range of employment, commercial, institutional, cultural, health and medical and entertainment uses, medium and high density residential uses and related public uses and infrastructure.
- ii. Some areas in the Corridor, particularly within the Brampton Main Street South Heritage District and Mineola Character Areas, will retain their low density character in accordance with existing Official Plan policies. In these areas nothing in this Plan will preclude the development of additional low density residential uses as long as they meet the intent of the Strategy.
- iii. Permitted uses shall be primarily located in medium and high density residential, office and institutional buildings. Both mixed use and single use buildings shall be permitted, including single use retail and service commercial buildings.
- iv. A wide range of housing types and tenures including affordable housing should be provided within each Character Area (except within the Mississauga Employment Area).
- v. Institutional uses shall be encouraged to locate on sites fronting onto Hurontario/Main Street or major cross streets.
- vi. Drive-through uses such as drive-through restaurants and drive-through financial institutions, shall not be permitted in the Corridor Area, either on single uses or in conjunction with otherwise permitted uses.
- vii. Automobile sales and service uses, which include gas bars and other similar vehicle service uses, shall not be permitted within 100 metres of Hurontario/Main Street.

RESIDENTIAL DENSITIES



Residential Densities

- **Low:** permits single detached dwellings, semi-detached dwellings, duplex and triplex dwellings, and street townhouses.
- **Medium:** permits a range of multiple dwellings such as all forms of townhouses, mid-rise apartments and other forms of horizontal multiple dwellings.
- **High:** permits apartments.

7.3.2 Permitted Uses at Grade Level

The use at street level along Hurontario/Main Street and major cross streets plays an important role in creating a pedestrian-friendly environment. For most sections of Hurontario/Main Street and on various connecting streets, the use at ground level facing the street must be as shown on the Character Area maps. There are five categories of use: Retail, Commercial or Institutional, Convertible, Employment Convertible and Special.

Areas designated Retail are expected to have a very high volume of pedestrian activity. Providing active retail uses facing the street will enhance the pedestrian experience and will create a strong Main Street environment. Uses in the remaining part of the building may be any other use allowed by these policies.

Areas designated Commercial or Institutional will have a relatively high volume of pedestrian activity as well; however, they may not have enough to support a large amount of retail activity. The intent is to create an attractive and safe pedestrian environment that allows a wide variety of uses. Uses in the remaining part of the building may be any other use allowed by these policies.

Convertible areas will have a relatively high volume of pedestrian activity at some point in the future, but may not have high enough volumes at the time of construction to justify mandating commercial uses.



Recommended Policies and Guidelines:

- i. Permitted uses at grade on street frontages will be in accordance with the Character Area maps and policies defined in Section 8.
- ii. In areas designated Retail, the use at ground level facing the street must be a retail commercial use, with the main doors and windows facing the street.
- iii. In areas designated Commercial or Institutional, the use at ground level facing the street must be commercial uses, which can include retail, office or service commercial uses, or institutional uses, such as schools or places of worship. The main doors and windows must face the street.
- iv. In areas designated Convertible, the use at ground level facing the street can be any use allowed by these policies; however, the structure must be built in such a way that it can accommodate street-related commercial uses at some point in the future. This means the main doors and windows must face the street and the first floor height must be typical of a commercial unit (4.0 metre minimum).
- v. In areas designated Convertible Employment, the use at ground level facing the street can be any employment use allowed by these policies; however, the structure must be built in such a way that the building can accommodate street-related accessory commercial uses at some point in the future. This means that the main doors and windows must face the street and the first floor height must be typical of an accessory commercial unit (4.0 metres minimum).
- vi. Areas designated Special Policy Area have certain historic characteristics that must be maintained. It is intended that these areas create a safe and attractive pedestrian environment by having buildings that face the street. This will be achieved by maintaining the existing character of the buildings and landscaping along the street edge.

7.3.3 Density and Heights

Based on a detailed analysis of the Hurontario/Main Street Corridor, a maximum density of 4.0X FSI and a maximum building height of 78.0m (25 storeys or 19 commercial storeys), not including possible bonusing, has been considered generally appropriate for much of the Corridor. With a higher-order transit system, these densities and heights will not only be acceptable from a planning and urban design perspective, but are also required to support the transit system as people move away from their dependency on the automobiles towards alternative modes of transportation. In some locations, lower density levels and lower maximum heights are proposed, particular at greater distances from the immediate station areas. [Figures 7.3.1](#), [7.3.2](#) and [7.3.3](#) set out three potential massing scenarios for this scale of density. This helps create variety and character within the neighbourhood, with the highest heights and densities closest to the most urban sections of the Corridor and lower density, mid-rise buildings buffering surrounding stable areas. These lower density areas help create distinct neighbourhood character, buffer existing stable residential or employment areas and result in a wider range of housing forms or employment built forms.

HEIGHTS



4.0X FSI



4.0X FSI

4.0X FSI means a building can have Gross Floor Area (GFA) equal to four times the lot area. This density level creates a very urban built form that is consistent with the desire of the Cities' to create new urban centres. This density also helps the Cities meet the Province's density targets.

DENSITY AND HEIGHTS

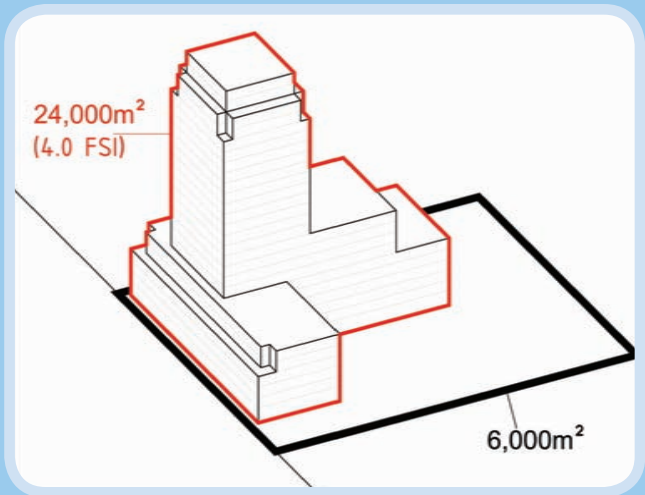


Figure 7.3.1
4.0X FSI and 25 Storeys

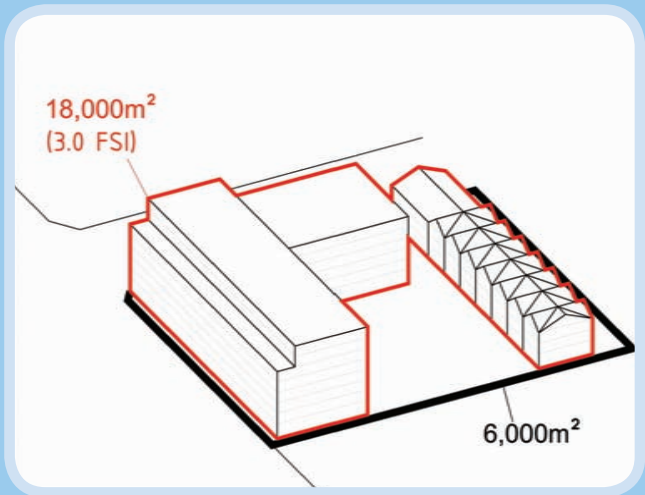


Figure 7.3.2
3.0X FSI and 8 storeys

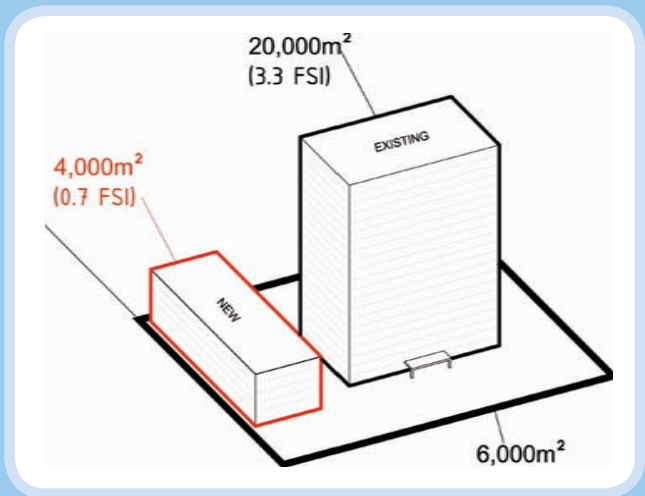


Figure 7.3.3
4.0X FSI allowing new podium building
in front of existing building

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Minimum density standards are not specified by this Planning and Urban Design Strategy. However, minimum densities are effectively established by the combination of continuous frontage and minimum storey policies. Unless otherwise specified, in all areas of the Corridor, the minimum building height will be 3 useable storeys. This ensures that land is used efficiently within the Corridor and lower density uses are not allowed.

In addition, along many of the main pedestrian-scaled streets, an additional height restriction for podiums is used to help create a more suitable human scaled streetscape. The maximum podium heights vary by area and street, but generally range from 12m (3 storeys) to 21m (6 storeys).

Recommended Policies and Guidelines:

- i. Maximum development densities and heights shall be in accordance with the Character Area maps and policies.
- ii. Minimum development densities will be established by a combination of minimum building storeys and minimum continuous street frontage.
- iii. The minimum height of all new buildings shall be 3 storeys, unless otherwise specified on the Character Area sections.
- iv. The minimum ground floor height shall be 4m for all buildings that are required to have a retail, commercial or institutional, or convertible use at grade.
- v. All parking structures that front onto a public street must have a minimum ground floor height of 4m to allow for future conversion to a retail or commercial use.

	Min. (m)
Height of ground floor	4.00
Height of residential storey	3.00
Height of commercial storey	4.00

Maximum height (m)	Typical residential storeys	Typical commercial storeys
12.00	3	3
15.00	4	3
18.00	5	4
21.00	6	5
24.00	7	6
27.00	8	6
30.00	9	7
33.00	10	8
36.00	11	9
39.00	12	9
42.00	13	10
45.00	14	11
48.00	15	12
51.00	16	12
54.00	17	13
57.00	18	14
60.00	19	15
63.00	20	15
66.00	21	16
69.00	22	17
72.00	23	18
75.00	24	18
78.00	25	19

Figure 7.3.4
Phase 1 podium building with addition development on back of lot added later

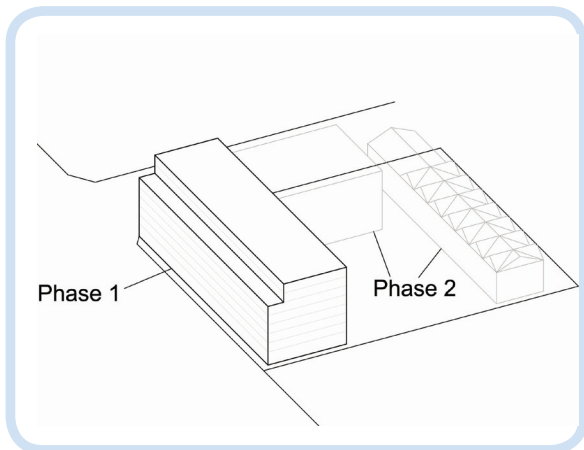
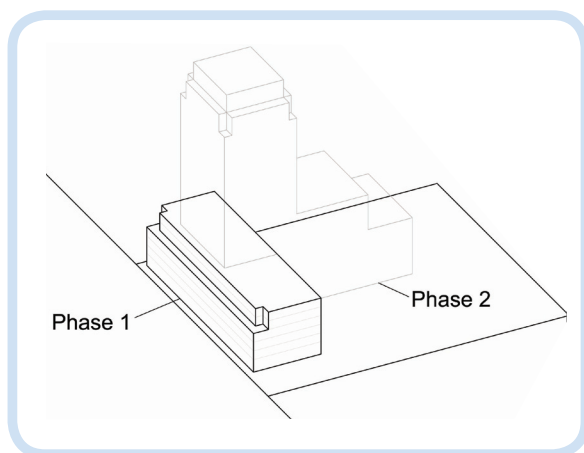


Figure 7.3.5
Phase 1 podium building with tower added later



7.3.4 Development in Phases

Where lands are proposed to be developed in multiple phases, the applicant shall be required to submit a master Site Plan to demonstrate how the ultimate density and overall objectives for the site can be achieved, before approval of any rezoning application or site plan application is given. The intent of this policy is to demonstrate how the lands can ultimately achieve the maximum density and built form requirements. The Site Plan should show blocks and streets, building envelopes, vehicular and pedestrian access routes, parking locations, open spaces and landscaping features and how the development meets the built form requirements of this Strategy. The master site plan should also clearly state which elements of the plan are interim elements, such as surface parking, that are intended to be replaced by the ultimate plan. Development on the Hurontario/Main Street frontage should be the first phase of development in order to create a safe, pedestrian-friendly environment as soon as possible. Figures 7.3.4, and 7.3.5 illustrate 2 examples of phased developments.

Recommended Policies and Guidelines:

- i. For phased development, a master Site Plan showing future development phases shall be submitted with all new development proposals.
- ii. The master Site Plan shall show the proposed phase 1 buildings and potential building envelopes for future phases, along with interim elements not intended to be permanent.
- iii. The master Site Plan shall show the proposed phase 1 and future phase pedestrian and vehicular network, indicating how this network creates a safe pedestrian-friendly streetscape along Hurontario/Main Street and other major cross streets.
- iv. All requirements of this Strategy must be taken into consideration for both the initial phase of development and for all subsequent phases of development.

7.3.5 Minimum Continuous Building Frontage Requirements

A continuous frontage and building façade is required to encourage a pedestrian-scaled street.

The minimum continuous building frontage requirement is measured as a percentage of the available frontage. Available frontage is defined as the total frontage less any required side yard setbacks and areas where buildings are not allowed due to building code, environmental or heritage conservation reasons or the location of utilities. Additionally, if no other site access opportunities exist, up to 8 metres of the frontage can be used for driveway and site access. In such cases incorporating vehicular access into the form of the building may be required. See [Figures 7.3.6, 7.3.7 and 7.3.8](#) for examples.

Exceptions to the continuous building frontage requirement for various design considerations, such as providing public plazas or improving pedestrian connections, may be granted on a case-by-case basis.

Recommended Policies and Guidelines:

- i. Where identified on the Character Area maps, a continuous building frontage shall be required, which means the building must occupy, at grade, at least 95% of the entire available frontage facing the street.
- ii. Where identified on the Character Area maps, an intermittent building frontage shall be required, which means the building must occupy, at grade, at least 70% of the entire available frontage facing the street.
- iii. For the remaining streets, no continuous minimum building frontage is required; however a building frontage of at least 70% of the available frontage is encouraged for all locations.
- iv. In no case shall new surface parking be located closer to the street than the front wall of a building.

7.3.6 Maximum Setback Lines

The provision of maximum building setbacks is vital to establishing a consistent street wall. The street wall is the effect created along the street by the collection of buildings along the street. Maximum setbacks range from 0.0m (building must be built at the streetline) to 5.0m (building must be built within 5.0m of the streetline). Where streetlines jog across the frontage of either one property or neighbouring properties exceptions may be allowed to create a visually consistent street wall.

Recommended Policies and Guidelines:

- i. Maximum building setbacks shall be in accordance with the Character Area maps and policies.
- ii. Where variation in the setback is allowed or required, consideration should be given to the relationship between the proposed building and its neighbours on either side.



FRONTAGE

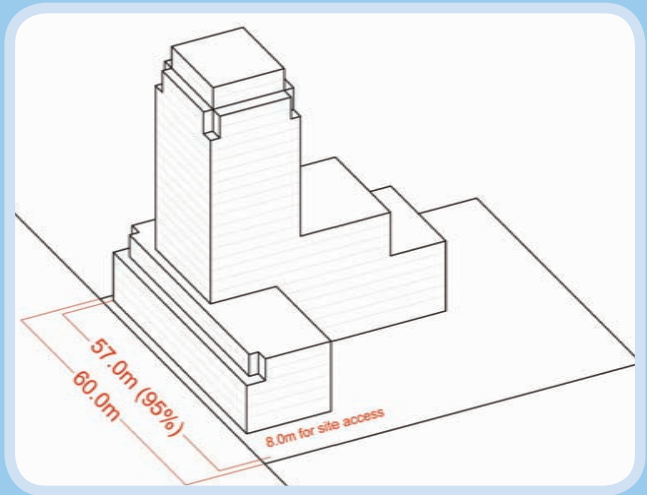


Figure 7.3.6
Continuous Frontage (95%)
with an allowance for access

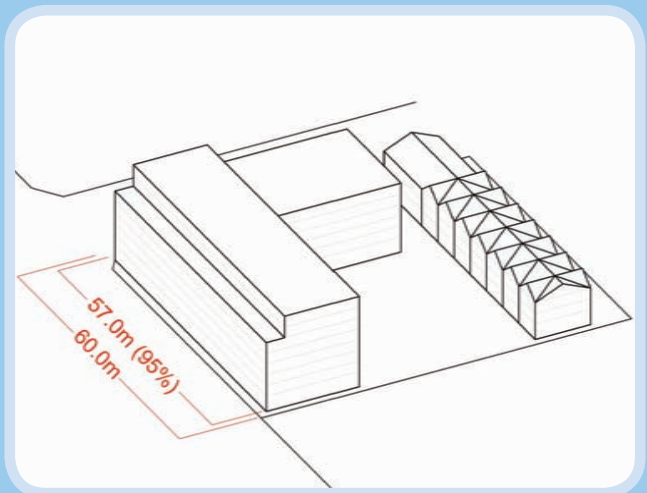


Figure 7.3.7
Continuous Frontage (95%)
with access from side street

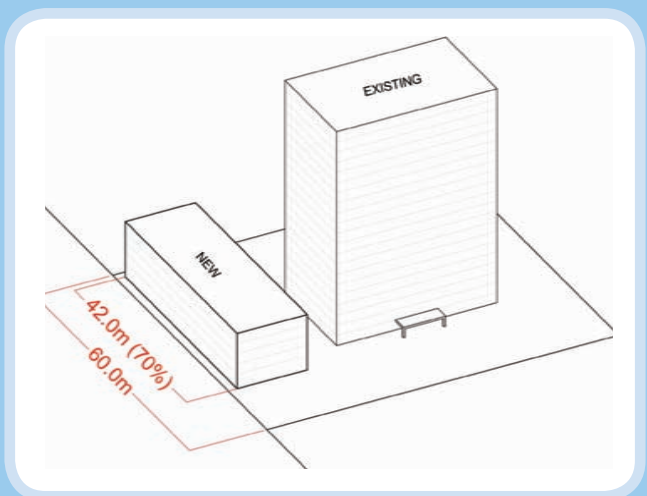


Figure 7.3.8
Intermittent Frontage (70%)
on lot with new podium building
in front of existing building

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7.3.7 Parking

Parking is a critical issue for the success of the Corridor. An adequate amount of parking must be provided at all stages of growth to allow developments to compete successfully in the market. However, it is also critical that parking takes up as little prime space as possible as the land within an urbanized environment with access to higher-order transit will become increasingly more valuable.

Parking should be built underground, wherever possible. This provides a great volume of parking close to the Corridor, particularly for residents and office workers. It also frees up valuable land for development and allows buildings to be sited in a pedestrian-friendly fashion.

Above-ground parking structures may also provide large volumes of parking. The size and location of such facilities should be sensitive to pedestrians and bicycles alike. Parking structures should not be built directly adjacent to the Corridor unless they face the structure with a building that animates the major street frontages in order to maintain a more attractive, pedestrian-scaled building façade.

On-street parking is a pedestrian-friendly way to provide convenient access to street front commercial uses and should also be considered as it supports animation, vibrancy and pedestrian-orientation of the



On-Street Parking, Mizner Park, Florida

street. On-street parking, both along Hurontario/Main Street and on side streets, can provide some parking space particularly for short-term visitors and shoppers.

In some cases, surface parking lots may be located behind buildings. However, these parking lots will be seen as temporary until full development of the property occurs. In areas where an intermittent frontage of 70% is allowed, surface parking lots along the side of the building may be acceptable if they are setback from the street frontage, proper landscaping is provided to maintain a comfortable and safe pedestrian realm, and walkways are included to promote through pedestrian traffic.

It is recognized that as the population and employment within

the Corridor grows, the value of land will increase and the development of underground and structured parking will become increasingly feasible. A recommended solution is to “phase” parking standards overtime, by permitting a competitive amount of surface parking in the early years of the development of the Corridor and then reducing the overall parking requirements and setting maximums for surface parking

over time as transit service increases and becomes a better alternative to vehicular access. In addition to parking standards, it is recommended that more emphasis be placed on managing parking infrastructure through transportation demand management policies and techniques. Parking related TDM policies and techniques can be used to encourage transit use, car/van pooling, walking and cycling and will encourage reduced single-occupancy vehicle use over time. By proactively managing the parking system, public investment in new transit facilities will be maximized.

Shared parking lots and facilities may also be a viable option to reduce the amount of space required for new developments along the Corridor, as uses that operate during different times of the day can share their facilities, therefore reducing their demand for spaces.



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In the short term, before higher order transit is operational, Brampton and Mississauga should engage developers in agreements requiring future infilling of their surface parking lots or the building of structured parking after higher order transit becomes operational.

Recommended Policies and Guidelines:

- i. On-street parking will be encouraged on Hurontario/Main Street and other streets in the Corridor where feasible. On-street parking stalls may be used to meet parking standards for commercial and other non-residential development, subject to City parking policies (i.e. payment-in-lieu of off street parking). For residential buildings on-street parking can accommodate visitors, but not tenants.
- ii. Live/work buildings are not required to provide additional parking for the “work” component.
- iii. Parking structures or underground parking are encouraged. Surface parking is discouraged but, if provided, will be located behind or beside buildings. There shall be no parking between a building and Hurontario/Main Street or at intersections.
- iv. Parking structures are discouraged from fronting onto Hurontario/Main Street and all major cross streets. However, if located on Hurontario/Main Street or a major cross street, parking structures must comply with the “Permitted uses at street frontage”, “Minimum floor height”, and “Continuous frontage” policies of the Planning and Urban Design Strategy.
- v. Shared parking facilities and shared vehicle access points are encouraged.
- vi. Civic-owned parking facilities are encouraged and may be used to meet parking standards for commercial and other non-residential development, subject to each City’s specific parking policies (i.e. payment-in-lieu of off street parking).
- vii. Reduced parking requirements will be phased in over time as the higher order transit system is implemented and the Corridor intensifies.
- viii. Should a development propose to exceed the parking standards, a planning and transportation rationale will be required to justify the increase.

7.3.8 Transit Supportive Designs

The physical configuration, land use, density and appearance of land development dictate the overall quality and function of a transportation system. Future development patterns along the Corridor shall create a balanced transportation system where pedestrians, cyclists, transit users and motorists all work together to develop a sustainable community, in keeping with the vision for the Corridor and for each character area.

Recommended Policies and Guidelines:

- i. New development will be designed to support, complement and integrate transportation infrastructure.



Transit supportive development, San Francisco CA

7.3.9 Pedestrian Orientation

Facilitating a network of lively, safe, enjoyable and convenient streets that link key destinations such as transit stations, homes, jobs, schools, shopping, parks, natural areas and other desirable destinations within the Hurontario/Main Street Corridor is an important aspect of the Planning and Urban Design Strategy. Pedestrian connections throughout the Hurontario/Main Street Corridor should be maintained and improved where needed. Well connected communities have many benefits, including fostering of healthier lifestyles, increased social interaction and decreased pollution through alternative modes of transportation such as walking and cycling.

Streets must be viewed as part of a larger network of a linked system. Each individual street within this network must be designed with the pedestrian in mind, shifting the balance away from an auto-dominated urban form.

Recommended Policies and Guidelines:

- i. New development will support a pedestrian-scaled network of connected local streets and sidewalks linking neighbourhoods, parks, transit stations, services and other desirable destinations.
- ii. New development will accommodate pedestrians on all streets along a network of connected sidewalks.
- iii. Wherever possible, streets will provide landscaped buffers, trees and appropriate pedestrian amenities for pedestrian safety and convenience.
- iv. Winter maintenance of pedestrian linkages will be undertaken to encourage active use of all streets throughout the winter months.
- v. Wherever possible, connections through blocks will be developed and direct walkway routes provided to parks, businesses, stations, schools, community facilities and other desirable destinations.
- vi. New development will promote and will not discourage pedestrian connections. Gated developments, cul-de-sacs and other approaches to development, which reduce connectivity, are not permitted.



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7.3.10 New connections

Urban rapid transit systems rely heavily on pedestrian access for their economic viability and ridership. As the area along the Corridor evolves from a more suburban car-oriented landscape to a true urban environment, it is vital that new pedestrian connections are established that allow people to get to transit stations and the retail areas as quickly and directly as possible. In most cases the new connections shown on the Character Area maps will be new public rights-of-way that serve as vehicular access points for the development along the Corridor. This helps to decrease the number of driveways directly accessing Hurontario/Main Street. In some locations, however, public streets are not possible or desirable. In these cases public walkways or publicly-accessible private pathways will be accepted. In all cases these walkways and pathways must be safe, attractive and accessible 24 hours a day.

Recommended Policies and Guidelines:

- i. New connections shall be in accordance with the Character Area maps and policies.
- ii. Sidewalks on both sides of the street shall be incorporated into the design of all streets, parking facilities and public spaces and shall be designed to connect building entrances.

7.3.11 Bonusing

Height and density bonusing, which may be granted to developers for providing public benefits such as public space and art, structured parking or transit facilities, is a valuable tool that can be used to improve the public amenities and transportation facilities within the Corridor. Since no two development proposals are the same, the benefit of providing additional height or density provisions will be reviewed on a case-by-case basis to consider whether the overall benefit exceeds the costs associated with permitting a taller or larger building.

Recommended Policies and Guidelines:

- i. Height and density bonusing in accordance with Section 37 of the *Planning Act*, may be used in accordance with the Character Area maps and policies to achieve identified public benefits.

7.3.12 Place-making

A priority for the Corridor is to become a vibrant and active pedestrian-friendly urban environment. Creating special, unique and memorable places along the Corridor is an essential part of creating this environment. All actions in the Hurontario/Main Street Corridor should contribute to place-making by building areas with a strong sense of identity and character that are attractive, safe and welcoming. High-quality and well integrated urban design creates places that engage people and offer a rich experience and a sense of belonging.

All new development should contribute to these place-making policies. Both private and public investment should strive to make a lasting and significant contribution. New development, deliberately directed, will be a catalyst for creating places that are unique, safe, walkable, vibrant and transit supportive. Growth and development should be directed to areas and sites where change is needed and where growth can be accommodated and supported by transit.

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**Small Public Park,
Helsinki**

PLACE-MAKING



Promoting, conserving and building upon a unique identity as well as encouraging public art and culture provides an opportunity to create a sense of place by conveying distinctiveness, developing community pride and enhancing public space by animation and diversity.

Recommended Policies and Guidelines:

- i. New development shall meaningfully contribute to the character and quality of the different Character Areas in order to foster community spirit and build civic pride and identity, and through aspects of the design, the integration of the public realm and through a participatory design process.
- ii. Growth should be directed to key nodes of mobility and activity, to support transit, facilitate 'place-making' and to revitalize the Corridor.
- iii. Growth should facilitate the creation of a sense of place through developing an identity, providing public art and cultural venues and spaces, such as parks, plazas and open spaces for community interactions.
- iv. Public art should animate civic spaces and reflect the culture and diversity of the local residents and community.
- v. New development shall contribute to the conservation of heritage resources, including landscapes, where they exist and conserve and enhance those elements (e.g. locations, events, buildings, landscapes) that have a special and unique meaning to the different communities living and working along the Hurontario/Main Street Corridor.

7.3.13 Visual Prominence

Sites that are visually prominent have a great impact on the image and character of the Hurontario/Main Street Corridor. Design of these sites should create memorable landmarks, orient pedestrians and strengthen civic pride. In particular, public realm and built form design should be coordinated at these locations. Sites that are visually prominent include:

- **Gateways:** locations where a significant number of people enter and exit the Hurontario/Main Street Corridor. Gateways occur at a variety of scales including gateways to Hurontario/Main Street, gateways to Character Areas, or gateways to specific open spaces.
 - **View corridors:** the long, straight streets within (and surrounding) the Hurontario/Main Street Corridor create the opportunity to maintain and enhance the views from the Corridor.
 - **View terminus:** a feature that terminates view corridors. Appropriate public realm view termini include parks or public art. Appropriate built form view termini are buildings that respond with a deliberate design, such as a tower or portico.
 - **Landmark buildings and frontages:** locations which are prominent because of their context, such as adjacency to a public open space or important street, or because of their content, such as heritage resources or public art. They also include structures that are prominent in the city's skyline.
- i. Gateways should be recognized through design features along the Hurontario/Main Street Corridor. They should have distinctive architecture and urban design, such as vertical elements at or near the intersection, unique lighting, signage and paving. They should have distinctive landscapes and/or public art, such as a unique or enhanced tree planting or freestanding sculptures. However, landscaping or art should not create a barrier to pedestrian movement, nor serve to separate active uses from pedestrian areas.
 - ii. Development should be designed to preserve views of natural amenities, parks and cultural facilities.
 - iii. Important view corridors should be protected through the creation of an enclosed built form throughout the view corridor. Buildings located within the view corridor and up to the view terminus should not obstruct the public view of the terminus.
 - iv. Landmark frontages should assist in wayfinding and contribute to a sense of place and reinforce the immediate context and Character Area in which they are located. Landmark frontages should be identified, protected and reinforced by existing and/or new/potential landmarks so as to enhance visual and physical connectivity.

Recommended Policies and Guidelines:

- i. Gateways should be recognized through design features along the Hurontario/Main Street Corridor. They should have distinctive architecture and urban design, such as vertical elements at or near the intersection, unique lighting, signage and paving. They should have distinctive landscapes and/



Rose Theatre, Brampton



7.3.14 Civic public spaces

Open spaces that are successful can have a tremendous influence on the image, appeal and economic development of an area. How these spaces are designed, programmed and interfaced with surrounding streets and land uses is crucial to their ability to attract and delight a variety of users and ensure that they are places where people feel safe and comfortable.

Parks typically serve a community's passive and active recreational interests and come in a variety of scales and configurations. Parks can be local and district parks, as well as larger city-wide parks.

Squares and plazas are more formal spaces than parks in that they are typically associated with a civic building and/or include a greater number of built amenities such as street furniture and public artwork. Squares and plazas are typically suited for denser neighbourhoods and

downtown locations because of their simplicity in design and the adjacent uses they promote. When successfully designed, squares and plazas have the potential to serve as a focus for attracting residents and visitors and for concentrating civic uses, retail and other amenities. They function best when they are framed by animated uses such as restaurants, bars and cafés. In such instances, they can function as year round gathering places. Successfully designed squares and plazas can reinforce the prominence of certain civic/commercial locations and instil a sense of pride in communities by enhancing the public realm.

Cemeteries, school yards, community garden plots and mid-block connections also have the opportunity to play an essential role in the open space system.

NOTE



Part of a realizing the goal of achieving “complete communities” along the Corridor is ensuring a proper mix and diversity of publicly accessible open spaces that support local living, working, and recreation. Each Character Area has an existing supply that will need to be assessed as sites develop, demographics evolve, populations grow and needs change.

Recommended Policies and Guidelines - Parks and Open Spaces:

- i. Creek corridors should be conserved as significant natural areas, and be connected and integrated as part of the overall public realm through a system of trails and pedestrian walkways.
- ii. A series of public multifunctional open spaces should be created to accompany the new transit-oriented development along the Corridor. This will create a cohesive transitional mixture of urban and natural space along this part of the Corridor.
- iii. All parks, squares, plazas and open spaces should be included as part of the transit-oriented developments along the Corridor and be connected and integrated as part of the overall public realm and neighbourhood.
- iv. The design of parks, squares, plazas and open spaces should include clear sight lines to surrounding areas and uses. The design will incorporate adequate pedestrian-scaled lighting and provide active building fronts, including entries and windows, to create “eyes” on the space, enhancing a sense of safety and discouraging inappropriate behaviour.
- v. Parks, squares, plazas and open spaces will serve the broad interests of a population of all ages and will provide opportunities for active as well as passive forms of leisure and recreation.



Civic public space, Washington DC

- vi. Parks, squares, plazas and active open spaces will enable easy ingress and egress and avoid creating entrapment spots that are not highly visible or well-used. Where appropriate, these spaces will use legible signs and orienting devices such as landmarks and pathways.
- vii. These spaces will also include barrier-free design to ensure accessibility to the broadest user group.
- viii. Parks, squares, plazas and active open spaces will include a variety of activities and a mix of surrounding uses to facilitate constant public use and/or surveillance of the space in all hours and seasons. Opportunities for programming during different times of the day and different seasons must be considered.
- ix. Parks, squares and plazas will emphasize quality of design over scale in high density areas. Generally, as the intensity of the surrounding uses increases, so should the quality of the open space.
- x. Parks, squares and plazas will create a vibrant visual impression for people passing by and be utilized for pedestrian, cycling and other forms of active transportation uses.
- xi. Parks, squares and plazas shall play a major role in the recreational needs of residents of the entire Corridor and the entire City.
- xii. The design of parks, squares, plazas and open spaces will conserve significant natural features and heritage resources and incorporate environmentally sustainable designs practices including: linking natural systems, use of porous hard surfaces, incorporating stormwater management facilities, landscaping with indigenous species and minimizing irrigation needs.
- xiii. Squares and plazas shall be accepted by the Cities as part of a development's parks contribution required by the *Planning Act*.

NOTE



Sidewalk should be sized in relation to the amount of anticipated pedestrian traffic. Generally a minimum 3 metre width should be maintained clear of obstructions such as street furniture, posts, or street plantings. In areas of higher pedestrian traffic the minimum width may increase to 4 or 5 metres in areas intended to accommodate retail spill-over (e.g. restaurant tables or grocery stall). An area of the public boulevard must be designed and allocated for this purpose and can vary in width from 1 metre to as much as 5 or 6 metres. Areas surrounding transit stops should have increased sidewalk width.



Streetscape Design Elements, New York, NY

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Recommended Policies and Guidelines – Streets and Streetscapes

- i. Streets and streetscapes shall be designed and landscaped to function as a significant part of the public realm and be oriented to pedestrian use.
- ii. Sidewalks located at major intersections along the Corridor should be wider to cope with higher pedestrian activity associated with major transit stops and intensified development. All remaining sidewalks widths should vary depending on their location with respect to: current or proposed uses, frontage designations and proximity to existing and future transit nodes, which will determine future pedestrian flows.
- iii. Sidewalks should:
 - be wide and hardscaped when fronting commercial uses;
 - include landscaping and walkways when fronting residential uses;
 - be wider in areas of greater pedestrian traffic;
 - Link to and enhance existing pedestrian paths and trails, while creating new ones wherever possible; and,
 - Provide for cycling routes.



Street Furniture & Landscaping

- iv. Pedestrian crossings should be designed to meet municipal standards, located at all signalized intersections and enhanced with different types of paving (unit paving or concrete) or colours and correspond with sidewalk width.
- v. Street furniture and landscaping within the right-of-way should reflect the high quality character of the Corridor.
- vi. High quality street furniture shall be strategically located to allow pedestrians to use the street comfortably, responding to the different uses, frontage designations and proximity to existing and future transit nodes along the Corridor. Street furniture in these areas should help achieve the aim of creating gathering areas along the frontages of the intersection.
- vii. Landscaping should support the movement of pedestrians while still extending the area's tree canopy along the street; and should connect with existing and planned parks and open spaces associated with the new transit-oriented developments.
- viii. The character of a park-like promenade, with an extensive and connected tree canopy, integrated with the canopy of adjacent areas, should be encouraged.

NOTE



Some areas along the Corridor have been identified as requiring a higher standard of streetscaping and street furnishings. This implies investing greater attention, care, and resources (than what may be standard along other parts of the Corridor) on the quality and character of the elements located within the streetscape, to ensure the highest possible appeal to, and use by, pedestrians. Examples may include specially designed benches, uniquely oriented lighting, retail kiosks, water fountains, commemorative plaques and other place specific features.

7.3.15 Private Publicly Accessible Spaces

Private publicly accessible spaces may include courtyards, forecourts, walkways, urban gardens, patios, porches and balconies. These contribute to the overall open space component of the public realm. Even where private open space is not accessible to the public, such spaces are still important if they form part of the visual open space and contribute visual connections in the overall network of open space.

Recommended Policies and Guidelines:

- i. All development proposals are encouraged to provide publicly accessible private open space.
- ii. The design of publicly accessible open space or private space must consider the context of the proposed open space in the overall network of open space, such as consideration for visual connections and tree canopy preservation and improvement.



Network of Private publicly accessible space, Washington, DC

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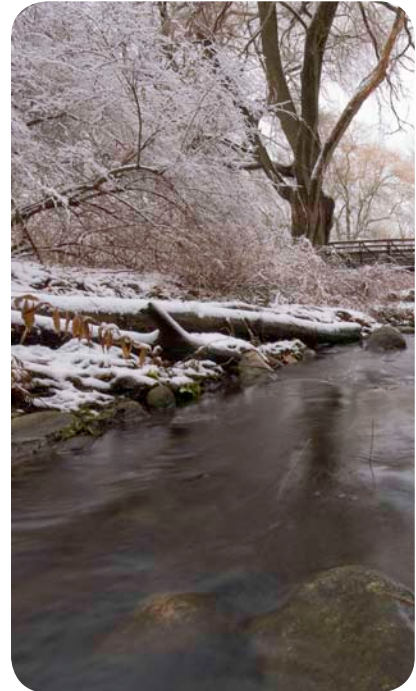
7.3.16 Natural Heritage Considerations

Natural heritage is an important part of our history and culture, as well as important to the health of the overall natural systems. This Strategy has been developed to ensure that the Corridor’s natural heritage features – creek valleys, woodlands, wildlife corridors and all other natural heritage features – remain a viable and significant part of its future. The policies recognize the significance of these features and the need to conserve them for their environmental function, as well as for their recreational opportunities.

Some of the notable natural features in the area include the Lake Ontario Waterfront and two key watercourses and associated valleys - Cooksville and Etobicoke Creek, in addition to a number of other creeks including Mississauga Valley and Fletcher’s Creek. Water and valley features are recognized as special areas that should be treated to maximize their economic and social potential and protected to maintain or improve their environmental and ecological functions.

The waterfront is a major community, municipal and regional destination and is the southern terminus of Hurontario Street. The waterfront is defined by parks, the Lake Ontario shoreline and its associated natural environments. The waterfront is located in the Port Credit Character Area, a community defined by mixed-uses; vibrant, pedestrian-friendly streets and other desirable urban qualities. The waterfront has many attractive and functional natural and built environments upon which to build. Additional policies and discussion about the waterfront are provided in the Port Credit Character Area.

The two major watercourse systems that intersect Hurontario/Main Street and run along portions of the Corridor, serve as important links between neighbourhoods, parks, schools, community facilities and other public amenities. They also provide a refuge from urban living for residents and visitors alike. The design of the public realm near and adjacent to the creeks should have a strong visual and physical link to the waterways and their associated natural features to integrate them into the community fabric and the open space system. New development, such as buildings, trails and roadways should relate to the topographical features and contours of the waterways to retain and complement the natural shape and character of the creeks.



Good urban design should be used to enhance and protect the environmental landscape character in the natural heritage areas along the Corridor, including view sheds. New development should have frontage on the waterway and open space corridors bordering the waterways, wherever possible.

Recommended Policies and Guidelines:

- i. In all cases, all new development shall adhere to the policies that have been set out in the municipalities' Official Plans and shall conform to the Credit Valley Conservation Authority and Toronto Region Conservation Authority requirements.
- ii. Development adjacent to natural features to be protected shall provide an assessment of land use compatibility. Where land uses are found to be incompatible the Cities will require alternative building and site design, landscaping and spatial separation requirements to ensure land use compatibility.
- iii. New and existing pedestrian connections to the creek corridors should be created and enhanced, wherever possible.
- iv. Streets, open spaces and private yards should seek to extend and connect the area's tree canopy and support the health of natural systems.

7.3.17 Stable neighbourhoods

While some neighbourhoods will experience change, other stable neighbourhoods will undergo little or no change at all. Stable residential neighbourhoods in the Corridor, such as Mineola, Main Street South Heritage Area and areas outside those recommended for change in the Character Area Plans, should remain stable and maintain their existing character.

Recommended Policies and Guidelines:

- i. Development occurring in or adjacent to stable neighbourhoods shall be in accordance with the applicable Character Area maps and policies.





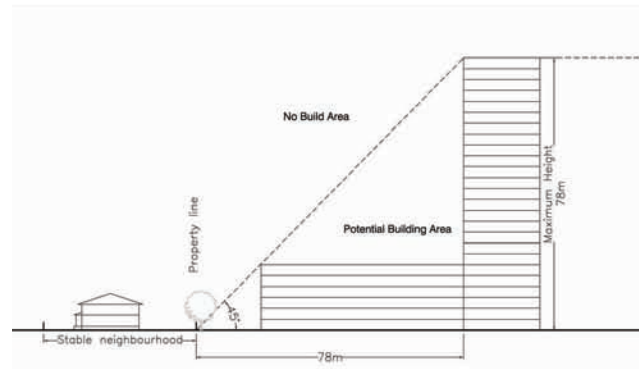
7.3.18 Transition Areas

As illustrated on the Character Area Maps, height transition areas are located adjacent to stable lower density residential areas. The purpose of these transition areas is to ensure that new developments are appropriately scaled and blended into existing neighbourhoods, by imposing a height transition plane on development in the Corridor. Additional Height Transition Areas may be identified by the City to allow for heritage, environmental or urban design considerations. Despite the height transition area designation, any new building within the Corridor must be at least 3 storeys in height.

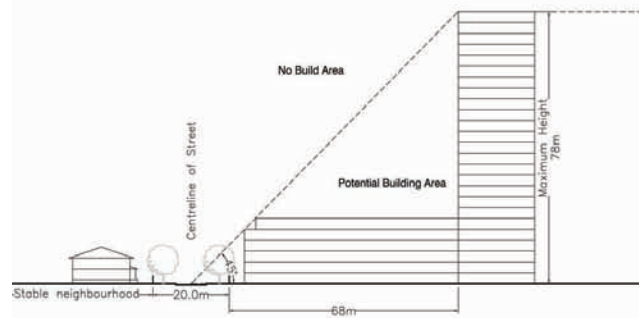
Recommended Policies and Guidelines:

- i. The maximum building height within each Character Area shall be limited by a line measured from the Height Transition Boundary as identified on the Character Area maps at a 45 degree angle from the boundary up over the Character Area (see [Figure 7.3.9](#)).
- ii. Notwithstanding the above policy, any new building shall be at least 3 storeys in height, unless otherwise specified in the Character Area sections, in accordance with policy iii of Section 7.3.3.
- iii. A step back along a 45 degree angular plane will also be required for new and renovated buildings that are adjacent to a property with significant heritage resources (i.e. listed, designated, or identified through a Heritage Impact Statement as may be required by the City). New buildings must be sympathetic to and transition from, the height of adjacent heritage resources, with a minimum 45 degree angular plane. [Figure 7.3.9](#) illustrates these policies.

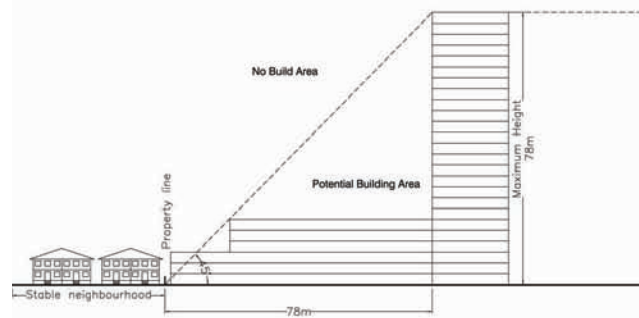
TRANSITION AREAS



Measured from rear lot line



Measured from centre of street



Measured from side lot line

Figure 7.3.9
Transition Areas

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7.3.19 Special Policy Areas and Recognized Floodplain



Certain areas along the Corridor are affected by Special Policy Area designations established by the Credit Valley Conservation Authority and the Toronto Region Conservation Authority, related to flood plain and flooding hazards.

In general, development is discouraged within floodplains in Ontario. However, if there is existing development on an affected site and re-developing the site can provide opportunities to improve the conditions of the riparian environment, re-development may be considered, subject to approval by the Conservation Authority. In these areas, special consideration must be given to mitigating potential damage from flooding and to generally improving the conditions of the riparian environment.

This provides an opportunity to develop some very creative and exciting design solutions that link the urban fabric with the natural environment found in the valleys. However, in these areas the policies and guidelines in this Strategy are secondary to the over-riding elements found in the special area policies.

Municipal policies and Conservation regulations related to a recognized floodplain area or designated Special Policy Area take precedence over the policies found below.

Recommended Policies and Guidelines:

- i. Development or redevelopment within a recognized floodplain or designated Special Policy Area may be considered if supported by floodproofing or flood protection measures, subject to the approval of the City and the policies of the Conservation Authority.
- ii. Any development or redevelopment within a recognized floodplain or designated Special Policy Area designation will be required to meet all of the requirements of the Conservation Authority, in addition to the requirements of this Plan. Where there is a conflict between policies in this Plan and those of the Conservation Authority that relate to flood safety, the policies of the Conservation Authority shall prevail.
- iii. In general, pedestrian and cycling linkages should be sited to avoid sensitive natural features, including flood plains. However if linkages are located in flood prone areas, bridges, culverts, swales and raised walkways will be required to ensure pedestrian safety and accessibility.



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7.3.20 Cultural Heritage Conservation

Portions of the Hurontario/Main Street Corridor contain significant cultural heritage resources. Accordingly, any development or redevelopment of lands containing or adjacent to cultural heritage resources shall be required to provide a Heritage Impact Study to demonstrate how the proposed development contributes to the conservation and maintenance of cultural heritage resources and attributes, integrating them into the development whenever possible. Heritage conservation policies established by the municipality or by other governmental agency regulations take precedence over the policies of this Strategy.

Recommended Policies and Guidelines:

- i. Any development or redevelopment of land that contains or is adjacent to identified cultural heritage resources will be required to undertake a Heritage Impact Study to the satisfaction of the City, the Heritage Board and any other appropriate approval authorities having jurisdiction, in order to determine the impacts of development and to identify how the impacts can be mitigated. Mitigation may include appropriate siting of new development, conservation of all or part of cultural heritage resources or attributes, or adaptive re-use of cultural heritage features.



7.3.21 Sustainability

In order to achieve the core elements of this Strategy, the concept of sustainability must be a guiding principle. The triple bottom-line objectives of sustainability – cultural/social, economic and environmental – are interwoven throughout the policies of this Strategy. The idea of a complete community is central to the success of the Hurontario/Main Street Corridor. It requires that development provide for and integrate alternative forms of transportation, provide linkages that facilitate accessibility and safety and encourages new development to explore innovative land use patterns, building standards and urban design that will reduce overall demand for energy.

Recommended Policies and Guidelines:

- i. Development applications shall be reviewed to ensure efficiency in the use of land in terms of their intensity, diversity, integration of land use and transportation system.
- ii. The City may require development proponents to submit a sustainable design brief as part of the development application in order to address the Region's Green Development Standards and these policies.
- iii. Development applications shall be reviewed with consideration given to energy conservation measures including, but not limited to:
 - a. Increased densities;
 - b. Promotion of public transit and alternative forms of transportation;
 - c. Orientation of streets and buildings to facilitate maximum energy efficiency;
 - d. Use of landscaping and green development standards, such as green building guidelines, Low Impact Development (LID) or similar standards; and
 - e. Promotion of the use of alternative and renewable energy systems, such as passive solar energy, geothermal and wind power.
- iv. New development shall be compatible with, integrated with and designed to, enhance existing natural heritage features such as woodlots, watercourses and stream valleys.

7.3.22 Cycling

Cycling and other forms of active transportation are critical forms of transportation that allow people to reach destinations that are too far to walk, but not so far away that they need to take a car or rapid transit. A higher density corridor with active retail and other destinations along it must be accessible by bicycle. Making the Corridor bicycle-friendly will encourage a more active lifestyle for residents and workers, as well as contributing to the improvement of the economic and environmental health of the area. Bicycle routes, both along the Corridor and to and from the Corridor, are important. Providing bicycle parking facilities on the rapid transit vehicles and at transit stations expands the catchment area of the rapid transit system.

Recommended Policies and Guidelines:

- i. Bicycle parking will be provided by all residential, commercial, institutional, office, recreational and civic buildings. Incrementally plan for residential buildings offering secure bike parking at a rate of at least 0.9 bicycle parking spaces for every unit, beginning in the Urban Growth Centre and Port Credit. Employment uses shall offer secure bike parking at a rate of at least 1 bicycle parking space for every 500 square metres of floor space. In addition, these buildings are encouraged to provide showers and change facilities.
- ii. Bicycle parking areas should be well lit and designed to ensure safety.
- iii. On-street bicycle parking is encouraged at appropriate locations and should be coordinated by the municipality.
- iv. Bicycle parking should not be located directly adjacent to areas of high-pedestrian traffic. It should not be located in immediate proximity to street corners, transit loading zones, goods delivery zones, taxi zones, emergency vehicle zones, hotel loading zones, near fire hydrants, near driveways, access lanes, or intersections.
- v. It is recognized that the provision of cycling infrastructure is constrained by the width of the Corridor right-of-way. Where sufficient right-of-way width is available to provide cycling lanes and on-street parking, consideration will be given to providing bicycle lanes where pedestrian safety and comfort is not adversely affected.
- vi. Cycling infrastructure on public lands should be maintained year-round by the City.



CHARACTER AREAS





EGLINTON



BRAMPTON GATEWAY



HOSPITAL



downtown mississauga



downtown cooksville



FAIRVIEW

This chapter documents the plan for each Character Area along the corridor, moving from the vision for each area through to the details of density, height and other specific elements.

Cross-sections proposed for Hurontario/Main Street are shown in Appendix 5a.



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DOWNTOWN BRAMPTON



Conceptual view of
Downtown Brampton

VISION

8.1 Brampton Downtown

8.1.1 Vision

The vision for the Brampton Downtown Character Area is to build upon the existing character and sense of place, conserving cultural heritage resources, including buildings, structures, streetscape and landscapes. The intersection of Main Street and Queen Street is the heart of the City of Brampton and should be given the highest priority for design and urban living. New development opportunities will bring a vibrant mix of uses and people into the area. The transit terminal and GO Transit station will be the focus for an anchor mobility hub where transit and high-density development will be integrated into the existing pedestrian-friendly environment. Innovation, creativity and respect for the existing urban fabric will be celebrated.



8.1.2 Population and Employment Forecast

The policies are based in part on the potential for population and employment growth in the Brampton Downtown area. Significant population and employment growth creates the opportunity to build upon Brampton Downtown's existing assets and support a city centre where residents can live, work and shop within a walkable area.

