Lakeshore Road Transportation Master Plan and Implementation Strategy

DRAFT Final Report

May 2019

Lakeshore Connecting Communities

MISSISSAUGA

HDR

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Executive Summary

Study Purpose

- Develop a **vision** for the Lakeshore Corridor
- Recognize the different **character areas**
- Support **all ways** of travelling
- Connect **people to places** and **move goods to market**
- Establish a **plan** to make the **vision a reality**
- Support existing and future **land uses**

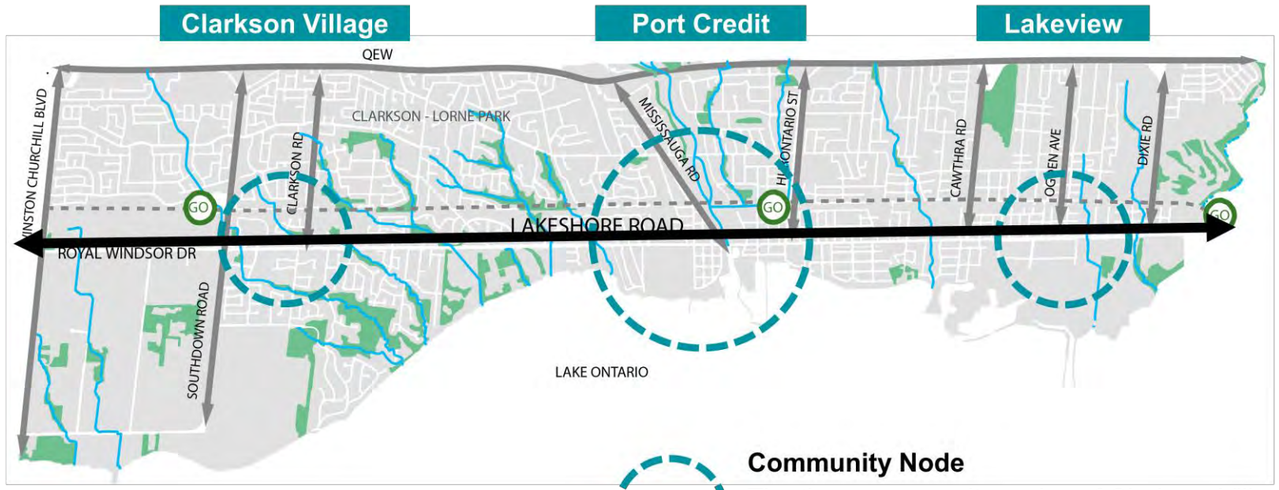
Study Process

This Study followed the master planning process (Approach 1) described in the Municipal Engineers Association Municipal Class Environmental Assessment (October 2000, as amended in 2007, 2011, and 2015). The project involved multi-modal transportation planning, urban design, and land use planning. The Master Plan process satisfied Phases I (Identify Problem and Opportunity) and II (Identify and Evaluate Alternative Solutions to the Problem or Opportunity) of the Municipal Class EA process.

The Transportation Master Plan (TMP) report documents the approach and recommendations from the TMP process per the Municipal Class EA process. It serves as the basis for, and will be used in support of, future investigations to fulfill Municipal Class EA requirements for the project recommendations identified from this Master Plan.

Study Area

The Lakeshore Corridor is 13 km long, and includes Lakeshore Road between Southdown Road and the east City limit and Royal Windsor Drive between the west City limit and Southdown Road.



Community Node

The three community nodes of Clarkson Village, Port Credit, and Lakeview as well as the linkages between these areas will be the focus of this study.

Strategic Analysis Area

Although the focus of the study will be the Lakeshore Road corridor, the analysis of transportation conditions will be completed in the context of a wider study area, from the QEW to Lake Ontario and from the east City limit to the west City limit.

A comprehensive review of the existing conditions in the Study Area is provided in **Section 2** of the TMP Report.

Public and Stakeholder Engagement

3 Rounds of Public Open Houses (POH) in 3 locations (9 POHs in total)

4 Pop Up Workshops
2 Walkability Audits
1 Business Community Workshop

300+ Public Comments

Online Website and Survey

Direct Mail and Newspaper Notices

Internal City of Mississauga stakeholders and external stakeholders were also consulted throughout the Study at key milestones to review recommendations and provide input. A Technical Advisory Committee (TAC) was established at the onset of the Study to facilitate communication between the Project Team and other subject matter experts. TAC meetings were held throughout the study before or after each Public Open House.

Indigenous Communities were also consulted throughout the Study. Notifications were sent via email and registered mail. Correspondence tracking log with Indigenous Communities is provided in **Appendix B.2**.

General Themes and Key Messages Heard from the Public

Create a more welcoming pedestrian environment

Address concerns about speeding on Lakeshore Road and through neighbourhoods particularly those areas adjacent to GO Stations

Develop some form of higher order rapid transit along Lakeshore Road.

Improve pedestrian connections and priority

Coordinate or sync signal timing during peak hour to improve operations

Improve intersection configurations and restrict turning movements during peak hours

Improve conditions for walking and cycling along the Waterfront Trail.

Explore feasibility of additional crossing of the Credit River

Dedicate and separate bike lanes along Lakeshore and create a continuous network along Lakeshore from Oakville to Toronto.

Multi-Modal Needs Assessment

A multi-modal needs assessment was undertake to determine the overall need and justification for transportation improvements to the Study Corridor from a transportation network perspective, and considering the needs for each travel mode.

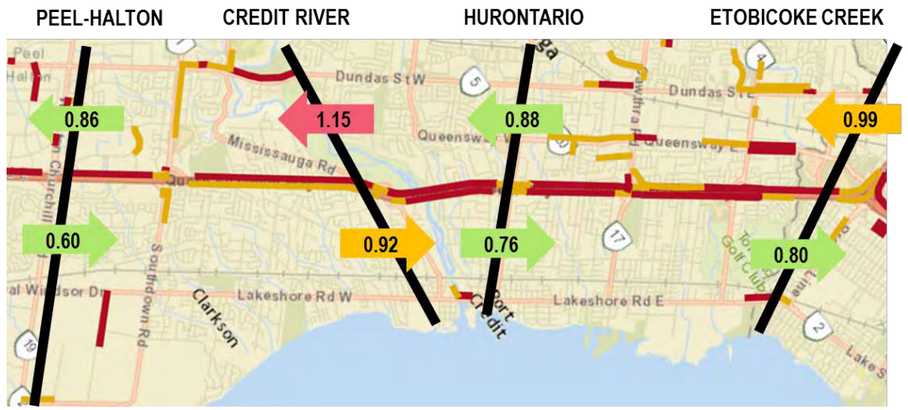
As the Lakeshore Road Corridor intensifies and redevelopment occurs, there will be greater demand on the existing pedestrian facilities – not only sidewalks but street cafes, benches, streetscaping, and walking trails. Improvements to the pedestrian environment should be made to make walking an attractive and viable alternative mode of transportation.

There is a high demand for cycling along Lakeshore Road and the Waterfront Trail as well as high demand for cycling linkages from neighbourhood centres, Clarkson Village, Port Credit, the waterfront, and GO Stations to destinations throughout the Corridor. The demand for cycling will continue to increase in the Network Analysis Area and the Lakeshore Road Corridor specifically as redevelopment occurs and new rapid transit is built.

Existing bus service is projected to be over capacity in the future. To test the potential for higher ridership along the route in the future, two scenarios were considered: BRT and an extension of the TTC streetcar. The results of these scenarios indicated that there is potential to support higher order transit east of Mississauga Road; however, ridership potential west of Mississauga is expected to remain low and would be adequately served by conventional or enhanced bus.

The road network within the broader study area continues to experience capacity constraints in the east-west direction with the Peel-Halton and Credit River screenlines becoming heavily congested in the PM peak hour in the westbound direction. Without any transportation improvements along Lakeshore Road, segments of Lakeshore Road are congested or above capacity between Winston Churchill Boulevard and Clarkson Road, through Port Credit (Mississauga Road to Cawthra Road) and between Dixie Road and the Etobicoke Creek.

Summary of Rapid Transit Need/Potential within the Lakeshore Corridor



Existing (2011) PM Peak Hour, East-West Travel Screenline Volume/Capacity Assessment

Future (2041) PM Peak Hour 'BAU', East-West Travel Screenline Volume/Capacity Assessment

Vision and Guiding Principles

The objectives of the Study were:

- Develop a vision
- Recognize the different character areas
- Support all ways of travelling
- Connect people to places and move goods to market
- Support existing and future land uses
- Establish a plan to make the vision a reality

A vision for the Study Corridor was developed early on in the Study process. Public input helped shape the vision for the Study Corridor and resulted in a set of guiding principles which the Project Team referred to in the assessment of transportation and corridor design alternatives.

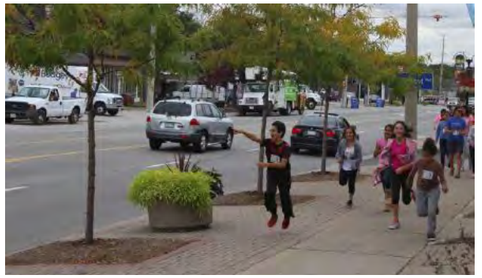
Problem/Opportunity Statement

Lakeshore Road intersects a mix of established and developing communities. Preserving and enhancing the community's character and sense of place is important. By 2041, the Lakeshore Communities will grow by approximately 56,000 people and 16,500 jobs. Without any improvements to the transportation network in the Lakeshore Communities congestion will worsen for all road users. The existing pedestrian and cycling network are discontinuous and can be better integrated into the overall network. The existing transit service will require additional capacity in the future and a greater degree of transit priority. With limited road capacity, greater reliance on transit, walking, and cycling is required. This requires making these methods of travelling more attractive.

Through POH1, the public had the opportunity to comment on the guiding principles as well as provide input on the vision for the Study Corridor specific to each mode of transportation through a visual preference exercise. The Project Team used the input from POH1 to inform the alternative solutions that were developed following POH1. The public also provided input on the problem/opportunity statement at POH1. The problem/opportunity statement was confirmed following POH1 and summarized and presented again at POH2.

The following guiding principles for the Lakeshore Connecting Communities Study were identified to reflect best practice in multi-modal complete streets design and public input:

Enhance connections to the waterfront



Create vibrant public spaces

Improve quality of life

Moving people safely and efficiently

Preserve the natural environment

Promote prosperity for local businesses

Design for all ages and abilities

Enhance main street features

Integrate transportation and land use

Evaluation Criteria

The evaluation of alternatives included the formulation of high level evaluation criteria. The evaluation criteria include transportation considerations as well as impacts to the natural, cultural, and socio-economic environments. Evaluation criteria were presented to the public at POH2 and confirmed following the open house.

Criteria used in the evaluation of the alternatives were categorized into three groups:

Serving People

Choice
Develop an integrated network that connects different modes to provide for more travel options

Experience
Capacity to ease crowding/congestion; reduce travel times; make travel more reliable, safe, and enjoyable

Social Equity
Do not favour any group over others, allows everyone good access to work, school, and other activities

Strengthening Places

Shaping the City
Use the transportation network as a tool to shape residential development of the City

Healthy Neighbourhoods
Changes in the transportation network should strengthen and enhance existing neighbourhoods; promote safe walking and cycling within and between neighbourhoods

Public Health and Environment
Support and enhance natural areas; encourage people to reduce how far they drive

Supporting Prosperity

Supports Growth
Investment in public transportation should support economic development; allow workers to get to jobs more easily; allow goods to get to markets more efficiently

Affordable
Improvements to the transportation system should be adorable to build, maintain and operate

Resilient
The transit network should have the ability to adapt and accommodate unexpected disruption including manage

Alternative Solutions

To address the problem/opportunity statement, alternative solutions were identified, assessed, and evaluated against project specific criteria resulting in a preferred solution.

There were three components to the alternative solutions as follows:

Transit network alternatives

Right-of-way alternatives

Credit River crossing alternatives

Transit Network Alternatives and Preferred Solution

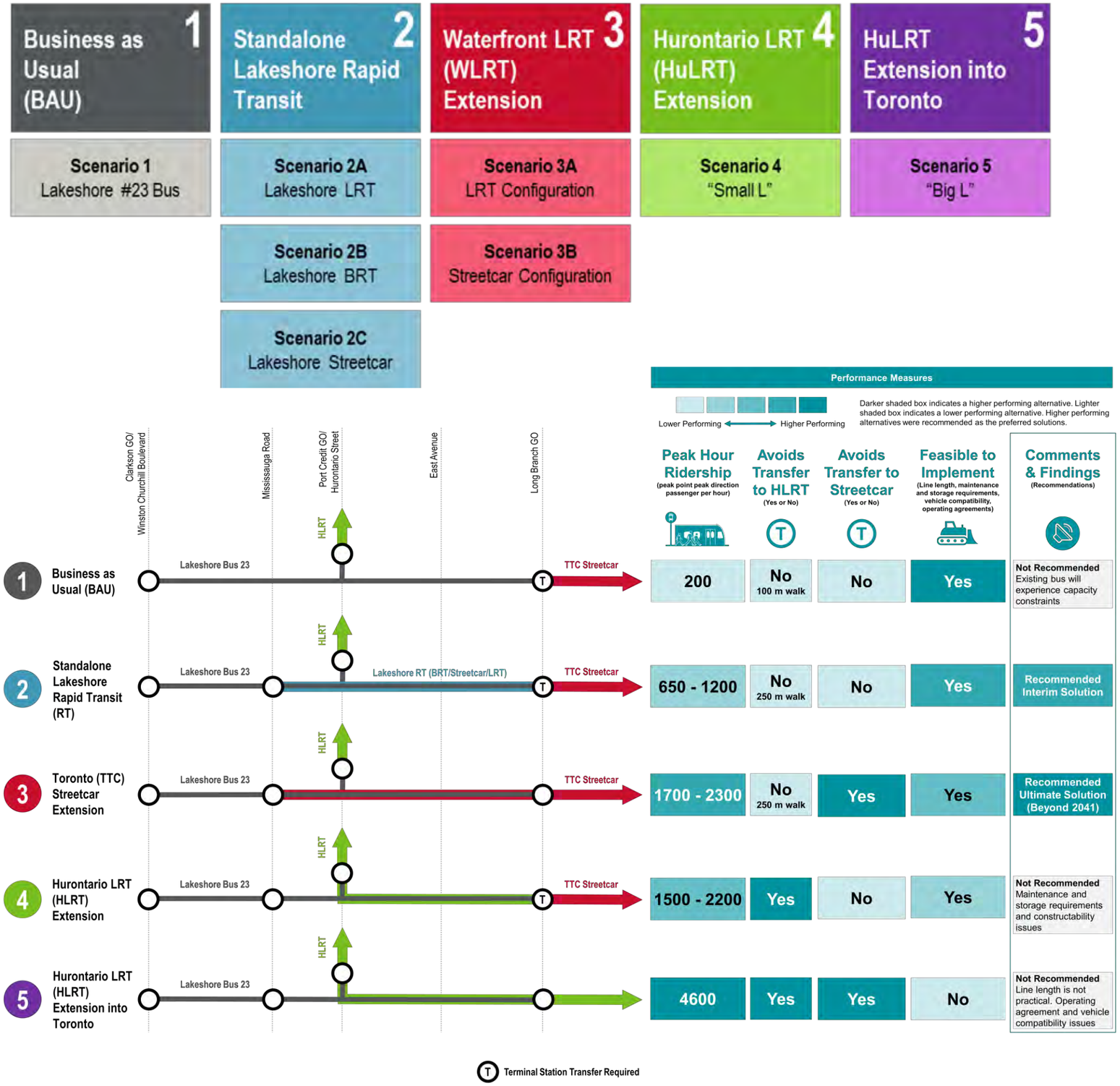
Five (5) transit network alternative families were considered. The alternatives were developed to address the need for rapid transit east of Mississauga Road and included standalone transit alternatives, extension of existing Toronto Transit Commission (TTC) service alternatives, and extension of the planned Hurontario LRT alternatives.

Alternative 2B – Lakeshore Express Bus/BRT and Alternative 3B – WLRT Extension (streetcar configuration) were selected as the preferred alternatives. It was determined that Alternative 2B – Lakeshore BRT would serve as an interim solution and Alternative 3B – WLRT Extension (streetcar configuration) as the ultimate preferred solution. Alternative 2B – Lakeshore Express Bus/BRT has relatively low construction complexity as it is a bus option with no need for construction of rail tracks. This is a flexible interim solution with very minor impacts to existing stable neighbourhoods due to construction. This alternative has the ability to build ridership before a streetcar/LRT service is needed for the corridor.

The recommended ultimate solution, Alternative 3B – WLRT Extension (streetcar configuration), has high projected ridership making it highly compatible with community services and provides a seamless (i.e. no transfer) connection with TTC, while also having only moderate impacts on noise and vibration due to construction and operation.

Through discussion with the City of Toronto and Toronto Transit Commission (TTC), it was confirmed that the Waterfront LRT (WLRT) is not planned to be implemented by 2041 between Legion Road and Long Branch. Based on the operating assumptions provided by TTC, the resulting ridership along Lakeshore Road, should the enhanced streetcar (i.e. Scenario 3B) be extended to Mississauga Road, would be approximately 1700 peak direction passengers per hour at the Etobicoke Creek, representing an approximate 30% decrease in peak hour direction ridership. Therefore, Alternative 2B – Lakeshore Express Bus/BRT is the preferred transit solution for the 2041 horizon year. Extension of the Streetcar can be considered beyond 2041.

With respect to the consideration of streetcars vs. express buses, the public generally showed a preference for express buses over streetcars. The public identified a number of benefits of having express buses which are seen to have more flexibility, to not necessitate overhead wires or streetcar tracks which are viewed by many as being an impediment for pedestrians and cyclists, and are considered less costly to maintain.



Refer to **Section 5.1** of the TMP Report for detailed evaluation of all transit network alternatives.

Preferred Express Bus Stop Locations

The conceptual design protects for local curbside transit facilities, express bus service and a median dedicated transitway to support the express bus service. Local curbside transit facilities are proposed throughout the corridor from Winston Church Boulevard to east of Dixie Road. The proposed express transit stops are identified as near side locations where feasible with the exception of the stops within the median transitway where stops are located on the far side of intersections. Far side stops at each express stop location are desired to accommodate potential future transit priority improvements, such as Transit Signal Priority, and should be protected for in future design phases. The preferred stop locations were selected to strike the balance between good access and high transit route speed. Surrounding existing and future land use was also considered to determine appropriate stop locations (i.e. supporting mixed use developments, intensification areas, and transit supportive land uses).

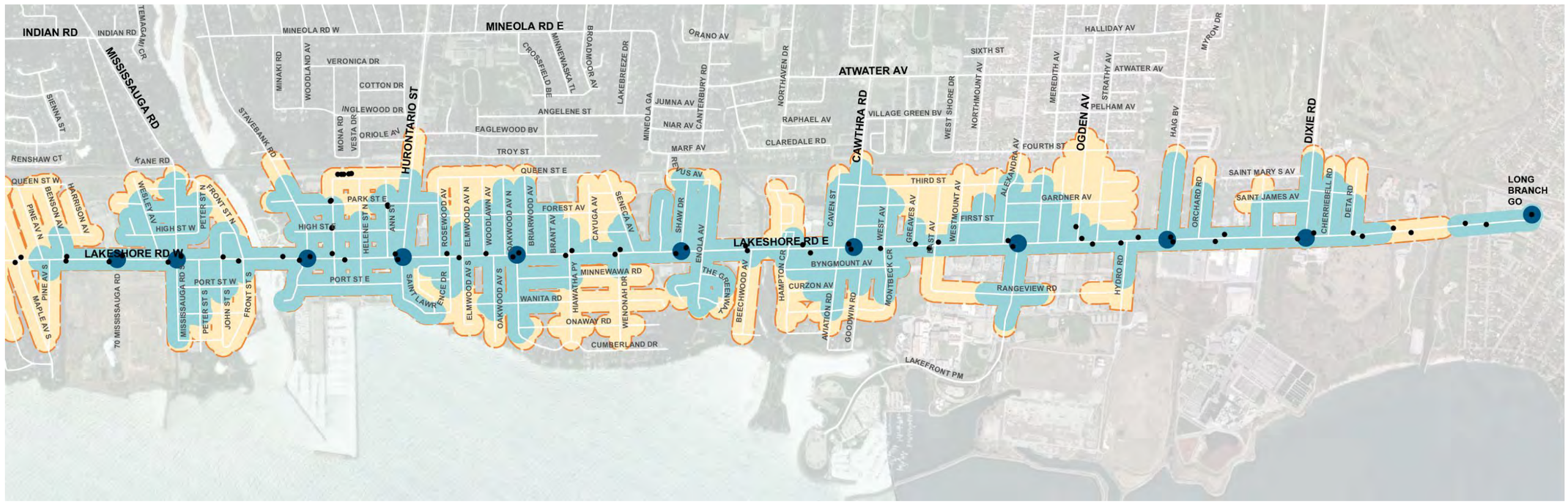
Although the locations of transit stops and shelters are identified on the conceptual corridor design, they are subject to change. Additional property may also be required to accommodate transit shelters which will be confirmed during detailed design.

Express bus stops are identified at the following intersections with Lakehsore Road:

- 70 Mississauga Road (at the intersection with Credit Landing Plaza);
- Mississauga Road;
- Stavebank Road;
- Hurontario Street /St Lawrence Drive;
- Cumberland Drive;
- Shaw Drive;
- Cawthra Road;
- Lakefront Promenade/Alexandra Ave (median express bus stop within dedicated transitway);
- Haig Blvd (median express bus stop within dedicated transitway);
- Dixie Rd (median express bus stop within dedicated transitway); and,
- Long Branch GO Station (outside the Study Corridor)

70 Mississauga Road Transit Hub

A new transit hub is proposed for the development at 70 Mississauga Road to anchor the express bus running between Long Branch GO station and the site. The new transit hub will help achieve the transit usage objectives for the site and facilitate the movement of people between the west side of the Credit River and the east side via transit. Until the completion of the transit hub on the 70 Mississauga Road development site, MiWay may choose to run the express bus between Clarkson and Long Branch GO Stations.



Right of Way Alternatives

Through Phase 1 of the Study, it was determined that improvements to the right-of-way are required to address the multi-modal needs identified along the Study Corridor. Therefore, to address the needs identified in the problem/opportunity statement, in Phase 2 of the Study right-of-way alternatives were identified, assessed and evaluated for the Study Corridor.

The corridor was divided into seven (7) segments based on differing characteristics, including: designated Official Plan (OP) right-of-way width, existing character, critical constraints, and future transportation needs.

Taking into consideration the different character areas along the corridor and the need for a context sensitive solution, a number of initial cross-section alternatives were developed for each segment. These cross-section alternatives provided a different emphasis and mix of transportation modes that could potentially fit into the available ROW. Trade-offs from different modes were considered between the various alternatives in order to satisfy the needs for each segment.

Using the public's input on the vision for the Study Corridor from POH1, the Project Team developed all reasonable and feasible alternative right-of-way configurations. At POH2, the right-of-way alternatives for each segment of the Study Corridor were presented to the public and they had the opportunity to give feedback and express their preference for an option. No recommendation for a preferred alternative was presented at POH2.

From the input received about the right-of-way alternatives at POH2 and following internal stakeholder meetings with the City of Mississauga staff, the Project Team noted that layby parking in the Port Credit Neighbourhood was important; therefore, the right-of-way alternatives for Segment 5 were refined to include an option with 4 travel lanes and layby parking which alternates with streetscaping opportunities. The alternatives were then evaluated and a preferred alternative was selected. The preferred alternative for each segment was presented to the public at POH3. Feedback from POH3 confirmed the preferred alternative for each segment.

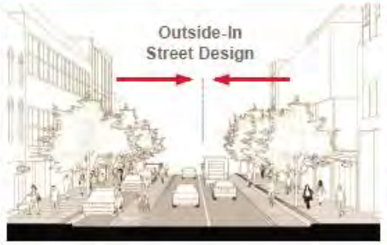
Corridor Design Principles

The following corridor design principles were used in the development of the right-of-way alternatives.

Context Sensitive Design

Goals Then:

- Auto Mobility
- Automobile Safety



Goals Now:

- Multi-modal Mobility + Access
- Public Health & Safety
- Economic Development
- Environmental Quality
- Livability / Quality of Life
- Equity

Lakeshore Road Today

The Public Right-of-Way

1. Wide roadway with no dedicated space for transit or bikes
2. Continuous parking on both sides of the roadway
3. Narrow sidewalks with small / non-existent setbacks
4. Few street trees & limited space for street furnishings

Street Design Elements

Sidewalks

- Design accessible sidewalks with clear, unobstructed continuous paths
- Design safe crossings
- Design sidewalks as a public space to be inhabited

Bike Facilities

- Context-appropriate design
- Design for the present and future
- Visible, intuitive cycling facilities
- Supply adequate bike parking
- Design bike-friendly curbside conditions

Transit

- Make connections safe, convenient and seamless
- Contribute to overall transit network
  Design visible, safe and convenient stops
- Design a universally accessible system

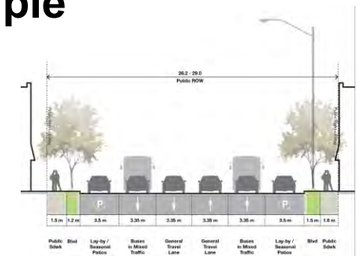
Roadway

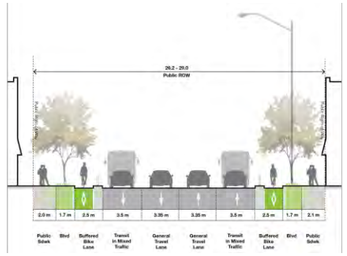
- Design streets to accommodate multi-modal transportation
- Consider the safety of all road users
- Design for context appropriate target speed and reliable travel

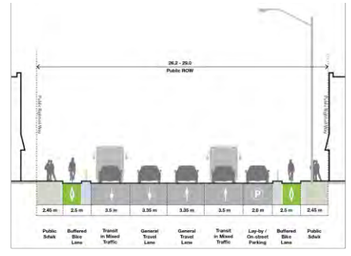
Street Trees & Site Furnishings

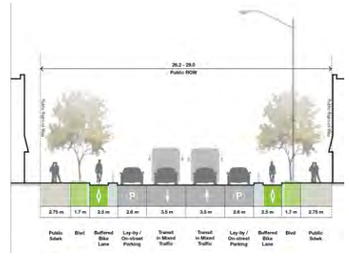
- Dedicate space for street trees, landscaping and furnishings
- Design the street for visibility and safety

Example









Alternative	Option 1: Do Nothing (4 Lanes + Parking)	Option 2: 4 Lanes (No Parking)	Option 3: 4 Lanes + Parking (One Side)	Option 4: 2 Lanes + Parking (Both Sides)
Description	• **Local bus** in mixed traffic • **Narrow** sidewalks • **No** cycling facility • **Four** traffic lanes • **Lay-by** parking	• **Higher order transit** in mixed traffic • **Wider** sidewalks • **Separated** cycling facility (on or off-street) • **Four** traffic lanes • **No** lay-by parking	• **Higher order transit** in mixed traffic • **Wider** sidewalks • **Separated** cycling facility (on or off-street) • **Four** traffic lanes • **Lay-by** parking on one side	• **Higher order transit** in mixed traffic • **Wider** sidewalks • **Separated** cycling facility (on or off-street) • **Two** traffic lanes • **Lay-by** parking on both sides
PRO	• Maintains four lanes on Lakeshore Road • Maintains lay-by parking	• Separated cycling facility (safe, continuous) • Wide sidewalks • Maintains four lanes on Lakeshore Road	• Separated cycling facility (safe, continuous) • Wide sidewalks • Maintains lay-by parking on one side • Provides higher order transit • Maintains four lanes on Lakeshore Road	• Separated cycling facility (safe, continuous) • Very wide sidewalks • Maintains lay-by parking on both sides • Provides higher order transit
CON	• No transit service improvements • Does not meet goals/objectives of study	• Does not maintain lay-by parking • Does not maximize opportunity for enhanced public realm (i.e. streetscaping, wider sidewalks)	• Does not maintain lay-by parking on both sides of the street • Does not maximize opportunity for enhanced public realm (i.e. streetscaping, wider sidewalks)	• Does not maintain four lanes on Lakeshore Road • Increased traffic volumes on Hurontario Street, Mississauga Road, and adjacent east-west streets

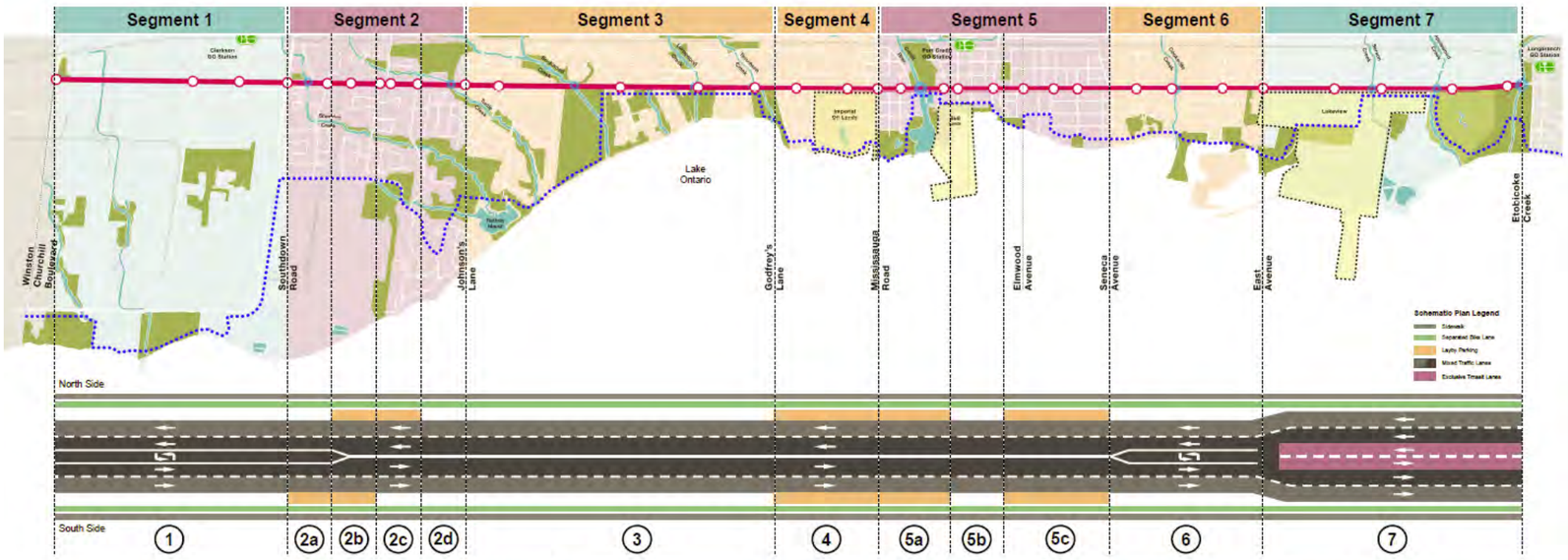
Refer to **Section 5.2** of the TMP Report for detailed evaluation of all right-of-way alternatives.

Preferred Right of Way Alternative

The preferred cross-section for each segment of the Study Corridor is presented below. The preferred cross-sections were determined through discussions with the City of Mississauga internal departments and reflect public and stakeholder input received following the evaluation of alternatives.

Continuous separated bike lanes are provided throughout as well as sidewalks on both sides of the street. Lay-by parking is to be provided on the north side along segments 2B and 2C, as well as on the south side along segment 2C. Segments 4, 5A, and 5C will have lay-by parking on one or both sides, alternating with planting zones. Segments 1, 2A, and 6 will provide a centre left turn lane. Finally, Segment 7 will have exclusive two-way transit lanes in the median.

It should be noted that the median transit only lanes do not extend the entirety of Segment 7; the transitway is from East Avenue to just west of the Etobicoke Creek to minimize impacts to the Etobicoke Creek and so that the express bus can merge back into general purpose lanes prior to crossing into the City of Toronto. Future studies will review the feasibility of extending the exclusive transit lanes into the City of Toronto.



Segment 1:
- Separated cycling

Segment 2A:
- Separated cycling
- Parking (one side)

Segment 2B:
- Separated cycling
- Parking (both sides)

Segment 2C:
- Separated cycling
- Parking (one side)

Segment 2D:
- Separated cycling

Segment 3:
- Separated cycling

Segment 4:
- Separated cycling
- Parking (both sides, alternating with planting zones)

Segment 5A:
- Separated cycling
- Parking (both sides, alternating with planting zones)

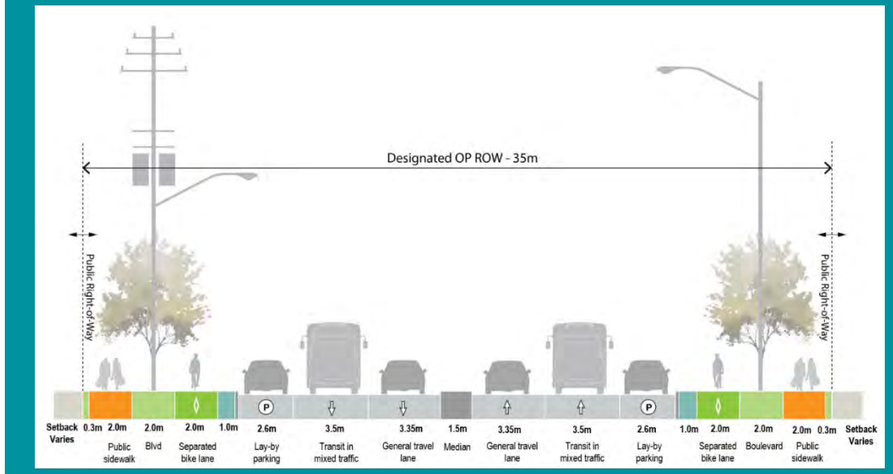
Segment 5B:
- Separated cycling

Segment 5C:
- Separated cycling
- Parking (both sides, alternating with planting zones)

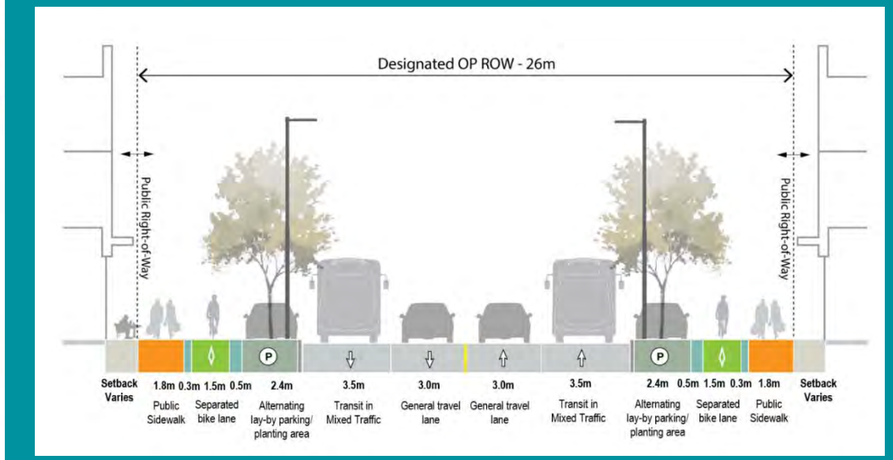
Segment 6:
- Separated cycling

Segment 7:
- Separated cycling
- Exclusive Transit in
- Median

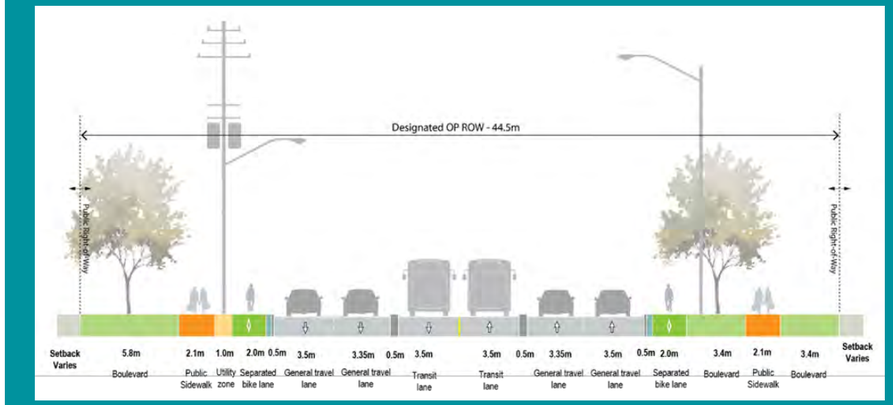
Example



Preferred Right of Way Alternative for Segment 2B (Clarkson)



Preferred Right of Way Alternative for Segment 4, 5A, 5C (Port Credit)



Preferred Right of Way Alternative for Segment 7 (Lakeview)

Credit River Crossing Alternatives and Preferred Solution

Through Phase 1 of the Study, it was determined that the existing Lakeshore Road crossing of the Credit River will become congested by 2041 and to accommodate future projected travel demand in the Study Area, a new crossing of the Credit River may improve traffic operations and provide a new connection between the QEW and Lakeshore Road to fill a 3 km gap in the east-west road network. Therefore, to address the needs identified in the problem/opportunity statement, in Phase 2 of the Study Credit River Crossing alternatives were identified, assessed and evaluated for the Study Corridor.

Alternative crossing locations of the Credit River were identified for two types of crossings:

1. Multi-modal crossing – a crossing which accommodates pedestrians, cyclists, transit, and automobiles
2. Non-vehicular (or active transportation only) crossing – a crossing which only accommodates pedestrians and cyclists

A high level evaluation of the crossing locations was carried out and opportunities to improve network connectivity and impacts on property, the natural environment, cultural heritage, archaeology, and the social environment were considered.

From the high level assessment, introducing a streetcar on the existing Lakeshore Road bridge (Alternative S) was deemed to be the most preferred multi-modal crossing alternative as it had the fewest impacts overall while addressing many of the needs for the corridor. Although not recommended as the preferred alternative through this TMP, the Queen Street Extension (Option 2) could be carried forward for future study at a later time as development occurs east and west of the Credit River.

The high level assessment of non-vehicular (or active transportation only) crossings resulted in the identification of a new crossing at Queen Street as the most preferred as this option is the most suited to meet the transportation objectives identified for this assignment.

At POH1, the public provided input on the need for a new Credit River crossing in the Port Credit area. Feedback indicated that there was interest in considering an additional crossing; however, the type and location were varied. At POH3, the evaluation of the alternative crossings and the recommended preferred alternatives were presented to the public. The public was able to comment on the recommendations and following POH3, the recommendations were confirmed.

Multi-Modal Crossing

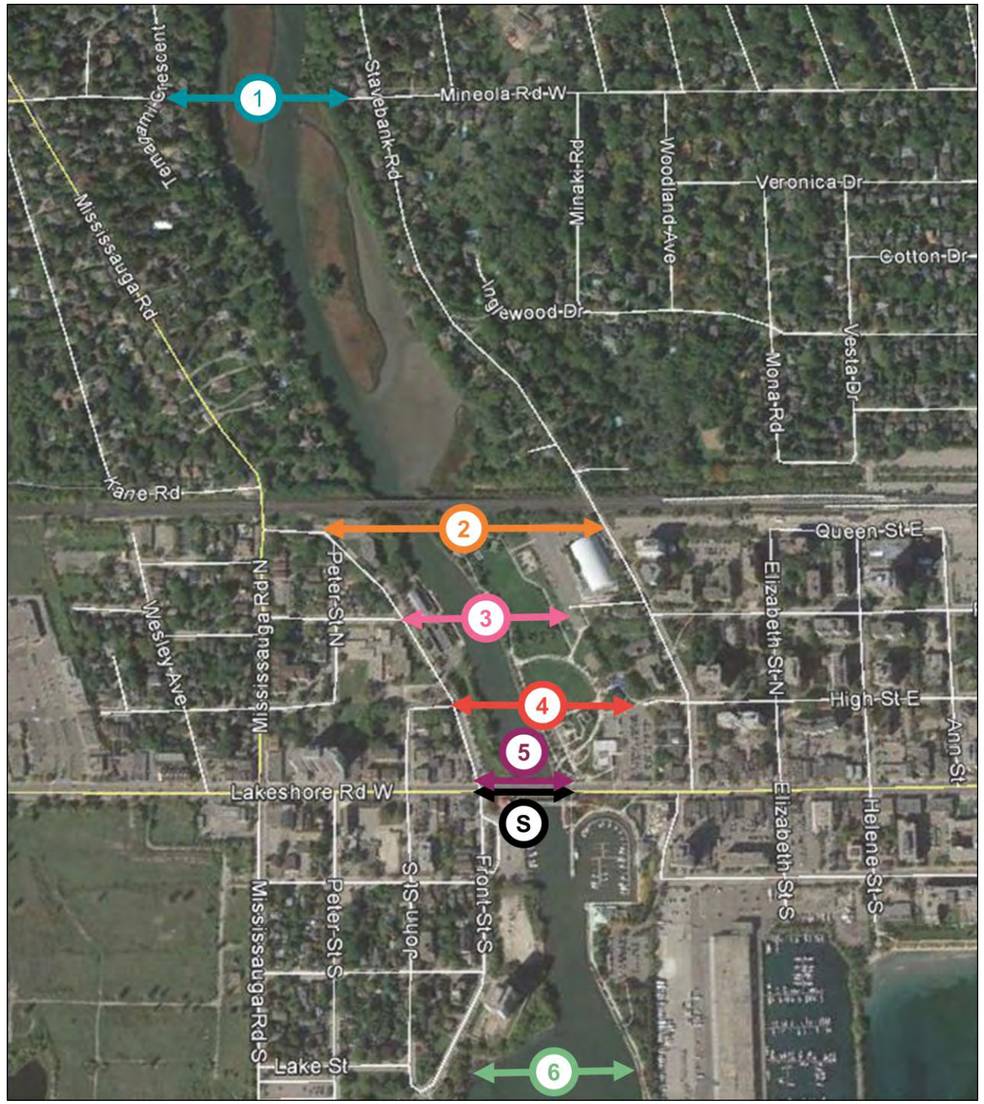
This type of crossing accommodates all ways of travelling, including: walking, cycling, transit, and driving.

- **N** Do Nothing
- **S** Streetcar/Express Bus on Existing Bridge
- **1** Mineola Road Extension
- **2** Queen Street Extension
- **3** Park Street Extension
- **4** High Street Extension

Non-vehicular Crossing

This type of crossing accommodates non-vehicular ways of travelling, including: walking, and cycling only.

- **N** Do Nothing
- **1** Mineola Road Extension
- **2** Queen Street Extension
- **3** Park Street Extension
- **4** High Street Extension
- **5** New Bridge on north side of Existing Lakeshore Road Bridge
- **6** Inspiration Port Credit Bridge



Credit River crossing alternative locations

Refer to **Section 5.3** of the TMP Report for detailed evaluation of all Credit River crossing alternatives.

Corridor Design Key Highlights

Traffic Capacity

Moving people safely and efficiently as well as promoting prosperity for local businesses were guiding principles of the Study.

Traffic congestion and delay to motorists was identified through the needs assessment as an issue for travelling along the Study Corridor.

The problem or opportunity statement noted that with limited road capacity, greater reliance on transit, walking, and cycling is required; therefore, no new road capacity was recommended as part of this Study.

However, to increase the people moving capacity of the Study Corridor and create a complete street a reduction in traffic capacity was explored. Through the evaluation of alternatives it was found that four lanes were required to be maintained along the Study Corridor due to it's significance as the only continuous east-west arterial street south of the QEW.

4 **General purpose through-traffic lanes will be maintained along the Study Corridor.**

Turn lanes will be provided at key intersections to accommodate left turns and U-turns (where the median exists).

Parking

Promoting prosperity for local businesses as well as designing for all ages and abilities were guiding principles of the Study.

Layby parking was found to be highly utilized in the Port Credit area during most time periods and was identified through the needs assessment as an important feature in the Port Credit area.

The problem or opportunity statement noted that with limited road capacity, greater reliance on transit, walking, and cycling is required; therefore, a reduction in layby parking capacity allowed for reallocation of road space to other modes such as walking and cycling. However, due to the utilization of layby parking and the projected future need for an increased supply in the Port Credit area, the corridor design allowed for some layby parking to be maintained.

Layby parking is flexible in its use and could become short term pick-up and drop-off locations for ridesharing, shared autonomous vehicles, or converted to streetscaping or patio space for cultural use in the future as the need for parking changes overtime.

89 **Layby parking spaces have been provided along the Study Corridor.**

There is an overall loss of 169 parking spaces along the Study Corridor which will result in a loss in revenue to the City of Mississauga.

Access Management

A lack of defined driveway accesses to retail/commercial plazas occurs along Lakeshore Road between Seneca Avenue and the Etobicoke Creek. Continuous curb cuts provide access along the entire frontage of a property and creates opportunities for conflicts between vehicles and pedestrians on sidewalks. Consolidation of access points along the Study Corridor is preferred from a traffic and safety perspective.

There is a two-way centre-left-turn lane (TWCLTL) or continuous left turn lane within the following sections of the Study Corridor:

- Winston Churchill Boulevard to Southdown Road
- Inverhouse Drive to Johnson's Lane
- Mississauga Road to John Street
- Seneca Avenue to the Etobicoke Creek

There is a need to provide left turn access in these segments. It was recommended through the TMP that an access management strategy for Lakeshore Road be developed during subsequent phases of the Study to define the City's policies for consolidating accesses such as through the development application process.

Poorly Defined Private Property Driveway Access (Lakeshore Road and Haig Boulevard)

Corridor Design Key Highlights

Cycling and Pedestrian Facilities

The conceptual corridor design incorporates sidewalks and one-directional off-road cycling facilities in each boulevard along the Study Corridor. The minimum sidewalk width varies amongst the segments from 1.8 m to 2.1 m.

The cycling facility will be a raised cycle track and have a 2.0m width along the corridor, with the exception of in Segments 4, 5A, and 5C where it will have a minimum 1.5m width.

As requested by MiWay the need for mid-block pedestrian crossings at these locations are subject to future study:

- East of Winston Churchill Boulevard;
- Porcupine Avenue / Festavon Crescent;
- Ibar Way;
- Between Orchard Road and Fergus Avenue; and
- East of Dixie Road at the eastern study limits.

To provide a separated crossing of Lakeshore Road in the vicinity of the Lakeshore Road and Front Street area, the City of Mississauga has proposed a pedestrian crossing under the Lakeshore Road Bridge on the west side of the Credit River (currently included in the plans to redevelop Marina Park and the west side of Port Credit Memorial Park) and is subject to the approval of CVC.

Public and stakeholder consultation indicated support for continuous, dedicated and separated active transportation facilities in the conceptual corridor design.

To promote transit usage on the express bus and adjacent rapid transit lines, it is recommended that the pedestrian connections on the fine grain street networks in major development areas be designed to enhance the pedestrian experience to create safe, interesting, and direct walking links to express bus stops. The following specific recommendations are made for consideration in future phases of the project:

- Widening of the sidewalk on Hurontario St (west side) between Lakeshore Road and Park St (i.e. future HuLRT station) to accommodate future pedestrian demand from transferring passengers from Lakeshore Road express bus to HuLRT.
- Improved walking and cycling connections on Ann St and Helene St for pedestrians and cyclists on Lakeshore Road to access the Port Credit GO Station.

Sidewalk

Street furniture, trees, and lighting along sidewalks

Wide sidewalks

Lighting

Light Fixture

Consistent light posts contribute to a safe pedestrian space

Parking

Maintain layby parking

Layby parking can be converted to patio space

Street Furniture

Constant street furniture between transit stops

Vibrant and colourful street furniture

Wayfinding

Clear wayfinding throughout Lakeshore Road

Consistent wayfinding throughout Lakeshore Road

Street Trees

Trees lining the sidewalk act as a buffer from vehicular traffic

Street medians with greenery

To create a vibrant public space and enhance main street features, the Study Corridor has been designed to prioritize the pedestrian. Pedestrian facilities were designed to maximize: the width of sidewalks, number of street trees, and space for street furniture, lighting, and wayfinding. In the traditional main street areas along the Study Corridor, such as in Clarkson and Port Credit, the street was designed to improve safety with narrower traffic lanes and frequent well designed pedestrian crossings. To support the vibrancy of these areas, the street design was developed with cultural programming in mind and the ability to be flexible to the changing needs of the street over time.

Recommendation for dedicated and continuous bike lanes between Winston Churchill Boulevard and the Etobicoke Creek are separated from vehicular traffic.

Crossrides are included in the corridor design which are pavement markings provided to indicate the intended path for cyclists and delineate a crossing space separated from vehicles and pedestrians.

Bike boxes are provided at select signalized intersections to accommodate left turning cyclists for eastbound-to-northbound and westbound-to-southbound movements.

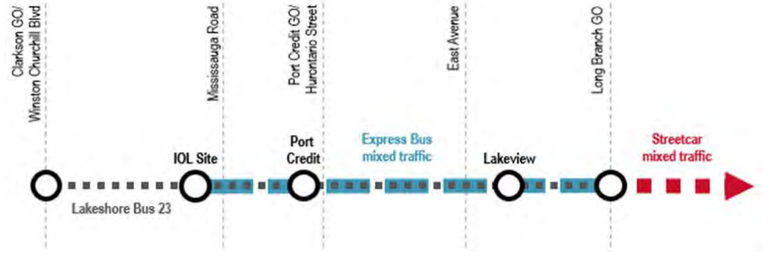
Implementation and Phasing

Implementation of improvements is dependent on administrative prioritization. Depending on available funding and municipal priorities, the timing for this project to proceed with environmental assessment approvals, detailed design and construction may vary. The implementation strategy of the interim recommendation and ultimate recommendation follows a phased approach. For all phases of implementation the existing local service (Route 23) will be maintained to complement express bus service between Clarkson GO Station and Long Branch GO Station, via Port Credit GO Station. Changes to transit service concepts are at the discretion of MiWay.

Phase 1

Transit Service Improvements

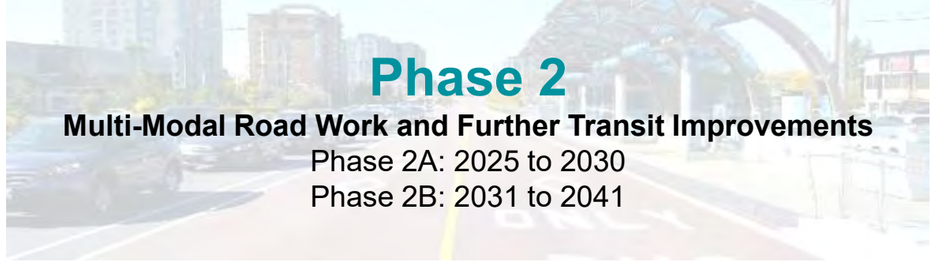
2019 to 2025



Phase 1 of the implementation strategy makes transit service improvements along the Study Corridor between 2019 and 2025 with minimal infrastructure requirements. Phase 1 will be realized in three sub-phases as follows:

A. Increase local bus service by doubling the peak frequency of the local bus
B. Upgrade local bus service from 40 ft to 60 ft buses to increase capacity
C. Introduce express bus service layered on top of the local bus service

New transit stop infrastructure (i.e. bus shelters) would be required to implement this phase; however, no new major transportation infrastructure would be required (i.e. road widening or re-construction).

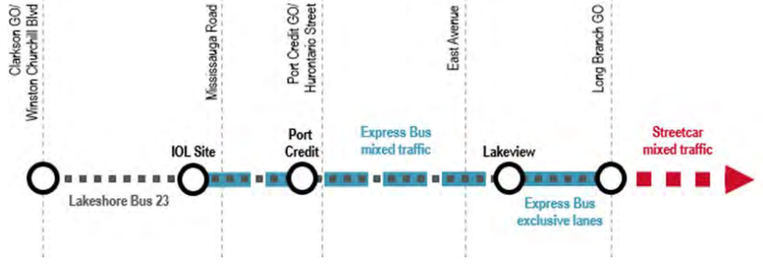


Phase 2

Multi-Modal Road Work and Further Transit Improvements

Phase 2A: 2025 to 2030

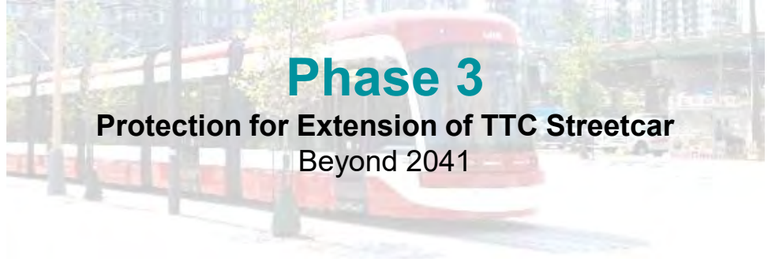
Phase 2B: 2031 to 2041



Phase 2 of the implementation strategy builds on Phase 1 and includes multi-modal road work improvements and further transit service improvements. Phase 2 will be realized in two sub-phases as follows:

A. Multi-modal road work (Shawnmarr Road to the Etobicoke Creek) and more frequent express bus service (70 Mississauga Road to Long Branch GO Station) to be implemented between 2025 and 2030. This phase involves constructing exclusive median transit lanes between East Avenue and the Etobicoke Creek. This should be completed with the development of the Lakeview Village development site to support transit oriented development and facilitate direct, fast, and reliable transit trips to and from the site to the Long Branch GO station and future regional express rail (RER) service on the Lakeshore West GO Line. In addition to the exclusive transit lanes, multi-modal road work improvements (as shown in the preferred corridor design for Segments 4 to 7) between Shawnmarr Road and East Avenue are also implemented during this phase. Transit signal priority at intersections along the route can also be implemented to provide travel time reliability in the mixed traffic section.

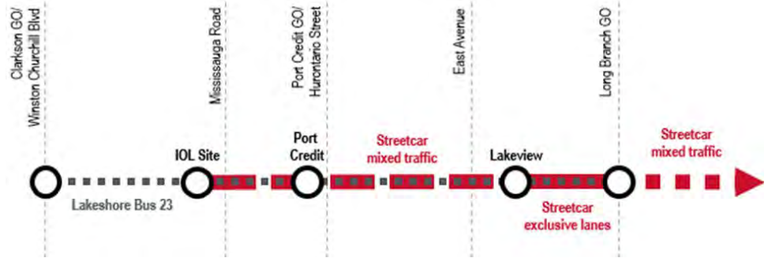
B. Multi-modal road work (Winston Churchill Boulevard to Shawnmarr Road) to be implemented following the completion of Phase 2A between 2031 and 2041. This phase includes multi-modal road work improvements (as shown in the preferred corridor design for Segments 1-3) between Winston Churchill Boulevard and Shawnmarr Road.



Phase 3

Protection for Extension of TTC Streetcar

Beyond 2041



Phase 3 (i.e. the final phase of implementation and ultimate transit configuration) involves the conversion of the express bus based transit service to an extension of the Toronto streetcar service operating in mixed traffic between Mississauga Road and East Avenue, and in exclusive lanes between East Avenue and the Etobicoke Creek to Long Branch GO Station.

In the fullness of time (i.e. beyond 2041), the Study Corridor has been designed such that the extension of the TTC streetcar into Mississauga from the Long Branch GO Station is protected for, subject to discussions with the City of Toronto. The extension of the TTC streetcar will allow for seamless transit travel between Toronto and Mississauga by eliminating a forced transfer and additional fare at the border.

Preliminary Capital Cost Estimate

The preliminary capital cost estimate was developed based on the Ministry of Transportation (MTO) parametric estimating guide and included costs for roadway construction (widening, rehabilitation, and reconstruction), transitway platforms, and major structure improvements including structural culverts (widening, rehabilitation, and reconstruction). Roadway construction costs included grading, drainage, urban sections, paving, granular materials, pavement markings, traffic control devices, roadside safety and minor utility relocation. Landscaping cost included enhanced landscaping features such as the soil cell system. The preliminary capital cost estimates did not include property costs or operating and maintenance costs. The preliminary capital cost estimate was prepared for the complete improvements to the Study Corridor as per the preferred corridor design.

The proposed improvements are not expected to be completed at once and a phased implementation is proposed. The capital cost estimates for each phase are presented below. A capital cost for Phase 3 (i.e. extension of the Streetcar) has not been presented as it is beyond the study horizon and not within the scope of this Study.

Phase	Description	Timeline	Additional Person Capacity (Peak hour in peak direction)	Approximate Capital Costs	Additional Annual Operating Cost
Phase 1 (Short to Medium Term Transit Service Improvement)		**2019 to 2025**	**Transit Capacity**		
A	Increase Local Bus Service		100	$2.4M	$1.6M
B	Improve Local Bus Service and upgrade to 60 ft buses		280	$3.6M	$0
C	Introduction of Express Bus Service		300	$4.8M	$3.5M
	Total		**680**	**$10.8M**	**$5.1M**
Phase 2 (Medium to Long Term Multi-modal Road Work)			**Multi-Modal Capacity**		
A	Multi-Modal Road Work and Frequent Express Bus Service (Shawnmarr Road to Etobicoke Creek)	**2025 to 2030**	3,200-4,700	$94M - $151M	**TBD**
B	Multi-Modal Road Work (Winston Churchill Blvd to Shanmarr Rd)	**2031 to 2041**	2,000-3,000	$60M - $100M	
	Total			**$154 - 251M**	
Phase 3		**Post 2041**	**To be explored in future years / studies**		

Next Steps

This report documents the approach and recommendations from the Transportation Master Plan process per the Municipal Class EA process. It serves as the basis for, and will be used in support of, future investigations to fulfill Municipal Class EA requirements for the project recommendations identified from this Master Plan.

The Final Lakeshore Connecting Communities Transportation Master Plan Report will be presented to City Council for endorsement and should its recommendations be endorsed, the project will progress to the next phase as follows:

- Schedule ‘C’ Municipal Class Environmental Assessment (EA) for Royal Windsor Drive (from Winston Churchill Boulevard to Southdown Road) and for Lakeshore Road (from Southdown Road to the Etobicoke Creek).
- Schedule ‘C’ Municipal Class Environmental Assessment (EA) for a new crossing of the Credit River linking the east and west side of the River south of the existing railway crossing generally to connect the Front St and Queen St right-of-ways. This TMP recommended an active transportation only crossing at this location; however, the EA should consider both an active transportation and vehicular crossing at this location.

Lakeshore
Connecting
Communities

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1 Introduction

The City of Mississauga has completed the Lakeshore Connecting Communities Study (the Study) which guided the planning of Lakeshore Road (Southdown Road to the east City limit) and Royal Windsor Drive (Southdown Road to the west City limit) ("the Study Corridor"). Input from the public was integral to defining issues and opportunities and refining final recommendations. The aim of the Study was to provide a unified and seamless vision that:

- Recognized the different character areas and supported all modes of transportation;
- Connected people to places and moved goods to market;
- Supported existing and future land uses; and
- Established an implementation plan to make the vision a reality.

This Transportation Master Plan (TMP) Report documents the process followed and the conclusions reached with respect to the transportation alternatives and recommended solutions. This report was prepared in accordance with Phase 1 and 2 of the Municipal Class Environmental Assessment (EA) process.

1.1 Study Purpose

The purpose of the Study was to:

- Articulate a vision for the Study Corridor as developed through recent planning initiatives (i.e. Clarkson Village Study, Inspiration Lakeview, Inspiration Port Credit, and the Port Credit and Lakeview Local Area Plans);
- Determine the long term transportation needs and function of the Study Corridor based on projected population and employment growth;
- Assess the need and timing of higher order transit between Hurontario Street and the east City limit, as well as extending rapid transit into the Port Credit area; and
- Identify policy, operational and physical improvements for the Study Corridor.

1.2 Study Process

This Study followed the master planning process (Approach 1) described in the Municipal Engineers Association Municipal Class Environmental Assessment (October 2000, as amended in 2007, 2011, and 2015). The project involved multi-modal transportation planning, urban design, and land use planning. The Master Plan process satisfied Phases I (Identify Problem and Opportunity) and II (Identify and Evaluate Alternative Solutions to the Problem or Opportunity) of the Municipal Class EA process as shown in **Exhibit 1-1**.

This report documents the approach and recommendations from the Transportation Master Plan process per the Municipal Class EA process. It serves as the basis for, and will be used in support of, future investigations to fulfill Municipal Class EA requirements for the project recommendations identified from this Master Plan.

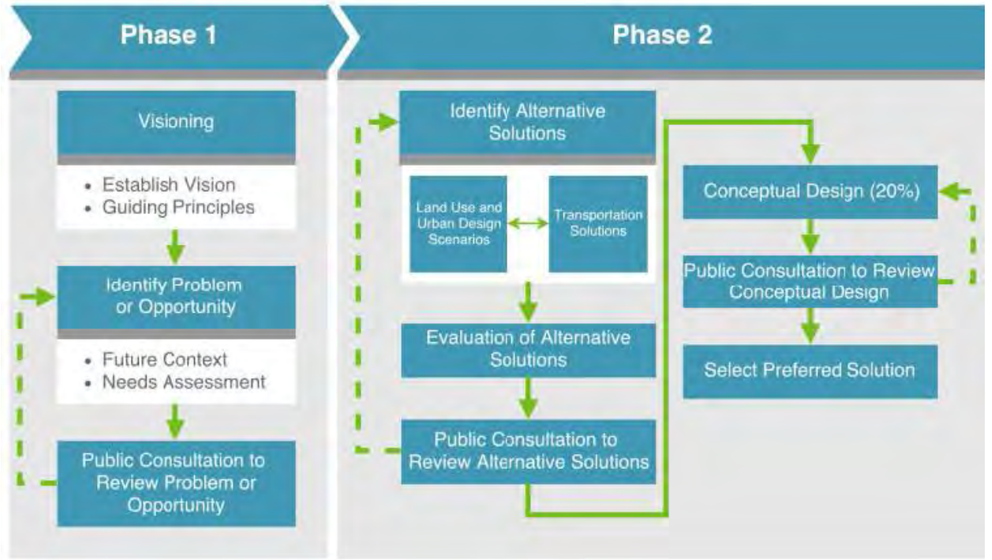


Exhibit 1-1 Municipal Class EA Process

1.3 Study Area

The Study Corridor is 13 km long, and includes Lakeshore Road between Southdown Road and the east City limit and Royal Windsor Drive between the west City limit and Southdown Road. The three community nodes of Clarkson Village, Port Credit, and Lakeview (i.e. the Lakeshore Communities) as well as the linkages between these areas were the focus of the study.

Although the focus of the study was the Lakeshore Road corridor, the analysis of transportation conditions was completed in the context of a wider study area defined as the Strategic Analysis Area from the QEW to Lake Ontario and from the east City limit to the west City limit.

The Study Corridor, Community Nodes, and Strategic Analysis Area are depicted in **Exhibit 1-2.**

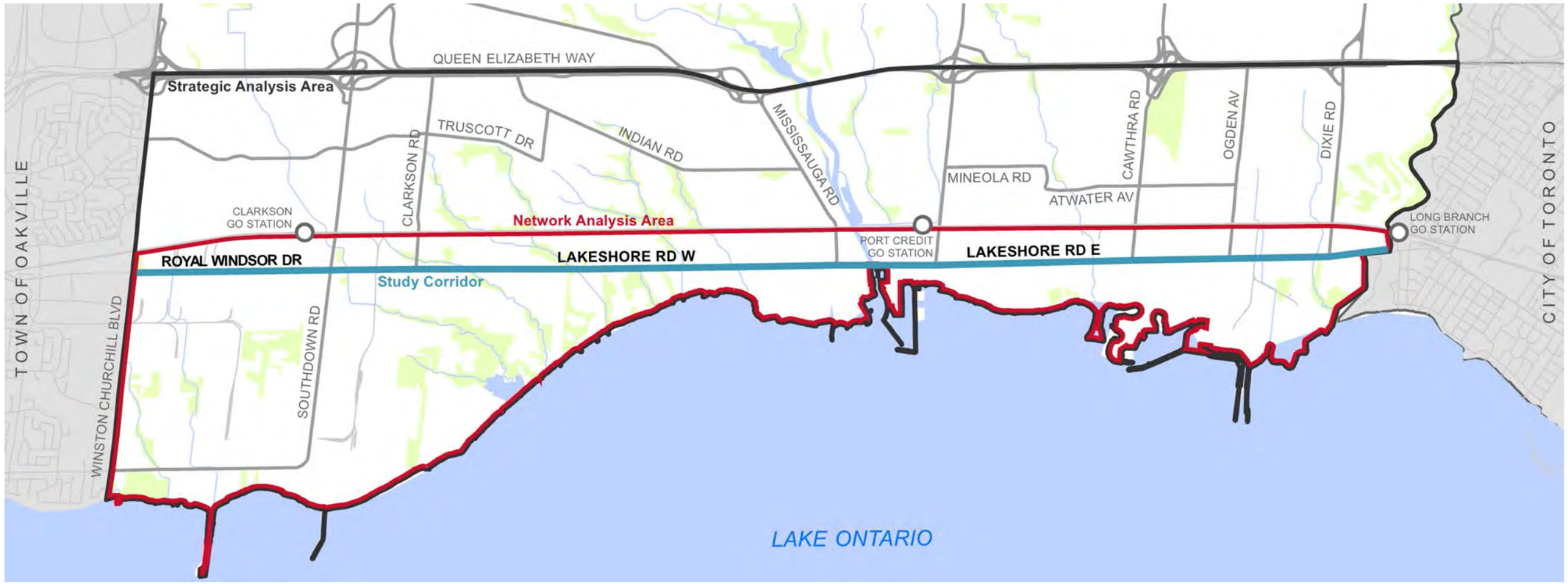


Exhibit 1-2 Lakeshore Connecting Communities Study Area

1.4 Public Consultation and Engagement

This section outlines the public engagement undertaken as part of this Study.

The goal of the public process was to engage directly with residents and stakeholders along the Study Corridor and across the city to provide easy to understand information so as to facilitate a good understanding of the scope of the work and opportunities for influencing outcomes. The public consultation and engagement approach provided opportunities for feedback from the general public through online, in print (newspaper advertisements) and in person (public open house) forums. The public feedback identified perspectives and challenges experienced with transportation in the study area, heard the public's vision for the Corridor, identified ideas and opportunities for addressing transportation improvements, and provided input on evaluation criteria, alternative solutions, and the recommended improvements.

Public consultation objectives included the following:

- To engage directly with residents and stakeholders along the Study Corridor.
- To build awareness through pop-up workshops.
- To establish a one window point of contact for sending comments.
- To publish information and updates through the Lakeshore Connecting Communities page on the city's website.
- To develop visual public meeting material that would be easy to understand and would assist in the public's ability to provide input.
- To provide opportunities for input through face to face and online mechanisms.
- To provide transparent accountable feedback reports to help the community understand what was being heard and how this would influence the study deliverables and final recommendations.

The following is a comprehensive list of touch points with the public during the course of the Study:

- Notice of Commencement (May 9, 2016)
- Lakeshore Connecting Communities webpage on the City's website
- Single point of contact for sharing comments via project website
- Social media to promote engagement events and opportunities
- Use of bookmarks to promote awareness of project
- Use of project mailing list to provide notice of events
- Pop-up Workshops (Five held over August 22 and 23, 2016)
- Business Community Workshop (October 6, 2016)
- Online Survey (June to December 2016) available through the Lakeshore Connecting Communities webpage, at Pop-up Workshops and Public Open House 1
- Public Open House (POH) 1 (November 1, 7, 8, 2016)
- Walkability Audit
  - Clarkson (May 13, 2017)
  - Port Credit (May 27, 2017)
- Public Open House 2 (September 20, 26, 27, 2017)
- Public Open House 3 (July 12, 16, 24, 2018)
- Comment tracking and responding.
- Publishing detailed public feedback reports on the webpage (with key messages heard and verbatim comments).

Public notices, online survey summary results, POH display boards, POH summary reports, and walkability audit results are provided in **Appendix A**.

1.4.1 Notice of Commencement

The Notice of Commencement was issued through the following means to introduce the study to the public and interested stakeholders:

- Distribution of notice to unaddressed mail notices via Canada Post Neighbourhood Mail to all the properties between the Lakeshore GO rail line and Lake Ontario within the City of Mississauga (week of June 6, 2018).
- Distribution of notice by email to agencies, project stakeholders and individuals who signed up for the mailing list (week of June 6, 2018).
- Direct mail letter and notice of commencement to Indigenous contacts (week of June 6, 2018 and also by email) ;
- Advertisements in Mississauga News, newspaper with local circulation, on June 9 and 16, 2016

The notice of commencement and all other study notices are provided in **Appendix A.1**.

1.4.2 Pop-Up Workshops

A series of pop-up workshop were held on August 22 and 23, 2016. A display with visually appealing images and study area facts was placed for two to three in areas of high foot traffic and attracting passersby's to participate for a few minutes by sharing future vision and transportation ideas on post-it notes. The project team set up pop-up workshops at the Port Credit GO Station, Clarkson GO Station, Corbasson Community Centre, and the Clarkson Community Centre. Over the course of two days, 93 individual comments/ideas were collected and 400 bookmarks were distributed to advertise the Online Survey, upcoming Public Open Houses and the Study itself. The survey was available at the two community centres and many residents took the opportunity to complete it on the iPads provided. Key themes heard at the pop-up workshops were as follows:

- Improve overall safety for pedestrians.
- Increase the number of places to sit along the Study Corridor.
- Increase the number of trees along the Study Corridor for shade.
- Physically separated bike facilities were highly supported.
- Improve transit connections and timing between local buses and GO Trains.
- Increase frequency of local transit buses.
- Implement more express buses and north-south routes.

Exhibit 1-3 Pop Up Workshop Display Board

Exhibit 1-4 Member of the Public Completing Comment Form at POH1

1.4.3 Online Survey

An online survey was conducted between June and December 2016 to ask for input on how people travel to work, school, shopping and everyday activities in the Lakeshore Communities. More than 300 people participated in the survey. The survey was comprised of 10 questions and took approximately five to ten minutes to complete. It was promoted through the City's social media channels, through the distribution of post cards at Pop-up Workshops and Public Open House 1. The survey was available for taking on iPads at two of the Pop-Up Workshops, at Public Open House 1, and available through the Lakeshore Connecting Communities webpage.

Key feedback from the survey included:

- Green spaces, community character, and trails and paths are desirable features of the Lakeshore Communities;
- Vehicle speeds and safety at crossings are concerns for pedestrians;
- Lack of safety and conflict with drivers are concerns for cyclists;
- Long wait times and long travel times are concerns for transit users;
- Congestion/delays and safety are concerns for drivers; and
- Separated off-road cycling paths, continuous cycling paths, better walking/cycling connections and streetscaping are desired to improve the travelling experience in the corridor.

The results of the online survey are available in **Appendix A.2**.

1.4.4 Public Open Houses

Three (3) rounds of public open houses (POH) were conducted during the Study at key milestones to receive input from the public to inform future phases of the Study. Each round included an open house in three (3) locations across the Study Corridor. Over the course of the Study approximately 685 people attended the POHs.

Each session was organized as a drop-in informal open house to provide the opportunity for community members to drop-in anytime over a two to three hour period and visit interactive information stations where information was displayed and the Project Team was available to discuss the study as shown in **Exhibit 1-4**. The format for the Open House maximized opportunities for individuals to review the information and provide ideas and input. Open Houses were designed to maximize input through interactive stations and use of a variety of participation methods. Public open house display boards are provided in **Appendix A.3**.

Public input was received through comment forms, writing on flipcharts, use of post-its, drawing on maps and placing dots to indicate preferences. Members of the public could view the ideas of other participants and add to these. Detailed feedback reports were published for each round of consultation and included key messages and verbatim comments. These were posted on the Lakeshore Connecting Communities webpage and are provided in **Appendix A.4**.

1.4.4.1 PUBLIC OPEN HOUSE #1

The first Public Open House was held as a drop-in style meeting between 5:30PM and 8:30 PM at the following locations in Mississauga:

- November 1, 2016 at Mississauga Seniors' Centre, 1389 Cawthra Road
- November 8, 2016 at Clarke Memorial Hall, 161 Lakeshore Road West
- November 18, 2016 at Chartwell Baptist Church, 1880 Lakeshore Road West

The purpose of Public Open House #1 was to:

- Describe the problem and opportunity.
- Summarize the technical work completed to date.
- Identify opportunities and challenges for travelling in the Lakeshore Communities.
- Help to develop a vision for Lakeshore Road in Mississauga by providing input on options for improving how people get around including walking, cycling, transit and driving.
- Discuss next steps.

Various communication mediums were used to invite the public and interested stakeholders to POH #1, including:

- Distribution of unaddressed mail notices via Canada Post Neighbourhood Mail to all the properties between the Lakeshore GO rail line and Lake Ontario within the City of Mississauga (week of October 24, 2016).
- Distribution by email to project stakeholders and individuals who signed up for the mailing list (week of October 17 and October 24, 2016).
- Email letter and notice of Open House to agencies, stakeholders
- Direct mail letter and notice of Open House to Indigenous contacts;
- Updates to the project website (www.connectlakeshore.ca) including notification of Open House, Open House display materials, and online comment form (survey)
- Advertisements in Mississauga News, newspaper with local circulation, on Thursday October 20, 2016 and Thursday October 27, 2016
- Social media updates: City of Mississauga Facebook and Twitter posts (week of October 17, 2016)

Members of the City of Mississauga and HDR project team were in attendance at the POH to answer questions, record comments and discuss issues with the public. Members of the public filled out the sign-in sheet upon arrival, and indicating whether they wanted to be added to the project mailing list. Those who were not already on the mailing list were added to the mailing list following the Open House. An image of a member of the public completing the interactive cross section activity at POH1 is shown in **Exhibit 1-5**.

Exhibit 1-5 Public Open House 1 (interactive Cross Section Activity)

Each Open House included the following information:

- Three stations with display boards
  - Station 1: background information, future vision brainstorming wall map, online survey
  - Station 2: existing conditions, large aerial maps with post it notes to note locations of concern or interest
  - Station 3: planned growth, identification of problems and visual preference activity, interactive cross section activity, and problem/opportunity statement
- Hard copies of the Comment Form

The three Open Houses were attended by approximately 240 people as noted from the sign-in sheets. Key themes heard from POH#1 are discussed in **Section 4.3**. Additional comments received at the POH are included in **Appendix A.4**.

1.4.4.2 PUBLIC OPEN HOUSE #2

The second Public Open House was held as a drop-in style meeting between 5:30PM and 8:30 PM at the following locations in Mississauga:

- September 20, 2017 at Clarke Memorial Hall, 161 Lakeshore Road West from 5:30 to 8:30 p.m.

- September 26, 2017 at Mississauga Seniors' Centre, 1389 Cawthra Road from 5:30 to 8:30 p.m.
- September 27, 2017 at Chartwell Baptist Church, 1880 Lakeshore Road West from 5:30 to 8:30 p.m.

The purpose of Public Open House #2 was to:

- Describe the preferred transit strategy for the Lakeshore Communities.
- Present the analysis of an additional crossing of the Credit River.
- Describe alternative street designs for Lakeshore Road and Royal Windsor Drive.
- Summarize the technical work completed to date.
- Discuss next steps.

Various communication mediums were used to invite the public and interested stakeholders to POH #2, including:

- Distribution of unaddressed mail notices via Canada Post Neighbourhood Mail to all the properties between the Lakeshore GO rail line and Lake Ontario within the City of Mississauga (September 7, 2017).
- Distribution by email to project stakeholders and individuals who signed up for the mailing list (September 11, 2017).
- Email letter and notice of Open House to agencies, stakeholders
- Direct mail letter and notice of Open House to Indigenous contacts;
- Updates to the project website (www.connectlakeshore.ca) including notification of Open House, Open House display materials, and online comment form (survey)
- Advertisements in Mississauga News, newspaper with local circulation, on September 7, 2017 and September 14, 2017.
- Social media updates: City of Mississauga Facebook and Twitter posts (weeks of September 4, 2017, September 11, 2017, September 18, 2017 and the week of September 25, 2017)

Members of the City of Mississauga and HDR project team were in attendance at the POH to answer questions, record comments and discuss issues with the public. Members of the public filled out the sign-in sheet upon arrival, and indicating whether they wanted to be added to the project mailing list. Those who were not already on the mailing list were added to the mailing list following the Open House.

Each Open House included the following information:

- Four stations with display boards
  - Station 1: Summary of what was heard at POH1, summary of Problem/Opportunity Statement, and vision and guiding principles activity,
  - Station 2: alternative transit networks considered, draft stop locations, preferred transit strategy and phasing,
  - Station 3: alternative Credit River Crossings considered and the benefits/impacts of each crossing option
  - Station 4: principles of corridor design, corridor segmentation, right-of-way alternatives and factual evaluation based on key metrics
- Hard copies of the Comment Form

The three Open Houses were attended by approximately 225 people as noted from the sign-in sheets. Key themes heard from POH#2 are discussed in **Sections 5.1.11, 5.2.12, and 5.3.4**. Additional comments received at the POH are included in **Appendix A.4.**

1.4.4.3 PUBLIC OPEN HOUSE #3

The third Public Open House was held as a drop-in style meeting between 6:30PM and 8:30 PM at the following locations in Mississauga:

- July 12, 2018 at Mississauga Seniors' Centre, 1389 Cawthra Road, Lakeview from 6:30 to 8:30 p.m.
- July 16, 2018 at First United Church, 151 Lakeshore Road West, Port Credit from 6:30 to 8:30 p.m.
- July 24, 2018 at Christ Church, UCC, 1700 Mazo Crescent, Clarkson from 6:30 to 8:30 p.m.

The purpose of Public Open House #3 was to:

- Present phased approach to rapid transit.
- Present cycling and pedestrian network improvements.
- Present conceptual design and public realm enhancements
- Present Credit River crossing recommendations
- Discuss next steps.

Various communication mediums were used to invite the public and interested stakeholders to POH #3, including:

- Distribution of unaddressed mail notices via Canada Post Neighbourhood Mail to all the properties between the Lakeshore GO rail line and Lake Ontario within the City of Mississauga (sent out June 28, 2018).
- Distribution by email to project stakeholders and individuals who signed up for the mailing list (week of June 25 and July 2, 2018).
- Email letter and notice of Open House to agencies, stakeholders
- Direct mail letter and notice of Open House to Indigenous contacts;
- Updates to the project website (www.connectlakeshore.ca) including notification of Open House, Open House display materials, and online comment form (survey)
- Advertisements in Mississauga News, newspaper with local circulation, on June 28, 2018 and July 5, 2018.
- Social media updates: City of Mississauga Facebook and Twitter posts (June 28, July 5 July 15, July 16, July 23, and July 24, 2018).

Members of the City of Mississauga and HDR project team were in attendance at the POH to answer questions, record comments and discuss issues with the public. Members of the public filled out the sign-in sheet upon arrival, and indicating whether they wanted to be added to the project mailing list. Those who were not already on the mailing list were added to the mailing list following the Open House.

Each Open House included the following information:

- Four stations with display boards
  - Station 1: summary of what was heard at POH2, and the study process to date

- Station 2: phased approach to transit, proposed transit stop locations, transportation and land use, cycling recommendations, pedestrian space recommendations, and people movement/access recommendations
- Station 3: summary of the proposed corridor design and public realm recommendations. Included roll plans of the corridor with the preferred corridor design showing potential property taking.
- Station 4: Summary of the Credit River Crossing recommendations

- Hard copies of the Comment Form

The three Open Houses were attended by approximately 220 people as noted from the sign-in sheets. Key themes heard from POH#3 are discussed in **Sections 5.1.11, 5.2.12, and 5.3.4**. Additional comments received at the POH are included in **Appendix A.4.**

1.4.5 Walkability Audit

The project team in collaboration with the Region of Peel conducted two walking audits; one in Clarkson (May 13, 2017) and the other in Port Credit (May 27, 2017) as shown in **Exhibit 1-6**. The purpose of the audit was for participants to comment and score the walking environment and place qualities of an area and provide recommendations for improvements. Approximately 10-15 people participated at each walking audit. Key feedback from the walking audit was to create accessible spaces for all people, create interesting and unique pedestrian spaces, and improve the quality of service for pedestrians (i.e. wider sidewalks, improve condition of sidewalks, enhanced connections, and more mid-block crossing locations). A summary of each audit is provided in **Appendix A.5**.

Exhibit 1-6 Port Credit Walkability Audit

1.5 Stakeholder Consultation and Engagement

This section outlines the stakeholder engagement undertaken as part of this Study. Key correspondence with stakeholders is provided in **Appendix B.1**.

Internal City of Mississauga stakeholders and external stakeholders were also consulted throughout the Study at key milestones to review recommendations and provide input. The following stakeholder groups were consulted with during the Study:

- City of Mississauga Core Team
  - Corporate Communications
  - Development and Design
  - MiWay
  - Parks and Forestry
  - Policy Planning
  - Strategic Community Initiatives
  - Transportation and Infrastructure Planning
- City of Mississauga Steering Committee
  - Director, Development and Design
  - Director, Engineering and Construction
  - Director, MiWay
  - Director, Parks and Forestry
  - Director, Policy Planning
  - Director, Strategic Community Initiatives
  - Director, Transportation and Infrastructure Planning
  - Director, Works Operations and Maintenance
- Technical Advisory Committee (TAC) (See **Section 1.5.1**)
- Public Agencies (in addition to TAC)
  - Canada Lands Corporation
  - Conservation Halton
  - Dufferin-Peel Catholic District School Board
  - Environment Canada
  - Fisheries and Oceans Canada
  - Infrastructure Ontario
  - Ministry of Aboriginal Affairs
  - Ministry of Economic Development, Employment and Infrastructure
  - Ministry of the Environment, Conservation and Parks
  - Ministry of Municipal Affairs and Housing
  - Ministry of Natural Resources, Strategic Coordination and Integration
  - Ministry of Natural Resources
  - Ministry of Tourism, Culture, and Sport
  - Ontario Provincial Police (OPP)
  - Ontario Realty Corporation
  - Peel District School Board
  - Peel Regional Police (12 Division)
  - Regional Municipality of Halton

- Committees
  - Accessibility Advisory Committee
  - Environmental Advisory Committee
  - Heritage Advisory Committee
  - Mississauga Cycling Advisory Committee
- Other
  - Area Business Improvement Areas (BIAs) and ratepayer groups
    - Port Credit BIA
    - Clarkson BIA
    - The Applewood Acres Homeowners Association, Ward 1
    - Cranberry Cove Port Credit Ratepayers' Association, Ward 1
    - Credit Reserve Association, Ward 1
    - Lakeview Ratepayers' Association, Ward 1
    - Orchard Heights Town & Country Homeowners Association, Ward 1
    - Port Credit Village Ratepayer Association, Ward 1
    - The Town of Port Credit Association, Ward 1
    - Sherway Homeowners and Recreation Association, Ward 1
    - Birch Glen Residents' Association, Ward 2
    - Clarkson Fairfields South Ratepayers Association, Ward 2
    - Council of South Mississauga Community Associations, Ward 2
    - Hillcrest Ratepayers Association, Ward 2
    - Lorne Crest Community Association, Ward 2
    - Lorne Park Estates Association, Ward 2
    - Lorne Park Watercolours Residents Association, Ward 2
    - Meadow Wood Rattray Ratepayers Association, Ward 2
    - Mississauga - Kane Road Ratepayer Association, Ward 2
    - Owenwood Residents Association, Ward 2
    - Park Royal Community Association, Ward 2
    - Parkland Area Residents Association, Ward 2
    - Whiteoaks/Lorne Park Community Association, Ward 2
  - Landowners, residents and business operators
  - Public transit users
  - Politicians (Local Ward 1 and 2 Councilors, Member of Provincial Parliament, and Member of Parliament)
  - Utility companies
    - Alectra
    - Bell Canada
    - Cogeco Data Services
    - Enbridge Gas Distribution
    - Hydro One
    - Rogers
    - TELUS

1.5.1 Technical Advisory Committee

A Technical Advisory Committee (TAC) was established at the onset of the Study to facilitate communication between the Project Team and other subject matter experts. TAC meetings were held throughout the study before or after each Public Open House (October 6, 2016, September 7, 2017, and September 21, 2018). Members of the TAC included representatives from:

- Region of Peel
- City of Toronto
- Toronto Transit Commission (TTC)
- Metrolinx
- Town of Oakville
- Oakville Transit
- Ministry of Transportation (MTO)
- Toronto and Region Conservation Authority (TRCA)
- Credit Valley Conservation Authority (CVC)
- Mississauga Advisory Committees

1.5.2 Business Community Workshop

A Business Community Workshop was held on Thursday, October 6, 2016, from 8:30 to 11:00 a.m. at Clarke Memorial Hall, (161 Lakeshore Road West, Port Credit). The purpose of the workshop was to receive input from area businesses to provide ideas about travelling by car, transit, walking and cycling including intersections, connections and parking. The workshop included an introduction to the project, sharing of information on existing travel patterns and interactive discussions on the valued characteristics, opportunities and challenges that were important to area businesses. A mix of business owners attended including representatives from area Business Improvement Areas. Key feedback from the business community workshop was as follows:

- Maintain the "main street" and "village" character of the Lakeshore Communities
- Improve pedestrian and cycling environment
- Create better transit connections
- Maintaining layby parking was important to some but not deemed necessary by all
- Improve transit frequency
- Saw incoming population and employment from developments as a challenge for the transportation network
- Noted importance of maintaining patios in Port Credit

The input from the business community workshop was considered in the development of the problem/opportunity statement.

1.6 Indigenous Community Consultation and Engagement

The project communication plan included an approach to consult with interested Indigenous Communities. In November 2016, the Project Team consulted with the Ministry of Indigenous Affairs to seek guidance on which Indigenous Communities should be engaged as part of this Study. The Ministry of Indigenous Affairs did not provide comment on the list of Indigenous Communities; therefore, all communities listed below were kept on the mailing list unless otherwise noted. Communities were engaged at key milestones throughout the project.

Correspondence tracking log with Indigenous Communities is provided in **Appendix B.2**.

Notifications were sent via email and registered mail to the following Indigenous Communities:

- Aamjiwnaang
- Alderville
- Algonquins of Pikwakanagan
- Aundeck Omni Kaning
- Beausoleil
- Bkejwanong Territory (Walpole Island)
- Caldwell
- Chippewas of Georgina Island
- Chippewas of Kettle & Stony Point First Nation
- Chippewas Of Nawash Unceded First Nation
- Chippewas of Rama First Nation
- Chippewas of the Thames First Nation 42
- Curve Lake First Nation
- Hiawatha First Nation
- M'Chigeeng First Nation
- Metis Nation of Ontario (Credit River Metis Council)
- Mississauga's of Scugog Island First Nation
- Mississaugas of the New Credit
- Mohawks of Akwesasne
- Mohawks of the Bay of Quinte
- Moravian of the Thames
- Munsee-Delaware Nation
- Oneida Nation of the Thames
- Saugeen First Nation
- Sheguiandah First Nation
- Sheshegwaning First Nation
- Six Nations of the Grand River
- Wikwemikong
- Zhiibaahaasing First Nation

The following Indigenous groups requested to be removed from the mailing list as they did not have an interest in the project:

- Chippewas Of Nawash Unceded First Nation
- Chippewas of the Thames First Nation 42
- Aundeck Omni Kaning

The following Indigenous groups noted an interest in the study and requested to remain on the contact list:

- Hiawatha First Nation
  - Requested to be updated as the Study progresses.
- Mohawks of the Bay of Quinte
  - Requested that Stage 1 Archaeological Study be forwarded to them when completed during future studies. An email notification was sent indicating that this will be sent during future studies.
- Mississauga's of Scugog Island First Nation
  - Noted that this Study is within Treaty #13A - Mississauga's of New Credit First Nation and they would defer to their consultation department.
- Chippewas of Rama First Nation
  - No action required; however, requested to remain on the study mailing list.
- Mississauga's of the New Credit First Nation (MNCFN)
  - It was noted that at this time, MNCFN has a low level of concern about the project. It was requested that the Project Team immediately notify MNCFN if there are any changes to the project as they may impact MNCFN's interests. Additionally, MNCFN requested a copy of all associated environmental and/or archaeological reports. Furthermore, MNCFN employs Field Liaison Representatives who must be on location whenever any fieldwork for environmental and/or archaeological assessments is undertaken. If additional work is scheduled, MNCFN should be notified as soon as possible to discuss and arrange for MNCFN's participation. An email notification was sent indicating that this will be sent during future studies.

The remainder of the Indigenous Communities did not respond to the email and registered mail notifications sent to them. The Project Team endeavored to follow up via phone call; however, no responses were provided. These groups remained on the mailing list and continued to receive notifications.

2 Existing Conditions

This section documents the existing conditions and planning context pertaining to the Study Corridor.

2.1 Planning and Policy Context

The following Provincial, Regional, City-wide, and area specific planning documents were reviewed to inform the Study.

Provincial Policies and Plans:

- Provincial Policy Statement, 2014
- Transit Supportive Guidelines, 2012
- Places to Grow, 2006

Peel Region Policies and Plans:

- Regional Official Plan, 2014 (and December 2016 Office Consolidation)
- Accessible Transportation Master Plan, 2013
- Road Characterization Study, 2013
- Long Range Transportation Plan, 2012
- Goods Movement Strategic Plan, 2012
- Water and Wastewater Master Plan, 2012
- Active Transportation Study, 2011
- Health Background Study, 2011
- Transportation Demand Management Study, 2004

Metrolinx/GO Transit Studies

- The Big Move, 2008
- Port Credit GO Station Southeast Area Master Plan, 2015
- Mobility Hub Guidelines, 2011
- Hurontario / Main Street Corridor Master Plan, 2010
- GO Transit Lakeshore Express Rail Benefits Case, 2009

Mississauga City Wide Policies and Plans

- MiWay 5 – Service Plan (2016-2020), 2015
- Hurontario-Main LRT Environmental Project Report, 2014
- Mississauga Official Plan, 2011
- Moving Mississauga, 2011
- Cycling Master Plan and Implementation Strategy, 2010 (updated in 2018)
- Natural Heritage and Urban Forestry Strategy, 2014
- Future Directions Report, 2014
- Natural Areas Survey, 2014
- Economic Development Strategy, 2010
- Strategic Plan, 2009
- Culture Master Pan, 2009
- The Waterfront Parks Strategy, 2008
- Accessibility Design Handbook, 2007
- Cultural Heritage Landscape Inventory, 2005

Mississauga Local Area Policies and Plans

- Lakeview Local Area Plan, 2015
- Inspiration Lakeview, 2014
- Port Credit and Lakeview Parking Strategy, 2014
- Port Credit Local Area Plan, 2014
- Clarkson Village Study, 2014
- Inspiration Port Credit, 2013
- Lakeshore Corridor Transportation Review, 2010
- Port Credit Harbour West Parks Pre-Design and Environmental Study Report, 2013
- Town of Port Credit Association's (TOPCA) White Paper and Lakeshore Corridor Summit Notes, 2012
- Stavebank Road and Lakeshore Road East Intersection Improvements Class Environmental Assessment, 2009
- Lakeview and Port Credit Public Engagement Process Directions Report, 2008
- Old Port Credit Village Heritage Conservation District (HCD) Plan, 2004

Details regarding the context of these planning documents in relation to the study corridor are documented in the study's **Future Planning Context Report, April 2016** found in **Appendix C**. Pertinent planning context that guided the study are highlighted in the following sections.

2.1.1 History of Streetcar on Lakeshore Road

The Study Corridor is currently serviced by local buses; however, this was not always the case. It was realized in the early nineteenth century that a transit connection between Toronto and southern Mississauga was a key connection to connect workers to employment along the Waterfront in this area.

The Toronto and Mimico Electric Railway and Light Company was incorporated in 1890, and operated the Mimico radial line in the Toronto area. The line started operation in 1892 as a short suburban line that later was extended to Port Credit by 1906. In 1928, the line was split into two portions and the section between Long Branch and Port Credit became the Port Credit Line which was a single track radial line operating every 30 minutes even overnight. In 1935 the Port Credit Line was ended and the tracks were taken up to make room for highway widening. Bus service eventually replaced the radial car line and currently services the Study Corridor till this day. Images of the radial car are shown in **Exhibit 2-1**.

Exhibit 2-1 Images of Port Credit Line Radial Car (Source: Top left - Lakeview: Journey from Yesterday, Kathleen A. Hicks, top and bottom right - City of Toronto Archives, bottom left – Heritage Mississauga)

Metrolinx 2041 Regional Transportation Plan (RTP)

Metrolinx 2041 RTP identifies part of Study Corridor as the future Waterfront West Light Rail Transit (WLRT) which is described as a new light rail transit corridor along the waterfront that links downtown Toronto and Port Credit. The RTP notes that all project definitions are subject to change based on negotiations and agreements with railways, environmental assessments, business case analyses, and further planning.

The RTP also identified 15 minute two-way all day GO train service on the Lakeshore West Line within the Strategic Analysis Area (SAA). This increase in service frequency within the NAA will improve transit availability for residents in the area and increase the need for improved multi-modal connections to GO Stations.

2.1.3 Regional Official Plan, 2014 (December 2016 Office Consolidation)

The Regional Official Plan (ROP) is a long-term policy framework used for decision making to address the significant growth that the Region will experience by the 2031 future horizon year. It provides regional context for managing resources to allow for coordinated growth that will efficiently and effectively serve the Region. General objectives in the transportation context that were considered include the following:

- To promote and encourage the increased use of public transit and other sustainable modes of transportation (5.9.1.4);
- To maximize the capacity of the transportation system by focusing on moving people and goods rather than on moving vehicles (5.9.1.6); and
- To support the integration of transportation planning, transportation investment and land use planning (5.9.1.10)

Regional Official Plan Amendment No. 27 (“ROPA 27”) came into effect on September 1, 2017 which included policies for health and built environment and age-friendly planning which was also applicable to this Study.