Existing and potential population and employment figures are as follows:

- Existing population: 4,700 people
- Population potential: 10,200 people
- Existing employment: 5,680 jobs
- Employment potential: 9,200 jobs

Note: These figures have been provided from the municipality as their 2031 growth targets and were determined through the municipality's provincial conformity exercise. As such, these figures are based on boundaries that may not exactly replicate the boundaries this study is using, but recognizes that the majority of new development will occur within the Character Area boundaries. Additional growth may be possible beyond 2031.



8.1.3 Permitted Use at Grade Level

Within the Brampton Downtown area there are three categories of animated use at street level: Retail, Commercial or Institutional, and Convertible. The intention is to create streets that will serve high levels of pedestrian activity. Within the central area the majority of the streets will have a retail-oriented main street character. Along Main Street and Queen Street these uses already exist. Sections of George Street and Nelson Street are included in this category to encourage those streets to develop pedestrian-friendly frontages that help link the four-corners area with the Transit Terminal and the GO Transit station.

Outside of the immediate core Commercial or Institutional uses are required which allows for a broader range of businesses while still maintaining a robust pedestrian character. Further north along Church Street and Railroad Street Convertible frontage will allow the development of residential uses that can be converted to commercial uses as the area grows.

Policies

- i. Uses along the main street-edge are required to be as designated on [Figure 8.1.1](#).

PERMITTED USE AT GRADE

**Figure 8.1.1
Brampton Downtown
Permitted Use**



	Retail Frontage		Proposed Transit Stop
	Commercial or Institutional Frontage		Parks and Open Space
	Convertible Frontage		

All other street frontages may have any use permitted by the Zoning Bylaw at ground level facing the street

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DENSITY & HEIGHT MAP

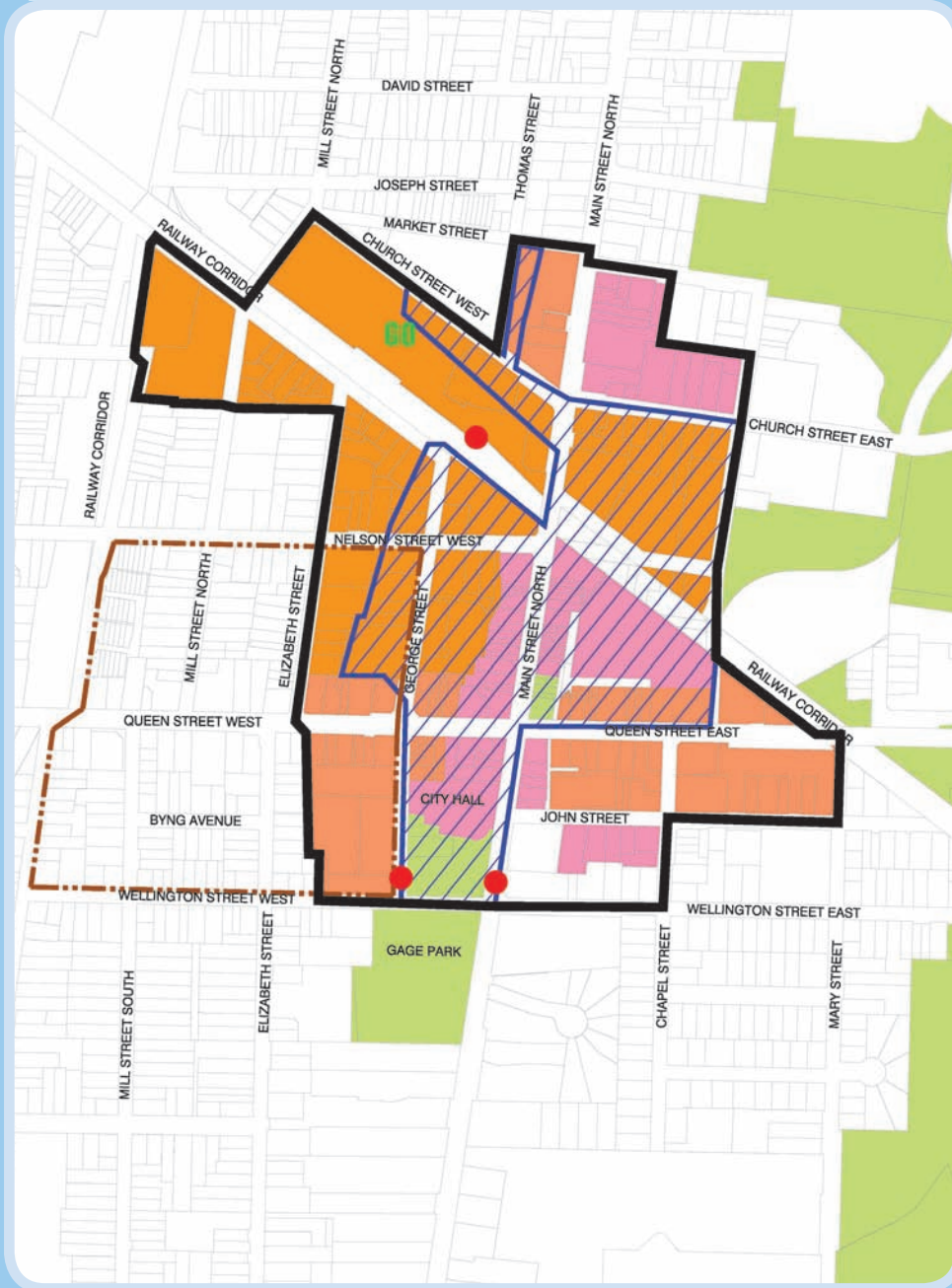


Figure 8.1.2
Brampton Downtown
Density and Height Map



8.1.4 Density

Within the Brampton Downtown area the permitted density is 3.5X FSI to 4.0X FSI, with the highest densities around the Transit Terminal and the GO Transit station. This is intended to create a compact form of development in close proximity to the transit stations. In areas further from the transit stations, the permitted density is 3.5X FSI, which will allow for buildings to fit with the existing urban fabric.

Policies

- i. Density shall be as specified on [Figure 8.1.2](#).

8.1.5 Heights

The existing Brampton Downtown Character Area consists of a mix of building types from single family homes to mid-to-high rise residential buildings with heights up to 20 storeys. The proposed height based on the City of Brampton's Zoning By-law for high-rise buildings is 68 m (before bonusing) closer to the station area and 41 m further away from the station area. Along the Main Street frontages the historic height of 13 m must be respected. A minimum height of 3 storeys will be applied to new developments meaning 1 or 2 storey buildings will no longer be allowed.





- i. Maximum building heights shall be as specified on [Figure 8.1.2](#).
- ii. Minimum building height shall be 3 storeys for all areas within this Character Area.



CONTINUOUS STREET FRONTAGE



Figure 8.1.3
Brampton Downtown
Continuous Street
Frontage Map

 Continuous Streetwall	 Proposed Transit Stop
 Intermittent Streetwall	 Parks and Open Space

All other street frontages are not required to provide a minimum amount of street wall

8.1.6 Minimum Continuous Street Frontage Requirements

Along the majority of streets south of the railway line “continuous frontage” will be required. It is anticipated that this area will have an intense pedestrian environment and complete streetwalls will be an important element of this Character Area. North of the railway line and east of Mill Street and west of Chapel Street (see [Figure 8.1.3](#)) an intermittent frontage of 70% is required.

- i. Continuous street frontage of buildings shall be required in the specific locations shown on [Figure 8.1.3](#).

8.1.7 Maximum Setback Lines

A vibrant streetscape involves the creation of an enclosed, pedestrian-scaled street. The provision of only minimal building setbacks is vital to establishing a consistent street wall that invites pedestrian activity.

- i. Setbacks and podium step-backs will be as per the City of Brampton Urban Design Policies for this Character Area.



Figure 8.1.4
Brampton Downtown Placemaking Map



8.1.8 Place-making

Downtown Brampton currently has a number of unique and special places including the Civic Plaza adjacent to the City Hall and the urban square that links the Rose Theatre to the intersection of Main Street and Queen Street. These spaces should be conserved and enhanced by any new development that occurs around them. In addition, the GO Transit station will increasingly become the focus for pedestrian activity in the area and therefore any development on the GO Transit lands should reflect the welcoming and vibrant nature of Downtown Brampton.

Some areas along the Corridor have been identified as requiring special urban design considerations and attention. This implies investing greater attention, care, and resources on the quality and character of design to ensure the highest possible appeal to, and use by, pedestrians. Examples may include special paving, a greater concentration of street furniture (e.g. benches), public art, enhanced landscaping elements, cultural heritage markings and plaques and special lighting features.

- i. Special Urban Design consideration in accordance with Section 7.3.12 of this Plan should be given to the placemaking locations identified on [Figure 8.1.4](#).



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8.1.9 Civic Public Spaces

The public realm includes all public aspects of Downtown Brampton, including the streets, sidewalks, furniture, public parks and public institutions. Downtown Brampton is a major retail, office, institutional and residential node and the importance of these civic spaces for the recreation and enjoyment by local residents is a key factor in the livability of the area.

The open space character of the Downtown Brampton area is defined by Garden Square which connects the intersection of Main Street and Queen Street to the Rose Theatre and the civic plaza that fronts City Hall. These public spaces form the backdrop for urban life in the City of Brampton.

- i Integration of civic public spaces into new development or redevelopment shall be in

accordance with Section 7.3.14 of this Plan. Specifically, key elements of the Downtown Brampton public realm such as the urban squares and the series of small active parks shall be considered to help refine the future of the Character Area.

- ii Existing urban squares (i.e. City Hall, Garden Square) shall be conserved and/or enhanced as an active community gathering space. Uses and activities that support public participation in urban living on a daily basis should be encouraged.

BRAMPTON MAIN STREET



VISION

SOUTH HERITAGE AREA

8.2 Main Street South Heritage Area

8.2.1 Vision

The vision for Main Street South Heritage Character Area is to maintain the existing heritage and park-like character, while incorporating rapid transit along Main Street South. There are three distinct areas along this section of Main Street: The stable heritage residential area (between the northern Etobicoke Creek crossing and Wellington Street), the park area (south of the northern Etobicoke Creek crossing) and the Brampton Mall area. Within the stable heritage and the park areas little or no change is expected. Conservation and preservation of the green spaces, heritage buildings and existing streetscape including existing tree stands will be a priority. Around the Brampton Mall site and adjacent properties there is an opportunity to create a mini-transit node, surrounded on two sides by green space and the other two sides by a low density stable neighbourhood, which will support the transit station at Nanwood Drive.



8.2.2 Population and Employment Forecast

The policies allow limited population and employment growth in the Main Street South Heritage Character Area, while still encouraging what growth does occur in the area to be desirable, vibrant, pedestrian-oriented and contribute to the unique sense of place

Existing and potential population and employment figures are as follows:

- Existing population: 9,200 people
- Population potential: 11,300 people
- Existing employment: 840 jobs
- Employment potential: 1,000 jobs

Note: These figures have been provided from the municipality as their 2031 growth targets and were determined through the municipality's provincial conformity exercise. As such, these figures are based on boundaries that may not exactly replicate the boundaries this study is using, but recognizes that the majority of new development will occur within the Character Area boundaries. Additional growth may be possible beyond 2031.



8.2.3 Permitted Use

Notwithstanding the policies found in Section 7.3.1, low density uses shall be permitted in this Character Area. This includes single detached and semi-detached dwelling units. In addition, medium and high density residential and commercial uses may be permitted in the vicinity of Nanwood Drive.

8.2.4 Permitted Use at Grade Level

Within the Main Street South Heritage Character Area there are two categories of animated use at street level: Special and Convertible. Uses permitted within these categories are discussed in Section 7.3.2 of this Plan. The intention is to maintain streets that are pedestrian-friendly and retain their heritage and green canopy. Through the Character Area, the Special designation means that the green character of the street is protected and uses will be limited to those activities that will not adversely affect that character. Where re-development is anticipated on the Brampton Mall site and adjacent properties, a Convertible frontage will create the potential for a commercial street frontage to support the transit station at Nanwood Drive.

- i. Uses along the major street-edges are required to be as designated on [Figure 8.2.1](#).



8.2.5 Density

Where re-development is anticipated on the Brampton Mall site and adjacent properties, a permitted density of 2.0X FSI is allowed. This will allow for a small scale transit-oriented development supporting the transit station at Nanwood Drive.

- i. Density shall be as specified on [Figure 8.2.2](#).

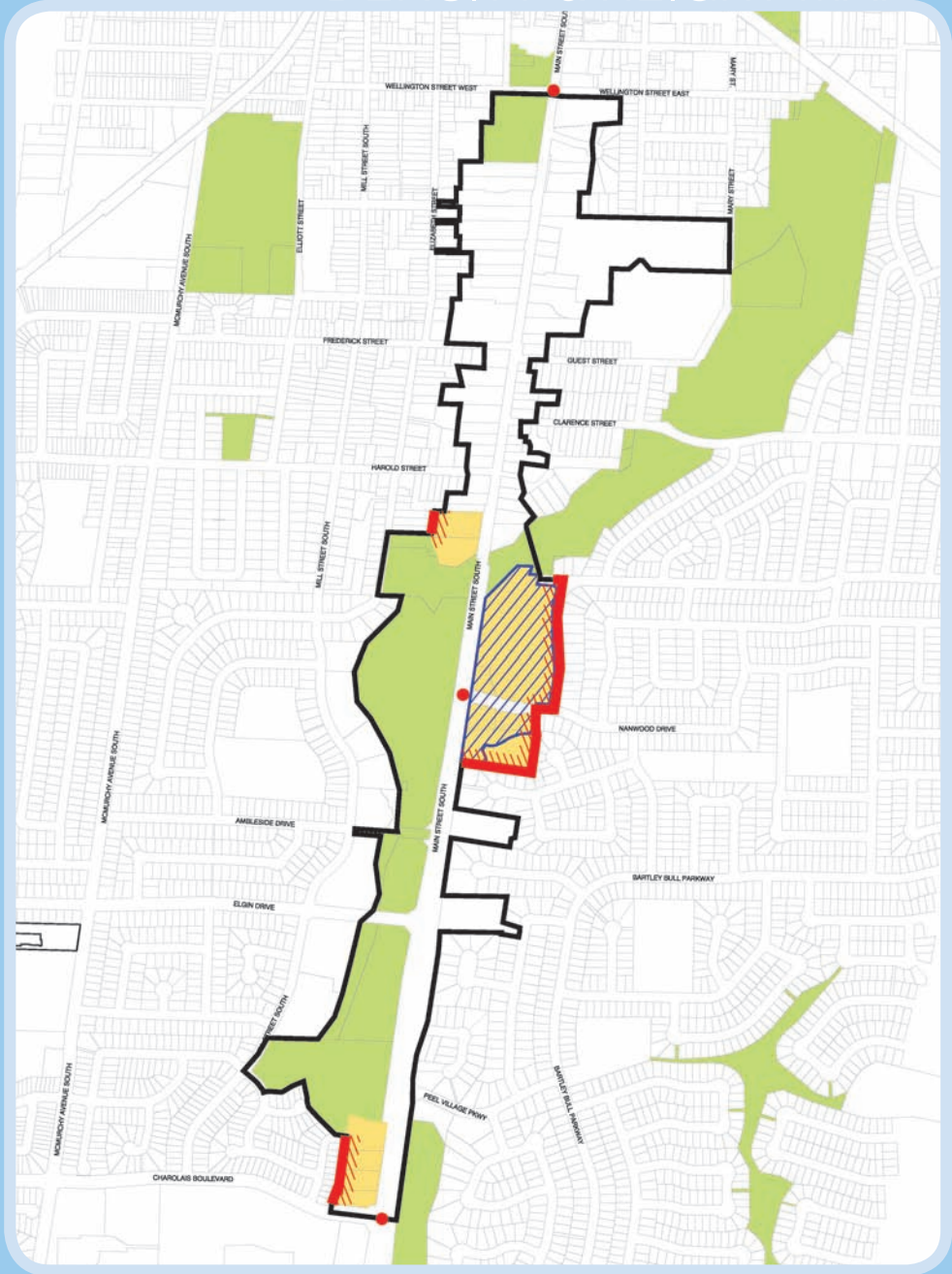
8.2.6 Heights

The existing Main Street South Heritage Area character is dominated by large low density single family homes and large park areas. No changes in height are expected in this area. There are a few 4 to 8 storey apartment towers and a collection of one storey retail buildings around Nanwood Drive. The proposed heights for new development in the Nanwood Area is 10 storeys with a minimum height of 3 storeys.

- i. Maximum building heights shall be as specified on [Figure 8.2.2](#).
- ii. Minimum building height shall be 3 storeys for all areas within the Nanwood Area as specified on [Figure 8.2.2](#).
- iii. Podiums shall be 3 storeys minimum and 21 m (6 storeys) maximum in locations where podium setbacks are specified on [Figure 8.2.4](#).

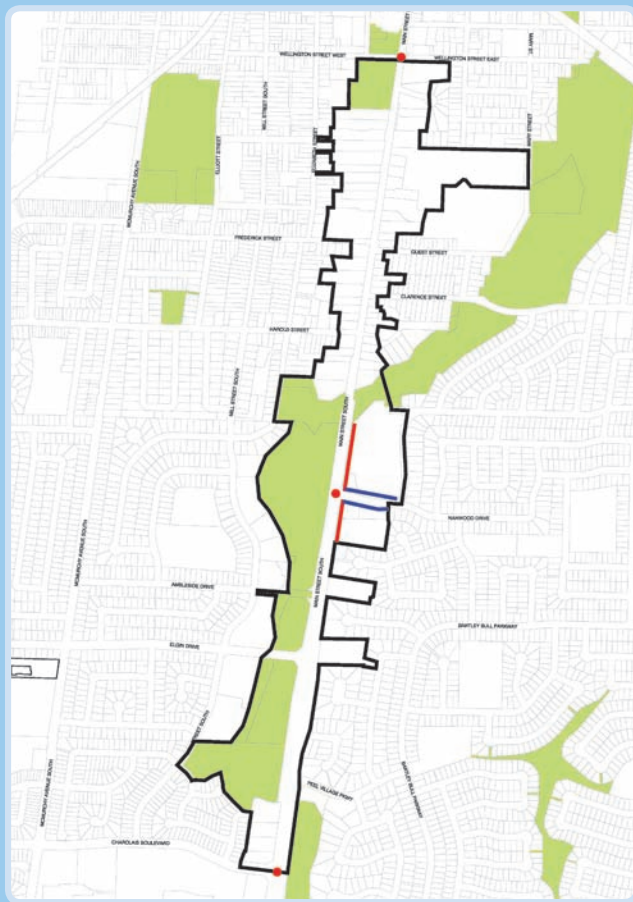
DENSITY & HEIGHT MAP

Figure 8.2.2
Main Street South
Heritage Area Density
and Height Map



	33.0m (10 Storey) - 2.0X FSI		Proposed Transit Stop
	Open Space		Height Transition Boundary
	Special Policy Area		Height Transition Area

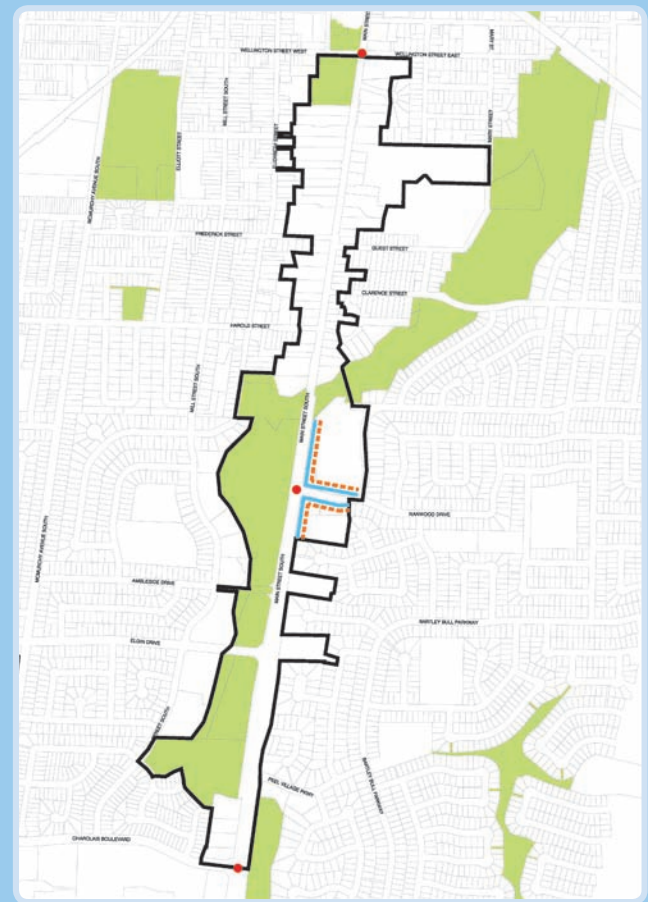
Figure 8.2.3
Main Street South Heritage Area Continuous Street Frontage Map



- Proposed Transit Stop
- Parks and Open Space
- Continuous Streetwall (95%)
- Intermittent Streetwall (70%)

All other street frontages are not required to provide a minimum amount of street wall

Figure 8.2.4
Main Street South Heritage Area Setback Map



- Proposed Transit Stop
- Parks and Open Space
- Building must be built within 5.0m of Street Line (maximum 5.0m setback)
- - - Additional setback of at least 2.5m required above podium

All other setbacks are as required by the Zoning Bylaws.

8.2.7 Minimum Continuous Street Frontage Requirements

Along Main Street “continuous frontage” will be required in the vicinity of Nanwood Drive. It is anticipated that this area will have a welcoming pedestrian environment. A complete streetwall on the east side will be an important element of this Character Area.

- i. Continuous street frontage of buildings shall be required in the specific locations shown on [Figure 8.2.3](#).

8.2.8 Maximum Setback Lines

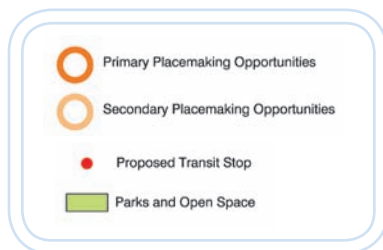
A vibrant streetscape involves the creation of a pedestrian-scaled street. Along the majority of this section of Main Street this will be created through the use of landscaping and tree cover. In the stable heritage residential area existing setbacks should be respected. The front yards must be landscaped and well-maintained. On the Brampton Mall site and adjacent properties, where continuous frontage is shown, buildings must be built to create a welcoming pedestrian environment.

- i. Development must be built within the distances stated from the streetline in locations specified on [Figure 8.2.4](#).
- ii. Part of the building above the podium shall be set back a minimum of 2.5 m in locations specified on [Figure 8.2.4](#).



8.2.9 Place-making

Figure 8.2.5
Main Street South Heritage Area Placemaking



Within the Main Street South Heritage Area there are numerous special places. The entire street between Gage Park and the northern Etobicoke Creek crossing has been designated as a special frontage which is meant to protect its existing character. South of the northern Etobicoke Creek crossing, the majority of the land adjacent to Main Street is parkland which will be maintained as such. However, within these special places there are opportunities to make an additional effort to create memorable and significant locations. Gage Park is one such location.

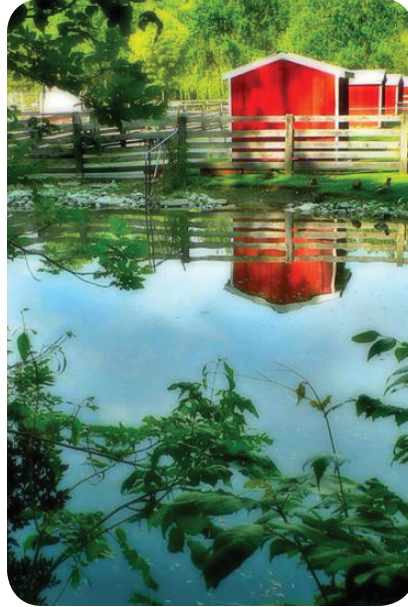
Another key location will be the intersection of Main Street and Nanwood Drive. This intersection will be the primary transit stop serving existing neighbourhoods both east and west of the Corridor, any new development in the immediate vicinity of Nanwood Drive, and users of the extensive park system in the area. This intersection, the transit stop associated with it and any new buildings built in the vicinity should be coordinated in design so they create a unique and memorable space.

Some areas along the Corridor have been identified as requiring special urban design considerations and attention. This implies investing greater attention, care, and resources on the quality and character of design to ensure the highest possible appeal to, and use by, pedestrians. Examples may include special paving, a greater concentration of street furniture (e.g. benches), public art, enhanced landscaping elements, cultural heritage markings and plaques and special lighting features.

- i. Special Urban Design consideration in accordance with Section 7.3.12 of this Plan should be given to the place-making locations identified on [Figure 8.2.5](#).



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All images on this page:
Kiwanis Memorial Park,
Brampton, Ontario

8.2.10 Civic Public Spaces

The Main Street South Heritage Area contains a large quantity of important civic public spaces intended for the enjoyment of residents from the entire city. The open space character of the Main Street South Heritage Area is defined by the large park system which follows Etobicoke Creek trail located along the Corridor. These parks include: Kiwanis Park, Joyce Archdekin Park, Charles F. Watson Family Gardens and Centennial Park.

In addition, Gage Park is located at the northern edge of this Character Area. Gage Park is the City of Brampton's premier civic park, being immediately adjacent to City Hall and home to summer evening concerts and a unique winter outdoor skating rink.

- i Integration of civic public spaces into new development or redevelopment shall be in accordance with Section 7.3.14 of this Plan. Specifically, key elements of the Main Street South Heritage public realm such as the large park system along Etobicoke Creek as well as Gage Park shall be considered to help refine the future of the Character Area.

8.2.11 Transition Areas

Adjacent to stable lower density residential areas a height transition area is proposed to blend new development into existing neighbourhood heights. These areas are identified on [Figure 8.2.2](#), and are subject to the policies below.

- i. No new building within a transition area shall exceed the height transition plane (see [Figure 8.2.2](#)) unless permitted by the approval authority. The height transition plane will be measured from the outer edge of the plan area up over the plan area at a 45 degree angle.
- ii. Notwithstanding the above policy, any new building shall be at least 9 m (3 storeys) in height or can match the height of any adjacent building if they are over three storeys without regard for the height transition plane.
- iii. A step back along a 45 degree angular plane will also be required for new and renovated buildings that are adjacent to a property with significant heritage resources (i.e. listed, designated, or identified through a Heritage Impact Statement as may be required by the City). New buildings must be sympathetic to and transition from, the height of adjacent heritage resources, with a minimum 45 degree angular plane as per Section 7.3.18.



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BRAMPTON GATEWAY



VISION

8.3 Brampton Gateway

8.3.1 Vision

The vision for the Brampton Gateway Character Area is to transform Shoppers World and other single-use retail properties into a vibrant mixed-use transit-oriented development. Retail uses, including large department stores and “warehouse” type retailers will be encouraged to remain in the area to help create a major shopping node that will be pedestrian and transit focused. However, new building forms will be encouraged to develop in order to support the vision of this Character Area. A transit terminal that connects the Hurontario/Main Street transit service to various other lines including Züm BRT (formerly known as the AcceleRide BRT) system and other transit services will be established in close proximity to the Hurontario and Steeles intersection. A pedestrian-scaled neighbourhood will be established around this Gateway Mobility Hub. A secondary transit-oriented neighbourhood area based on a predominantly office and institutional core will develop between Steeles Avenue and Highway 407.



8.3.2 Population and Employment Forecast

The policies are based in part on the potential for population and employment growth in the Brampton Gateway area. Significant population and employment growth creates the opportunity to transform Brampton Gateway into a vibrant neighbourhood where residents can live, work and shop within a walkable area.

Existing and potential population and employment figures are as follows:

- Existing population: 14,550 people
- Population potential: 21,000 people
- Existing employment: 4,990 jobs
- Employment potential: 7,700 jobs

Note: These figures have been provided from the municipality as their 2031 growth targets and were determined through the municipality's provincial conformity exercise and the recommendations of this Master Plan. These figures are based on boundaries that may not exactly replicate the boundaries this study is using, but recognizes that the majority of new development will occur within the Character Area boundaries. Additional growth may be possible beyond 2031.

PERMITTED USE AT GRADE

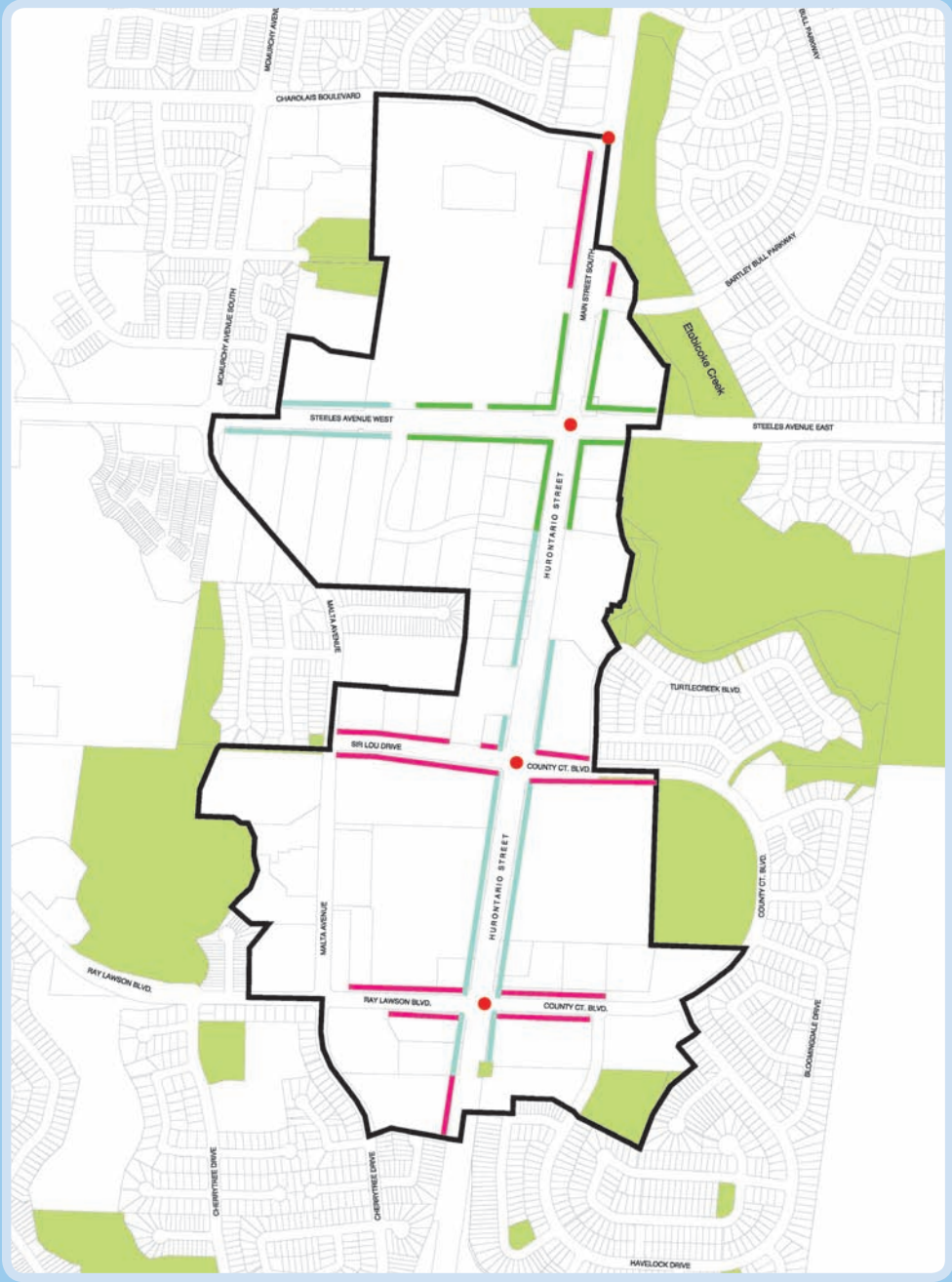


Figure 8.3.1
Brampton Gateway
Permitted Use

 Retail Frontage	 Proposed Transit Stop
 Commercial or Institutional Frontage	 Parks and Open Space
 Convertible Frontage	

All other street frontages may have any use permitted by the Zoning Bylaw at ground level facing the street

8.3.3 Permitted Use at Grade Level

Within the Brampton Gateway Character Area there are three categories of animated use at street level: Retail, Commercial or Institutional, and Convertible. The intention is to create streets that will serve high levels of pedestrian activity. South of Steeles Avenue, Hurontario Street will be an active “Main Street” with uses limited to Retail and Commercial or Institutional at street level which support high volumes of pedestrian traffic. North of Steeles Avenue, the focus of pedestrian activity will move west of Main Street onto the Shoppers World lands. In the County Court node, cross streets will have a Convertible frontage allowing for a broad range of uses that can respond to market demands and neighbourhood evolution over time.

- i. Uses along the main street-edge are required to be as designated on [Figure 8.3.1](#).



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DENSITY & HEIGHT MAP

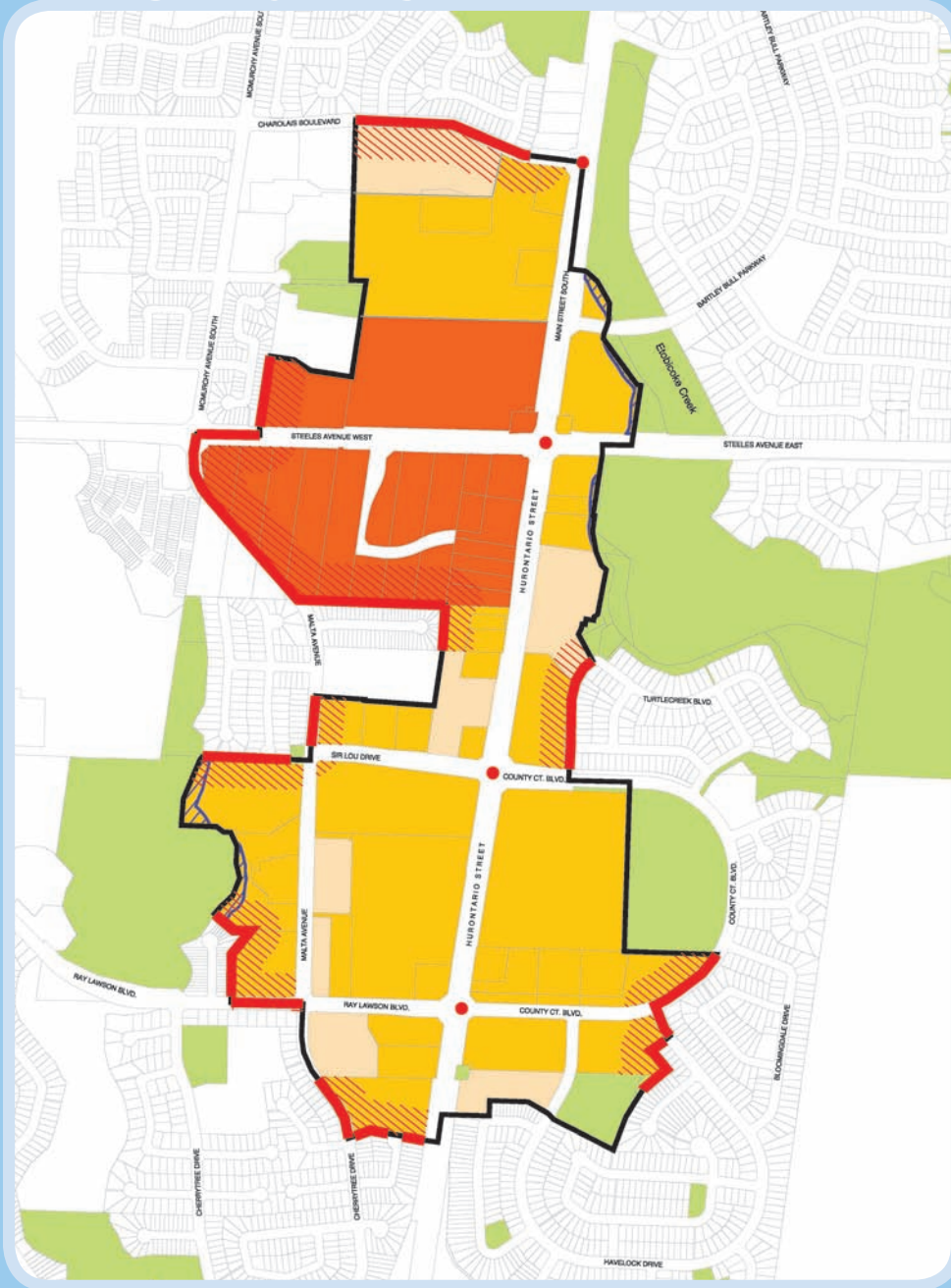


Figure 8.3.2
Brampton Gateway
Density and Height Map



8.3.4 Density

Within the Brampton Gateway area the permitted density is 4.0X FSI with the highest densities around the intersection of Hurontario Street and Steeles Avenue. This is intended to create a compact form of development. It is also intended to encourage additional development, on properties with existing high-rise development to help create a desirable street frontage condition. Further away from the intersection of Hurontario and Steeles and in the County Court node the permitted density is 3.0X FSI which will allow for a variety of building types within the corridor.

- i. Density shall be as specified on [Figure 8.3.2](#).

8.3.5 Heights

The existing Brampton Gateway Character Area is dominated by one-storey retail plazas and malls surrounded by a mix of mid-to-high rise residential buildings with heights that range from 6 to 25 storeys, medium-density townhouse developments, 6 to 8 storey commercial/institutional buildings and low density single family homes.

The proposed heights for high-rise buildings is 78 m (25 storeys) (before bonusing) in the Steeles Avenue node and 63 m (20 storeys) in the County Court node. However, a minimum height of 3 storeys will be applied to all new developments.

- i. Maximum building heights shall be as specified on [Figure 8.3.2](#).
- ii. Minimum building height shall be 3 storeys for all areas within this Character Area.
- iii. Where podium setbacks are specified on [Figure 8.3.5](#), podium heights shall be as follows:
 - Hurontario/Main Street and Steeles Avenue shall have a minimum of 4 storeys and a maximum of 21 m (6 storeys).

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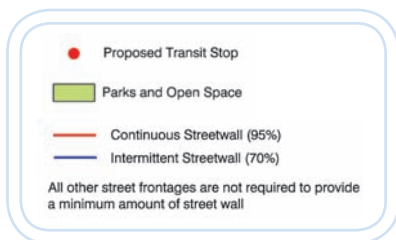
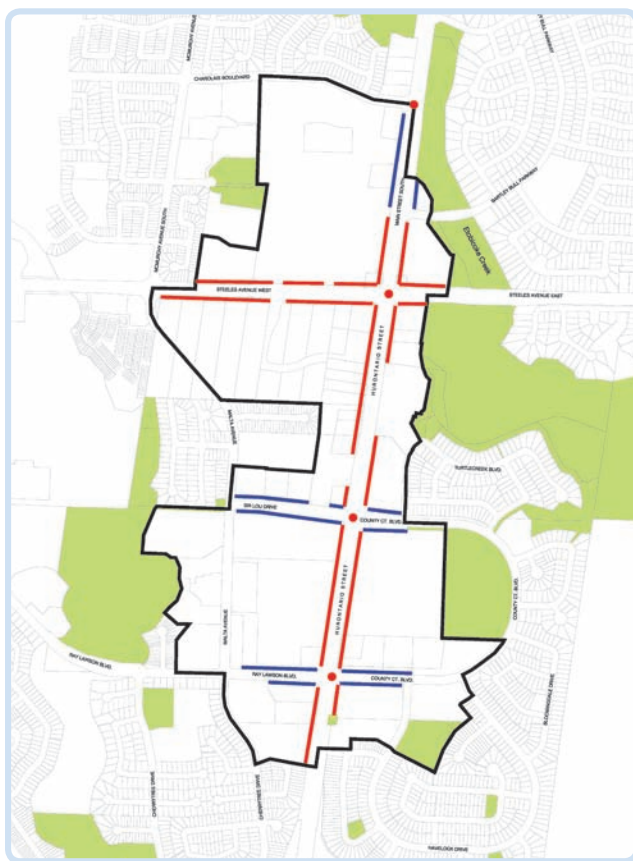
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Figure 8.3.3
Brampton Gateway Continuous Street Frontage Map



8.3.6 Minimum Continuous Street Frontage Requirements

Along Hurontario/Main Street and along Steeles Avenue continuous frontage will be required. It is intended that this area will have a welcoming pedestrian environment and complete streetwalls will be an important element of this Character Area. For sections of Ray Lawson Blvd, County Court Blvd and Sir Lou Drive (see [Figure 8.3.3](#)) an intermittent frontage of 70% is required.

- i. Continuous street frontage of buildings shall be required in the specific locations shown on [Figure 8.3.3](#).

8.3.7 Maximum Setback Lines

A vibrant streetscape involves the creation of an enclosed, pedestrian-scaled street. Along various routes, the provision of only minimal building setbacks is vital to establishing a consistent street wall that invites pedestrian activity.

- i. Development must be built within the distances stated from the streetline in locations specified on [Figure 8.3.4](#).
- ii. Buildings above the podium shall be set back a minimum of 2.5 m in locations specified on [Figure 8.3.4](#).

SETBACK MAP

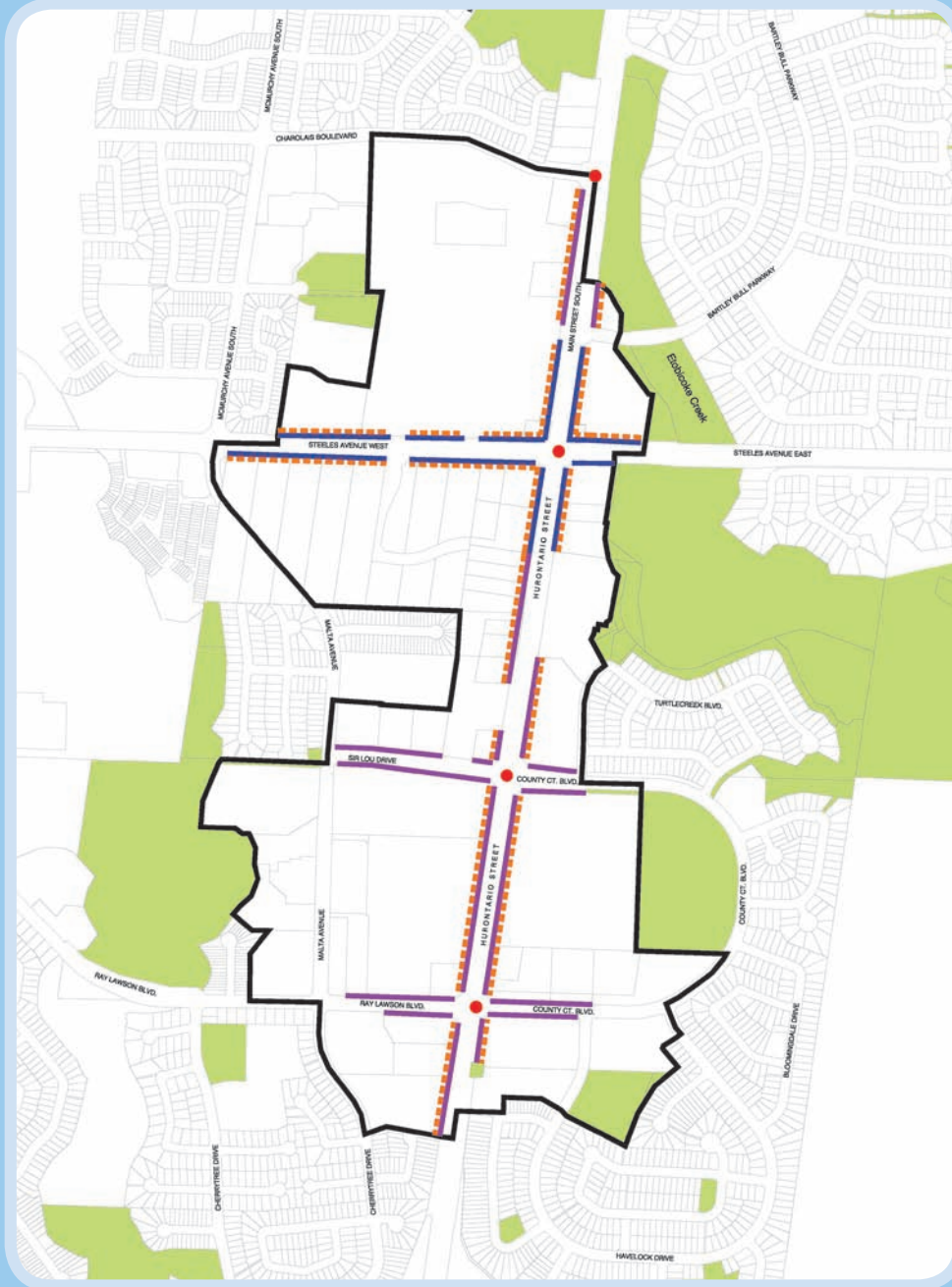


Figure 8.3.4
Brampton Gateway
Setback Map

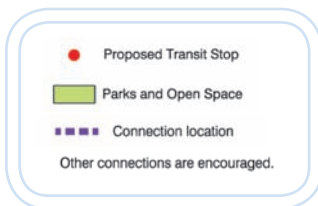
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- Building must be built at Street Line (0.0m Setback)
- Building must be built within 2.5m of Street Line (maximum 2.5m setback)
- Additional setback of at least 2.5m required above podium
- Proposed Transit Stop
- Parks and Open Space

All other setbacks are as required by the Zoning Bylaws.

8.3.8 New Connections

Figure 8.3.5 Brampton Gateway Connections Map



Improved connectivity between streets, pathways, amenities, buildings and transit stops/stations are essential to improving the vibrancy of the streetscapes by reducing walking distances and times and opening opportunities for exploration. The Brampton Gateway Character Area currently contains large blocks, which, if not broken up, will create a poor pedestrian environment. This Plan encourages increased connectivity through the lands in this area through the creation of new roads or pedestrian pathways that would more effectively allow residents and users of the buildings not directly fronting Hurontario Street to access Hurontario Street and the transit stations.

- i. The connections shown on [Figure 8.3.5](#) shall be developed as local public streets or publicly accessible walkways.
- ii. Encourage additional connections in developments through the introduction of mid-block pedestrian connections.

8.3.9 Place-making

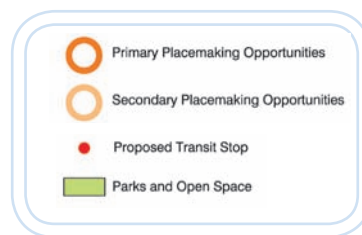
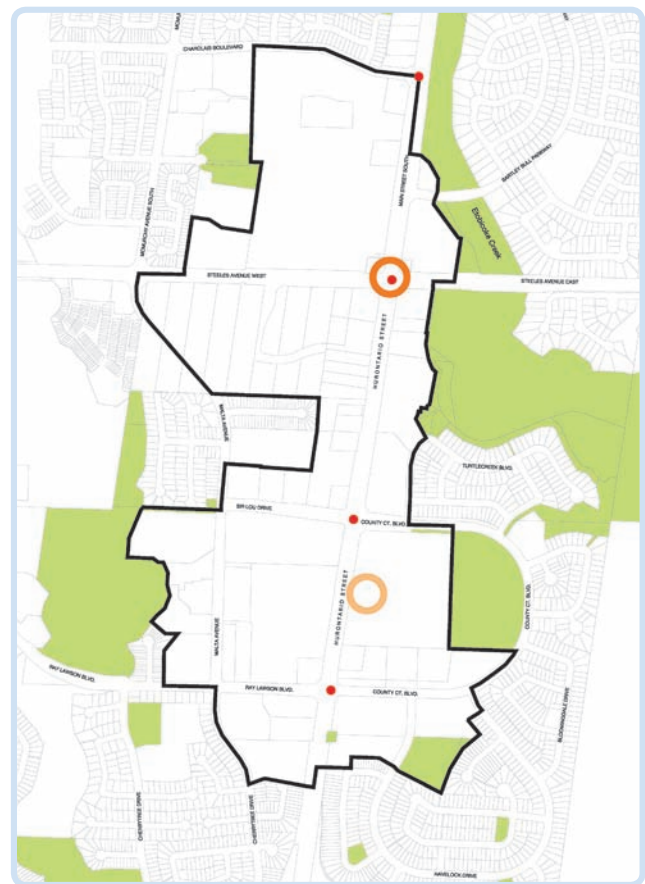
The intersection of Steeles Avenue and Hurontario/Main Street has been identified as the centre of a Gateway Hub by the Metrolinx Regional Transportation Plan and is thus intended to become the heart of a major pedestrian-oriented neighbourhood. Currently this location is the intersection of two major regional arterial highways handling hundreds of vehicles per hour.

Further south in the vicinity of the A. Grenville & William Davis Courthouse, there are a number of development opportunities that will allow that area to develop a central neighbourhood focus along Hurontario Street between Sir Lou Drive and Ray Lawson Boulevard.

Some areas along the Corridor have been identified as requiring special urban design considerations and attention. This implies investing greater attention, care, and resources on the quality and character of design to ensure the highest possible appeal to, and use by, pedestrians. Examples may include special paving, a greater concentration of street furniture (e.g. benches), public art, enhanced landscaping elements, cultural heritage markings and plaques and special lighting features.

- i. Special Urban Design consideration in accordance with Section 7.3.12 of this Plan should be given to the place-making locations identified on [Figure 8.3.6](#).

Figure 8.3.6
Brampton Gateway Placemaking Map





8.3.10 Civic Public Spaces

Brampton Gateway is a major residential, retail and office node and the importance of civic spaces for the recreation and enjoyment by local residents is a key factor in the livability of the area.

The open space character of the Brampton Gateway Neighbourhood is defined by a large park system which follows Etobicoke Creek trail located along the Corridor between Steeles Avenue and the border with the Main Street South Heritage Character Area. These parks include: Kiwanis Memorial Park, Joyce Archdekin Park, Charles F. Watson Family Gardens and Centennial Park.

- i Integration of civic public spaces into new development or redevelopment shall be in accordance with Section 7.3.14 of this Plan. Specifically, key elements of the Brampton Gateway public realm such as the large park system along Etobicoke Creek shall be considered to help refine the future of the Character Area.
- ii A public open space should accompany the transit oriented developments and major transit stop located at the intersection of Hurontario Street and Ray Lawson Boulevard/County Court Boulevard.
- iii. The visual and civic prominence of the two public buildings located on the south corners of Hurontario Street and Sir Lou Drive/ County Court Boulevard (Peel Regional Court House and Peel Police Headquarters) should be recognized through the provision of public open spaces that help frame the building frontages.
- iv The section of Main Street located between Steeles Avenue and Charolais Boulevard shall be given special attention as it will act as a transition zone between the built environment along the west side of the street and the natural environment located on the east side. New plantings shall be natural to the area and shall not encroach on the adjacent habitat.

8.3.11 Transition Areas

Adjacent to stable lower density residential areas a height transition area is proposed to blend new development into existing neighbourhood heights. These areas are identified on [Figure 8.3.2](#) and are subject to the policies below.

- i. No new building within a transition area shall exceed the height transition plane (see [Figure 8.3.2](#)) unless permitted by the approval authority. The height transition plane will be measured from the outer edge of the plan area up over the plan area at a 45 degree angle.
- ii. Notwithstanding the above policy, any new building shall be at least three storeys (8.0 metres) in height or can match the height of any adjacent building if they are over three storeys without regard for the height transition plane.
- iii. A step back along a 45 degree angular plane will also be required for new and renovated buildings that are adjacent to a property with significant heritage resources (i.e. listed, designated, or identified through a Heritage Impact Statement as may be required by the City). New buildings must be sympathetic to and transition from, the height of adjacent heritage resources, with a minimum 45 degree angular plane as per Section 7.3.18.



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MISSISSAUGA EMPLOYMENT



VISION

8.4 Mississauga Employment Area

8.4.1 Vision

The vision for the Mississauga Employment Area is to develop a premier office commercial and employment corridor supported by four nodes of accessory retail, commercial, recreational and institutional uses focused around the major transit stations. The built form of the area will support pedestrian and transit activity and will create a pedestrian-friendly character with street-related accessory commercial uses to support local employees in the area.



8.4.2 Population and Employment Forecast

Intensification and new development will occur through employment growth, such as offices, institutions, recreational facilities, light industries uses and related accessory and supporting commercial uses (restaurants, shops and street-related activities). Residential growth is not permitted in this area.

Existing and potential population and employment figures are as follows:

- Existing population: 0 people
- Population potential: 0 people
- Existing employment: 59,350 jobs
- Employment potential: 70,700 jobs

Note: These figures have been provided from the municipality as their 2031 growth targets and were determined through the municipality's provincial conformity exercise. As such, these figures are based on boundaries that may not exactly replicate the boundaries this study is using, but recognizes that the majority of new development will occur within the Character Area boundaries. Additional growth may be possible beyond 2031.

8.4.3 Permitted Use

Lands within the Mississauga Employment Area are subject to the regulations of the Federal Government's Lester B. Pearson Airport Operating Area which prohibits new residential uses and other sensitive land uses. Employment uses will thus dominate this Character Area with the focus being on office development, with accessory commercial, institutional, recreational and civic uses being concentrated immediately adjacent to Hurontario Street or along major cross streets. Therefore, notwithstanding the policies found in Section 7.3.1 Permitted Uses, the following will apply to this area:

- i. Permitted uses on Hurontario Street shall include the full range of employment, office, accessory commercial, institutional, cultural, health and medical, entertainment uses and related public uses such as urban squares and public parking.
- ii. Institutional uses shall be encouraged to locate on sites fronting onto Hurontario Street or major cross streets.
- iii. Warehousing, storage and industrial uses shall not be permitted on lands fronting Hurontario Street.
- iv. Mixed-use buildings or mixed-use developments that include industrial uses may be permitted on lands fronting Hurontario Street if the industrial use is not located along the Hurontario Street frontage.
- v. Drive-through uses such as drive-through restaurants and drive-through financial institutions shall be prohibited in the Corridor Area, either singly or in conjunction with otherwise permitted uses.
- vi. Automobile sales and service uses, which include gas bars and other similar vehicle service uses, shall not be permitted closer than 100 metres from the Hurontario/Main Street Corridor.
- vii. Developments that are proposed to ultimately be under condominium tenure will be encouraged to maximize their density and meet all design requirements in the first phase of their development. If phased condominium development is being proposed each phase must be a separate condominium corporation and the applicant shall submit a phasing strategy that allows the later phases of the development to be completed as per the master Site Plan without relying on the approval of owners of the earlier phases.

8.4.4 Permitted Use at Grade Level

Within the Mississauga Employment Area there are two categories of animated use at street level: Commercial or Institutional and Convertible Employment. Commercial or Institutional uses are focused around the four major transit stations found in this area. The intention is to promote pedestrian activity, particularly in the vicinity of the major transit stations, with a mix of employment and accessory commercial uses to entice visitors and employees to explore, shop, work and take transit within this area. Incorporating animated uses at street-level will help to encourage employees to use the transit system by making the connections from their place of employment to the transit station a pleasant and comfortable experience.

Outside of the major station areas, Convertible Employment frontage at street level means initially employment uses can occupy the entire building but as the number of pedestrians increase over time, new accessory retail and street-related commercial uses can be added, effectively extending the nodes along the Corridor.

- i. Uses along the main street-edge are required to be as designated on [Figure 8.4.1](#).

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PERMITTED USE AT GRADE

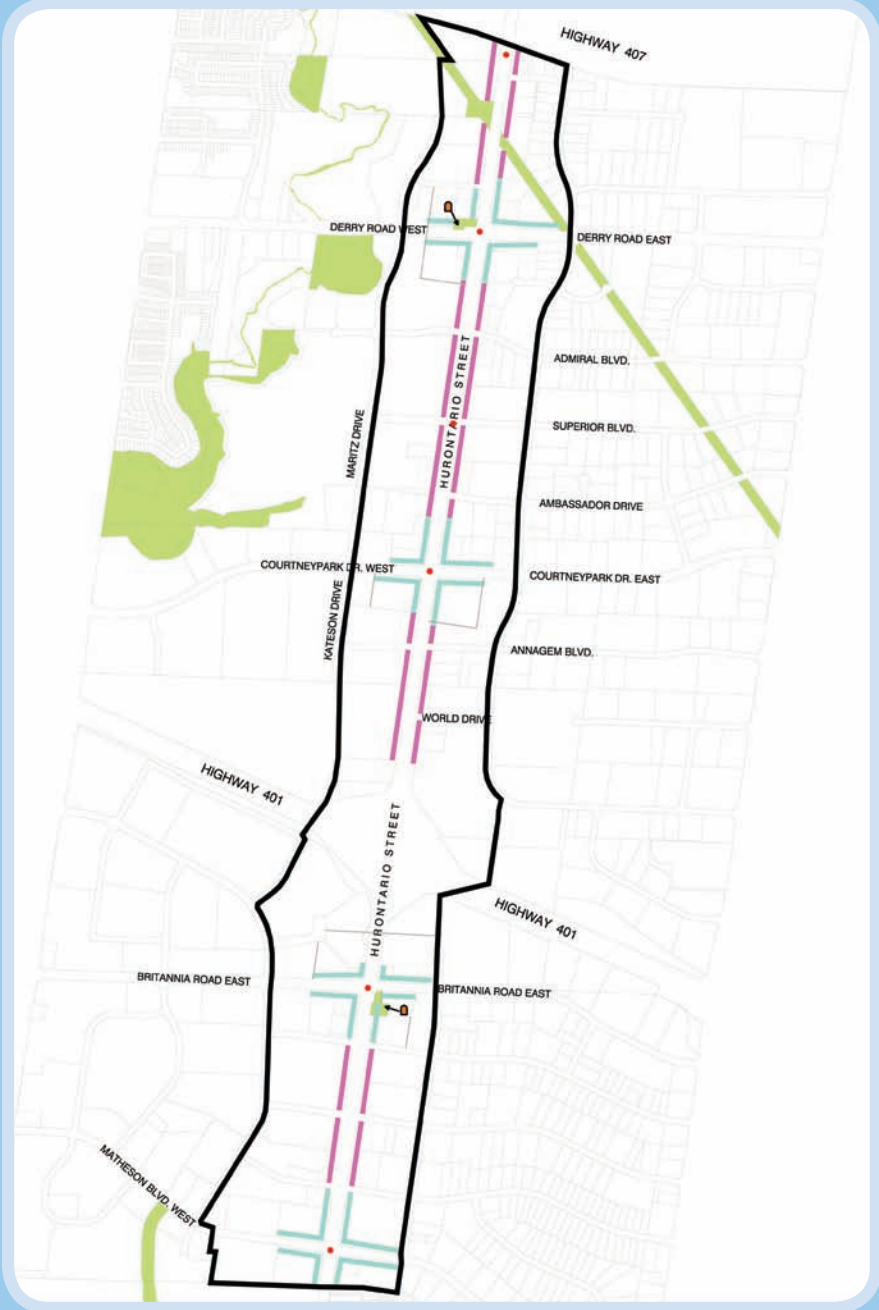




Figure 8.4.1
Mississauga Employment
Area Permitted Use

 Accessory Commercial or Institutional Frontage	 Proposed Transit Stop
 Convertible Employment Frontage	 Parks and Open Space
All other street frontages may have any use permitted by the Zoning Bylaw at ground level facing the street	
	 Historic Cemetery

8.4.5 Density

Within the Mississauga Employment Area, the permitted density will be a maximum of 4.0X FSI in the immediate vicinity of the major transit stations and 2.5X FSI elsewhere. This is intended to create a compact form of development within the major station areas, while distributing a more moderate density along the Corridor in between transit stations.

- i. Density shall be as specified on [Figure 8.4.2](#).

8.4.6 Heights

Building heights within the Mississauga Employment Area are limited to 48 m (15 storeys) of the major station areas and 33 m (10 storeys) elsewhere in the Character Area as shown in [Figure 8.4.2](#). For this section “major station areas” is defined as the areas shown with 4.0X FSI on [Figure 8.4.2](#).

- i. Maximum building heights shall be as specified on [Figure 8.4.2](#).
- ii. Minimum building height shall be 3 storeys within all areas immediately adjacent to major station areas.
- iii. Where podium setbacks are specified on [Figure 8.4.5](#), podiums heights shall have a 3 storey minimum and 21 m (6 storey) maximum podium.

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DENSITY & HEIGHT MAP

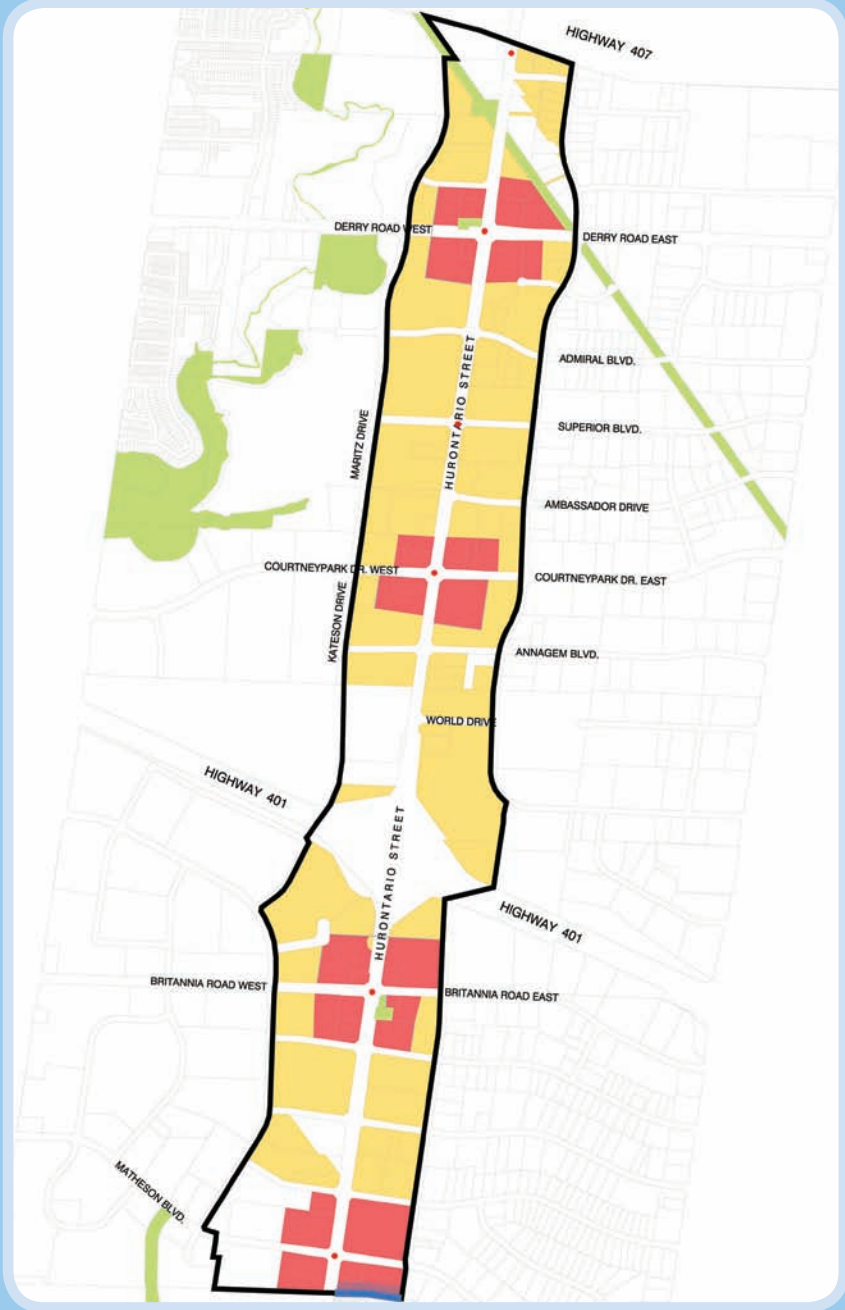


Figure 8.4.2
Mississauga Employment Area
Density and Height Map

8.4.7 Minimum Continuous Street Frontage Requirements

Within the major transit station areas Continuous frontage will be required (minimum 95%). This is intended to create a complete street wall that supports a robust pedestrian environment. Along the Corridor, in sections between these major station nodes an intermittent frontage (minimum 70%) is allowed. This is intended to create a relatively friendly pedestrian environment while still recognizing the current preferred built form for prestige office commercial buildings in the city.

- i. Development will be required to build to the street edge for the percentage of the street frontage in locations as specified on [Figure 8.4.3](#).

Figure 8.9.3
Mississauga Employment Area Continuous Street Frontage Map

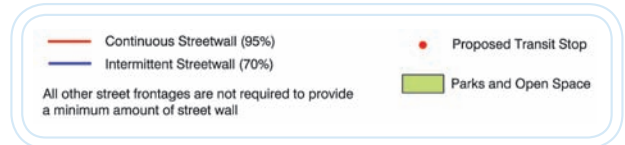
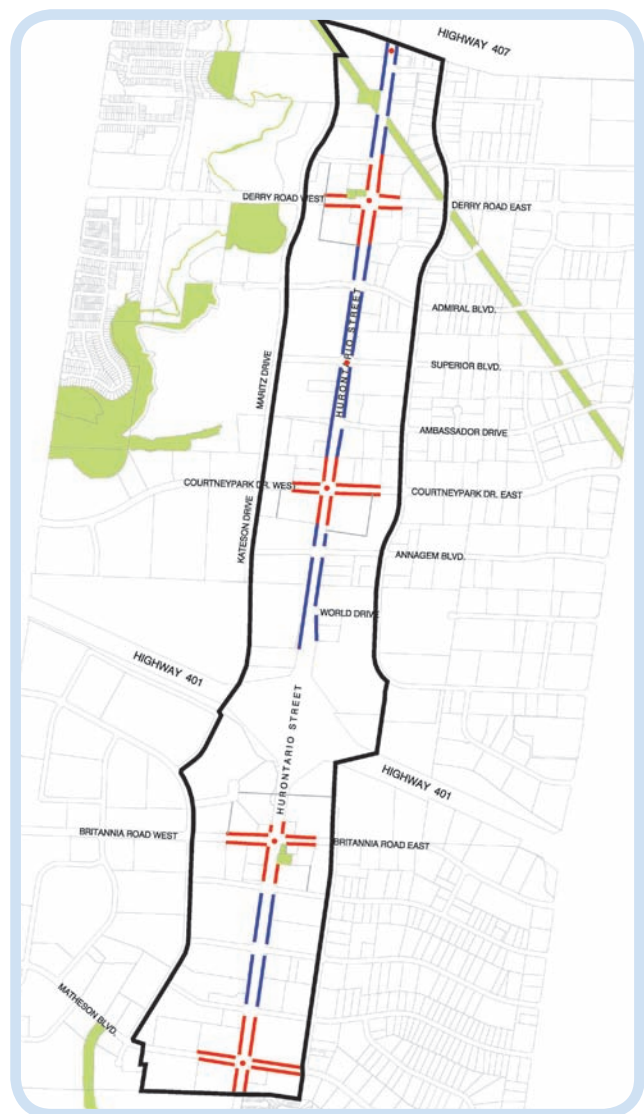
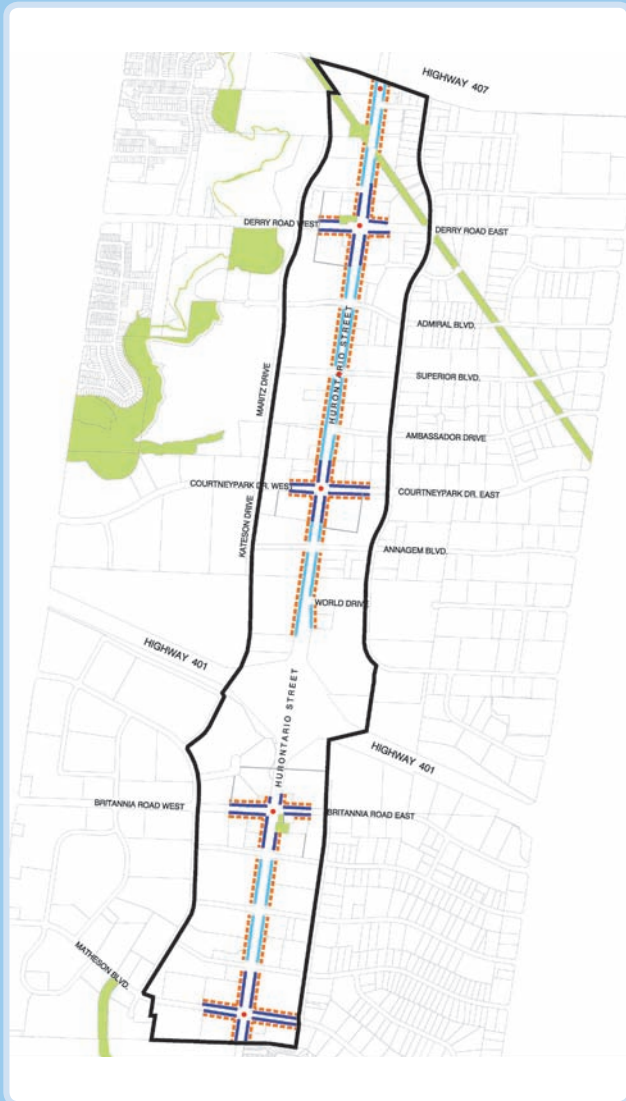
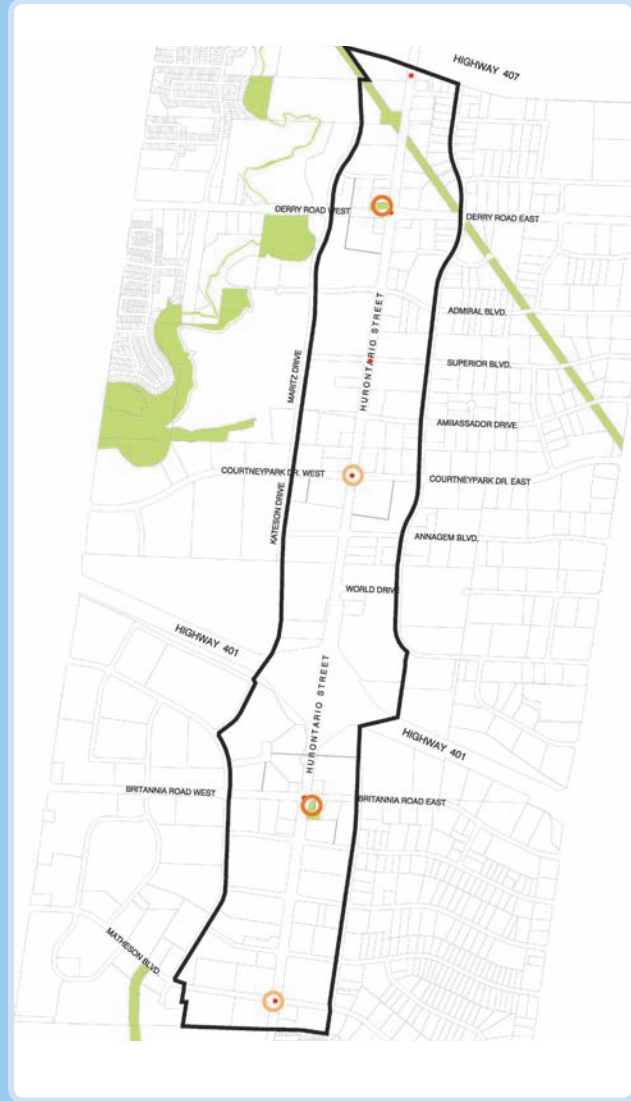


Figure 8.4.4
Mississauga Employment Area Setback Map



- Proposed Transit Stop
 - Parks and Open Space
 - Building must be built at Street Line (0.0m Setback)
 - Building must be built within 5.0m of Street Line (maximum 5.0m setback)
 - - - Additional setback of at least 2.5m required above podium
- All other setbacks are as required by the Zoning Bylaws.

Figure 8.4.5
Mississauga Employment Area Placemaking Map



- Primary Placemaking Opportunities
- Secondary Placemaking Opportunities
- Proposed Transit Stop
- Parks and Open Space

8.4.8 Maximum Setback Lines

A vibrant streetscape involves the development of an enclosed, pedestrian-scaled street. Along various routes, the provision of minimal building setbacks is vital to establishing a consistent street wall that invites pedestrian activity.

- i. Development must be built within the distances stated from the streetline in locations specified on [Figure 8.4.4](#).
- ii. Buildings above the podium shall be set back a minimum of 2.5 m in locations specified on [Figure 8.4.4](#).

8.4.9 Place-making

There are a number of places through the Corridor where special and unique opportunities exist for creating interesting civic public spaces. Just west of Hurontario Street on Derry Road there is an historic cemetery which must be protected and preserved and could be combined with lands to its east to create a significant urban green space/square. A similar arrangement is possible at Britannia Road and Hurontario Street where there is an historic cemetery and church just south of the intersection on the east side.

Some areas along the Corridor have been identified as requiring special urban design considerations and attention. This implies investing greater attention, care, and resources on the quality and character of design to ensure the highest possible appeal to, and use by, pedestrians. Examples may include special paving, a greater concentration of street furniture (e.g. benches), public art, enhanced landscaping elements, cultural heritage markings and plaques and special lighting features.

- i. Special Urban Design consideration in accordance with Section 7.3.12 of this Plan should be given to the place-making locations identified on [Figure 8.4.5](#).

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8.4.10 Civic Public Spaces



The Mississauga Employment Area is a major employment and office corridor and the importance of civic spaces for the recreation and enjoyment by local employees is a key factor in the viability of the area.

- i. Integration of civic public spaces into new development or redevelopment shall be in accordance with Section 7.3.14 of this Plan.
- ii. New developments shall incorporate outdoor spaces with a scale relative to the number of employees.
- iii. Streets and streetscapes should be designed and landscaped to function as a significant part of the public realm and be oriented to pedestrian use.
 - Intersections along Hurontario Street should act as a significant open space features within the Mississauga Employment Character Area. Design and layout shall enable pedestrian circulation from transit stops towards adjacent buildings and destinations in a way that is direct, desirable and safe, year-round, while contributing to the visual appeal of the Corridor.
 - The Britannia United Church and Cemetery located at the intersection of Hurontario Street and Britannia Road, should be preserved and respected to provide the opportunity for urban green space.
- iv. Within the Mississauga Employment area, sidewalk widths will vary depending on their location, but will be at least 3 metres clear to ensure comfortable and easy movement, with respect to: current or proposed uses, frontage designations and proximity to existing and future transit nodes, which will determine future pedestrian flows.



8.4.11 Transition Areas

Along the southern boundary of this Character Area is a stable lower density residential area, where a height transition area has been applied to ensure the existing neighbourhood is protected by requiring new development adjacent to the stable community to respect the existing conditions. This area is identified on [Figure 8.4.2](#) and is subject to the policies below.

- i. No new building within a transition area shall exceed the height transition plane (see [Figure 8.4.2](#)) unless permitted by the approval authority. The height transition plane will be measured from the outer edge of the plan area up over the plan area at a 45 degree angle.
- ii. Notwithstanding the above policy, any new building shall be at least 9 m (3 storeys) in height or can match the height of any adjacent building if they are over three storeys without regard for the height transition plane.
- iii. A step back along a 45 degree angular plane will also be required for new and renovated buildings that are adjacent to a property with significant heritage resources (i.e. listed, designated, or identified through a Heritage Impact Statement as may be required by the City). New buildings must be sympathetic to and transition from, the height of adjacent heritage resources, with a minimum 45 degree angular plane as per Section 7.3.18.

EGLINTON-BRISTOL

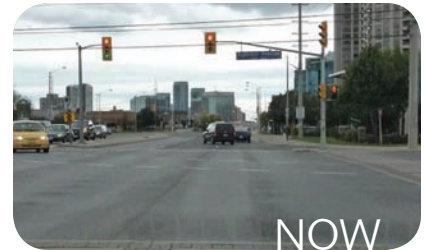


VISION

8.5 Eglinton-Bristol

8.5.1 Vision

The vision for development in the Eglinton-Bristol Character Area is to create two high-density transit-oriented nodes – both will be strong mixed-use centres with businesses, office, retail, cafés, restaurants and cultural uses, along with a substantial residential component. The primary node will be centred on Eglinton Avenue, with Bristol Road acting as a secondary supporting node. Pedestrian activity will be encouraged by providing a scale of built form, streetscape and uses at grade that animate the street.



8.5.2 Population and Employment Forecast

The policies are based in part on the potential for population and employment growth in Eglinton-Bristol. Modest population and employment growth creates the opportunity to transform Eglinton-Bristol into a vibrant neighbourhood where residents can live, work and shop within a walkable area.

Existing and potential population and employment figures are as follows:

- Existing population: 62,530 people
- Population potential: 68,550 people
- Existing employment: 6,160 jobs
- Employment potential: 7,700 jobs

Note: These figures have been provided from the municipality as their 2031 growth targets and were determined through the municipality's provincial conformity exercise. As such, these figures are based on boundaries that may not exactly replicate the boundaries this study is using, but recognizes that the majority of new development will occur within the Character Area boundaries. Additional growth may be possible beyond 2031.

PERMITTED USE AT GRADE

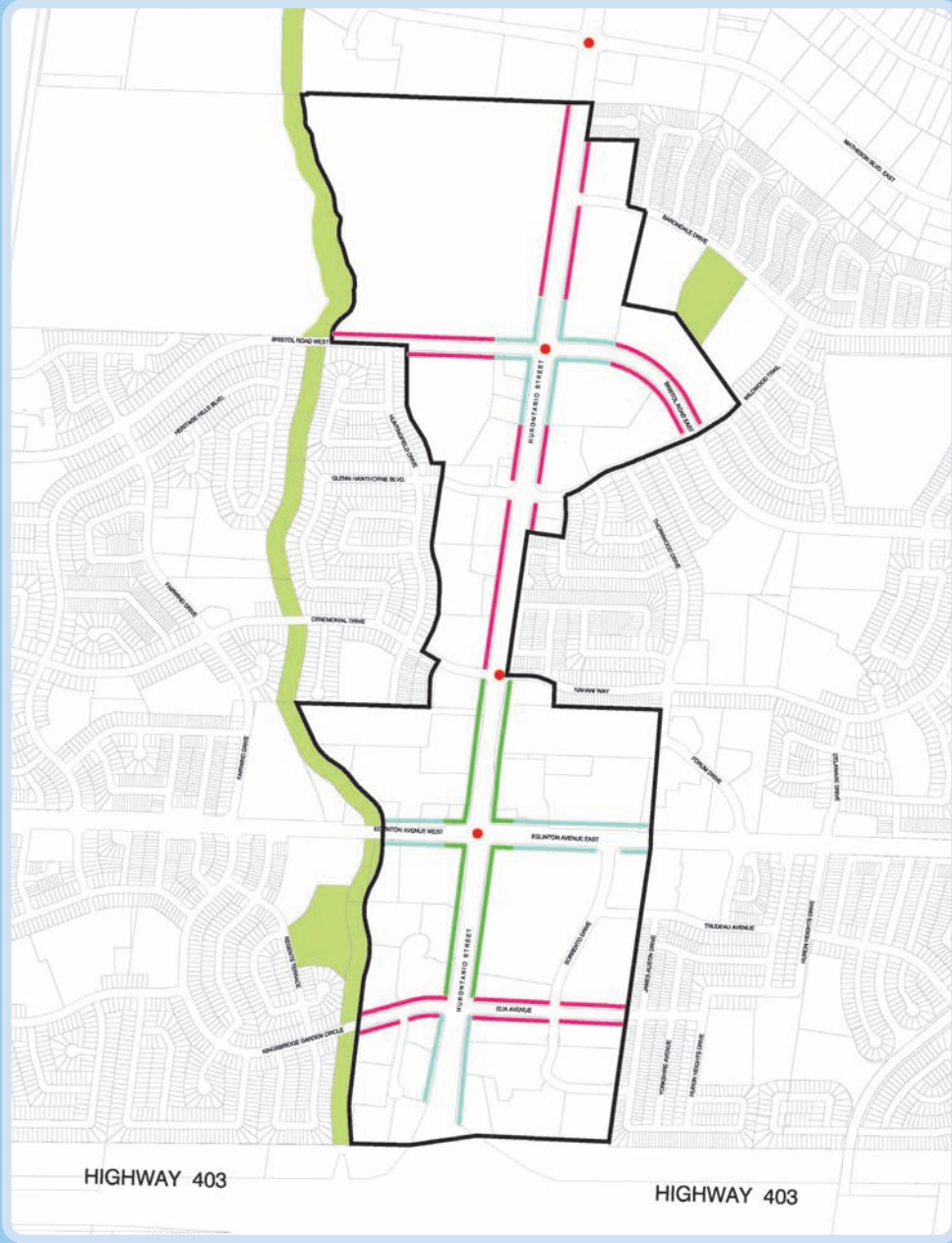


Figure 8.5.1
Eglinton-Bristol
Permitted Use Map

— Retail Frontage	● Proposed Transit Stop
— Commercial or Institutional Frontage	 Parks and Open Space
— Convertible Frontage	

All other street frontages may have any use permitted by the Zoning Bylaw at ground level facing the street



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8.5.3 Permitted Use at Grade Level

Within Eglinton-Bristol there are three categories of animated use at street level: Retail, Commercial or Institutional, and Convertible. The intention is to create streets that will serve high levels of pedestrian activity. In the vicinity of Eglinton Avenue, Hurontario will be an active “Main Street” with uses limited to retail at street level which supports the highest volume of pedestrian traffic. Further north and south along Hurontario and also east and west on Eglinton, a wider range of Commercial or Institutional uses are allowed which helps create a vibrant street that will be developed into a “Main Street” over time. Approximately 50 metres from the Bristol node and along some cross streets, Convertible frontage allows for a broad range of uses that can respond to market demands and neighbourhood evolution over time. Initiatives such as widening sidewalks and enhancing streetscaping and landscaping for buildings located along the street edge will be done in order to promote other pedestrian scale movement opportunities (e.g. bicycles, in-line skating, etc.) and connections with surrounding residential neighbourhoods and parks.

- i. Uses along the main street-edge are required to be as designated on [Figure 8.5.1](#).

DENSITY & HEIGHT MAP

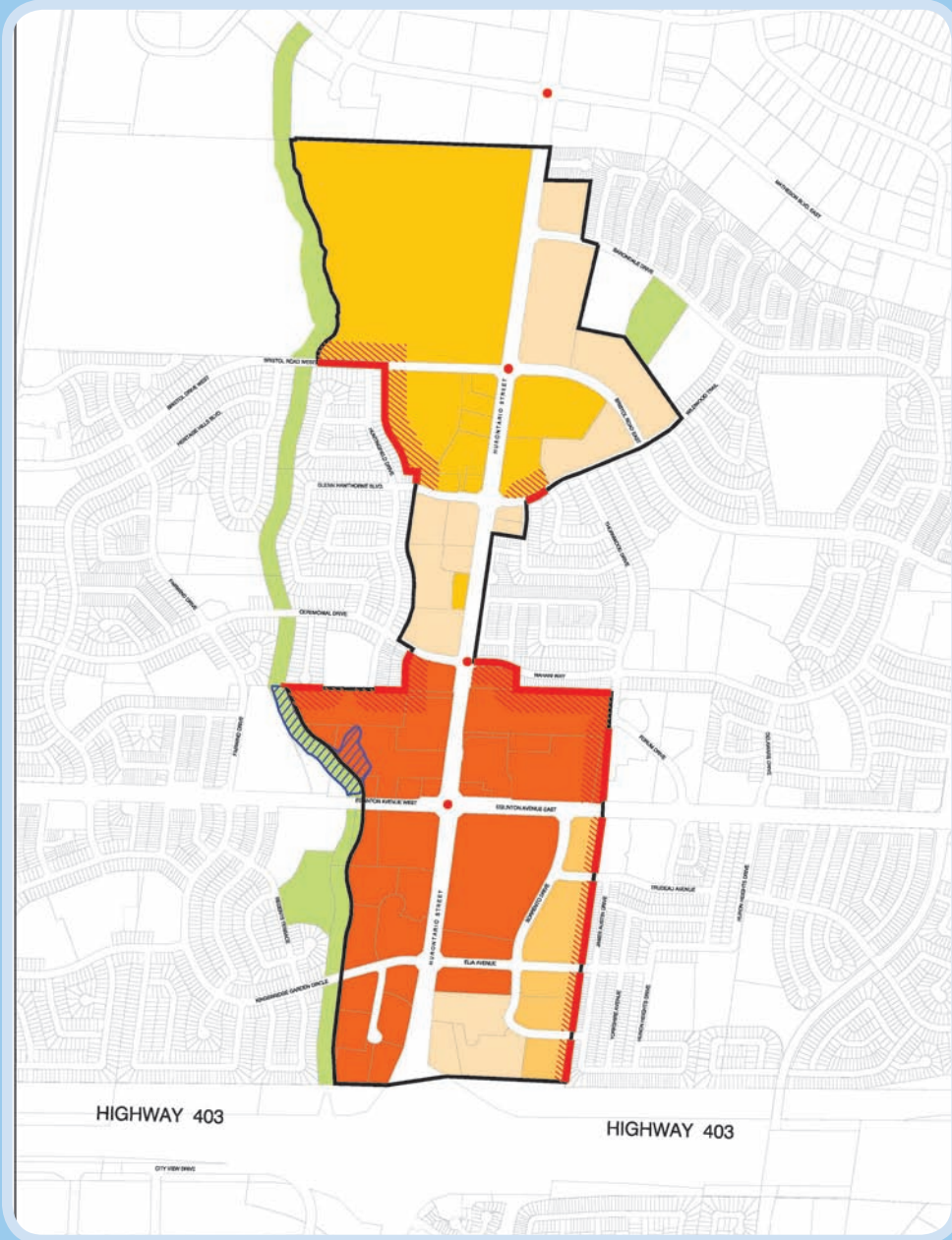











Figure 8.5.2
Eglinton-Bristol Density
and Height Map

	78.0m (25 Storey) - 4.0X FSI		Area Subject to Floodplain Policies
	63.0m (20 Storey) - 3.0X FSI		Height Transition Boundary
	39.0m (12 Storey) - 3.0X FSI		Height Transition Area
	13.0m (4 Storey) - 2.0X FSI		Parks and Open Space
			Proposed Transit Stop

8.5.4 Density

Within the Eglinton-Bristol Character Area the highest densities are around the intersection of Hurontario Street and Eglinton Avenue. This is intended to create a compact form of development. It is also intended to encourage additional development on properties with existing high-rise development to help create a desirable street frontage condition. In the Bristol node the permitted density is lower, which will provide the opportunity for a wider variety of building types and characters within the Corridor.

- i. Density shall be as specified on [Figure 8.5.2](#).

8.5.5 Heights

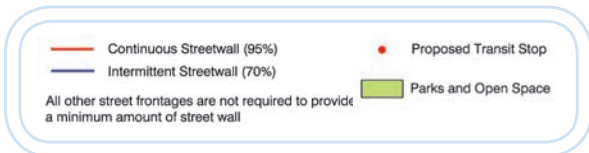
The existing Eglinton-Bristol character is a mix of high-rise residential buildings with heights that range from 8 to 35 storeys, medium-density townhouse developments, 6 to 10 storey commercial buildings and 1 storey retail plazas.

The permitted height for the high-rise buildings is 78 m (25 storeys) (before bonusing) in the Eglinton node and 63 m (20 storeys) in the Bristol node. However the minimum height of 3 storeys will be applied to all new developments.

- i. Maximum building heights shall be as specified on [Figure 8.5.2](#).
- ii. Minimum building height shall be 3 storeys for all areas within this Character Area.
- iii. Where podium setbacks are specified on [Figure 8.5.4](#), podiums heights shall be 3 storey minimum and an 21 m (6 storey) maximum podium.

8.5.6 Minimum Continuous Street Frontage Requirements

Figure 8.5.3
Eglinton-Bristol Continuous Street Frontage Map



Along Hurontario Street, Eglinton Avenue and Bristol Road a continuous frontage of 95% will be required. It is anticipated that this area will have a welcoming pedestrian environment and complete street walls will be an important element of this Character Area. For Elia Avenue, Bristol Drive, Huntington Drive and Kingsbridge Garden Circle an intermittent frontage of 70% is required.

- i. Development will be required to build to the street edge for the percentage of the street frontage in locations as specified on [Figure 8.5.3](#).

8.5.7 Maximum Setback Lines

A vibrant streetscape involves the creation of an enclosed, pedestrian-scaled street. Along various routes, the provision of minimal building setbacks is vital to establishing a consistent street wall that invites pedestrian activity.

- i. Development must be built within the distances stated from the streetline in locations specified on [Figure 8.5.4](#).
- ii. Buildings above the podium shall be set back a minimum of 2.5 m in locations specified on [Figure 8.5.4](#).

Figure 8.5.4
Eglinton-Bristol Setback Map



Figure 8.5.5
Eglinton-Bristol New Connections Map



8.5.8 New Connections

Improved connectivity between streets, pathways, amenities, buildings and transit stops/stations is essential to improve the vibrancy of the streetscapes by reducing walking distances and times and opening opportunities for exploration. The Eglinton-Bristol Character Area currently contains large blocks, which, if not broken up, will create a poor pedestrian environment. This Plan encourages increased connectivity in this area through the creation of new roads or pedestrian pathways that would more effectively allow residents and users of the buildings not directly fronting Hurontario Street to access the street and the transit stations.

- The connections shown on [Figure 8.5.5](#) will be developed as local public streets or publicly accessible walkways.
- Encourage additional connections in developments through the introduction of mid-block pedestrian connections.

8.5.9 Place-making

The intersection of Hurontario Street and Eglinton Avenue is and will remain one of the busiest intersections in Mississauga and therefore it should be treated with special consideration. As the centre of a growing neighbourhood, based around a rapid transit station, it must be made pedestrian-friendly and welcoming without totally disregarding automobiles. A high quality of design must be incorporated into the buildings and spaces around this intersection.

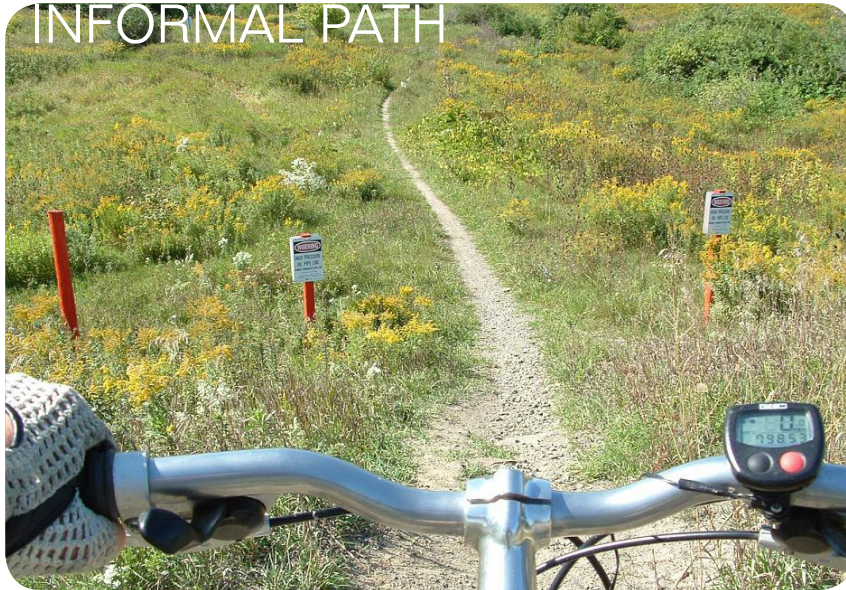
The intersection of Hurontario Street and Bristol Road provides an opportunity to create an interesting gateway between the employment areas to the north and the city centre to the south, while growing as a pedestrian-oriented neighbourhood that provides a mix of uses with high urban design standards.

Some areas along the Corridor have been identified as requiring special urban design considerations and attention. This implies investing greater attention, care, and resources on the quality and character of design to ensure the highest possible appeal to, and use by, pedestrians. Examples may include special paving, a greater concentration of street furniture (e.g. benches), public art, enhanced landscaping elements, cultural heritage markings and plaques and special lighting features.

- i. Special Urban Design consideration in accordance with Section 7.3.12 of this Plan should be given to the place-making locations identified on [Figure 8.5.6](#).

Figure 8.5.6
Eglinton-Bristol New Connections Map





8.5.10 Civic Public Spaces

Eglinton-Bristol is a major residential, retail and office node and the importance of these civic spaces for the recreation and enjoyment by local residents is a key factor in the livability of the area.

- i Integration of civic public spaces into new development or redevelopment shall be in accordance with Section 7.3.14 of this Plan. Specifically, new large-scale development in the Eglinton-Bristol area should include new public open spaces, recreational parks, and public squares and plazas within and adjacent to the development. Smaller-scale developments should contribute to the public realm by providing opportunities for human interaction and animation along the street edge. Existing paths and community spaces provided by schools and community centres located adjacent to the Corridor (i.e. St. Francis Xavier Secondary School, Bristol Road Middle School and Frank McKechnie Community Centre) should be maintained and enhanced as publicly accessible spaces.

8.5.11 Transition Areas

Adjacent to stable lower density residential areas a height transition area is proposed to blend new development into existing neighbourhood heights. These areas are identified on [Figure 8.5.2](#) and are subject to the policies below.

- i. No new building within a transition area shall exceed the height transition plane (see [Figure 8.5.2](#)) unless permitted by the approval authority. The height transition plane will be measured from the outer edge of the plan area up over the plan area at a 45 degree angle.
- ii. Notwithstanding the above policy, any new building shall be at least 9 m (3 storeys) in height or can match the height of any adjacent building if they are over three storeys without regard for the height transition plane.
- iii. A step back along a 45 degree angular plane will also be required for new and renovated buildings that are adjacent to a property with significant heritage resources (i.e. listed, designated, or identified through a Heritage Impact Statement as may be required by the City). New buildings must be sympathetic to and transition from, the height of adjacent heritage resources, with a minimum 45 degree angular plane as per Section 7.3.18.



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DOWNTOWN CORE



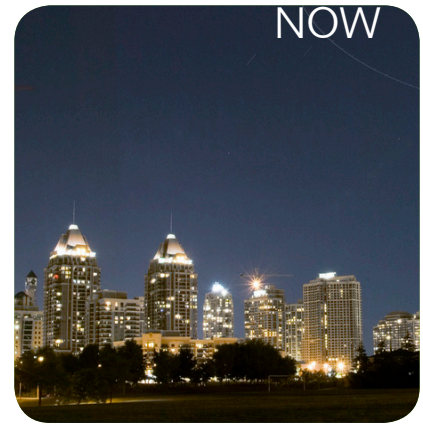
VISION

8.6 Downtown Core

The Downtown Core (Mississauga City Centre) is in many ways the heart of the Hurontario/Main Street Corridor – with Downtown Brampton and Port Credit being the anchors at either end, but it is also the heart of the entire City of Mississauga and plays an important role in the Region of Peel and the entire Greater Toronto Area. Due to this significance, the City has commissioned a parallel study to this Higher Order Transit study to look at the core in a much broader light. That study – Downtown21 – takes precedence over this study with regard to the planning and urban design policies. That being said, the philosophy expressed in Downtown21 is consistent with the principles and policies set out in this master plan. The following are excerpts from the Downtown21 document for reference (please refer to the actual Downtown21 document for additional information):

“To achieve the goals of the Strategic Plan a significant transformation for Downtown Mississauga will be required – a transformation from suburban to urban. This will entail a Downtown that will be walkable and human-scaled with juxtapositions and surprises, arts and culture, grit and polish, rich in information, convenient, stimulating, flexible, wired, innovative, productive, sensual and able to do more things in less space. It is the place we want to be. The broad vision for this transformation has been endorsed by the public and City Council in numerous town hall meetings.

Downtown Mississauga is a proven and successful market with over 30,000 residents and 20,000 jobs within walking distance of the major centre of civic government, cultural amenities and an established regional retail facility. Expanding on this substantial base, Downtown21 is designed to promote the continued evolution of a livable, compact, sustainable downtown centre for the entire city which will enhance Mississauga’s competitive advantage and reputation as a forward looking community.



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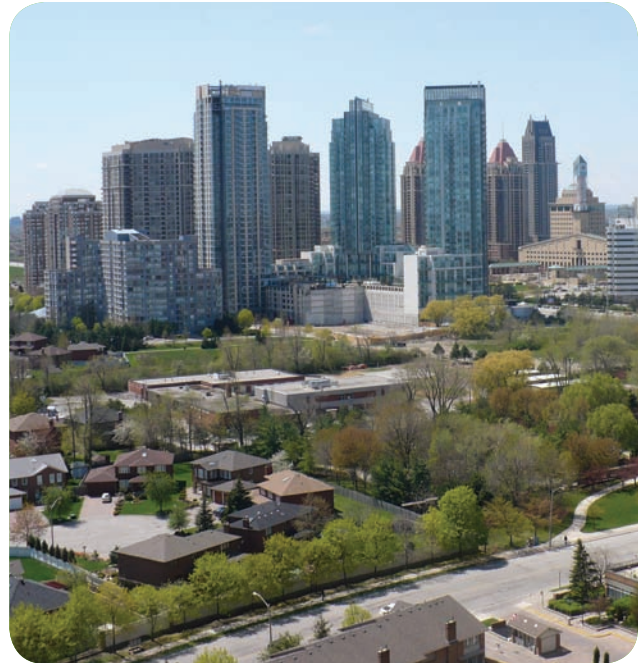
8.6.1 Principles

Catalyze Employment

The future of downtown has to strengthen existing office uses and attract new major employment to ensure long-term economic success and urban vitality.

Build a Multi Modal Place

A successful, vibrant and active downtown will have to support and rely on a range of transportation modes including walking, cycling, transit and the car.



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Create an Urban Place

A downtown cannot be derived from a suburban built form. Developing a walkable, urban downtown is critical to re-branding the downtown as a unique “GTA” location with a high quality-of-place. The multi-cultural diversity of Mississauga demands a downtown that is unique, authentic and memorable.

Living Green

Downtown should showcase Mississauga’s commitment to sustainability as both an economic development and resource consumption strategy.

Establish a Focus

The geography of downtown is too large to start just anywhere or everywhere. The limited resources of the City and participation of private stakeholders should be initially focused in a small, intense location.

Create a Development Framework with Predictability

The current development policy framework lacks necessary guidance, is an unpredictable planning regime and does not incentivize or direct the kind of coordinated urban development necessary to create a vibrant and walkable Downtown.

DOWNTOWN FAIRVIEW

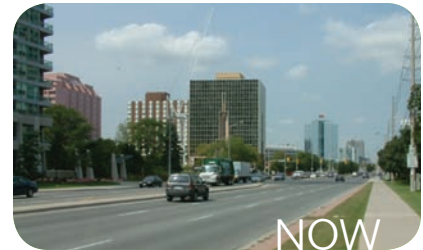


VISION

8.7 Downtown Fairview

8.7.1 Vision

The Downtown Fairview Character Area will continue to be developed as a vibrant complete downtown environment with a mix of high density uses. The predominant use in this area will be residential with retail uses encouraged at grade. Located between the City Centre and the Cooksville Gateway Mobility Hub, it will connect these areas by creating uses, particularly commercial and institutional, at grade that will animate the street and support adjacent neighbourhoods. The scale of built form and streetscape will reinforce the “main street” character of Hurontario and support robust, vibrant pedestrian activity.



8.7.2 Population and Employment Forecast

The policies are based in part on the potential for population and employment growth in Downtown Fairview. Increasing population and employment growth creates the opportunity to transform Downtown Fairview into a vibrant downtown core where residents can live, work and shop within a walkable area.

Existing and potential population and employment figures are as follows:

- Existing population: 20,700 people
- Population potential: 22,400 people
- Existing employment: 1,100 jobs
- Employment potential: 1,250 jobs

Note: These figures have been provided from the municipality as their 2031 growth targets and were determined through the municipality’s provincial conformity exercise. As such, these figures are based on boundaries that may not exactly replicate the boundaries this study is using, but recognizes that the majority of new development will occur within the Character Area boundaries. Additional growth may be possible beyond 2031.

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8.7.3 Permitted Use at Grade Level

Within Downtown Fairview there are two categories of animated use at street level: Commercial or Institutional and Convertible. The intention is to create a street with a high pedestrian activity recognizing that this area will be predominately residential with major retail nodes both to the north and south. Initially retail uses will be directed to the City Centre and Cooksville areas, but over time a commercial main street environment may evolve through the Fairview area as well. Linking the City Centre and Cooksville areas with a pedestrian-friendly street will be a high priority.

- i. Uses along the main street-edge are required to be as designated on [Figure 8.7.1](#).

PERMITTED USE AT GRADE



Figure 8.7.1
Downtown Fairview
Permitted Use Map

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 Convertible Frontage	 Proposed Transit Stop
All other street frontages may have any use permitted by the Zoning Bylaw at ground level facing the street	
	 Parks and Open Space

8.7.4 Density

Within the Downtown Fairview Area the permitted density is 4.0X FSI. This is intended to create a compact form of development. It is also intended to encourage additional development on properties with existing high-rise development to help create a desirable street frontage condition.

- i. Density shall be as specified on [Figure 8.7.2](#).