2.1.4 Mississauga Official Plan (OP), 2011

Chapter 8 of the Mississauga OP is especially important for this TMP as it states the policies for creating a multi-modal City. Lakeshore Road will continue to move large volumes of traffic and support goods movements; however, the design of the street must be sensitive to surrounding land uses. The needs of transit, pedestrians and cyclists will be prioritized at the forefront – transportation decisions will support the creation of a fine grain street pattern, low traffic speeds, a mix of travel modes and attention to design of the public realm.

Schedules 1 to 9 of the Official Plan identify Corridors, Intensification Areas, and Transit Terminals, Natural heritage Systems, Parks and Open Spaces, Utilities Areas, and Educational Facilities within the study boundaries.

Two Major Transit Station Areas (MTSA) are located within the Study Area as identified in the Mississauga OP and as defined in the Growth Plan for the Greater Golden Horseshoe, 2017. Specifically, they are located in Clarkson (located west of Southdown Road) and Port Credit (north of the Lakeshore Road / Hurontario Street intersection). Major transit station areas on priority transit corridors (i.e. the Lakeshore West GO Line) will be planned for a minimum density target of 150 residents and jobs combined per hectare. Refer to Section 2.2.4 (Transit Corridors and Station Areas) for more information regarding MTSAs in the Growth Plan for the Greater Golden Horseshoe, 2017.

2.1.5 Mississauga Cycling Master Plan and Implementation Strategy, 2010 (updated in 2018)

According to the Mississauga Cycling Master Plan, the highest demand for cycling in the study corridor is along Burnhamthorpe Road, Waterfront Trail, Lakeshore Road, Eglinton Avenue West, Aquitaine Drive, Thomas Street and McLaughlin Road. Cycling volumes along major corridors represent 1% or less of all travel modes. There is a high demand for cycling where linking destinations to neighbourhood centres is critical, such as in Clarkson, Port Credit, along the Waterfront, and in proximity to GO Stations. The 2010 Master Plan identified Royal Windsor Drive from Winston Churchill Blvd to Southdown Road as a proposed primary boulevard route and Lakeshore Road from Southdown Road to the East City limit as a primary on-road route. It also identified two new crossings of the Credit River within the Strategic Analysis Area (SAA) at the QEW and Mineola/Indian Road.

During the course of the Lakeshore Connecting Communities Study, the City of Mississauga updated their Cycling Master Plan and it was endorsed by City Council on July 4, 2018. The

updated Master Plan identified separated bike lanes for the entire Study Corridor between Winston Churchill Blvd and the Etobicoke Creek with proposed major barrier crossings at the QEW, Mineola/Indian Rd, and the south side of the Lakeshore West GO railway line.

2.1.6 MiWay 5 – Service Plan (2016-2020), 2015

MiWay 5 is the five year service plan to guide transit expansion within the City of Mississauga and to support the implementation of a new light rail line along Hurontario Street. The plan is focused on revising existing routes and schedules to provide added frequency, more service hours and better connectivity throughout the network. Specifically, the plan builds on public and stakeholder preference for a grid route network with improved frequencies and increase service span on Sundays and early morning weekdays, improved reliability, faster travel times with more direct routes, improved connections to GO stations, more express routes, and improved service to neighbouring communities.

The Lakeshore Road Corridor between Clarkson GO Station and Long Branch GO Station is identified as a high frequency corridor. The MiWay 5 Service Plan informed the study with respect to improving service on Lakeshore Road with frequencies improving on Route 23 in response to ridership demand..

2.1.7 Hurontario-Main LRT Environmental Project Report (EPR), 2014

The Hurontario-Main LRT EPR identified the terminal stop for the HuLRT at Park St on Hurontario Street with protection for a potential southerly extension to Lakeshore Road. Since the proposed location for the terminal is north of Lakeshore Road, improving multi-modal connectivity between Lakeshore Road and the future LRT is important.

2.1.8 Clarkson Village Study

On July 2, 2014, Official Plan Amendment No. 9, Zoning By-law 0194-2014 and Urban Design Guidelines to implement the Lakeshore Road West – Clarkson Village Study (Southdown Road to Johnson's Lane) was adopted by Mississauga City Council. The goals of the study were to create a pedestrian oriented community, promote transit oriented development, encourage mixed use intensification, and create a vibrant main street. A key element of the study identified as critical to achieving the overall goal of the plan was land consolidation and site access management.

The long term configuration can be implemented when redevelopment is at a stage that allows the control of mid-block left turns through intersection implementation of easement connections and a centre median. The following are design elements of the ultimate design:

- Provide centre median and related streetscape features.
- Provide supplementary plantings.
- Provide access management strategy with integrated driveways / easements.
- Introduce on-street dedicated bicycle lanes with current curb location and minor reconstruction.

2.1.9 Lakeview Local Area Plan and Port Credit Local Area Plan

Both the Lakeview Local Area Plan (generally Lakeshore Road from the Etobicoke Creek to Seneca Avenue) and the Port Credit Local Area Plan (generally Lakeshore Road from Seneca Avenue to Godfrey's Lane) state that Lakeshore Road should be maintained as a four lane roadway during peak travel times. Lakeshore Road is identified as a high order transit corridor with pedestrian and cycling facilities in the Lakeview Local Area Plan. Furthermore, public transit is recommended on Dixie Road, Cawthra Road, and Ogden Avenue.

It was also noted that on-street parking should be permitted only where it can be accommodated into streetscaping.

The City of Mississauga initiated the Inspiration Lakeview Master Plan in 2010 (received by the Planning and Development Committee in 2014) and led to the creation of the new Major Node Character Area within the Lakeview Employment Character Area which came into effect on August 1, 2018 following the City of Mississauga's adoption of Official Plan Amendment 89 on July 4, 2018. A draft development master plan was released in October 2018 for "Lakeview Village" and is currently under review.

The City of Mississauga also initiated the Inspiration Port Credit Master Plan in 2013 which led to the development of master plans for 1 Port Street East and 70 Mississauga Road. A draft development master plan was released in March 2018 for "Port Credit West Village" at 70 Mississauga Road and is currently under review.

2.2 Land Use and Built Form

This section documents the existing land use and built form along the Study Corridor.

2.2.1 Existing Land Use

The Study Corridor is approximately 13 km in length and is highly diverse. It traverses the City of Mississauga in an east-west direction and runs through the historic communities of Clarkson, Lorne Park, Port Credit and Lakeview (i.e. the Lakeshore Communities). To address its diversity, the study corridor was organized into a series of character areas, based on existing urban structure and patterns of built form. These character areas were termed as "Community Nodes", which are substantially commercial or mixed commercial-residential in use, "Neighbourhoods", which are substantially residential; and "Employment Areas". A description of the existing land use, with focus on those adjacent to Lakeshore Road, is summarized by character area and presented in **Exhibit 2-2.**

2.2.1.1 SOUTHDOWN EMPLOYMENT AREA:

Bounded by the rail corridor to the north, Lake Ontario to the south, Winston Churchill Boulevard to the west, and Southdown Road and a point just west of Apple Lane to the east.

Large properties consisting mainly of heavy and general industrial uses including several large Suncor Energy facilities and the Clarkson Wastewater Treatment Plant, an office building and a substantial amount of open space and park area.

Intersection of Southdown Ave and Royal Windsor Drive contains a number of commercial retail properties including a Canadian Tire/Metro/Shoppers Drug Mart shopping centre, a permanent fruit and vegetable market, a garden centre and the Ontario Racquet Club.

2.2.1.2 CLARKSON VILLAGE COMMUNITY NODE:

Bounded by the rail corridor and Turtle Glen Park to the north, Lushes Avenue and rear of the fronting properties to the south, Southdown Road to the west, and Meadow Wood Road to the east.

Larger parcels containing commercial plazas, stand-alone stores and 2-3 storey mixed residential/commercial developments.

Eastern end contains a small section of 2 storey "main street" commercial on the north side of Lakeshore Road between Clarkson Road North and Meadow Woods Road. Western end contains several clusters of large townhouse developments as well as a number of 8 to 21 storey apartment buildings.

Community and cultural uses include a place of worship on the south side of Lakeshore Road, and several parks and open space areas throughout.

2.2.1.3 CLARKSON-LORNE PARK NEIGHBOURHOOD:

Bounded by the rail corridor to the north, Lake Ontario to the south, Southdown Road and the Clarkson Village Character Area to the west, and Raintree Lane and Crozier Court to the east.

Development is predominantly single detached residential with some semi-detached, townhouses and apartments generally located on the western side of the character area. Few properties have direct access to Lakeshore Road.

Few retail commercial uses are found along the corridor, mainly located adjacent to, and extending Clarkson Village. Located throughout the area are a number of schools, places of worship, as well as a substantial park and open space system that includes Jack Darling Memorial Park and Rattray Marsh Conservation Area.

2.2.1.4 PORT CREDIT NEIGHBOURHOOD WEST:

Bounded by the rail corridor to the north, Lake Ontario to the south, Shawnmar Road to the west, and Mississauga Road North and Front Street South to the east.

Range of building forms including apartment buildings ranging in height from 3 to 7 storeys, a large townhouse development near the western boundary and a large vacant property between Lakeshore Road and Lake Ontario (the former Imperial Oil site to be redeveloped). The commercial development generally consists of small stand-alone buildings with the exception of a large commercial development containing a Loblaw's as well as five smaller commercial units on separate pads. Community uses located throughout this character area but away from the Lakeshore Road corridor include a school, and a number of open space and park areas including JC Saddington Park and Brueckner Rhododendron Gardens.

2.2.1.5 PORT CREDIT COMMUNITY NODE

The Port Credit CN character area is generally bounded by the rail corridor to the north, Lake Ontario to the south, Mississauga Road N and Front Street S. to the west, and Rosewood Road and Elmwood Avenue S. to the east. The central portion of the corridor generally consists of 2 storey "main street" retail commercial uses, several with residential above. Higher density forms of mixed residential/commercial in the range of 5 to 22 storeys can be found on the western and eastern edges of the corridor, as well as just behind the fronting properties. Community and cultural uses within this area includes the Port Credit Library adjacent the corridor, while the Port Credit Harbour Marina, Port Credit Arena, canoe and rowing clubs along the Credit River, several schools and a number of places of worship are located throughout the area. There is also a substantial amount of public parkland and open space, some located adjacent the corridor, but mainly located throughout the area.

2.2.1.6 PORT CREDIT NEIGHBOURHOOD EAST

The Port Credit Neighbourhood (NHD) East character area is generally bounded by the rail corridor to the north, Lake Ontario to the south, Rosewood Road and Elmwood Avenue S. to the west, and Seneca Ave to the east. The corridor area is dominated by 2 storey "main street" mixed commercial/residential along with several 3 storey apartment buildings that dot the corridor. The remainder of the area consists primarily of detached residential with several schools and various employment uses adjacent to the rail corridor.

2.2.1.7 LAKEVIEW NEIGHBOURHOOD

The portion of the Lakeview NHD character area located within the study area is generally bounded by the rail corridor to the north, Lake Ontario to the south, Seneca Ave. to the west, and the eastern City limit and Lakeview EA Character Area to the east. The corridor area consists of a mix of 1-2 storey retail commercial and mixed residential/commercial uses along with several 5 to 7 storey apartment buildings fronting onto Lakeshore Road. The area also contains several larger retail commercial developments such as the Metro/Beer Store plaza located on the western edge of the character area, while further east there is also a large commercial plaza containing a Shoppers Drug Mart and Dollarama along with a number of smaller stores within the plaza. Adjacent the Shoppers Drug Mart, a new retail development is currently under construction. The remainder of the area generally consists of detached residential, as well as a number of industrial properties located near the rail corridor and the Lakeview Water Treatment Plant adjacent the Lake. Community and cultural uses located adjacent the corridor include several places of worship and schools. Other community uses located throughout this character area include the Blythe Academy, Army Navy & Airforce Veterans Club, the Lakefront Promenade Marina, Port Credit Yacht Club and RK McMillan Park.

2.2.1.8 LAKEVIEW EMPLOYMENT AREA:

Bounded by Lakeshore Road to the north, Lake Ontario to the south, East Ave. to the west, and the city limits to the east.

Primarily industrial uses, with open space and park areas. Lakeshore Road provides access to adjacent properties, set well back from the street.

Several large parcels that appear to be vacant (former Lakeview Generating Station).

2.2.1.9 LAKEVIEW WATERFRONT:

The boundaries are south of Lakeshore Road East to Lake Ontario, and from East Avenue to the Toronto municipal boundary.

This new Major Node Character Area within the Lakeview Employment Character Area came into effect on August 1, 2018 following the City of Mississauga's adoption of Official Plan Amendment 89 on July 4, 2018.This change is not reflected in **Exhibit 2-2** as it was prepared prior to the adoption of the amendment.

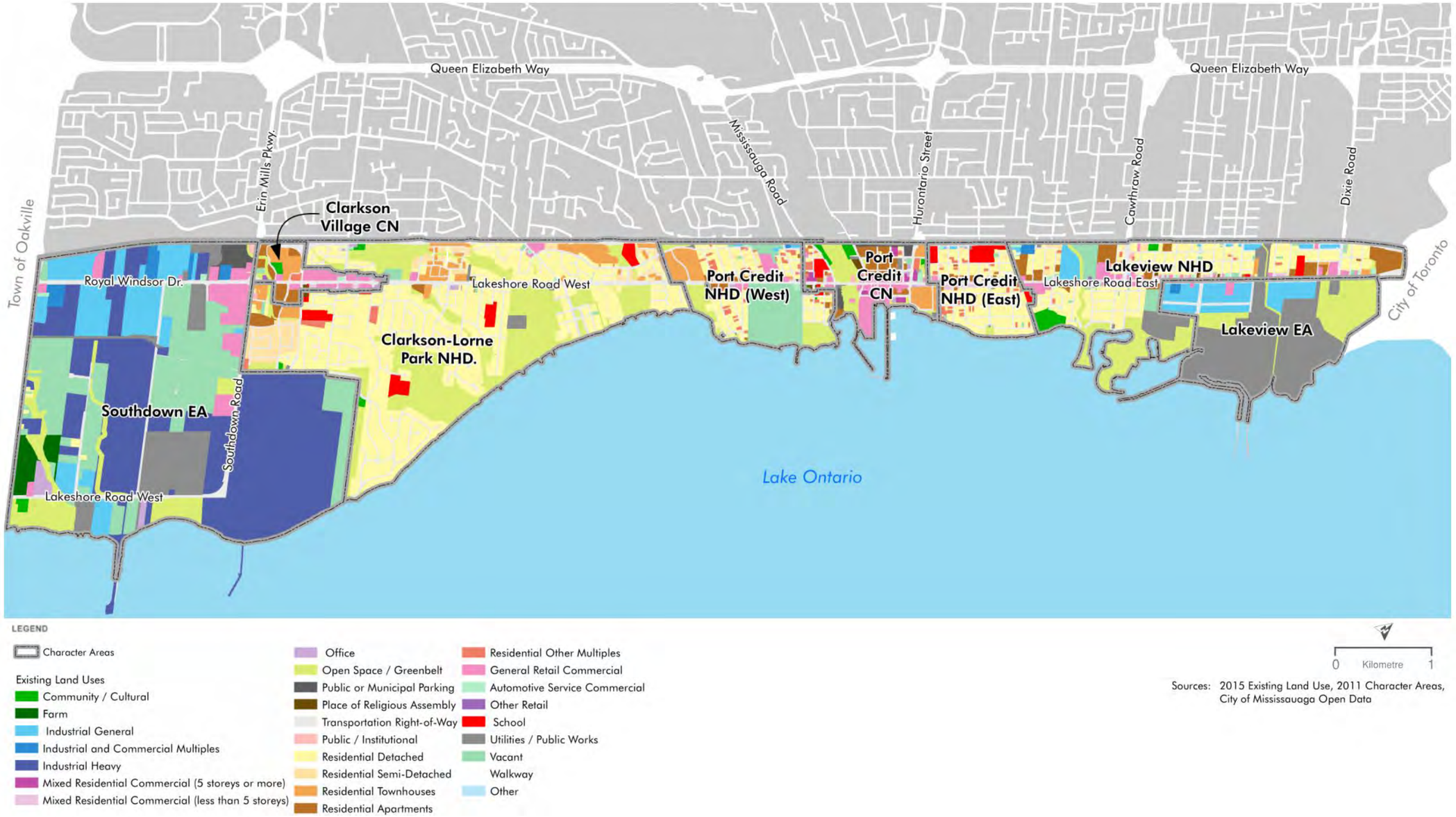


Exhibit 2-2 Existing Land Uses in the Study Area (2015)

Note: Does not reflect changes to Lakeview EA as a result of MOPA#89 for addition of Lakeview Waterfront Major Node

2.2.2 Population and Employment

Table 2-1 summarizes the 2011 population and employment as well as the 2041 forecast population and employment growth within the Network Analysis Area based on City of Mississauga character areas. These figures are used herein when describing existing population and employment as well as future growth trends for each of the character areas within the Network Analysis Area. It is noted that for the Clarkson-Lorne Park Neighbourhood District (NHD) and Lakeview NHD character areas, existing and forecasted population and employment are overstated as the forecasts apply to the character area in its entirety rather than just the portion located within the Network Analysis Area. With a 2011 population of over 76,000, the Network Analysis Area accounts for approximately 10% of the total population of the City of Mississauga. In regards to employment, there were approximately 16,000 jobs as of 2011, which accounted for approximately 3.5% of the employment of Mississauga. Significant growth in population and jobs is anticipated over the next twenty years. The population is forecast to increase by 55,885 people and represents a 73% increase while the City as a whole is forecast to increase by 165,000 people, a 22% increase. Employment is forecast to increase by 16,488 jobs and represents a 76% increase in employment, while the overall city increase is 115,000 jobs, a 26% increase.

The gross population and employment density by character area for 2011 (i.e. number of persons or jobs as a proportion of the total character area) is illustrated in **Exhibit 2-3** and **Exhibit 2-4** respectively. High density development is prominent within Clarkson Village Community Node (CN), Port Credit CN, and Lakeview NHD; whereas other character areas are primarily low density residential. There is also a high concentration of jobs within the Clarkson Village CN and Port Credit CN; whereas jobs are more dispersed within the Southdown and Lakeview Employment Areas.

Table 2-1 Population and Employment (2011 to 2041)

Character Area	Population					Employment				
	2011	2041	Change			2011	2041	Change		
			Pop.	% Change	Annual Growth Rate			Emp.	% Change	Annual Growth Rate
Clarkson Village CN	2,400	3,200	800	33%	1.0%	1,300	1,800	500	38%	1.1%
Port Credit CN	6,700	16,756	10,056	150%	3.1%	2,300	5,092	2,792	121%	2.7%
Clarkson - Lorne Park NHD	38,800	40,500	1,700	4%	0.1%	3,800	4,300	500	13%	0.4%
Lakeview NHD	22,600	45,429	22,829	101%	2.4%	4,900	11,296	6,396	131%	2.8%
Port Credit NHD	5,800	15,300	9,500	164%	3.3%	1,600	5,600	4,000	250%	4.3%
Lakeview EA	-	11,000	11,000	-	-	1,800	2,100	300	17%	0.5%
Southdown EA	-	-	-	-	-	5,900	7,900	2,000	34%	1.0%
Study Area Total	76,300	132,185	55,885	73%	1.8%	21,600	38,088	16,488	76%	1.9%
City of Mississauga Total	743,000	908,000	165,000	22%	0.7%	448,000	563,000	115,000	26%	0.8%
Study Area as a % of Mississauga Total	10.3%	14.6%	33.9%	-	-	4.8%	6.8%	14.3%	-	-

Source: Mississauga Long-Range Growth Forecasts Population, 2011-2041-Hemson Consulting Ltd.
Mississauga Long-Range Growth Forecasts Employment, 2011-2041-Hemson Consulting Ltd.
City of Mississauga, July 2016

Exhibit 2-3 Gross Population Density by Character Area (2011)

Exhibit 2-4 Gross Employment Density by Character Area (2011)

2.2.3 Built Form

As discussed there are nine character areas identified along the corridor, including a number of varied neighbourhoods and communities including the historic villages of Clarkson, Lorne Park, Port Credit and Lakeview, as well as the new mixed-use developments and employment lands at the east and west boundaries of the City. The wide landscaped boulevards, woodlots, creeks and waterway crossings and the proximity to the Lake Ontario waterfront are notable, character-defining elements of the corridor.

A chart summarizing the land use at grade, road cross-section elements, cycling facilities, sidewalks, streets, blocks, and crossings, and the user profile with photos is included in the **Existing Conditions Report, 2016** provided in **Appendix D**. An overview by character areas is as follows:

- **Southdown Employment Area** extends along Royal Windsor Drive, from the western boundary of the City of Mississauga, between Winston Churchill Boulevard and Southdown Road. This character area is dominated by heavy vehicular traffic, and is further divided into two areas including the industrial strip at the west end and the commercial strip at the east end of the segment.
- **Clarkson Village Community Node** extends between Southdown Road and Johnson's Lane and encompasses Clarkson Village, which is further divided into the following Neighbourhood Character Areas, as identified in the **Clarkson Village Urban Design Guidelines, June 2004**:
    - West Village Gateway is a largely residential area, bounded on the west by the major intersection of Lakeshore Road and Southdown Road. This area acts as an important link between Clarkson Village to the east, and the Clarkson GO station, located to the north, on Southdown Road.
    - Outer Village Core is primarily an auto oriented suburban commercial strip, with front parking lots and wide driveways. The area is bisected by a railway underpass that defines the beginning of a retail strip to the east.
    - Village Core is the 'main street' of Clarkson Village. It has a vibrant and animated street edge and a pedestrian-friendly streetscape. Future development in this area is intended to maintain and enhance the pedestrian scale of the north side of Lakeshore Road, with similar mixed-use building heights, and setbacks.
    - East Village Gateway is defined by Birchwood Park to the north and an established residential area to the south that is elevated well above Lakeshore Road West, requiring a continuous retaining wall and landscape edge to the right-of-way.
- **Lorne Park Neighbourhood** extends between Johnson's Lane and Godfrey's Lane. Here few properties face onto the road. On the south side is the Lorne Park neighbourhood, a small community that is buffered by a very dense landscaped buffer. On the north side is an older residential neighbourhood with back yard fences and a landscaped setback lining the road. Lakeshore functions as a green link between Clarkson Village to the west and the Port Credit to the east as there are very few crossing streets that connect into the adjacent neighbourhoods.
- **Port Credit Neighbourhood West** extends and encompasses the Port Credit neighborhood, which is further divided into Neighbourhood Character Areas, as identified in the **Port Credit Local Area Plan, August 2015** and **Inspiration Port Credit, 2013**. These include the Port Credit Community Node, the Imperial Oil Lands and the East and West Port Credit Neighbourhoods.
    - *West Port Credit Neighbourhood* is an established residential area with a regular street grid that meets Lakeshore Road at an angle. Building facades along Lakeshore Road create a saw tooth pattern of open space along the road.
    - *Imperial Oil Lands* segment is characterized by the large brownfield development site extending between Benson Avenue and Wesley Street and from Lakeshore Road to Lake Ontario. A framework for a future master plan for 70 Mississauga Road South, the former Texaco refiner site owned by Imperial Oil Limited was developed under the banner of Inspiration Port Credit; a City of Mississauga staff led community engagement process. The framework was approved by Council in December 2015. The site is slated for future open space, mixed-use and employment lands development and when redeveloped, the spacing of north-south connections along this segment should be greatly improved by establishing a block structure derived from the surrounding neighbourhoods.
- **Port Credit Community Node** is where Lakeshore Road becomes a more traditional neighbourhood main street. In this area, the Lakeshore Road ROW is narrowed and the street is very pedestrian oriented. The centre of Port Credit is known regionally as a scenic waterfront destination, with cafes and restaurants spilling out onto the street and spectacular views of the Credit River and Lake Ontario.
- **Port Credit Neighbourhood East** is characterized by mixed-use development with a regular street grid. This area has a less developed street edge and is more auto-oriented than the Community Node, but maintains a high quality of the pedestrian realm.
- **Lakeview Neighbourhood** extends between Seneca Avenue and East Avenue, between the established Port Credit Neighborhood to the west and Lakeview to the east. This section of Lakeshore Road is a neighbourhood in transition, straddling the Cooksville Creek and characterized by low-rise mixed use development that is set back from the street and a number of new residential developments currently underway
- **Lakeview Employment Area** extends from East Avenue to the Etobicoke Creek, at the eastern limit of the City of Mississauga and is divided into:
    - *Lakeview Development Lands* segment includes an existing mixed-use neighbourhood to the north and a commercial warehouse district to the south. Per **Inspiration Lakeview Master Plan, June 2014,** a planned development on the south side of Lakeshore Road will drastically improve the character of the area by introducing a fine grained network of streets and blocks that will feed into the existing road network and provide space for transit riders, cars, cyclists and pedestrians.
    - *East Boundary* of the study area extends 815 metres along Lakeshore Road from Fergus Avenue to the East edge of Mississauga, at the Etobicoke Creek Bridge. The Arsenal Lands and Marie Curtis Park, two large naturalized areas take up the south side of the road and help to define the character of Lakeshore Road at the East end of the City.

2.3 Natural Environment

A desktop-level review Natural Environment Constraints Assessment was prepared for the study corridor and is provided in **Appendix E**. This section documents the findings of the desktop review related to watercourse features, natural areas, wildlife and wildlife habitat, and aquatic features and fish.

2.3.1 Watercourses

There are twelve (12) watercourse crossings along the Study Corridor, eleven (11) under the jurisdiction of the Credit Valley Conservation Authority (CVC) and one (1) under the jurisdiction of the Toronto and Region Conservation Authority (TRCA). Existing watercourses are listed as follows and are illustrated on **Exhibit 2-5.**

- Credit River
- Sheridan Creek
- Turtle Creek
- Tecumseh Creek
- Birchwood Creek
- Lornewood Creek
- Serson Creek
- Applewood Creek
- Etobicoke Creek
- Avonhead Creek
- Cooksville Creek
- Moore Creek

2.3.2 Natural Areas

The natural environment constraint assessment identified the natural areas as listed in **Table 2-2** and **Exhibit 2-5**.

Table 2-2 Natural Areas

Type	Name
Conservation Area	Rattray Marsh Conservation Area located south of the Study Corridor along the shore of Lake Ontario between Bob-O-Link Road and Parkland Avenue.
Areas of Natural and Scientific Interest (ANSI)	Rattray Marsh Conservation Area (Provincial Life Science ANSI) located approximately 800 m south of the Study Corridor. Credit River Marshes (Provincial Life Science ANSI) located approximately 400 m north of the Study Corridor.
Significant Valleylands	Significant valleylands are those valleylands associated with tributaries and watercourses that drain directly to Lake Ontario – considered a Significant Natural Area. Core valley and stream corridors associated with the Credit River and Etobicoke Creek
Significant Woodlands	Any woodland greater than 4 hectares in size, and or any woodland that supports provincially or globally rare species, or species designated by COSEWIC or COSSARO as threatened, endangered, or special concern, including: Residential woodland in Lorne Park Estates Woodland between Whittier Crescent and Balboa Drive, just west of Lorne Park Estates and south of Lakeshore Road West Woodland that contains Sheridan Creek, south of Lakeshore Road West, and connects to the Rattray Conservation Area Woodland north and south of Lakeshore Road West that contains Fudger's Marsh Woodland that is adjacent to (southwest) Etobicoke Creek
Credit Valley Conservation (CVC) Regulation Areas	Valleylands and riparian habitat of Sheridan Creek, Turtle Creek, Birchwood Creek, Lornewood Creek, Tecumseh Creek, Credit River, Serson Creek, and Applewood Creek. Parcel of land that contains the multi-use trails that connect to Douglas Kennedy Park and A.E. Cookes Park. Parcel of land between Birchwood Creek and Parkland Avenue that contains the Jack Darling Memorial Park Trail that contains the multi-use trail from Jack Darling Memorial Park and part of the trail from Rattray Marsh. The far eastern portion of the Project intersects the Valleylands and riparian habitat of Etobicoke Creek. Not Yet Named Park P-358 is owned by the TRCA and contains Valleylands and riparian habitat on the west bank of Etobicoke Creek.
Toronto and Region Conservation Authority (TRCA) Regulation Areas	Valleylands and riparian habitat of the Etobicoke Creek.
Region of Peel Official Plan – Natural Areas	Core Areas of the regional Greenlands System, including: the valleylands and riparian habitat of the Credit River, Sheridan Creek, Turtle Creek, Tecumseh Creek, Lornewood Creek, Birchwood Creek and Etobicoke Creek.
City of Mississauga Official Plan – Natural Areas	Significant natural areas, linkages, special management areas, and residential woodlands area located within the study area..

2.3.3 Wildlife and Wildlife Habitat

Based on a desktop assessment forty-two (42) species at risk have been historically observed within 1 km of the Study Corridor and are considered to have high or moderate potential to occur in the study area. Based on the species ranges and habitat requirements, there is moderate or high potential for seven (7) species at risk to occur in the study area as well. Potential significant wildlife habitats (SWH) present in the study area include, but are not limited to, the following:

- Credit River (movement corridor)
- Etobicoke Creek (movement corridor)
- Fudger's Marsh (habitat for species or special concern)
- Woodlands supporting amphibian breeding ponds (specialized habitat)

2.3.4 Aquatic Habitat and Fish

There are no Provincially Significant Wetlands (PSW) within the study area. The Rattray Marsh and Turtle Creek Reed Swamp are PSWs that are located just south of the study area along the shore of Lake Ontario. The Credit River Marshes and Cawthra Woods are other PSWs located north of the study area.

'Other Wetlands' or wetlands which do not qualify as PSW but are considered significant at a local scale include: the Fudger's Marsh and the wetlands within the valleylands of the Etobicoke Creek.

The Credit River and Etobicoke Creek are considered areas of fish habitat. Within the Credit River watershed, almost 60 species of fish are known to occur, including Northern Pike, White Sucker, Common Shiner, Fathead Minnow, Creek Chub, and Rainbow Darter. Within the study area, watercourses support mainly warmwater and mixed cool/warmwater fish communities. Redside Dace and Shortnose Cisco are known to occur within the Credit River watershed and are designated endangered under the ESA.

The Etobicoke Creek watershed is dominated by warmwater fish communities and supports more than 25 species of fish. The most common include White Sucker, Blacknose Dace, Fathead Minnow, Bluntnose Minnow, and Creek Chub. Many watercourses within this watershed have been channelized as part of flood and erosion control.

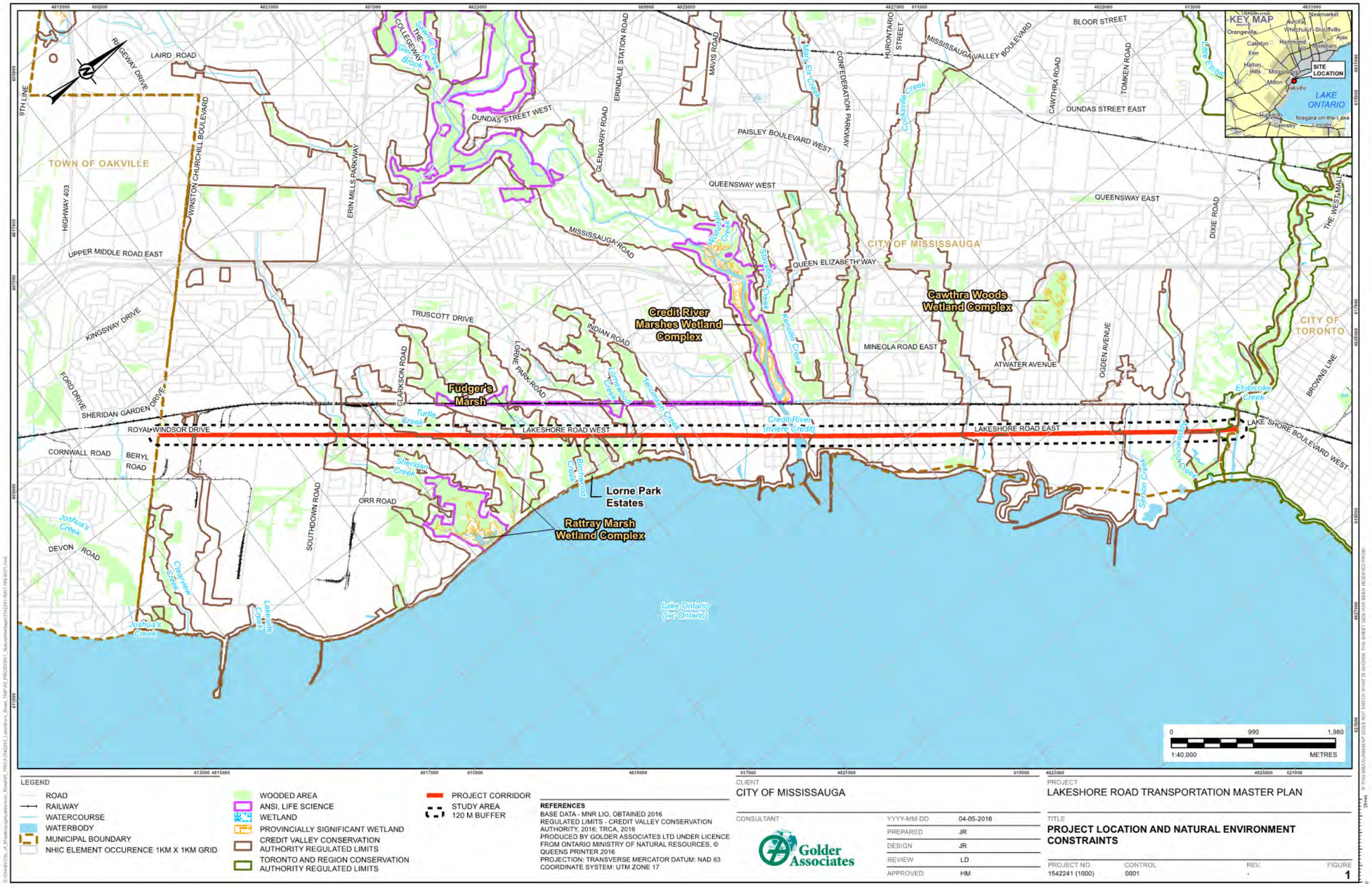


Exhibit 2-5 Map of Natural Environment Constraints within 1km of the Study Corridor

2.4 Cultural/Heritage Resources

A desktop-level cultural resource (archaeology and heritage) survey for the Study Corridor was prepared and is provided in **Appendix F**. The survey is not intended to act as a Stage 1 Archaeological Assessment as identified in the Ontario Ministry of Tourism, Culture, and Sport's 2011 Standards and Guidelines for Consultant Archaeologists, nor does it fulfill the requirements of a Heritage Impact Assessment.

This heritage resource survey does not include a detailed assessment of registered archaeological sites, individual heritage properties, or detailed property histories. Further archaeological and cultural heritage assessments will be required on all subject properties with the potential to be disturbed through construction activities.

Along the Study Corridor, there are fifty-five (55) recognized heritage properties, of which fifteen (15) are individually designated under Part IV of the Ontario Heritage Act (OHA) and seven (7) are designated under Part V as part of Port Credit Village Heritage Conservation District. The remaining thirty-three (33) properties are listed by the City and subject to the Provincial Policy Statement (PPS) 2014 and planning policies of the City of Mississauga. In addition, the City identified three (3) cultural heritage landscapes that cross the study corridor (Credit River, Etobicoke Creek, and Mississauga Road), whose unique heritage characteristics were considered in the development process.

There are twenty-five (25) currently registered archaeological sites that fall within 1 km of the Study Corridor. Of those, only one (1) site, on the western bank of the Credit River, is within 100 m of the Study Corridor.

The approximate locations of known archaeological sites within 1 km of the Study Corridor are presented in **Exhibit 2-6.** Designated heritage properties and heritage conservation districts within or adjacent to the Study Corridor are presented in **Exhibit 2-7**.

This resource survey is an inventory of the known and identified cultural heritage resources along the Study Corridor. Prior to construction activities taking place, this survey recommends the following:

1. A stage 1 archaeological assessment to determine whether the potential exists for as-yet unidentified archaeological sites within the proposed development areas and to assess the potential for development impacts to any of the registered sites listed in this survey.
2. A Cultural Heritage Assessment Report (CHAR) to identify and determine the impacts to any known or potential cultural heritage resources through potential development as required by the PPS 2014, and the City of Mississauga Official Plan, and as described in the City of Mississauga Heritage Impact Assessment Terms of Reference (2015).

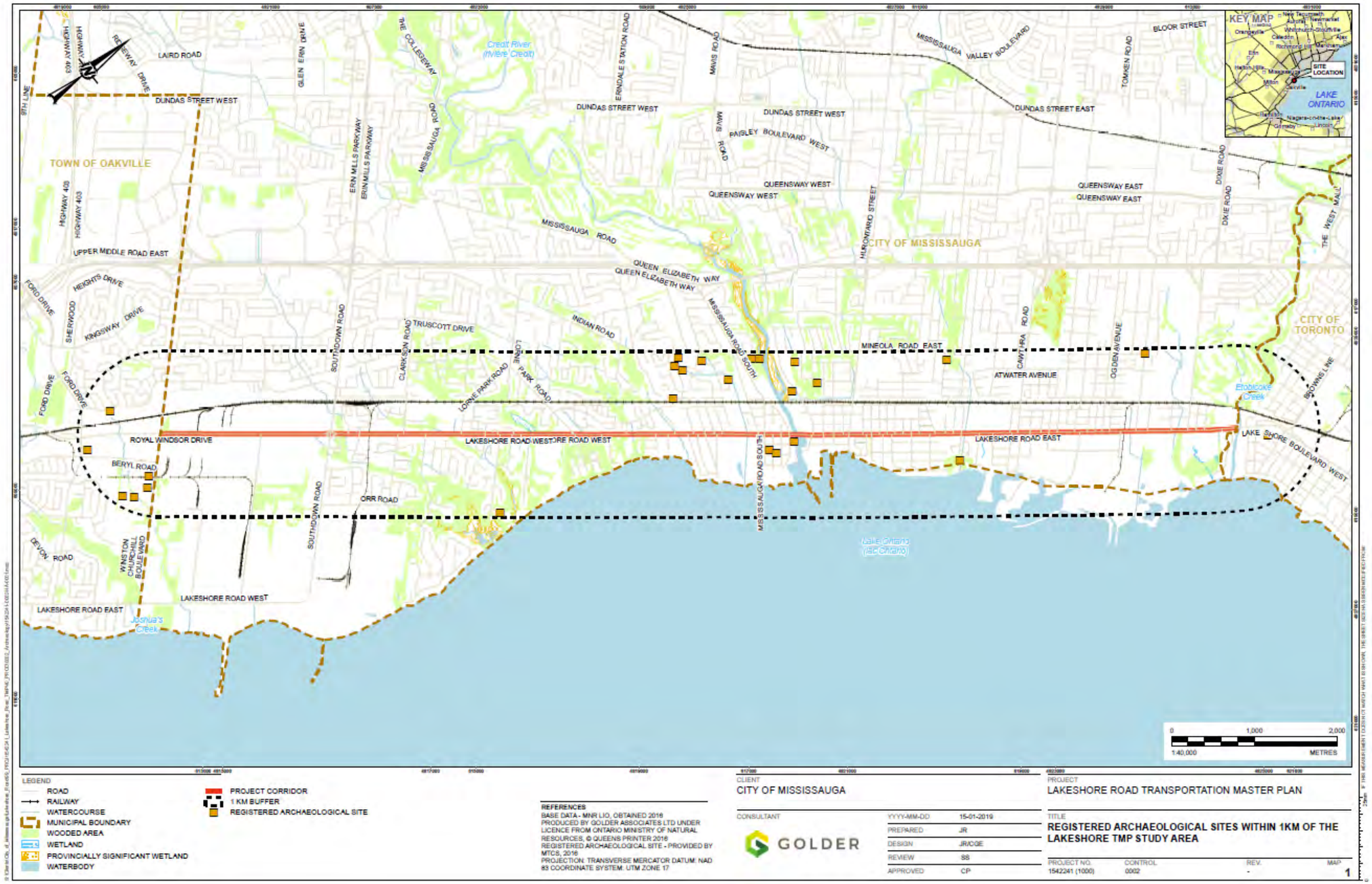


Exhibit 2-6 Map of the approximate locations of known archaeological sites within 1km of the Study Corridor

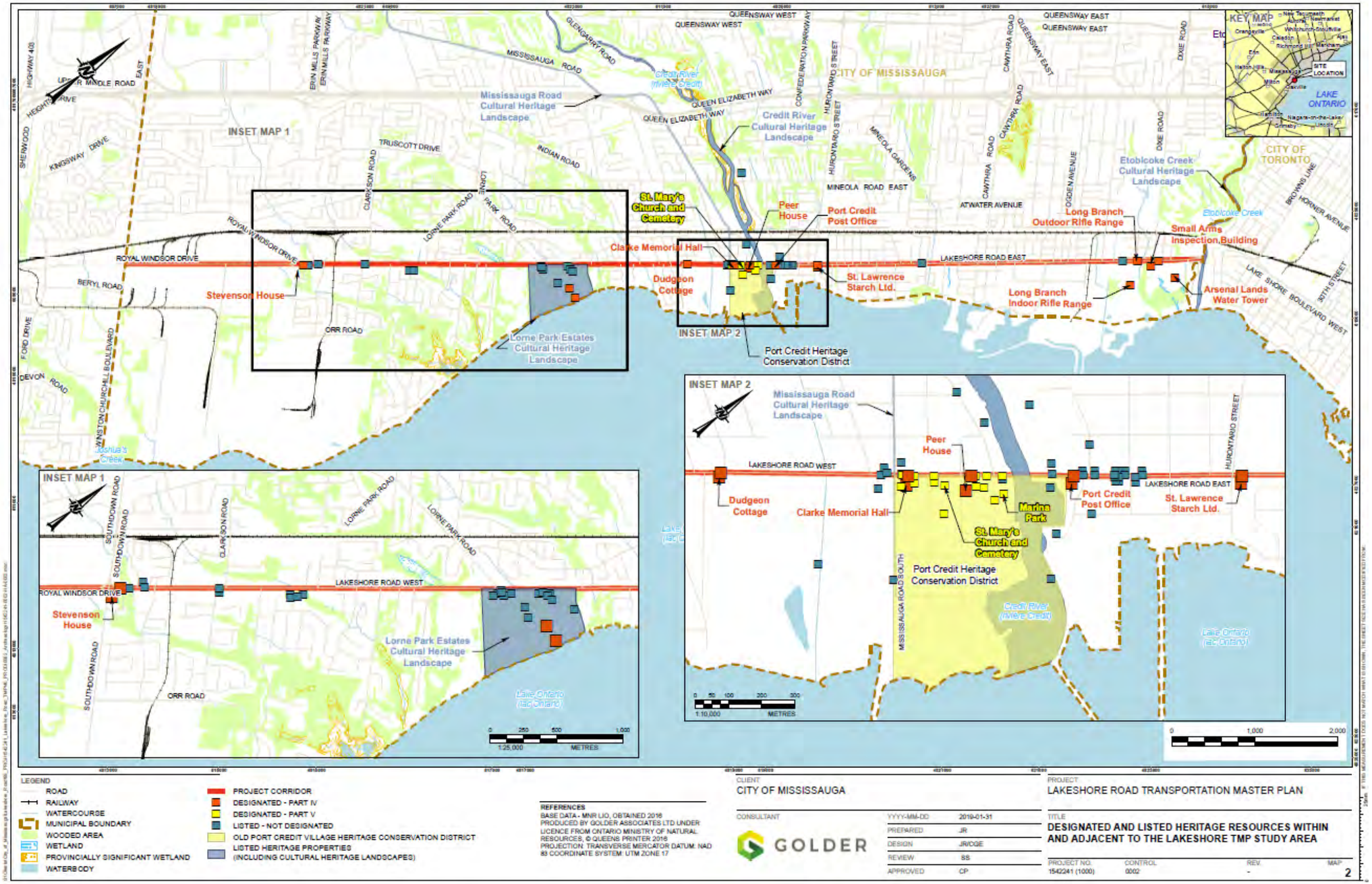


Exhibit 2-7 Designated Heritage Properties and Heritage Conservation Districts within or adjacent to the Study Corridor

2.5 Structural

There are eight (8) structures within the Study Corridor as described in **Table 2-3** which identifies the structure, heritage consideration, existing dimension and condition. Structural information is based on 2017 OSIM reports unless otherwise noted. Two (2) watercourses cross Lakeshore Road in trunk storm sewers, specifically, Lornewood Creek and Turtle Creek. Condition assessment reports were not available for these structures at the time of writing; therefore, should be reviewed again during future phases of the project.

Table 2-3 Existing Structures

Structure	Existing Structure Dimensions	Structural Condition
Segment 2A **CNR over Lakeshore** **(Not considered a heritage structure)**	L = 28.08 m Clearance = 4.3 m (substandard)	Fair
Segment 2A **Lakeshore over Sheridan Creek** **(Not considered a heritage structure)**	L = 16.5 m W=32.3 m TW = 26 m Clearance = 3.3 m	Fair
Segment 3 **Lakeshore over Tecumseh Creek** **(Not considered a heritage structure)**	L = 150 m Span =2.4 m TW = 15.7 m Clearance 1 m	Excellent (based on 2009 OSIM report)
Segment 5A **Lakeshore over Credit River** **(Not considered a heritage structure)**	L = 56 m W=19.3 m TW = 14.3 m Clearance = 4.5 m	Fair
Segment 6 **Lakeshore over Cooksville Creek** **(Not considered a heritage structure)**	L = 27.3 m W=23.1 m TW = 17 m Clearance = 3 m	Good
Segment 7 **Lakeshore over Serson Creek** **(Not considered a heritage structure)**	1 Span = 10 m Length = 30.2 m TW = 24.1 m Clearance 1.1 m	Excellent
Segment 7 **Lakeshore over Applewood Creek**	L=22 m Span = 3.05 m, H = 1.25 m TW = 15.0 m	Excellent
Segment 7 **Lakeshore over Etobicoke Creek** **(Not considered a heritage structure)**	L = 48.8m W=23 m TW = 18.58 m Clearance = 5 m	Very good

2.6 Transportation Conditions

This section summarizes the existing multi-modal transportation conditions along the Study Corridor. Complete documentation of the existing transportation conditions is provided in the **Existing Conditions Report, 2016** provided in **Appendix D** using the most up-to-date information available at the time unless otherwise noted.

2.6.1 Right-of-Way Characteristics

2.6.1.1 RIGHT-OF-WAY WIDTH AND TYPICAL SECTION

The existing right-of-way (ROW) along the Study Corridor generally varies between 26 and 44.5 metres. In the following locations the ROW narrows to 26 - 31 metres:

- Etobicoke Creek to Dixie Road
- Greaves Avenue to Godfrey's Lane (majority of Port Credit area)
- Meadow Wood Road to Clarkson Road South (Clarkson Village Community Node)

Throughout the corridor, four general purpose through travel lanes are provided. A two-way centre-left-turn lane (TWCLTL) is also accommodated within the following sections:

- Winston Churchill Boulevard to Southdown Road
- Inverhouse Drive to Johnson's Lane
- Mississauga Road to John Street
- Seneca Avenue to the Etobicoke Creek

In addition a short segment between Southdown Road and the entrance to the Clarkson GO Station parking lot is six lanes with three westbound through lanes, two eastbound through lanes and one TWCLTL.