8.7.5 Heights

The existing Downtown Fairview character is generally made up of high-rise residential buildings with heights that range from 3 to 30 storeys interspersed with a few 1 storey commercial buildings. New development will be characterized by high density structures, with the heights for the high-rise buildings remaining similar to the existing heights. A minimum height of 3 storeys will be applied to all new developments meaning new 1 or 2 storey buildings will not be permitted. The Downtown Fairview area will act as a bridge between Cooksville and the Downtown Core, by providing an integrated system of trails and paths, as well as a transition in built form.

- i. Maximum building heights shall be as specified on [Figure 8.7.2](#).
- ii. Minimum building height shall be 3 storeys for all areas within this Character Area.
- iii. Where podium setbacks are specified on [Figure 8.7.4](#), podiums heights shall be as follows:
 - Hurontario Street shall have a 5 storey minimum and 21 m (6 storey) maximum podium; and,
 - Central Parkway and Burnhamthorpe Road shall have a 3 storey minimum and a 15 m (4 storey) maximum podium.

DENSITY & HEIGHT MAP

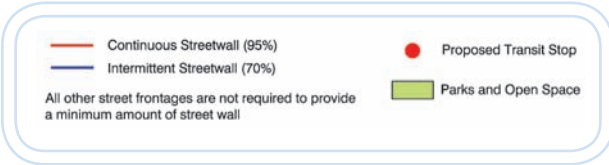
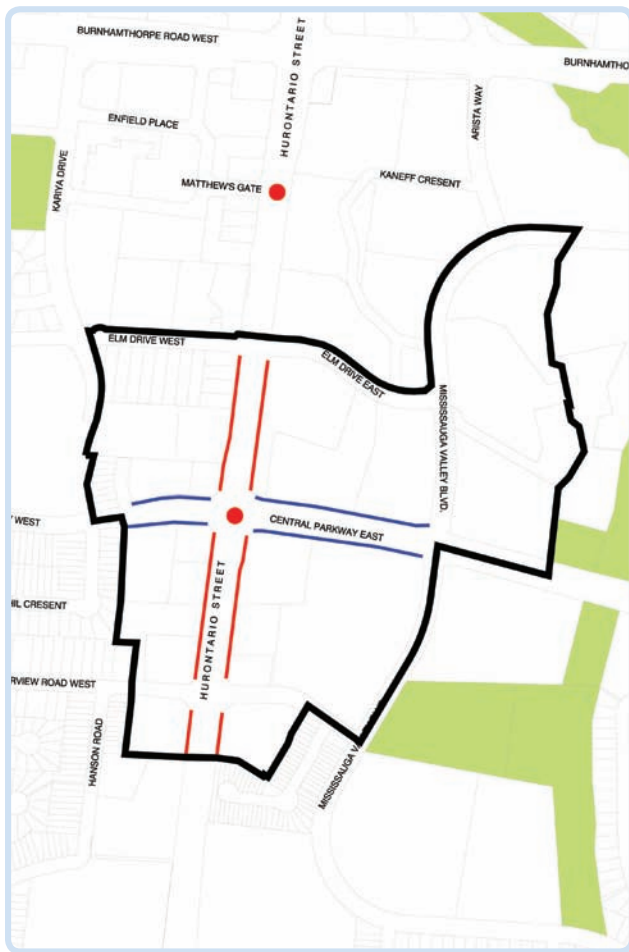


Figure 8.7.2
Downtown Fairview
Density and Height Map

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8.7.6 Minimum Continuous Street Frontage Requirements

Figure 8.7.3
Downtown Fairview Continuous Street Frontage Map



Along Hurontario Street a continuous frontage of 95% will be required. It is anticipated that this area will have a rich urban feel and complete streetwalls will be an important element of this character. For part of Central Parkway, an intermittent frontage of 70% is required.

- i. Development will be required to build to the street edge for the percentage of the street frontage in locations as specified on [Figure 8.7.3](#).

8.7.7 Maximum Setback Lines

A vibrant streetscape involves the creation of an enclosed, pedestrian-scaled street. Along various routes, the provision of only minimal building setbacks is vital to establishing a consistent street wall that invites pedestrian activity.

- i. Development must be built within the distances stated from the streetline in locations specified on [Figure 8.7.4](#).
- ii. Buildings above the podium shall be set back a minimum of 2.5 m in locations specified on [Figure 8.7.4](#).

Figure 8.7.4
Downtown Fairview Setback Map



● Proposed Transit Stop
 Parks and Open Space
 Building must be built within 2.5m of Street Line (maximum 2.5m setback)
 Additional setback of at least 2.5m required above podium
 All other setbacks are as required by the Zoning Bylaws.

8.7.8 New Connections

Improved connectivity between streets, pathways, amenities, buildings and transit stops/stations is essential to improving the vibrancy of the streetscapes by reducing walking distances and times and opening opportunities for exploration. The Downtown Fairview Character Area currently has relatively large blocks containing high-rise towers surrounded by open space or parking areas. This Plan encourages increased connectivity through the lands on the east side of Hurontario Street by the creation of new roads or pedestrian pathways that would more effectively allow residents of the buildings not directly fronting Hurontario Street to access the street and the transit stations.

- i. The connections shown on [Figure 8.7.5](#) will be developed as local public streets or publicly accessible walkways.
- ii. Encourage additional connections in developments through the introduction of mid-block pedestrian connections.

NEW CONNECTIONS



 Connection location	 Proposed Transit Stop
Other connections are encouraged.	 Parks and Open Space

Figure 8.7.5
Downtown Fairview
Connections Map

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Images on this page: Mississauga Valleys

8.7.10 Civic Public Spaces

Downtown Fairview is a major residential node and the importance of civic spaces for the recreation and enjoyment by local residents is a key factor in the livability of the area.

- i Integration of civic public spaces into new development or redevelopment shall be in accordance with Section 7.3.14 of this Plan. Specifically, key elements of the Downtown Fairview public realm such as the creek corridor; the small informal paths and Mississauga Valleys shall be considered to help refine the future of the Character Area.

8.7.11 Transition Areas

Adjacent to stable lower density residential areas, a height transition area is proposed to blend new development into existing neighbourhood heights. These areas are identified on [Figure 8.7.2](#) and are subject to the policies below.

- i. No new building within a transition area shall exceed the height transition plane (see [Figure 8.7.2](#)) unless permitted by the approval authority. The height transition plane will be measured from the outer edge of the plan area up over the plan area at a 45 degree angle.
- ii. Notwithstanding the above policy, any new building shall be at least 9 m (3 storeys) in height or can match the height of any adjacent building if they are over three storeys without regard for the height transition plane.
- iii. A step back along a 45 degree angular plane will also be required for new and renovated buildings that are adjacent to a property with significant heritage resources (i.e. listed, designated, or identified through a Heritage Impact Statement as may be required by the City). New buildings must be sympathetic to and transition from, the height of adjacent heritage resources, with a minimum 45 degree angular plane as per Section 7.3.18.



DOWNTOWN COOKSVILLE



VISION

8.8 Downtown Cooksville

8.8.1 Vision

Downtown Cooksville is a vibrant, mixed-use, pedestrian-oriented Gateway Mobility Hub located on the Hurontario Street Corridor. The Hub is anchored by two nodes, located at the intersection of Hurontario Street and Dundas Street and at the GO Transit Station. Hurontario Street will link these nodes conveniently and attractively for pedestrians through the creation of a continuous street wall along Hurontario Street, with building podiums between 5 and 6 storeys in height. Streets located within the vicinity of each node are similarly intensified, resulting in a consistent urban form that is immediately recognizable as Downtown Cooksville. New connections to parks and open spaces, wider sidewalks, new cycling paths, enhanced streetscaping and improved landscaping will reinforce Hurontario Street's and Dundas Street's function as "Main Streets".



8.8.2 Population and Employment Forecast

The policies are based in part on the potential for population and employment growth in Downtown Cooksville. Significant population and employment growth creates the opportunity to transform Downtown Cooksville into a vibrant downtown core where residents can live, work and shop within a walkable area.

Existing and potential population and employment figures are as follows:

- Existing population: 10,690 people
- Population potential: 21,800 people
- Existing employment: 3,170 jobs
- Employment potential: 3,800 jobs

Note: These figures have been provided from the municipality as their 2031 growth targets and were determined through the municipality's provincial conformity exercise. As such, these figures are based on boundaries that may not exactly replicate the boundaries this study is using, but recognizes that the majority of new development will occur within the Character Area boundaries. Additional growth may be possible beyond 2031.

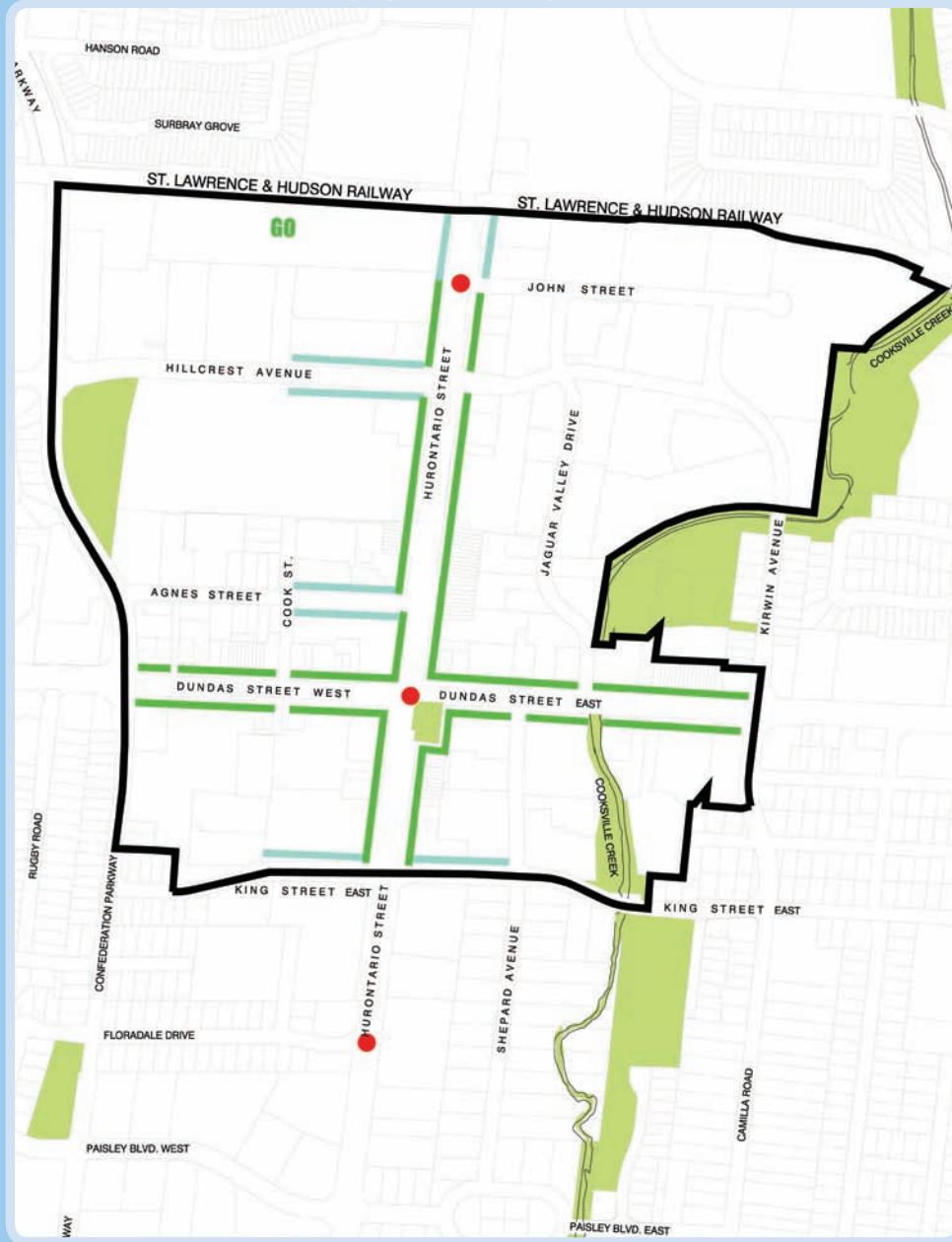






8.8.3 Permitted Use at Grade Level

Within Downtown Cooksville there are two categories of animated use at street level: Retail and Commercial or Institutional. The Retail category is particularly prevalent in this area as it is anticipated that it will remain a centre of high pedestrian activity. Linking the intersection of Dundas Street and Hurontario Street to the GO Transit station with a pedestrian-friendly street will be a high priority.

- i. Uses along the main street-edge are required to be as designated on [Figure 8.8.1](#).

PERMITTED USE AT GRADE



 Retail Frontage	 Proposed Transit Stop
 Commercial or Institutional Frontage	 Parks and Open Space

All other street frontages may have any use permitted by the Zoning Bylaw at ground level facing the street

Figure 8.8.1
Downtown Cooksville
Permitted Use Map

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8.8.4 Density

The Downtown Cooksville Character Area has two density categories. In the vicinity of the GO Transit station the permitted density is 4.0X FSI. This is intended to create an urban high-rise form of development. In the area around the intersection of Dundas Street and Hurontario Street the permitted density is 3.0X FSI. This is intended to create a compact and walkable mid-rise urban village centre.

- i. Density shall be as specified on [Figure 8.8.2](#).

8.8.5 Heights

The existing Downtown Cooksville character is generally made up of mixed building heights that range from 1 to 25 storeys in height. North of Agnes Street the majority of buildings are higher density residential buildings. In this area the maximum height will be 78 m (25 storeys) in keeping with the existing character of the area and the general policies of this plan.

In the vicinity of the intersection of Dundas Street and Hurontario Street the maximum height will be 27m (8 storeys). The intent is to create a unique pedestrian scale specifically at this intersection to encourage a built form that is consistent with the Corridor yet recognizes the unique attributes of this intersection.

Farther away from the GO Transit station and the intersection of Dundas Street and Hurontario Street, the height will be limited to 63 m (20 storeys), which is in keeping with the existing mid-to-high rise buildings found in these locations.

- i. Maximum building heights shall be as specified on [Figure 8.8.2](#).
- ii. Minimum building height shall be 3 storeys for all areas within this Character Area.
- iii. Where podium setbacks are specified on [Figure 8.8.4](#), podiums heights shall be as follows:
 - Hurontario Street and Dundas Street shall have a 5 storey minimum and 20m (6 storey) maximum podium; and
 - King Street, John Street, Agnes Street and Hillcrest Avenue shall have a 3 storey minimum and 15 m (4 storey) maximum podium.

DENSITY & HEIGHT MAP

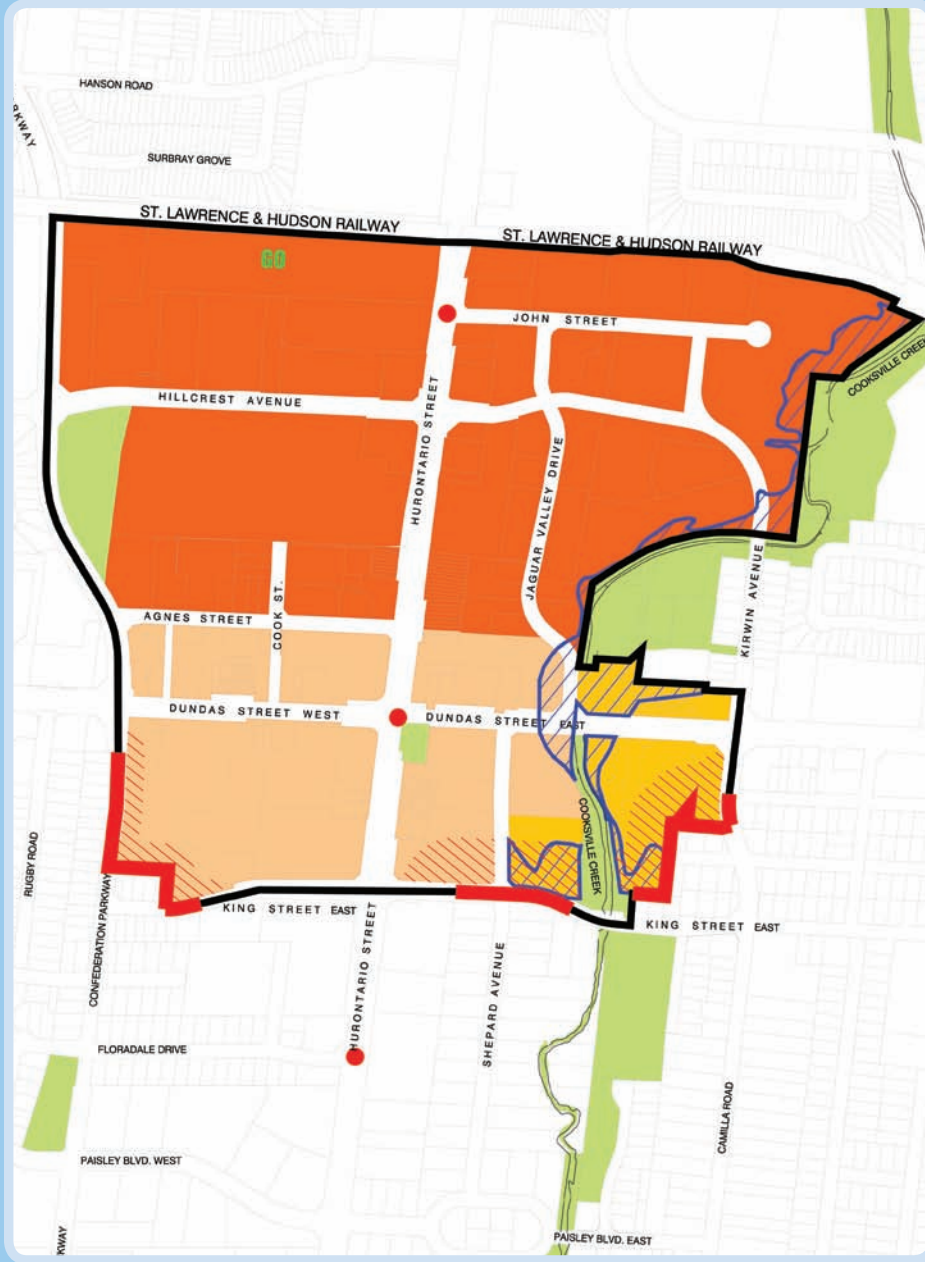


Figure 8.8.2
Downtown Cookville
Density and Height Map

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8.8.6 Minimum Continuous Street Frontage Requirements

Along Hurontario Street and on various connecting streets a “continuous frontage” of 95% will be required. It is anticipated that this area will have a rich urban feel and complete streetwalls will be an important element of this character. For some connecting streets an intermittent frontage of 70% is required.

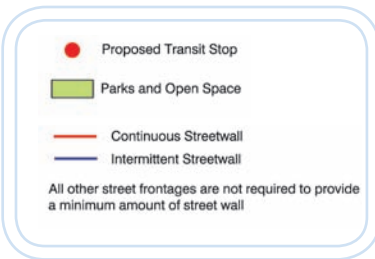
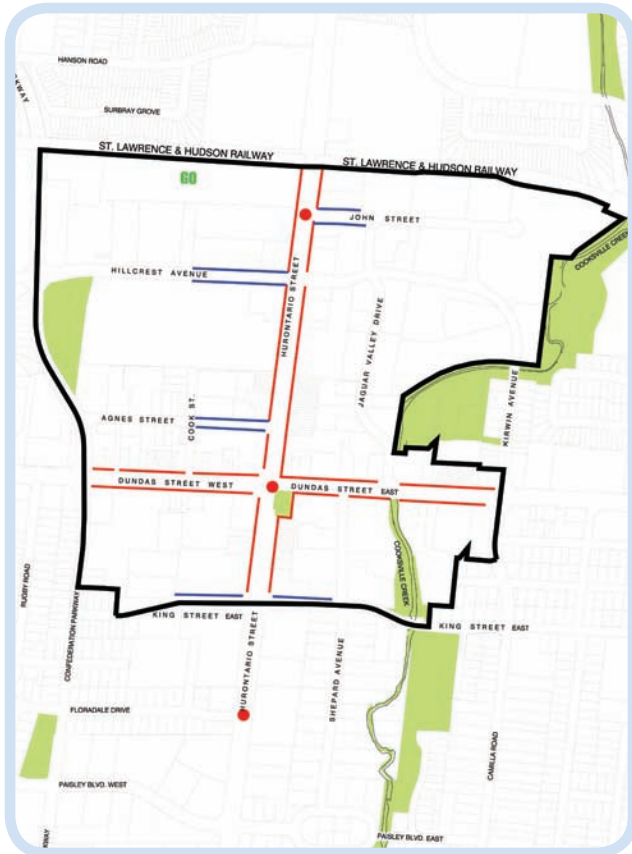
- i. Development will be required to build to the street edge for the percentage of the street frontage in locations as specified on [Figure 8.8.3](#).

8.8.7 Maximum Setback Lines

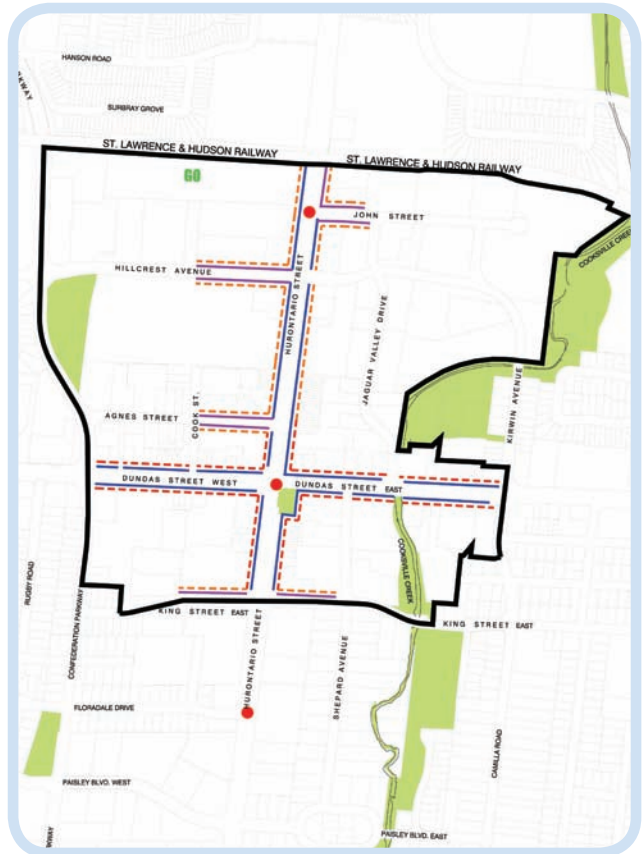
A vibrant streetscape involves the creation of an enclosed, pedestrian-scaled street. Along various routes, the provision of minimal building setbacks is vital to establishing a consistent street wall that invites pedestrian activity.

- i. Development must be built within the distances stated from the streetline in locations specified on [Figure 8.8.4](#).
- ii. Buildings above the podium shall be set back a minimum of 2.5m in locations specified on [Figure 8.8.4](#), except along the Hurontario Street frontage between King Street and Agnes Street and along Dundas Street.
- iii. Along the Hurontario Street frontage between King Street and Agnes Street and along the Dundas Street frontage additional storeys above 20m (6 storey) must be stepped back at a 45 degree angle measured from the 20m (6 storey) level as illustrated in [Figure 8.8.6](#).
- iv. Subject to a detailed design study additional setbacks may be granted to allow for wider sidewalks and on-street parking where appropriate.

**Figure 8.8.3
Downtown Cooksville Continuous
Street Frontage Map**



**Figure 8.8.4
Downtown Cooksville Setback Map**



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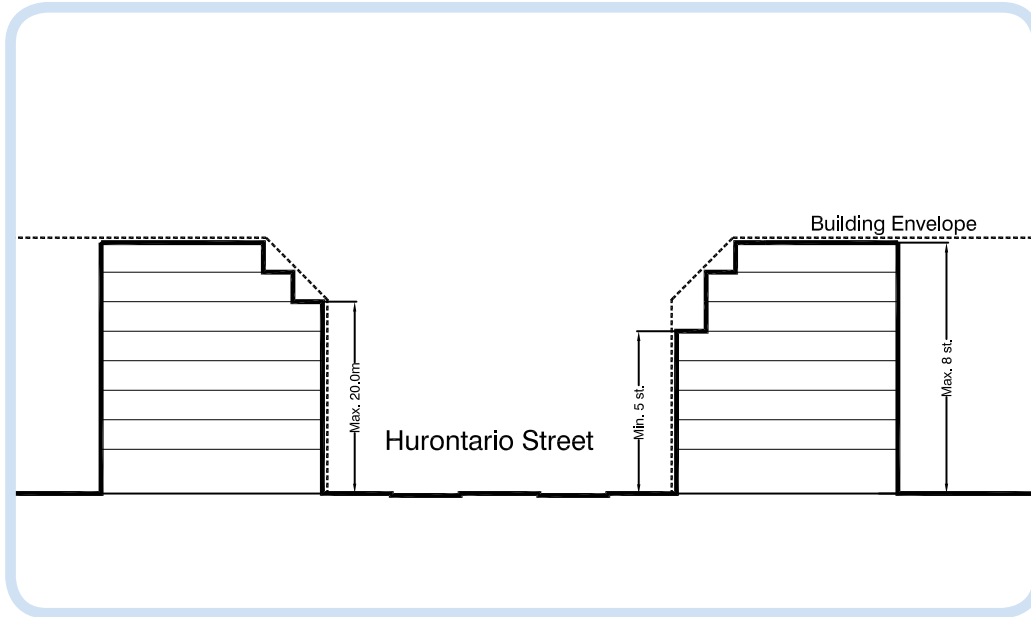


Figure 8.8.6
45° Step Back

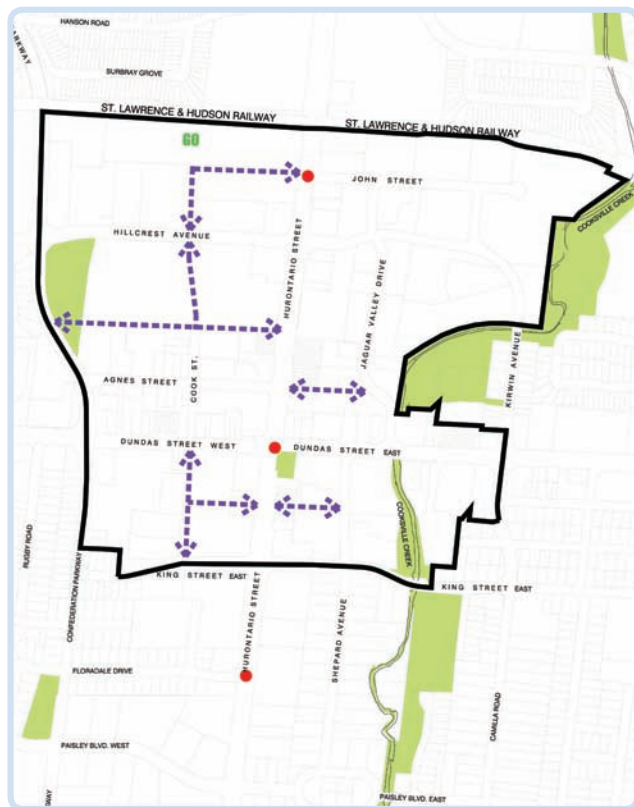
8.8.8 New Connections

Improved connectivity between streets, pathways, amenities, buildings and transit stops/stations is essential to improving the vibrancy of the streetscapes by reducing walking distances and times and opening opportunities for exploration. This is particularly crucial for the Cooksville area as it is intended that this area will have a high level of pedestrian activity. This Plan encourages increased connectivity through the lands on both sides of Hurontario Street through the creation of new roads or pedestrian pathways that would have the effect of joining the GO Transit station with King

Street and creating a finer grained block pattern, thereby enhancing the system of publicly accessible streets and walkways to improve circulation and opening opportunities for exploration.

- i. The connections shown on [Figure 8.8.5](#) will be developed as local public streets or publicly accessible walkways.
- ii. Encourage additional connections in developments through the introduction of mid-block pedestrian connections.

Figure 8.8.5
Downtown Cooksville Connections Map



8.8.9 Bonusing

It is recognized that height and density bonusing, which may be granted to developers for providing public benefits such as public space and art, structured parking or transit facilities, is a valuable tool that can be used to improve the public amenities and transportation facilities within Downtown Cooksville. Since no two development sites are the same, the benefits of providing additional height or density provisions to a specific development proposal should be reviewed on a case-by-case basis to consider whether the overall benefit exceeds the costs associated with permitting a taller or larger building.

- i. Increased heights and densities will be considered, through bonusing, for the provision of public benefits such as public transit facilities, public art, community facilities or public structured parking. These identified areas are considered the priority areas for redevelopment.
- ii. Bonusing of up to 12 stories and 4.0X FSI will be considered for those areas identified on [Figure 8.8.2](#) as having a maximum height limit of 8 storeys and 3.0X FSI.

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8.8.10 Place-making

Figure 8.8.7 Downtown Cooksville Placemaking Map



The intersection of Dundas Street and Hurontario Street has been an important crossroad since the area was first surveyed in the early 1800's. It will become a major transit hub in the future when the Dundas Street rapid transit line is constructed. Therefore special consideration must be given to this area. There is an opportunity to turn the city-owned parcel of land, known as “Little Town Square”, on the southeast corner which is currently being used as open space into a significant town square feature. Of primary importance is the placement of and architectural detailing of the surrounding buildings. This is a location where the highest standards of innovation and creativity will be welcome.

Of similar importance is the GO Transit station area. This will remain an important transportation hub, and improving the pedestrian link between the GO Transit station and the Hurontario rapid transit station will be key to the success of the mobility hub.

Some areas along the Corridor have been identified as requiring special urban design considerations and attention. This implies investing greater attention, care, and resources on the quality and character of design to ensure the highest possible appeal to, and use by, pedestrians. Examples may include special paving, a greater concentration of street furniture (e.g. benches), public art, enhanced landscaping elements, cultural heritage markings and plaques and special lighting features.

- i. Special Urban Design consideration in accordance with Section 7.3.12 of this Plan should be given to the place-making locations identified on [Figure 8.8.7](#).

8.8.11 Civic Public Spaces

Downtown Cooksville generally has one of the highest volume of pedestrian flow along the Hurontario/Main Street Corridor. This is due to a combination of factors including the presence of a significant residential population, the concentration of retail along the Corridor and the general mix of uses operating at a pedestrian scale.

- i. Integration of civic public spaces into new development or redevelopment shall be in accordance with Section 7.3.14 of this Plan. Specifically, key elements of the Downtown Cooksville public realm such as the creek corridor, the original pedestrian-oriented grid system of streets, the series of parks and private yards and landscaped areas, and the T.L. Kennedy Secondary School grounds shall be considered.
- ii. “Little Town Square”, a notable park in this Character Area, located at Hurontario Street and Dundas Street should:
 - be landscaped and programmed to accommodate year-round activities, including events such as concerts, markets and small festivals;
 - be fronted by active uses and appropriate built form, which help animate the park; and
 - be connected through paths and trails to other open spaces, including adjacent streets.
- iii. Street furniture and furnishings should:
 - Conserve and enhance the “village” heritage and identity of Cooksville. Correspond to the different uses, frontage designations and proximity to existing and future transit nodes found within the area; and
 - Recognize the importance of the intersection of Hurontario Street and Dundas Street, in particular around “Little Town Square”.

8.8.12 Transition Areas

Adjacent to stable lower density residential areas a height transition area is proposed to blend new development into existing neighbourhood heights. These areas are identified on [Figure 8.8.2](#) and are subject to the policies below.

- i. No new building within a transition area shall exceed the height transition plane (see [Figure 8.8.2](#)) unless permitted by the approval authority. The height transition plane will be measured from the outer edge of the plan area up over the plan area at a 45 degree angle.
- ii. Notwithstanding the above policy, any new building shall be at least 9 m (3 storeys) in height or can match the height of any adjacent building if they are over three storeys without regard for the height transition plane.
- iii. A step back along a 45 degree angular plane will also be required for new and renovated buildings that are adjacent to a property with significant heritage resources (i.e. listed, designated, or identified through a Heritage Impact Statement as may be required by the City). New buildings must be sympathetic to and transition from, the height of adjacent heritage resources, with a minimum 45 degree angular plane as per Section 7.3.18.

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DOWNTOWN HOSPITAL



VISION

8.9 Downtown Hospital

8.9.1 Vision

The Downtown Hospital Character Area will be transformed into a pedestrian and transit oriented neighbourhood with a healthy street environment and a broad mix of uses centered around the Trillium Health Centre, supporting businesses, retail, cafés, cultural, offices and residential uses. The existing urban fabric provides the opportunity to introduce active uses along frontages and the opportunity to create new transit-oriented developments. A pedestrian focused approach along the Corridor will create new connections to surrounding residential areas and parks, which will support compact, street related development.



8.9.2 Population and Employment Forecast

The policies are based in part on the potential for population and employment growth in Downtown Hospital. Healthy population and employment growth creates the opportunity to transform Downtown Hospital into a vibrant downtown core where residents can live, work and shop within a walkable area.

Existing and potential population and employment figures are as follows:

- Existing population: 14,211 people
- Population potential: 16,130 people
- Existing employment: 6,439 jobs
- Employment potential: 7,993 jobs

Note: These figures have been provided from the municipality as their 2031 growth targets and were determined through the municipality's provincial conformity exercise. As such, these figures are based on boundaries that may not exactly replicate the boundaries this study is using, but recognizes that the majority of new development will occur within the Character Area boundaries. Additional growth may be possible beyond 2031.



8.9.3 Permitted Use at Grade Level

Within Downtown Hospital there are two categories of animated use at street level: Commercial or Institutional and Convertible. The intention is to create streets with high pedestrian activity recognizing that this area is dominated by the Trillium Health Centre and related commercial and institutional uses and is easily accessible due to the connection to the Queen Elizabeth Way. By allowing a broad range of uses at street level, a vibrant main street will be developed over time that will strengthen the existing health care uses and can benefit from its close proximity to a provincial highway.

- i. Uses along the main street-edge are required to be as designated on [Figure 8.9.1](#).

PERMITTED USE AT GRADE



 Commercial or Institutional Frontage	 Proposed Transit Stop
 Convertible Frontage	 Parks and Open Space

All other street frontages may have any use permitted by the Zoning Bylaw at ground level facing the street

Figure 8.9.1
Downtown Hospital
Permitted Use Map

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8.9.4 Density

Within the core of the Downtown Hospital Area the permitted density is 4.0X FSI. This is intended to create a compact form of development. It is also intended to encourage additional development on properties with existing high-rise development to help create a desirable street frontage condition. This will allow existing buildings built at lower densities to top up the total floor area to 4.0X FSI when the existing and new building are added together. To the west of this area the density drops to 3.0X FSI which will help make a transition between the high-density corridor and the lower-density stable neighbourhoods further west. Along the west side of Hurontario Street, north of Harborn Road the density is 2.0X FSI which reflects the desire to maintain an appropriate relationship to the properties to the west.

- i. Density shall be as specified on [Figure 8.9.2](#).

8.9.5 Heights

The existing Downtown Hospital Character Area is generally made up of high-rise residential buildings building with heights that range from 4 to 25 storeys interspersed with 1 to 6 storey commercial buildings. New development will be characterized by high-rise buildings similar to the existing heights of the area; however a minimum height of 3 storeys will be applied to new developments meaning new 1 or 2 storey commercial buildings will not be permitted. A maximum height of 21 m (6 storeys) will be permitted along the west side of Hurontario Street, north of Harborn Road to provide an appropriate transition (see [Figure 8.9.7](#)).

- i. Maximum building heights shall be as specified on [Figure 8.9.2](#).
- ii. Minimum building height shall be 3 storeys for all areas within this Character Area.
- iii. Where podium setbacks are specified on [Figure 8.9.4](#), podium heights shall have a 5 storey minimum and 21m (6 storey) maximum podium.



New street related construction in front of existing apartment buildings, Shepard Avenue, Toronto

DENSITY & HEIGHT MAP

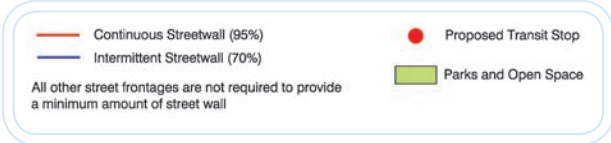
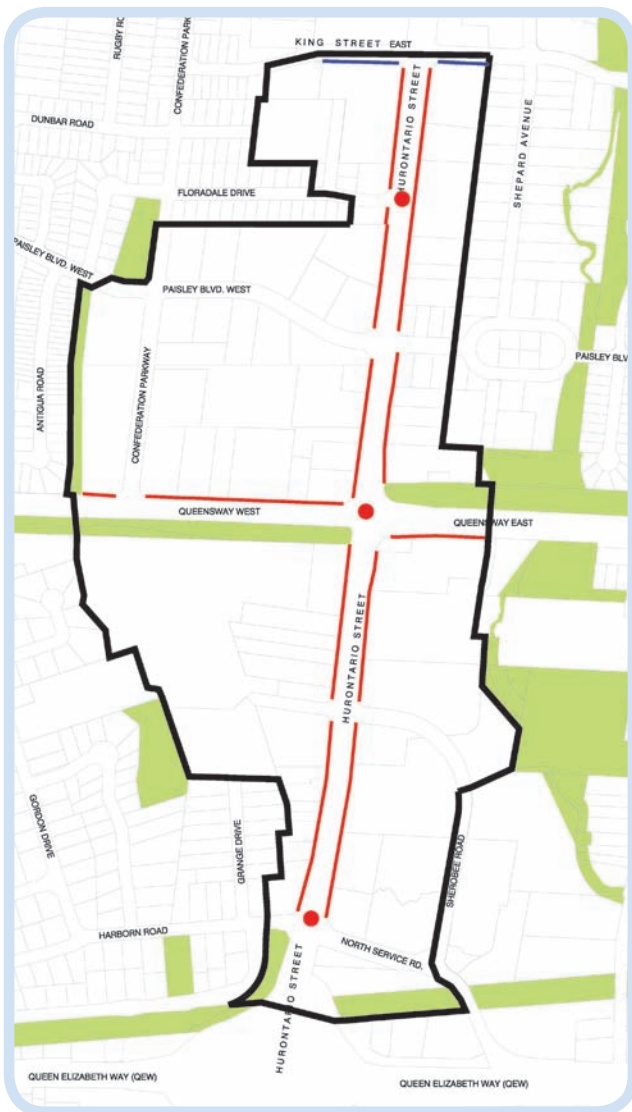


Figure 8.9.2
Downtown Hospital
Density and Height Map

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8.9.6 Minimum Continuous Street Frontage Requirements

Figure 8.9.3
Downtown Hospital Continuous Street Frontage Map



Along Hurontario Street and along the north side of Queensway West a continuous frontage of 95% will be required. It is anticipated that this area will have a welcoming pedestrian environment and complete streetwalls will be an important element of this Character Area. For the south side of King Street West an intermittent frontage of 70% is required.

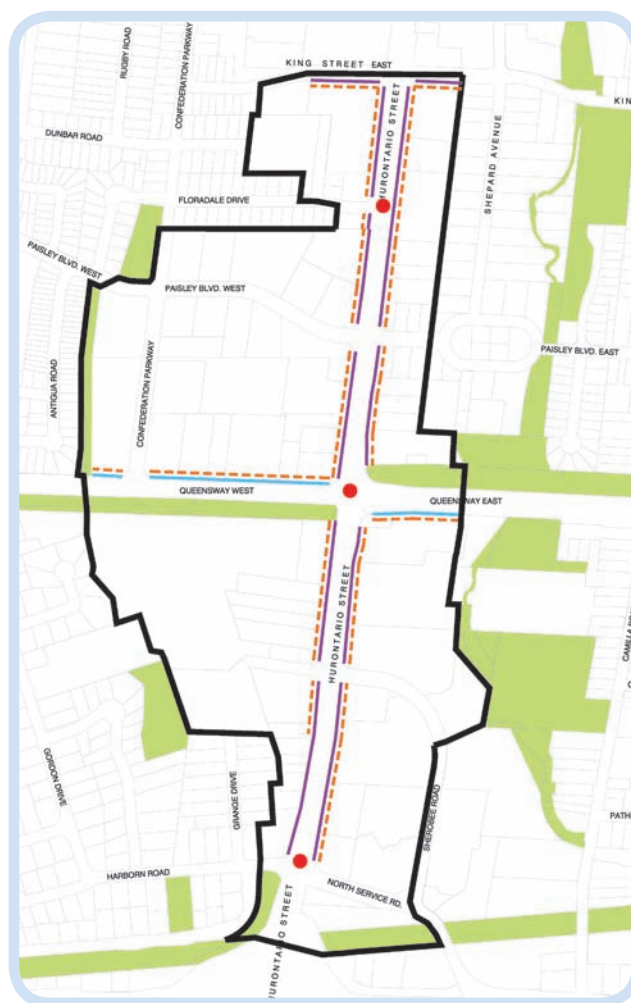
- i. Development will be required to build to the street edge for the percentage of the street frontage in locations as specified on [Figure 8.9.3](#).

8.9.7 Maximum Setback Lines

A vibrant streetscape involves the creation of an enclosed, pedestrian-scaled street. Along various routes, the provision of minimal building setbacks is vital to establishing a consistent street wall that invites pedestrian activity.

- i. Development must be built within the distances stated from the streetline in locations specified on [Figure 8.9.4](#).
- ii. Buildings above the podium shall be set back a minimum of 2.5 m in locations specified on [Figure 8.9.4](#).

Figure 8.9.4
Downtown Hospital Setback Map



8.9.8 New Connections

Figure 8.9.5 Downtown Hospital Connections Map



Improved connectivity between streets, pathways, amenities, buildings and transit stops/stations is essential to improving the vibrancy of the streetscapes by reducing walking distances and times and opening opportunities for exploration. The northwest quadrant of the Downtown Hospital area is currently a relatively large block containing high-rise towers and institutional uses surrounded by open space or parking areas. This Plan encourages increased connectivity through the lands in this area through the creation of new roads or pedestrian pathways that would more effectively allow residents and users of the buildings not directly fronting Hurontario Street to access the street and the transit stations and opening opportunities for exploration.

- The connections shown on [Figure 8.9.5](#) will be developed as local public streets or publicly accessible walkways.
- Encourage additional connections in developments through the introduction of block pedestrian connections.

8.9.9 Place-making

The Queensway is a unique street in Mississauga in that it is paralleled by a major pipeline easement and hydro transmission corridor. Through the Hurontario section the large hydro transmission towers have been removed which has left a wide linear green space. East of Hurontario Street this feature is on the north side of the street and west of Hurontario Street it is on the south side of the street. A linear park and multi-use recreation trail is currently being constructed. The intersection of Hurontario and Queensway has the potential to become the main linking hub between the City's main north-south transit corridor and this east-west recreation corridor. An urban plaza or gateway feature located at this intersection could serve as the link. This space could also be associated with the Trillium Health Care complex which is the pre-eminent employer at this intersection.

Some areas along the Corridor have been identified as requiring special urban design considerations and attention. This implies investing greater attention, care, and resources on the quality and character of design to ensure the highest possible appeal to, and use by, pedestrians. Examples may include special paving, a greater concentration of street furniture (e.g. benches), public art, enhanced landscaping elements, cultural heritage markings and plaques and special lighting features.

- i. Special Urban Design consideration in accordance with Section 7.3.12 of this Plan should be given to the place-making locations identified on [Figure 8.9.6](#).
- ii. A gateway plaza should be developed at the intersection of The Queensway and Hurontario Street.

Figure 8.9.6
Downtown Hospital Placemaking Map





8.9.10 Civic Public Spaces

Downtown Hospital is a major residential and healthcare node and the importance of civic spaces for the recreation and enjoyment by local residents and employees is a key factor in the attractiveness of the area.

- i. Integration of civic public spaces into new development or redevelopment shall be in accordance with Section 7.3.14 of this Plan. Specifically, key elements of the Downtown Hospital public realm such as the Cooksville creek corridor, the pipeline corridor that parallels Queensway, and the series of private landscaped areas shall be considered.
- ii. The existing pipeline corridors should:
 - be integrated and connected to the overall public realm through a system of trails and pedestrian walkways; and
 - include an urban plaza in the vicinity of Hurontario and Queensway for active community use.

8.9.11 Transition Areas

Adjacent to stable lower density residential areas a height transition area is proposed to blend new development into existing neighbourhood heights. These areas are identified on [Figure 8.9.2](#) and are subject to the policies below.

- i. No new building within a transition area shall exceed the height transition plane unless permitted by the approval authority. The height transition plane will be measured from the outer edge of the plan area up over the plan area at a 45 degree angle.
- ii. Notwithstanding the above policy, any new building shall be at least 9m (3 storeys) in height or can match the height of any adjacent building if they are over three storeys without regard for the height transition plane.
- iii. A step back along a 45 degree angular plane will also be required for new and renovated buildings that are adjacent to a property with significant heritage resources (i.e. listed, designated, or identified through a Heritage Impact Statement as may be required by the City). New buildings must be sympathetic to and transition from, the height of adjacent heritage resources, with a minimum 45 degree angular plane as per Section 7.3.18.

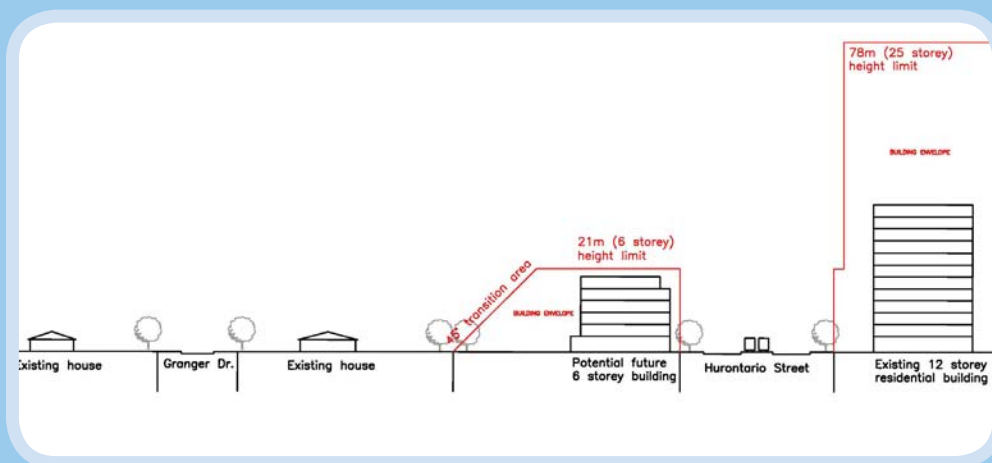


Figure 8.9.7
Transition for Buildings
Adjacent to Stable
Neighbourhoods

MINEOLA



VISION

8.10 Mineola

8.10.1 Vision

The Vision for Mineola is to maintain the neighbourhood’s existing character while implementing rapid transit along Hurontario Street. As such, the policies found in this chapter only address those properties that front onto Hurontario Street. No proposed changes are being suggested for the stable residential areas. Specifically, for those properties fronting Hurontario Street, the impact of front yard parking will be minimized and streetscapes will be enhanced through the encouragement of a variety of pedestrian activities and modes of movement.



8.10.2 Population and Employment Forecast

The policies are based in part on the potential for population and employment growth in Mineola. Low population and employment growth will help ensure that the character of Mineola is maintained. Any growth that occurs will be directed to two specific areas that have been identified for their opportunity for intensification over the long-term.

Existing and potential population and employment figures are as follows:

- Existing population: 9,717 people
- population potential: 10,175 people
- Existing employment: 1,366 jobs
- employment potential: 1,460 jobs

Note: These figures have been provided from the municipality as their 2031 growth targets and were determined through the municipality’s provincial conformity exercise. As such, these figures are based on boundaries that may not exactly replicate the boundaries this study is using, but recognizes that the majority of new development will occur within the Character Area boundaries. Additional growth may be possible beyond 2031.

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8.10.3 Permitted Use

Notwithstanding the policies found in Section 7.3.1, only low density residential and office uses shall be permitted in those areas outside of Area A in keeping with existing policy framework. This includes single detached dwelling units. Area A permits a full range of urban uses, including residential, commercial and employment uses, however those uses must be aware of their proximity to the existing stable residential area and respect it accordingly.

8.10.4 Permitted Use at Grade Level

Within Mineola there are three categories of animated use at street level: Special, Convertible and Commercial or Institutional. The majority of the street is shown as Special Frontage, which allows the existing street to be maintained, with buildings facing Hurontario and allowing for an animated street. On the eastern side of the southern portion of Hurontario Street, the streetscape is Commercial or Institutional frontage in order to help establish a more vibrant, mixed use streetscape that transitions into Port Credit. Convertible Frontage is shown on South Service Road, at the north end of Mineola and south of the Queen Elizabeth Way. It is anticipated that pedestrian use of this street will increase as more people use the proposed transit system.

- i. Uses along the main street-edge are required to be as designated on [Figure 8.10.1](#).

PERMITTED USE AT GRADE

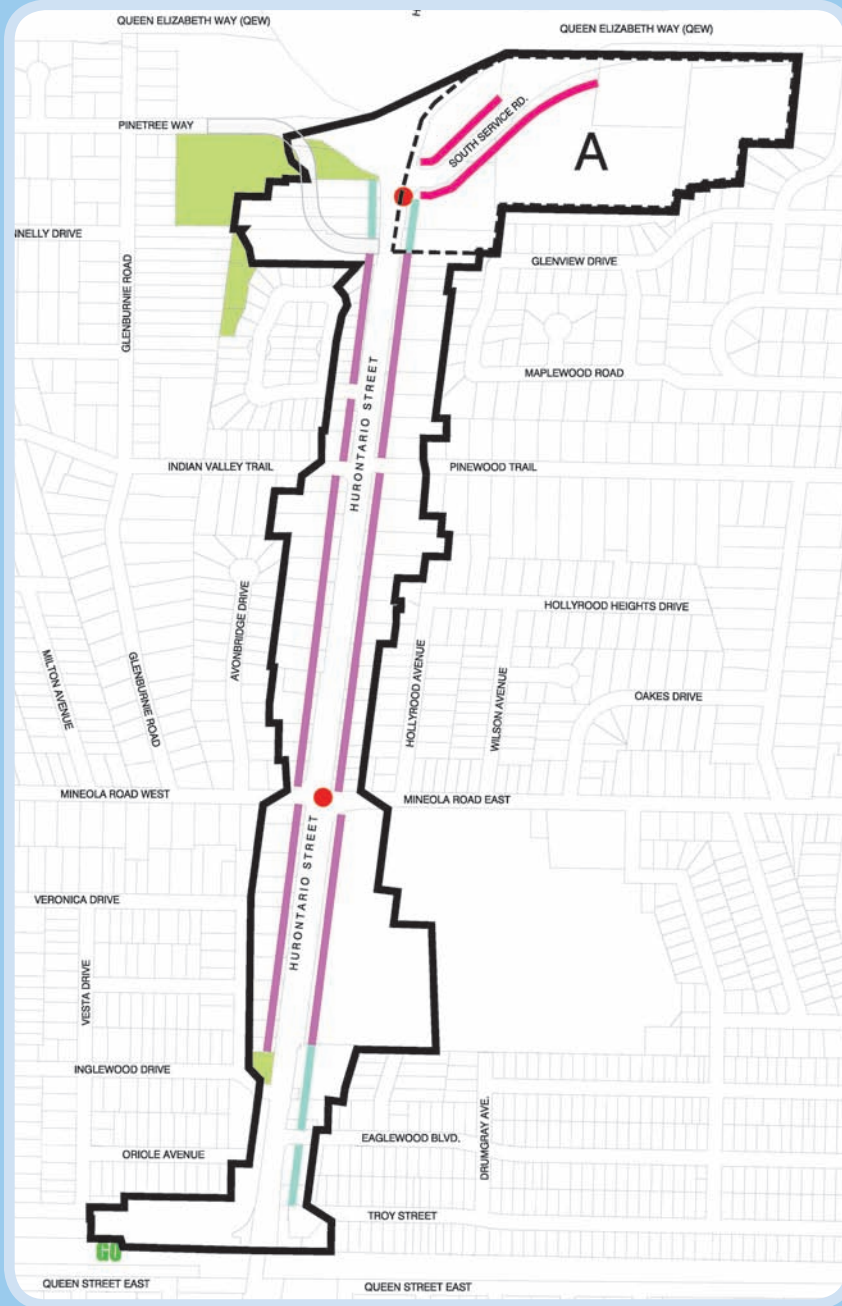
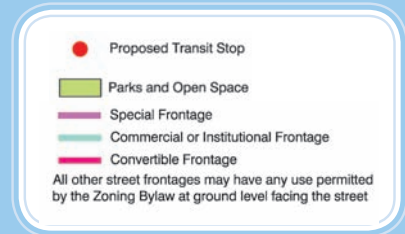


Figure 8.10.1
Mineola Permitted
Use Map



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8.10.5 Density

Maximum density for new development should be sensitive to the densities of surrounding residential areas. A maximum density for Area A (as shown on [Figure 8.10.2](#)) has been set at 1.5X FSI in order to permit streets within this block to develop a pedestrian-scaled, enclosed character that does not overwhelm or conflict with neighbouring residential buildings.

- i. Density shall be as specified on [Figure 8.10.2](#).

8.10.6 Heights

Mineola is currently characterized by low-rise residential dwellings that will be impacted by dramatic changes in height. Accordingly, only one area has been identified to accommodate development with only moderate height increases, providing for a transition between low-rise residential and new development. All other areas in Mineola will maintain their low-rise character.

- i. Maximum building heights shall be 15 m (4 storeys) for Area A as specified on [Figure 8.10.2](#).
- ii. Minimum building height shall be 3 storeys for Area A.
- iii. There shall be no minimum heights for areas outside of Area A within this Character Area.

DENSITY & HEIGHT MAP

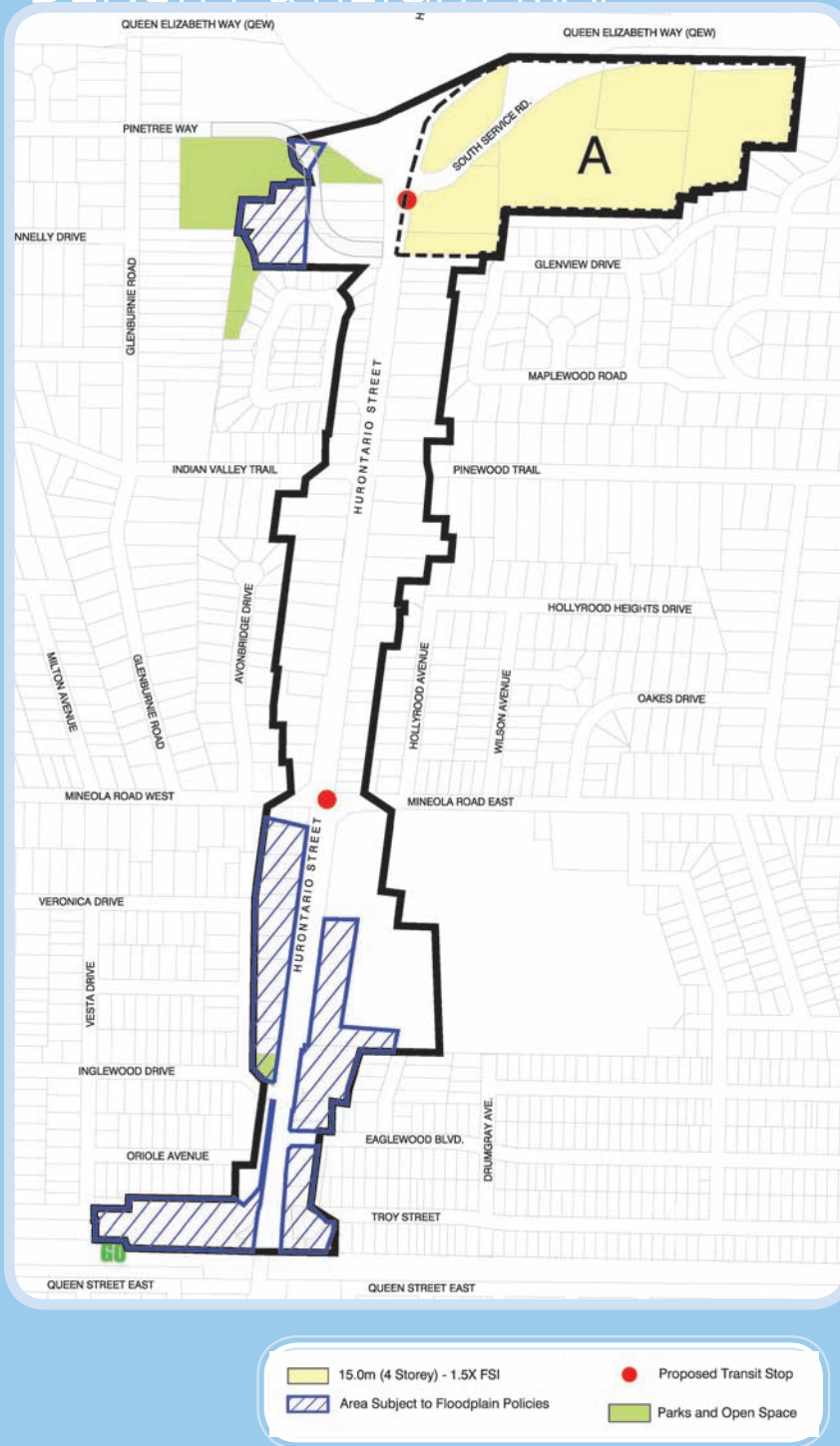
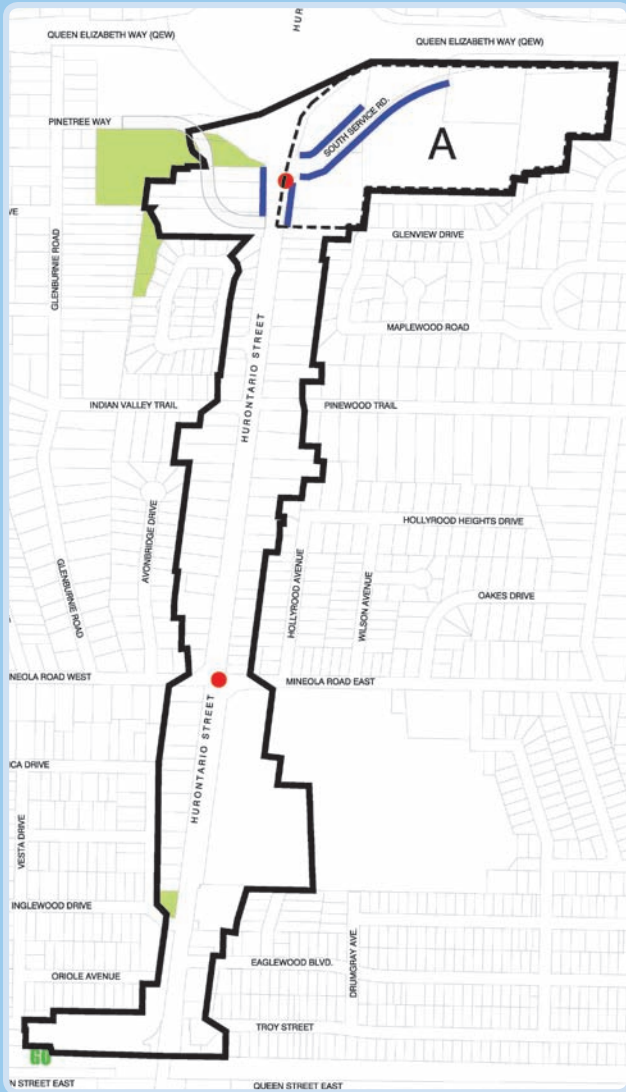


Figure 8.10.2
Mineola Density and Height Map

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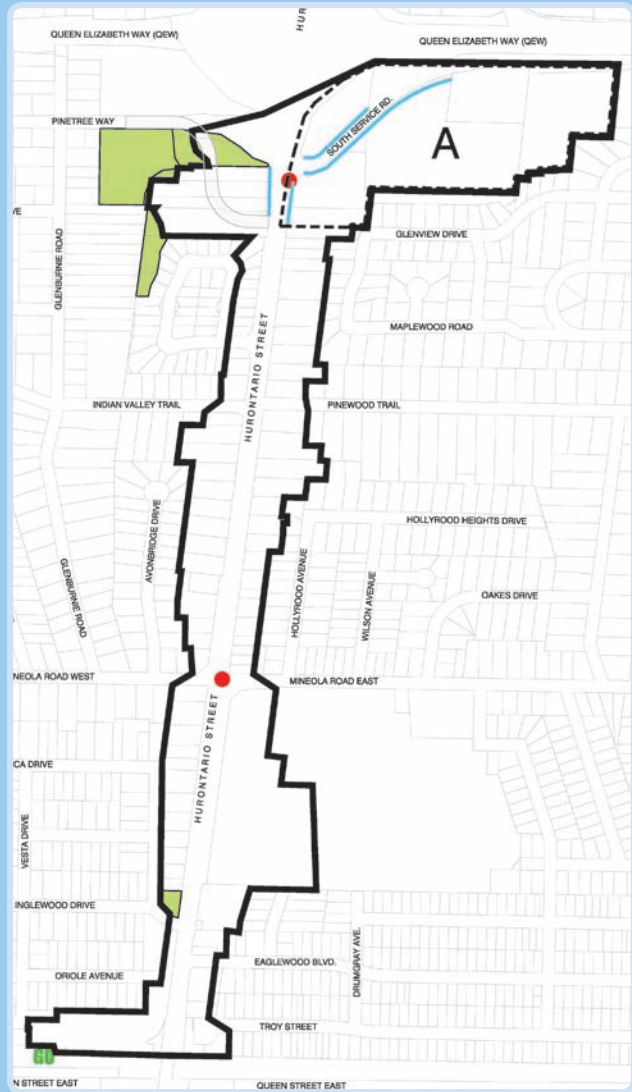
Figure 8.10.3
Mineola Continuous Street Frontage Map



- Proposed Transit Stop
- Parks and Open Space
- Intermittent Streetwall

All other street frontages are not required to provide a minimum amount of street wall

Figure 8.10.4
Mineola Setback Map



- Proposed Transit Stop
- Parks and Open Space
- Building must be built within 5.0m of Street Line (maximum 5.0m setback)

All other setbacks are as required by the Zoning Bylaws.

8.10.7 Minimum Continuous Street Frontage Requirements

The majority of Hurontario Street within the Mineola neighbourhood is designated as Special Frontage, meaning that the street should maintain its existing character (including frontage and setbacks) while buildings are oriented to help animate the street. However, there are two exceptions to the Special Frontage – at the north end of the neighbourhood and generally along South Service Road, buildings are required to provide an intermittent frontage of 70%.

- i. Development will be required to build to the street edge for the percentage of the street frontage in locations as specified on [Figure 8.10.3](#).

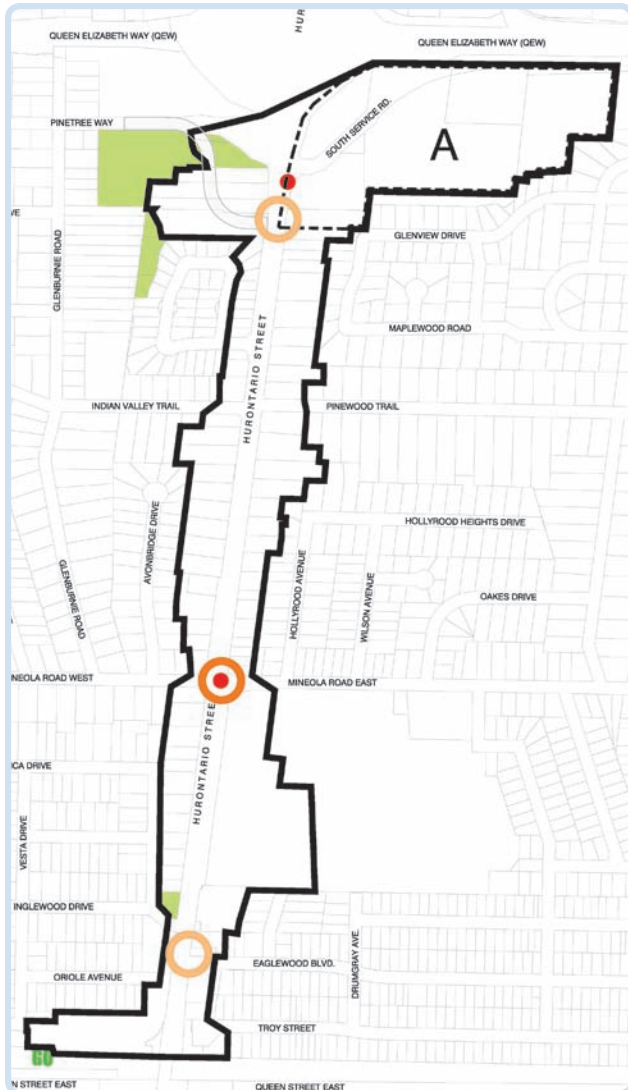
8.10.8 Maximum Setback Lines

In order to maintain the existing character of the neighbourhood, the setbacks of new development and redevelopment should be consistent with surrounding properties. Unlike most other areas of the Hurontario/Main Street Corridor, the creation of an inviting pedestrian environment in Mineola will be accomplished through landscaping rather than building form. However this does not mean building form is not relevant. This is demonstrated in Area A, which is in close proximity to the transit station at the Queen Elizabeth Way and at the south end of the character area, close to the Port Credit GO Station, where slightly more intense commercial and institutional uses are allowed.

- i. Development must be built within the distances stated from the streetline in locations specified on [Figure 8.10.4](#).

8.10.9 Place-making

Figure 8.10.5
Mineola Placemaking Map



Mineola has been identified as a stable residential neighbourhood, which will undergo little to no change, however, there are still opportunities for placemaking to be undertaken, which are best organized around major intersections in the area such as Mineola Road and Hurontario Street. Placemaking in this Character Area will be realized by small public realm interventions such as added street furniture and paving materials.

- i. Special Urban Design consideration in accordance with Section 7.3.12 of this Plan should be given to the placemaking locations identified on [Figure 8.10.5](#).



8.10.10 Civic Public Spaces

Mineola is an important residential neighbourhood and the importance of these civic spaces for the recreation and enjoyment of local and visiting residents is a key factor in the enjoyment of the area.

- i Integration of civic public spaces into new development or redevelopment shall be in accordance with Section 7.3.14 of this Plan. Specifically, key elements of the Mineola public realm such as the Port Credit Secondary school grounds, and the series of private landscaped areas shall be considered.
- ii Existing trails and paths along Hurontario Street should be enhanced to promote connectivity within the area.

PORT CREDIT



VISION

8.11 Port Credit

8.11.1 Vision

The vision for Port Credit is to build upon the neighbourhood's existing vibrant pedestrian-oriented character and to create a Gateway Mobility Hub centred on the GO Transit station. This hub will link the GO Transit trains with the Hurontario higher-order transit system, local transit and a potential Lakeshore Road higher order transit system with future development. This connection will result in a vibrant community with a variety of amenities and housing types to choose from.

Development along the waterfront should be related to the water and its shoreline and, wherever possible, development should contribute to enhancing environmental vitality and the human experience. Urban design should emphasize use and public access to the shoreline, as well as reinforce both visual and physical connections to the water. Street connections should be expanded and fine-grained, human-scaled streets, should be continued or developed. Inter-connected open spaces, trails and recreational amenities along the water's edge should be enhanced and continued where possible.



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8.11.2 Population and Employment Forecast

The policies are based in part on the potential for population and employment growth in Port Credit. Modest population and employment growth creates the opportunity to build upon and enhance Port Credit's already vibrant, pedestrian-oriented built form.

Existing and potential population and employment figures are as follows:

- Existing population: 11,798 people
- Population potential: 13,686 people
- Existing employment: 3,420 jobs
- Employment potential: 4,013 jobs

Note: These figures have been provided from the municipality as their 2031 growth targets and were determined through the municipality's provincial conformity exercise. As such, these figures are based on boundaries that may not exactly replicate the boundaries this study is using, but recognizes that the majority of new development will occur within the Character Area boundaries. Additional growth may be possible beyond 2031.

8.11.3 Permitted Use at Grade Level

Within Port Credit there are three categories of animated use at street level: Retail, Commercial or Institutional and Convertible. The intention is to create major streets that support high levels of pedestrian activity. Retail uses will continue to be focused on Lakeshore Road which supports the existing "Main Street" character of street. Commercial or Institutional uses must be present along Hurontario Street to link Lakeshore Road to the GO Transit Station. Convertible frontage is to be provided along the north side of Port Street which is intended to enhance the pedestrian character of this street as development occurs along the shoreline.

- Uses along the main street-edge are required to be as designated on [Figure 8.11.1](#).

8.11.4 Density

- Further density policies will be determined through the ongoing Port Credit District Policy Review.

8.11.5 Heights

- Further height policies will be determined through the ongoing Port Credit District Policy Review.

PERMITTED USE AT GRADE



	Retail Frontage		Proposed Transit Stop
	Commercial or Institutional Frontage		Parks and Open Space
	Convertible Frontage		

All other street frontages may have any use permitted by the Zoning Bylaw at ground level facing the street

Figure 8.11.1
Port Credit Permitted
Use Map

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**Figure 8.11.2
Port Credit Continuous Street
Frontage Map**



- Proposed Transit Stop
- Parks and Open Space
- Continuous Streetwall

All other street frontages are not required to provide a minimum amount of street wall

**Figure 8.11.3
Port Credit Setback Map**



- Proposed Transit Stop
- Parks and Open Space
- Building must be built at Street Line (0.0m Setback)
- Additional setback of 2.5m to 5.0m required above podium

All other setbacks are as required by the Zoning Bylaws.

8.11.6 Minimum Continuous Street Frontage Requirements

Along Hurontario Street, Lakeshore Road and the north side of Port Street, a “continuous frontage” of 95% will be required. It is anticipated that this area will have a welcoming pedestrian environment and continuous street wall that will be an important element of this Character Area.

- i. Development will be required to build to the street edge for the percentage of the street frontage in locations as specified on [Figure 8.11.2](#).

8.11.7 Maximum Setback Lines

A vibrant streetscape involves the development of an enclosed, pedestrian-scaled street. Along various routes, the provision of minimal building setbacks is vital to establishing a consistent street wall that invites pedestrian activity.

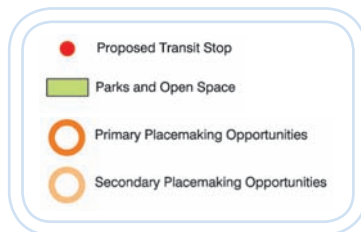
- i. Development must be built within the distances stated from the streetline in locations specified on [Figure 8.11.3](#).
- ii. Buildings above the podium shall be set back a minimum of 2.5 m in locations specified on [Figure 8.11.3](#).

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8.11.8 Place-making

Figure 8.11.4 Port Credit Placemaking Map



As an identified mobility hub in the Metrolinx Regional Transportation Plan, the area around the GO Transit station will continue to play a significant role in the development of this community. The station area must be designed to be pedestrian-friendly with welcoming and attractive pedestrian spaces and links to the surrounding neighbourhoods. Of particular importance is the pedestrian link between the Hurontario rapid transit station at Park Street and the GO Transit station. The quicker and more conveniently people can move between these two locations, the more successful the Mobility Hub will be.

The main feature in Port Credit is the waterfront. This area will continue to grow as a major regional destination and how the waterfront develops will have a big impact on the area's success. It is important that views to the waterfront are retained and public access to the waters edge provided. Port Street can evolve into an exciting pedestrian-oriented street that supports retail shopping along Lakeshore Road with the higher-order transit terminus as its centre piece.

Some areas along the Corridor have been identified as requiring special urban design considerations and attention. This implies investing greater attention, care, and resources on the quality and character of the urban design to ensure the highest possible appeal to, and use by, pedestrians. Examples may include special paving, a greater concentration of street furniture (e.g. benches), public art, enhanced landscaping elements, cultural heritage markings and plaques and special lighting features.

- i. Special Urban Design consideration in accordance with Section 7.3.12 of this Plan should be given to the place-making locations identified on [Figure 8.11.4](#).

8.11.9 Civic Public Spaces

The public realm includes all public aspects of Port Credit, including the streets, sidewalks, furniture, public parks and public institutions. Port Credit is an important residential and retail node and the importance of these civic spaces for the recreation and enjoyment by local residents and visitors is a key factor in the livability of the area.

- i. Integration of civic public spaces into new development or redevelopment shall be in accordance with Section 7.3.14 of this Plan. Specifically, key elements of the Port Credit public realm such as Lake Ontario and Credit River; the series of small active parks along Lakeshore Road; and the water's edge shall be considered to help refine the future of the Character Area.
- ii. Streets and streetscapes should be designed and landscaped to function as a significant part of the public realm and be oriented to pedestrian use. The enhancement of streets should be used to their full potential to create cohesive pedestrian connections between open spaces, active uses and residential development.

Hurontario Street should:

- be used as the major north-south corridor within the Port Credit Character Area; and
- be a major pedestrian connection to the mobility hub, new proposed open spaces, waterfront spaces and active uses located along Lakeshore Road.

Ann Street should:

- be enhanced to improve the pedestrian facilities (i.e. wider sidewalks, on-street parking and elimination of driveways) of the street to allow for a better pedestrian connection with the pocket park located on Lakeshore Road, and to enhance pedestrian access to the GO Station.

Helene Street should:

- be enhanced to allow for a better pedestrian connection with the waterfront trail system, and to the GO station.

Lakeshore Road should:

- be used as the major east-west corridor within the Port Credit Area; and
- be the major commercial spine within the Port Credit GO Transit station.

Park Street should:

- be a strong connection to the GO Station.

Port Street should:

- be enhanced and act as a major pedestrian connection to the waterfront and St. Lawrence Drive.

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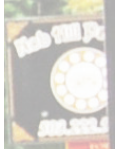
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PROOF OF CONCEPT SITES



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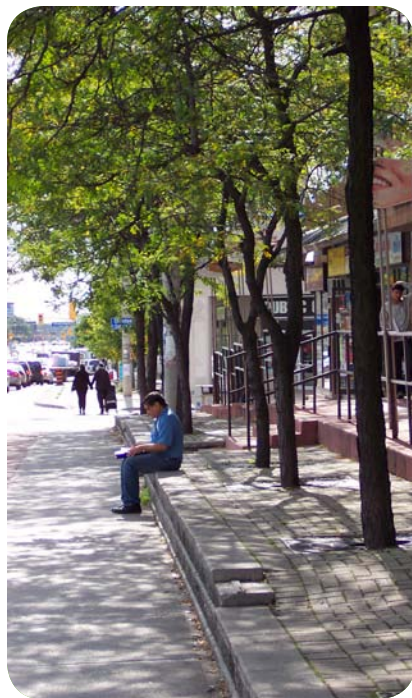
9 PROOF OF CONCEPT SITES



In order to ensure that the planning and urban design policies found in the previous chapters are realistic and help create the type of communities along the corridor that are envisioned, the team brought in VIA Architects to test the policies in four selected locations along the corridor. They sketched out how they would design the selected nodes if they were a developer, using the proposed planning and urban design policies as a guide. They have also tested the pedestrian connectivity in areas where we are proposing new connections to ensure that these connections are effective and bring more people to the main streets. Through this exercise many of the policies were adjusted and fine-tuned to ensure they worked as intended. This chapter illustrates VIA's work and shows what the corridor might look like in 2031. It illustrates the possible impacts of the policies and technology in the four selected nodes. It is not intended to be definitive or regulatory.



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9.0.1 Findings

Due to heavy vehicular traffic, Hurontario is presently a barrier rather than the centre of the communities it serves. Much of the focus of the Proofs of Concept has been on how to re-engage Hurontario as the centre of the communities with introduction of the new transit system. These case studies have considered ways to introduce incremental improvements to both the public and private realms in a way that pedestrian and cycling connections will be improved and so that new developments will enhance the character and livability of these communities.

It is important to note that the case studies are intended to be a dynamic tool or framework for anticipated change rather than a static vision. This is why there is a focus on providing a variety of land use and building typologies that can apply to development of these transit oriented neighbourhoods in the future.



9.0.2 Method of Analysis

Spatial Syntax analysis is a widely accepted method for measuring the behavior and success, both phenomenological and dimensionally, of pedestrian activity and accessibility. For the Hurontario project, this method was explored for two of the four sites in an attempt to understand the complexity of the pedestrian and vehicular interface. Space Syntax theory and modeling uses measurements associated with intersection frequency, lines of sight, connectivity and nodal accessibility to determine the quantitative attributes of pedestrian trip generation in urban environments at the same time documenting assumptions related to choice and quality.

There are three relational values which have been shown to have effects on walking behaviour, particularly in higher numbers of utilitarian walking trips such as shopping, or transit to get to work or an appointment. These three measures, which have been taken from within the combined 500m walking circles for the Four Corners and the Brampton GO Station, are Control, Local Integration and Global Integration. These measures are compared between existing conditions and a proposed conceptual build-out scenario in order to show the improvement from the original condition, and to test the effectiveness of the proposed concept. Hierarchies of connections are desired, with more private paths leading to connective paths or pedestrian “arterials”; if an appropriate hierarchy is not established the concept is refined to achieve it. Hierarchical paths should also mesh with either predetermined or desired land use and civic use; or can be used to indicate where these should occur. (Note: The analysis is from the previous concept plan but changes in connections are minor).

Control

Control measures connectivity and accessibility by how much control a street has over its connecting neighbours; for instance a street which has a dead-end street opening onto it has control of that dead-end street. A high measure of control (visualized in red or warm colors) means a high level of accessibility along that street or connection and higher numbers of walking trips.

Local Integration

Local integration measures how many connections can be made to any one connector in three turns or less, with fewer required turns being optimal. By itself it is not an important predictor variable for walking trips, but is important in conjunction with Control and Global Integration. High measures of local integration improve the function of the other two variables in increasing walking trips.

Global Integration

Global integration measures integration values across the whole system being measured (the area within the 500 meter walk circle) and how many turns are required to get to each connector from any other connector, with fewer turns being optimal. High measures of global integration mean greater accessibility and connectivity and higher numbers of walking trips.

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DOWNTOWN BRAMPTON



CONCEPT AREA

Figure 9.1.1:
Downtown Brampton Concept Birdseye View

9.1 Downtown Brampton Proof of Concept Summary

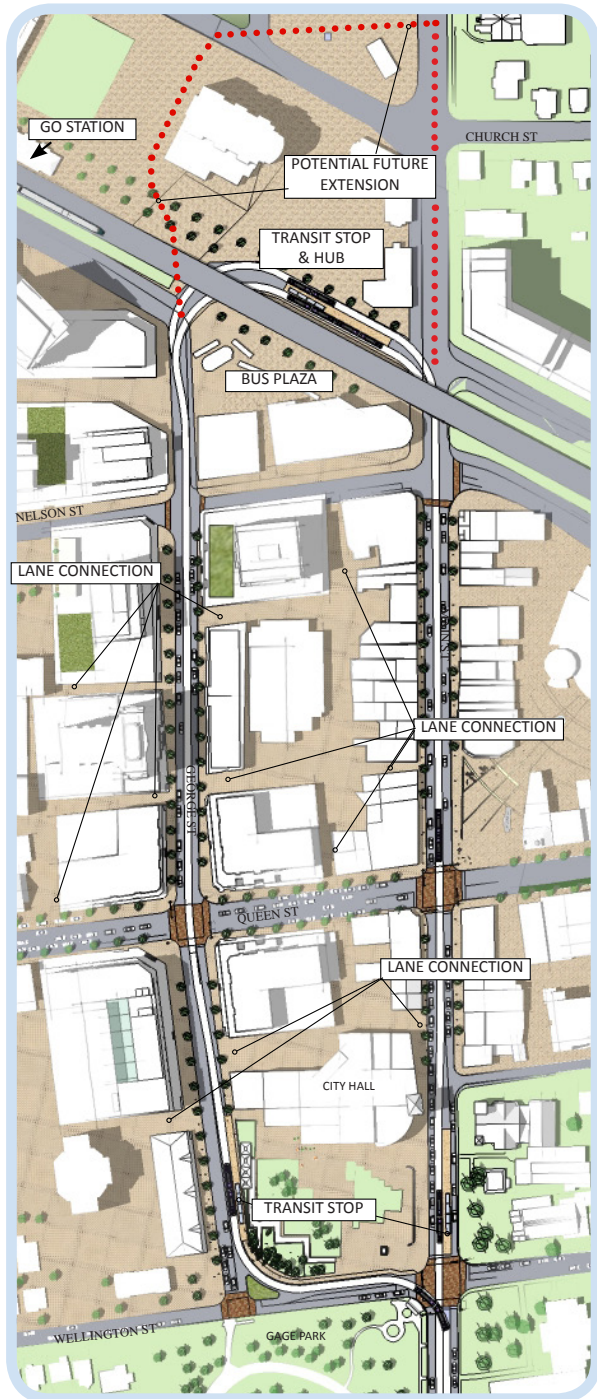
Brampton presents interesting opportunities as a major transit hub and terminus (with future expansion potential) in the centre of a beautifully functioning small town environment. Due to the scale and character of the historic Main Street, the built-form studies show the transit dividing into a loop that includes George Street, creating a civic transit mall to work in positive conjunction with the return line on Main Street.

Figure 9.1.2:
Downtown Brampton Concept Aerial View



9.1.1 Place-making

Figure 9.1.3: Downtown Brampton Transit Plan



Downtown Brampton has utilized place-making in the context of the historic and special character of Main Street to generate a series of great civic spaces. Because Main Street is already developed within this special context, the concept study explores the effect of transit split between George Street and Main Street. Transit on George Street creates new opportunities for civic place-making, of a different but complementary character and function from Main Street. It also increases the range of potential development opportunities away from Main Street. The built-form concept shows transitional heights and typologies that step down in scale and character towards the southwest neighborhoods.

9.1.2 Street Level Uses and Frontages

The built form concept testing follows active uses and frontages as shown in Figures 9.1.1 and 9.1.2, with first-floor heights at a minimum of 4 meters suitable for retail, commercial/institutional or convertible uses. New street frontages continue the existing and historic Brampton pattern of pedestrian laneways, to allow for

more frequent pedestrian access and connections and to promote the establishment of a walkable pedestrian grid.

New development in the floodplain is required to have an elevated ground floor and associated sidewalk, as illustrated in Figure 9.1.5.

Figure 9.1.4:
Illustrative example of one-way transit on Main Street



Figure 9.1.5:
Illustrative example of elevated ground floors and sidewalks in floodplain areas



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Figure 9.1.6:
Illustrative example of George St. platform stop at City Hall Square



9.1.3 Downtown Brampton Transit Loop

Due to the small scale and special character of the built form in downtown Brampton, the transit is split into a loop configuration with one transit lane on two streets, George Street and Main Street. Going north, the line turns left on Wellington and then onto George Street, making a platform stop at the City Hall plaza. The line continues under the rail corridor and back towards Main Street, with a platform stop for transfers to the GO station and an extra track for storage. The line goes back on Main Street to return to the Hurontario line.

The historic form of downtown Brampton includes pedestrian laneways that connect through the blocks to the major streets, and from parking in the interior of the block. These pedestrian lanes are encouraged in new development as well.

9.1.4 Connections Network and Pedestrian Accessibility

Downtown Brampton has a historic and existing condition of lane connections, pedestrian through-block passages and interior or back-of-block service lanes. Lane connections are incorporated into the new development blocks as well. Structured parking and parking access are provided in the block interiors. The Downtown already has a small-scale pedestrian grid which will remain, making accessibility analysis and determination of best new pedestrian networks unnecessary.

The George Street to Main Street alignment keeps the transit adjacent to the existing bus plaza and moves the terminus closer to the historic building housing the GO station. Design may take into account the possibility of future expansion of the Hurontario line beyond the railway. A transit plaza on the other side of the track connects the Hurontario platform to the GO station.

Figure 9.1.7:
Downtown Brampton Pedestrian Connective Grid

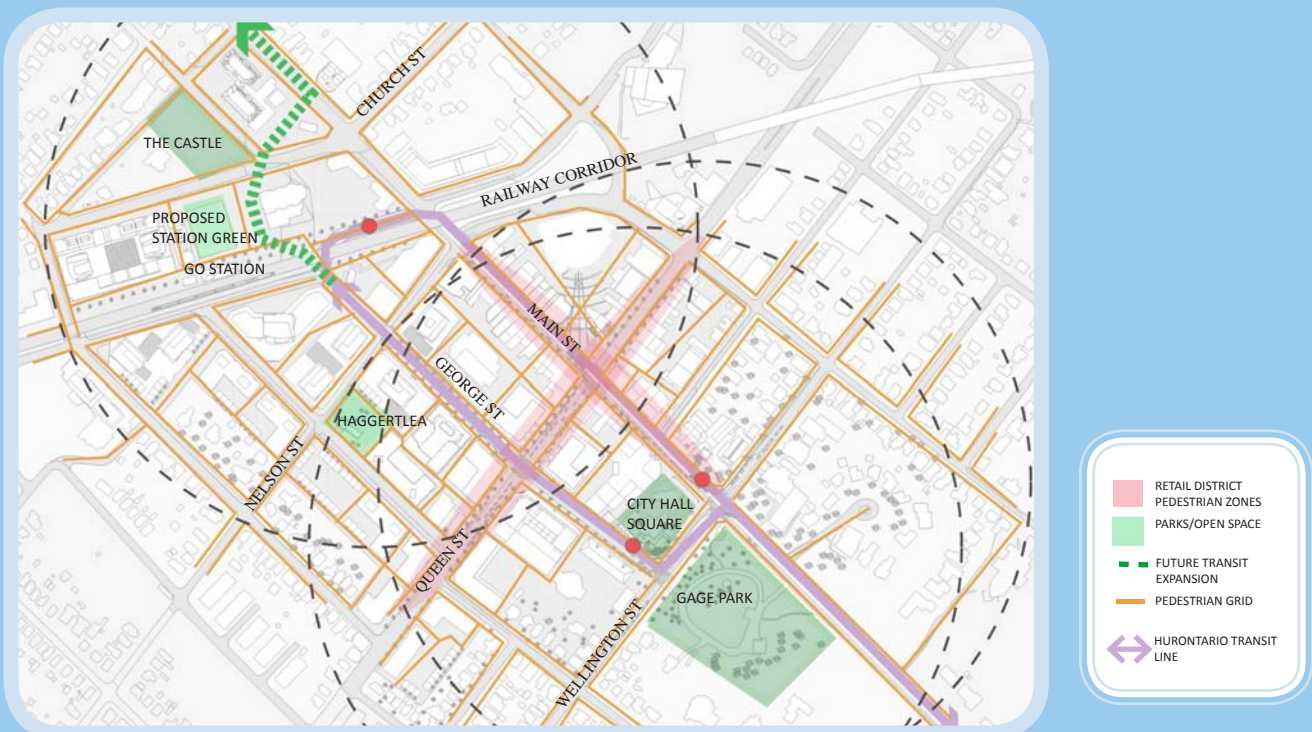


Figure 9.1.8:
Downtown Brampton Concept Aerial Key



9.1.5 Height and Density

Building typologies meeting the following characteristics were utilized: Height maximums of 11 or 20 storeys at a corresponding 3.5 or 4.0 FSI; street front podiums for retail, commercial, institutional or convertible use; below grade parking or above grade structured parking behind frontage uses; combination forms to meet transitional height requirements while achieving allowed FSI; tower form and spacing for light and view; continuous street wall and pedestrian route frontage; and unobtrusive vehicular and service access. Typologies in the floodplain are raised one meter above grade, with elevated sidewalk frontage. Parking podiums of buildings on larger parcels offer the possibility of extra parking capacity to implement a shared public parking strategy. Smaller infill sites self-park or utilize shared parking strategy.

9.1.6 Typology Examples

Typologies shown are for illustrative purposes of possible building types that meet the requirements for height, density, setbacks and active street frontages, and how those building types might be combined over the station area. Other typologies currently being built in the region were tested, but on compact urban parcels were found to yield a much higher FSI than the 4.0 maximum envisioned. Some types are shown with extra height and density for potential bonus incentives.

Figure 9.1.9: M4-20

M4-20: Mixed-use, infill site, residential over ground floor use. Above-grade in-structure parking; one-meter floodplain elevation with elevated sidewalk.

Parcel Area (m ²)	Res. Units	Ground-Floor Use (m ²)	Office (m ²)	FSI
3,150	122	1,500	0	4.0



Figure 9.1.10: M6-30

M6-30: With bonusing for extra height/density. Mixed-use, residential over ground floor use. Above-grade in-structure parking; one-meter floodplain elevation with elevated sidewalk.

Parcel Area (m ²)	Res. Units	Ground-Floor Retail (m ²)	Office (m ²)	FSI
4,040	244	4,370	0	6.0



Figure 9.1.11: C6.5-25

C6.5-25: With bonusing for extra height/density. Office space, reduced parking requirement for transit proximity. Parking below grade.

Parcel Area (m ²)	Res. Units	FSI
6,140	40,670	6.5



Figure 9.1.15: M3.5-7A

M3.5-7A: Mixed-use, infill site, residential over ground floor use. Above-grade in-structure parking; one-meter floodplain elevation with elevated sidewalk.

Parcel Area (m ²)	Res. Units	Ground-Floor Retail (m ²)	Office (m ²)	FSI
3,000	100	1,425	0	3.5

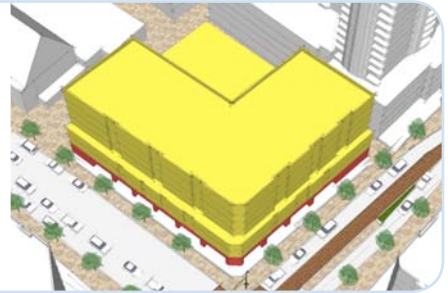


Figure 9.1.16: M3.5-5A

M3.5-5A: Mixed-use, infill site, residential over ground floor use. Utilizes shared parking strategy.

Parcel Area (m ²)	Res. Units	Ground-Floor Retail (m ²)	Office (m ²)	FSI
1,730	52	1,300	0	3.5



BRAMPTON GATEWAY



CONCEPT AREA

Figure 9.2.1:
Brampton Gateway Future Buildout Concept Aerial

9.2 Brampton Gateway Proof of Concept Summary

In an area constrained by greenbelts and established single-family neighborhoods, concept testing looks at long-term eventual phasing-in of development in a form and manner that meets the Vision for the character area. Conceptual future phasing envisions the Shoppers World eventually redeveloping into a mixed-use Retail District, after infill development with replacement structured parking has taken place on the current parking lots. The new shopping district contains a variety of internal mews and court spaces for varied and intimate shopping environments, and for connecting to residential areas.

Phasing assumes that development first occurs on undeveloped parcels, with added incentive for redevelopment of certain properties, in particular at the corners of the transit stop intersection at Steeles Avenue and Hurontario Main Street. Other properties will remain as currently developed for many years, until replacement makes economic sense. New buildings and infill buildings are phased in around those existing buildings, with the transit hub as the starting point and heart. The final, very long-term move develops that last corner lot with station area development and easy transit connections to the Hurontario transit line.



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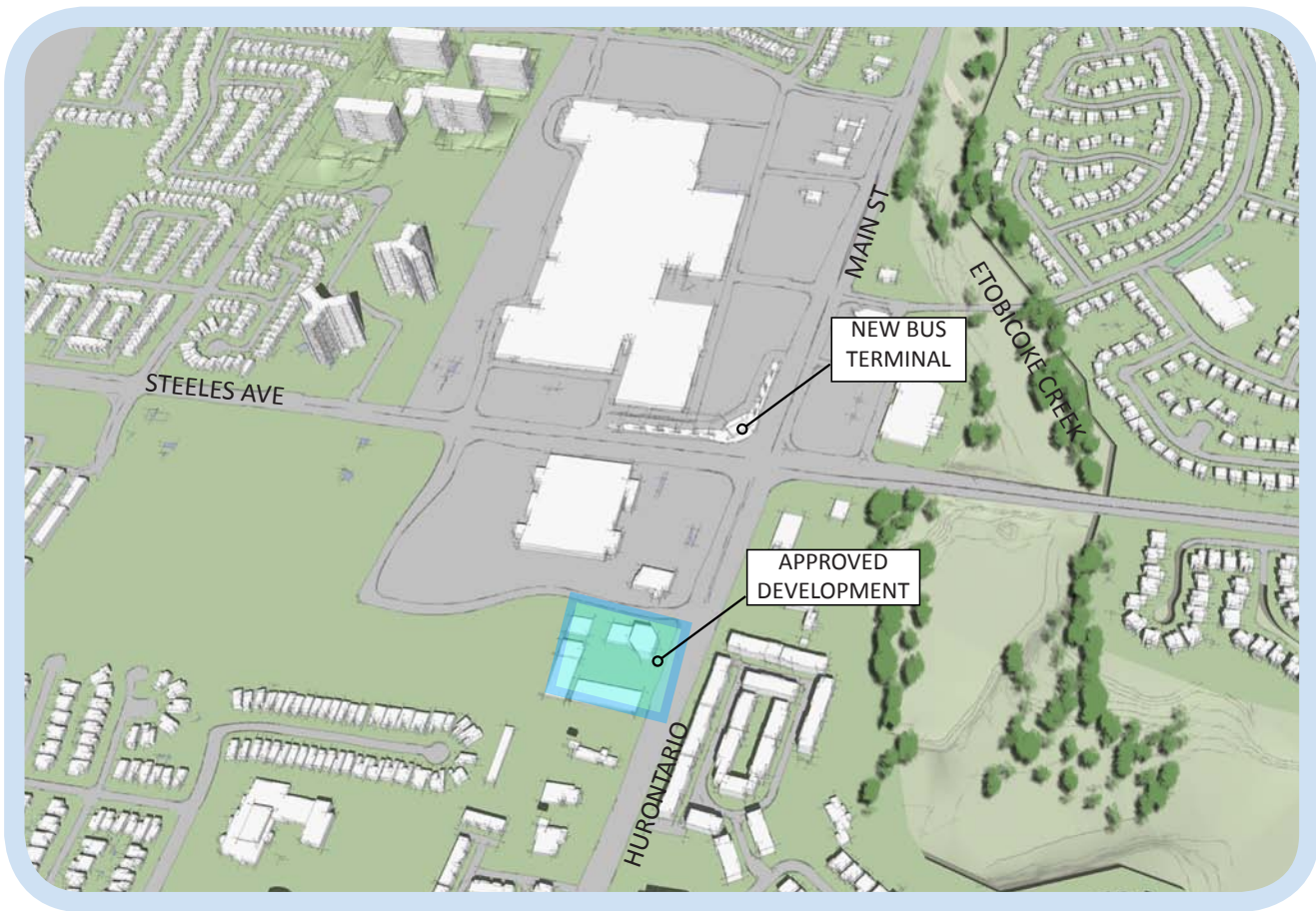
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Brampton Gateway Phasing

Phasing assumes that development first occurs on undeveloped parcels, with added incentive for redevelopment of certain properties, in particular at the corners of the transit stop intersection at Steeles Avenue and Hurontario Main Street. Other properties will remain as currently developed for many years, until replacement makes economic sense. New buildings and infill buildings are phased in around those existing buildings, with the transit hub as the starting point and heart.

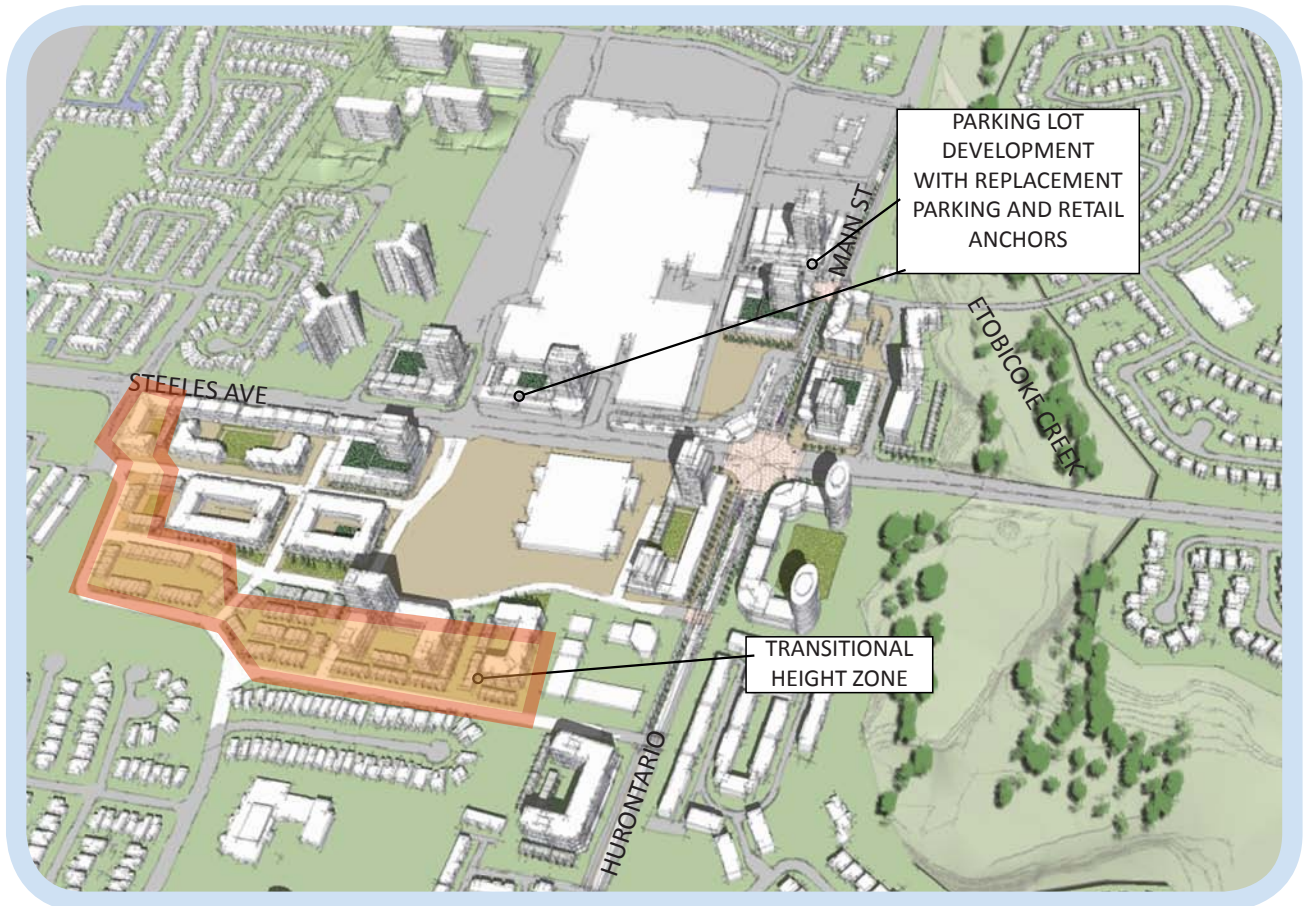
Figure 9.2.2: Brampton Gateway Existing



Phase I

Phase I shows where development is first likely to occur during and after construction of the transit corridor. The bus terminal is in place as planned. Aside from currently undeveloped parcels, new development and redevelopment is focused on giving form to the corners at the transit hub. Also shown are the first stages of development around Shoppers World. Two buildings on the parking lots at the main entry on Main Street have structured public replacement parking in the podium, as well as retail space to begin to transfer anchor tenants from the mall and begin to establish street frontage on the corridor. Similarly, on the Steeles Avenue side, development is shown on the current parking lot and on the previous bus terminal site, establishing active street frontage on Steeles. Building typologies step down in the transitional height zone adjacent to existing neighborhoods.