Typical cross-sections illustrating the existing conditions at the midblock and at the intersection, including existing vehicular travel lanes, pedestrian/cyclist facilities and available boulevard for streetscaping/plantings for each of the eight (8) character areas are provided in the **Existing Conditions Report, 2016** provided in **Appendix D.**

2.6.1.2 UTILITIES

The following utilities have been identified throughout the course of the Study; however, it was not a comprehensive review and will need to be identified in more detail during future phases this project.

Hydro poles are located primarily on the north side of the study corridor while light standards line both sides.

Hydro One confirmed that they have high voltage transmission (Idle) facilities within the study area approximately 90 m west of Haig Boulevard. Hydro One noted that there is an ongoing transmission idle line removal (Lakeview Generating Station) project related to these 4 idle circuits; however, no further information was provided.

Imperial Oil confirmed that the Imperial Oil pipeline in not located within the study area.

Rogers Communications currently has existing plant in the Study Area, including:

- Aerial fiber TV plant, aerial coaxial TV plant, buried fiber TV plant, and buried coaxial TV plant.

The location of the utilities are generally located within the Study Corridor as follows:

- North side between Winston Churchill Boulevard and Mississauga Road
- Not present between Mississauga Road and Seneca Avenue
- North side between Seneca Avenue and Meredith Avenue
- South side between Meredith Avenue and the Etobicoke Creek

Alectra Utilities confirmed that they have power distribution plants along the Study Corridor.

Enbridge Gas also confirmed that they have existing gas plants along the Study Corridor.

2.6.1.3 SPEED LIMIT, TRAFFIC CONTROL AND ACCESS MANAGEMENT

The speed limit along Lakeshore Road varies between 50 and 60 km/h. Along Royal Windsor Drive the speed limit is 60 km/h.

There are 29 signalized intersections along the Study Corridor and 49 unsignalized intersections. Three of the 29 signalized intersections are under Peel Region's jurisdiction, including: Royal Windsor Drive at Winston Churchill Boulevard, Lakeshore Road at Cawthra Road, and Lakeshore Road and Dixie Road. Signalized intersections are generally more closely spaced in "main street" areas such as Clarkson Village and Port Credit. All unsignalized intersections are two-way stop controlled on the side street with Lakeshore Road as the main street. Within Port Credit and Lakeview there is a fine grain local street grid pattern with access onto Lakeshore Road approximately every 100 metres or less. Clarkson Village including Lorne Park and Southdown are characteristic of a more curvilinear local street pattern with fewer access points onto Lakeshore Road.

Driveway access from private properties occur often along the Study Corridor. The highest density of direct driveway access to the Study Corridor is between Winston Churchill Boulevard and Johnsons Lane, and between Godrey's Lane and Dixie Road with the exception of the retail/commercial zones in the Port Credit area.

2.6.2 Travel Demand

Using the 2011 Transportation Tomorrow Survey (TTS), overall mode shares, origin-destination (OD) patterns, and average trip length distributions were calculated to gain an understanding of existing travel within the Strategic Analysis Area (bounded by the QEW, east City limit, Lake Ontario, and west City limit as shown in **Exhibit 1-2.**

A total of approximately 150,000 trips originated from the Strategic Analysis Area during a typical day. Of the 150,000 trips, 85% were made by car, 10% by transit, and 5% by active modes such as walking or cycling, as illustrated in **Exhibit 2-8.** There is a high propensity to travel by car which is indicative of a primarily auto-oriented, low-density area in close proximity to a major freeway with free parking at regional rail stations. There is also a high proportion of short trips (less than 1 km) made by those driving alone which implies that walking and cycling are not attractive alternative modes for these trips.

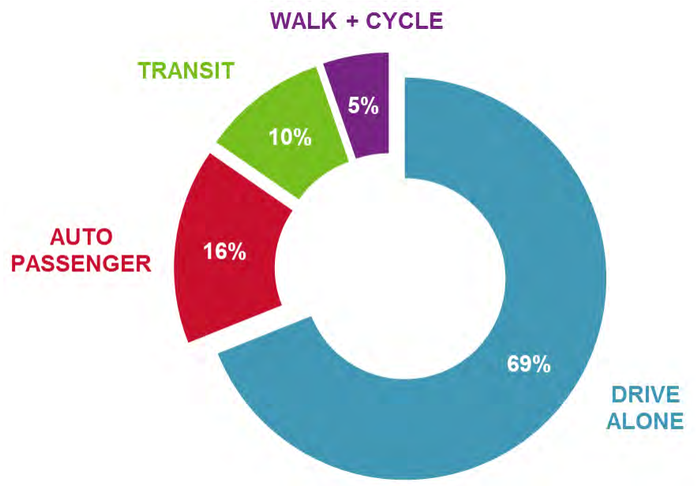


Exhibit 2-8 Strategic Analysis Area Trip Origin Mode Shares (2011 Daily Trips) (Source: TTS)

A total of 243,818 trips originated from or were destined to the Strategic Analysis Area during a typical day. Of the 243,818 trips, 23% were internal to the corridor, 38% were to the rest of the City of Mississauga, 7% were to Oakville, 20% were to the City of Toronto, and the remaining 12% were to other parts of the Greater Toronto and Hamilton Area (GTAH) as illustrated in **Exhibit 2-9.** Existing travel patterns indicate that it is equally important for trip makers within the Strategic Analysis Area to access the rest of Mississauga as it is to access the City of Toronto by transit.

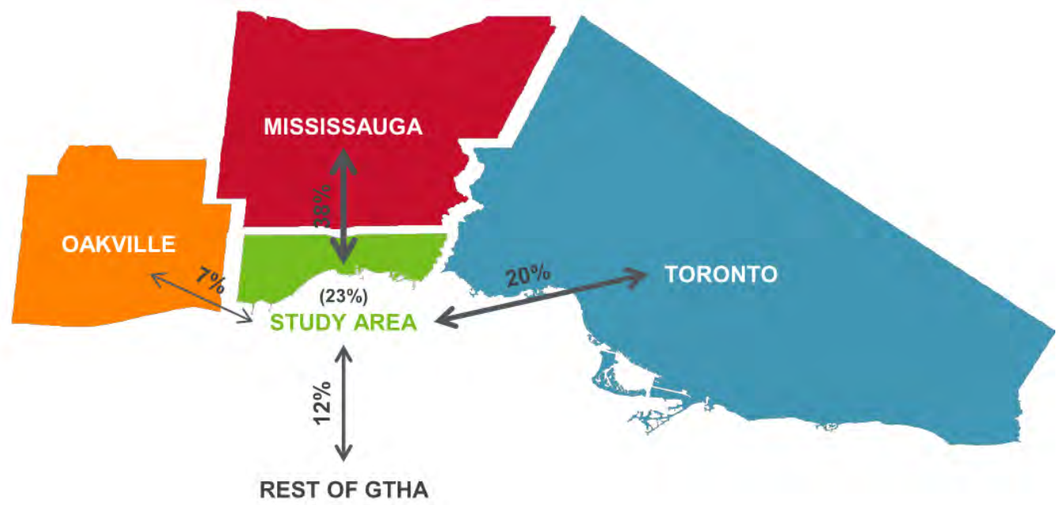


Exhibit 2-9 Strategic Analysis Area Origin-Destination Pattern (Source: TTS)

2.6.3 Walking

The sidewalk and trail network within the Network Analysis Area is illustrated in **Exhibit 2-10.** In general, a sidewalk or trail is generally provided on both sides of the roadway for the entire Study Corridor with the exception of the south boulevard on Royal Windsor Drive between Winston Churchill Boulevard and Avonhead Road and the south boulevard on Lakeshore Road between Dixie Road and the east City limit.

Major pedestrian generators in the corridor include: community nodes (Clarkson, Port Credit, and Lakeview) or 'main street' retail areas, community centres, schools, places of worship, transit hubs, parks and recreational areas.

For the purposes of this study, multi-modal level of service (MMLOS) was considered. In the absence of an established MMLOS methodology for the City of Mississauga, the following approach was taken. The level of service experienced by pedestrians (PLOS) along the corridor was reviewed using a methodology of assigning a letter between 'A' and 'F', where 'A' is the most preferred and 'F' is the least preferred. Lower levels of pedestrian comfort are observed in locations with high vehicle speeds, narrow sidewalks and minimal separation from moving traffic. Similarly higher levels of pedestrian comfort are observed in locations where there are lower vehicle speeds and volumes, wide sidewalks and larger boulevards with ample separation from moving traffic. The look, feel, and function of the Study Corridor changes along its length as does the level of comfort experienced by pedestrians. PLOS is identified along the midblock and at intersections as shown in **Exhibit 2-11**

The majority of intersections in the corridor fall between PLOS 'C' and 'D'. Intersection PLOS scores in the range of 'C' to 'D' are indicative of shorter crossing distances (4 lanes), relatively small corner radii, and zebra crosswalk treatments. In contrast, the intersection of Royal Windsor Drive and Southdown Road has an intersection PLOS of 'F' since pedestrians must cross a total of five lanes plus two additional channelized right turn lanes at each end.

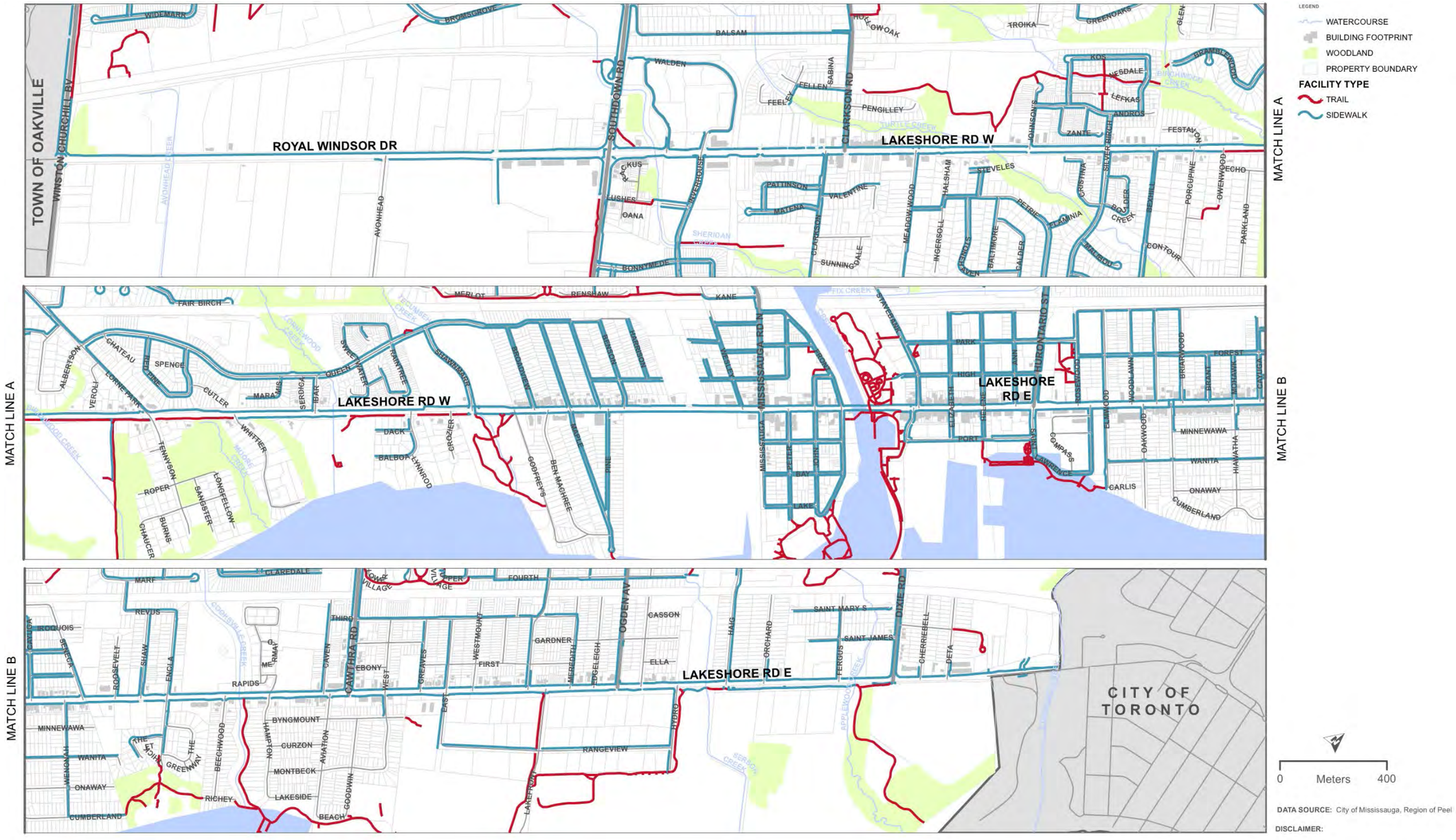


Exhibit 2-10 Existing Pedestrian Network (Sidewalk and Trails - 2016)

Exhibit 2-11 Pedestrian Level of Service (2016)

2.6.4 Cycling

There are three types of cycling facilities within the vicinity of the Study Corridor, which are: paved multi-use trails, shared use lanes (sharrows), and signed bike routes. Paved multi-use trails are typically 3.0 to 4.5 metres wide and are located within the boulevard either separated by a landscaped buffer or directly adjacent to the roadway.

A map of the existing cycling network can be found in **Exhibit 2-12.**

The paved multi-use trail is generally on the south side of Lakeshore Road from Meadowood Rd to Godfreys Lane and from Hydro Rd to Dixie Rd. Sharrows are provided on both sides of Lakeshore Road between Meadow Wood Road and Southdown Road. Signed bike routes are typically found in the Network Analysis Area to connect different sections of the Waterfront Trail to one another through neighbourhoods.

Cycling facilities along the corridor are neither continuous nor contiguous and several gaps are present where cyclists do not have a dedicated space within the ROW allocated for them. The gaps are located between the following segments:

- Royal Windsor Drive: Winston Churchill Boulevard to Southdown Road
- Lakeshore Road: Godfrey's Lane to Hydro Road
- Lakeshore Road: Dixie Road to the east City limit

Within the vicinity of the Study Corridor, adjacent local roads are designated as signed bike routes which allow cyclists to access the Waterfront and the Waterfront Trail. The Waterfront Trail is continuous through the Network Analysis Area through a mix of off-road trails and low-traffic residential streets acting as a quasi by-pass for cyclists traversing Lakeshore Road.

Cycling facilities on intersecting streets include:

- Paved multi-use path on Southdown Road
- Signed bike route on Ogden Ave
- Signed bike route on Lorne Park Road
- Bicycle lanes on Dixie Road
- Various trail connections to the Waterfront Trail (in addition to the mentioned signed routes)

For the purposes of this study, multi-modal level of service (MMLOS) was considered. In the absence of an established MMLOS methodology for the City of Mississauga, the following approach was taken. Similar to PLOS, bicycle level of service (BLOS) varies along the Study Corridor and is represented by a letter between 'A' and 'F', where 'A' is the most preferred and 'F' is the least preferred. The multi-use path along Lakeshore Road has a BLOS of 'A' while the shared use lanes (i.e. sharrows) between Meadow Wood Road and Southdown Road have a score of 'E' and 'F'. The remainder of the Study Corridor does not accommodate cyclists in a separate facility and is in mixed traffic; therefore, segment BLOS ranges between 'E' and 'F' due to the four lane cross-section and 50 to 60 km/h speed limit.

Intersections do not accommodate cyclists making left or right turns in a controlled manner. Cyclists operate in mixed traffic and are subject to cross several lanes to make left turns and traversing long right turn lanes; therefore, the majority of intersections receive an intersection BLOS between 'E' and 'F' with few intersections in the main street area of Port Credit receiving a score between 'C' and 'D'. The existing cycling quality of service map can be found in **Exhibit 2-13.**

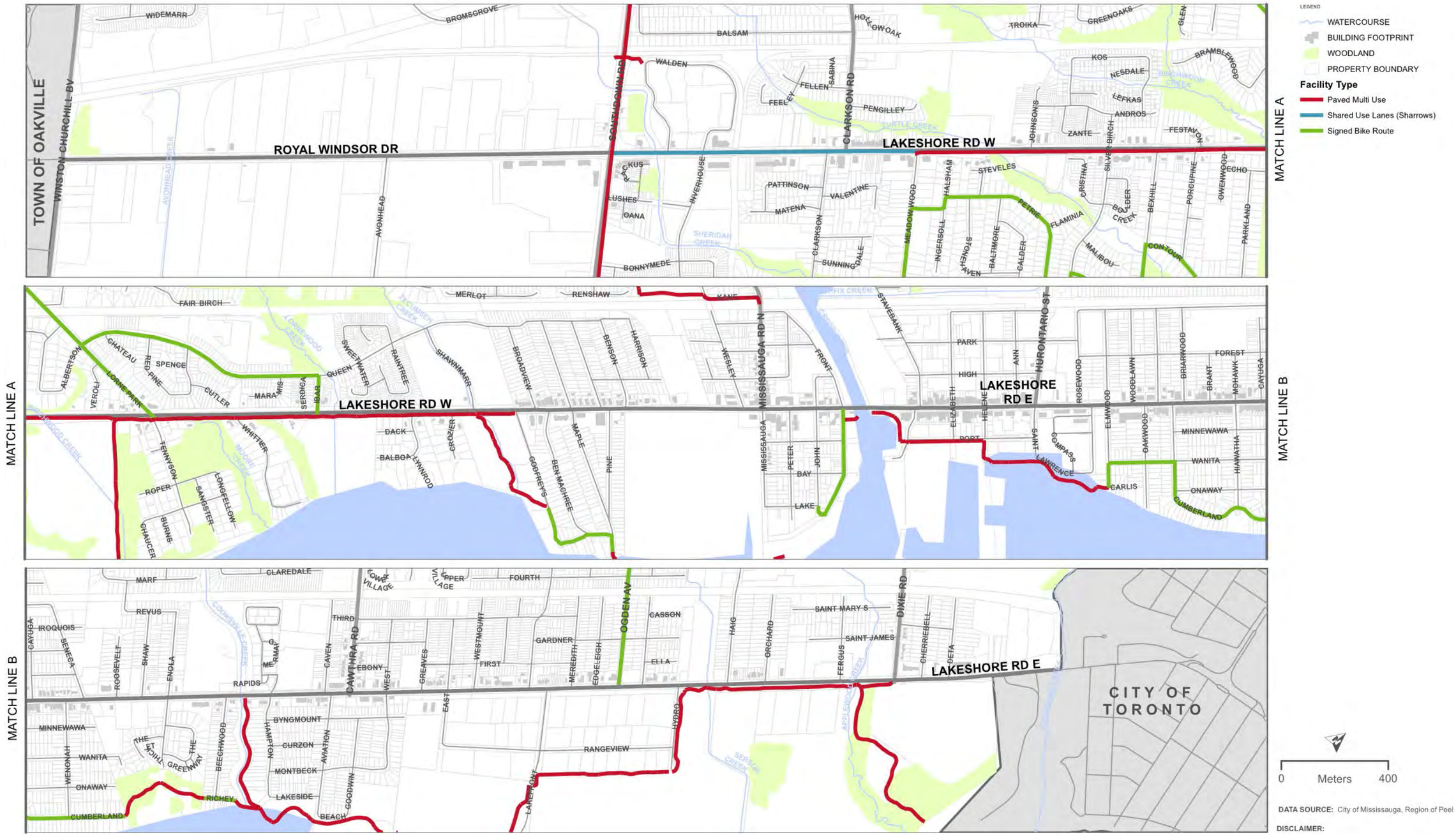


Exhibit 2-12 Existing Cycling Network (2016) Note: Bicycle lanes were added to Dixie Road following the production of this exhibit.

Exhibit 2-13 Cycling Level of Service (2016)

2.6.5 Transit

The Strategic Analysis Area is served by three categories of transit networks: local MiWay bus routes, regional, and inter-municipal connectors as shown in **Exhibit 2-14**. There is a mix of bus stop typologies along Lakeshore Road, including: on-street stops, bus bays, near and far side stops, and bus shelters. Bus bays were provided during the time that Lakeshore Road was under the jurisdiction of the Ministry of Transportation (MTO) and since conversion to a local road, MiWay has progressively eliminated bus bays where possible in favour of on-street stops. Existing bus bays do not currently accommodate MiWay's sixty-foot buses.

MiWay Route 23 along Lakeshore Road is an important east-west transit connection in the City of Mississauga and serves three GO Stations and connects to important TTC routes at Long Branch. Transit activity is concentrated around the Clarkson, Port Credit, and Long Branch GO Station platforms as well as the intersections of Lakeshore Road/Elizabeth Street and Lakeshore Road/Hurontario Street. Other locations with high transit activity include Lakeshore Road/Cawthra Road and Lakeshore Road/Ogden Avenue. Route 23 (Lakeshore) has a total daily weekday ridership of approximately 4,000 persons with an average daily total route travel time of 33-40 minutes during the weekday (varying based on time of day). .

GO Transit operates the Lakeshore West Line between Union Station in Toronto and Aldershot Station in Burlington with limited service to Hamilton with stops at Long Branch, Port Credit, and Clarkson in the vicinity of the Study Corridor and within the Network Analysis Area.

Oakville Transit (OT) and the Toronto Transit Commission (TTC) provide local transit connections at key transfer stations. MiWay transit routes 5 and 23 connect to the Long Branch GO Station and TTC loop for connections to the GO Lakeshore West Line and TTC routes 110, 123, 501, and 508. Oakville Transit operates routes 4, 21,102, and 25 to Clarkson GO Station for connections to the GO Lakeshore West Line and MiWay routes 13, 14, 23, 29, 45, and 110.

Headways are greater than 15 minutes on average even during peak periods for both MiWay and GO Transit routes which can be categorized as "long-headway". Long-headways provide a reduced quality of service compared to "short-headway" arrivals (i.e. less than 10 minutes) since passengers typically budget extra time into their trip to ensure they actually catch their desired transit departure and provides less flexibility in leaving home or work. The service span on Route 23 and the Lakeshore West GO Line is long enough to allow additional types of trips to be served other than the traditional commute trips and midday trips.

A key factor in choosing to use transit and an indicator of the quality of the service is whether or not the transit service provides a reasonable walking distance to one's origin and destination. The typical passenger will walk to access a bus stop approximately 400 metres or less with an average walking speed of 5 kilometres per hour (i.e. 5 minutes). **Exhibit 2-15** illustrates a 400 metre (5 minute) walking distance from each bus stop serving Route 23. Several other factors influence the access distance to transit including: the pedestrian environment, street patterns, accessibility, bicycle access, and automobile access/park-and-ride facilities; however, there is adequate coverage for the Study Corridor. There are approximately 18,500 people and 4,400 jobs within walking distance to an existing bus stop.

2.6.6 Motorized Vehicles

The following section describes the existing network, demand and level of service with respect to motorized vehicles within the Study Corridor, Network Analysis Area, and Strategic Analysis Area. The road network within the Strategic Analysis Area is illustrated in **Exhibit 2-16** and includes Provincial, Regional, and Local roads. In general, the Study Corridor is operating with excess capacity to accommodate existing vehicle volumes.

Existing traffic on Lakeshore Road is highest in the eastbound direction during the weekday AM peak hour and generally ranges between 1,000 and 2,000 vehicles per hour with a 2,500 vehicle per hour spike at Mississauga Road. In the weekday PM peak, traffic is highest in the westbound direction and generally ranges between 1,000 and 1,500 vehicles per hour, with a 2,000 vehicle per hour spike at Cawthra Road.

In both peaks, the off-peak direction traffic flow is much lower than the peak direction, indicating that Lakeshore Road serves a commuter function. The lowest volumes are observed at the east and west ends of the Study Corridor indicating that the intra-Mississauga traffic role of Lakeshore Road is more significant than its inter-regional role. However, this does not speak to the use of Lakeshore Road as a short distance bypass when issues occur on the QEW.

The road segments that are congested or above capacity include:

- Queensway at Cawthra Road and Dixie Road in the AM and PM peak hours in the peak directions.
- Lakeshore Road at the Credit River and at the Etobicoke Creek in the AM and PM peak hours in the peak directions.

The level of service at an intersection is based on the average control delay per vehicle for a given movement. Delay is an indicator of how long a vehicle must wait to complete a movement and is represented by a letter between 'A' and 'F', with 'F' being the longest delay. The volume to capacity (v/c) ratio is a measure of the degree of capacity utilized at an intersection.

Existing operations along the Study Corridor are generally acceptable in terms of both LOS and v/c ratio. No intersection is operating with LOS "F" or at capacity (v/c ratios greater than 1.0). Specifically, a majority of the signalized intersections on Lakeshore Road (27 out of 29) are operating with overall level of service A, B, or C, during both the weekday AM and PM peak hours. Among the 27 intersections, no movements are operating with v/c ratios higher than 0.9 or worse than LOS 'E', with the two exceptions at:

- Clarkson Road South/Lakeshore Road: The southbound approach (driveway out of Tim Hortons) during the weekday PM peak hour. The southbound left-through-right turn movement is operating with v/c ratio 0.92 and LOS 'F';
- Clarkson GO Access Road/Royal Windsor Drive: The northbound approach during the weekday PM peak hour. The northbound left turn movement is operating with v/c ratio of 1.00 and LOS 'F'.

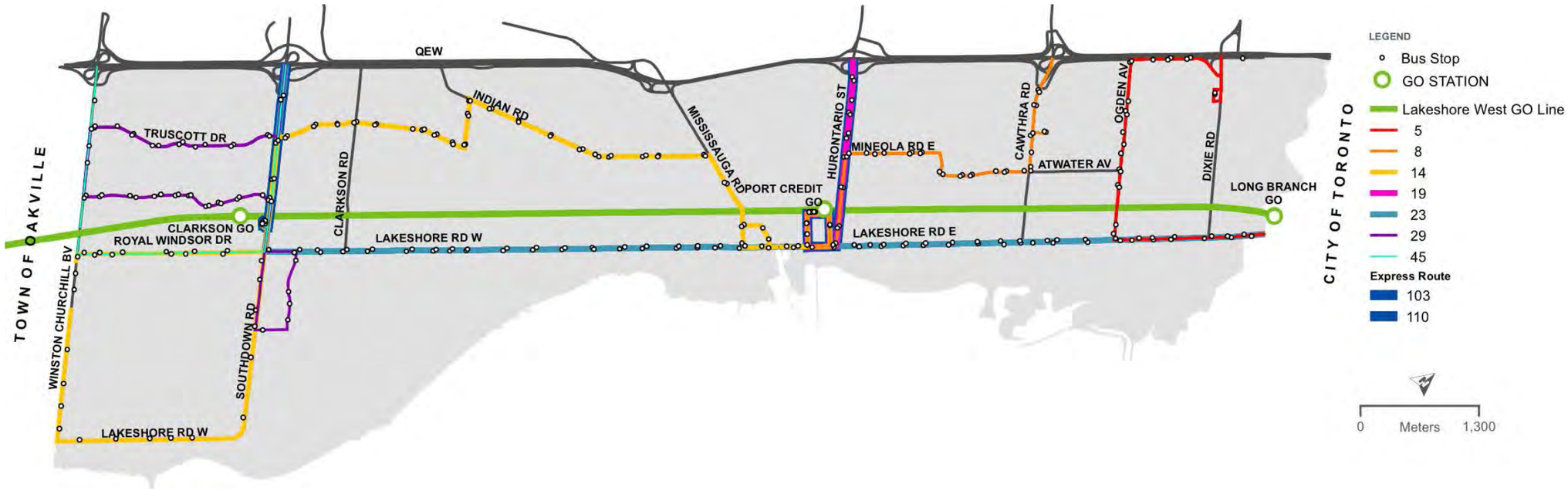


Exhibit 2-14 Existing Transit Network (2016)

Exhibit 2-15 Transit Walk Shed (400 metre or 5 minute walking distance)

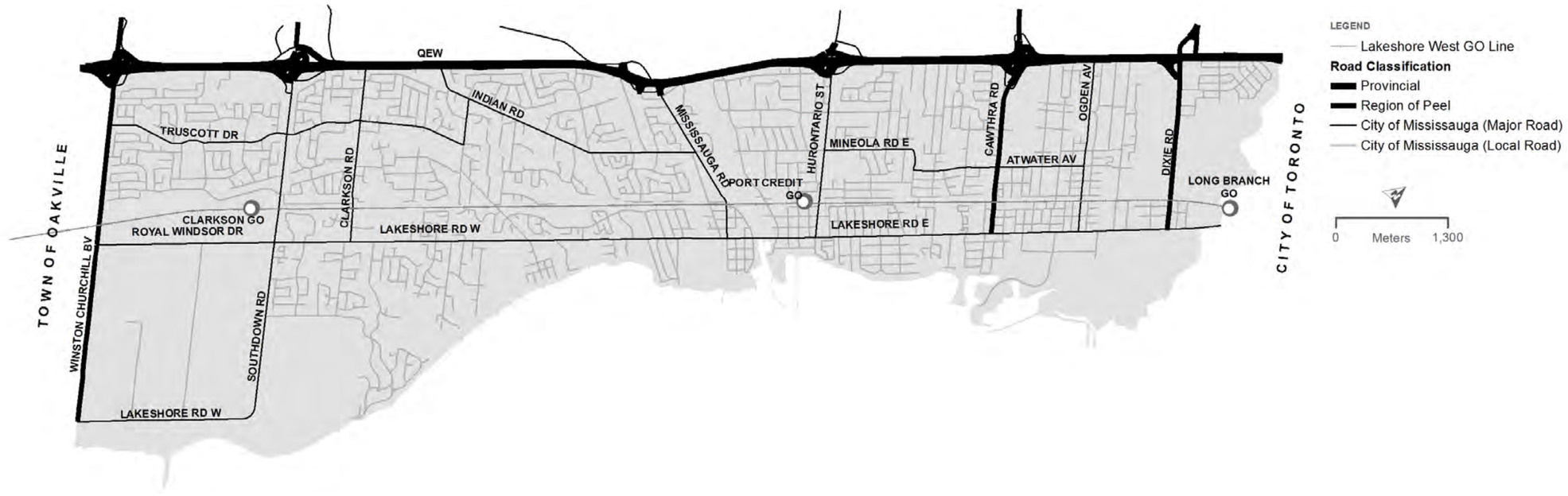


Exhibit 2-16 Existing Road Network (Jurisdiction) (2016)

2.6.7 Goods Movement

Major truck generators within the Strategic Analysis Area are located where high concentrations of businesses generate a significant number of truck trips such as manufacturing, wholesale, and transportation and warehousing businesses as shown in **Exhibit 2-17**. There is a high concentration of these businesses within the Southdown and Lakeview Character Areas. Secondary truck trip generators include professional, scientific and technical services and retail businesses and are generally served by light to medium vehicles compared to heavy vehicles serving the manufacturing, wholesale, and transportation and warehousing businesses.

The highest truck volumes are observed at the Southdown Road/Lakeshore Road and Ogden Avenue/Lakeshore Road intersections consistent with high concentration of manufacturing, wholesale, and transportation and warehousing businesses at these locations. Truck volumes are relatively consistent throughout the rest of the Study Corridor generally ranging between 50 – 175 vehicles during peak hours.

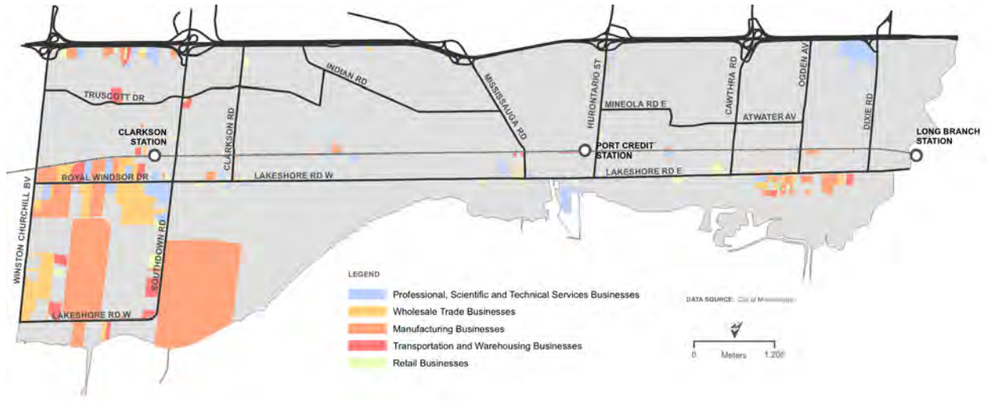


Exhibit 2-17 Employment Areas by Type of Business (2016)

2.6.8 Parking

On-street parking is provided along the Study Corridor in the form of lay-bys. Lay-by parking is a designated paved area beside the main roadway where cars can park. There are approximately 258 layby parking spaces along the Study Corridor. There is no on-street parking allowed at any time within the four general purpose travel lanes on Lakeshore Road or Royal Windsor Drive.

The majority of lay-by parking is provided on both sides of the road in the Port Credit area between Mississauga Road and Cawthra Avenue, making up 50% of the public on-street parking supply. The remaining 50% is found in Clarkson Village between Mississauga Road and Southdown Road; no on-street parking of any kind is provided in Lakeview or the Southdown Employment area. Public on-street parking represents 16% of the total parking supply along the Study Corridor. The on-street parking supply within the corridor is subject to restrictions varying by Location but is limited to the following types:

- Pay and display (10 AM to 5 PM)
- 15 or 30 minute maximum
- Standard City By-law (3 hour maximum)
- No stopping (8 AM to 9 AM or 3 PM to 4 PM, Monday to Friday, September to June)

The most common restriction and represents nearly 90% of the parking supply is the pay and display restriction. Two other types of parking are found along the Study Corridor, including: public off-street parking and private parking.

For all segments of the Study Corridor and for all parking types, parking spaces are utilized more during weekdays than on weekends. Public on-street parking is most utilized in the Port Credit area (i.e. Hurontario Street to Mississauga Road), whereas public off street parking is most utilized in the Southdown Employment area but also highly utilized in the Port Credit and Lorne Park communities.

2.6.9 Safety

A safety assessment and collision review was completed for the Study Corridor. The analysis was based on collision records provided by the City for the years between 2009 and 2013 along the Study Corridor. Collisions reported with classification of 'Non-reportable' were assumed to be 'Property Damage Only' (PDO), as more severe collisions resulting in injury would be classified as such. The full safety assessment is provided in the **Existing Conditions Report, 2016 provided in Appendix D**.

There were 904 collisions reported between 2009 and 2013 in the Study Corridor; 743 (82%) were classified as PDO, 159 (18%) non-fatal injury, and 2 (0.2%) fatal injury collisions. The majority of collisions occurred in eastbound and westbound directions which are consistent with the traffic patterns on Lakeshore Road.

The location at which collisions occurred is relatively distributed along the Study Corridor, with the exception of Southdown Road which experienced the highest number of collisions occurred within the review period.

Region of Peel completed a Network Screening Analysis for all of Peel Region through their ***Annual Road Safety Report, 2016***. Three (3) intersections within the Study Corridor were included in the Region's network screening analysis; potential for safety improvement (PSI) and ranks for other intersections are not available. The intersection with the highest PSI ranking is Lakeshore Road at Winston Churchill Boulevard. The intersection with the highest collision rate is Southdown Road and Lakeshore Road.

3 Multi-Modal Needs Assessment

This section documents the overall need and justification for transportation improvements to the Lakeshore Road and Royal Windsor Drive Corridor from a transportation network perspective, and considering the needs for each travel mode.

3.1 Walking

3.1.1 Existing Walking Needs Assessment

As noted in the Existing Conditions Report, the sidewalk network in the Network Analysis Area generally provides sufficient coverage and is present on both sides of the street for the entire Corridor with the exception of the south boulevard on Royal Windsor Drive between Winston Churchill Drive and Avonhead Road and the south boulevard on Lakeshore Road between Dixie Road and the east City limit. However, the quality of the pedestrian environment is less than satisfactory for much of the Corridor. High traffic volumes and speeds, narrow sidewalks and boulevards, and long crossing distances for pedestrians are the major impediments to a high quality of service for pedestrians. Opportunities to provide a larger buffer between the sidewalk and the roadway should be explored as well as wider sidewalks, zebra-striped intersection crossings, and lower speed limits to improve safety and improve the overall pedestrian quality of service.

Through the first round of public consultation several concerns were noted with respect to the pedestrian environment along Lakeshore Road, specifically:

- Residents supported traffic signals being timed according to time of day and day of week to accommodate pedestrians in a timely manner during off-peak hours across intersections
- Residents were concerned about speeding along Lakeshore Road noting that the speed limit could be lowered to be consistent across the Corridor
- Sidewalks were noted as being in poor condition and the lack of continuous/consistent design was also mentioned
- There was support for improved pedestrian connections and priority. Specifically, residents would like to see better pedestrian connectivity across Lakeshore Road, across the Credit River, and increased time to cross the road. Providing more opportunities for pedestrian crossings was also frequently noted.
- Improvements to the public realm including: more places to sit, street furnishings, street art and landscaping were supported

3.1.2 Future Walking Needs Assessment

As the Lakeshore Road Corridor intensifies and redevelopment occurs, more people and jobs will be added and there will be greater demand on the existing pedestrian facilities – not only sidewalks but street cafes, benches, streetscaping, and walking trails. In order for the City to achieve its goal and vision for the Corridor, improvements to the pedestrian environment should be made to make walking an attractive and viable alternative mode of transportation especially for short distance trips (i.e. ≤ 1 km) which are currently made by car.

3.2 Cycling

3.2.1 Existing Cycling Needs Assessment

As noted in the City of Mississauga's Cycling Master Plan (2010 and updated in 2018), Lakeshore Road is an important corridor for cycling. Available data consistently shows Lakeshore Road as a location where cycling activity is relatively high and it is an important cycling route between adjacent municipalities. Collision data from 2009-2013 shows clusters of collisions along the Lakeshore corridor in locations with and without cycling facilities. There is a need to improve safety and access for cyclists along this corridor.

As noted in the Existing Conditions Report, the existing cycling network in the Network Analysis Area is neither continuous nor contiguous and generally provides a poor level of service for cyclists due to the lack of safe, separated, and connected routes. High traffic volumes and speeds along Lakeshore Road also contribute to a deteriorated level of service for cyclists. The only segments of Lakeshore Road that have a good level of service for cyclists are locations where a bi-directional multi-use path is provided on the south side of Lakeshore Road. Some of these segments represent parts of the larger Waterfront Trail between Meadow Wood Drive and Broadview Avenue, and between Hydro Road and Dixie Road. The Waterfront Trail is a marked cycling route that generally runs parallel to the Lake Ontario waterfront – it takes many forms including multi-use paths, and signed routes on residential streets.

Significant gaps in east-west and north-south cycling continuity also act as a barrier to cycling in the Network Analysis Area. The existing and proposed cycling networks as well as the location of potential future connections and crossings are illustrated in **Exhibit 3-1**.

Through the first round of public consultation several concerns were noted with respect to the cycling network along Lakeshore Road, specifically:

- Lack of bicycle parking/storage
- There was support for continuous separated bike lanes along Lakeshore Road from Oakville to Toronto
- The Waterfront Trail is seen as a recreational trail that is circuitous and not direct which is not ideal for commuting. Fast riding cyclists present a safety concern to pedestrians that currently share the trail
- Dixie Road to Long Branch GO Station was noted as a critical missing link in the Lakeshore Road cycling route
- Cycling trails were noted as being in poor condition and the lack of continuous/consistent design was also mentioned
- P-gates (or barriers to prevent vehicles from entering paths) on the Waterfront Trail and along multi-use paths were consistently noted as a barrier to travel for cyclists and should be removed

3.2.2 Future Cycling Needs Assessment

There is currently a high demand for cycling along Lakeshore Road and the Waterfront Trail as well as high demand for cycling linkages from neighbourhood centres, Clarkson Village, Port Credit, the waterfront, and GO Stations to destinations throughout the Corridor. The demand for cycling will continue to increase in the Network Analysis Area and the Lakeshore Road Corridor specifically as redevelopment occurs and new rapid transit is built (i.e. Regional Express Rail and the Hurontario

LRT). Residents will want alternative ways to access GO Stations and transit stations in a safe and convenient way. To accommodate this future demand, east-west and north-south cycling network gaps will need to be bridged to create a minimum grid of cycling facilities in the Network Analysis Area. Continuous and separated cycling routes should be provided to attract a segment of the travelling public who is "interested but concerned" about cycling and who currently use cars to make short trips (i.e. ≤ 5 km).

The Waterfront Trail and planned future cycling connections (as identified in the Mississauga Official Plan) are opportunities to create a minimum grid of safe and connected cycling routes in the Network Analysis Area. The updated 2018 Cycling Master Plan identifies separated bike lanes for the entire Study Corridor between Winston Churchill Blvd and the Etobicoke Creek with proposed major barrier crossings at the QEW, Mineola/Indian Rd, and the south side of the Lakeshore West GO railway line.

3.2.2.1 CYCLING POTENTIAL IN NETWORK ANALYSIS AREA

Potentially cyclable trips are all trips with a cyclable trip distance that are not currently walked or cycled, as long as these trips were not taken to facilitate a passenger (i.e. drop someone at work or school) and the straight line distance between origin and destination was between one and five kilometres.

An analysis of trips originating from the network analysis area using 2011 TTS data found that approximately 94% of trips (or 24,161 daily trips) that meet the criteria for potentially cyclable trips are currently not walked or cycled. There is an immense opportunity to shift these trips to cycling by improving the quality of service of cycling facilities along Lakeshore Road and provide connections to planned future routes to promote this as a viable alternative mode.

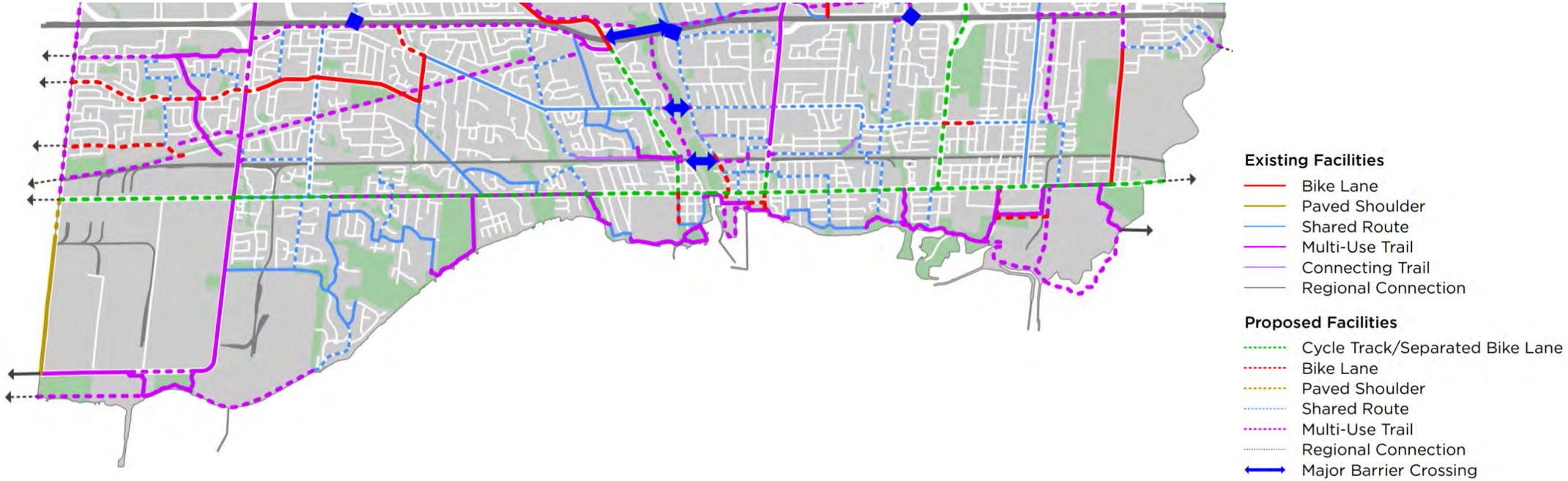


Exhibit 3-1: Existing and Proposed Cycling Network (Mississauga Cycling Master Plan, 2018)

3.3 Transit

3.3.1 Existing Transit Needs Assessment

Route 23 has an approximate capacity of 200 peak direction passengers per hour (based on 15 minute weekday peak headways and MiWay loading standards of 50 passengers per 40 foot bus). In the absence of any kind of transit priority, Route 23 buses operate within mixed traffic therefore being vulnerable to road conditions causing delays and service reliability issues. Buses also experience reliability issues due to difficulty in making left turns from Lakeshore Road to Ann Street in order to access the Port Credit GO Station. The PM peak direction peak hour ridership is 243 passengers..

Through the first round of public consultation concerns were noted with respect to transit along Lakeshore Road and MiWay Route 23, specifically:

- Transit service on Southdown Road south of Lakeshore Road was requested to access destinations near employment lands
- Moving the southbound bus stop on Ogden Avenue closer to Lakeshore Road to minimize risk of pedestrians dangerously crossing Ogden Avenue

3.3.2 Future Transit Needs Assessment

To assess the need for transit improvements in the future (i.e. 2041) the “do nothing” or “business as usual” (BAU) condition was tested to determine if the existing transit service on Lakeshore Road is over capacity. The “Business as Usual” (BAU) scenario illustrates the effects of making no changes to the existing condition transit service, and acts as a baseline to which alternative solutions can be considered. The BAU scenario includes all committed transit improvements, such as the Mississauga Transitway, Hurontario LRT (HuLRT), and GO Regional Express Rail (RER). There was no improvement to MiWay Route 23Route 23 in the 2041 BAU scenario, meaning it is maintained as conventional bus with 15 minute weekday peak headways operating in mixed traffic

For the purpose of consistency, the BAU transit network was based on the network developed for the Dundas Connects Study and supplied to HDR along with road network updates and land use numbers developed by the City of Mississauga.

In the BAU scenario, existing bus service is projected to be over capacity in the future. The 2041 BAU PM peak direction peak hour ridership is 219 passengers compared to a capacity of 200 peak direction passengers per hour. The model being used to test future transit ridership potential is capacity constrained, meaning once the transit service becomes crowded or operates near capacity potential riders may shift behaviour and use other modes or routes to avoid the congestion. To test the potential for higher ridership along the route in the future, two additional scenarios were considered: BRT and an extension of the TTC streetcar. The results of these scenarios indicated that there is potential to support higher order transit east of Mississauga Road as illustrated in **Exhibit 3-2**; however, ridership potential west of Mississauga Road is assumed, based on land uses and proposed development, to remain low and would be adequately served by conventional or enhanced bus. In order to achieve the goals of the study, namely to integrate transportation and land use and move people safely and efficiently, improvements to transit are necessary such that projected population and employment growth along the corridor has a competitive and attractive alternative to driving.

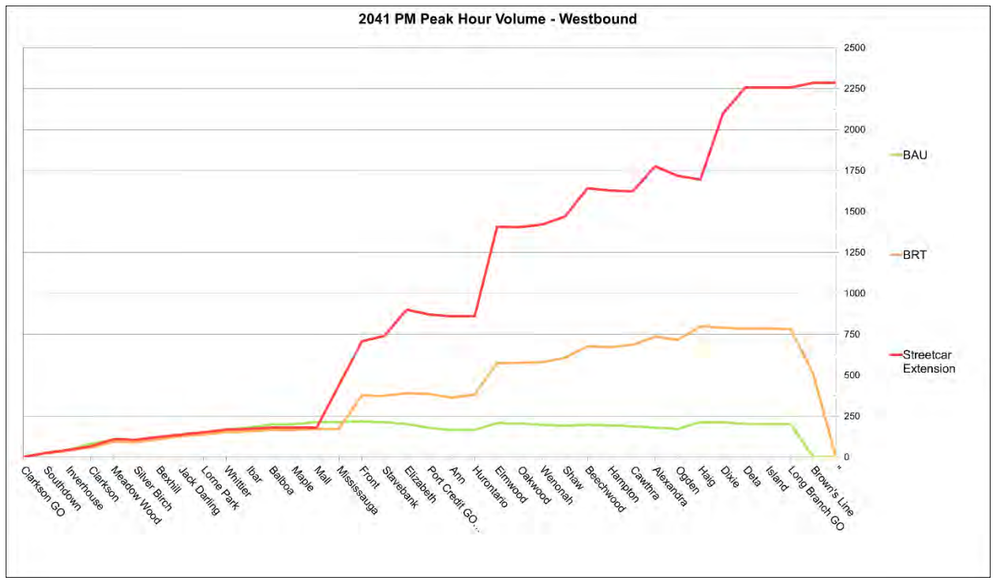


Exhibit 3-2: Ridership Profile for Lakeshore Corridor Showing the BAU Scenario, the Standalone BRT Scenario, and the Extension of the Streetcar Scenario

3.3.2.1 COORDINATION OF TRANSIT AND LAND USE

Transportation and land use should be coordinated such that appropriate densities and mix of uses are in proximity to planned transit. As noted in the Ministry of Transportation’s Transit Supportive Guidelines, as “residential and employment densities increase, the number of passengers per route-kilometre increases and a higher level of transit service can be cost –effective”. The Transit Supportive Guidelines provide suggested minimum density thresholds for areas within a 5-10 minute walk of transit capable of supporting different types and levels of transit service in **Table 3-1**.

Table 3-1: Suggested Minimum Density Thresholds

Transit Service Type	Suggested Minimum Density (people and jobs per hectare)
Bus Transit Service (one bus every 20-30 minutes)	< 50
Frequent Transit Service (one bus every 10-15 minutes)	80
Very Frequent Bus Service (one bus every 5 minutes with potential for BRT or LRT)	100
Dedicated Rapid Transit (LRT/BRT)	160
Subway	> 200

The projected future (2041) density (people and jobs combined per hectare) is presented in **Exhibit 3-3**. Based on future development in the Strategic Analysis Area including the major re-development sites at the Imperial Oil Lands (IOL) site, Port Credit GO Mobility Hub, Canada Lands Corporation (CLC) site, and the Ontario Power Generation (OPG) and Lakeview Employment Area site, the Lakeshore Road Corridor between Mississauga Road and the Etobicoke Creek has high order transit supportive (i.e. BRT/LRT) density.

Exhibit 3-3: Projected Future (2041) Density

In summary, there is a need to improve the existing bus service along the Lakeshore Road corridor; however, based on ridership potential and projected future density there is only a need for higher order transit between Mississauga Road and Long Branch GO Station, conventional or enhanced bus service will adequately service the area between Winston Churchill Boulevard and Mississauga Road.

Exhibit 3-4: Summary of Rapid Transit Need/Potential within the Lakeshore Corridor

3.4 Autos/Trucks

3.4.1 Existing Autos/Trucks Needs Assessment

As noted in the Existing Conditions Report, the existing road network within the broader study area is experiencing capacity constraints in the east-west direction during both the AM and PM weekday peak periods. A screenline analysis of east-west transportation links in the broader study area (between Dundas Street and Lake Ontario) was completed to assess deficiencies in the existing road network. A screenline is an imaginary line on a map that crosses numerous roads of interest. The rationale behind using this analysis for traffic capacity purposes lies in the fact that traffic often has the flexibility to divert to other parallel routes, so considering an entire screenline is beneficial in understanding broader, network-wide traffic issues. During the AM peak hour, the Credit River, Hurontario, and Etobicoke Creek screenlines are congested in the eastbound direction. During the PM peak hour, the Credit River screenline is congested in both directions while the Etobicoke Creek screenline is congested in the westbound direction as shown in **Exhibit 3-5**.

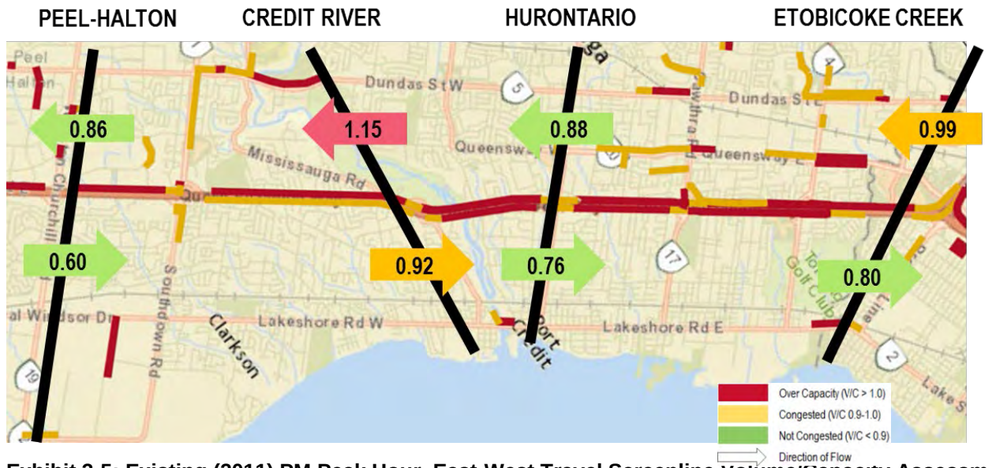


Exhibit 3-5: Existing (2011) PM Peak Hour, East-West Travel Screenline Volume/Capacity Assessment

At the intersection level, there are existing operational issues at Stavebank Road, Mississauga Road, Clarkson Road South, Southdown Road, and the Clarkson GO access road. Through the first round of public consultation several concerns were noted with respect to traffic operations at intersections along Lakeshore Road and Royal Windsor Drive, specifically:

- Clarkson Road North and South were noted as problematic from a traffic operations and safety perspective due to the very short distance between intersections (less than 80 m).
- Delays caused by turning vehicles in the Port Credit area at Elizabeth Street, Stavebank Road, and Front Street were noted as contributing to operational issues and congestion.
- Stavebank Road was consistently noted as having geometric deficiencies which lead to operational and safety problems. Delays caused by turning vehicles were also noted as a significant problem.
- Mississauga Road was noted to be a problem intersection due to its configuration and layout being confusing.
- Residents expressed support for moving the existing traffic signal at John Street to Front Street in order to improve operations and safety

Further to intersection specific problems, several comments noted that the bridge over the Credit River acts as a bottleneck to travel in Port Credit and opportunities to remove on-street parking should be considered to make room for other improvements to the public realm, including wider sidewalks and dedicated cycling facilities. Signal timing was a recurring comment and residents expressed dissatisfaction with the coordination of traffic lights along Lakeshore Road.

Speeding along Lakeshore Road was noted as an issue and residents expressed support for lowering the speed limit and making it consistent throughout the Corridor. Concerns regarding speeding through neighbourhoods to avoid traffic on Lakeshore Road were also noted. These concerns were most frequently noted near GO Stations and around congested segments and intersections along Lakeshore Road.

3.4.2 Future Autos/Trucks Needs Assessment

An analysis of future (2041) under “do nothing” or “business as usual” conditions was completed for the study area to determine future traffic volumes given projected population and employment growth. Similar to the transit analysis discussed previously, the analysis assumed a BAU condition where planned and approved improvements to the road and transit network to the City of Mississauga and surrounding areas were incorporated; however, no improvements to Lakeshore Road were made.

The BAU analysis also indicated that the average trip length for trips using Lakeshore Road for any part of their trips is approximately 12 to 14 kilometres in the PM peak hour. Eighty nine percent (89%) of trips either start or end on the Lakeshore Corridor while only 8% of trips both start and end on the Lakeshore Corridor. Eleven (11%) of trips use Lakeshore Road as a through Corridor – meaning that Lakeshore Road functions primarily to facilitate local trips rather than longer distance commuter trips (i.e. from Oakville to Toronto).

Exhibit 3-6 presents the PM peak hour traffic volumes in the eastbound and westbound direction along Lakeshore Road in the BAU condition at the Etobicoke Creek, the Credit River, Clarkson Road, and west of Winston Churchill Boulevard.

Auto volumes are highest westbound across the Credit River (approximately 2730 vehicles per hour) which exceeds the theoretical capacity of the two-lane per direction bridge (approximately 2000 vehicles per hour). A screenline analysis of east-west transportation links in the broader study area (between Dundas Street and Lake Ontario) was also carried out for the future (2041) ‘BAU’ condition to assess travel demand and capacities. As shown in **Exhibit 3-7**, the road network within the broader study area continues to experience capacity constraints in the east-west direction with the Peel-Halton and Credit River screenlines becoming heavily congested in the PM peak hour in the westbound direction. Without any transportation improvements along Lakeshore Road, segments of Lakeshore Road are congested or above capacity between Winston Churchill Boulevard and Clarkson Road, through Port Credit (Mississauga Road to Cawthra Road) and between Dixie Road and the Etobicoke Creek.

Exhibit 3-6: Future (2041) PM Peak Hour, Lakeshore Road Select Corridor Demand

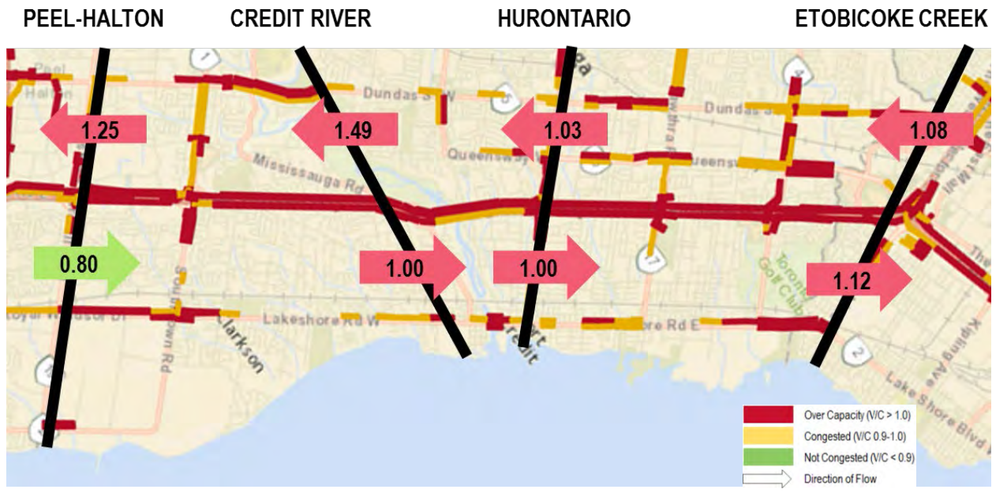


Exhibit 3-7: Future (2041) PM Peak Hour 'BAU', East-West Travel Screenline Volume/Capacity Assessment

The Lakeshore Road corridor is constrained and there is no opportunity to widen the right-of-way (ROW) in the Port Credit Area (i.e. where the existing ROW is 26 m wide) to accommodate additional lanes to increase road capacity; therefore, operational improvements and improvements to transit and active transportation facilities must be considered to increase the people moving capacity (i.e. number of people moved per hour versus number of vehicles moved per hours) of the road.

Mississauga's Official Plan (OP) as summarized in the Future Planning and Context Report lays out policies for creating a multi-modal City. Specifically, it states that although Lakeshore Road will continue to move large volumes of traffic and support goods movements, the design of the street must be sensitive to surrounding land uses. The needs of transit, pedestrians and cyclists will be placed at the forefront; transportation decisions will support the creation of a fine grain street pattern, low traffic speeds, a mix of travel modes and attention to the design of public realm.

With the OP policies in mind and a constrained right-of-way (ROW) through much of the Corridor (i.e. Lakeshore Road from west of Cawthra Road to west of Mississauga Road); widening the right-of-way to achieve a balance of space for all users is not practical in addressing the future transportation issues in certain sections of the Corridor.

3.4.3 Goods Movement

As Lakeshore Road is the only continuous east-west roadway link south of the QEW, it is important from a network redundancy perspective to maintain the current capacity along Lakeshore Road to allow for efficient movement of goods for primary and secondary truck trip generators along the Study Corridor.

3.4.4 Parking

For all segments of the Study Corridor and for all parking types, parking spaces are utilized more during weekdays than on weekends. Public on-street parking is most utilized in the Port Credit area (i.e. Hurontario Street to Mississauga Road), whereas public off-street parking is most utilized in the Southdown Employment area but also highly utilized in the Port Credit and Lorne Park communities. Layby parking is highly utilized in the Port Credit area (75% on weekdays); therefore, there is a need to maintain some layby parking. Layby parking is flexible in its use and could become short term pick-up and drop-off locations for ridesharing, shared autonomous vehicles, or converted to streetscaping or patio space for cultural use in the future as the need for parking changes overtime.

3.4.5 Access Management

A lack of defined driveway accesses to retail/commercial plazas as shown in **Exhibit 3-8** occurs along Lakeshore Road between Seneca Avenue and the Etobicoke Creek. Continuous curb cuts provide access along the entire frontage of a property and creates opportunities for conflicts between vehicles and pedestrians on sidewalks. Consolidation of access points along the Study Corridor is preferred from a traffic and safety perspective. It is recommended that an access management strategy for Lakeshore Road be developed during subsequent phases of the Study to define the City's policies for consolidating accesses such as through the development application process.

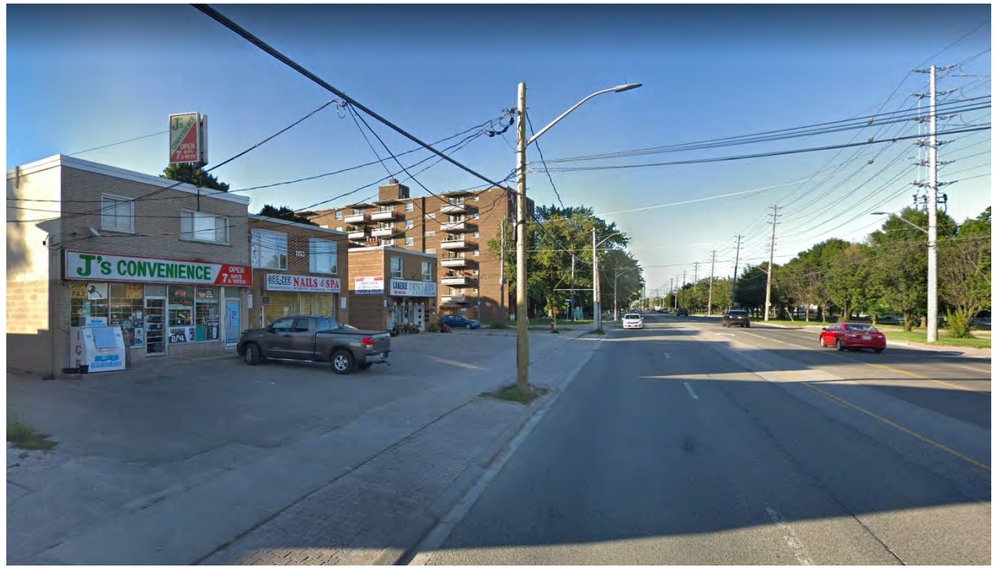


Exhibit 3-8: Poorly Defined Private Property Driveway Access (Lakeshore Road and Haig Boulevard)

There is a two-way centre-left-turn lane (TWCLTL) or continuous left turn lane within the following sections of the Study Corridor:

- Winston Churchill Boulevard to Southdown Road
- Inverhouse Drive to Johnson's Lane
- Mississauga Road to John Street
- Seneca Avenue to the Etobicoke Creek

There is a need to provide left turn access in these segments.

3.4.6 Safety

Three intersections within the Study Corridor (Cawthra, Dixie, and Winston Churchill) were included in the Region's network screening analysis; potential for safety improvement (PSI) and ranks for other intersections were not available. The intersection with the highest PSI ranking is Lakeshore Road at Winston Churchill Boulevard. The intersection with the highest collision rate (per City of Mississauga provided date) is Southdown Road and Lakeshore Road. Potential improvements to be considered during the identification and evaluation of alternative right-of-way solutions include:

- Applying a consistent 50km/h speed limit to the entire Study Corridor.
- Removing right turn channels at Winston Churchill Boulevard and Southdown Road intersections.
- Tightening curb radii for shorter crossing distances
- Implementing new pedestrian crossover locations in between far spaced signalized intersections.

3.5 Credit River Crossing

The Credit River is a major barrier to east-west travel in the study area. The existing four (4) crossings of the Credit River are: the Queen Elizabeth Way (QEW) crossing, which accommodates highway automobile traffic; the Lakeshore GO Rail bridge crossing, which accommodates rail traffic; the Lakeshore Road bridge crossing, which accommodates pedestrian, cyclist, and automobile traffic; and the Waterfront Trail bridge crossing, which accommodates pedestrians and cyclists. Locations are shown in **Exhibit 3-9.**

Exhibit 3-9 Existing Credit River Crossings (within Network Analysis Area)

Based on these existing crossing locations, there is a three (3) km gap in the east-west municipal transportation network across the Credit River between Dundas Street and Lakeshore Road for pedestrians, cyclists, and vehicles. Although the City is also studying the feasibility of an Active Transportation (AT) crossing at the QEW and Credit River, if implemented this potential AT crossing would not address the network connectivity issues south of the Lakeshore GO rail corridor.

3.5.1 Existing Transportation Conditions

Lakeshore Road is the only crossing of the Credit River south of the Lakeshore GO rail corridor, and is currently over the theoretical capacity during the PM peak period, as shown in **Exhibit 3-10**. There is a high propensity to travel by car within the analysis area which is indicative of a primarily auto-oriented, low-density area in close proximity to a major freeway with free parking at regional rail stations. There is a high proportion of short trips (less than 1 kilometer) made by those driving alone which implies that walking and cycling are not attractive modes for these trips. Of all trips made to or from the analysis area, approximately half are to/from other parts of the City of Mississauga and the City of Toronto, while 23% remain internal to the Study Corridor. Existing travel patterns indicate that it is equally important for trip makers within the analysis area to access the rest of Mississauga as it is the City of Toronto by transit.

Exhibit 3-10 Existing Traffic Operations (2011 PM Peak Hour – Peak Direction – Westbound)

3.5.2 Future Transportation Conditions

A baseline analysis for future (2041) conditions was completed for the study area to determine future traffic volumes given projected population and employment growth. The baseline analysis assumed a "business as usual" (BAU) condition where planned and approved improvements to the road and transit network within the City of Mississauga and surrounding areas were incorporated; however, no improvements to Lakeshore Road were made. Auto volumes in the study area were projected to reach approximately 2,730 vehicles per hour in the westbound direction (PM peak hour peak direction) across the Credit River on Lakeshore Road. This volume exceeds the theoretical capacity of the four-lane bridge (approximately 2,000 vehicles per hour per direction), as shown in **Exhibit 3-11**. This demand is a result of the expended growth in the corridor. The corridor is expected to grow by approximately 56,000 people and 16,500 jobs between 2011 and 2041. The majority of this growth will be focused in the Port Credit area (i.e. 70 Mississauga Road, 1 Port Street, Port Credit GO Station area, and the Ontario Power Generation Site and Lakeview Employment Area). With transit enhancements on Lakeshore Road, automobile demand decreases by only 1 to 3%, depending on the scenario.

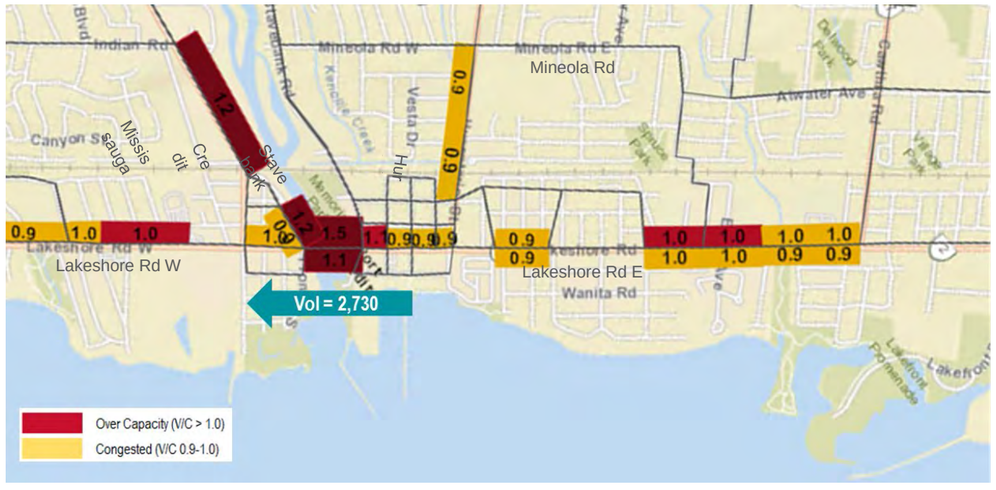


Exhibit 3-11 Capacity Deficiencies without New Credit River Crossing (2041 BAU PM Peak Hour)

As shown in **Exhibit 3-12**, most westbound travel along the Lakeshore Bridge during the PM peak hour begins or ends along the Lakeshore corridor. This indicates that the primary function of this crossing is to facilitate local trips as opposed to long distance regional trips (i.e. trips between downtown Toronto and Oakville). Of the volumes crossing the Lakeshore bridge in the westbound direction in the PM peak hour, approximately 28% travel west on Lakeshore Road and northbound on Mississauga Road, 25% travel southbound on Hurontario Street and west on Lakeshore Road, and 47% travel from east of Hurontario Street to west of Mississauga Road.

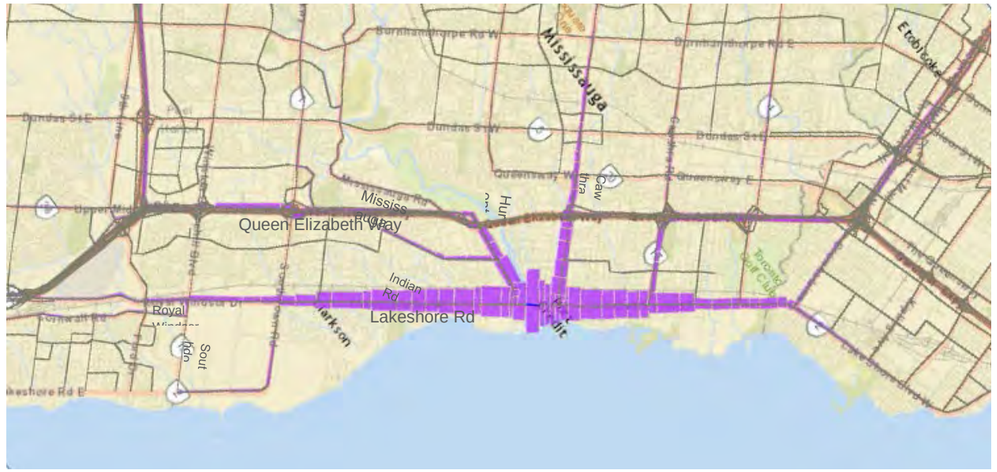
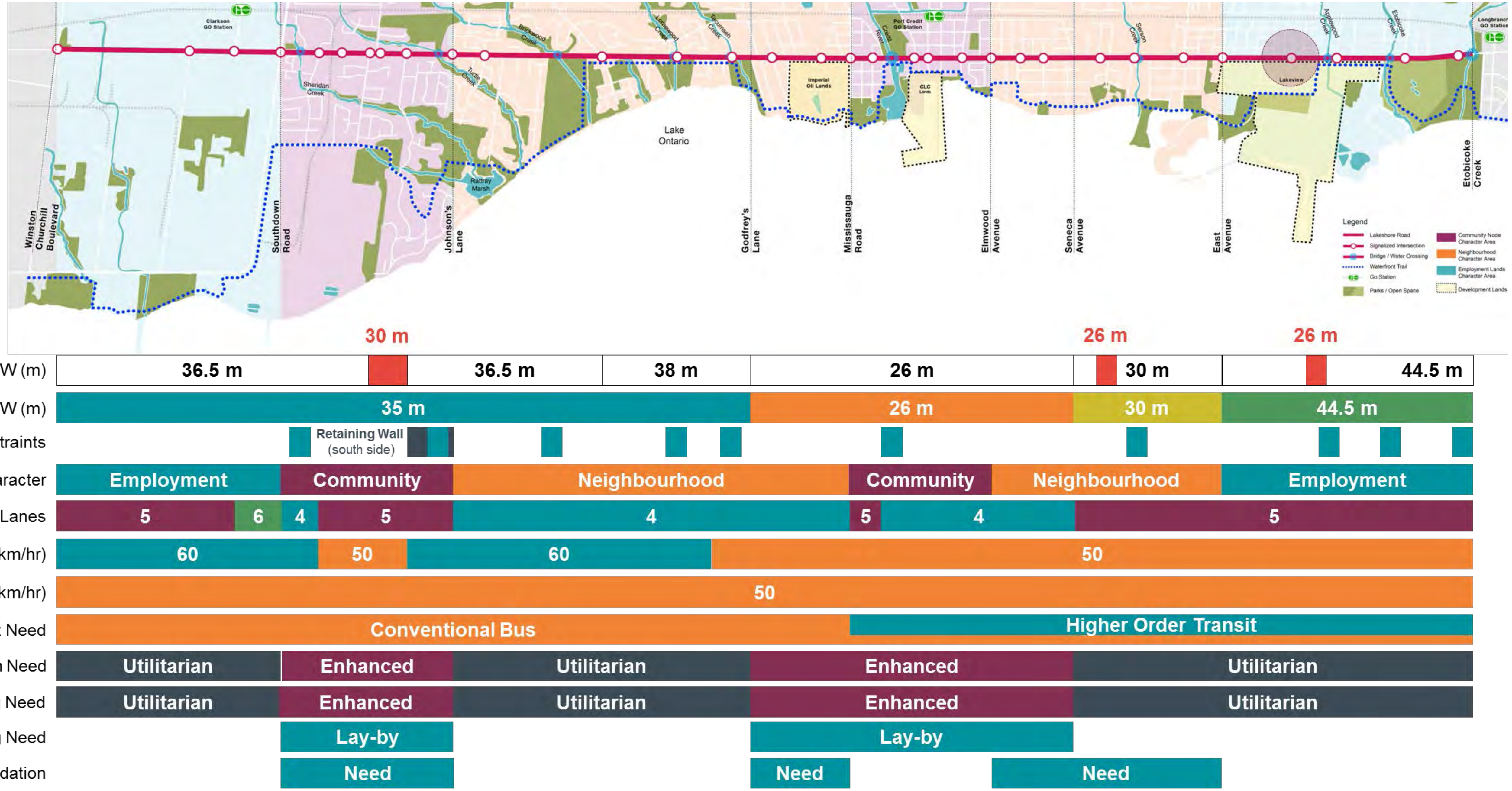


Exhibit 3-12 Auto Volumes (2041 BAU PM Peak Hour – both directions)

3.6 Summary of Needs Assessment

A summary of the key characteristics and multi-modal transportation needs along the Study Corridor are illustrated in **Exhibit 3-13**.


Clarkson GO Station
Sheridan Creek
Rattray Marsh
Lake Ontario
Port Credit GO Station
Imperial Oil Lands
CLC Lands
Lakeview
Longbranch GO Station
Winston Churchill Boulevard
Southdown Road
Johnson's Lane
Godfrey's Lane
Mississauga Road
Elmwood Avenue
Seneca Avenue
East Avenue
Etobicoke Creek
Legend
Lakeshore Road
Signalized Intersection
Bridge / Water Crossing
Waterfront Trail
Go Station
Parks / Open Space
Community Node Character Area
Neighbourhood Character Area
Employment Lands Character Area
Development Lands
30 m
26 m
26 m
Ex. ROW (m)
36.5 m
36.5 m
38 m
26 m
30 m
44.5 m
Designated OP ROW (m)
35 m
26 m
30 m
44.5 m
Environmental Constraints
Retaining Wall (south side)
Ex. Character
Employment
Community
Neighbourhood
Community
Neighbourhood
Employment
Ex. No. Lanes
5
6
4
5
4
5
4
5
Ex. Speed Limit (km/hr)
60
50
60
50
Prop. Design Speed (km/hr)
50
Transit Need
Conventional Bus
Higher Order Transit
Pedestrian Need
Utilitarian
Enhanced
Utilitarian
Enhanced
Utilitarian
Cycling Need
Utilitarian
Enhanced
Utilitarian
Enhanced
Utilitarian
On-street Parking Need
Lay-by
Lay-by
Driveway Consolidation
Need
Need
Need

Note: Not to Scale
Utilitarian: Facility as a means of transport rather than recreation. Users are typically concentrated at the same peak travel times as motorists and transit users.
Enhanced: Facility use serving both utilitarian users as well as recreational users both during and outside of peak travel times.
Driveway Consolidation: was based on Planning Policy as noted in the *Future Planning Context Report, October 2016.*

Exhibit 3-13 Summary of Needs Assessment

4 Vision and Guiding Principles

This section documents how the objectives of the study were carried out to develop a vision and a set of guiding principles which were used to develop the Problem and Opportunity Statement.

The objectives of the Study were:

- Develop a vision
- Recognize the different character areas
- Support all ways of travelling
- Connect people to places and move goods to market
- Support existing and future land uses
- Establish a plan to make the vision a reality

A vision for the Study Corridor was developed early on in the Study process. Public input helped shape the vision for the Study Corridor and resulted in a set of guiding principles which the Project Team referred to in the assessment of transportation and corridor design alternatives.

4.1 Guiding Principles

The following guiding principles for the Lakeshore Connecting Communities Study were identified to reflect best practice in multi-modal complete streets design and public input:

- Enhance connections to the waterfront
- Create vibrant public spaces
- Design for all ages and abilities
- Promote prosperity for local businesses
- Integrate transportation and land use
- Move people safely and efficiently
- Preserve the natural environment
- Enhance main street features
- Improve quality of life

Exhibit 4-1: Public Open House 2 (Clarkson Village Location)

4.2 Problem/Opportunity Statement

Lakeshore Road intersects a mix of established and developing communities. Preserving and enhancing the community's character and sense of place is important. By 2041, the Lakeshore Communities will grow by approximately 56,000 people and 16,500 jobs. Without any improvements to the transportation network in the Lakeshore Communities congestion will worsen for all road users. The existing pedestrian and cycling network are discontinuous and can be better integrated into the overall network. The existing transit service will require additional capacity in the future and a greater degree of transit priority. With limited road capacity, greater reliance on transit, walking, and cycling is required. This requires making these methods of travelling more attractive.

4.3 Public and Stakeholder Input

Public input helped shape the vision for the Study Corridor and resulted in a set of guiding principles. Through the online survey and pop-up workshops the public was asked to provide input on what they liked about the Lakeshore Communities, what their concerns were, and what would most likely improve their travelling experience. Using the input received, the Project Team developed the guiding principles and presented them at POH1.

Through POH1, the public then had the opportunity to comment on the guiding principles as well as provide input on the vision for the Study Corridor specific to each mode of transportation through a visual preference exercise. The Project Team used the input from POH1 to inform the alternative solutions that were developed following POH1.

The public also provided input on the problem/opportunity statement at POH1. The problem/opportunity statement was confirmed following POH1 and summarized and presented again at POH2. At POH2 another vision activity was used to gather input after which the Vision was confirmed. An image of the public providing input on the vision is shown in **Exhibit 4-1**.

Frequently noted general themes were compiled and are listed below in **Table 4-1**: Additional comments received are documented in **Appendix A.4.**

Table 4-1 General Themes and Key Messages Heard (Vision/Guiding Principles and Problem/Opportunity)

General Themes Frequently Noted	Key Messages Heard
Treat Lakeshore as a local mainstreet and not as a thru way.	The land use and urban design desired is that of a walkable village like commercial atmosphere. It is important to residents that the communities maintain their heritage, character, and "unhurried" atmosphere.
Address safety for all road users.	Safety is of concern to residents with many ideas being suggested for improving safety for pedestrians, cyclists, transit users, and autos and trucks. Some of the ideas which are further elaborated in other key messages include: lowering speed limits, providing safe crossings, separating pedestrians, cyclists, and autos/trucks.

General Themes Frequently Noted	Key Messages Heard
Create a more welcoming pedestrian environment	Wider sidewalks, places to sit, green infrastructure, street trees, public art, place making and more attention to walkability are noted as key ways to improve the pedestrian environment. More focus is needed on pedestrian comfort including no bike lock-up at benches, better placement of garbage receptacles and improved sidewalk conditions.
Improve pedestrian connections and priority	Ideas include better pedestrian connectivity across Lakeshore Road, across the Credit River, and increased time to cross the road. Review of policies for placement of patios is suggested to avoid obstruction of pedestrian movement in areas where the patio extends to the street edge. Some residents suggest reviewing the removal of on-street parking from Lakeshore Road if it could be provided on side streets and behind commercial buildings so that this space could be used for cycling facilities or wider sidewalks and patios.
Dedicate and separate bike lanes along Lakeshore and create a continuous network along Lakeshore from Oakville to Toronto.	Dedicated, separated and protected bike lanes along Lakeshore are noted as a preferred approach for developing a safe continuous network of cycling facilities. There is interest in considering on-road protected cycle tracks to improve the cycling facilities along Lakeshore Road. There is some support for multi-use paths and raised cycle tracks. There was little to no support noted for on-road buffered bike lanes or shared use lanes (i.e. "sharrows"). The area along Lakeshore from Dixie Road to Long Branch GO Station was noted to be a critical missing link in the Lakeshore Road cycling route.
Improve conditions for walking and cycling along the Waterfront Trail.	The Waterfront Trail is valued as an important recreational active transportation destination. There is concern that in the absence of better cycling facilities in the Lakeshore, that The Waterfront Trail is being used by commuting and fast riding cyclists which are a safety concern to pedestrians sharing the trail. P-gates on the Waterfront Trail are consistently noted as a barrier to travel for cyclists and pedestrians and should be removed.
Develop some form of higher order rapid transit along Lakeshore Road.	There is interest in and support for developing rapid transit along Lakeshore Road between Port Credit and Toronto and improved transit service west of Port Credit extending to Oakville. The appears to be strong interest in BRT 'Light', LRT in an exclusive ROW, and streetcar in mixed traffic. There appears to be less support for bus/HOV lanes or bus only lanes. Some residents have concerns about the impact of removing general purpose travel lanes from Lakeshore Road for transit.

General Themes Frequently Noted	Key Messages Heard
Address concerns about speeding on Lakeshore Road and through neighbourhoods particularly those areas adjacent to GO Stations	Residents are concerned with speeding along Lakeshore Road noting that the speed limit could be lowered to be made consistent throughout the corridor. Concerns are also noted about speeding which is occurring through neighbourhoods by drivers. These concerns are most frequently noted near GO Stations and around congested segments and intersections along Lakeshore Road trying to avoid traffic on Lakeshore Road.
Coordinate or sync signal timing during peak hours to improve operations	Residents would like to see better signal timing and timing being coordinated according to time of day and day of week to accommodate pedestrians in a timely manner during off-peak hours. Residents are generally not satisfied with the current timing of traffic signals at various intersections along the corridor.
Improve intersection configurations and restrict turning movements during peak hours	Residents identified that left hand turns along Lakeshore are causing congestion and delays at intersections. There are mixed views as to how to address this including restricting left hand turn lanes, adding turning lanes, and realigning skewed and jogged intersections. Stavebank Road and Clarkson Road were noted as key problem intersections. Turning restrictions are noted as a suggestion for alleviating congestion especially through Port Credit.
Explore feasibility of additional crossing of the Credit River	There appears to be interest in considering an additional crossing of the Credit River. There are mixed views for the location and type of crossing (i.e. for all modes or just walking and cycling). Potential locations noted include: Queensway extension, Mineola Road – Indian Road connection, adjacent the railway corridor, or just north of the existing Lakeshore Road bridge.

5 Transit, Right of Way and Credit River Crossing Alternatives

To address the problem/opportunity statement in **Section 4.2**, alternative solutions were identified, assessed, and evaluated against project specific criteria resulting in a preferred solution.

There were three components to the alternative solutions as follows:

- Transit network alternatives (i.e. alternative transit network configurations to provide rapid transit between the Etobicoke Creek and 70 Mississauga Road as identified in the Transit Needs Assessment)
- Right-of-way alternatives (i.e. alternative right-of-ways or street cross-sections to address the multi-modal needs)
- Credit River Crossing alternatives (i.e. alternative locations for a new crossing of the Credit River)

The following sections document Phase 2 of the Study which aimed to identify all reasonable and feasible solutions to the problem/opportunity statement for each of the three components listed above.

5.1 Transit Alternatives

This section describes the transit alternatives identified, assessed and evaluated for the Study Corridor. Bus rapid transit (BRT), streetcar, and light rail transit (LRT) are all viable rapid transit technology options for the Lakeshore Road Corridor. In addition to the selection of the appropriate transit technology, different options of the line configurations need to be considered, including whether there is the need to have continuity with transit technologies in Toronto (i.e. extension of the existing streetcar), and the need to merge the transit service with other planned transit services near the corridor (e.g., Hurontario LRT). Furthermore, one cannot choose the appropriate transit network solution without considering its configuration and how it fits within a limited right-of-way. Based on these factors and understanding that rapid transit is only required east of Mississauga Road by 2041, a wide range of transit alternatives were considered. Three transit technology alternatives that were considered are: BRT, Streetcar, and LRT. These alternatives were summarized into “families” of network scenarios as shown in **Exhibit 5-1.** In total five transit network scenarios were considered including the base scenario 1, Business As Usual (BAU) which are described in the subsequent sections.

The following scenarios are options that have been recommended by the Lakeshore Connecting Communities Master Plan project. These scenarios will be considered in the future when reviewing service opportunities along the Lakeshore corridor. Once viable options are narrowed down upon, further review and refinement will need to be conducted with the transit agencies whose service is being proposed: MiWay, TTC, and Metrolinx. At such a time fare structures, service levels and ridership will be confirmed. These scenarios are subject to change and shall have regard for changes in ridership demand, resources and operational conditions. As such, these scenarios will be considered and further refined in subsequent project phases.

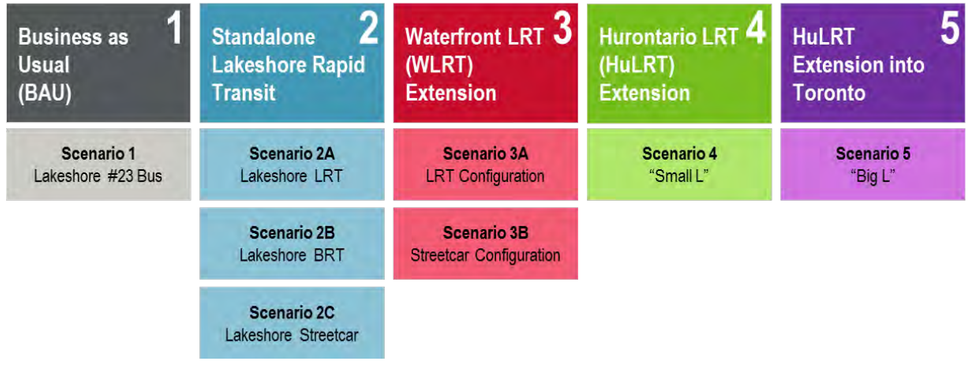


Exhibit 5-1 "Families" of network scenarios

5.1.1 Scenario 1: Business as Usual

The BAU scenario includes all committed transit improvements, such as the Mississauga Transitway, Hurontario LRT (HuLRT), and GO Regional Express Rail (RER). In this scenario Lakeshore Road from Clarkson GO to Long Branch GO is serviced by MiWay Route 23MiWay Route 23 as per existing levels of service. This assumes a conventional bus. At Hurontario Street, MiWay Route 23 would connect to Port Credit GO Station where passengers can transfer to the HuLRT and GO RER services. At the Long Branch GO station passengers could transfer from the MiWay Route 23 to the #501 Queen Streetcar. Scenario 1 (BAU) is illustrated in **Exhibit 5-2**.

Exhibit 5-2 Diagram of Scenario 1

5.1.2 Scenario 2A: Standalone Lakeshore LRT

This scenario involves converting the #501 TTC Queen streetcar route to LRT level of service to simulate the WLRT and implementing a stand-alone LRT service along Lakeshore Rd between Long Branch and Mississauga Rd with limited stops at Dixie Rd, Ogden Ave, Cawthra Rd, Wenonah Dr, Hurontario St and Mississauga Rd. This scenario requires a transfer at Long Branch (and extra fare payment) between the WLRT and the Lakeshore service for passengers travelling between Mississauga and Toronto (similar to the existing situation). The LRT along Lakeshore Rd is considered a MiWay route in this scenario, meaning that it is part of the Mississauga fare system, with extra fares required for transfers to TTC routes, but none to other MiWay routes.

Lakeshore Rd was also reduced to 2 traffic lanes (1 per direction) between Mississauga Rd and East Ave in order to provide a dedicated right-of-way (ROW) for the LRT (i.e. not in mixed traffic but rather in a partially exclusive ROW). As per the City of Mississauga Official Plan (OP) a 44.5 m ROW is designated for Lakeshore Rd between East Ave and Long Branch and can accommodate an LRT in a dedicated ROW without the need for lane reductions. The BAU configuration of the MiWay Route 23 was also maintained to serve short-haul trips and intermediate stops. Scenario 2A (Lakeshore LRT) is illustrated in **Exhibit 5-3**.

Exhibit 5-3 Diagram of Scenario 2A

5.1.3 Scenario 2B: Standalone Lakeshore BRT

This scenario involves converting the #501 TTC Queen streetcar route to LRT level of service to simulate the WLRT and implementing a stand-alone BRT service along Lakeshore Rd between Long Branch and Mississauga Rd (in mixed traffic between East Avenue and Mississauga Road). This scenario requires a transfer (and extra fare) at Long Branch between the WLRT and the Lakeshore service for passengers travelling between Mississauga and Toronto. The BRT along Lakeshore Rd is considered a MiWay route in this scenario.

No lane reductions were applied along Lakeshore Rd since the BRT would run in mixed traffic between Mississauga Rd and East Avenue (and in a dedicated ROW east of East Avenue). The MiWay Route 23 was also truncated to run only between Port Credit and Clarkson stations, as the BRT can serve short-haul trips between Port Credit and Long Branch. Scenario 2B (Lakeshore BRT) is illustrated in **Exhibit 5-4**.

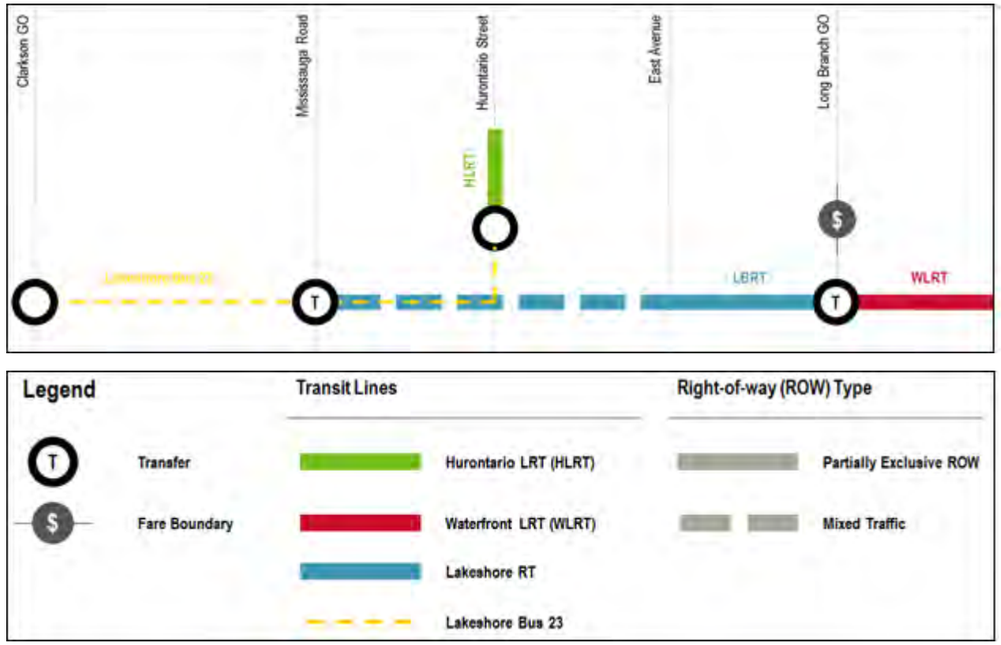


Exhibit 5-4 Diagram of Scenario 2B

5.1.4 Scenario 2C: Standalone Lakeshore Streetcar

This scenario involves converting the #501 TTC Queen streetcar route to LRT level of service to simulate the WLRT and implementing a stand-alone streetcar service in mixed traffic along Lakeshore Rd between Long Branch and Mississauga Rd. This scenario requires a transfer (and extra fare) at Long Branch between the WLRT and the Lakeshore service for passengers travelling between Mississauga and Toronto. The streetcar along Lakeshore Rd is considered a MiWay route in this scenario.

No lane reductions were applied along Lakeshore Rd since the streetcar would run in mixed traffic between Mississauga Rd and East Avenue (and in a dedicated ROW east of East Avenue). The MiWay Route 23 was also truncated to run only between Port Credit and Clarkson stations, as the streetcar can serve short-haul trips between Port Credit and Long Branch. Scenario 2C (Lakeshore Streetcar) is illustrated in **Exhibit 5-5**.