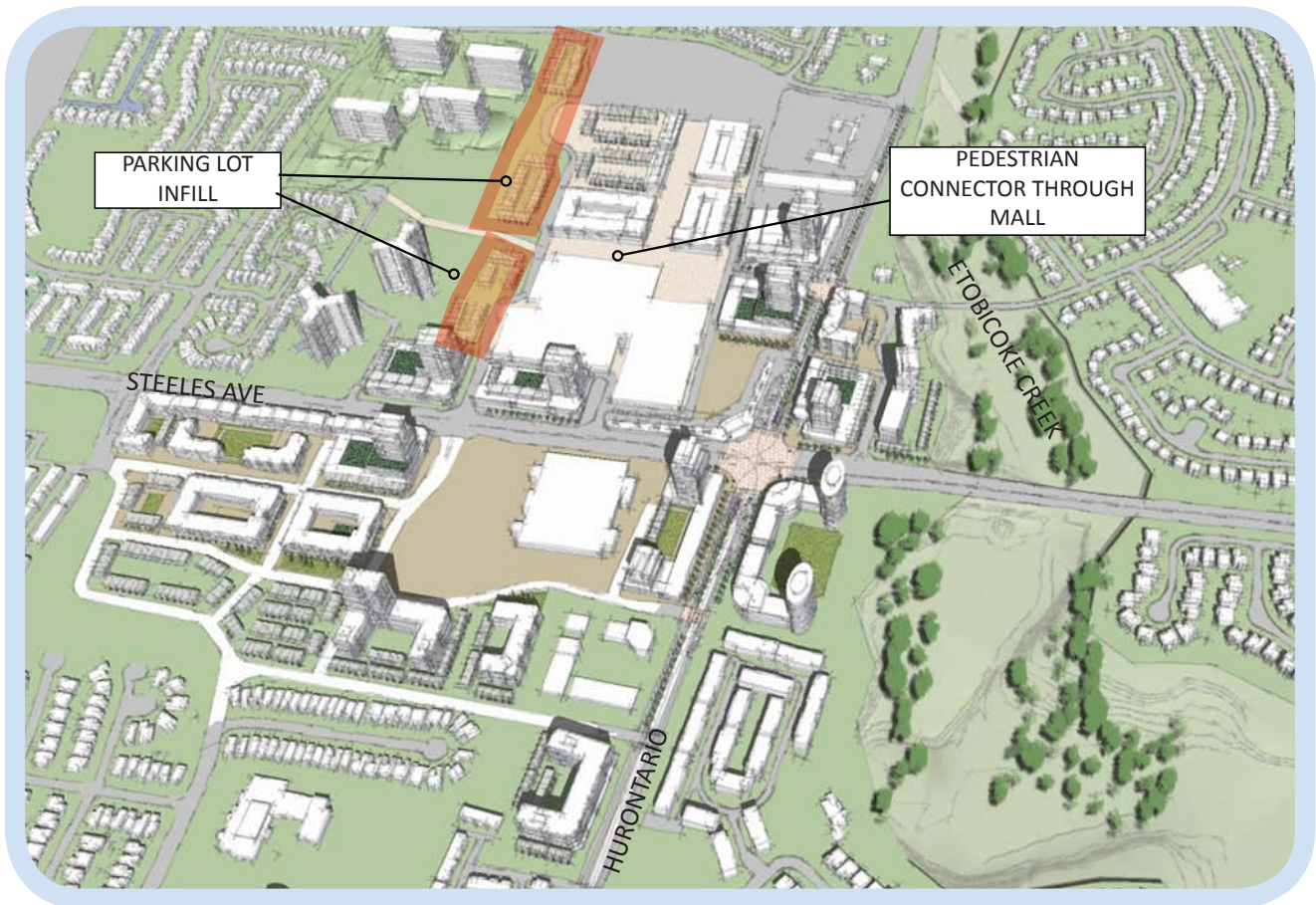
Figure 9.2.3: Brampton Gateway Phase I



Phase II

This interim phase develops more of the Shoppers World parking lot, and envisions a pedestrian passage through the mall connecting to the parks and neighborhoods on the other side. Enough retail anchor tenants have been relocated to new development in the parking lots to allow the north half of the mall to redevelop.

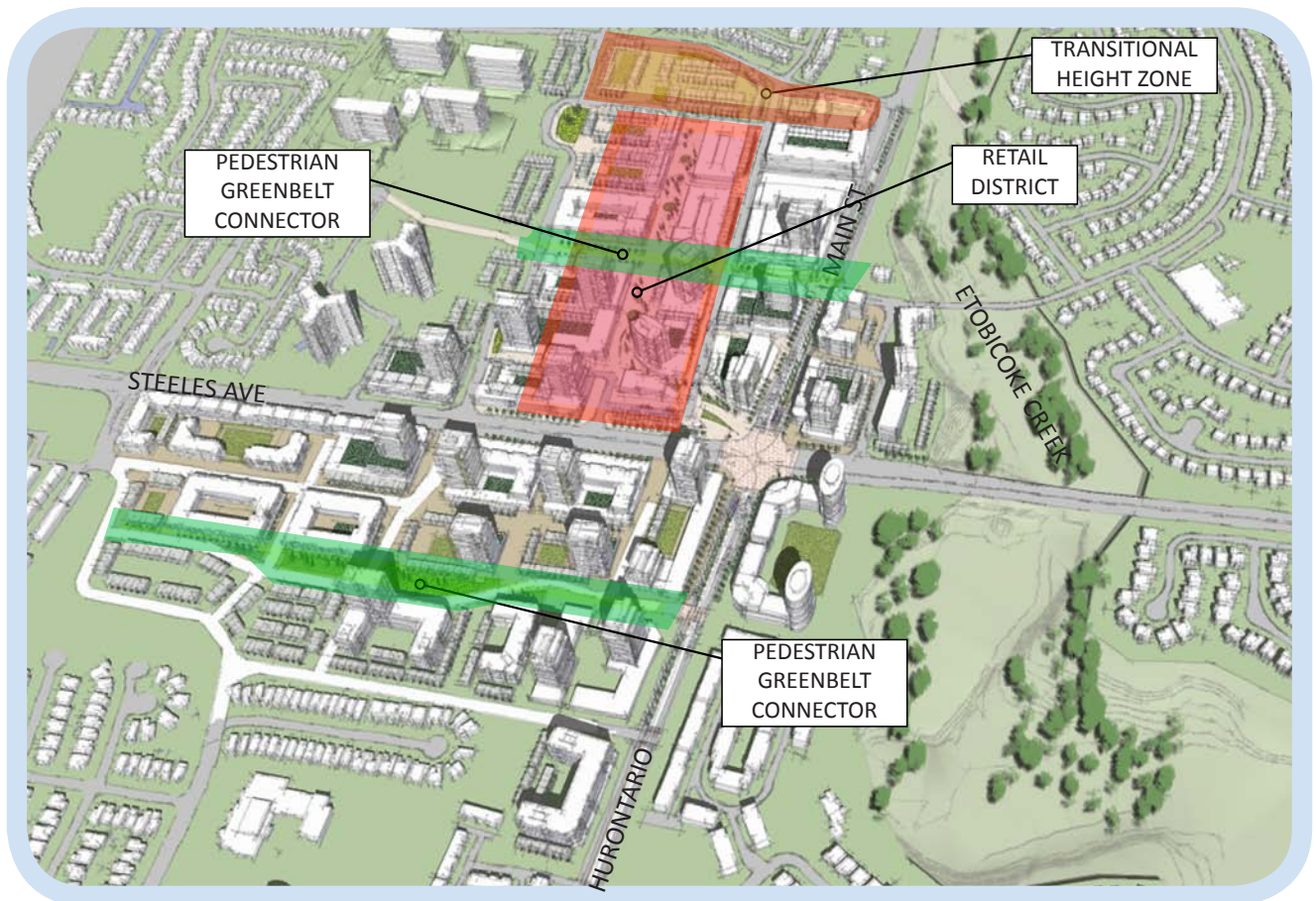
Figure 9.2.4:
Brampton Gateway Phase II



Phase III

This phase is a long-term projection, perhaps beyond the 2031 growth scenario, and envisions redevelopment of the Shoppers World into a mixed-use pedestrian retail district. The last of the surface lots are redeveloped with high density at the transit corner, and low density such as townhome blocks on the north lots. The bus shelters on Steeles are incorporated into market stalls to further activate the Steeles street edge. The remaining low-density blocks south of Steeles are ready for redevelopment in this long-term view.

Figure 9.2.5:
Brampton Gateway Phase III



Retail District: Phased Parking Replacement and Anchor/Large Retail Locations

The long-term phasing strategy utilizes gradual infill development in the parking lots at Shoppers World. New development incorporates structured parking in sufficient quantities to replace the existing capacity, and to allow for further infill development. New infill development in the parking lots also creates space for the mall anchor tenants to transfer to, allowing for eventual redevelopment of the mall. In the more compact urban form envisioned, smaller development parcels can require more than one level of below grade parking to meet current requirements. Podium typologies allow for additional above-grade in-structure parking if required.

Figure 9.2.6 shows potential development of above-grade structured parking. Red edges are wrapped with retail, institutional or commercial uses. Purple edges show service access where the garage front may not be wrapped with other uses. Remaining frontages are wrapped with residential use. The pale red areas show new anchor tenant spaces; the pale purple shows locations for parking podiums to replace the redeveloping surface parking lots.

Figure 9.2.6:
Brampton Gateway Retail and Parking Strategy Diagram

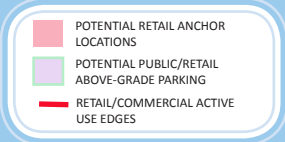
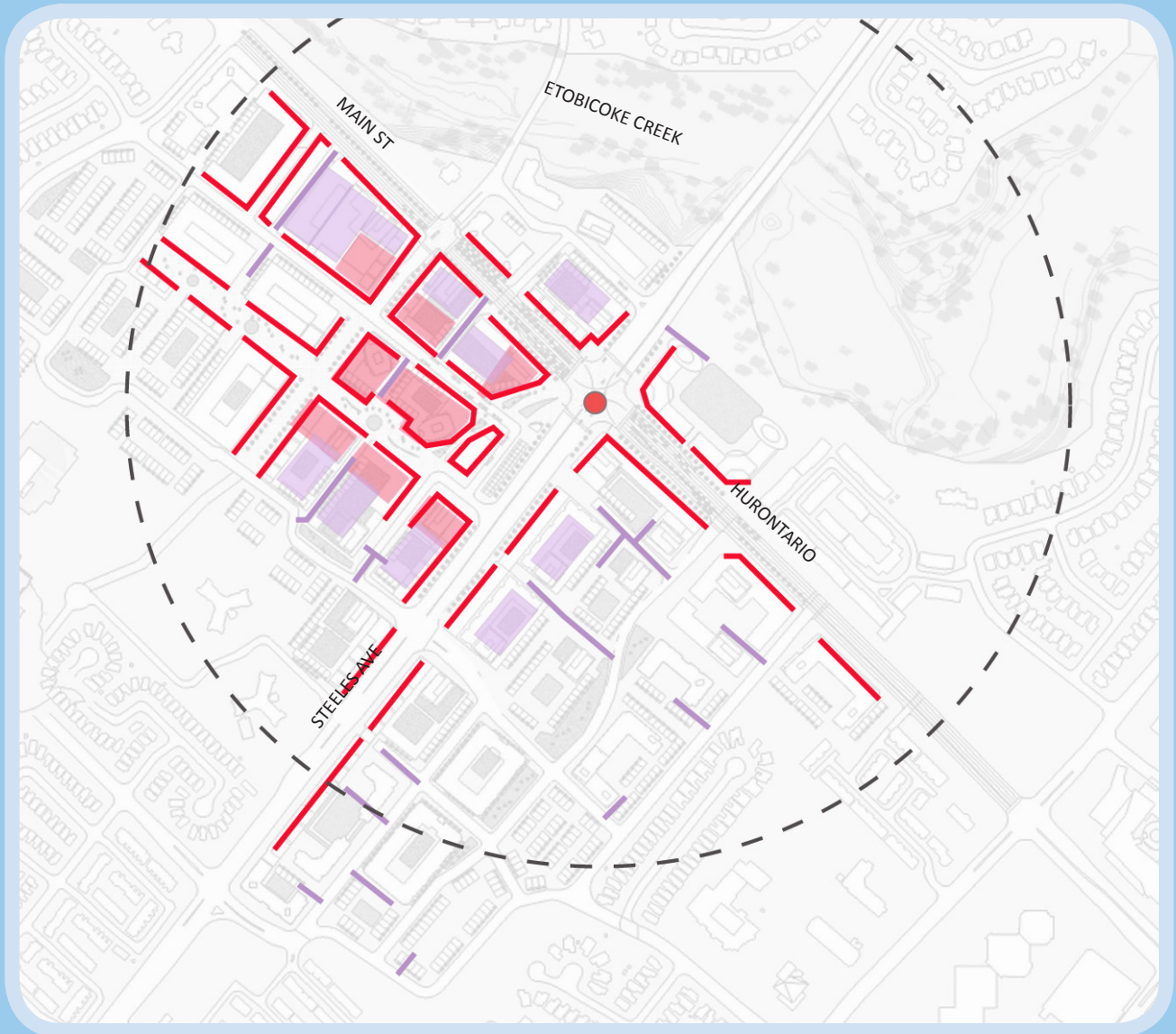


Figure 9.2.7:
Brampton Gateway Place-making Character View



9.2.1 Place-making

As the character areas transition from spread-out towers-in-the-park towards a more densely woven urban fabric, the place-making elements are the street walls that define the character of the street environment. The design considerations of upper floors involve mitigation of effects on the place-making environment of the street, using setbacks to decrease shadowing or avoid overpowering the street, or turning it into a dark and uninviting canyon. The upper maximum FSI helps to increase the spacing of towers, which should be spaced a minimum of 30 meters apart and placed for light and views. Establishing a maximum residential floorplate (800 square meters is used here) improves the massing for light, views and minimal impact on the street.

The design of the upper levels, a more private realm, takes into account green roofs and active terraces and common areas, including areas overlooking the street to add to activation and safety of the street.

Figure 9.2.8:
Brampton Gateway Main Street View



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9.2.2 Street Level Uses and Frontages

The built form concept testing follows active uses and frontages as shown in images 9.2.1 and 9.2.7, with first-floor heights at a minimum of 4 meters suitable for retail, commercial/institutional or convertible uses. Where continuous frontages are called for, we have understood this as allowing for narrow laneways or covered carriageways along the frontage, to allow for more frequent pedestrian access and connections and to promote the establishment of a walkable pedestrian grid. Vehicular access along the continuous frontage is prohibited except where previously noted.



Figure 9.2.9:
Hurontario/Main Street Transit Plan



9.2.3 Hurontario/Main Street Transit Corridor

The transit is center-aligned with one tree-planted median (tree planting may be contingent upon utility locations and other issues). Both right and left turn lanes are shown at the Steeles Avenue intersection, but it may not be necessary to have both. Bollards protect pedestrians and cyclists at the mid-block crossings. Tree plantings and landscape elements emphasize the green connective nature of this area and of the gateway into Brampton.

9.2.4 Connections Network and Pedestrian Accessibility

As noted previously in the Street Frontages section, concept testing utilizes frequent laneways or carriageways for better pedestrian connections to the transit corridor. The suggested maximum distance between pedestrian access ways along the continuous street frontage is 100 meters. Incentives or other means might be considered to encourage a connective network of public access ways through private developments. On Hurontario/Main Street, mid-block pedestrian and bicycle crossings connect the Etobicoke Creek greenbelt to parks and greenbelts southeast and southwest of the transit zone. Frequent pedestrian crossings are encouraged on Hurontario/Main Street within the walking distance radii, with suggested maximum of 150 meters between crossings.

9.2.5 Brampton Gateway: Control

In the existing conditions, Hurontario/Main Street has the highest control value as there is not a connective grid pattern in the measured area.

In the conceptual buildout, control values for Bartley Bull Parkway, with extension, are increased and create a secondary axis. The new Brampton Gateway connections are fairly even in hierarchy, which highlights some of the issues with one-sided transit development, as the Etobicoke Creek ravine to the north severely limits new connective development on that side of the transit corridor.

Figure 9.2.10: Existing Control

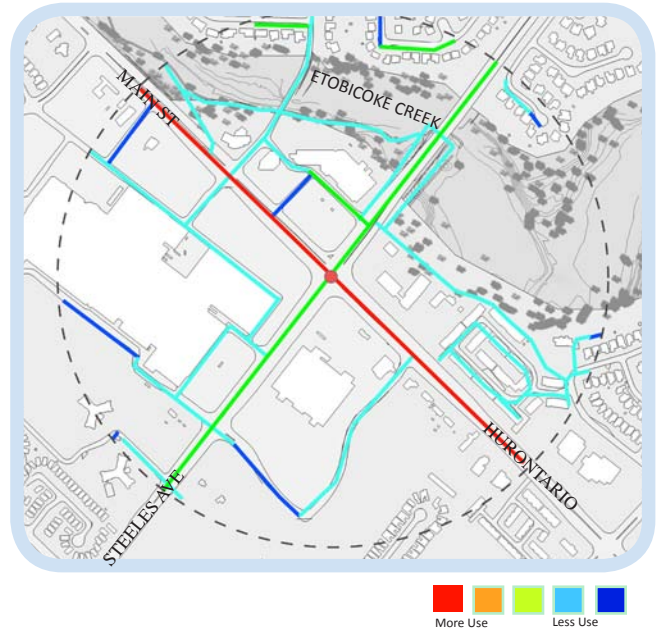
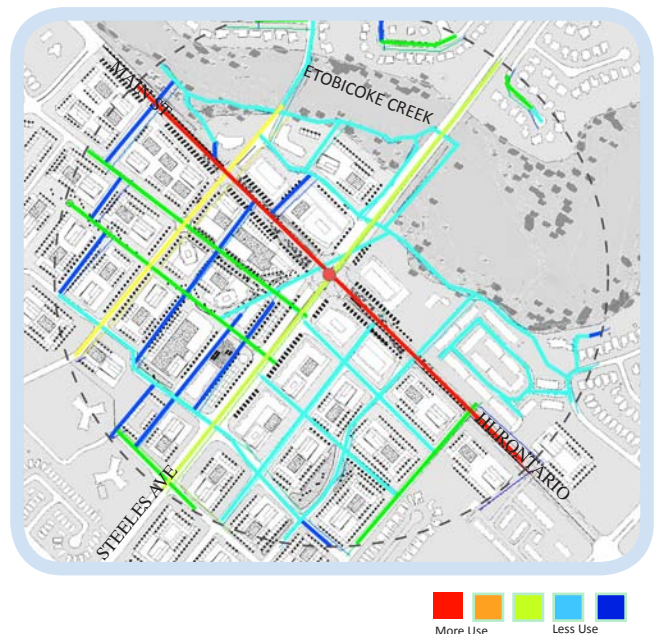


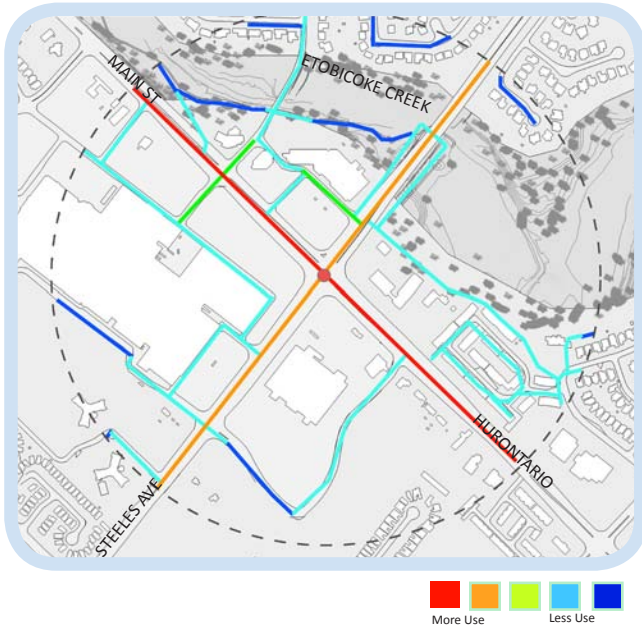
Figure 9.2.11: Buildout Control



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9.2.6 Brampton Gateway: Local Integration

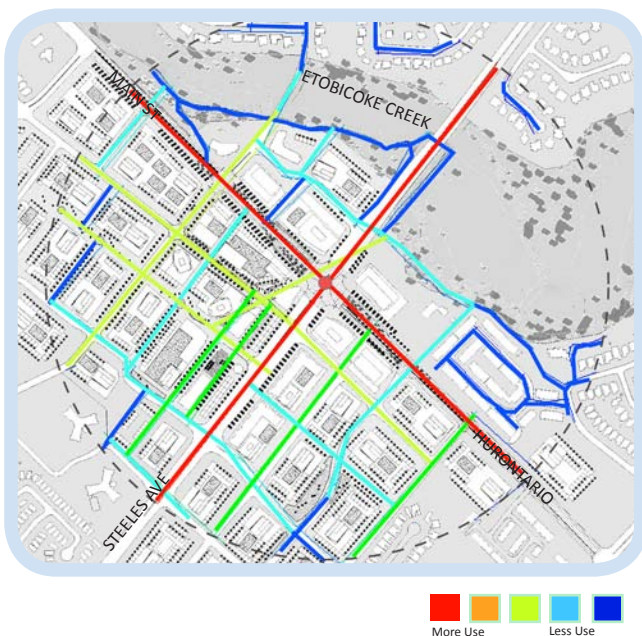
Figure 9.2.12: Existing Local Integration



In the existing condition Hurontario/Main Street has the highest local integration, with strong secondary values for Steeles Avenue.

In the conceptual buildout, new connections give Steeles Avenue nearly equal priority to Hurontario/Main Street in terms of local integration, creating a strong commercial/retail corner.

Figure 9.2.13: Buildout Local Integration



9.2.7 Brampton Gateway: Global Integration

In the existing condition there is a low level of global integration, reflecting the basic nature of the network.

In the conceptual buildout, new connections to Steeles Avenue and Hurontario/Main Street create a greatly enhanced level of integration.

Figure 9.2.14: Existing Global Integration

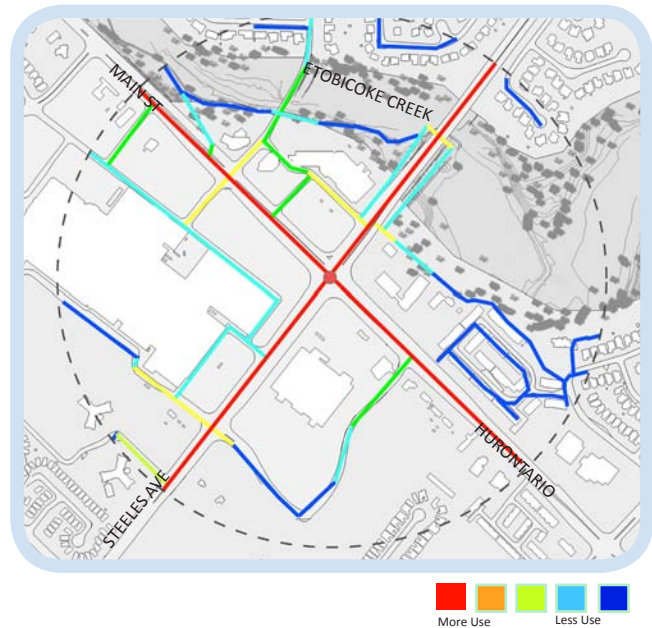
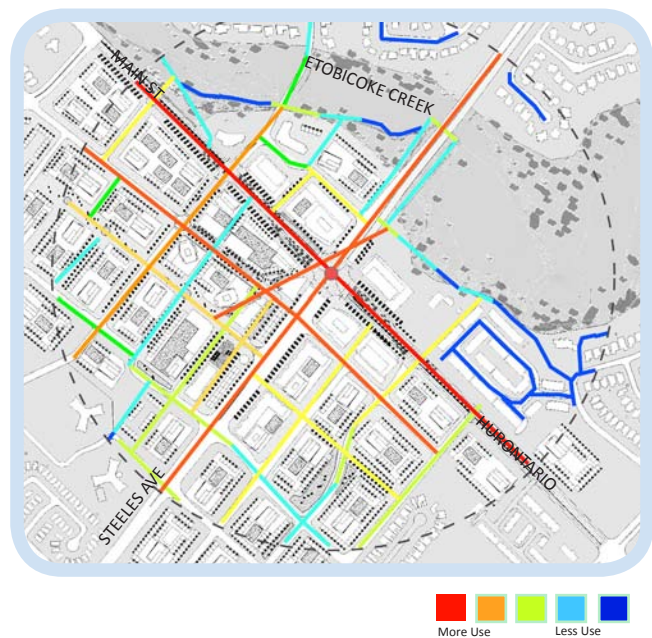


Figure 9.2.15: Buildout Global Integration



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9.2.8 Height and Density

Building typologies meeting the following characteristics were utilized: Height maximums of 11 or 20 storeys at a corresponding 3.5 or 4.0 FSI; street front podiums for retail, commercial, institutional or convertible use; below grade parking or above grade podium structured parking behind frontage uses; combination forms to meet transitional height requirements while achieving allowed FSI; tower form and spacing for light and view; continuous street wall and pedestrian route frontage; and unobtrusive vehicular and service access. To try to achieve 200 ppj/ha or less, while still allowing for towers close to the station and walkable urban form, it was necessary to introduce more townhouse blocks in the transitional and adjacent zones, with lower FSI of 0.7 to 1.0.

Even so, with many block heights reduced to 5 floors, the overall density is still high. Of approximately 78 hectares in the station area, approximately 38 hectares of development parcels (not including streets and open space) are shown. The end phase development as shown will produce approximately 23,000 people plus jobs, or approximately 280 ppj/ha for the entire station area. However, as this is a long-term phase beyond the 2031 population projections, this is probably not great cause for concern.

The final buildout as shown contains approximately 94,000 square meters of ground floor retail. The existing mall is approximately 77,000 square meters.

9.2.9 Typology Examples

Typologies shown are for illustrative purposes of possible building types that meet the requirements for height, density, setbacks and active street frontages, and how those building types might be combined over the station area. Other typologies currently being built in the region were tested, but on compact urban parcels were found to yield a much higher FSI than the 4.0 maximum envisioned.

4.0 FSI – 25 Storey Typology Examples

Figure 9.2.16: M4-25A

M4-25A: Mixed-use, residential over retail. Option: Ground-floor warehouse or anchor retail use; or additional above-grade in-structure parking wrapped with uses.

■ residential use ■ ground floor retail / commercial use

Parcel Area (m ²)	Res. Units	Ground-Floor Retail (m ²)	Office (m ²)	FSI
10,000	346	5,020	0	4.0



Figure 9.2.17: M4-25B

M4-25B: Mixed-use, residential over commercial facing Hurontario; residential tower and flats on back side of development parcel. Below-grade parking.

■ residential use ■ ground floor retail / commercial use ■ office

Parcel Area (m ²)	Res. Units	Ground-Floor Retail (m ²)	Office (m ²)	FSI
16,000	505	4,370	13,110	4.0



3.5 FSI – Varied Heights Typology Examples

Figure 9.2.18: M3.5-25

M3.5-25: Mixed-use, office over commercial/institutional forms continuous active street frontage along Steeles, with pedestrian laneways or carriageways breaking the block; residential uses are located behind. A mix of below-grade and above-grade in-structure parking wrapped with uses is shown. One 25 storey residential tower is shown with 5 storey flats and office.

■ residential use ■ ground floor retail / commercial use ■ office

Parcel Area (m ²)	Res. Units	Ground-Floor Retail (m ²)	Office (m ²)	FSI
30,000	720	3,000	34,000	3.5



3.5 FSI – Varied Heights Typology Examples (continued)

Figure 9.2.19: R3.5-5

R3.5-5: 5 storey residential flats around a courtyard. Below-grade parking.

residential use

Parcel Area (m ²)	Res. Units	Ground-Floor Retail (m ²)	Office (m ²)	FSI
8,800	255	0	0	3.5

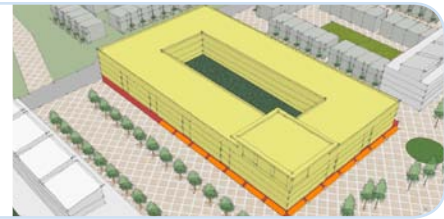


Figure 9.2.20: M3.5-5

M3.5-5: Mixed-use 5 storey residential over retail with interior courtyard.

residential use ground floor retail / commercial use

Parcel Area (m ²)	Res. Units	Ground-Floor Retail (m ²)	Office (m ²)	FSI
10,000	265	5000	0	3.5



3.0 FSI – 20 Storey Typology Examples

Figure 9.2.21: T3-25

T3-25: Transitional height zone residential use with townhomes, 7 storey flats and a 25 storey tower at the back. Below-grade parking.

residential use

Parcel Area (m ²)	Res. Units	Ground-Floor Retail (m ²)	Office (m ²)	FSI
20,300	620	0	0	3.0



Figure 9.2.22: M3-20

M3-20A: Mixed-use, 5 storey office over retail/commercial activates the corner frontages with 20 storey residential towers behind on the greenbelt and pedestrian connection through the block.

residential use ground floor retail / commercial use office

Parcel Area (m ²)	Res. Units	Ground-Floor Retail (m ²)	Office (m ²)	FSI
18,500	348	4,800	19,200	3.0



Figure 9.2.23: M3-12

M3-12: 12 storey mixed-use offices over large-format ground floor retail. Below-grade parking.

■ residential use ■ ground floor retail / commercial use ■ office

Parcel Area (m ²)	Res. Units	Ground-Floor Retail (m ²)	Office (m ²)	FSI
18,500	348	4,800	19,200	3.0



Figure 9.2.24: R3-20

R3-20: 8 storey mid-rise flats with 20 storey high-rise element and townhomes.

■ residential use

Parcel Area (m ²)	Res. Units	Ground-Floor Retail (m ²)	Office (m ²)	FSI
20,300	620	0	0	3.0



<1.0 FSI – 3 Storey Townhomes

Figure 9.2.25: TH1-3

TH1-3: 3 Storey townhomes.

■ residential use

Parcel Area (m ²)	Res. Units	Ground-Floor Retail (m ²)	Office (m ²)	FSI
20,300	620	0	0	3.0



COURTNEYPARK



CONCEPT AREA

Figure 9.3.1: Courtneypark Concept Aerial

9.3 Mississauga Employment Centre: Courtneypark

The challenge of the concept for the Employment Centre is to generate a mix of tenant types and sizes as well as a mix of uses that provide a destination and presence beyond the office workday. Building types range from the large single-tenant office building to multiple tenant subdivided spaces, offering both open floorplate and distinct subdivided loft units. In addition to active ground floor uses along the corridor and transit corners, smaller, flexible spaces on the backs of the blocks provide opportunities for entertainment uses other than day-time office use, such as clubs and entertainment venues. The existing cinema is the core of a mixed-use entertainment district, with the possibility of future redevelopment when the area builds out.

As the area may be slow to build up density, development is concentrated at the transit stop corners. The higher density (4.0 FSI) corners have structured podium parking; the backs of blocks and lower density corners might have surface parking until density warrants adding parking structures. Hotels are strategically situated to encourage through-block movement and activation of other uses at night as well as day. Through-block mews lead to mid-block plazas with restaurants and pedestrian crossings at Hurontario, all to encourage through-block movement and active use, in addition to the movement and uses along the Hurontario corridor.

9.3.1 Place-making

The four quadrant blocks around the transit stop are each subdivided into four quadrants with through connectors. Plazas at the mid-block crossings are anchored with active uses such as restaurants and lead to areas of other use, to draw both the lunchtime office workers and serve as a regional entertainment draw in the evening, aided by hotels placed on opposing quadrant blocks. The concept envisions that, due to convenient airport access, companies will locate corporate conference centers here which will further support day and night uses. Hotels are strategically placed to activate the entertainment uses and to activate through-block travel.



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Figure 9.3.2:
Courtneypark Place-making Character View, Mid-block passage between Annagem and Courtneypark, leading to Entertainment District.



9.3.2 Street Level Usages and Frontages

The mid-block crossings and plazas provide paths between various office uses to the Hurontario corridor and other uses. Mid-block plazas are ideally activated by restaurant anchors. These active anchor plazas and through-block passages open up the possibility for other active uses, including night-time uses, on the backs of the blocks. Strategic placement of hotels furthers this possibility. One hotel on each of two quadrants, out of a four-quadrant station area, is suggested.

Figure 9.3.3:
Courtneypark Hurontario View



The built form concept testing follows active uses and frontages as shown in [Figures 9.3.1](#) and [9.3.2](#), with first-floor heights at a minimum of 4 meters suitable for accessory retail, commercial/institutional or convertible uses. Wide sidewalks, provided by building setbacks, are shown along Hurontario to offset the shadowing effect of large floorplate office buildings. This view shows one open corner plaza leading to the entertainment district.

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**Figure 9.3.4:
Hurontario Transit Plan**



9.3.3 Hurontario Transit Corridor

The LRT is center-aligned with one tree-planted median and a smaller vegetated barrier opposite (tree planting may be contingent upon utility locations and other issues).

9.3.4 Connections Network and Pedestrian Accessibility

The Employment Centre concept is based on a simple four-square geometry of quadrants around the transit stops. In addition to cross-street connections, there is one mid-block connection through each block. Active anchor uses such as restaurants are centered at these mid-block plazas to increase through-block connectivity, pedestrian access to the corridor, and activation of uses along the corridor and along the connectors.

9.3.5 Height and Density

Building typologies meeting the following characteristics were utilized: Height maximums of 10 or 15 storeys at a corresponding 2.0 or 4.0 FSI; street front podiums for accessory retail, commercial, institutional or convertible use; variety of tenant space arrangements; structured or surface parking behind frontage uses; and continuous street wall and pedestrian route frontage.

9.3.6 Typology Examples

Typologies shown are for illustrative purposes of possible building types that meet the requirements for height, density, setbacks and active street frontages, and how those building types might be combined over the station area.

4.0 FSI – 15 Storey Typology Examples

App. ppj/ha shown is for the developed parcel only.

Figure 9.3.5: C4-15A

C4-15A: Office over ground floor commercial use, wrapped podium parking.

■ office ■ ground floor retail / commercial use

Parcel Area (m ²)	Office / Commercial Use (m ²)	FSI
21,000	84,780	4.0



Figure 9.3.6: C4-15B

C4-15B: Office over ground floor commercial use, hotel use, wrapped podium parking.

■ ground floor retail / commercial use ■ office ■ hotel

Parcel Area (m ²)	Office / Commercial Use (m ²)	Hotel	FSI
23,450	65,200	25,550	4.0



4.0 FSI – 15 Storey Typology Examples (continued)

Figure 9.3.7: C2-10A

C2-10A: Office over ground floor commercial use, long-span free-standing garage behind other uses (tenant loft spaces).

■ office ■ ground floor retail / commercial use

Parcel Area (m ²)	Office / Commercial Use (m ²)	FSI
21,000	41,800	2.0



2.0 FSI – 10 Storey (maximum) Typology Examples

Figure 9.3.8: C2-6A

C2-6A: Tenant floor space mid-rise courtyard buildings, some surface parking, optional below grade or share parking garage. Hotel with parking garage.

■ office ■ hotel

Parcel Area (m ²)	Office / Commercial Use (m ²)	Hotel	FSI
19,700	32,000	6,700	2.0



Figure 9.3.9: C2-6B

C2-6C: Naturally ventilated courtyard office over ground floor commercial use wrapped parking podium.

■ office ■ hotel

Parcel Area (m ²)	Office / Commercial Use (m ²)	Hotel	FSI
19,400	36,000	571	4.0



Figure 9.3.10: C2-6C

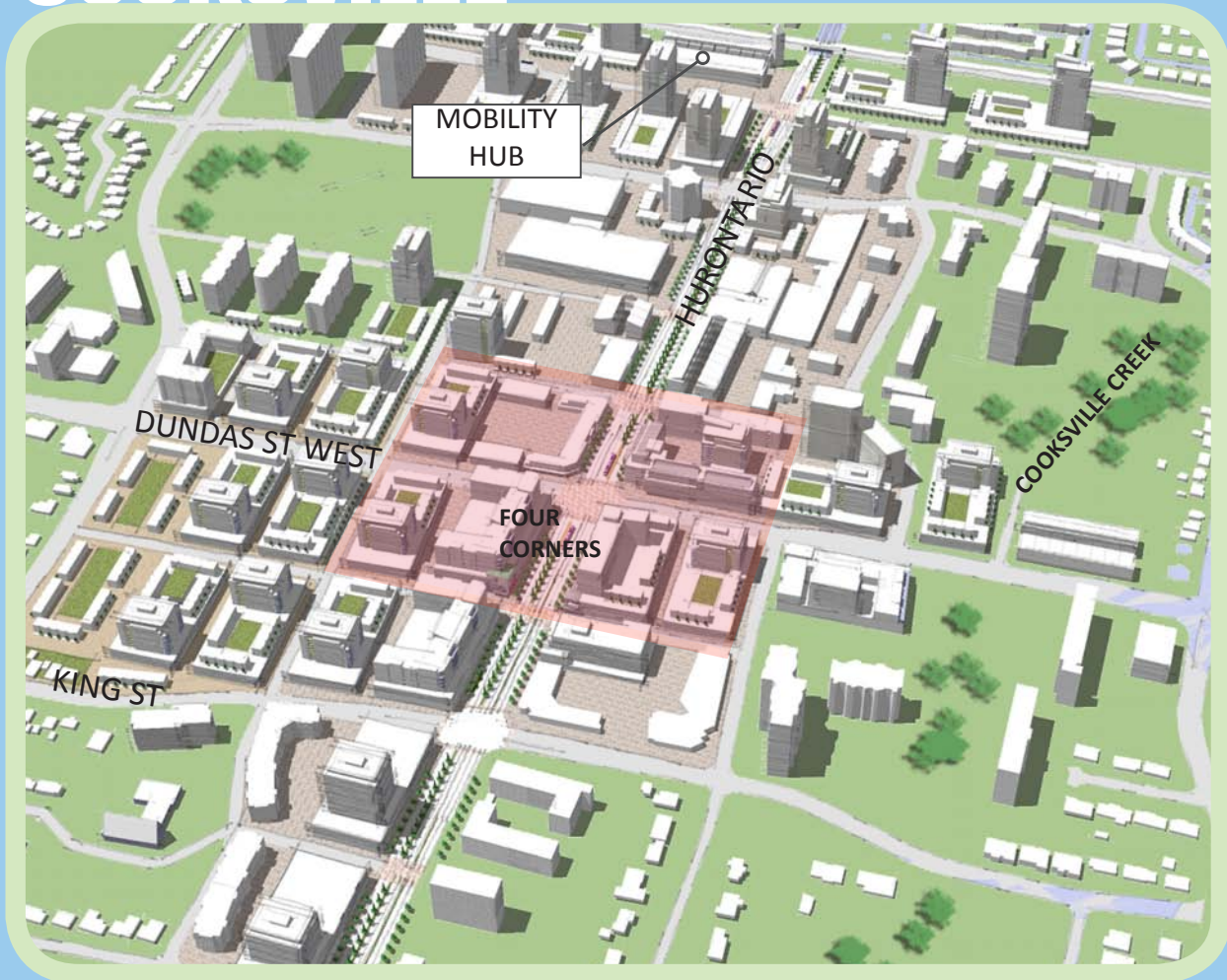
C2-6B: Tenant stacked loft space courtyard buildings, some surface or below grade parking or shared parking garage.

■ office ■ ground floor retail / commercial use

Parcel Area (m ²)	Office / Commercial Use (m ²)	FSI
19,200	40,800	2.0



COOKSVILLE



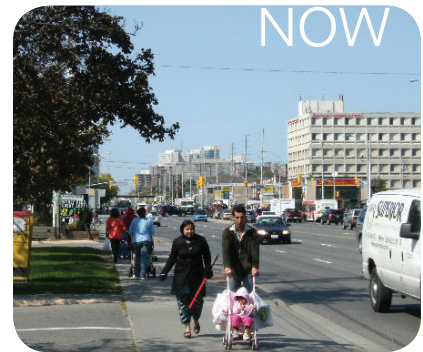
CONCEPT AREA

Figure 9.4.1: Cooksville Potential Development Concept

9.4 Cooksville

The concept for the Four Corners intersection at Dundas and Hurontario is of a walkable village with active streetfronts in a human-scaled streetwall. Conceptual built-form studies test this streetwall with different uses and stepped-back heights, and incorporating some of the existing fabric rather than envisioning a complete redevelopment scenario.

Development scenarios assume a village scale of smaller development blocks and frequent pedestrian connections. Laneways, mews and access ways provided through parcels assembled for private development may prove a qualification for incentive bonusing. Some existing development may stay (i.e., heritage features), requiring infill development on smaller parcel assemblies. Typologies are developed for infill parcels and for more efficient division of larger parcels, sized for parking efficiencies and in keeping with the more compact urban form envisioned for Cooksville. Allowances are made for the existing patterns of small ownership to continue, with a typology for phased replacement of existing mixed-use strip buildings under multiple ownership. Typologies are also developed to replace existing large-format retail businesses that currently have surface parking lots.



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Cooksville Four Corners Development Concept

Cooksville has existing building stock of varying age and condition. There may be some opportunity for land assembly, but smaller infill development is also likely. The concept looks at how both large block and infill development might occur.

Figure 9.4.2:
Cooksville Existing

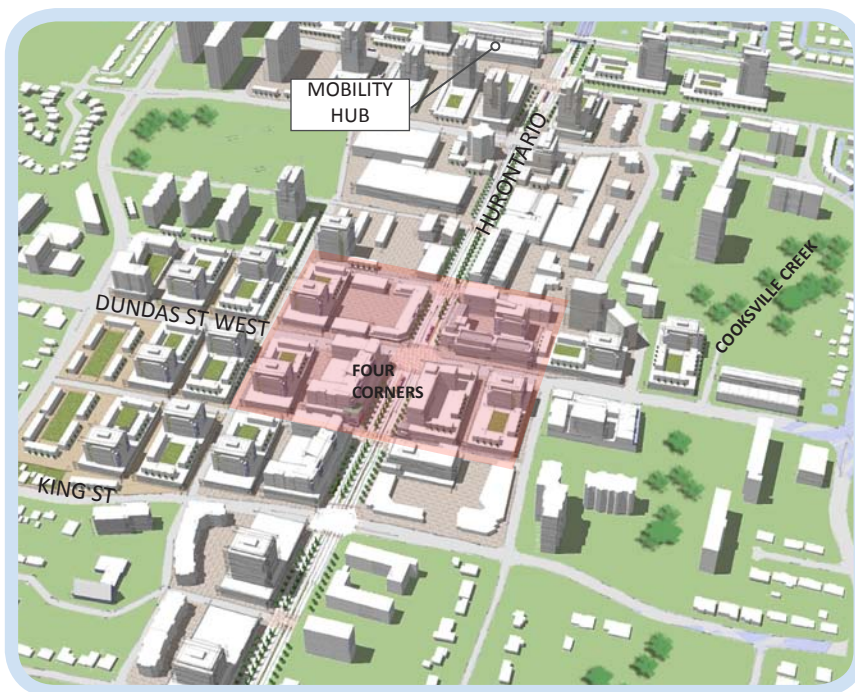


Infill Development Concept

This scenario theorizes potential redevelopment in both assembled blocks and smaller infill parcels. The T.L. Kennedy School is shown rebuilt in a more urban form, leaving room for Cook Street to connect up to the John Street transit mall and GO station. The northeast and southeast quadrants of the Four Corners at Dundas and Hurontario have public/civic/retail/transit plazas. The northeast corner infills development around existing buildings. Large format retail is placed in the podium of mixed-use buildings. An existing typology of mixed-use retail strip buildings under multiple ownership is reimagined as a phased replacement building in two parts, building on the street-front parking strip and then replacing the existing buildings with a second row, roofed over to become a type of arcade building. Residential towers at their respective height limitations fit in with existing tower development, with transitional height buildings next to established neighborhoods.



Figure 9.4.3:
Cooksville Potential Development Concept



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9.4.1 Place-making

The character of Cooksville, the Four Corners at Dundas and Hurontario in particular, is that of a smaller-scale urban village with active street frontage uses and people places. Movement of transit and people, pedestrians and cyclists, adds to the life of the village with multiple choices of where to go and how to get there, and frequent opportunities for urban interaction and observation. A key strategy for Cooksville is to provide new streets and pedestrian connections to establish a more fine-grained urban grid. Active and inhabited

spaces on podium setback terraces and rooftops overlook the street, adding levels of activation and a greater element of security. In the concept scenario, the city-owned property on the north-east corner has been leveraged in partnership with private property owners to get public plazas on both the north-east and north-west corners, providing more density, active uses and intensive place-making at this important transit stop and four-corner village retail.

Figure 9.4.4:
Cooksville Four Corners Place-making Character View



9.4.2 Street Level Uses and Frontages

The built form concept testing follows active uses and frontages as shown in [Figures 9.4.1](#) and [9.4.4](#), with first-floor heights at a minimum of 4.0 meters suitable for retail, commercial/institutional or convertible uses, and 3 meters minimum for residential use. Where continuous frontages are called for, we have understood this as allowing for pedestrian accessways along the frontage, to allow for more frequent pedestrian connections and to promote the establishment of a walkable pedestrian grid. Vehicular access along the continuous frontage is prohibited except where previously noted. Built form concepts look at development parcels based on an efficient below-grade or podium parking module for on-site parking, which allows

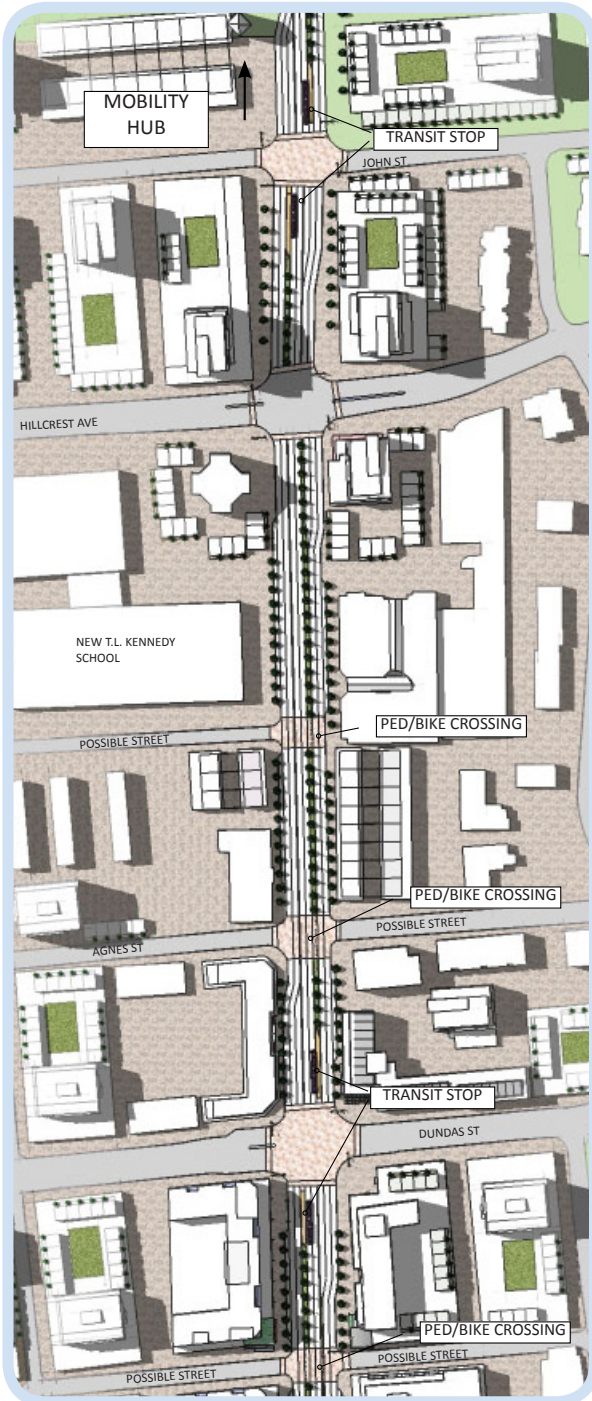
for a consistent pattern and potential grid of service access and/or pedestrian mews. Except where new public connections are noted in [Figure 9.4.5](#), these connections will occur through private development.

In terms of built-form impact upon the street environment, shadowing of the street may be a concern, particularly from development on the southwest side of the street. Shadow studies may be required of new development, and incentives provided for point towers combined with shorter blocks of flats. It may be desirable to reduce the podium height on Hurontario from four to three storeys.

Figure 9.4.5:
Cooksville Hurontario View



Figure 9.4.6:
Hurontario Transit Plan



9.4.3 Hurontario Transit Corridor

The LRT is center-aligned with one tree-planted median and a smaller vegetated barrier opposite (tree planting may be contingent upon utility locations and other issues). On-street parking is shown, along with left turn lanes at the major intersections. Bollards protect pedestrians and cyclists at the mid-block crossings.

9.4.4 Connections Network and Pedestrian Accessibility

As noted previously in the Street Frontages section, concept testing utilizes frequent pedestrian connections and access to the transit corridor. Public and private accessways shown are between 60 to 100 meters apart. The suggested maximum distance between pedestrian access ways is 100 meters. Incentives or other means might be considered to encourage a connective network of public access ways through private developments. On Hurontario, mid-block pedestrian and bicycle crossings promote two-sided and four-corner active development. Frequent pedestrian crossings are encouraged on Hurontario/Main Street within the walking distance radii of transit stops.

Figure 9.4.7: Existing Control



Figure 9.4.8: Buildout Control



9.4.5 Cooksville: Control

In the existing conditions, all of the control is along Hurontario, meaning all of the primary connections and access are made to Hurontario.

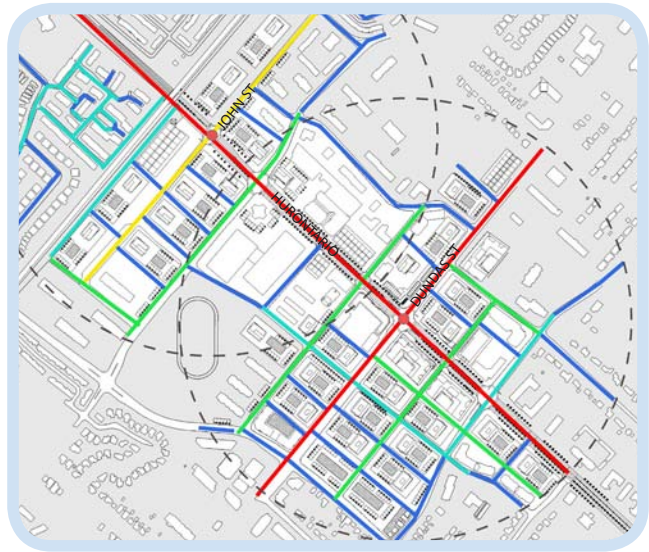
In the conceptual buildout, the new connections give Dundas and the extended John St. transit mall the highest control values, leading to the transit stops, which is appropriate and desirable.

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Figure 9.4.9: Existing Local Integration



Figure 9.4.10: Buildout Local Integration



9.4.6 Cooksville: Local Integration

In the existing condition Hurontario has the highest local integration, similar to the control values. This is not a bad thing and is normally seen for a High Street or Main Street.

In the conceptual buildout, new connections give Dundas nearly equal priority to Hurontario in terms of local integration. This creates a true Four Corners of crossroads retail and commercial destinations, as intended.

Figure 9.4.11: Existing Global Integration

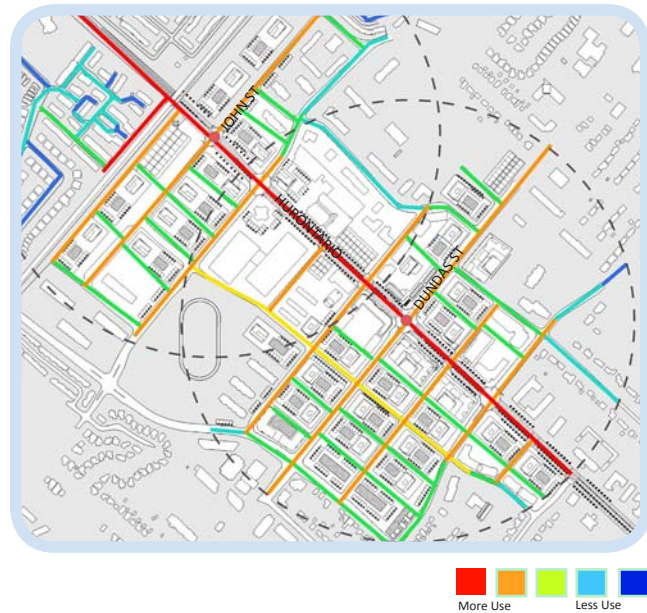


9.4.7 Cooksville: Global Integration

In the existing condition Hurontario has greatest importance followed by the major cross streets.