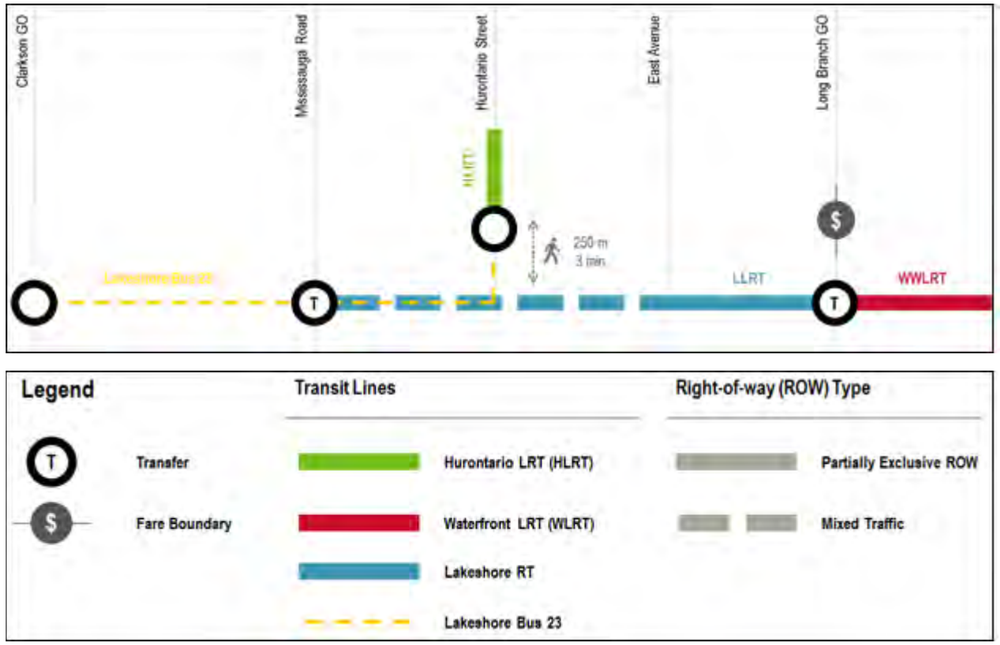


Exhibit 5-5 Diagram of Scenario 2C

5.1.5 Scenario 3A: WLRT Extension (LRT Configuration)

This scenario involves converting the #501 TTC Queen streetcar route to LRT level of service to simulate the WLRT and extending it along Lakeshore Rd from Long Branch station to Mississauga Rd. This scenario is similar to Scenario 2A except that it eliminates a transfer (and an extra fare) at Long Branch for passengers travelling between Mississauga and Toronto on the WLRT. The LRT along Lakeshore Rd is considered a TTC route in this scenario (meaning that it is part of the TTC fare system, with extra fares required for transfers to MiWay routes). Therefore, passengers transferring at Hurontario St or Mississauga Rd to travel further north (on the HuLRT) or west (on the Lakeshore bus) – respectively – would need to pay an extra fare at these points in the model.

As in Scenario 2A, Lakeshore Rd was reduced to 2 traffic lanes between Mississauga Rd and East Ave and the BAU configuration of the MiWay Route 23 was maintained. Scenario 3A (WLRT Extension – LRT Configuration) is illustrated in **Exhibit 5-6**.

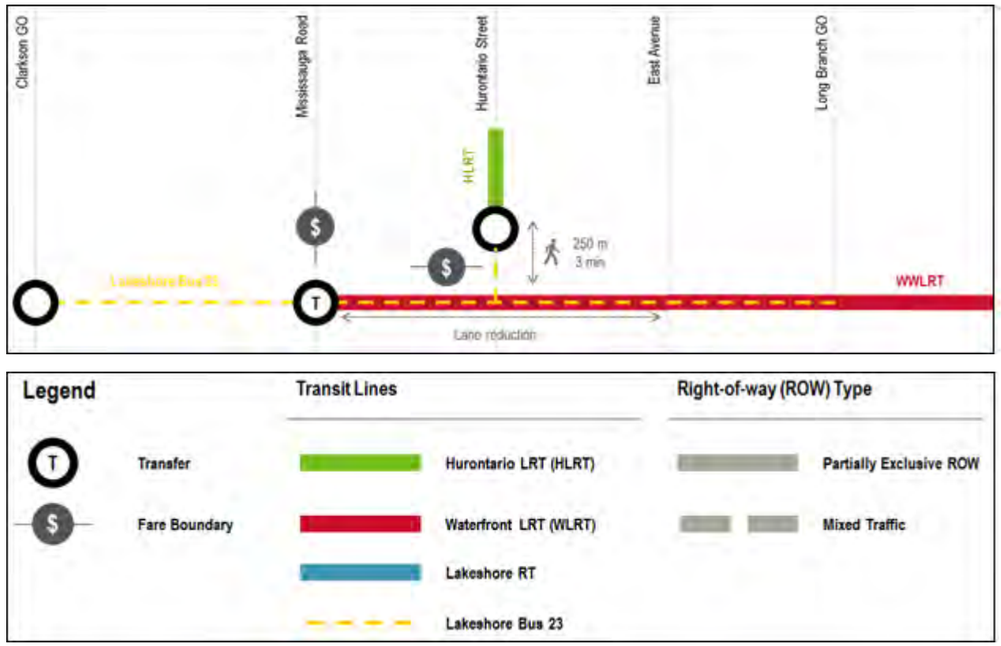


Exhibit 5-6 Diagram of Scenario 3A

5.1.6 Scenario 3B: WLRT Extension (Streetcar configuration)

This scenario involves converting the #501 TTC Queen streetcar route to LRT level of service to simulate the WLRT and implementing a stand-alone streetcar service in mixed traffic along Lakeshore Rd between Long Branch and Mississauga Rd. This scenario requires a transfer (and extra fare) at Long Branch between the WLRT and the Lakeshore service for passengers travelling between Mississauga and Toronto.

No lane reductions were applied along Lakeshore Rd since the streetcar would run in mixed traffic between Mississauga Rd and East Avenue (and in a dedicated ROW east of East Avenue). The MiWay Route 23 was also truncated to run only between Port Credit and Clarkson stations, as the streetcar can serve short-haul trips between Port Credit and Long Branch. Scenario 2C (Lakeshore Streetcar) is illustrated in **Exhibit 5-7**

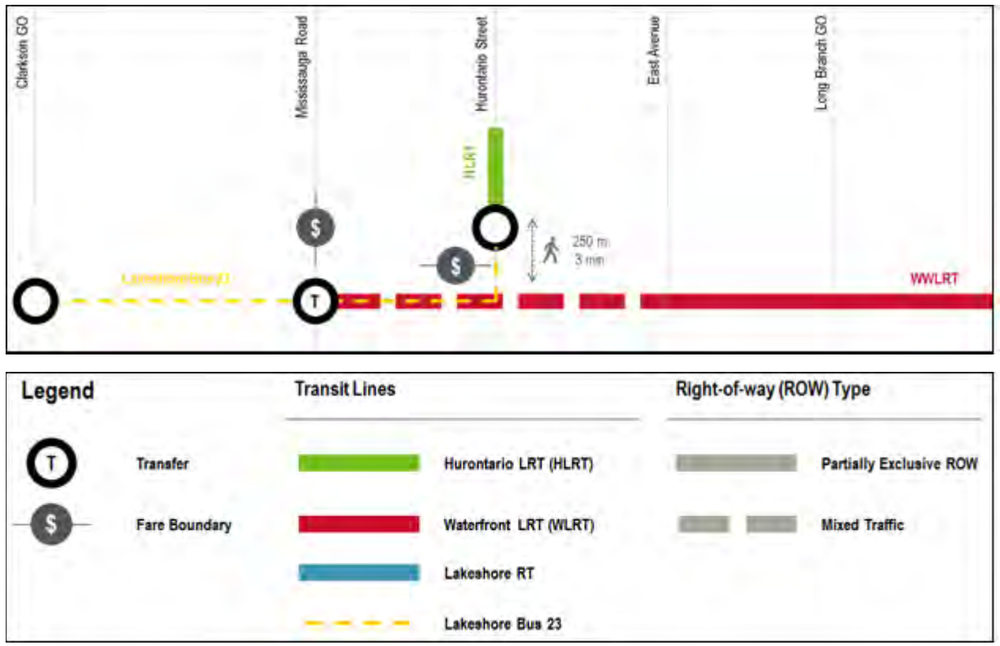


Exhibit 5-7 Diagram of Scenario 3B

5.1.7 Scenario 4: Small L

This scenario involves converting the #501 TTC Queen streetcar route to LRT level of service to simulate the WLRT and extending the HuLRT from Port Credit to Long Branch along Lakeshore Rd as a streetcar service in mixed traffic. This scenario is similar to Scenario 2C, except that it eliminates a transfer at Port Credit between the HuLRT and the Lakeshore service for passengers travelling between Hurontario St and Lakeshore Rd (but still requires a transfer and extra fare at Long Branch between the WLRT and Lakeshore service for passengers travelling between Mississauga and Toronto). This configuration also truncates/eliminates the enhanced Lakeshore service between Hurontario St and Mississauga Rd. As a result extending the HuLRT (which has higher vehicle capacity than the WLRT and the Lakeshore LRT/Streetcar scenarios tested) along Lakeshore Rd, transit service along Lakeshore Rd has higher capacity in this scenario (vehicle capacity is 500 on HuLRT vs. 250 on WLRT and Lakeshore LRT/Streetcar).

As in Scenario 2C, no lane reductions were applied and the MiWay Route 23 provides service west of Port Credit GO station only. Scenario 4 (HuLRT Extension – "Small L") is illustrated in **Exhibit 5-8**.

Exhibit 5-8 Diagram of Scenario 4

5.1.8 Scenario 5: Big L

This scenario involves extending the HuLRT from Port Credit to Long Branch along Lakeshore Rd as a streetcar service in mixed traffic, and from Long Branch to Downtown Toronto as a LRT service (to simulate the WLRT). This scenario is similar to Scenario 4, but in addition to eliminating a transfer at Port Credit between the HuLRT and the Lakeshore service, it also eliminates the transfer (and extra fare) at Long Branch between the WLRT and Lakeshore service for passengers travelling between Mississauga and Toronto. This configuration also truncates/eliminates the enhanced Lakeshore service between Hurontario St and Mississauga Rd and has higher transit vehicle capacity on Lakeshore Rd. The full line between Square One in Mississauga (the northern terminal of HuLRT's south section) and Downtown Toronto is considered a single route in this scenario.

As in Scenario 4, no lane reductions were applied and the MiWay Route 23 provides service west of Port Credit GO station only. It should be noted as a reminder that for all scenarios, the streetcar or LRT runs in a dedicated ROW between East Ave and Long Branch. Scenario 5 (HuLRT Extension – "Big L") is illustrated in **Exhibit 4-9.**

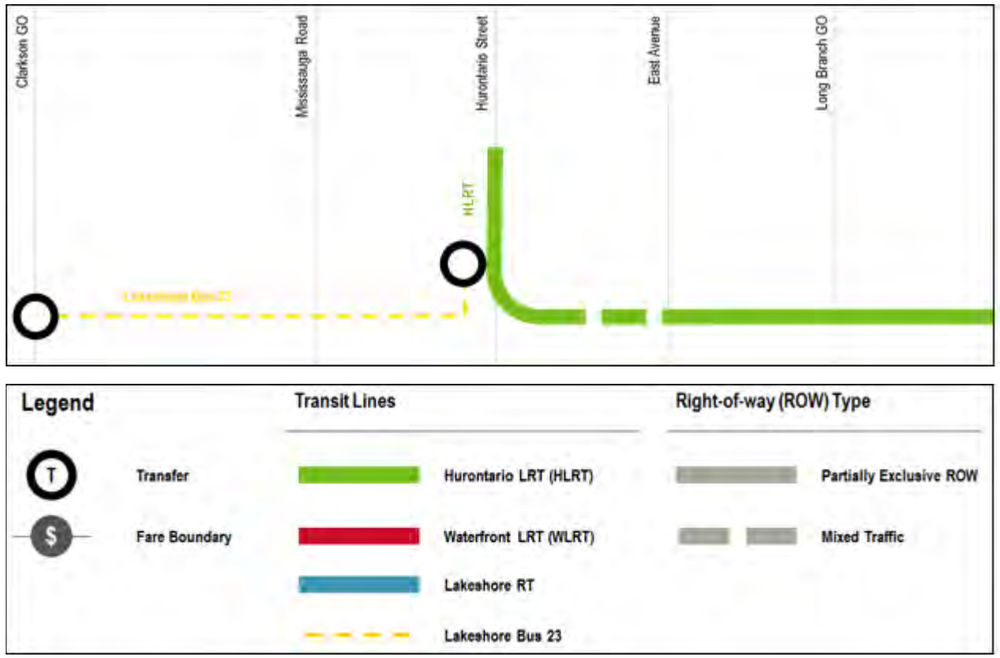


Exhibit 5-9 Diagram of Scenario 5

5.1.9 Evaluation

The evaluation of alternative rapid transit network solutions included the formulation of high level evaluation criteria. The evaluation criteria include transportation considerations as well as impacts to the natural, cultural, and social environments. Criteria to be used in the evaluation of the alternative solutions have been categorized into three groups:

- Serving People
- Strengthening Places
- Supporting Prosperity

The alternatives identified have been evaluated at a high-level using the established criteria on a scale of least to most preferred.

The alternative rapid transit network solutions identified were evaluated based on the criteria as shown in **Table 5-1**. Evaluation of the alternatives is presented in **Table 5-2** and a summary is presented in **Table 5-3**.

Evaluation of network scenarios were developed on the basis of existing on-road/transit conditions and therefore do not comprehensively factor in future system wide changes such as for example transit fare integration. As such, these scenarios are subject to change and shall have regard for changes in ridership demand, resources and operational conditions. Details and design of the proposed network scenarios will be refined through subsequent project phases.

Table 5-1: Evaluation Criteria (Transit Alternatives)

Category	Criteria
Serving People	
Choice	• Integrate with other higher order transit services to ensure fast, efficient connections/transfers • Connect to transit terminals/stations • Connect to other transit routes • Availability of supporting transportation infrastructure (i.e. land for bus bays/laybys/terminals, taxi stands, passenger pick up/drop offs, bicycle racks, secure bike parking, and commuter parking, if applicable) • Promote a high quality pedestrian experience (i.e. improves pedestrian accessibility and connectivity) • Promote a high quality cycling experience (i.e. improves cycling accessibility and connectivity) • Potential to provide an opportunity for pick up and drop off areas for those completing their first or last mile (i.e. ability to accommodate ride sharing services)
Experience	• Speed, reliability and comfort • Capacity to ease congestion on all modes (transit, autos, pedestrians, cyclists) • Line ridership and total transit ridership • Safety for all corridor users • Proximity of stop locations to key destinations/attractions
Social Equity	• Improve service to areas of social need identified by the City • Support equity in mobility by gender, income, family status, and age class
Strengthening Places	
Public Health and the Environment	• Impact on air quality/ ability to reduce Greenhouse Gas Emissions • Impact on Cultural Heritage/Archaeological Features, including noise and vibration from construction and operation • Impact on the natural environment
Healthy Neighbourhoods	• Impact on existing stable neighbourhoods and responds to local context • Noise and vibration impact to properties due to construction and operation • Compatibility with parks, public spaces, and natural areas • Improving access to community services and facilities • Temporary and permanent property impacts
Shaping the City	• Serve areas of existing and future population • Encourage transit oriented development (TOD) in the vicinity of stations • Create opportunities for place-making • Existing physical barriers (barriers to connectivity) • Compatibility with City Planning policies
Supporting Prosperity	
Affordability	• Engineering complexity • Capital costs • Operating and maintenance costs • Ease of providing connection to storage facility and cost • Ease of construction • Feasibility of implementation
Support Growth	• Integrate with existing land uses • Serve areas of existing and future employment and development • Efficient goods movement • Support local businesses • Mitigate impact to businesses due to construction and operation of the project

Category	Criteria
Resiliency	• Design and construct to manage associated risks with climate change • Corridor resilience and flexibility (ability to accommodate unexpected disruption)

Table 5-2 Evaluation of 2041 Network Scenarios

Criteria		1 BAU - Do Nothing	2A Lakeshore LRT	2B Lakeshore Express Bus/BRT	2C Lakeshore Streetcar	3A WLRT Extension	3B WLRT Extension (Streetcar configuration)	4 Hurontario LRT Extension ("Small L")	5 Hurontario LRT Extension into Toronto ("Big L")
SERVING PEOPLE	**Choice**	• Requires a 100m walk to transfer to HuLRT • Transfer and extra fare required at Long Branch for passengers travelling between Mississauga and Toronto to the #501 Queen Streetcar • Number of lanes remains the same • Lowest transit vehicle capacity	• Requires a 250m walk to transfer to HuLRT • Transfer and extra fare required at Long Branch and transfer required at Mississauga Rd for passengers travelling between Mississauga and Toronto • Requires lane reduction (2 traffic lanes) between Mississauga Rd. and East Ave. to accommodate dedicated ROW for LRT • Average transit vehicle capacity	• Requires a 250m walk to transfer to HuLRT • Transfer and extra fare required at Long Branch and transfer required at Mississauga Rd for passengers travelling between Mississauga and Toronto • No lane reduction required • Low transit vehicle capacity	• Requires a 250m walk to transfer to HuLRT • Transfer and extra fare required at Long Branch and transfer required at Mississauga Rd for passengers travelling between Mississauga and Toronto • No lane reduction required • Average transit vehicle capacity	• Requires a 250m walk to transfer to HuLRT • Transfer and extra fare eliminated at Long Branch for passengers travelling between Mississauga and Toronto; however, passengers transferring to the HuLRT or MiWay routes require extra fare • Requires lane reduction (2 traffic lanes) between Mississauga Rd. and East Ave. to accommodate dedicated ROW for LRT • Average transit vehicle capacity	• Requires a 250m walk to transfer to HuLRT • Transfer and extra fare eliminated at Long Branch for passengers travelling between Mississauga and Toronto; however, passengers transferring to the HuLRT or MiWay routes require extra fare • No lane reduction required • Average transit vehicle capacity	• No walk required to transfer to HuLRT • Transfer and extra fare required at Long Branch for passengers travelling between Mississauga and Toronto. Transfer and extra fare eliminated at Port Credit • No lane reduction required • High transit vehicle capacity	• No walk required to transfer to HuLRT • Transfer and extra fare eliminated at Long Branch for passengers travelling between Mississauga. Transfer and extra fare eliminated at Port Credit • No lane reduction required • Highest transit vehicle capacity
	Experience	• Total ridership will continue to be low (~200 passengers during the PM peak period) • Existing bus will experience capacity constraints • No change in auto demand	• Total ridership forecasted to be 1,840 passengers during the PM peak period • Auto demand projected to decrease by 1% • 50% increase in congestion due to lane reduction • Does not have sufficient demand as expected ridership is below threshold for LRT	• Total ridership forecasted to be 2,625 passengers during the PM peak period • Auto demand projected to decrease by 0.4% • Sufficient demand for BRT based on expected ridership	• Total ridership forecasted to be 2,800 passengers during the PM peak period • Auto demand projected to decrease by 0.4% • Does not have sufficient demand as expected ridership is below threshold for partially exclusive right-of-way streetcar	• Total ridership forecasted to be 5,815 passengers during the PM peak period • Auto demand projected to decrease by 1% • 50% increase in congestion due to lane reduction • Expected ridership would only be sufficient once WLRT is implemented	• Total ridership forecasted to be 6,390 passengers during the PM peak period • Auto demand projected to decrease by 1% • Expected ridership would only be sufficient once WLRT is implemented	• Total ridership forecasted to be 4,755 passengers during the PM peak period • Auto demand projected to decrease by 1% • High expected ridership due to elimination of transfer at Long Branch	• Total ridership forecasted to be 12,835 passengers during the PM peak period • Auto demand projected to decrease by 3% • Highest expected ridership due to elimination of additional transfer
	Social Equity	• Equity in mobility remains the same • Extra fare required at Long Branch for passengers travelling between Lakeshore Bus 23 and #501 Queen Streetcar	• Equity in mobility remains the same amongst all alternatives • Extra fare required at Long Branch for passengers travelling between Lakeshore bus 23/ Lakeshore LRT and WLRT	• Equity in mobility remains the same amongst all alternatives • Extra fare required at Long Branch for passengers travelling between express bus/BRT and WLRT	• Equity in mobility remains the same amongst all alternatives • Extra fare required at Long Branch for passengers travelling between Lakeshore Streetcar and WLRT	• Equity in mobility remains the same amongst all alternatives • Extra fares required at Hurontario for passengers travelling between Lakeshore Bus 23 and HuLRT, and at Mississauga Rd for passengers travelling between Lakeshore Bus 23 and WLRT	• Equity in mobility remains the same amongst all alternatives • Extra fares required at same locations as in 3A	• Equity in mobility remains the same amongst all alternatives • Extra fare required at Long Branch for passengers travelling between HuLRT and WLRT	• Equity in mobility remains the same amongst all alternatives • Extra fare eliminated
	Evaluation	○	◑	●	◔	◔	●	◑	●
STRENGTHENING PLACES	**Public Health and the Environment**	• Potential for poor air quality due to increased congestion • No change to cultural heritage/ archaeological features • No additional impacts on the environment	• Potential for reduction of greenhouse gas emissions • No change to cultural heritage/ archaeological features • Potential for some noise and vibration due to construction and operation • No additional impacts on the environment	• Same as 2A	• Same as 2A	• Same as 2A	• Same as 2A	• Same as 2A	• Same as 2A

Criteria		1 BAU - Do Nothing	2A Lakeshore LRT	2B Lakeshore Express Bus/BRT	2C Lakeshore Streetcar	3A WLRT Extension	3B WLRT Extension (Streetcar configuration)	4 Hurontario LRT Extension ("Small L")	5 Hurontario LRT Extension into Toronto ("Big L")
SUPPORTING PROSPERITY	**Healthy Neighbourhoods**	• No impact on existing stable neighbourhoods • No changes to levels of noise and vibration • No change in compatibility with parks, public spaces, and natural areas • No change in access to community services or facilities • No temporary or permanent property impacts	• Impacts on existing stable neighbourhoods during construction • Moderate change in noise and vibration due to construction and operation • Highly compatible with parks, public spaces, and natural areas • Highly compatible with community services and facilities • Potential temporary or permanent property impacts	• Minor impact on existing stable neighbourhoods • Minor change in noise and vibration • Compatible with parks, public spaces, and natural areas • Compatible with community services and facilities • No temporary or permanent property impacts	• Impacts on existing stable neighbourhoods during construction • Moderate change in noise and vibration due to construction and operation • Highly compatible with parks, public spaces, and natural areas • Highly compatible with community services and facilities • No temporary or permanent property impacts	• Impacts on existing stable neighbourhoods during construction • Moderate change in noise and vibration due to construction and operation • Highly compatible with parks, public spaces, and natural areas • Highly compatible with community services and facilities • Potential temporary or permanent property impacts	• Impacts on existing stable neighbourhoods during construction • Moderate change in noise and vibration due to construction and operation • Highly compatible with parks, public spaces, and natural areas • Highly compatible with community services and facilities • No temporary or permanent property impacts	• Impacts on existing stable neighbourhoods during construction • Significant change in noise and vibration due to construction and operation • Highly compatible with parks, public spaces, and natural areas • Highly compatible with community services and facilities • Potential temporary or permanent property impacts	• Impacts on existing stable neighbourhoods during construction • Significant change in noise and vibration due to construction and operation • Highly compatible with parks, public spaces, and natural areas • Highly compatible with community services and facilities • Potential temporary or permanent property impacts
	Shaping the City	• Not sustainable to support future population and demand • No change in opportunities for transit oriented development (TOD) in the vicinity of stations • No change in opportunities for place-making • No existing physical barriers to connectivity • Incompatible with planning policies	• Future population and demand will not sustain this alternative • Highly supportive of TOD in the vicinity of stations • No change in opportunities for place-making • No existing physical barriers to connectivity • Compatible with planning policies	• Sustainable to support future population and demand • Supportive of TOD in the vicinity of stations • No change in opportunities for place-making • No existing physical barriers to connectivity • Compatible with planning policies	• Sustainable to support future population and demand • Supportive of TOD in the vicinity of stations • No change in opportunities for place-making • No existing physical barriers to connectivity • Compatible with planning policies	• Sustainable to support future population and demand • Highly supportive of TOD in the vicinity of stations • No change in opportunities for place-making • No existing physical barriers to connectivity • Compatible with planning policies	• Sustainable to support future population and demand • Supportive of TOD in the vicinity of stations • No change in opportunities for place-making • No existing physical barriers to connectivity • Compatible with planning policies	• Sustainable to support future population and demand • Highly supportive of TOD in the vicinity of stations • No change in opportunities for place-making • No existing physical barriers to connectivity • Compatible with planning policies	• Sustainable to support future population and demand • Highly supportive of TOD in the vicinity of stations • No change in opportunities for place-making • No existing physical barriers to connectivity • Compatible with planning policies
	Evaluation								
SUPPORTING PROSPERITY	**Affordability**	• Maintenance costs associated with existing fleet of busses.	• Significant amount of infrastructure required to support LRT (construction of light-rail tracks, new fleet of light rail, terminal stations) • High cost and difficult to implement	• Minimal amount of infrastructure required to support express bus/BRT (existing fleet of busses, bus pads) • Low cost and easy to implement	• Moderate amount of infrastructure required to support streetcar (construction of streetcar tracks, new fleet of streetcars, bus pads) • High cost and difficult to implement	• Significant amount of infrastructure required to support LRT (construction of light-rail tracks, new fleet of light rail, terminal stations) • High cost and difficult to implement	• Moderate amount of infrastructure required to support streetcar (construction of streetcar tracks, new fleet of streetcars, bus pads) • High cost and difficult to implement	• Significant amount of infrastructure required to support (construction of light-rail tracks, new fleet of light rail, terminal stations) • High cost and difficult to implement	• Significant amount of infrastructure required to support LRT (construction of light-rail tracks, new fleet of light rail, terminal stations) • High cost and difficult to implement • Not feasible to implement – line length is not practical. Operating agreement and vehicle compatibility issues exist

Criteria		1 BAU - Do Nothing	2A Lakeshore LRT	2B Lakeshore Express Bus/BRT	2C Lakeshore Streetcar	3A WLRT Extension	3B WLRT Extension (Streetcar configuration)	4 Hurontario LRT Extension ("Small L")	5 Hurontario LRT Extension into Toronto ("Big L")
	Support Growth	• No change to existing land uses • No change in service to areas of existing and future employment and development • No change in goods movement • No impacts to businesses during construction	• No change to existing land uses • High capacity and dedicated service strongly supports areas of existing and future employment and development by moving more people to and within the corridor • No change in goods movement • Construction of tracks may impact local businesses	• No change to existing land uses • Improves service to areas of existing and future employment and development • No change in goods movement • No impacts to businesses during construction	• No change to existing land uses • Improves service to areas of existing and future employment and development • No change in goods movement • Construction of tracks may impact local businesses	• No change to existing land uses • High capacity and dedicated service strongly supports areas of existing and future employment and development by moving more people to and within the corridor. • No change in goods movement • Construction of tracks may impact local businesses	• No change to existing land uses • Improves service to areas of existing and future employment and development • No change in goods movement • Construction of tracks may impact local businesses	• No change to existing land uses • High capacity and dedicated service strongly supports areas of existing and future employment and development by moving more people to and within the corridor • No change in goods movement • Construction of tracks may impact local businesses	• No change to existing land uses • High capacity, dedicated service, and no additional fare strongly supports areas of existing and future employment and development by moving more people to and within the corridor • No change in goods movement • Construction of tracks may impact local businesses
	Resiliency	• No assigned climate change risk mitigation strategy • No change in ability to accommodate unexpected disruption	• Light-Rail technology designed to reduce greenhouse gas emissions to mitigate climate change risks • No change in ability to accommodate unexpected disruption	• Express bus/BRT is a more reliable transit service with greater efficiencies, therefore it encourages more users effectively helping to reduce climate change risks. • Flexible routes which don't require tracks, therefore buses can be rerouted to accommodate disruption.	• Streetcar designed to reduce greenhouse gas emissions to mitigate climate change risks • No change in ability to accommodate unexpected disruption	• Light-Rail technology designed to reduce greenhouse gas emissions to mitigate climate change risks • No change in ability to accommodate unexpected disruption	• Streetcar designed to reduce greenhouse gas emissions to mitigate climate change risks • No change in ability to accommodate unexpected disruption	• Light-Rail technology designed to reduce greenhouse gas emissions to mitigate climate change risks • No change in ability to accommodate unexpected disruption	• Light-Rail technology designed to reduce greenhouse gas emissions to mitigate climate change risks • No change in ability to accommodate unexpected disruption
	Evaluation								
Overall Evaluation									

Table 5-3 Summary of Evaluation

Criteria	1 BAU - Do Nothing	2A Lakeshore LRT	2B Lakeshore Express Bus/BRT	2C Lakeshore Streetcar	3A WLRT Extension	3B WLRT Extension (Streetcar configuration)	4 Hurontario LRT Extension ("Small L")	5 Hurontario LRT Extension into Toronto ("Big L")
SERVING PEOPLE								
STRENGTHENING PLACES								
SUPPORTING PROSPERITY								
OVERALL EVALUATION								
RECOMMENDATIONS	**NOT RECOMMENDED** This alternative is not sustainable to support future population. The existing bus will experience capacity constraints.	**NOT RECOMDMENDED** Expected ridership does not meet the threshold for LRT.	**RECOMMENDED INTERIM SOLUTION** This alternative has a relatively low construction complexity since there is no need to build tracks to accommodate LRT or streetcar. As such, there is no impact on existing stable neighbourhoods during construction. This is a flexible interim solution as it allows protection for conversion to future LRT.	**NOT RECOMMENDED** Expected ridership does not meet the threshold for partially exclusive right-of-way streetcar.	**NOT RECOMMENDED** This alternative would cause a 50% increase in congestion due to the required lane reduction between the Etobicoke Creek and Mississauga Road to provide exclusive dedicated transit operations.	**RECOMMENDED ULTIMATE SOLUTION** This alternerative has high projected ridership and a seamless connection (i.e. no transfer) with TTC, while also having only moderate impacts on noise and vibration due to construction and operation.	**NOT RECOMMENDED** This alternative has significant engineering and construction complexities with respect to extending the HuLRT south and east given the current terminus of the HuLRT.	**NOT RECOMMENDED** This alternative has significant engineering and feasibility complexities with respect to the length of the proposed line, operations and maintenance considerations, and the need to convert the entire line to one compatible rail gauge.

5.1.10 Identification of Preferred Transit Alternative

Alternative 2B – Lakeshore Express Bus/BRT and Alternative 3B – WLRT Extension (streetcar configuration) were selected as the preferred alternatives. It was determined that Alternative 2B – Lakeshore BRT would serve as an interim solution and Alternative 3B – WLRT Extension (streetcar configuration) as the ultimate preferred solution. Alternative 2B – Lakeshore Express Bus/BRT has relatively low construction complexity as it is a bus option with no need for construction of rail tracks. This is a flexible interim solution with very minor impacts to existing stable neighbourhoods due to construction. This alternative has the ability to build ridership before a streetcar/LRT service is needed for the corridor. The recommended ultimate solution, Alternative 3B – WLRT Extension (streetcar configuration), has high projected ridership making it highly compatible with community services and provides a seamless (i.e. no transfer) connection with TTC, while also having only moderate impacts on noise and vibration due to construction and operation. However, through discussion with the City of Toronto and Toronto Transit Commission (TTC), it was confirmed that the Waterfront LRT (WLRT) is not planned to be implemented by 2041 between Legion Road and Long Branch. Based on the operating assumptions provided by TTC, the resulting ridership along Lakeshore Road, should the enhanced streetcar (i.e. Scenario 3B) be extended to Mississauga Road, would be approximately 1700 peak direction passengers per hour at the Etobicoke Creek, representing an approximate 30% decrease in peak hour direction ridership. Therefore, Alternative 2B – Lakeshore Express Bus/BRT is the preferred transit solution for the 2041 horizon year. Extension of the Streetcar can be considered beyond 2041.

5.1.11 Public and Stakeholder Input

Public input helped shape the transit strategy for the Study Corridor. The alternative transit networks considered by the Project Team were presented at Pubic Open House (POH) 2 in addition to draft transit stop locations and the preferred transit strategy and phasing plan. At POH2, the public had the opportunity to comment on all aspects of the preferred transit strategy. Following POH2, the Project Team evaluated the alternative transit networks and selected a preferred interim and ultimate solution. Input received through POH2 confirmed this recommendation which was finalized and presented to the public at POH3. The public had a final chance to comment on the phased approach to transit and feedback received through POH3 confirmed the final recommendations as well.

With respect to the consideration of streetcars vs. express buses, the public generally showed a preference for express buses over streetcars. The public identified a number of benefits of having express buses which are seen to have more flexibility, to not necessitate overhead wires or streetcar tracks which are viewed by many as being an impediment for pedestrians and cyclists, and are considered less costly to maintain. It was noted that dedicated exclusive lanes for Express Buses will be needed particularly at peak times so that buses are not stuck in mixed traffic.

These comments were considered by the Project Team and confirmed that the draft preferred transit strategy: “A Standalone BRT/Express Bus System with limited stops in the interim” was preferred by the public.

Frequently noted general themes were compiled and are listed below in **Table 5-4**. Additional comments received are documented in **Appendix A.4**.

Table 5-4: General Themes and Key Messages Heard (Transit Alternatives)

General Themes Frequently Noted	Key Messages Heard
Support heard for the draft preferred transit strategy: “A Standalone BRT/Express Bus System with limited stops in the interim”	• Support for implementing convenient and efficient rapid transit along the Lakeshore. • Differing views on Express Buses or LRT/Streetcar. Express buses are generally preferred over streetcars. • Support for dedicated exclusive lanes for Express Buses particularly at peak travel times. • Streetcars are seen by some as too slow and inflexible noting that slowdowns occur with streetcar breakdowns compared to more flexibility replacing express buses. • There is a negative perception of putting tracks on the Lakeshore with concerns expressed about impact to pedestrians and cyclists and higher costs to maintain.
Minimize the number of transit stops and provide rest stops in-between to facilitate walking to transit	• Support for ensuring expedient transit service by having fewer stops along the route – the fewer the better. • It was further noted that the transit service should provide good connections and stops should be planned to integrate with north-south buses, connectivity to the GO Stations and transfer points. Support was noted for a frequent and direct connection with the TTC and the upcoming planned LRT. • Additional transit connections down to the Lakeshore from areas in the study area but outside of the 800 metre walking distance were noted to be needed. • Desire for rest areas between transit stops with benches and weather protection (shade and rain/snow). • Improved pedestrian environment is seen as being important for increasing transit usage. • In the Lakeview community, a stop at Ogden Avenue should be considered to facilitate transit for Inspiration Lakeview.

5.2 Right of Way Alternatives

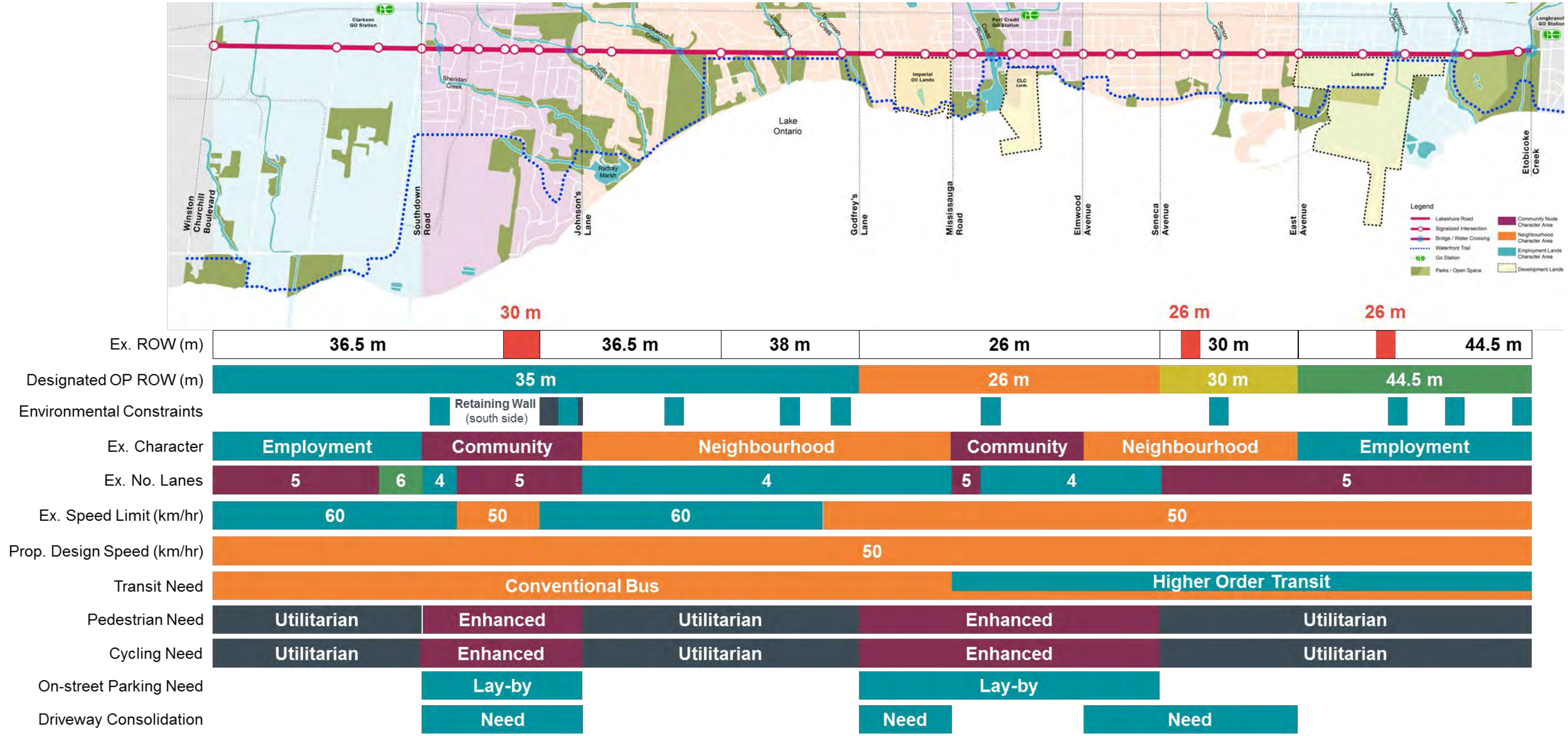
Through Phase 1 of the Study, it was determined that improvements to the right-of-way are required to address the multi-modal needs identified along the Study Corridor. Therefore, to address the needs identified in the problem/opportunity statement, in Phase 2 of the Study right-of-way alternatives were identified, assessed and evaluated for the Study Corridor.

This section documents the corridor segmentation, typical cross section element dimensions used to develop the alternatives, identification of alternative right-of-way cross sections, evaluation of the alternatives, and identification of the preferred alternative. The “Do Nothing” alternative was carried forward as an option for all segments as a basis for comparison

5.2.1 Corridor Segmentation

The corridor was divided into seven (7) segments based on differing characteristics, including: designated Official Plan (OP) right-of-way width, existing character, critical constraints, and future transportation needs. A visual representation of the division of the corridor is shown in **Exhibit 5-10.**

Taking into consideration the different character areas along the corridor and the need for a context sensitive solution, a number of initial cross-section alternatives were developed for each segment. These cross-section alternatives provided a different emphasis and mix of transportation modes that could potentially fit into the available ROW. Trade-offs from different modes were considered between the various alternatives in order to satisfy the needs for each segment. It should be noted that all options which provide separated cycling lanes show bollards for illustrative purposes; however, physical separation can take several forms and if recommended will be determined at a later stage of the study (for example during detailed design).


Winston Churchill Boulevard
Southdown Road
Johnson's Lane
Godfrey's Lane
Mississauga Road
Elmwood Avenue
Seneca Avenue
East Avenue
Etobicoke Creek
Lake Ontario
Lakeview
30 m
26 m
26 m
Ex. ROW (m)
36.5 m
36.5 m
38 m
26 m
30 m
44.5 m
Designated OP ROW (m)
35 m
26 m
30 m
44.5 m
Environmental Constraints
Retaining Wall (south side)
Ex. Character
Employment
Community
Neighbourhood
Community
Neighbourhood
Employment
Ex. No. Lanes
5
6
4
5
4
5
4
5
Ex. Speed Limit (km/hr)
60
50
60
50
Prop. Design Speed (km/hr)
50
Transit Need
Conventional Bus
Higher Order Transit
Pedestrian Need
Utilitarian
Enhanced
Utilitarian
Enhanced
Utilitarian
Cycling Need
Utilitarian
Enhanced
Utilitarian
Enhanced
Utilitarian
On-street Parking Need
Lay-by
Lay-by
Driveway Consolidation
Need
Need
Need

Note: Not to Scale
Utilitarian: Facility as a means of transport rather than recreation. Users are typically concentrated at the same peak travel times as motorists and transit users.
Enhanced: Facility use serving both utilitarian users as well as recreational users both during and outside of peak travel times.
Driveway Consolidation: was based on Planning Policy as noted in the *Future Planning Context Report, October 2016.*

Exhibit 5-10 Corridor Segmentation

5.2.2 Typical Cross-Section Elements

Typical cross-section alternatives were developed for each respective corridor segment with consideration given to which ROW elements address the needs of each area. The desired and minimum widths were developed with the City of Mississauga and followed the City of Mississauga Design Standards for roads and OTM Book 18 for Cycling Facilities. The typical cross-section elements considered are shown in **Table 5-5**.

Table 5-5: Desired and Minimum ROW Element Widths

ROW Element	Desired Width (m)	Minimum Width (m)
General purpose travel lane (through)	3.5	3.0
General purpose travel lane (curb)	-	3.5
Two-way centre left turn lane	3.5	3.25
Curb (each side of the road)	0.75	0.5
On-street parking (layby)	-	2.6 (2.1[1])
Sidewalk (clear zone)	2.0	1.5
Conventional bike lane	1.8	1.5
Separated bike lane: marked buffer	1.8 lane + 1.2 buffer	1.5 lane + 0.5 buffer
Separated bike lane: flexible bollard	2.0 lane + 1.2 buffer	1.5 lane + 0.5 buffer
Separated bike lane: physical barrier	2.0 lane + 1.2 buffer	1.8 lane + 0.5 buffer
Separated bike lane: on-street parking	1.8 lane + 1.2 buffer	1.5 lane + 0.8 buffer
One-way raised cycle track	2.0	1.5
Two-way raised cycle track	4.0	3.0
One-way in-boulevard facility	2.0	1.8
Two-way in-boulevard facility	4.0	3.0
One-way in-boulevard shared facility	4.0	3.0
Transit only lane	3.6	3.5
Bus platform (no shelter)	2.0	2.0
Bus platform (with shelter)	5.5	4.0
Transit station	-	3.0

[1]*Absolute minimum depending on context; however, minimum 2.6 should be used*
Maintenance vehicles typically require 2.0m of unobstructed running width for cycle lanes

City of Mississauga indicated that the preferred width for the lane portion of a separated bike lane should be 2.0 m to accommodate existing maintenance vehicles. The City of Mississauga also noted that the preferred width for a tree planting zone is 2.0 m and trees should not be planted under hydro lines if possible. For all typical sections depicted in this TMP, north is to the left and south is to the right.

5.2.3 Segment 1: South Employment Area

Segment 1 is approximately 2.0 km from Winston Churchill Boulevard to Southdown Road along Royal Windsor Drive within the Southdown Employment Area. This segment has a utilitarian pedestrian and cycling function and would be adequately served by conventional bus. There is a need to maintain the existing number of lanes in this segment for adequate movement of vehicles and goods to employment destinations abutting the corridor.

Options considered for this segment:

1. Do Nothing
2. Separated Cycling
3. Multi-use Trail (One Side)

The cross-sections for the three options considered for this segment are illustrated in **Exhibit 5-11**, **Exhibit 5-12,** and **Exhibit 5-13.** A description of the cross-sections can be found below in **Table 5-6**.

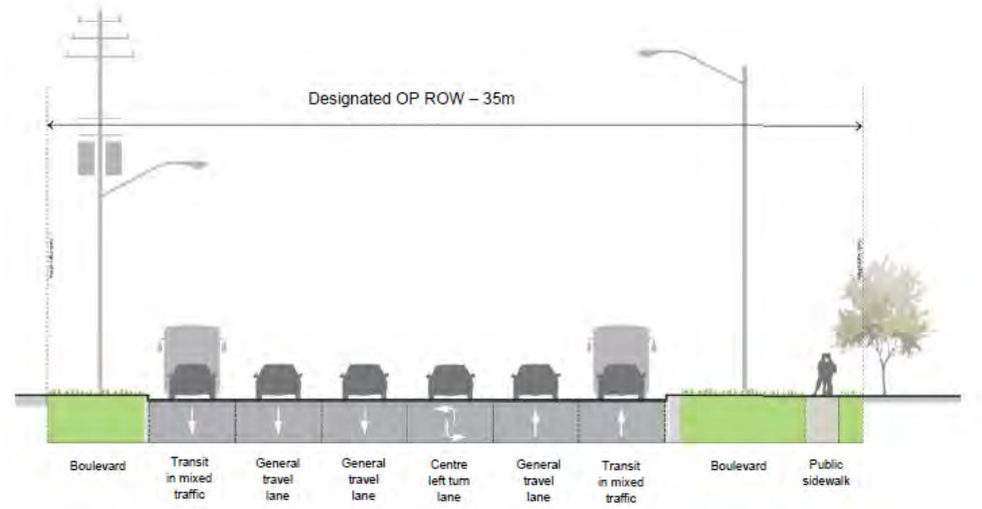


Exhibit 5-11 Right of way segment 1 option 1

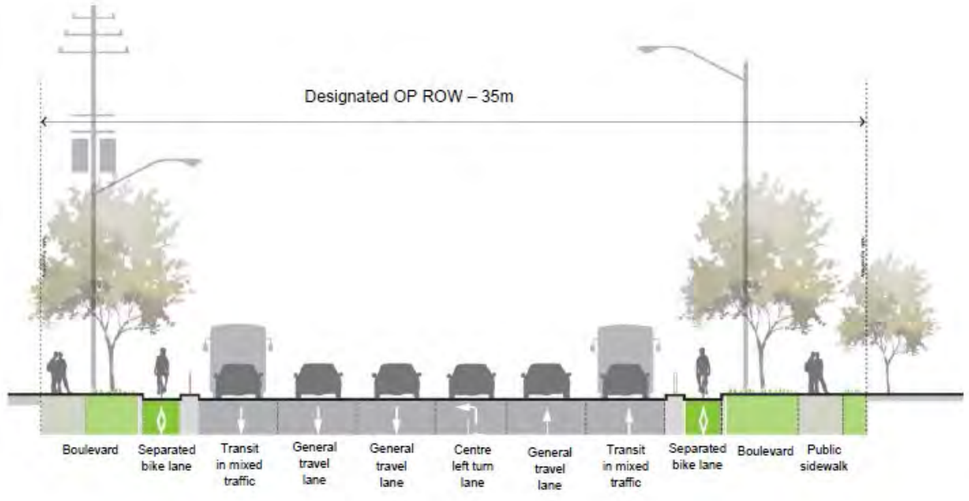


Exhibit 5-12 Right of way segment 1 option 2

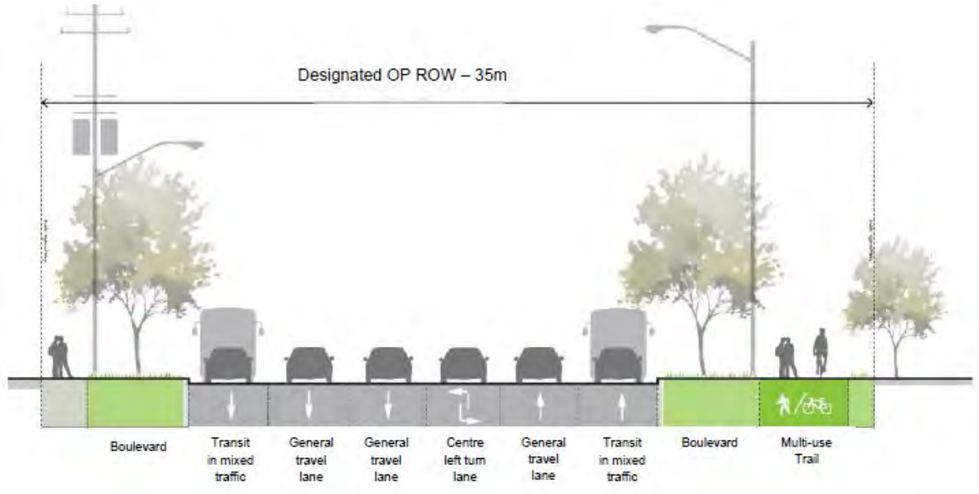


Exhibit 5-13 Right of way segment 1 option 3

Table 5-6 Summary of Segment 1 Options

	Option 1: Do Nothing	Option 2: Separated Cycling	Option 3: Multi-use Trail (One Side)
Transit	Conventional bus in mixed traffic	Conventional bus in mixed traffic	Conventional bus in mixed traffic
Walking	Sidewalk only on the south side	Sidewalk on both sides	Sidewalk on the north side, multi-use path on the south side
Cycling	No dedicated cycling facilities	Separated bike lanes on both sides	Shared multi-use trail on south side
Driving	Two general purpose travel lanes in each direction and a centre left turn lane	Two general purpose travel lanes in each direction and a centre left turn lane	Two general purpose travel lanes in each direction and a centre left turn lane
Lay-by Parking	No lay-by parking lane	No lay-by parking lane	No lay-by parking lane
People Moving Capacity	Existing capacity: 6,400 people per hour per direction	9,800 people per hour per direction	6,800 - 9,400 people per hour per direction
Public Realm	The percentage of total space dedicated to people is 35%, compared to the 65% of space dedicated to vehicles. There is an approximate 11m collective streetscaping area.	The percentage of total space dedicated to people is 40% compared to the 60% of space dedicated to vehicles. There is an approximate 6m collective streetscaping area.	The percentage of total space dedicated to people is 40% compared to the 60% of space dedicated to vehicles. There is an approximate 9m collective streetscaping area.

5.2.4 Segment 2: Clarkson Village Community Node

Segment 2 is approximately 1.6 km from Southdown Road to Johnson's Lane along Lakeshore Road within the Clarkson Community Node. This segment has an enhanced pedestrian and cycling function and would be adequately served by conventional bus. Currently, shared-lane markings or sharrows are present through parts of the Clarkson Village Community Node. The options considered for this segment offer pedestrian and cycling facilities that are separated from vehicular lanes. There is a need to maintain the existing number of lanes in this segment for adequate movement of vehicles and goods to employment destinations abutting the corridor. This segment is sub-divided into four (4) segments as per the segmentation identified in the **Clarkson Village Study (2010):**

- 2A. West Village Gateway Area: Southdown Road to CN Railway Crossing
- 2B. Outer Village Core Area: CN Railway Crossing to Clarkson Road South
- 2C. Village Core Area: Clarkson Road South to Meadow Wood Road
- 2D. East Village Gateway Area: Meadow Wood Road to Johnson's Lane

5.2.4.1 SEGMENT 2A: WEST VILLAGE GATEWAY AREA

Options considered for segment 2A:

1. Do nothing
2. Separated Cycling + Parking (One Side)

The cross-sections for the two options considered for this segment are illustrated in **Exhibit 5-14** and **Exhibit 5-15**. Descriptions of the two options, elaborating on key measurements, are detailed in **Table 5-7**.

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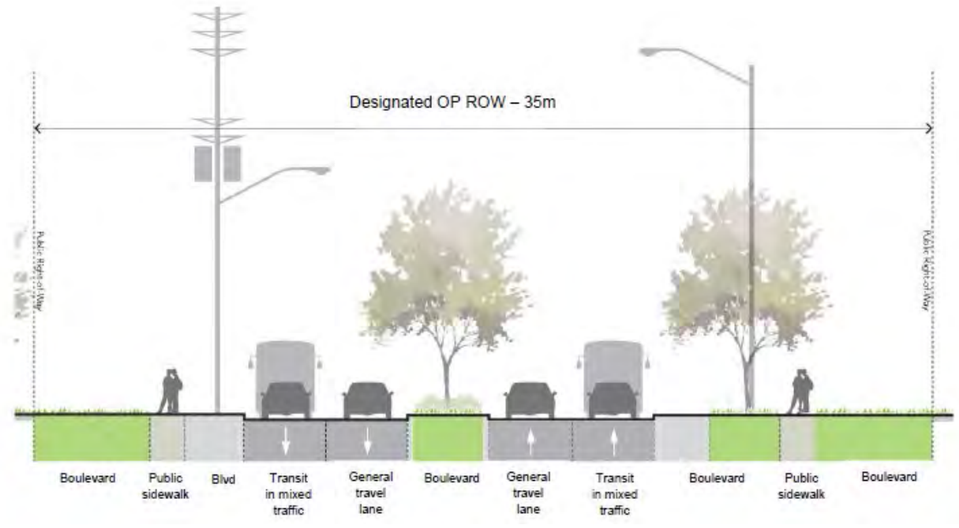

Exhibit 5-14 Right of way segment 2A option 1

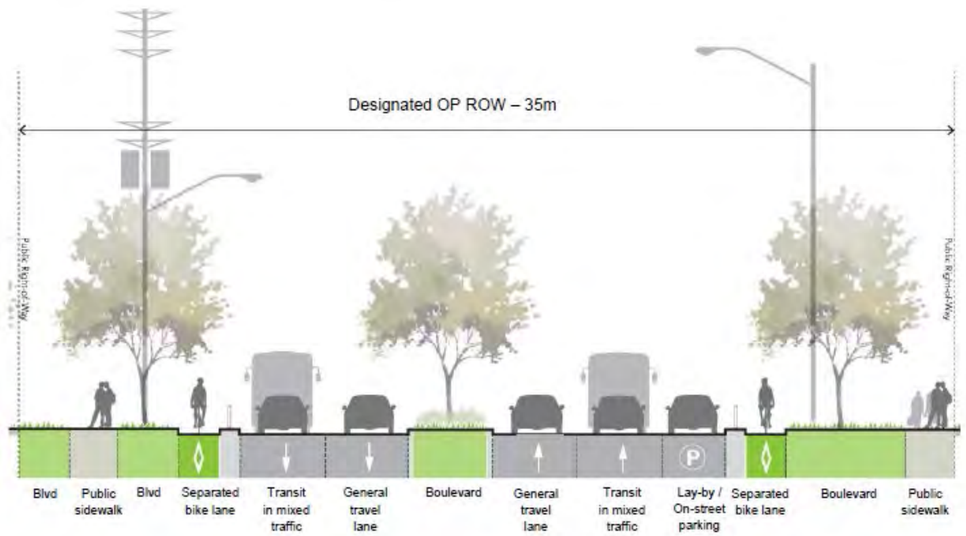

Exhibit 5-15 Right of way segment 2A option 2

Table 5-7 Summary of segment 2A options

	Option 1: Do Nothing	Option 2: Separated Cycling + Parking
Transit	Conventional bus in mixed traffic	Conventional bus in mixed traffic.
Walking	Sidewalk on both sides	Sidewalk on both sides
Cycling	No dedicated cycling facilities	Separated bike lanes on both sides
Driving	Two general purpose lanes in each direction	Two general purpose lanes in each direction
Lay-by Parking	No lay-by parking lane	Layby parking on the south side
People Moving Capacity	Existing capacity: 6,400 people per hour per direction	9,400 people per hour per direction
Public Realm	The percentage of total space dedicated to people is 60%, compared to the 40% of space dedicated to vehicles. The streetscaping area varies along this segment, but exceeds 9m.	The percentage of total space dedicated to people versus vehicles is balanced at 50%. The streetscaping area varies along this segment, but exceeds 8m.

5.2.4.2 SEGMENT 2B: OUTER VILLAGE CORE AREA

Options considered for this segment are:

1. Do Nothing
2. Separated Cycling + Parking (Both Sides)
3. Separated Cycling + Parking (One Side)

The cross-sections for the three options considered for this segment are illustrated in **Exhibit 5-16**, **Exhibit 5-17**, and **Exhibit 5-18**. A description of the cross-sections can be found below in **Table 5-8**.

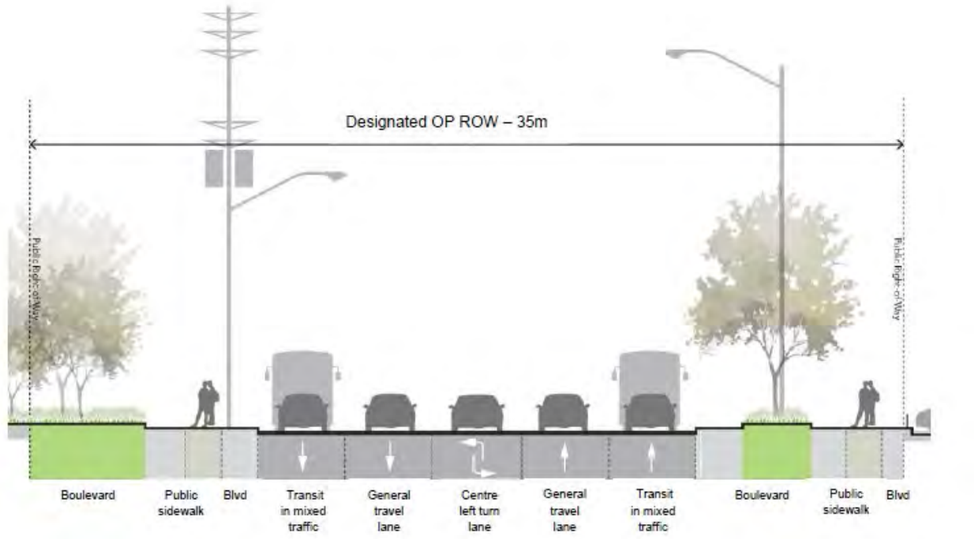

Exhibit 5-16 Right of way segment 2B option 1

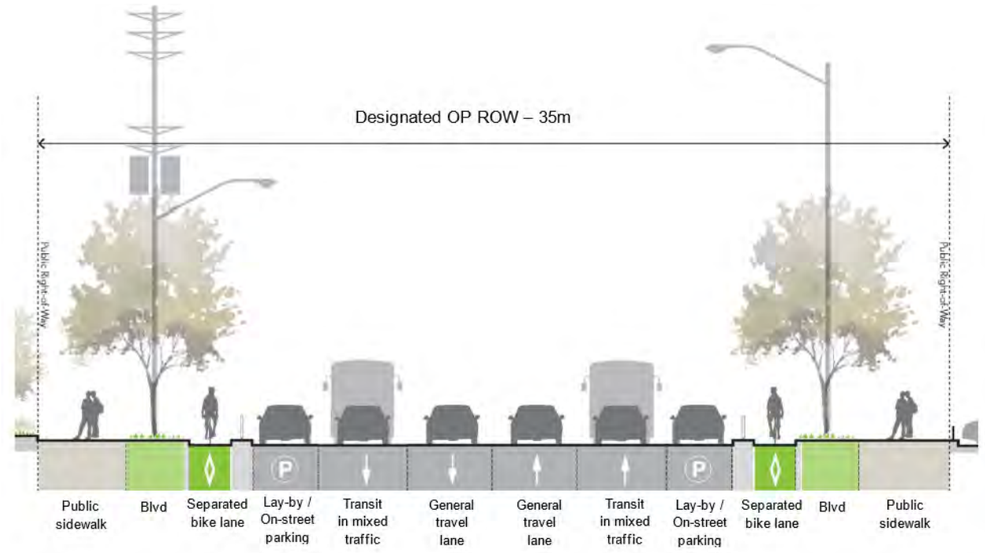

Exhibit 5-17 Right of way segment 2B option 2

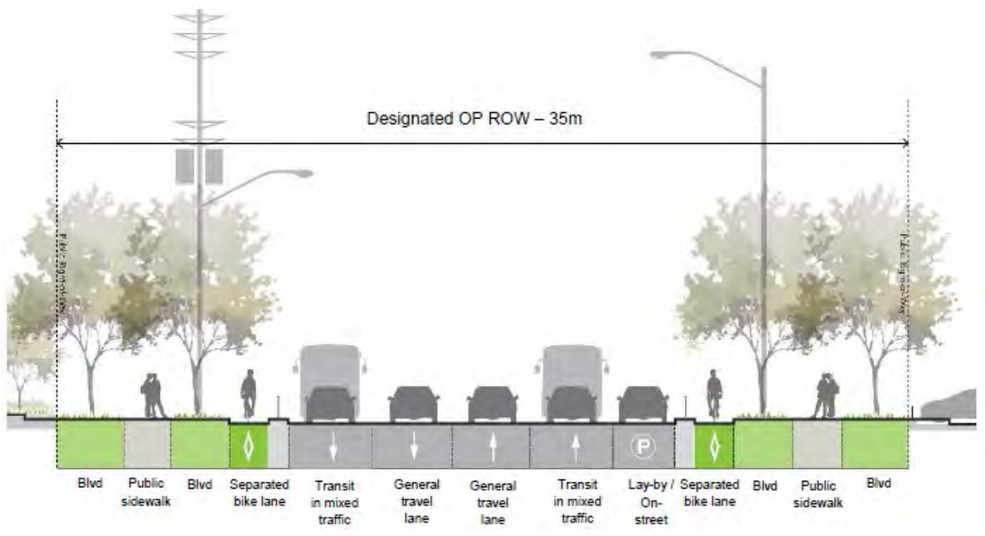

Exhibit 5-18 Right of way segment 2B option 3

Table 5-8 Summary of segment 2B options

	Option 1: Do Nothing	Option 2: Separated Cycling + Parking	Option 3: Separated Cycling + Parking (One Side)
Transit	Conventional bus in mixed traffic	Conventional bus in mixed traffic	Conventional bus in mixed traffic
Walking	Sidewalk on both sides	Wide sidewalk on both sides	Wide sidewalk on both sides
Cycling	No dedicated cycling facilities	Separated bike lanes on both sides	Separated bike lanes on both sides
Driving	Two general purpose lanes in each direction and a centre left turn lane.	Two general purpose lanes in each direction. No centre left turn lane.	Two general purpose lanes in each direction. No centre left turn lane.
Lay-by Parking	No lay-by parking lane	Layby parking on both sides.	Layby parking on the south side.
People Moving Capacity	Existing capacity: 6,400 people per hour per direction	11,000 people per hour per direction	9,400 people per hour per direction
Public Realm	The percentage of total space dedicated to people versus vehicles is 50%. There is an approximate 15m collective streetscaping area	The percentage of total space dedicated to people versus vehicles is 50%. There is an approximate 5m collective streetscaping area	The percentage of total space dedicated to people is 55% compared to the 45% of space dedicated to vehicles. There is an approximate 10.7m collective streetscaping area

5.2.4.3 SEGMENT 2C: VILLAGE CORE AREA

Options considered for this segment:

1. Do Nothing
2. Separated Cycling + Parking (One Side)

The cross-sections for the two options considered for this segment are illustrated in **Exhibit 5-15** and **Exhibit 5-16**. Descriptions of the two options, elaborating on key measurements, are detailed in **Table 5-9.**

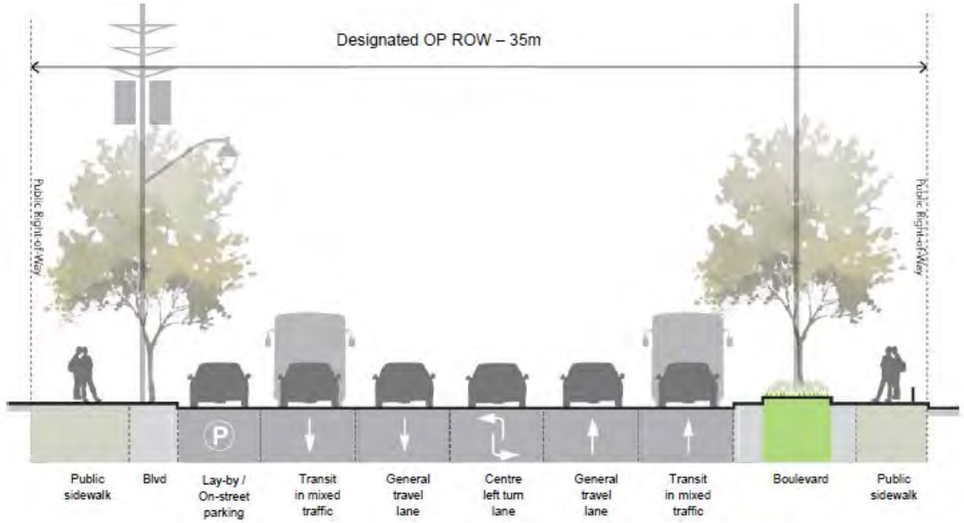

Exhibit 5-19 Right of way segment 2C option 1

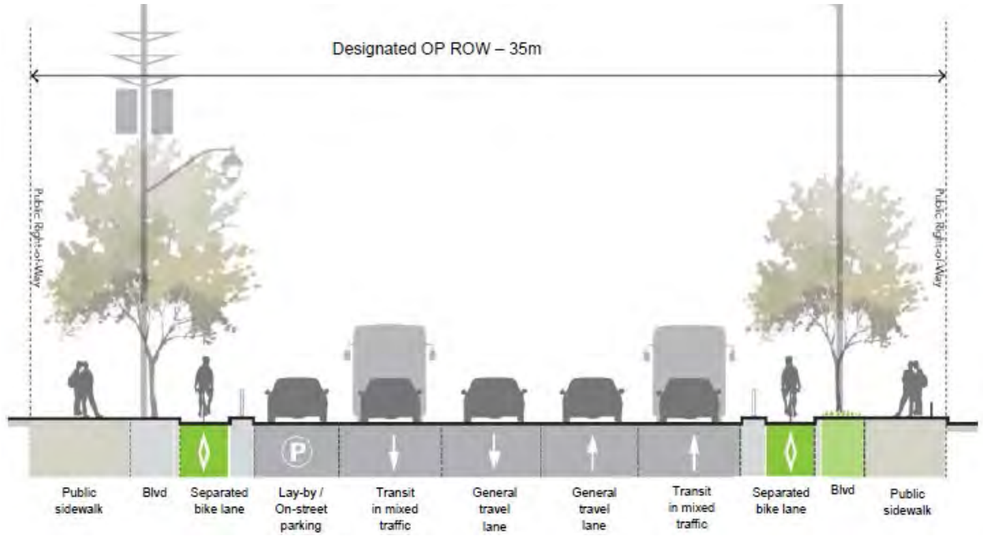

Exhibit 5-20 Right of way segment 2C option 2

Table 5-9 Summary of segment 2C options

	Option 1: Do Nothing	Option 2: Separated Cycling
Transit	Conventional bus in mixed traffic	Conventional bus in mixed traffic
Walking	Sidewalk on both sides	Sidewalk on both sides
Cycling	No dedicated cycling facilities	Separated bike lanes on both sides
Driving	Two general purpose travel lanes in each direction and a centre left turn lane.	Two general purpose travel lanes in each direction. No centre left turn lane.
Lay-by Parking	Layby parking on the north side	Layby parking on the north side
People Moving Capacity	Existing capacity: 6,800 people per hour per direction	9,400 people per hour per direction
Public Realm	The percentage of total space dedicated to people is 30%, compared to the 70% of space dedicated to vehicles. There is an approximate 6m collective streetscaping area	The percentage of total space dedicated to people 40% in this option, compared to 60% of space dedicated to vehicles. There is an approximate 3.4m collective streetscaping area

5.2.4.4 SEGMENT 2D: EAST VILLAGE GATEWAY AREA

Options considered for this segment are:

1. Do Nothing
2. Separated Cycling
3. Multi-use Trail (Both Sides)

The cross-sections for the three options considered for this segment are illustrated in **Exhibit 5-21, Exhibit 5-22,** and **Exhibit 5-23**. A description of the cross-sections can be found below in **Table 5-10**.

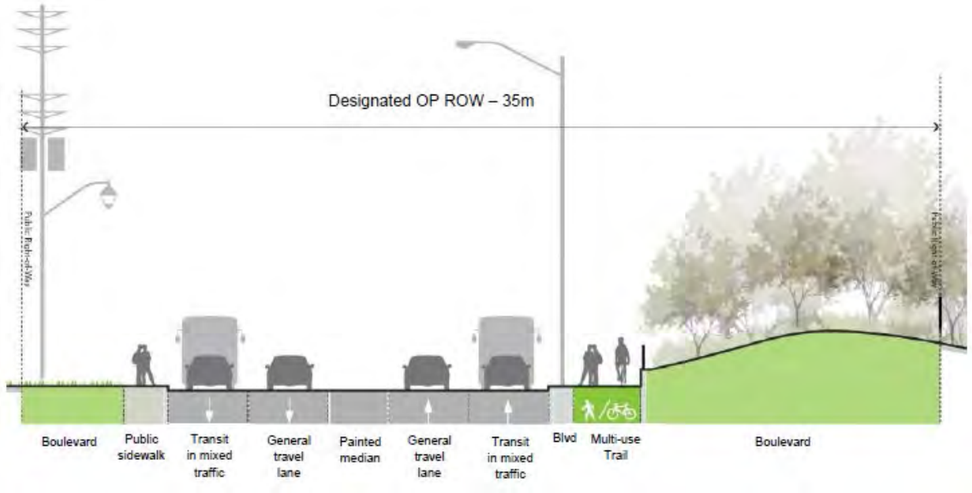

Exhibit 5-21 Right of way segment 2D option 1

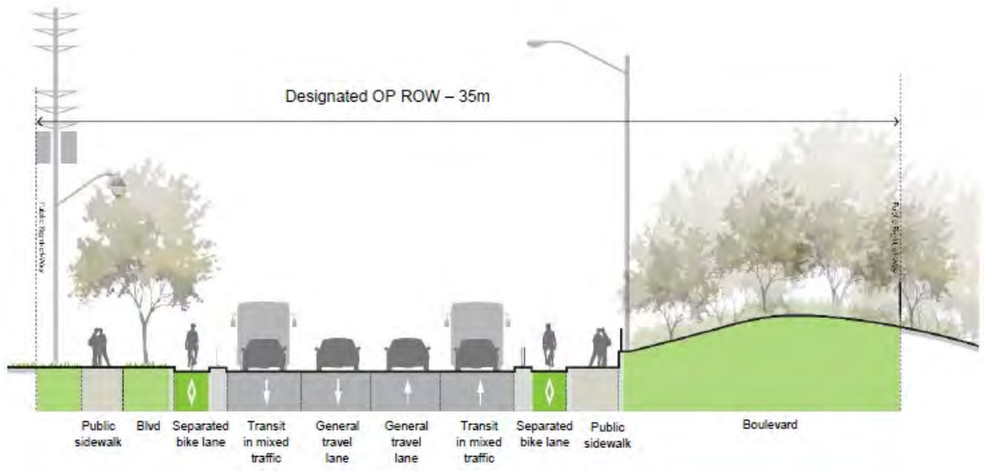

Exhibit 5-22 Right of way segment 2D option 2

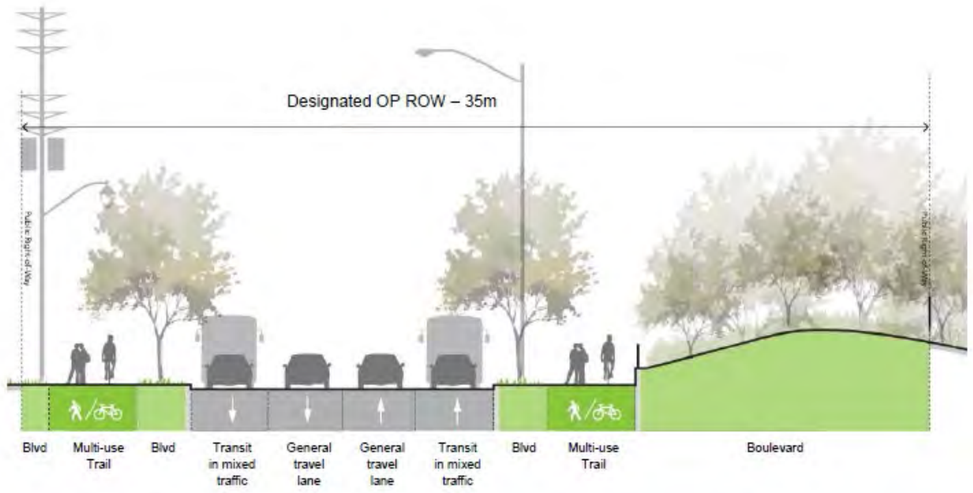

Exhibit 5-23 Right of way segment 2D option 3

Table 5-10 Summary of segment 2D options

	Option 1: Do Nothing	Option 2: Separated Cycling	Option 3: Multi-use Trail (Both Sides)
Transit	Conventional bus in mixed traffic	Conventional bus in mixed traffic	Conventional bus in mixed traffic
Walking	Sidewalk on the north side and multi-use trail on the south side	Sidewalk on both sides	Multi-use trail on both sides
Cycling	Shared multi-use trail on the south side	Separated bike lanes on both sides	Shared multi-use trail both sides
Driving	Two general purpose travel lanes in each direction	Two general purpose travel lanes in each direction	Two general purpose travel lanes in each direction
Lay-by Parking	No lay-by parking	No lay-by parking	No lay-by parking
People Moving Capacity	Existing capacity: 6,400-7,400 people per hour per direction	9,400 people per hour per direction	7,400 people per hour per direction
Public Realm	The percentage of total space dedicated to people versus vehicles is 50%. The streetscaping area varies at this segment but exceeds 6.5m	The percentage of total space dedicated to people is 60%, compared to 40% for vehicles. The streetscaping area varies at this segment but exceeds 4.6m	The percentage of total space dedicated to people is 60%, compared to 40% for vehicles. The streetscaping area varies at this segment but exceeds 6.2m

5.2.5 Segment 3: Lorne Park Neighbourhood

Segment 3 is approximately 2.7km from Johnson's Lane to Godfrey's Lane along Lakeshore Road in the Clarkson-Lorne Park Neighbourhood. This segment has a utilitarian pedestrian and cycling function and would be adequately served by conventional bus.

Options considered for this segment:

1. Do nothing
2. Separated Cycling
3. Multi-use Trail (Both Sides)

The cross-sections for the three options considered for this segment are illustrated in **Exhibit 5-24**, **Exhibit 5-25**, and **Exhibit 5-26.** A description of the cross-sections can be found below in **Table 5-11**.

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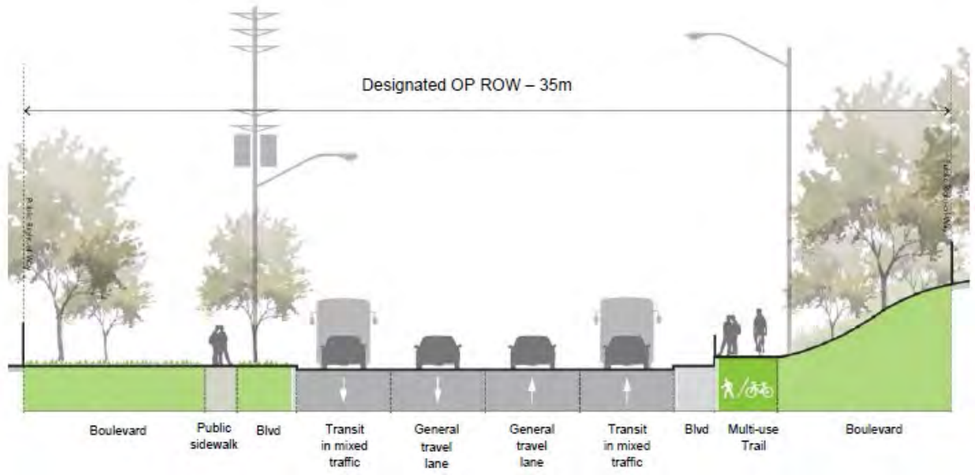

Exhibit 5-24 Right of way segment 3 option 1

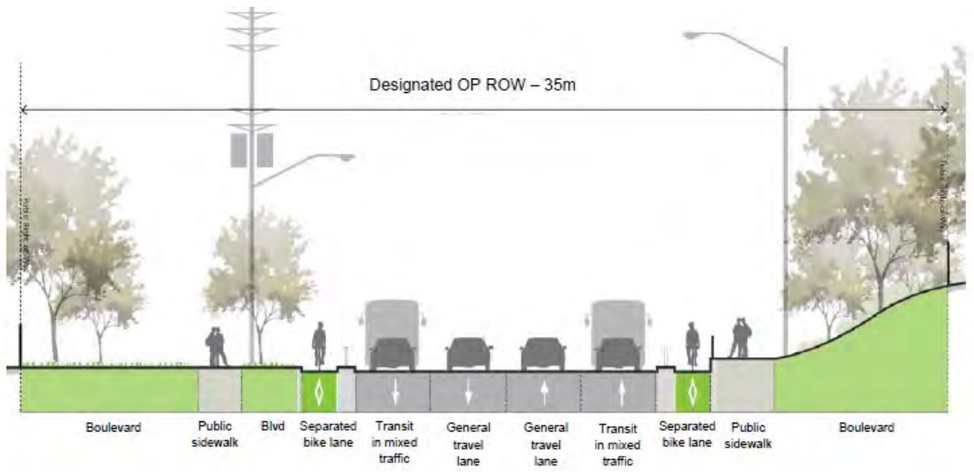

Exhibit 5-25 Right of way segment 3 option 2

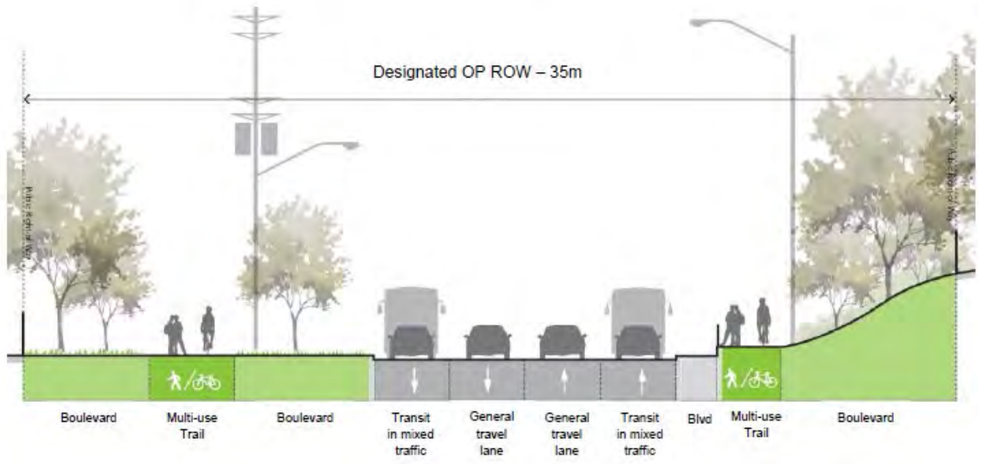

Exhibit 5-26 Right of way segment 3 option 3

Table 5-11 Summary of segment 3 options

	Option 1: Do Nothing	Option 2: Separated Cycling	Option 3: Off Street Shared (Both Sides)
Transit	Conventional bus runs mixed traffic	Conventional bus in mixed traffic	Conventional bus in mixed traffic
Walking	Sidewalk on the north side and multi-use trail on the south side	Sidewalk on both sides	Multi-use trail on both sides
Cycling	3.0m shared multi-use trail on the south side	Separated bike lane on both sides	Shared multi-use trail on both sides
Driving	Two general purpose travel lanes in each direction	Two general purpose travel lanes in each direction	Two general purpose travel lanes in each direction
Lay-by Parking	No lay-by parking	No lay-by parking	No lay-by parking
People Moving Capacity	Existing capacity: 6,400-7,400 people per hour per direction	9,400 people per hour per direction	7,400 people per hour per direction
Public Realm	The percentage of total space dedicated to people versus vehicles is 50%. The streetscaping area varies at this segment but exceeds 4.7m	The percentage of total space dedicated to people is 60%, compared to 40% for vehicles. The streetscaping area varies at this segment but exceeds 2.8m	The percentage of total space dedicated to people is 60%, compared to 40% for vehicles. The streetscaping area varies at this segment but exceeds 8.4m

5.2.6 Segment 4: Port Credit West Neighbourhood

Segment 4 is approximately 0.9 km from Godfrey's Lane to Mississauga Road along Lakeshore Road in the Port Credit West Neighbourhood. This segment has an enhanced pedestrian and cycling function and would be adequately served by conventional bus. If higher order transit is brought into the Imperial Oil Lands (OIL) Site (70 Mississauga Road South), than the recommendations from Segment 5, described in the next section, would be adopted for this segment for the length of road required to accommodate the higher order transit. Layby parking is currently provided in this segment along Lakeshore Road and an optimal cross-section would maintain some on-street parking.

Options considered for this segment:

1. Do nothing
2. Separated Cycling
3. Separated Cycling + Parking (Either side - alternating with planting zones)
4. Multi-use Trail (One Side)
5. Multi-use Trail (Both Sides)

The cross-sections for the five options considered for this segment are illustrated in **Exhibit 5-27** to **Exhibit 5-31**. A description of the cross-sections can be found below in **Table 5-12**

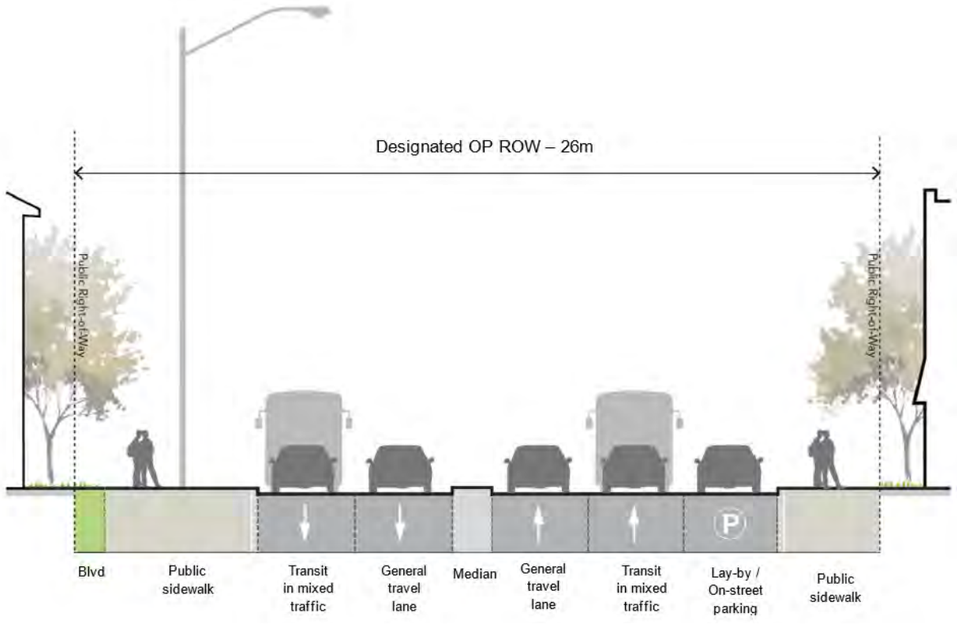

Exhibit 5-27 Right of way segment 4 option 1

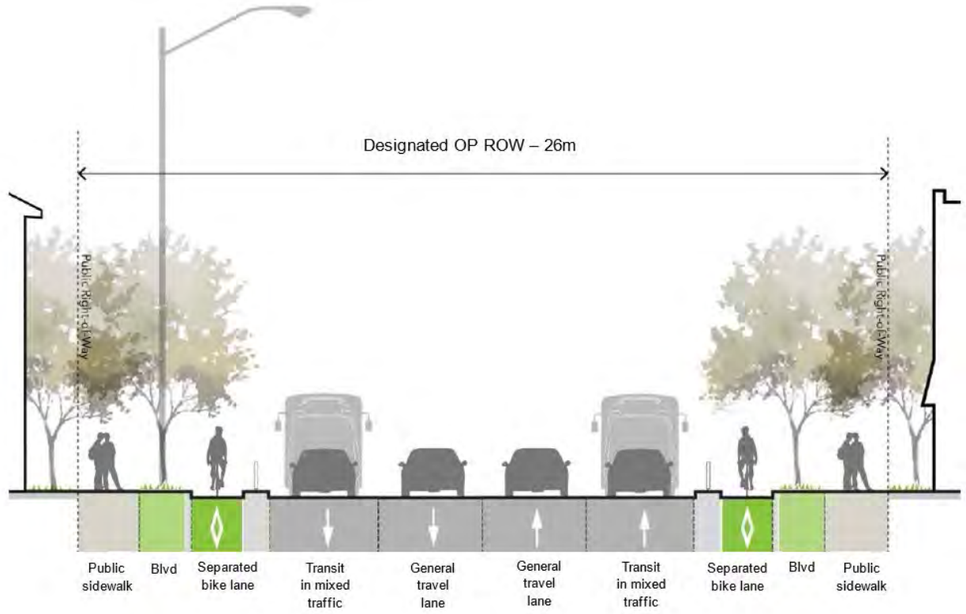

Exhibit 5-28 Right of way segment 4 option 2

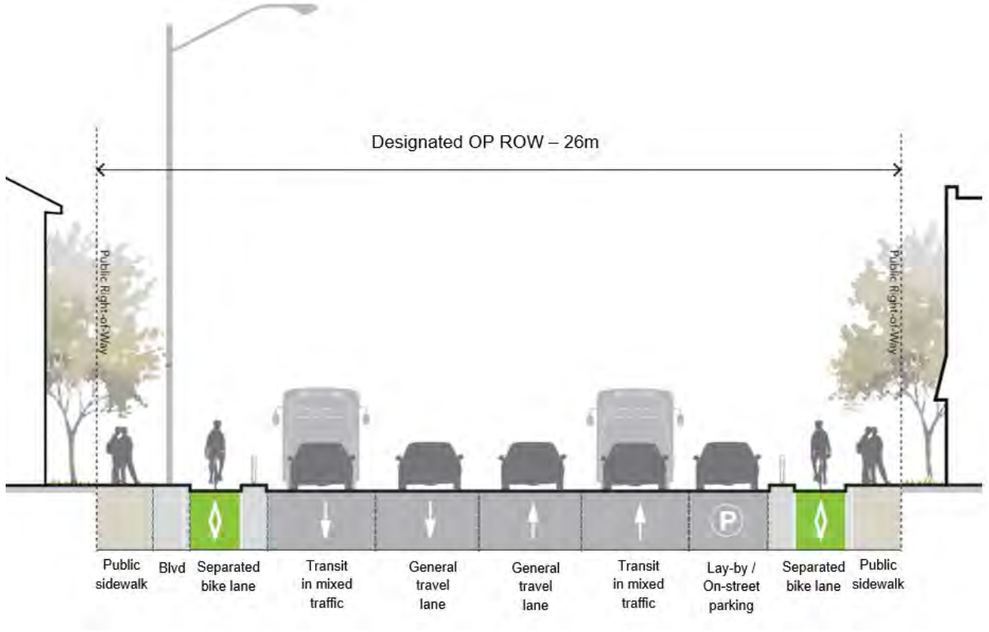

Exhibit 5-29 Right of way segment 4 option 3

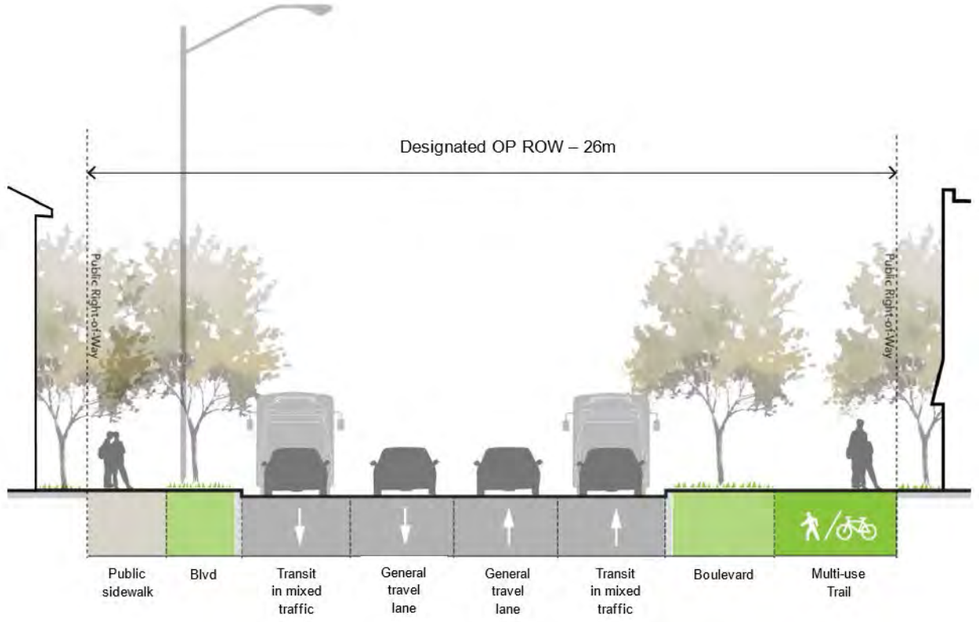

Exhibit 5-30 Right of way segment 4 option 4

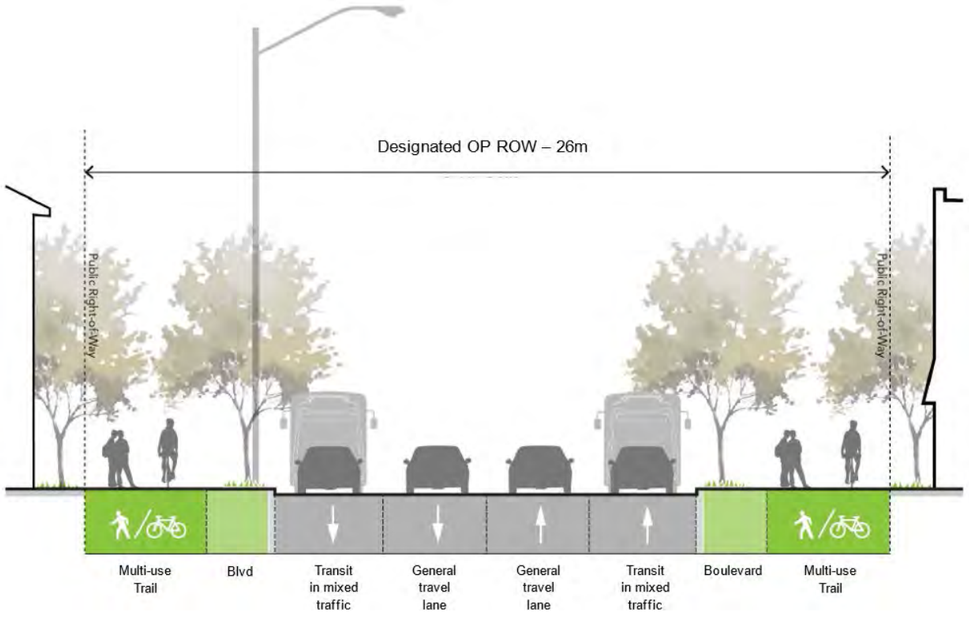

Exhibit 5-31 Right of way segment 4 option 5

Table 5-12 Summary of segment 4 options

	Option 1: Do Nothing	Option 2: Separated Cycling	Option 3: Separated Cycling + Parking (Either side - alternating with planting zones)	Option 4: Multi-use Trail (One Side)	Option 5: Multi-use Trail (Both Sides)
Transit	Conventional bus in mixed traffic	West of 70 Mississauga Road: Conventional bus in mixed traffic East of Mississauga Road: Higher order transit	West of 70 Mississauga Road: Conventional bus in mixed traffic East of Mississauga Road: Higher order transit	West of 70 Mississauga Road: Conventional bus in mixed traffic East of Mississauga Road: Higher order transit	West of 70 Mississauga Road: Conventional bus in mixed traffic East of Mississauga Road: Higher order transit
Walking	Sidewalk on both sides	Sidewalk on both sides	Sidewalk on both sides	Sidewalk on the north side, multi-use trail on the south side	Multi-use trail on both sides
Cycling	No dedicated cycling facilities	Separated bike lanes on both sides	Separated bike lanes on both sides	Shared multi-use trail on the south side	Shared multi-use trail on both sides
Driving	Two general purpose travel lanes in each direction	Two general purpose travel lanes in each direction	Two general purpose travel lanes in each direction	Two general purpose travel lanes in each direction	Two general purpose travel lanes in each direction
Lay-by Parking	North side: 28-32 parking spaces South side: 16 parking spaces	No lay-by parking (44-48 spaces to be removed)	Some parking spaces to be maintained and alternated with planting zones(exact number to be determined through design)	No lay-by parking lane (44-48 spaces to be removed)	No lay-by parking lane (44-48 spaces to be removed)
People Moving Capacity	Existing capacity: 6,400 people per hour per direction	9,400 people per hour per direction	9,400 people per hour per direction	6,400- 7,400 people per hour per direction	7,400 people per hour per direction
Public Realm	The percentage of total space dedicated to people is 40%, compared to 60% for vehicles. There is an approximate 1m collective streetscaping area	The percentage of total space dedicated to people versus vehicles is 50% with this option. There is an approximate 3.4m collective streetscaping area	The percentage of total space dedicated to people versus vehicles is 50% with this option. There is limited opportunity for streetscaping in this option (i.e. alternating with layby parking)	The percentage of total space dedicated to people versus vehicles is 50% with this option. There is an approximate 3.4m collective streetscaping area	The percentage of total space dedicated to people versus vehicles is 50% with this option. There is an approximate 4.0m collective streetscaping area

5.2.7 Segment 5: Port Credit Community Node & Port Credit East Neighbourhood

Segment 5 is approximately 2.1 km from Mississauga Road to Seneca Avenue along Lakeshore Road in the Port Credit Community Node and Port Credit neighbourhood. This segment has the most constrained ROW along the corridor (26 metres) and several needs competing for limited space. This segment should also accommodate higher order transit. Pedestrian space is especially critical in this segment and maintaining some on-street parking is also optimal.