In the conceptual buildout, new connections have increased the number of valuable cross-connectors to Hurontario which are likely to increase the number of walking trips.

Figure 9.4.12: Buildout Global Integration



9.4.8 Height and Density

Building typologies meeting the following characteristics were utilized: Height maximums of 11 or 20 storeys at a corresponding 3.0 or 4.0 FSI; street front podiums for retail, commercial, institutional or convertible use; below grade parking or above grade structured parking behind frontage uses; combination forms to meet transitional height requirements while achieving allowed FSI; tower form and spacing for light and view; continuous street wall and pedestrian route frontage; and unobtrusive vehicular and service access.

9.4.9 Typology Examples

Typologies shown are for illustrative purposes of possible building types that meet the requirements for height, density, setbacks and active street frontages, and how those building types might be combined over the station area.

4.0 FSI – 25 Storey Maximum Typology Examples

Figure 9.4.13: M4-25

M4-25: Mixed-use, residential over parking podium wrapped with office and ground-floor retail.

■ ground floor retail / commercial use
 ■ office
 ■ residential use

Parcel Area (m ²)	Res. Units	Ground-Floor Retail (m ²)	Office	FSI
7,400	209	2,600	7,800	4.0



Figure 9.4.14: M4-24

M4-24: Mixed-use residential tower over parking podium wrapped with townhomes. Commercial or convertible use on primary street frontage; optional live-work or transitional use instead of townhomes. Shared service alley with mixed-use building. Residential or live-work mews shared with second residential building.

■ residential use
 ■ office

Parcel Area (m ²)	Res. Units	Ground-Floor Retail (m ²)	Office (m ²)	FSI
7,315	313	0	0	4.0



Figure 9.4.15: M4-18

M4-18: Mixed-use residential tower over parking podium wrapped with townhomes. Commercial or convertible use on primary street frontage; optional live-work or convertible use instead of townhomes. Residential or live-work mews shared with second residential building.

■ residential use
 ■ office

Parcel Area (m ²)	Res. Units	Ground-Floor Use (m ²)	Office (m ²)	FSI
8,220	302	0	3,900	4.0



4.0 FSI – 12 Storey Typology Examples

Figure 9.4.16: MLR4-12

M4-12A: Mixed-use infill parcels around existing building, 4-storey streetwall residential over retail with residential tower behind, parking below grade. Option: Office over retail.

■ residential use
 ■ ground floor retail / commercial use
 ■ office

Parcel Area (m ²)	Res. Units	Ground-Floor Use (m ²)	Office (m ²)	FSI
7,000	271	2,500	0	4.0



Figure 9.4.17: M4-12B

M4-12B: Mixed-use residential mid-rise over parking podium wrapped with uses and ground floor retail. Option: Office as upper-level podium use.

■ residential use
 ■ ground floor retail / commercial use

Parcel Area (m ²)	Res. Units	Ground-Floor Use (m ²)	Office (m ²)	FSI
6,700	267	1,600	0	4.0



Figure 9.4.18: M4-12C

M4-12C: Mixed-use infill tower over ground floor retail with townhomes. Below-grade parking.

■ residential use
 ■ ground floor retail / commercial use

Parcel Area (m ²)	Res. Units	Ground-Floor Use (m ²)	Office (m ²)	FSI
4,850	193	900	0	4.0



3.0 FSI – 8 Storey Typology Examples

Figure 9.4.19: M4-12A

MLR3-8A: Mixed-use residential mid-rise over double-height podium parking wrapped with retail. 2 levels of below grade parking. Residential use above ground floor. Stepbacks at 45 degrees above 6th floor. Half-block parcel.

■ residential use ■ ground floor retail / commercial use

Parcel Area (m ²)	Res. Units	Ground-Floor Use (m ²)	Office (m ²)	FSI
9,700	194	1,505	0	3.0

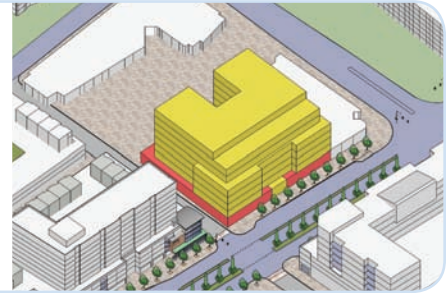
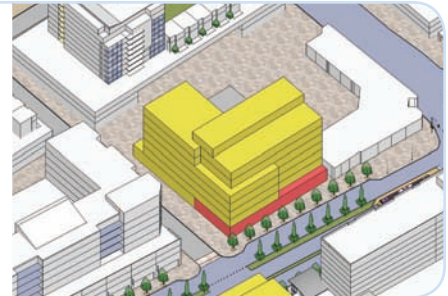


Figure 9.4.20: C4-8

MLR3-8B: Mixed-use residential mid-rise over double-height podium parking wrapped with retail. Residential use above ground floor. Stepbacks at 45 degrees above 6th floor. Infill parcel.

■ ground floor retail / commercial use ■ office


Parcel Area (m ²)	Res. Units	Ground-Floor Use (m ²)	Office (m ²)	FSI
4,440	111	1,040	0	3.0



3.0 FSI – 8 Storey Typology Examples (Cont'd)

Figure 9.4.21: M3-8A

M3-8A: Residential flats with below-grade parking

 residential use

Parcel Area (m ²)	Res. Units	Ground-Floor Use (m ²)	Office (m ²)	FSI
6,700	200	0	0	3.0



Figure 9.4.22: M3-8B

M3-8B: Residential block with flats, townhomes and below-grade parking

 residential use

Parcel Area (m ²)	Res. Units	Ground-Floor Use (m ²)	Office (m ²)	FSI
6,700	195	0	0	3.0



3.0 FSI – 20 Storey Typology Examples

Figure 9.4.23: M3-18, M3-15, R3-6

■ residential use
 ■ ground floor retail / commercial use
 ■ office

M3-18: Mixed-use residential tower over parking podium wrapped with office over ground-floor retail.

Parcel Area (m ²)	Res. Units	Ground-Floor Use (m ²)	Office (m ²)	FSI
6,160	122	1,800	5,400	3.0

M3-15: Mixed-use residential tower over parking podium wrapped with office over ground-floor retail.

Parcel Area (m ²)	Res. Units	Ground-Floor Use (m ²)	Office (m ²)	FSI
5,360	96	1,800	5,400	3.0

R3-6: Mid-rise residential flats with below-grade parking.

Parcel Area (m ²)	Res. Units	Ground-Floor Use (m ²)	Office (m ²)	FSI
4,400	142	0	0	3.0



SUBS &

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IMPLEMENTATION PLAN



10 IMPLEMENTATION PLAN

This chapter addresses next steps the Cities need to take prior to and after the LRT has been constructed. The plan addresses the steps needed to successfully implement a rapid transit service, by developing supportive land uses, appropriate urban design guidelines and intelligent and effective marketing strategies to make the Corridor a vibrant and livable community.

10.1 Official Plan and Zoning By-law Amendments

10.1.1 Context



Implementing the recommended policies of the Planning and Urban Design Strategy into each municipal Official Plan and Zoning By-law is an essential step towards fulfilling the vision of this Master Plan. The Official Plan Amendments will guide municipal decision making throughout the corridor. The Official Plan policies will also enable the preparation of more detailed Zoning By-laws for the Corridor, which should be based on the detailed policies contained in the Planning and Urban Design Strategy. Furthermore, the Cities may wish to amend their Community Improvement Policies in order to allow for the preparation of one or more community improvement plans in the Corridor, in accordance with the recommendations contained in Section 9.2 of this Plan.



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It is recommended that the Planning and Urban Design Strategy be implemented in each municipal Official Plan and Zoning By-law. Currently, each municipal-wide Official Plan is applicable to the portion of the Study Area and Character Areas that fall within the boundary of each municipality. In addition, a number of Secondary Plans apply to portions of the Study Area in both Mississauga and Brampton. Note that in Mississauga, Secondary Plans are referred to as District Plans.

A detailed review of the existing Official Plan and Secondary Plan policies will be required in order to translate the proposed policies of this Master Plan into implementing Official Plan and zoning amendments. The general intent of the existing municipal policy framework in many areas of the Corridor has been to ensure orderly, financially responsible, and primarily relatively low-density growth of greenfield areas, without consideration for the implications of a higher-order transit system and the potential growth that could be accommodated with such a system. By contrast, the general intent of this Master Plan is to build higher density, pedestrian-oriented environments that capitalize on the opportunities created by a higher-order transit system.

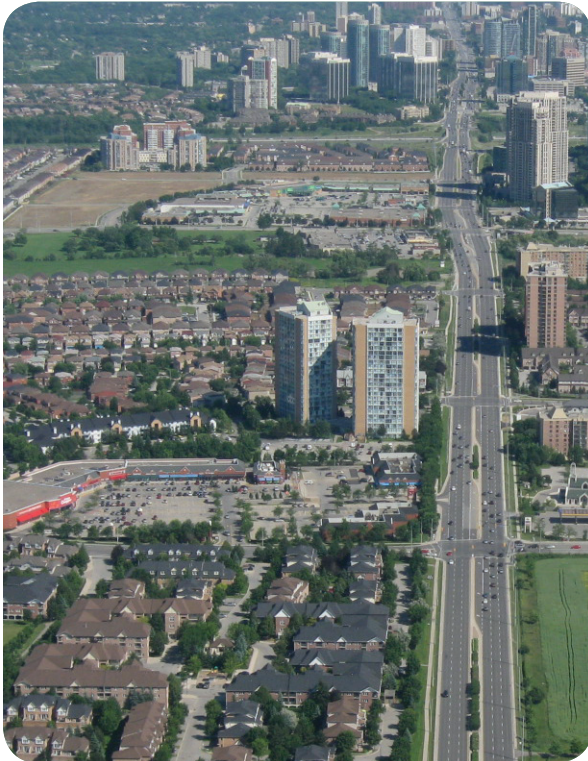
The Planning and Urban Design Strategy is a visionary policy framework, with its basis being a thorough investigation of best practices and emerging trends in urban design and transit-oriented development, as well as a detailed analysis of the Study area and each individual Character Area. The policies recommended in the Planning and Urban Design Strategy should only be considered in association with a detailed review of the existing policy framework, especially in terms of the detailed policies relating to servicing, natural heritage conservation and the other specific matters which have been examined more broadly by the Planning and Urban Design Strategy. It may be necessary to carry forward many of the existing Official Plan policies, possibly with minor amendments, in order to develop a comprehensive planning regime for the Corridor that conforms with each City's existing individual policy structure and framework, while integrating the intent of this Master Plan.

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10.1.2 Translating the Master Plan into Policies versus Regulations



The following table is intended to help aid each City in implementing the policies of the Urban Design Strategy, and is meant for illustrative purposes only. It is important to note that **Table 10.1.1** below outlines the policy topics broached in Section 8 of this Master Plan only, and that specific policies related to each topic may be found in Section 9. The actual method in which each policy of the Strategy is implemented should be influenced by the policy versus regulatory approach currently used by each City – that is, each City may wish to be consistent with the way they currently implement policy directions, in that they may choose to be more or less detailed in their Official Plan policies than is described in the following table. As noted in the previous section, the translation of the Strategy’s policies into implementing Official Plan and Zoning policies should be undertaken in association with a detailed review of each City’s existing policy and zoning framework. **Table 10.1.1** is based on the recommended approach to implementing the Master Plan into the Official Plans and Zoning By-laws, as noted in Sections 10.1.3 and 10.1.4 below.

Table 10.1.1 – Potential Approaches to Implementing the Master Plan

Master Plan Policy Area/Topic (Note that many of the topics below are also addressed in Section 8 which should be reviewed to apply specific Character Area policy directions)	Potential Official Plan Implementation Approach	Potential Zoning Implementation Approach	Potential Implementation using Urban Design Guidelines
Permitted Uses (7.3.1)	<ul style="list-style-type: none"> Provide for an appropriate mix of uses throughout the Corridor Address land use compatibility of stable adjacent neighbourhoods 	<ul style="list-style-type: none"> Detail the uses permitted within in each zone 	<ul style="list-style-type: none"> N/A
Permitted Uses at Grade Level (7.3.2)	<ul style="list-style-type: none"> Establish the importance of having animated uses at grade Broadly outline permitted uses at grade 	<ul style="list-style-type: none"> Detail the uses that are permitted at grade Use the zoning maps as a tool to differentiate where the various uses should be permitted at grade 	<ul style="list-style-type: none"> N/A
Density and Height (7.3.3)	<ul style="list-style-type: none"> Recognize importance of establishing minimum heights and densities for creating critical mass Recognize height transition and compatibility, especially with adjacent stable, low-rise neighbourhoods Subject to site planning, servicing and other considerations May wish to provide a framework for minimum and maximum building heights to be established in the zoning by-law 	<ul style="list-style-type: none"> Detail the permitted heights and densities, using the maps in the recommended zoning implementation approach discussed below Provide for podium requirements 	<ul style="list-style-type: none"> Could address preferred design elements related to height, building envelope and lot coverage, such as step-backs of upper storeys, in more detail
Development in Phases (7.3.4)	<ul style="list-style-type: none"> Require submission of Master Plan where development is proposed in phases 	<ul style="list-style-type: none"> N/A 	<ul style="list-style-type: none"> Address appropriate phasing, demonstrating importance of the street and maintaining/enhancing pedestrian connections between phases
Minimum Street Frontage (7.3.5)	<ul style="list-style-type: none"> Establish importance of continuous street wall/frontage in certain areas for creating a pedestrian-scaled street 	<ul style="list-style-type: none"> Indicate where minimum street walls are required using a schedule Regulate specifically what is required in the street wall and what uses may be permitted to “break” the street wall (e.g., access to rear parking), where applicable 	<ul style="list-style-type: none"> Detail the treatment of the façade; emphasize importance of design elements such as repetition, windows, entryways, awnings and other features
Maximum Setback Lines (7.3.6)	<ul style="list-style-type: none"> Establish a framework for setting maximum setbacks, including buildings built at the streetline in the Zoning By-law 	<ul style="list-style-type: none"> Detail the setback requirements in a schedule Offer regulations to address 	<ul style="list-style-type: none"> N/A

Table 10.1 – Potential Approaches to Implementing the Master Plan

<p>Master Plan Policy Area/Topic</p> <p>(Note that many of the topics below are also addressed in Section 8 which should be reviewed to apply specific Character Area policy directions)</p>	<p>Potential Official Plan Implementation Approach</p>	<p>Potential Zoning Implementation Approach</p>	<p>Potential Implementation using Urban Design Guidelines</p>
<p>Parking (7.3.7)</p>	<ul style="list-style-type: none"> • Provide for a review of parking requirements over time, as it is expected that the need for parking will diminish as the rapid transit system is implemented • Provide for surface parking early in the life of the plan, but only as a temporary use and only at the rear of lots • Provide general design and locational requirements for parking areas and structures • Encourage structured and on-street parking as opposed to surface parking • Require parking/ transportation studies, where warranted • Provide for shared parking 	<ul style="list-style-type: none"> • Detail the parking space requirements for the permitted uses • Provide requirements for parking area design, access, dimensions, location, specifications for shared parking facilities, etc. 	<ul style="list-style-type: none"> • More detailed design requirements for parking areas and structures, including pedestrian connectivity and landscaping • Design of parking structures
<p>Transit Supportive Designs (7.3.8)</p>	<ul style="list-style-type: none"> • Generally require consideration for transportation infrastructure in the design and layout of sites and buildings 	<ul style="list-style-type: none"> • May address technical matters of providing appropriate space for transit infrastructure including pedestrian connections and safety considerations 	<ul style="list-style-type: none"> • Expand on the City's preferred approach to integrating site/building designs into transit infrastructure
<p>Pedestrian Orientation (7.3.9)</p>	<ul style="list-style-type: none"> • Establish the importance of providing an integrated, well-connected pedestrian network • Require sidewalks on new streets and maximize pedestrian connections in site design • Encourage street furniture, buffering, vegetation and other pedestrian amenities that maximize pedestrian comfort and safety 	<ul style="list-style-type: none"> • Provide regulations for pedestrian trails and sidewalks • Address requirements and location of buffers and landscaping 	<ul style="list-style-type: none"> • Provide design guidelines for street layout and pedestrian connectivity • Address the design of pedestrian connections • Guidelines for vegetation, street furniture and other amenities
<p>New Pedestrian Connections (7.3.10)</p>	<ul style="list-style-type: none"> • Require sidewalks on new streets and require/encourage new pedestrian connections elsewhere • Require barrier-free design of pedestrian connections • May wish to identify opportunities for new conceptual or required pedestrian connections • Prohibit any new channelized right turn lanes in the corridor, and work towards elimination of those which exist 	<ul style="list-style-type: none"> • Indicate where new sidewalks are required (which type of roads, which sides of streets, etc.) 	<ul style="list-style-type: none"> • Guidelines for design of pedestrian connections, cycling routes, sidewalks (e.g. materials) and integration of such connections into site design and existing connections

Master Plan Policy Area/Topic (Note that many of the topics below are also addressed in Section 8 which should be reviewed to apply specific Character Area policy directions)	Potential Official Plan Implementation Approach	Potential Zoning Implementation Approach	Potential Implementation using Urban Design Guidelines
Bonusing (7.3.11)	<ul style="list-style-type: none"> Provide for bonusing as a means of achieving the types of heights and densities to support the transit system, and to obtain other public benefits that advance the vision of the Master Plan 	<ul style="list-style-type: none"> N/A (the details of the height and density bonusing program would be addressed through a bonusing by-law) 	<ul style="list-style-type: none"> N/A
Place-making (7.3.12)	<ul style="list-style-type: none"> Direct growth to nodes of activity to facilitate place-making in those areas first Encourage public art and creation of sense of place through high quality architecture Conserve heritage resources, including cultural heritage landscapes 	<ul style="list-style-type: none"> N/A 	<ul style="list-style-type: none"> Specifically identify place-making opportunities, if not done so in the Official Plan Provide architectural, public space and other guidelines that support place-making and sense of place Public art guidelines Guidelines for integration of development with heritage resources
Visual Prominence (7.3.13)	<ul style="list-style-type: none"> Support the creation and emphasis of existing gateways, view corridors, view termini and landmarks as place-making features 	<ul style="list-style-type: none"> N/A 	<ul style="list-style-type: none"> Identify and promote existing gateways, view corridors, view termini and landmark buildings and frontages, and offer guidelines to address the creation of such features
Civic Public Spaces (7.3.14)	<ul style="list-style-type: none"> Conserve creeks, open spaces, parks and natural heritage Promote the creation of new parks and multifunctional open spaces, squares and plazas, as well as the integration of such places into the pedestrian network and transit infrastructure Encourage year-round uses, barrier free design and integration into the pedestrian/transit network 	<ul style="list-style-type: none"> Regulate the use of public space 	<ul style="list-style-type: none"> Guide the design of parks, squares and plazas and specifically address integration of these spaces into the urban fabric and to create barrier-free designs
Private, Publicly Accessible Spaces (7.3.15)	<ul style="list-style-type: none"> Encourage public accessibility to private open space, such as courtyards, walkways, gardens, etc. Encourage barrier-free access 	<ul style="list-style-type: none"> N/A 	<ul style="list-style-type: none"> Guidelines for publicly accessible open spaces, such as landscaping, encouragement of barrier-free design and consideration for visual connections and tree canopy improvement

Table 10.1 – Potential Approaches to Implementing the Master Plan

<p>Master Plan Policy Area/Topic</p> <p>(Note that many of the topics below are also addressed in Section 8 which should be reviewed to apply specific Character Area policy directions)</p>	<p>Potential Official Plan Implementation Approach</p>	<p>Potential Zoning Implementation Approach</p>	<p>Potential Implementation using Urban Design Guidelines</p>
<p>Natural Heritage Considerations (7.3.16)</p>	<ul style="list-style-type: none"> • Polices implementing Credit Valley Conservation's and the TRCA's requirements • Generally encourage retention • Where appropriate provide pedestrian connections to creek corridors • Support creation of an urban forest through tree canopy improvements • Address accessibility of trails into natural heritage corridors 	<ul style="list-style-type: none"> • N/A 	<ul style="list-style-type: none"> • Guidelines to encourage retention of trees, planting of appropriate types of vegetation, and to connect tree canopies
<p>Stable Neighbourhoods (7.3.17)</p>	<ul style="list-style-type: none"> • Recognize those Character Areas which are stable and prevent incompatible adjacent development 	<ul style="list-style-type: none"> • Development to occur in accordance with height transition areas (see below) 	<ul style="list-style-type: none"> • Address use of design elements to enhance compatibility with stable adjacent areas, such as stepping back upper storeys and design of landscaped buffering
<p>Transition Areas (7.3.18)</p>	<ul style="list-style-type: none"> • Establish the importance of transitioning height from low-rise stable areas to higher density areas of the Corridor, both for compatibility and good design purposes, and state that the zoning by-law is intended to establish height transition 	<ul style="list-style-type: none"> • Identify height transition areas as a schedule in the zoning by-law, and provide general provisions addressing required height transitions, applicable to new buildings within the overlay 	<ul style="list-style-type: none"> • N/A
<p>Special Policy Areas and Recognized Floodplain (7.3.19)</p>	<ul style="list-style-type: none"> • Address Conservation Authority's requirements with regard to floodplain management and development within a Special Policy Area 	<ul style="list-style-type: none"> • Address Conservation Authority's requirements with regard to floodplain management and development within a Special Policy Area 	<ul style="list-style-type: none"> • N/A
<p>Cultural Heritage Conservation (7.3.20)</p>	<ul style="list-style-type: none"> • Require Heritage Impact Study for development adjacent to or containing cultural heritage resources • Require mitigation of any impacts prior to development taking place 	<ul style="list-style-type: none"> • N/A 	<ul style="list-style-type: none"> • Provide guidelines for effective integration of cultural heritage resources into development, guidelines for adaptive re-use of built heritage resources, and creating development that is compatible with historic buildings and architectural styles.

Master Plan Policy Area/Topic (Note that many of the topics below are also addressed in Section 8 which should be reviewed to apply specific Character Area policy directions)	Potential Official Plan Implementation Approach	Potential Zoning Implementation Approach	Potential Implementation using Urban Design Guidelines
Sustainability (7.3.21)	<ul style="list-style-type: none"> • City may require a sustainable design brief as part of a development application in order to address the Green Development Standards • Encourage orientation of streets and buildings to maximize energy efficiency through passive solar heating/cooling • Encourage green building and low impact development (LID) 	<ul style="list-style-type: none"> • N/A 	<ul style="list-style-type: none"> • Indicate how buildings may achieve greater energy efficiency through site design • Encourage use of green building techniques
Cycling (7.3.22)	<ul style="list-style-type: none"> • Require bicycle parking to be provided for residential, commercial, employment and public uses. • Provide for bicycle parking on-site, and where appropriate, on-street parking. 	<ul style="list-style-type: none"> • Bicycle parking requirements, including where bicycle parking is permitted and required parking based on gross floor area 	<ul style="list-style-type: none"> • Design of cycling trails and bicycle parking, specifically on-street bicycle parking





10.1.3 Official Plan Implementation

Given that the entire Corridor is currently affected by existing Secondary/District Plans and the two comprehensive municipal Official Plans, there are essentially three options for implementing the Planning and Urban Design Strategy into the Mississauga Plan and the Brampton Official Plan:

- 1. Creation of a Hurontario Corridor Secondary/District Plan:** Prepare a new Secondary Plan in Brampton and a new District Plan in Mississauga, and amend the Planning Areas for each of the Secondary Plans or District Plans to reflect the new Hurontario / Main Street Corridor Planning Area/District; or
- 2. Amendments to the Existing Secondary/District Plans:** Implement the proposed policies into the existing Secondary/District Plans through comprehensive amendments to all of the applicable Plans in the Corridor; or
- 3. Hybrid Option:** Prepare a new Secondary/District Plan for both Brampton and Mississauga, while retaining and amending one or more of the existing Secondary/District Plans. The retained Secondary/District Plans should include only the Plans that best reflect the intent of the Planning and Urban Design Strategy, such as the Downtown Brampton Secondary Plan, so that a comprehensive amendment would not be required. Even in this case, however, the retained Secondary Plans will need to be reviewed in light of the recommendations of this Master Plan and will likely still need to be amended. Adjustments to the planning area of the retained Secondary/District Plans may also be required in order to rationalize the boundaries.

The third, hybrid option discussed above is likely the most efficient and effective means of implementing the policy framework of the Planning and Urban Design Strategy. In Brampton, where there are fewer applicable

Secondary Plans, amendments to these Plans will not be as extensive and cumbersome as amending the Mississauga Plan, which includes a larger portion of the Corridor and many more applicable District Plans. Furthermore, the Downtown Brampton Secondary Plan contains policies that are relevant to achieving the vision of the Planning and Urban Design Strategy, and although it will need to be reviewed in detail, amendments to that Plan may not be quite as extensive.

Accordingly, it is recommended that:

- The City of Brampton consider the preparation of a new Secondary Plan which applies to the entirety of the Corridor in the City of Brampton, except for Downtown Brampton. Although it is anticipated that the Downtown Brampton Secondary Plan already implements many of the policies of the Planning Strategy, the City may wish to consider making minor amendments to the Brampton Secondary Plan to ensure all aspects of the Planning Strategy are implemented.
- The City of Mississauga consider the preparation of a new District Plan to apply to the entire portion of the Corridor that is located within the City's boundaries, and amend the planning areas of the applicable District Plans accordingly. It is recommended that the new District Plan maintain the distinct Character Areas, which are defined by the boundaries of the existing District planning areas. Retaining the Character Areas will help each area to maintain their unique identity in the City in the absence of the Secondary/District Plans.
- Each City undertake a detailed policy review in association with the preparation of the implementing Official Plan policies. In the case of Brampton, where it is recommended that the existing Secondary/District Plans be retained, such a review will be necessary in the process of amending the Plans. In the case of Mississauga, the existing District Plans as well as the municipal-wide Mississauga Plan should be consulted and reviewed throughout the preparation of a recommended new Hurontario Corridor District Plan.



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10.1.4 Zoning Implementation



Implementing the recommendations of this Strategy into a zoning by-law amendment is anticipated to be a complex task, and not just a simple translation of the Master Plan's policies into zoning provisions. The recommendations of this report envisage a zoning system where matters such as permitted uses, height, density, setbacks, frontage, continuous frontages/street walls and height transitions are considered. Simply providing a number of zones and applying each zone on a property-by-property basis, combined with associated regulations, may not clearly address such a relatively complex framework. Regulatory subjects such as height transition zones, permitted uses at grade, continuous frontages, setbacks heights and densities may require its own mapping to illustrate the where such regulations are applicable, since the areas to which these regulations would apply may not line up with the zone boundaries.

There are two possible options to address the regulatory framework recommended by the Master Plan:

- The first option is to require a zoning amendment on all lands within the Corridor, and the City can review each application on a case-by-case basis against the Planning and Urban Design Strategy and applicable Secondary/District Plan. Under this option, the City will need to administer a new zone for each property that comes forth. This approach may result in either many zone exceptions, or the City could adopt an approach in which the zone symbol incorporates the maximum permitted height, whether uses at grade are required, etc (e.g., a Mixed Use zone with a maximum height of 10 storeys and 90% continuous frontage required might be indicated with the symbol MU(h10, f90). Alternatively, the City could prepare a consistent template, which is filled in with the applicable regulations for each site. The approach of requiring a zoning amendment for each development application poses several issues, including administrative

difficulties and the possible perception of the process as a constraint to development.

- The second option is to address the regulatory framework by providing a zone or set of zones, and then adding overlays to indicate where the regulations for height transition areas, continuous street wall, permitted uses at grade, etc., would apply. Regulations addressing additional height requirements where an overlay is shown could be included in either the General Provisions of the By-law or within the regulations of each of the zones. Alternatively, it may be more effective to illustrate some of the overlays on a separate set of schedules if the Zoning schedule becomes too cluttered. The benefit of this approach is that the Corridor is proactively zoned, which may streamline the development process; however, the Cities will need to undertake a comprehensive review of the zoning to ensure it is correct and appropriate for each site, and reflects the Phasing Policies of the Planning and Urban Design Strategy. While these initial costs might be high, the long-term cost of zoning under this approach is far less than the cost of processing many more zoning applications and administering the zoning under the first approach.

Although each approach may have both pros and cons, it is recommended that the City of Brampton and the City of Mississauga follow the second approach, described above. This approach is the clearest and most effective means of implementing the recommended policies of the Master Plan into each City's Zoning By-law, and would generally be easier and less costly to administer. In addition, proactively zoning the Corridor will allow development to occur more quickly and make a clear statement about the City's intent with regard to the lands that are rezoned.





10.2 Community Improvement Recommendations

An important component of the Planning and Urban Design Strategy is the implementation of one or more Community Improvement Plans to achieve the vision of the Master Plan. Under the *Planning Act*, each municipality can designate a Community Improvement Project Area (CIPA) to offer financial incentives to eligible property owners in the project area through a Community Improvement Plan. A Community Improvement Plan (CIP) can also establish municipally-driven programs to help administer and implement the Community Improvement Plan, or plan for municipal projects such as infrastructure or streetscape improvements. This section discusses the basis on which a CIP may be prepared for the Hurontario/Main Street Corridor as well as recommendations for a CIPA, goals, objectives, financial incentive programs and municipal leadership programs.

10.2.1 Legislative Authority and Policy Context

10.2.1.1 The Planning Act

Changes to the *Planning Act*, effective January 1st, 2007, provided Ontario's municipalities with additional planning tools and clearer rules to better manage growth and development in their communities. Section 28 of the *Planning Act* defines community improvement as "the planning or replanning, design or redesign, resubdivision, clearance, development or redevelopment, construction, reconstruction and rehabilitation, improvement of energy efficiency, or any of them, of a community improvement project area, and the provision of such residential, commercial, industrial, public, recreational, institutional, religious, charitable or other uses, buildings, structures, works, improvements or facilities, or spaces therefore, as may be appropriate or necessary." This definition defines community improvement activities for both private developers and municipal leadership activities. Note that this definition states that these activities can only occur within a Community Improvement Project Area.

Section 28 of the *Planning Act* defines the term Community Improvement Project Area as "a municipality or an area within a municipality, the community improvement of which in the opinion of the council is desirable because of age, dilapidation, overcrowding, faulty arrangement, unsuitability of buildings or for any other environmental, social or community economic development reason" (S. 28(1)).

Each City must designate a Community Improvement Project Area (CIPA), by by-law, prior to implementing a CIP. As noted in its definition, a CIPA can be established for a variety of reasons, as long as the preparation of a CIP is considered desirable for that area. There are numerous reasons why a CIP might be useful for the Hurontario/Main Street Corridor, including improvement of the built environment, improvement of physical infrastructure, or other economic development reasons. A CIP provides an additional tool to ensure the Corridor is developed in an orderly fashion.



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Once a CIPA has been designated, a CIP can be prepared for that area. The municipalities may use a CIP to:

- Undertake a number of activities for the purpose of community improvement, such as:
 - the preparation of land, including grading, acquisition, holding or clearing;
 - construction or rehabilitation of buildings, such as community centres or other civic uses, on municipal land; and
 - the buying, selling or leasing of land.
- Make grants or loans to owners and tenants of land and buildings within the community improvement project area. Costs that may be eligible for grant or loan programs are those related to environmental site assessment, environmental remediation, development, redevelopment, construction and reconstruction of lands and buildings for rehabilitation purposes or for the provision of energy efficient uses, buildings, structures, works, improvements or facilities. Projects that are eligible for grants or loans may range from small-scale signage improvements or façade improvements to major new development projects.

In addition to these powers, which are identified explicitly in the *Planning Act*, the Municipality may also wish to undertake other initiatives as set out in the CIP. For instance, the municipality may wish to provide alternative development approval processes in order to expedite development approvals in the community improvement project area. The CIP may also provide for initiatives to market or administer the CIP. The municipality may also undertake capital works, including improvement of physical infrastructure, such as sidewalks, water and wastewater servicing, lighting; or development of parks or works related to improving or rehabilitating the natural environment. Further, the municipality can provide tax incentives in accordance with the *Municipal Act*, 2001.

The Region of Peel may also participate in community improvement planning under recent amendments to the *Planning Act* (Bill 51). For example, the Region may wish to provide a portion of the grant or financing offered by the municipality or offer their own incentive programs, such as a reduction in taxes imposed by the Region.

10.2.1.2 Mississauga Plan and the Brampton Official Plan

In order to establish a community improvement project area and subsequently prepare a CIP for that area, each City must have Official Plan policies in place in order to enable the selection of a community improvement project area and prepare a CIP.

Community improvement policies are provided in Section 5.8 of the Mississauga Plan (Official Plan) and Section 5.13 of the Brampton Official Plan. Each Official Plan has set out criteria for the selection of community improvement project areas, specifically in Section 5.8.2 of the Mississauga Plan and Section 5.13.12 of the Brampton Official Plan.

Section 5.8.2 of the Mississauga Plan, includes, but is not limited to, the following criteria for selection of a CIPA:

- Opportunities for infilling and development of underutilized sites;
- Identification of the need to encourage office employment opportunities;
- For commercial areas, evidence of economic decline such as unstable uses or high vacancy rates;
- Identification of the need to improve streetscape amenities; and
- The soil and water, based on past industrial and/or commercial uses is potentially contaminated and may need remediation.

While the intent of Section 5.13.12 of the Brampton Official Plan is similar to Mississauga’s policies in that it identifies desirable project areas based on the need for improvement, it also contains considerations such as, but not limited to the following:

- The importance of the proposed area to the overall social and economic health and integrity of the City;
- The degree of intervention or assistance required to stimulate rehabilitation and redevelopment to establish and maintain the health of the proposed area; and
- The likelihood that such intervention or assistance will achieve the desired result.

Both Official Plans identify methods of implementation including:

- Participation of funding programs with senior levels of government which provide assistance in undertaking community improvement projects;
- The encouragement of site remediation and/or infill and development which is in harmony with the existing pattern and character of the surrounding lands;
- The acquisition and assembly of lands for public facilities and infrastructure and possible development;
- The application of the *Ontario Heritage Act* to conserve or enhance heritage buildings, where appropriate; and
- Upgrading the existing level of municipal services for the purpose of stimulating private investment.

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10.2.2 Basis for the Community Improvement Plan



As the Cities of Mississauga and Brampton continue to grow and intensify into more transit-oriented urban communities, the need to build, redevelop and reshape the cities to meet the needs of residents and workers in a sustainable manner becomes vital. A changing municipality must overcome challenges to urbanization, yet still be able to capitalize on the opportunities created by a more urban and sustainable environment. Community improvement planning can be used by the Cities of Brampton and Mississauga to address some of these challenges and ease the transition of the Hurontario/Main Street Corridor into a vibrant, pedestrian- and transit-oriented corridor. Community improvement planning provides a means of planning and overcoming some of the barriers and impediments to financing development activities that more effectively use buildings and/or infrastructure.

The Cities of Mississauga and Brampton have identified Hurontario/Main Street as a vital infrastructure spine that presents an opportunity for higher density development and enhancement of economic vitality through the introduction of a rapid transportation system. Both Cities have identified in their Official Plans and Strategic Plans that they will continue to stimulate, support and promote economic opportunities that create vibrant, safe and connected communities. As stated in Mississauga's Strategic Plan, the Corridor should become "a place where people will chose to be".

The Hurontario/Main Street Corridor Study Area is a suitable community improvement project area, as defined in the previous section, for a number of reasons:

- A CIP's financial incentive tools may help reduce any perceived or real financial risk of building mixed-use, pedestrian-oriented developments. The financial tools may therefore help to "jump-start" high-quality development within the Corridor in the early stages of its transition when the rapid transit system is first implemented.

- A CIP provides a means for a coordinated, strategically-prioritized plan for streetscape, infrastructure, roadway improvements, appropriate parking and land acquisition. A CIP can include a number of municipal leadership initiatives, ranging from the CIP's administration and implementation to capital works such as landscaping and streetscape improvements. The CIP can also provide for the development of supportive guidelines and strategies, such as a parking strategy. Furthermore, a better-connected, pedestrian-oriented environment can be created through the acquisition of land and development of new trails, streets, public squares or transit stops and facilities. Preparation of a CIP will therefore allow each City a means to coordinate and strategically plan its municipal works, helping to achieve the vision of a pedestrian-oriented built form throughout the Corridor.
 - The Corridor is a Study Area that has been identified primarily based on principles of transit-oriented development and a critical needs analysis.
 - A CIP can encourage the high standards of design envisioned in this Planning and Urban Design Strategy. As the CIP's financial incentives are provided only to exceptionally high-quality development proposals, it can be expected that developers will improve their designs in order to qualify for the financial incentives. The CIP's incentive tools may therefore help the Corridor to exceed the minimum standards of the Planning and Urban Design Strategy as outlined in Chapters 8 and 9 of this Master Plan.
 - An Application Review Program, which can be set out as part of the municipal leadership strategy, can provide faster development approvals, helping to entice developers to locate in the Corridor.
 - The CIP's municipal leadership programs and financial incentive programs can be tailored to address specific needs of certain areas, such as the need to protect and enhance heritage assets in historic areas of the Corridor.
 - The CIP provides an indication that Mississauga and Brampton are confident that the Corridor will achieve the vision of the Master Plan and prepared to participate in and oversee its transformation. The CIP can therefore act as a marketing tool that draws public attention to the Corridor.
- It is clear that a CIP can benefit the transformation of the Hurontario/Main Street Corridor. However, it is recognized that the diverse critical needs and existing character of the Corridor means that a CIP for the whole Corridor requires careful thought about what the municipal leadership and financial incentive programs will mean for each distinct Character Area. The Corridor needs to be strategically planned if the vision of an urban, pedestrian-oriented environment is to be created throughout the Corridor. The following section recommends a community improvement project area for the Hurontario/Main Street Corridor CIP.

10.2.3 Recommended Community Improvement Project Area



Prior to implementing a CIP for the Corridor, the municipalities must first designate a Community Improvement Project Area (CIPA).

It is recommended that consideration be given to phasing the CIPA. Offering incentives to the whole Corridor may encourage isolated development proposals in areas where there is not a critical mass to support a vibrant streetscape. Rather, the incentives should be focused in key, high-priority areas and phased outwards across the whole Corridor over time as the Corridor intensifies in response to rapid transit and a growing local economy. This phasing will help ensure that higher density development occurs in areas that can support it, and will allow the development to contribute to higher transit ridership and pedestrian activity. This phasing strategy is linked to the phasing of bonusing, which will ensure orderly intensification and growth of the Corridor. Recommended phasing is illustrated in [Figure 10.3.1](#).



At this time, the recommended CIPA is identified in [Figure 10.3.2](#). Of course, since the Corridor is split between the City of Mississauga and the City of Brampton, the Corridor will consist of two CIPAs – one designated by by-law in each municipality. As the Corridor develops, the municipalities may wish to amend the CIPA to incorporate new phases, as illustrated in [Figure 10.3.1](#). The CIP should contain a discussion of phasing including an illustration of the preliminary future community improvement project areas. In order to maximize the potential for a CIP to achieve the vision of the Master Plan, the whole Hurontario/Main Street Corridor Study Area should be included in the CIPA in the long term.

Several existing or conceptual CIPAs are located within the recommended future CIPA. Note that an existing CIPA has been established in Downtown Brampton for the Central Area CIP. The Central Area CIP is a relatively new document that was established utilizing design-driven criteria and contains incentives that generally meet the intent of this CIP. The development of the Hurontario/Main Street Corridor CIP will need to be coordinated with the established CIP to ensure that the financial incentives programs within the Central Area CIP are considered and that any additional proposed incentives and programs not currently offered in the Central Area CIP are considered for inclusion. By including a comprehensive set of tools in both, it will ensure that the programs do not overlap. Additionally, we would recommend that clauses be included in the Hurontario/Main Street Corridor CIP that would prevent property owners or developers from applying to incentives offered by the Hurontario/Main Street Corridor CIP if they have already applied by incentives from an existing CIP.

In addition, the Mississauga Plan conceptually identifies a Hurontario/Dundas Community Improvement Area, stretching north from the Queen Elizabeth Way to just south of Matheson Boulevard East in the north (OPA 58, currently under appeal to the Ontario Municipal Board as it applies to two properties). A portion of Lakeshore Road West including Hurontario Road is also identified as a conceptual Community Improvement Project Area. In accordance with Section 5.8.2.3 of the Mississauga Plan, these areas may be modified upon further study of these areas. However, the City's recognition of these areas is indicative of their suitability for community improvement,

at least from a preliminary analysis by the City. The financial incentive and municipal leadership programs of other CIPs prepared specifically for these areas must be coordinated with the financial incentive and municipal leadership programs of a CIP for the Hurontario/Main Street Corridor. Opportunities for landowners to double-dip into the financial incentive programs of more than one CIP should be eliminated.

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10.2.4 Community Improvement Programs

It is important to develop a full understanding of the Corridor in order to select and implement the most appropriate and effective municipal leadership and financial incentive programs. The vast collection of potential incentive and municipal leadership tools that can be offered by the CIP, combined with the diverse needs and opportunities within each Character Area of the Corridor, provides for an array of tools and incentives that could be utilized. An effective CIP will be one that is strategically written and implemented, and is based on a thorough understanding of the Corridor, including its existing characteristics, its needs and its vision. It is also important to recognize that not all of the programs will be implemented in all areas and that some of the suggested programs may be reserved for priority areas such as the Urban Growth Centres.

In order to begin to scope the potential incentive and municipal leadership tools that a CIP can provide for the Corridor, the following three prioritized

considerations have been developed in order to identify the most appropriate municipal leadership and incentive programs:

1. The CIP's municipal leadership programs and incentive programs should, above all, support transit-oriented development in the Corridor. For example, this may include provision of financial incentives to support higher density development (e.g., 90% of the maximum permitted density could be an eligibility criterion), pedestrian-oriented design, significant and distinct architectural design and a mix of uses within the proposed building(s).
2. The programs should support multiple modes of transportation, including pedestrian-oriented design, cycling paths, rapid transit and connections to other transit systems, as well as automobile traffic and appropriate provision of parking. Municipal leadership programs should therefore focus on providing streetscape improvements, cycling infrastructure and new and improved street connectivity. Financial incentive programs should reward the provision of appropriate and attractive structured parking, public spaces, public bicycle parking and improved pedestrian connectivity.
3. The incentive programs should be related to the assessed critical needs of the Corridor. In historic areas, for example, the eligibility requirements for financial incentive programs should focus on adaptive re-use of heritage buildings and protection of heritage assets.

Based on these three key considerations, as well as the extensive background work undertaken throughout the development of this Master Plan to understand the Corridor's critical needs and existing character, the following subsections present recommended municipal leadership and financial incentive programs for the CIP.



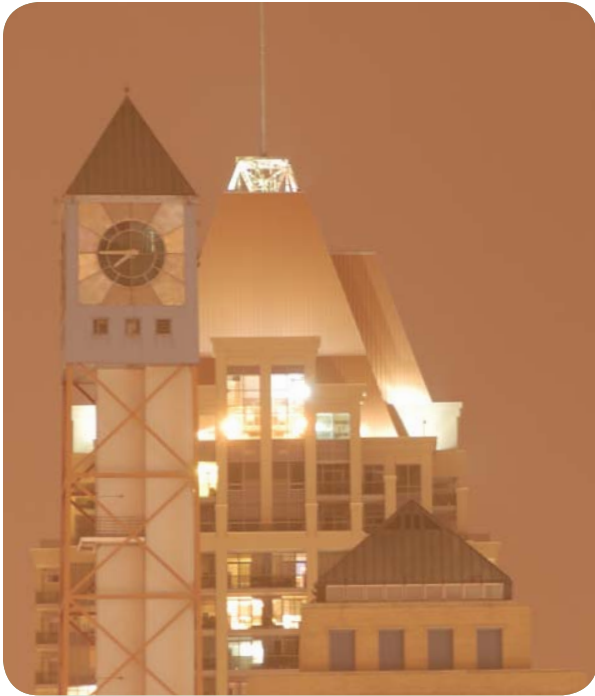
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10.2.5 Recommended Municipal Leadership Programs



Mississauga and Brampton can become actively involved in the implementation of a CIP by including a comprehensive municipal leadership strategy. The following recommended municipal leadership programs should be included in a CIP for the Hurontario/Main Street Corridor. These programs are consistent with the considerations for selecting appropriate incentive programs, as described above. The description of each program below also speaks briefly to the costs of each program as well as the relative priority of each program.

1. Application Review Program

The Cities may consider fast tracking development applications that meet eligibility criteria for transit-oriented development, such as proposals that include a variety of uses within a building, uses that offer a variety of housing types to various income groups, proposed buildings with unique and attractive architecture and proposed buildings that achieve near-maximum densities. A fast-tracked development approval process would have to be coordinated with each City's relevant development planning branch. Accordingly, the program may require staff resources and commitment in order to be implemented. In order to maximize the benefit of the CIP, it is recommended that the Application Review Program be implemented as a high-priority municipal leadership program.

2. Hurontario / Main Street Review Panel

It is recommended that a Review Panel for each City be established to assess applications for financial incentive programs. The Review Panel would be responsible for administrative tasks related to the implementation of the CIP, including the evaluation of applications and would provide a recommendation to City Council about whether to approve an application for a financial incentive. The Review Panel would likely be made of municipal staff and would therefore require staff resources and commitment. The Review Panel is an important and therefore high-priority municipal leadership strategy that will help to ensure successful implementation of the CIP.

3. Marketing and Communications Program

Upon adoption of the CIP, the Cities of Mississauga and Brampton may promote the CIP and its incentive programs through a Marketing Strategy. The Strategy may be targeted to local businesses and organizations within the

community improvement project area, as well as developers outside the community improvement project area in order to educate eligible property and business owners about the opportunities created in the CIP. It is recommended that this municipal leadership program be a high-priority initiative in order to help raise public awareness of the CIP and its benefits. The cost of such a program will be related to required staff resources and the selected means of raising public awareness.

4. Streetscape and/or Landscaping Improvements

It is recommended that the CIP include provisions for streetscape and landscaping improvements within the community improvement project area. In particular, these improvements should focus on:

- Development of a continuous sidewalk network and tree canopy/landscaping along the transit route. This is particularly important in instances where redevelopment may not occur in a timely manner and therefore improvements to the streetscape will need to be

undertaken by the municipality in accordance with the Planning and Urban Design Strategy found in this Plan;

- Providing crosswalks at all key four-way intersections;
- Use of consistent sidewalk materials and dimensions;
- Providing bicycle parking to encourage multi-modal transportation;
- Implement principles of barrier-free design/universal access; and
- Provide additional and cohesive street furniture such as benches, lighting, street signs, banners, trees and planters.

5. Municipal Acquisition of Land

The Cities may undertake municipal land acquisition within the CIPA in accordance with Section 28 of the *Planning Act*, in order to encourage redevelopment and revitalization. For example:

- The municipalities may acquire land for a number of purposes, such as establishing new roadways to improve road connections and mobility or for the purpose of developing new transit stops and facilities, or;

- The municipalities could enhance opportunities for the acquisition of land for development and link several small parcels into one or more suitable parcels for redevelopment.

In addition, each City may also wish to assist in the attractiveness and suitability of available redevelopment land parcels by reconfiguring properties or by clearing and grading land prior to redevelopment.

6. Parking Strategy

The Cities may wish to invest in structured parking in partnership with office developers within the community improvement project area. Minimum parking standards for the number of parking stalls, stall sizes and aisle widths should become the maximums. In a phased manner, as transit ensues, each City should undertake a parking standard review with the intent of minimizing the parking standards. In the interim, if an application is to exceed these minimum standards, a planning rationale should be required to justify the increase. The parking strategy should be a medium- to high-priority task for the Cities and would be implemented on an on-going basis through review of development proposals in the Corridor.



10.2.6 Recommended Financial Incentive Programs and Eligibility Criteria

A key component of the CIP should be the inclusion of financial incentive programs. In order to maximize the potential benefits of the CIP, only projects that support transit-oriented development should be eligible for financial incentives. Eligibility requirements should be based on the following principles:

- At a minimum, the development proposal should meet the requirements of the Planning and Urban Design Strategy, unless there are specific exceptional reasons why the requirements cannot be met (but the general intent and vision of the Plan is maintained).
- In general, higher densities should be encouraged (closer to the maximum).
- The provision of public squares, trails, pedestrian connections, public parks and other public space outside of the requirements of the Planning and Urban Design Strategy and is considered desirable and attractive for the development, should be considered as a component of the eligibility criteria.
- The provision of structured or underground parking should be considered an important component of the eligibility criteria, in the early stages of the Corridor’s transition. The provision of parking will be essential to ensuring the Corridor remains an attractive, feasible alternative to other locations where parking is readily available.
- In general, new development should exceed the requirements of the Planning and Urban Design Strategy in order to be eligible for financial incentives. Redevelopment and adaptive re-use proposals should generally be eligible for incentives, provided the proposal meets the minimum requirements of the Planning and Urban Design Strategy as identified in Sections 8.2, 8.3 and 8.4.

The Cities may wish to develop more detailed eligibility criteria, including specific minimum density, height and other requirements, based on the principles above.

A description of recommended financial incentive programs and a rationale for each program is described as follows.



1. Tax Increment-Equivalent Grant Program

The Tax Increment-Equivalent Grant Program offers grants to eligible applicants who are providing a new office development with structured or underground parking, in order to assist with financing the development. The program will stimulate investment on land by rebating to the applicant a percentage of the tax increase attributed to the development during the early years of the building's life. This would reduce the risk and uncertainty during the initial lease-up period of major new office developments. The Cities of Mississauga and Brampton will benefit from the property tax increase with each passing year (as the grant decreases to the expiry of the grant agreement) and for each year thereafter, in addition to the potential creation of jobs and local economic activity associated with the community improvement works undertaken.

2. Application and Permit Fee Grant Program

The Application and Permit Fee Grant Program offers grants to eligible applicants for City planning application and/or building permit fees related to the creation of transit-oriented developments within the designated community improvement project area and subject to other eligibility criteria that may be developed in the CIP. The program is seen as a catalyst for stimulating development and revitalization efforts where there is existing infrastructure and where there is no need to have additional charges levied against development. The program encourages development because it reduces the cost of development through the provision of grants equal to the cost of City planning application and/or building permit fees. Each City will benefit from the tax increase on the property as a result of the property improvement, development or redevelopment, in addition to the potential creation of jobs and local economic activity associated with the project.

3. Development Charge Rebate Program

A Development Charge Rebate Program offers grants to eligible applicants to cover the cost of City development charges related to office developments or structured parking under the *Development Charges Act*, 1997. The grant program would offer one-time rebates of all or portion of a development charge to eligible property owners and developers, up to a maximum amount specified by the City in the CIP.

4. Temporary Exemption from Peel Region and Business Education Taxes

The Temporary Exemption from Peel Region and Business Education Taxes Program offers grants to office developers from paying education and Region of Peel property taxes within the designated community improvement project area. The program would be permitted in accordance with Section 365(1) of the *Municipal Act*, 2001, which allows a municipality to grant a reduction in or exemption from school-related or municipal taxes to property owners who apply for such an exemption, provided that a municipal by-law is in place to provide for such an exemption. The implementing by-law for the CIP could provide for this program in accordance with the *Municipal Act*, 2001. Such a program would occur in cooperation with the Region of Peel, which is permitted to participate in the programs of a local municipality's Community Improvement Plan under the *Planning Act*.

5. Environmental and Servicing Study Grant/Loan Program

The Environmental and Servicing Study Grant Program offers grants and/or loans to eligible property owners for the completion of a Phase I Environmental Site Assessment (ESA), a Phase II ESA and/or Servicing and Flood Mitigation Studies for eligible properties. The Cities of Mississauga and Brampton will benefit from the undertaking of such studies because it will mean that additional and higher quality environmental and servicing information will become available. This will be particularly helpful in determining the extent of flood protection required within identified floodplain areas.

6. Heritage Grant/Loan Program

The Heritage Grant/Loan Program offers grants and/or loans to owners of buildings or structures and surrounding lands designed under Part V of the *Ontario Heritage Act*, for the purpose of assisting in the cost associated with restoration, renovations and reconstruction of heritage properties within the community improvement project area. It is recommended that this program be targeted to historic areas where significant heritage buildings and features may be at risk due to increased development pressure, which may be in close proximity to the future rapid transit stops. Adaptive re-use of heritage buildings, such as the conversion of heritage buildings for new uses, or expansions to heritage buildings that maintain the character of the original building, should be rewarded through this program.



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10.2.7 Implementation of a Community Improvement Plan

Preliminary Community Improvement Goals & Objectives

Based on the vision and guiding principles of this Master Plan, particularly those identified in the Planning and Urban Design Strategy, the following preliminary community improvement goals have been identified for a Community Improvement Plan for the Hurontario/Main Street Corridor:

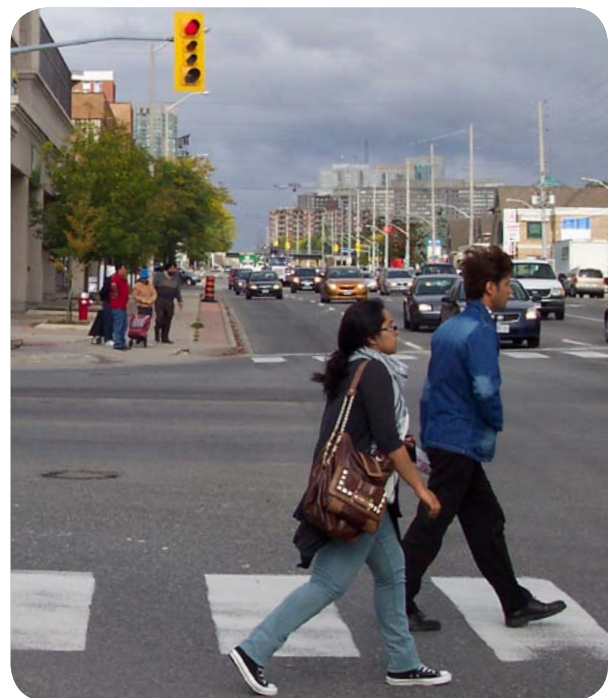
The goals of the CIP will be “to promote and encourage a pedestrian/transit-oriented environment within the Hurontario/Main Street Corridor. In order to sustain this goal, the ancillary goal will be to promote construction and rehabilitation of residential, commercial, industrial and institutional development along the corridor that is pedestrian and transit-oriented, as well as being compatible with the existing and surrounding community.”

The detailed eligibility criteria for the financial incentive programs, as well as municipal leadership programs, should be developed to achieve these CIP goals.

The objectives of the Hurontario Community Improvement Plan are intended to accomplish the primary and ancillary goals of this Plan. The objectives are listed as follows:

- Provide grants and refunds to eligible property owners that incorporate transit-oriented development principles and develop in accordance with the requirements of the Planning and Urban Design Strategy for all projects;
- Arrange land uses and organize growth so as to promote local economic development, efficiency, aesthetics, compatibility and flexibility for future growth;
- Improve public infrastructure in a coordinated manner that reflects local issues, municipal priorities and financial resources;
- Encourage public/private partnership ventures;
- Stimulate the redevelopment of vacant or underutilized properties;
- Enhance the physical environment and visual qualities along the Corridor in a manner that is consistent with the urban design principles outlined in the Planning and Urban Design Strategy;
- Endorse the economic development and competitiveness of Mississauga and Brampton in order to create a diverse and sustainable economic base;
- Protect, conserve and enhance the unique attributes, nature and identity of the Port Credit, Mineola, Brampton Main Street South and Downtown Brampton Character Areas; and
- Monitor the performance of the Hurontario Community Improvement Plan on an on-going basis to ensure that the goals of the Planning and Urban Design Strategy are being met.

Again, the eligibility criteria should flow from the objectives as well as the requirements of the Planning and Urban Design Strategy. The objectives also provide a basis for monitoring and evaluating the effectiveness of the CIP's municipal leadership and financial incentive programs.



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COMMUNITY IMPROVEMENT PLAN AREAS

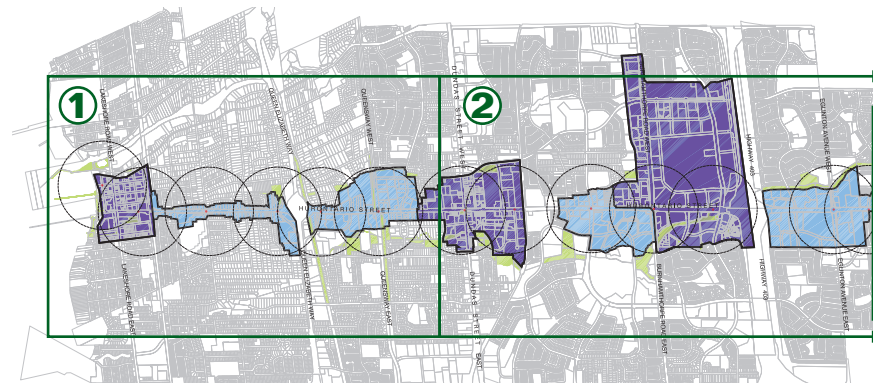
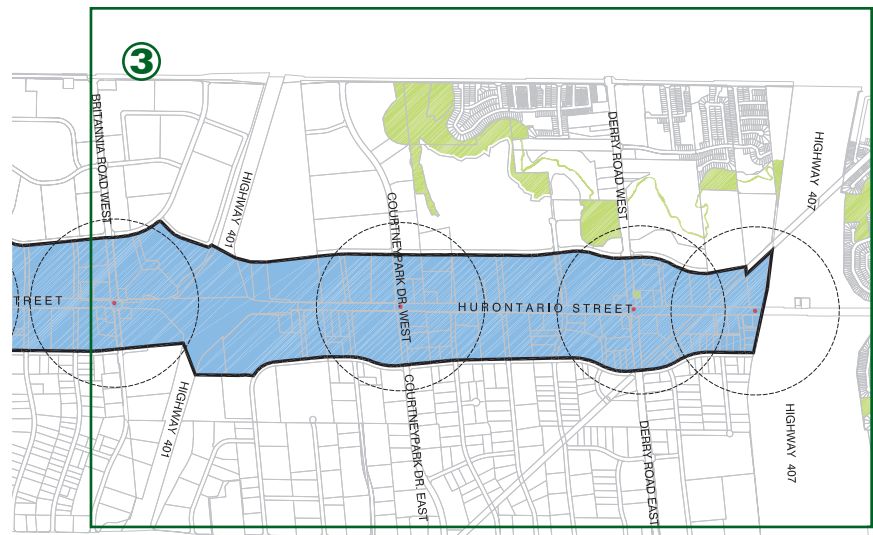
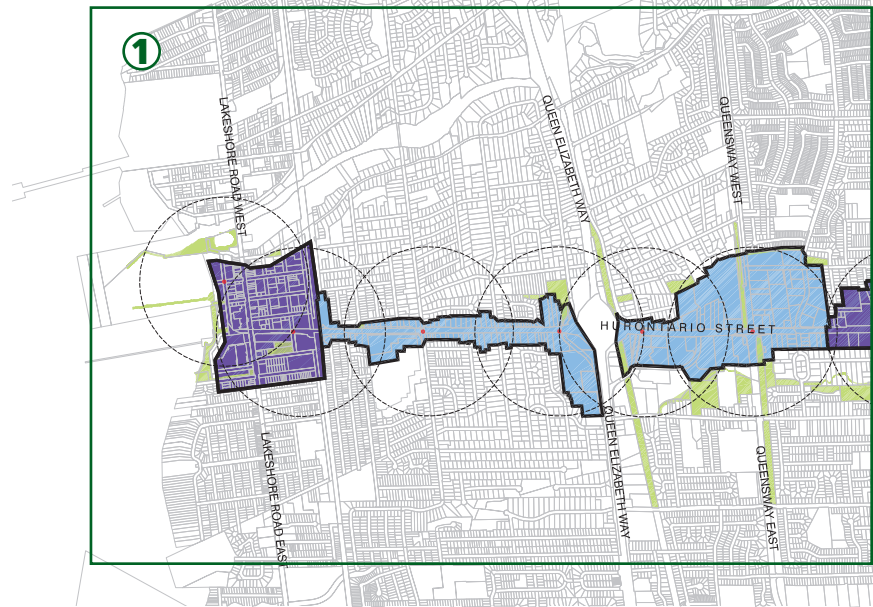
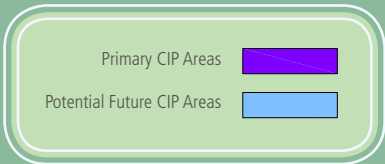
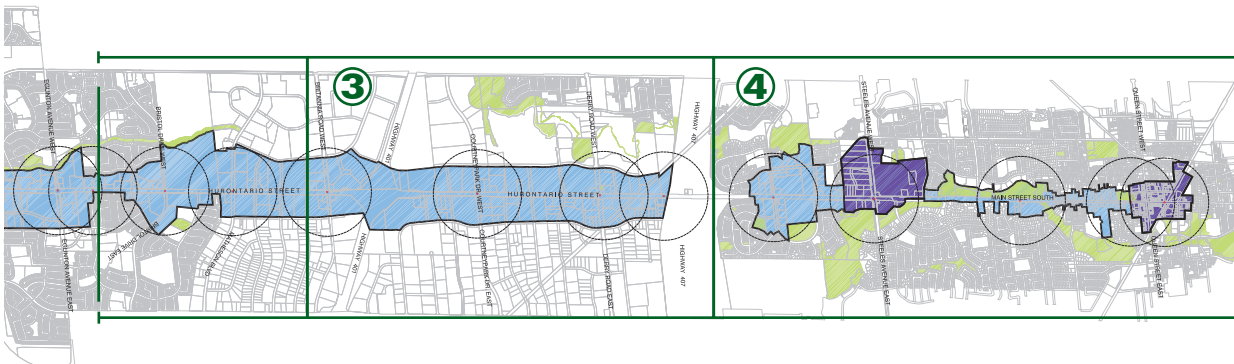
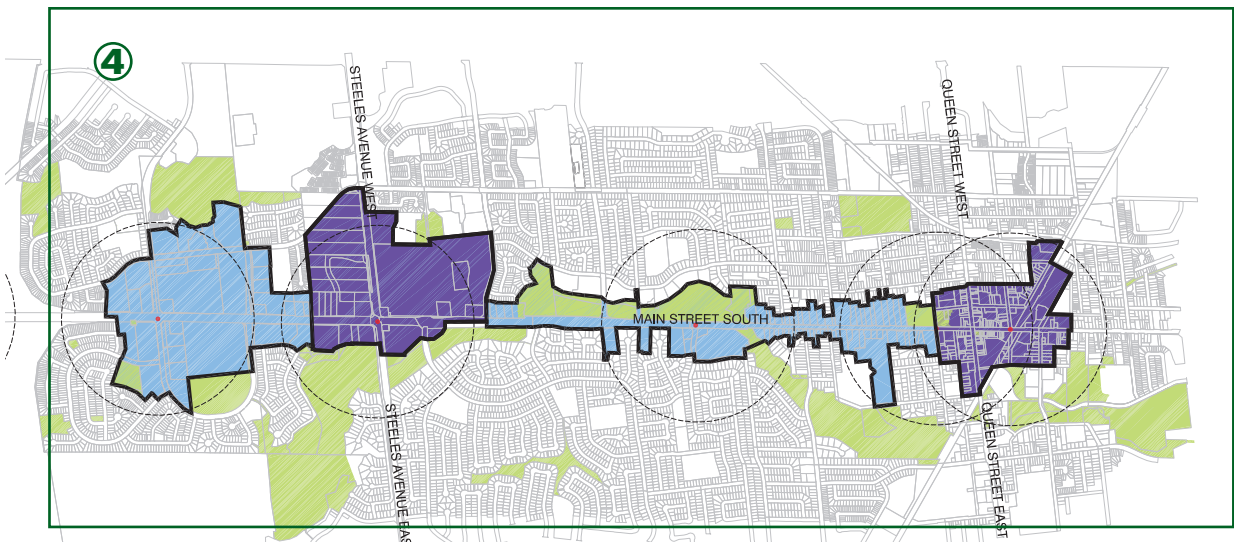
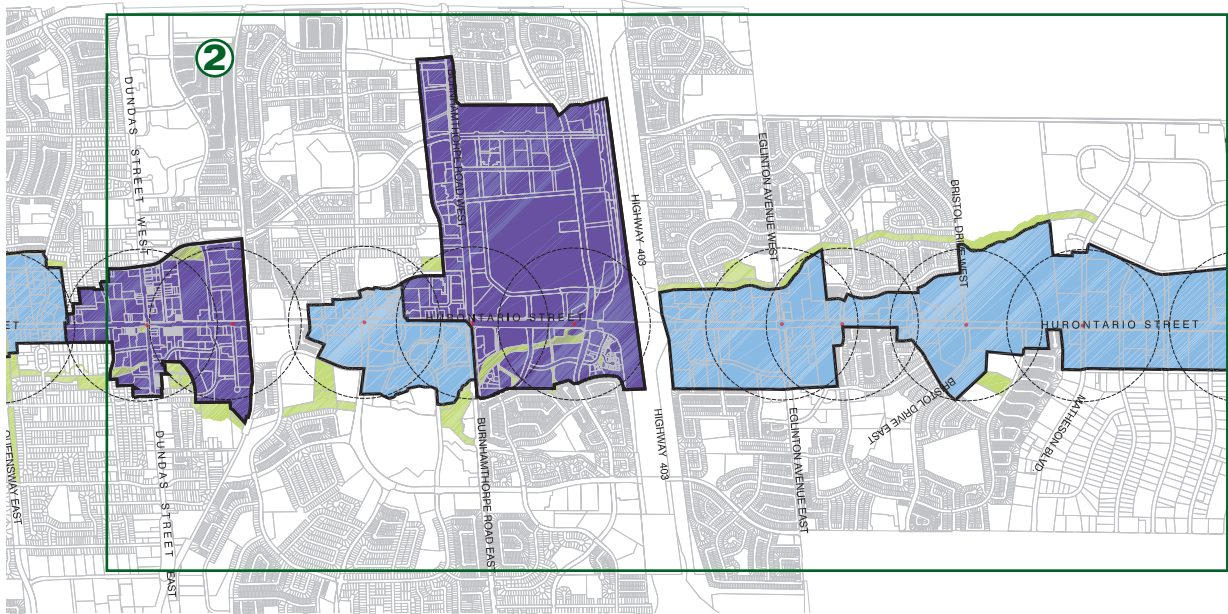


Figure 10.2.1
Community Improvement
Plan Areas





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10.2.8 Administration, Monitoring and Evaluation of the CIP

A recommended municipal leadership strategy is the establishment of a CIP Review Panel (and/or Administrator[s]), who will be responsible for administering, monitoring and evaluating the effectiveness of the CIP. The Review Panel would likely be comprised of City staff who can devote time to review and process applications for financial incentive programs and provide recommendations to Council in relation to implementing and financing other municipal leadership programs. Further, administrative staff should seek input from the Corridor’s Business Improvement Area associations, (e.g., the Brampton Downtown Business Association) and other economic development associations (e.g., the Mississauga Board of Trade and the Brampton Board of Trade), as they would provide valuable input to improving the CIP’s municipal leadership and financial incentive programs. It is recommended that at least one staff member be devoted to promoting, administering and evaluating the CIP, in order to ensure on-going promotion and service support to local businesses and developers.

A key function of the Review Panel should also be monitoring and evaluating the CIP. A periodic review, likely an annual review, of the plan, will provide the

basis for evaluating the CIP’s effectiveness based on analysis of statistics pertaining to incentive applications, application approval rates and budget considerations. Adjustments to the plan’s community improvement project area, municipal leadership programs, financial incentive programs including eligibility criteria, may be required based on the evaluation. The Review Panel should consider monitoring indirect but potential indicators of the CIP’s success, including:

- Monitoring employment and office space within the community improvement project area;
- Monitoring commuter patterns (i.e., are more people walking, cycling or taking transit to get to work?);
- Monitoring the development of support services for employment, including development of ancillary uses (restaurants, office services such as printing and courier services, etc.) within close proximity to employment areas; and
- Monitoring the development of residential, retail and other uses in the Corridor.

10.3 Phasing of Construction

Based on the ridership results presented in the preceding chapters and the Travel Demand Forecasting Report, the entire length of the Corridor is expected to witness significant demands by 2016, enough to warrant a LRT in the Corridor. However, given the timeline needed to complete the other phases of the EA and bring the project up to construction readiness for a 2016 opening day there is a need to address what part of the LRT can be practically built by 2016.

A number of factors go into deciding this, including, but not limited to, network connectivity, feasible construction targets, multi-agency cooperation, funding and risk assessment, amongst others. Based on our knowledge and experience with the EA process, state of readiness of the overall transit network in the GTHA and construction feasibility on similar projects, we have evaluated the phasing plan against two major criteria documented below.

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10.3.1 Risk Assessment

The phasing plan needs to accommodate a certain level of risk that is a function of variables beyond the control of the proponents of the project in question. For the Hurontario LRT, this risk lies with the implementation of the “other” rapid transit projects that traverse the Corridor, given that these interconnections partially influence the projected transit ridership. Thus, the phasing plan should ensure that the proposed LRT line connects to more than one other major existing or under construction transit system to account for the uncertainty of network connectivity. The termination and start points for the LRT line should tie into one or more other major transit corridors.

Another major risk that should be managed actively is that additional transit oriented development may occur along the corridor, without a funding commitment for LRT to support intensification. The longer implementation is delayed, the more auto-development residents and workers will become making implementation even harder.

10.3.2 Construction Target

The phasing plan also needs to reflect a practical construction target given the approval process, design steps remaining and the 2016 opening day objective. A review of similar LRT projects around North America was completed to document what is a reasonable construction target by 2016 as shown in **Table 10.2.1**. Using an average of 0.43 km of LRT construction per month, in a 24 month period (2014 Fall – 2016 Fall) approximately 10.5 kilometers of track (both ways) and the supporting infrastructure (stations, traffic signals, etc) can be built.

Table 10.2.1 – Average LRT Construction Times in North America

City	Project	Length (km)	Start Date	End Date	Duration (years)	Km / month
Toronto	Eglinton LRT	33	2010	2018	8	0.34
Toronto	Finch West LRT	17	2011	2015	4	0.35
Toronto	Sheppard East LRT	14	2010	2013	3	0.39
Minneapolis	Hiawatha LRT	19	2001	2005	4	0.4
Phoenix	Phoenix Metro LRT	33	2005	2009	4	0.69
Average km/month						0.43

10.3.3 Construction Phasing

Based on the criteria stated above, a logical option for phasing would see the first phase of the Hurontario Street LRT extending from the Brampton Zum service on Steeles Avenue to Downtown Mississauga by 2016, as shown in **Figure 10.3.1**, linking two key Mobility Hubs. This phasing plan will ensure that the LRT is anchored to the maintenance facility and a major transit corridor in the northern end, and, in the southern end it will tie into the proposed Mississauga BRT line and terminate at the City Centre Transit Terminal. This phasing plan will ensure that the public realizes the potential travel time savings and improved transit service with the LRT operating in exclusive reserved lanes, garnering the support needed to implement the LRT in mixed traffic to the two ends of the line.

The plan ensures that the start and end points of the line are major trip generators with significant east-west transit initiatives linking to the proposed LRT.

The length of the Corridor from the maintenance facility to the Mississauga City Centre Transit Terminal is approximately 10.5 km.

It will be important to provide a connection to the Cooksville GO Station and hence to the Dundas Street area of the Mobility Hub. Thus an alternative end point for the 2016 LRT could be Cooksville GO station as shown in **Figure 10.3.2**. This can be achieved if a more aggressive construction target (above the average of 0.43 km / month) is maintained. This will link the 2016 LRT network to the Milton GO Rail service, which is proposed to include all day service by 2013.

The remaining portion of the Hurontario LRT network, extending from the City Centre Transit Terminal to the waterfront should be built for a 2021 opening day. That will provide the links to the Downtown Brampton Mobility Hub and to the Lakeshore Go, service Port Credit.



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PHASING PLAN OPTIONS



Figure 10.3.1:
2016 Phasing Plan Option 1

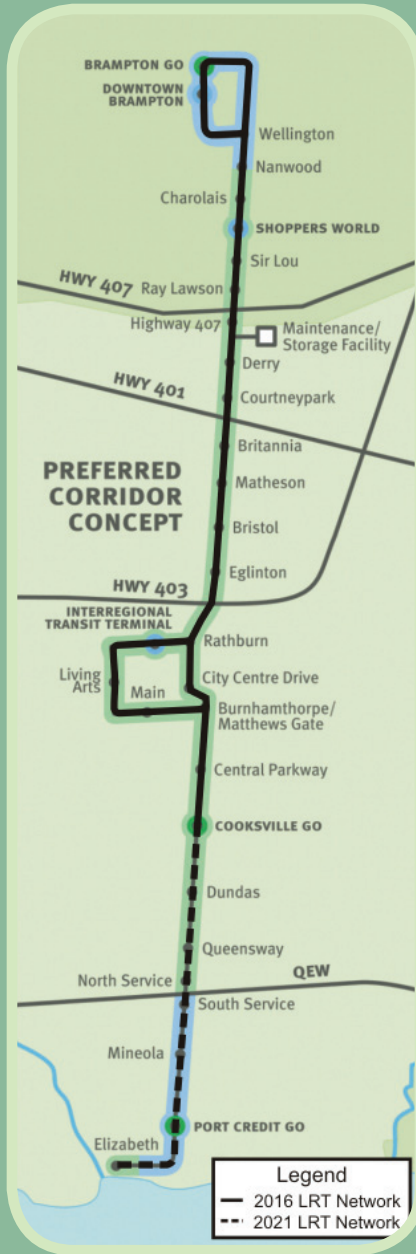


Figure 10.3.2:
2021 Phasing Plan Option 2

Legend

- LRT Implemented by 2016
- - - LRT Implemented by 2021
- Reserved Lanes
- Shared Lanes

10.4 Approval and Design Processes

The Hurontario/Main Street Study was undertaken in accordance with the requirements of the Municipal Class Environmental Assessment (EA) (2000, as amended in 2007). Through this process, Phases 1 and 2 of the Class EA have been addressed. Since the Hurontario/Main Street Study commencement in 2008, the Ministry of the Environment has passed Ontario Regulation 231/08, which includes the six-month Transit Project Assessment Process. Under the Transit Project Assessment Process, all public transit projects are exempt from the *Environmental Assessment Act*.

To move forward towards light rail implementation, the Municipalities of Brampton and Mississauga will need to either complete Phases 3 and 4 of the Municipal Class Environmental Assessment, or undertake the Transit Project Assessment Process.

It is recommended that the Municipalities of Brampton and Mississauga proceed with the six-month Transit Project Assessment Process instead of continuing with the Municipal Class Environmental Assessment. The primary advantages are the streamlined approval process through the assigned Director from the Ministry of the Environment, and the overall six-month time limit, which includes a maximum 35-day review period by the Minister of the Environment. In contrast to the Class EA process, the TPAP affords only limited opportunity for a Part II order (bump-up to an Individual EA). The process starts with a selected transit project – in this case the Hurontario/Main Street Study.

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If the Cities proceed with the TPAP, a notice of study completion for Phases 1 and 2 must be filed. To initiate the Transit Project Assessment Process, the Municipalities of Brampton and Mississauga must first contact a Director at MOE, then contact the relevant bodies/agencies identified by the Director. The initial phase of the Transit Project Assessment Process – a 120 day period – begins with a Notice of Commencement. The 120 day period includes consulting on the proposed transit project and preparing an Environmental Project Report (EPR). Following this, a notice of completion begins a 30 day review period, when the public and agency will be given the opportunity to participate in a final review of the EPR. The Minister of the Environment then has 35 days to review the EPR. Upon completion of this process, the Hurontario/Main Street Study can proceed to implementation and construction.

10.5 Governance

This intent of this section is to present issues that could influence the governance of the Hurontario LRT system. Recommending a preferred governance model is beyond the scope of this study given the work needed to complete the EA process and the uncertainty surrounding the role of Metrolinx and the various transit operators in the Corridor. Some of the critical issues that need to be considered are documented below.

10.5.1 Ownership

With the LRT straddling two Municipalities, each with their own transit agency, the ownership of the LRT line is an important issue. A number of options are available, such as:

- Either one of the Municipalities could act as the owner with a contract to provide services to the other Municipality;
- A special purpose agency co-owned by both the Municipalities could be formed; or
- An agency from the Province, such as Metrolinx, could be in-charge of operations. This appears to be the most likely scenario, based on Metrolinx’s policy directions to date.

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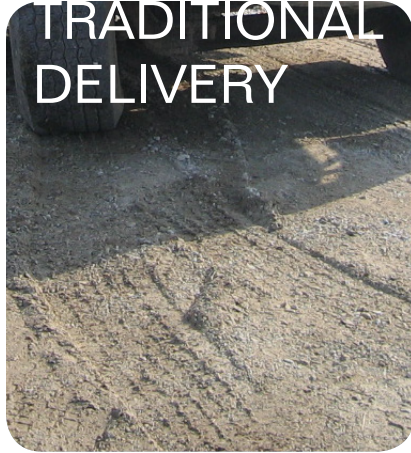
10.5.2 Implementation

Key initial steps include completion of the Metrolinx Benefits Case Assessment (now underway), which is to be followed by a “value for money” assessment by Infrastructure Ontario.

Governments all over the world today are looking for new ways to deliver major transportation infrastructure projects cost effectively and in less time. Many similar projects to the Hurontario LRT system are being procured using Alternative Finance Procurement (AFP) or Public Private Partnerships (PPP) delivery methods. In fact, the Province of Ontario requires a “Value for Money” analysis be undertaken on all major transportation projects as a means to confirm the method of procurement.

Experience in Canada and worldwide has demonstrated that major transportation projects can be delivered for significantly less cost and much faster using AFP and PPP delivery methods. A very good example of this is the Canada Line, in Vancouver, which was delivered at less cost than the public comparator and ahead of schedule, in time for the 2010 Olympics. AFP and PPP delivered projects are becoming the preferred delivery method by many transportation agencies and governments.

As the project proceeds, Infrastructure Ontario will undertake a “Value for Money” analysis of the Hurontario LRT project to determine the most beneficial method of procurement. Some of the most typical procurement methods are described on the following page.



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TD

In the past, municipalities and transit agencies in Ontario have delivered transit projects by undertaking the project detail design and tendering the construction and vehicle supply elements to individual contractors. While this option provides the most control to the municipality, it also means the municipality retains most of the integration responsibility and risk. Typically, this delivery method takes much longer to construct because the project is often divided up into smaller affordable contract packages and the design-bid-build process spread out in a consecutive manner. Overall project costs tend to be much higher due to higher costs associated with internal administration costs, design, project management, construction oversight, claims and change orders.

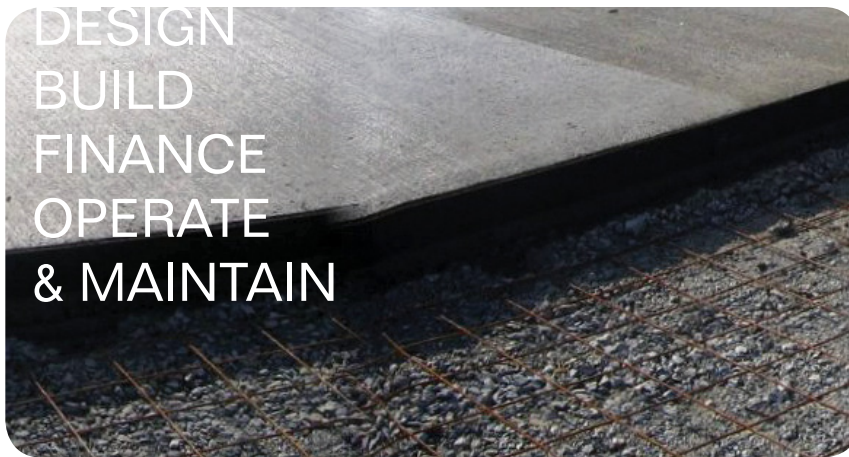
DB

As the name implies, Design-Build contracts transfer the design and construction responsibilities to the contractor shifting some of the risks directly to the contractor. To be most effective, DB contracts must be written using performance based specifications as compared to prescriptive specifications used in TD contracts. DB contracts should allow the contractor enough latitude for innovation and Value Engineering. DB contracts allow for the design and construction activities to be integrated and delivered much faster and at less cost than comparable TD projects.

DBF

Design-Build-Finance projects are very similar to DB projects with the additional responsibility for project financing during construction. Typically, payments to the contractor are not made until the end of the contract after the project is accepted and commissioned, so the contractor has to finance his costs during the term of the contract. DBF projects provide a significant incentive for the contractor to complete the project on schedule or ahead of schedule as the contractor's payments are tied to completion. In addition the financial obligations provide an additional rigor on the contractor, as financial lenders provide an additional layer of oversight to ensure the contractor meets its contractual obligations.

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DBFOM

This delivery method includes responsibilities for the contractor to provide the future operation and maintenance. This option can be the subject of some debate as it is really a policy related decision with respect to how the municipality or transit agency wishes to operate the transit system. A DBFOM contract is ideally a preferred procurement option, as it includes all responsibilities to design, build, supply, operate and maintain the whole transit system,

over a long-term period (at least 15 years). DBFOM contracts transfer most of the design, construction and operating risk to the contractor. The contractor is in the best position to evaluate and trade off the capital investment cost against the cost to operate the system on a long-term basis. It is noted that under a DBFOM contract, the municipality is still the owner and would retain a large part of the ridership and revenue risk.



Concession

A concession is very similar to a DBFOM contract with the exception that ownership is usually transferred to contractor as well under a long-term lease agreement. Under a concession, the municipality may lose a significant degree of control but also may be able to transfer additional risk such as operating and revenue risk. Highway 407 ETR is an example of a transportation concession agreement in Ontario.

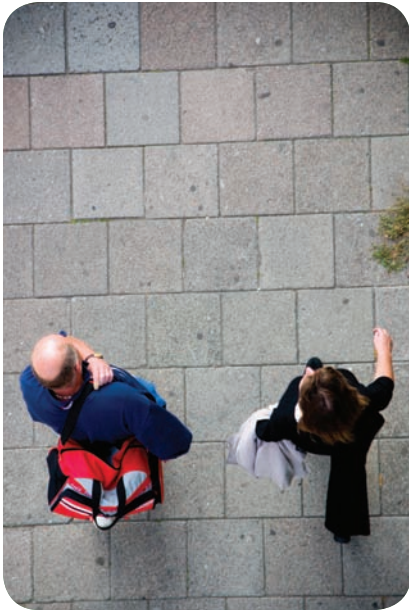
10.5.3 Operations and Maintenance

The responsibility for operations and maintenance of the LRT system are mainly an outcome of the decisions taken regarding its ownership and method of implementation. In the case of a more comprehensive project delivery method (e.g. DBOM), the operations and maintenance are managed as part of the project delivery method. However, other options for operations and maintenance of the system could be explored, such as:

- The procurement process could be oriented towards selecting a private sector consortium as the operations-maintenance contractor. This could be for a concession period of 15-20 years; or,
- If the public sector will be the owner-operator, an LRT operations/maintenance unit could be formulated to work exclusively on the system.



10.6 Next Steps



10.6.1 Social Marketing and Transportation Demand Management

A list of marketing and transportation demand management (TDM) options should be explored to promote transit usage and discourage auto use in the Corridor as the municipalities implement the planning framework, and begin to introduce enhanced transit services. These are listed below:

- Develop gateway 'mobility hubs' at major entry points to the Corridor such as GO Transit stations;
- Plan for retail, institutional and commercial uses that are focused on the street, with parking positioned behind the buildings;
- Design innovative public awareness campaigns to market sustainable transportation and development initiatives and strategies to all residents, particularly children, the elderly and new Canadians;
- Require TDM plans or strategies for any major commercial or employment development application (over 100 employees);
- Partner with major retail stores to develop incentive programs for high school and university students (or others) using transit. Incentives could include discounts at local restaurants, clothing stores, etc;
- Encourage all employers to implement TDM programs;
- Consider incentives that promote transit and work with local Smart Commute associations to discourage all-day parking (e.g. subsidize auto share programs); and
- Develop sample templates and pilot commuter trip reduction programs for businesses in the Corridor.

10.6.2 Terms of Reference for Next Phases of EA

As part of the implementation plan, the Terms of Reference (ToR) for the next phases of the EA must be scoped with an estimated budget. The ToR identifies the studies that need to be completed to fulfill the requirements for the next phases of the EA. Based on the work completed for this project and the TPAP guidelines of the Ministry of the Environment, the next phase of the study should include the following elements:

- traffic impact assessment (potentially requiring microsimulation of key areas such as Downtown Brampton, Main Street South, Mississauga Downtown, Port Credit and Mineola);
- noise impact assessment;
- natural environment assessment;
- cultural, including archeological assessment and heritage assessment;

- assessment of impacts during construction;
- social environment;
- economic environment;
- property impact;
- planning objectives;
- consultation including first nations;
- utilities;
- further refinement of the design, including resolution of the Highway 403 crossing, Rathburn Road and minor issues; and
- elaboration of the streetscaping plan.

Mitigating measures would need to be defined for any specific impacts, to result in approximately no net negative effect.

1 Costs



11 COSTS

11.1 Capital Costs



The capital costs (in 2009 dollars) for the three alternatives (Do-Nothing, LRT, BRT) are presented below. These costs are representative of construction and fleet procurement, refurbishment and / or replacement.

1. **Do-nothing:** \$213.4 million. This cost reflects the incorporation of a completely new bus fleet to serve the transit demand projected for the 2031 do-nothing scenario. This was done to make this option similar to the LRT and BRT options, which assume that the existing equipment will be reallocated to enhance service elsewhere in Mississauga and Brampton;
2. **LRT:** \$1,025 million; represents construction costs, LRT vehicle procurement costs and refurbishment costs;
3. **BRT:** \$600 million; represents construction costs, BRT vehicle procurement costs and replacement costs; and,
4. **LRT / BRT alternative:** \$975 million, represents construction costs, LRT vehicle procurement and refurbishment costs; and BRT vehicle procurement and replacement costs.

These costs include preliminary costs for urban design, street scaping or place-making along the Corridor. A cost of approximately \$100 million for these integral initiatives is included in addition to the infrastructure costs noted above for the LRT, BRT and LRT/BRT alternatives. It is assumed that this level of investment would not take place under the Do-nothing alternative.

The capital costs noted above include costs for a maintenance facility that would be needed for a LRT facility.

The costs presented above do not include property cost. The total estimated cost for implementing LRT throughout the corridor, based on the level of analysis completed, is \$1,025 to \$1,230 million, not including property.



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11.2 Operating Costs

LRT operating costs were developed from data provided by the City of Calgary, which reported an operating cost of \$287,719 per LRT vehicle in its fleet per year. Adjusted to 2009, this represents an annual vehicle operating cost (excluding costs of administration and other overheads) of \$304,930.

The Canadian Urban Transit Association (CUTA) provides bus operating cost data for the major systems in the GTHA, and these systems together with London and Ottawa were considered as valid comparators.) The average annual operating cost per bus for these

operators, adjusted for 2009 values, is \$359,470. A BRT system is expected to have a premium operating cost of 1.4 over a standard bus system. On this basis, the annual operating cost for the BRT system is expected to be \$503,250 per BRT vehicle.

The operating costs in net present value (NPV) for each of the three alternatives are reported below in [Table 11.2.1](#).

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Table 11.2.1
Operating Costs in the Hurontario / Main Street Corridor (\$000,000)

	Do-Nothing	LRT	BRT	LRT / BRT
Net Present Value (NPV)	254.5	186.6	332.4	212
Benefits over Do-Nothing		67.9	(77.9)	42.45

11.3 Business Case

The detailed documentation on the business case for the Hurontario Street LRT is attached in Appendix 11. Presented below is a short summary on the final results from the business case.

The business case was structured along the lines of the Multiple Account Evaluation (MAE) studies recently prepared by Metrolinx for other transportation projects in the GTA. The business case analysis addresses the following four accounts:

1. Financial Costs and Benefits
2. Transportation User Benefits
3. Environmental Benefits
4. Economic Benefits

Both the BRT and LRT options show a significant positive benefit when compared to the costs associated with their implementation. Although, as a benefit/cost ratio, the BRT shows a relatively higher benefit (Table 11.3.1), this is purely the result of the higher initial costs for the LRT. Evaluating only the benefit/cost ratio masks the fact that, in all benefit measures, the LRT option is preferred to the BRT alternative. LRT significantly outperforms BRT in the important factors of travel time savings, tax revenue and operating cost. This shows that over the longer terms LRT is a better solution.

**Table 11.3.1
Incremental Costs and Revenues
(Benefits from the Do-nothing alternative: All
values as NPV – \$000,000)**

	LRT	BRT
Capital Costs	(611.5)	(252.4)
Operating Costs	67.9	(77.9)
Fare Revenue	58.9	22.3
Taxes	112.3	76.4
Travel Time Savings	452	277.4
Auto Ownership	152	123.9
Collision	17.7	14.5
Total Benefits (NPV)	860.8	436.5
Benefit / Cost Ratio	1.4	1.7

As shown in **Table 11.3.1**, both the LRT and BRT options generate positive net benefits, as they demonstrate a benefit/cost ratio greater than 1. The business case did not factor in the cost of a maintenance facility, which is estimated to be in the order of \$100-120 Million. A detailed size and cost of this facility will be determined during the next phases of the study.

It should, however, be noted that the ratio only captures part of the benefits that are expected to accrue from the LRT alternative. Other benefits are expected to include:

- The tax uplift implications and the opportunity to intensify development along Hurontario and Main Street are dependent on significant transit improvements. It is therefore possible that a BRT option will not be sufficiently attractive to result in the proposed intensification and associated improvements along this corridor. (This has been the experience in numerous case studies assessed, with little contradictory evidence.)
- Reduction in greenhouse gas emissions in the corridor (reduction by approximately 25% over the BRT).
- Quality of ride, LRT has been widely shown to provide a highly superior travel experience to the rider.

- By virtue of the greater investment in infrastructure, economic benefits associated with the construction of the LRT will be significantly higher than those associated with a BRT project.



12

INTERIM SERVICE PLAN



12 INTERIM SERVICE PLAN

12.1 Hurontario/Main – Interim Transit Service – Pre Light Rail Transit (LRT)



The evolution of transit service on Hurontario/Main Street will see Mississauga Transit and Brampton Transit jointly providing an integrated service of both local and limited stop/express bus service between the City Centre Transit Terminal in Mississauga and the Shoppers World Terminal in Brampton. This will involve the restructuring of the existing local service and introducing a joint limited / express transit service commencing in 2011. Customers will be served at all major stops and transfer points identified in the Hurontario/Main Higher Order Transit Feasibility Study.



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12.2 Hurontario/Main Street – Local Service Plan



Recognizing that not all passengers are travelling the length of the entire corridor, both Brampton Transit and Mississauga Transit will continue to operate their respective local transit service (Route 2-Main in Brampton and Route 19-Hurontario in Mississauga). Local transit service will be restructured along the corridor with over-lapping service currently envisioned to operate between the Derry Road and County Court/Ray Lawson boundaries. Over time, as ridership patterns change, it is possible that the service levels offered by Mississauga Transit's Route 19-Hurontario and Brampton Transit's Route 2-Main may be modified or adjusted as passenger travel patterns change and/or passengers migrate to the limited stop/express Züm services. This overlapping service will continue to serve the existing transit stops along the corridor, where local transit stops outside of this overlapping service ie. north of County Court/ Ray Lawson and south of Derry Road will be serviced by each Municipalities respective local transit service.

Details surrounding the interim service plan (route origin/ destination, service span, frequency, etc.) are being defined by Mississauga Transit and Brampton Transit. The goal is to provide service levels that balance the current passenger travel needs, and also grows transit ridership along the corridor that will support to the longer-term transportation objectives of both municipalities.

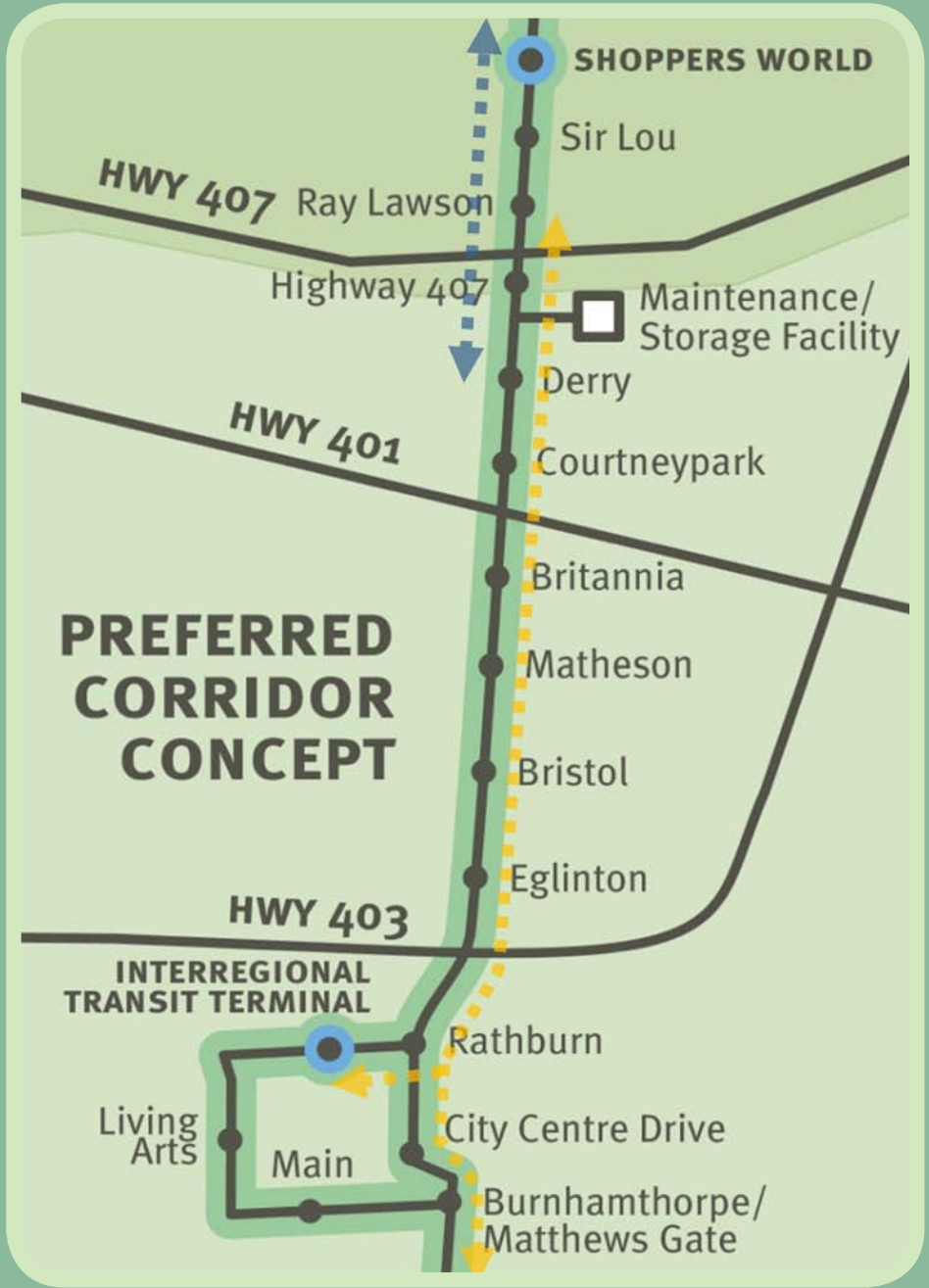


Figure 12.2.1:
Local Transit Interim
Service Plan

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LEGEND

- Brampton Züm
- Mississauga Express
- ⋯→ Brampton Local
- ⋯→ Mississauga Local

12.3 Hurontario/Main Street – Express/Züm Service Plan



Prior to the launch of LRT service along the corridor, both the Cities of Brampton and Mississauga will be introducing a limited stop express/Züm transit service that will serve the planned LRT stops using uniquely branded Mississauga Transit and Brampton Züm Transit Buses. This joint service will operate between City Centre Transit Terminal in the south and Shoppers World Terminal in the north. The following major stop locations will be served by the integrated 2011 limited stop express/Züm Service:

- City Centre Transit Terminal
- Eglinton Avenue
- Ceremonial Drive
- Bristol Road
- Matheson Boulevard
- Courtneypark Drive
- Skyway Drive/Superior Boulevard
- Derry Road
- Highway 407
- Ray Lawson Boulevard
- Sir Lou Drive / County Court Boulevard
- Shoppers World Transit Terminal

These stops will be served by both Brampton Transit's Züm service as well as Mississauga Transit's Limited Stop/Express service. In addition, it is recognized that Brampton Transit will be operating Züm service between CCTT and Sandalwood Parkway (north of Shoppers World) while Mississauga Transit will operate both branches of its Hurontario limited stop/express service (Routes 102 and 202) along the corridor to Port Credit. As ridership patterns evolve, both transit agencies will work together and adjust their services in tandem in response to changing customer travel patterns.

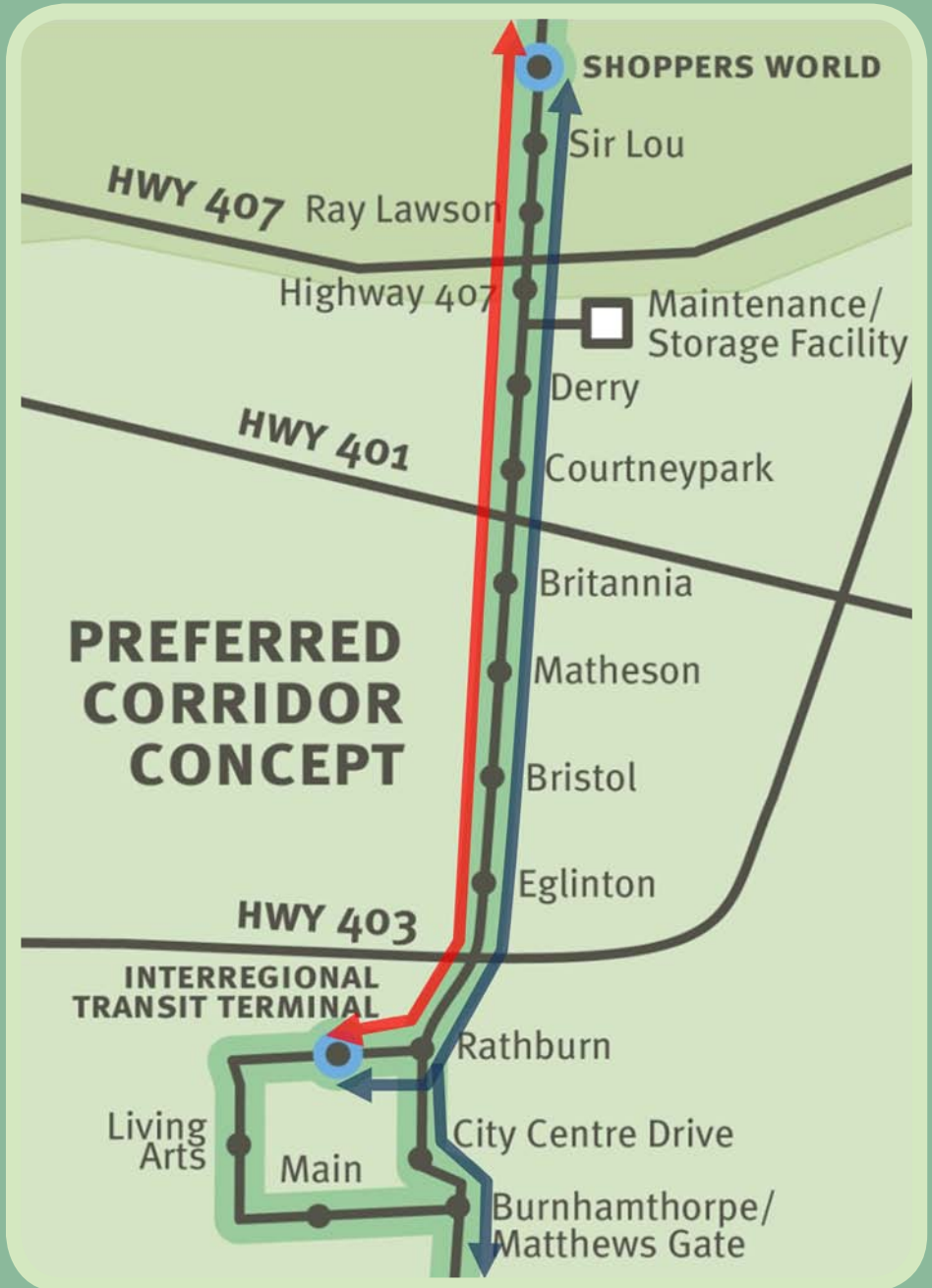


Figure 12.3.1:
Rapid Transit/Züm
Interim Service Plan

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LEGEND

- Brampton Züm
- Mississauga Express
- Brampton Local
- Mississauga Local