This segment was sub-divided into three (3) segments:

- 5A. Mississauga Road to Stavebank Road
- 5B. Stavebank Road to Hurontario Street
- 5C. Hurontario Street to Seneca Avenue

Options considered for all three segments (i.e. 5A, 5B, 5C) are as follows:

6. Do nothing
7. 4 Lanes (No Parking)
8. 4 Lanes + Parking (Either side - alternating with planting zones)
9. 2 Lanes + Parking (Both Sides)

The cross-sections for the four options considered for this segment are illustrated in **Exhibit 5-32** to **Exhibit 5-35**. Descriptions of the four options, elaborating on key measurements, are detailed in **Table 5-13**.

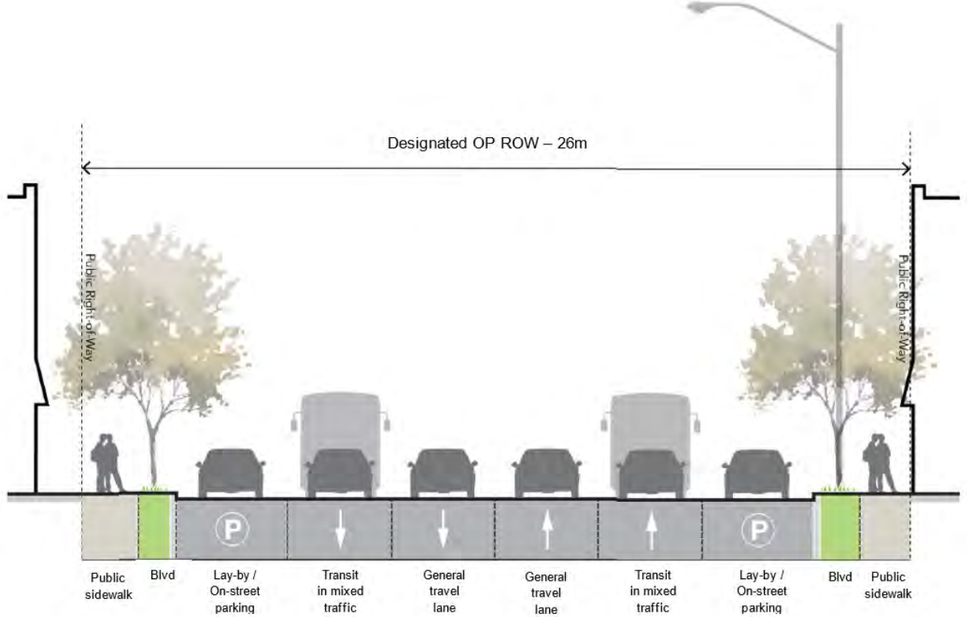

Exhibit 5-32 Right of way segment 5 option 1

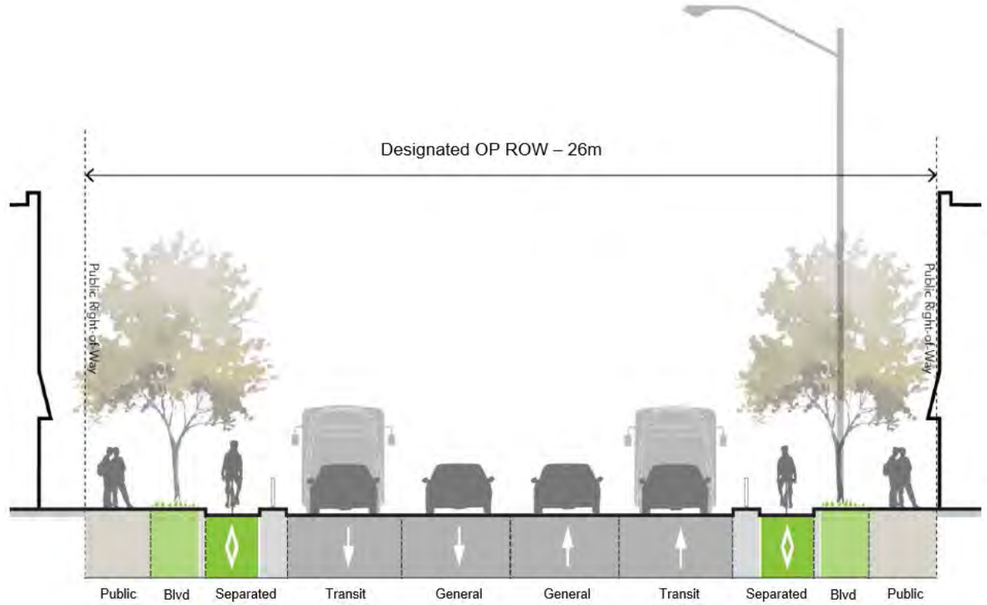

Exhibit 5-33 Right of way segment 5 option 2

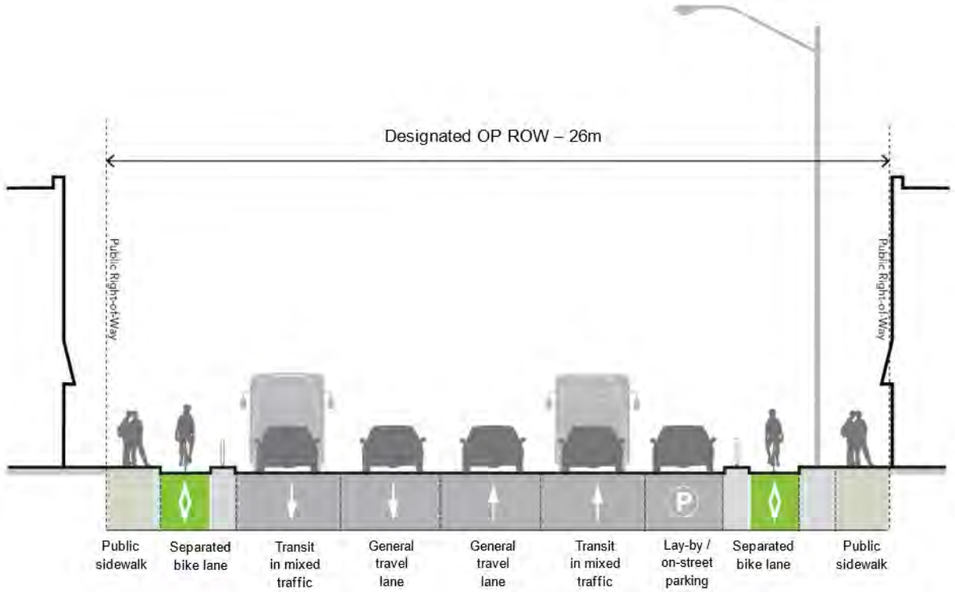

Exhibit 5-34 Right of way segment 5 option 3

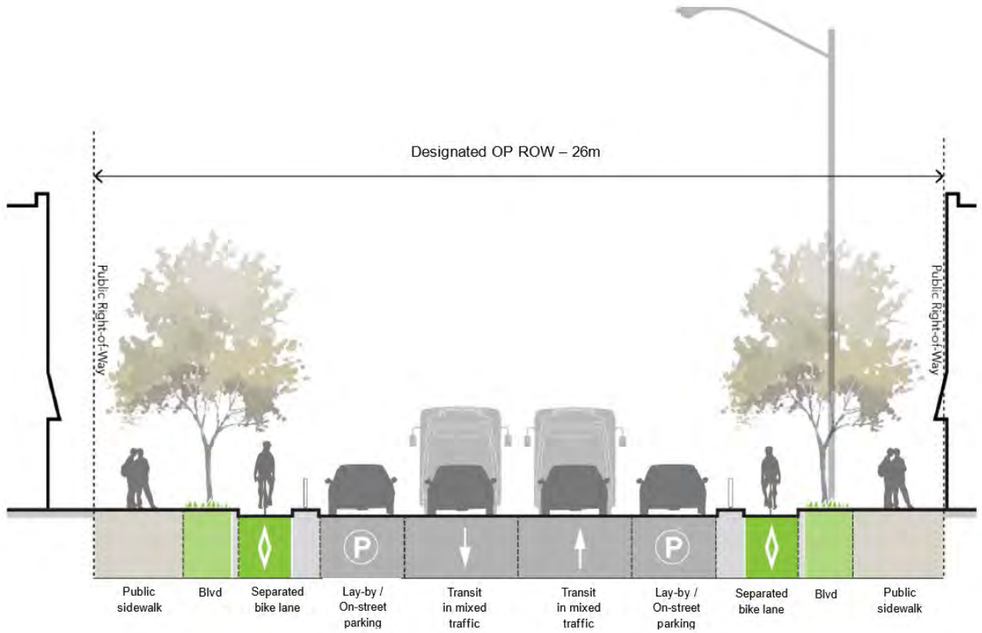

Exhibit 5-35 Right of way segment 5 option 4

Table 5-13 Summary of Segment 5 Options

	Option 1: Do Nothing (4 Lanes)	Option 2: 4 Lanes (No Parking)	Option 3: 4 Lanes + Parking (Either side - alternating with planting zones)	Option 4: 2 Lanes + Parking (Both Sides)
Transit	Conventional bus in mixed traffic	Higher order transit in mixed traffic	Higher order transit in mixed traffic	Higher order transit in mixed traffic
Walking	Narrow sidewalks on both sides	Wide sidewalks on both sides	Wide sidewalks on both sides	Wide sidewalks on both sides
Cycling	No dedicated cycling facilities	Separated bike lanes on both sides	Separated bike lanes on both sides	Separated bike lanes on both sides
Driving	Two general purpose travel lanes in each direction	Two general purpose travel lanes in each direction	Two general purpose travel lanes in each direction	One general purpose travel lane in each direction
Lay-by Parking	5A: North side – 16 spaces South side – 6 spaces 5B: North side – 30 spaces South side – 23 spaces 5C: North side – 46 spaces South side – 93 spaces	5A: 22 spaces removed 5B: 53 spaces removed 5C: 139 spaces removed	Some parking spaces to be maintained and alternated with planting zones(exact number to be determined through design)	No change to parking supply from existing condition
People Moving Capacity	Existing capacity: 6,400 people per hour per direction	11,800 people per hour per direction	11,800 people per hour per direction	10,700 people per hour per direction
Public Realm	The percentage of total space dedicated to people is 20%, compared to 80% for vehicles. There is an approximate 2.7m collective streetscaping area	The percentage of total space dedicated to people versus vehicles is 50% for this option. There is an approximate 3.4m collective streetscaping	The percentage of total space dedicated to people is 40%, compared to 60% for vehicles. There is limited opportunity for streetscaping in this option (i.e. alternating with parking laybys)	The percentage of total space dedicated to people versus vehicles is 50% for this option. There is an approximate 3.4m collective streetscaping area

5.2.8 Segment 6: Lakeview West Neighbourhood

Segment 6 is approximately 1.35 km from Seneca Avenue to East Avenue along Lakeshore Road in the Lakeview neighbourhood. This segment has a designated OP ROW width of 30 m and should accommodate higher order transit along with utilitarian pedestrian and cycling facilities. This segment is dependent on the outcomes of Segment 5, meaning the preferred option for Segment 5 would be continued into this segment and the additional ROW space would be distributed amongst the various cross-sectional elements.

Options considered for this segment:

1. Do nothing (4 Lanes)
2. 4 Lanes (No Parking)
3. 4 Lanes + Parking (One Side)
4. 2 Lanes + Parking (Both Sides)

The cross-sections for the four options considered for this segment are illustrated in **Exhibit 5-36** to **Exhibit 5-39.** Descriptions of these options, elaborating on key measurements, are detailed in **Table 5-14 .**

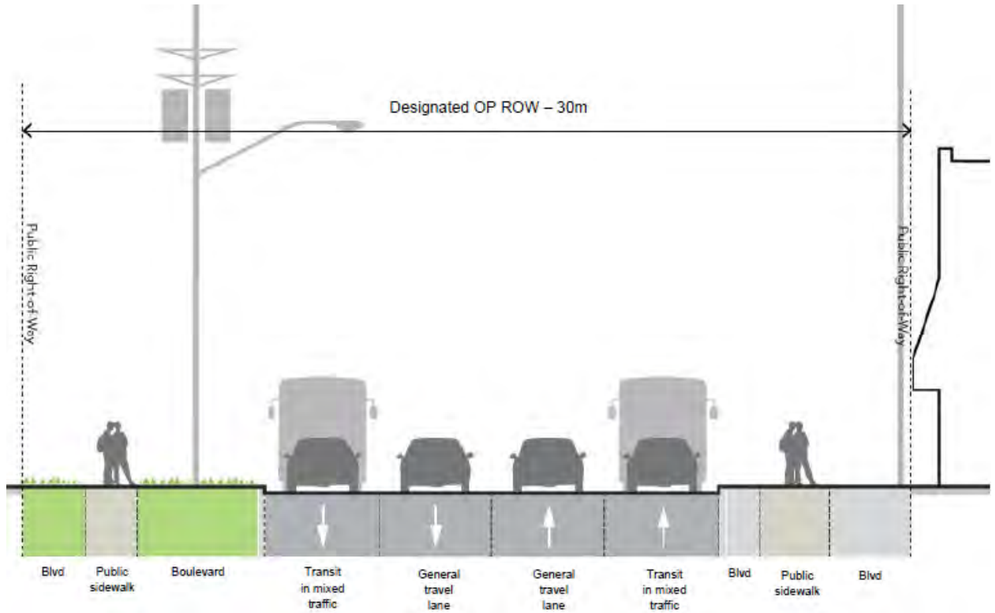

Exhibit 5-36 Right of way of segment 6 option 1

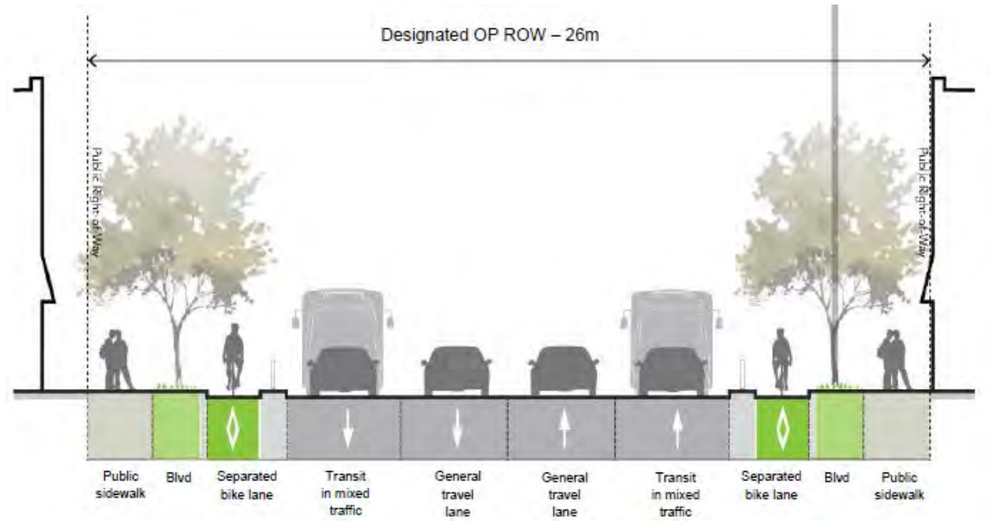

Exhibit 5-37 Right of way of segment 6 option 2

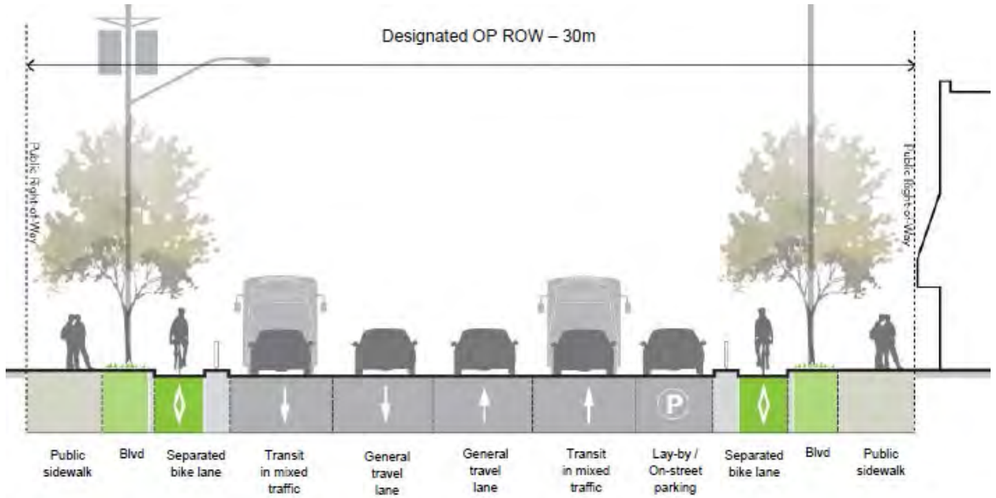

Exhibit 5-38 Right of way of segment 6 option 3

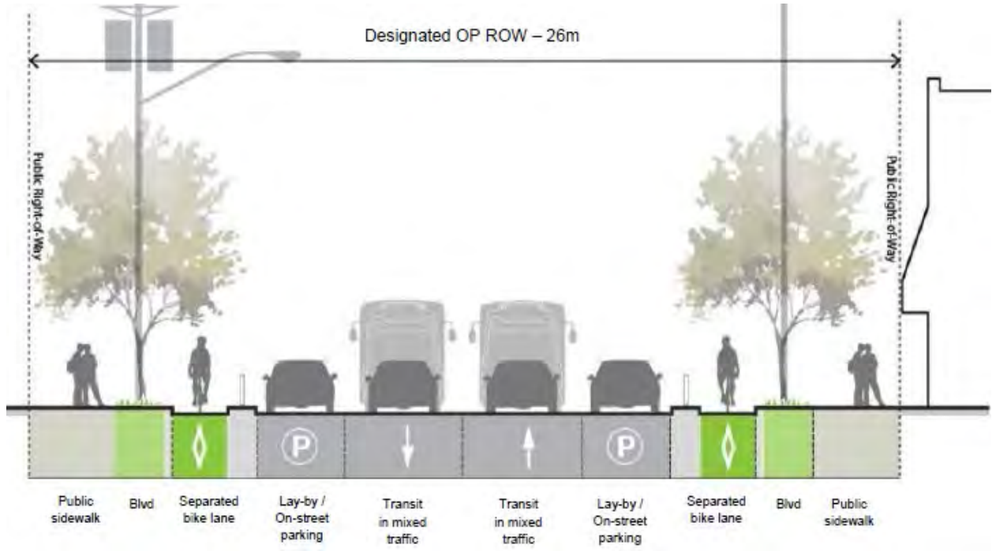

Exhibit 5-39 Right of way segment 6 option 4

Table 5-14 Summary of Segment 6 Options

	Option 1: Do Nothing (4 Lanes)	Option 2: 4 Lanes (No Parking)	Option 3: 4 Lanes + Parking (One Side)	Option 4: 2 Lanes + Parking (Both Sides)
Transit	Conventional bus in mixed traffic	Higher order transit in mixed traffic	Higher order transit in mixed traffic	Higher order transit in mixed traffic
Walking	Sidewalks on both sides	Wide sidewalks on both sides	Wide sidewalks on both sides	Wide sidewalks on both sides
Cycling	No dedicated cycling facilities	Separated bike lanes on both sides	Separated bike lanes on both sides	Separated bike lanes on both sides
Driving	Two general purpose travel lanes in each direction	Two general purpose travel lanes in each direction	Two general purpose travel lanes in each direction	One general purpose travel lane in each direction
Lay-by Parking	No layby parking lane	No layby parking lane	Layby parking on the south side	Layby parking on both sides
People Moving Capacity	Existing capacity: 6,400 people per hour per direction	11,800 people per hour per direction	11,800 people per hour per direction	10,700 people per hour per direction
Public Realm	The percentage of total space dedicated to people is 30%, compared to 70% for vehicles. The streetscaping area varies at this segment, but exceeds 7.2m	The percentage of total space dedicated to people is 55%, compared to 45% for vehicles. The streetscaping area varies at this segment, but exceeds 3.4m	The percentage of total space dedicated to people is 45%, compared to 55% for vehicles. There is an approximate 3.4m collective streetscaping area	The percentage of total space dedicated to people versus vehicles is 50% for this option. There is an approximate 3.4m collective streetscaping area

5.2.9 Segment 7: Lakeview Employment Area

Segment 7 is approximately 2.3 km from East Avenue to Etobicoke Creek along Lakeshore Road and part of the segment abuts the Inspiration Lakeview development lands. This segment has a utility pedestrian and cycling function; however, requires higher order transit. As the segment has a 44.5 m right-of-way, only dedicated transit options were considered and similar to Segment 6, the preferred option for Segment 5 would be continued into this segment and the additional ROW space would be distributed amongst the various cross-sectional elements.

Options considered for this segment:

1. Do nothing (4 Lanes)
2. Exclusive Transit (One Side) + Separated Cycling
3. Exclusive Transit (Median) + Separated Cycling
4. Exclusive Transit (Median) + Multi-use Trail (Both Sides)

The cross-sections for the four options considered for this segment are illustrated in **Exhibit 5-40** to **Exhibit 5-43**. Descriptions of these options, elaborating on key measurements, are detailed in **Table 5-15.**

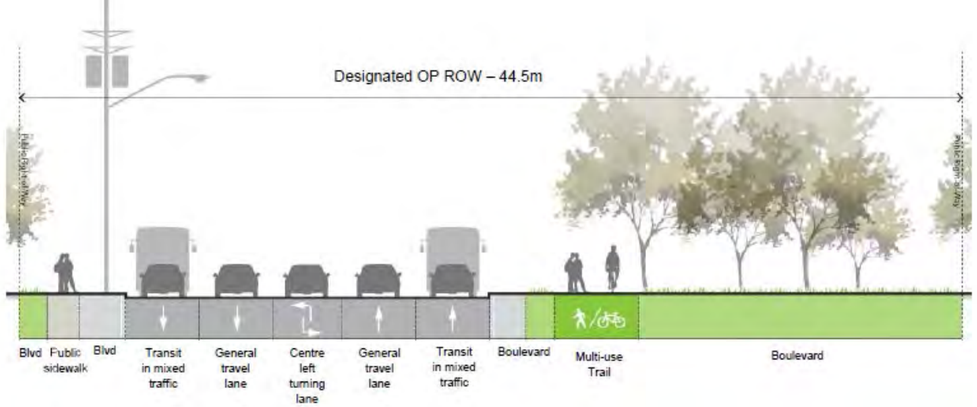

Exhibit 5-40 Right of way of segment 7 option 1

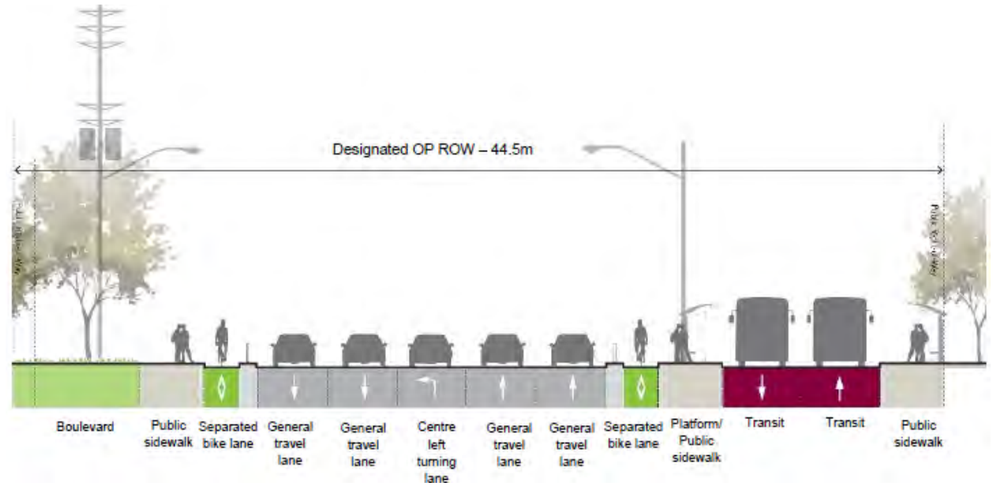

Exhibit 5-41 Right of way of segment 7 option 2

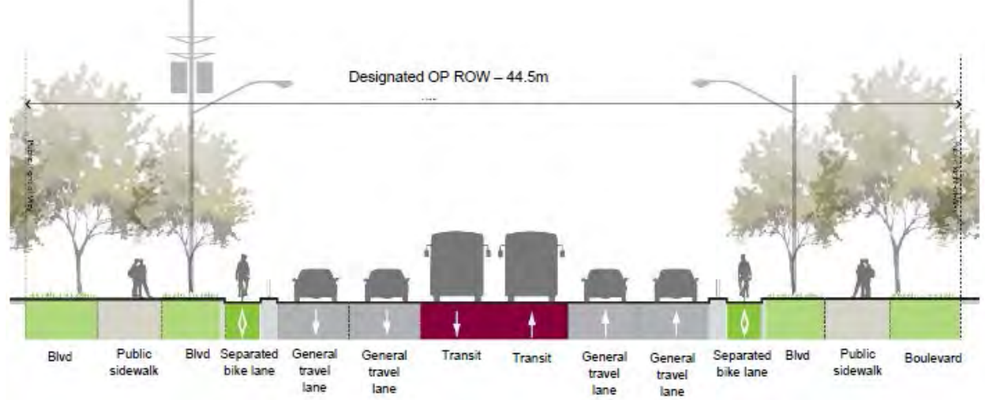

Exhibit 5-42 Right of way segment 7 option 3

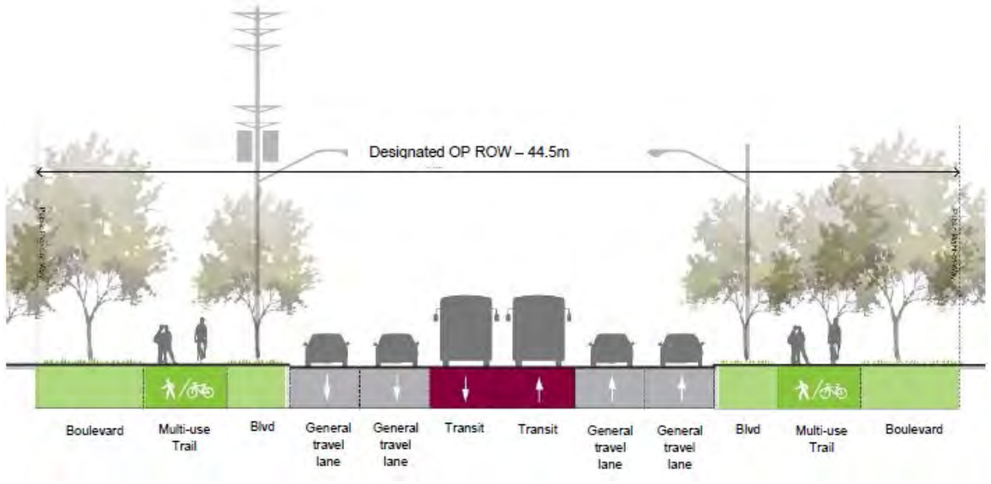

Exhibit 5-43 Right of way of segment 7 option 4

Table 5-15 Summary of Segment 7 Options

	Option 1: Do Nothing	Option 2: Exclusive Transit (One Side) + Separated Cycling	Option 3: Exclusive Transit (Median) + Separated Cycling	Option 4: Exclusive Transit (Median) + Multi-use Trail (Both Sides)
Transit	Conventional bus in mixed traffic	Higher order transit in exclusive lanes on the south side	Higher order transit runs an exclusive median lane	Higher order transit in an exclusive median lane
Walking	Sidewalk on the north side. Multi-use trail on the south side	Sidewalk on both sides. No multi-use trail.	Sidewalk on both sides. No multi-use trail.	Shared multi-use trail on both sides.
Cycling	Shared multi-use trail on the south side	Separated bike lanes on both sides	Separated bike lanes on both sides	Shared multi-use trail on both sides
Driving	Two general purpose travel lanes and a centre left turn lane	Two general purpose travel lanes and a centre left turn lane	Two general purpose travel lanes. No centre left turn lane.	Two general purpose travel lanes. No centre left turn lane
Lay-by Parking	No layby parking lane	No layby parking lane	No layby parking lane	No layby parking lane
People Moving Capacity	Existing capacity: 6,400-7,900 people per hour per direction	11,800 people per hour per direction	11,800 people per hour per direction	10,300 people per hour per direction
Public Realm	The percentage of total space dedicated to people is 60%, compared to 40% for vehicles. The streetscaping area varies at this segment, but exceeds 4.1m	The percentage of total space dedicated to AT users versus vehicles is balanced at 50%.There is an approximate 6.0m collective streetscaping area	The percentage of total space dedicated to AT users versus vehicles is balanced at 50%.There is an approximate 12.8m collective streetscaping area	The percentage of total space dedicated to AT users is decreased to 55%, meaning total space dedicated to vehicles is 45%. There is an approximate 16m streetscaping area

5.2.10 Evaluation

The evaluation of right-of-way alternatives included the formulation of high level evaluation criteria. The evaluation criteria include transportation considerations as well as impacts to the natural, cultural, and social environments. Criteria to be used in the evaluation of the alternative solutions have been categorized into three groups:

1. Serving People
2. Strengthening Places
3. Supporting Prosperity

The right of way alternatives identified were evaluated based on the following criteria as shown in **Table 5-16**.

Table 5-16: Evaluation Criteria (Right of way Alternatives)

Category	Criteria
Serving People	
Choice	• Integrate with other higher order transit services to ensure fast, efficient connections/transfers • Connect to transit terminals/stations • Connect to other transit routes • Availability of supporting transportation infrastructure (i.e. land for bus bays/lay-bys/terminals, taxi stands, passenger pick up/drop offs, bicycle racks, secure bike parking, and commuter parking, if applicable) • Promote a high quality pedestrian experience (i.e. improves pedestrian accessibility and connectivity) • Promote a high quality cycling experience (i.e. improves cycling accessibility and connectivity) • Potential to provide an opportunity for pick up and drop off areas for those completing their first or last mile (i.e. ability to accommodate ride sharing services)
Experience	• Speed, reliability and comfort • Capacity to ease congestion on all modes (transit, autos, pedestrians, cyclists). • Line ridership and total transit ridership • Safety for all corridor users (pedestrian, transit passenger, cyclist, auto) • Proximity of stop locations to key destinations/attractions
Social Equity	• Improve service to areas of social need identified by the City • Support equity in mobility by gender, income, family status, and age class
Strengthening Places	
Public Health and the Environment	• Impact on air quality/microclimate/heat island effect/ ability to reduce Greenhouse Gas Emissions • Impact on Cultural Heritage/Archaeological Features, including noise and vibration from construction and operation • Impact on the natural environment
Healthy Neighbourhoods	• Impact on existing stable neighbourhoods and responds to local context • Noise and vibration impact to properties due to construction and operation • Compatibility with parks, public spaces, and natural areas • Improving access to community services and facilities • Temporary and permanent property impacts
Shaping the City	• Serve areas of existing and future population • Encourage transit oriented development (TOD) in the vicinity of stations • Create opportunities for place-making (considering the percentage of the right-of-way dedicated to public realm versus movement of cars – the target split is 40/60% respectively) • Existing physical barriers (barriers to connectivity) • Compatibility with City Planning policies (with respect to policy identifying need for another crossing, and compatibility of a bridge and its impacts)
Supporting Prosperity	
Affordability	• Engineering complexity • Capital costs • Operating and maintenance costs • Ease of providing connection to storage facility and cost • Ease of construction • Feasibility of implementation
Support Growth	• Integrate with existing land uses • Serve areas of existing and future employment and development • Efficient goods movement • Support local businesses • Mitigate impact to businesses due to construction and operation of the project
Resiliency	• Design and construct to manage associated risks with climate change • Corridor resilience and flexibility (ability to accommodate unexpected disruption)

The cross-section alternatives for each segment were evaluated against the aforementioned criteria to determine the most preferred option. The high-level evaluation used a scale of least preferred to most preferred.

The evaluations by segment are presented in **Table 5-17 to Table 5-27.**

Table 5-17: Segment 1 Evaluation

Criteria		Option 1 - Do Nothing	Option 2 - Separated Cycling	Option 3 – Multi-use Trail (One Side)
SERVING PEOPLE	**Choice**	• Pedestrian level of service: Poor • Cycling level of service: Poor • No accommodation for pick-up/drop-off locations for ridesharing services • Local bus in mixed traffic	• Pedestrian level of service: Moderate • Cycling level of service: Good • No accommodation for pick-up/drop-off locations for ridesharing services • Local bus in mixed traffic	• Pedestrian level of service: Moderate • Cycling level of service: Moderate • No accommodation for pick-up/drop-off locations for ridesharing services • Local bus in mixed traffic
	Experience	• Maintains five general purpose travel lanes (experiences peak hour peak direction congestion) and centre left turn lane • No improvements to multi-modal network connectivity • No improvements to safety for cyclists due to lack of separated cycling facilities • No improvements to safety for pedestrians • Transit line speed: 16-20km/h • No increase in transit ridership • Capacity: 6,400 people per hour per direction	• Maintains five general purpose travel lanes (experiences peak hour peak direction congestion) and centre left turn lane • Improved multi-modal network connectivity • Improved safety for pedestrians due to wider sidewalks and boulevard and separation from cyclists • Improved safety for cyclists due to presence of separated and dedicated cycling facilities • Transit line speed: 16-20km/h • No increase in transit ridership • Capacity: 9,800 people per hour per direction	• Maintains five general purpose travel lanes (experiences peak hour peak direction congestion) and centre left turn lane • Improved multi-modal network connectivity • Improved safety for pedestrians due to wider sidewalks and boulevard • Improved safety for cyclists due to multi-use trail • Potential for conflict between pedestrian and cyclists due to shared facility in one boulevard on one side • Transit line speed: 16-20km/h • No increase in transit ridership • Capacity: 6,800 - 9,400 people per hour per direction
	Social Equity	• Lack of separated cycling facilities limits ability of children and seniors to cycle	• Supports equity in mobility by gender, income, family status, and age class	• Supports equity in mobility by gender, income, family status, and age class
	Evaluation	○	◔	◑
STRENGTHENING PLACES	**Public Health and the Environment**	• Potential decrease in air quality due to increased congestion and poor modal share distribution between autos and pedestrians/cyclists • No impact to cultural/heritage/archaeological features. • No impacts on the natural environment.	• Potential improvement in air quality and opportunity to reduce GHG emissions as a result of improved active transportation facilities and associated mode shift from single occupancy vehicles • No impact to cultural/heritage/archaeological features. • No impacts on the natural environment.	• Potential improvement in air quality and opportunity to reduce GHG emissions as a result of improved active transportation facilities and associated mode shift from single occupancy vehicles • No impact to cultural/heritage/archaeological features. • No impacts on the natural environment.
	Healthy Neighborhoods	• No impact on existing stable neighborhoods • No impacts to existing properties • No noise and vibration impacts • No change to compatibility with parks, public spaces, and natural areas • No improvement to access of community services and facilities	• No impact on existing stable neighborhoods • No impacts to existing properties • Potential for noise and vibration impact to properties from construction • Compatible with parks, public spaces, and natural areas • Improves access to community services and facilities for cyclists and pedestrians	• No impact on existing stable neighborhoods • No impacts to existing properties • Potential for noise and vibration impact to properties from construction • Compatible with parks, public spaces, and natural areas • Improves access to community services and facilities for cyclists and pedestrian
	Shaping the City	• Unable to serve future population • Does not encourage Transit Oriented Development (TOD) • No opportunity for place-making • Lack of accommodation for improved pedestrian and cycling facilities is not compatible with City planning policies • The percentage of total space dedicated to AT users is 35%, compared to the 65% of space dedicated to vehicles. There is an approximate 11m collective streetscaping area	• Able to serve future population • Encourages TOD • Creates opportunities for place-making • Compatible with City Planning policies • The percentage of total space dedicated to AT users is increased to 40% compared to the 60% of space dedicated to vehicles. There is an approximate 6m collective streetscaping area	• Able to serve future population • Encourages TOD • Creates opportunities for place-making • Compatible with City Planning policies • The percentage of total space dedicated to AT users is increased to 40% compared to the 60% of space dedicated to vehicles. There is an approximate 9m collective streetscaping area

	Evaluation	○	●	●
SUPPORTING PROSPERITY	**Affordability**	• No engineering complexity • No capital costs • Maintenance costs remain the same	• Low capital cost as no additional vehicular lanes would be constructed. • Feasible to implement as the separated active transportation facilities could be accommodated within the existing right-of-way. • Costs associated with maintenance of added cycling infrastructure (i.e., repairs, winter maintenance, etc.)	• Low capital cost as no additional vehicular lanes would be constructed. • Feasible to implement as the shared active transportation facility could be accommodated within the existing right-of-way. • Costs associated with maintenance of added cycling infrastructure (i.e., repairs, winter maintenance, etc.)
	Support Growth	• Limited ability to serve future employment and development to the east and west • Maintain existing level of goods movement • No impact to businesses during construction	• Able to serve future employment and development in the neighborhood • Maintain existing level of goods movement • Impacts to businesses due to construction • Potential to support local business with improved pedestrian and cycling facilities	• Able to serve future employment and development in the neighborhood • Maintain existing level of goods movement • Impacts to businesses due to construction • Potential to support local business with improved pedestrian and cycling facilities
	Resiliency	• Risks of climate change are not addressed • Relying on automobile as primary road user limits ability of transportation network to respond to technological and environmental changes in the future	• Risks of climate change addressed • Accommodates a diversity of road users, provides redundancy in transportation network to respond to technological and environmental changes in the future	• Risks of climate change addressed • Accommodates a diversity of road users, provides redundancy in transportation network to respond to technological and environmental changes in the future
	Evaluation	○	●	●
OVERALL EVALUATION		○	●	◕
OVERALL RECOMMENDATION		• **NOT PREFERRED**	**PREFERRED**	**LESS PREFERRED**
RECOMMENDATION SUMMARY		This option does not achieve the serving people, strengthening places, and supporting prosperity objectives of the study. No improvements are made.	This option achieves the serving people, strengthening places, and supporting prosperity objectives of the study. By providing separated AT facilities, people moving capacity increases as a result of increased safety for cyclists and pedestrians.	This option achieves the serving people, strengthening places, and supporting prosperity objectives of the study. However, people moving capacity is less than Option 2 and there are potential conflicts between cyclists and pedestrians. A shared AT facility on one side does not provide connectivity along the corridor.

Table 5-18: Segment 2A (West Village Gateway Area) Evaluation

Criteria		Option 1 - Do Nothing	Option 2 - Separated Cycling + Parking
SERVING PEOPLE	**Choice**	• Pedestrian level of service: Poor • Cycling level of service: Poor • No accommodation for pick-up/drop-off locations for ridesharing services • Local bus in mixed traffic	• Pedestrian level of service: Good • Cycling level of service: Good • Addition of lay-by parking on one side of the street • Opportunity for pick-up/drop-off locations for ridesharing services • Local bus in mixed traffic
	Experience	• Maintains four general purpose travel lanes (experiences peak hour peak direction congestion) • No improvements to multi-modal network connectivity • No improvements to safety for cyclists due to lack of separated cycling facilities • No improvements to safety for pedestrians • Transit line speed: 16-20km/h • No increase in transit ridership • The roadway capacity currently accommodates 6,400 people per hour per direction	• Maintains four general purpose travel lanes (experiences peak hour peak direction congestion) • Improved multi-modal network connectivity • Improved safety for pedestrians due to wider sidewalks and boulevard and separation from cyclists • Improved safety for cyclists due to presence of separated and dedicated cycling facilities • Transit line speed: 16-20km/h • No increase in transit ridership • The roadway capacity in this option would increase to accommodate 9,400 people per hour per direction
	Social Equity	• Lack of separated cycling facilities limits ability of children and seniors to cycle	• Supports equity in mobility by gender, income, family status, and age class
	Evaluation	○	●
STRENGTHENING PLACES	**Public Health and the Environment**	• Potential decrease in air quality due to increased congestion and poor modal share distribution between autos and pedestrians/cyclists • No impact to cultural/heritage/archaeological features • No impacts on the natural environment.	• Potential improvement in air quality and opportunity to reduce GHG emissions as a result of improved active transportation facilities and associated mode shift from single occupancy vehicles • No impact to cultural/heritage/archaeological features • Minor impacts associated with increased hard surface area (due to addition of vehicular lane and increased width of Active Transportation (AT) facilities), stormwater quantity will increase and quality mitigation may be required
	Healthy Neighborhoods	• No impact on existing stable neighborhoods • No impacts to existing properties • No noise and vibration impacts • No change to compatibility with parks, public spaces, and natural areas • No improvement to access of community services and facilities	• No impact on existing stable neighborhoods • No impacts to existing properties • Addition of lay-by parking may ease parking demand on neighboring roads • Potential for noise and vibration impact to properties from construction • Compatible with parks, public spaces, and natural areas • Improves access to community services and facilities for cyclists and pedestrians
	Shaping the City	• Unable to serve future population • Does not encourage Transit Oriented Development (TOD) • Creates opportunities for place-making • Lack of accommodation for improved pedestrian and cycling facilities is not compatible with City planning policies • The percentage of total space dedicated to AT users is 60%, compared to the 40% of space dedicated to vehicles. The streetscaping area varies along this segment, but exceeds 9m	• Able to serve future population • Encourages TOD • Creates opportunities for place-making • Compatible with City Planning policies • The percentage of total space dedicated to AT users versus vehicles is balanced at 50%. The streetscaping area varies along this segment, but exceeds 8m.
	Evaluation	○	◔

SUPPORTING PROSPERITY	**Affordability**	• No engineering complexity • No capital costs • Maintenance costs remain the same	• High capital cost due to addition of lay-by parking lane • Feasible to implement as all improvements could be accommodated within the existing right-of-way • Cost associated with maintenance of added cycling infrastructure and lay-by parking (i.e., repairs, winter maintenance, etc.)
	Support Growth	• No change in ability to serve future employment and development in the neighborhood • Maintain existing level of goods movement • No impact to businesses during construction	• Able to serve future employment and development in the neighborhood • Maintain existing level of goods movement • Impacts to businesses due to construction • Potential to support local business with improved pedestrian and cycling facilities, and adding parking on one side of the street
	Resiliency	• Risks of climate change are not addressed • Relying on automobile as primary road user limits ability of transportation network to respond to technological and environmental changes in the future	• Risks of climate change addressed • Accommodates a diversity of road users, provides redundancy in transportation network to respond to technological and environmental changes in the future
	Evaluation		
OVERALL EVALUATION			
OVERALL RECOMMENDATION		• **NOT PREFERRED**	**PREFERRED**
RECOMMENDATION SUMMARY		This option does not achieve the serving people, strengthening places, and supporting prosperity objectives of the study. No improvements are made.	This option achieves the serving people, strengthening places, and supporting prosperity objectives of the study. By providing separated AT facilities, people moving capacity increases as a result of increased safety for cyclists and pedestrians. The addition of lay-by parking also improves access to community services and facilities on one side.

Table 5-19: Segment 2B (Outer Village Core Area) Evaluation

Criteria		Option 1 - Do Nothing	Option 2 - Separated Cycling + Parking (both Sides)	Option 3 – Separated Cycling + Parking (One Side)
SERVING PEOPLE	**Choice**	• Pedestrian level of service: Moderate • Cycling level of service: Poor • No accommodation for pick-up/drop-off locations for ridesharing services • Local bus in mixed traffic	• Pedestrian level of service: Good • Cycling level of service: Good • Opportunity for pick-up/drop-off locations for ridesharing services • Local bus in mixed traffic	• Pedestrian level of service: Good • Cycling level of service: Good • Opportunity for pick-up/drop-off locations for ridesharing services • Local bus in mixed traffic
	Experience	• Maintains four general purpose travel lanes (experiences peak hour peak direction congestion) • No improvements to multi-modal network connectivity • No improvements to safety for cyclists due to lack of separated cycling facilities • No improvements to safety for pedestrians • Transit line speed: 16-20km/h • No increase in transit ridership • The roadway capacity currently accommodates 6,400 people per hour per direction	• Maintains four general purpose travel lanes (experiences peak hour peak direction congestion) • Removes the centre left turn lane • includes two parking lanes • Improved multi-modal network connectivity • Improved safety for pedestrians due to wide sidewalks and boulevard and separation from cyclists • Improved safety for cyclists due to presence of separated and dedicated cycling facilities • Transit line speed: 16-20km/h • No increase in transit ridership • The roadway capacity in this option would increase to accommodate 11,000 people per hour per direction	• Maintains four general purpose travel lanes (experiences peak hour peak direction congestion) • Removes the centre left turn lane • Includes one parking lane • Improved multi-modal network connectivity • Improved safety for pedestrians due to wider sidewalks and boulevard and separation from cyclists • Improved safety for cyclists due to presence of separated and dedicated cycling facilities • Improved safety for cyclists due to presence of separated and dedicated cycling facilities • Transit line speed: 16-20km/h • No increase in transit ridership • The roadway capacity in this option would increase to accommodate 9,400 people per hour per direction
	Social Equity	• Lack of separated cycling facilities limits ability of children and seniors to cycle	• Supports equity in mobility by gender, income, family status, and age class	• Supports equity in mobility by gender, income, family status, and age class
	Evaluation	○	●	◔
STRENGTHENING PLACES	**Public Health and the Environment**	• Potential decrease in air quality due to increased congestion and poor modal share distribution between autos and pedestrians/cyclists • No impact to cultural/heritage/archaeological features • No impacts on the natural environment.	• Potential improvement in air quality and opportunity to reduce GHG emissions as a result of improved active transportation facilities and associated mode shift from single occupancy vehicles • No impact to cultural/heritage/archaeological features • Moderate impact associated with increased hard surface area (due to addition of two vehicular lanes and increased width of AT facilities), stormwater quantity will increase and quality mitigation may be required	• Potential improvement in air quality and opportunity to reduce GHG emissions as a result of improved active transportation facilities and associated mode shift from single occupancy vehicles • No impact to cultural/heritage/archaeological features • Minor impact associated with increased hard surface area (due to an increased width of AT facilities), stormwater quantity will increase and quality mitigation may be required
	Healthy Neighborhoods	• No impact on existing stable neighborhoods • No impacts to existing properties • No noise and vibration impacts • No change to compatibility with parks, public spaces, and natural areas • No improvement to access of community services and facilities	• No impact on existing stable neighborhoods • No impacts to existing properties • Addition of lay-by parking may ease parking demand on neighbouring roads • Potential for noise and vibration impact to properties from construction • Compatible with parks, public spaces, and natural areas • Improves access to community services and facilities for cyclists and pedestrians • Improved access to community services and facilities for vehicles	• No impact on existing stable neighborhoods • No impacts to existing properties • Addition of lay-by parking may ease parking demand on neighbouring roads • Potential for noise and vibration impact to properties from construction • Compatible with parks, public spaces, and natural areas • Improves access to community services and facilities for cyclists and pedestrians • improved access to community services and facilities for vehicles

	Shaping the City	• Unable to serve future population • Does not encourage Transit Oriented Development (TOD) • No opportunity for place-making • Lack of accommodation for improved pedestrian and cycling facilities is not compatible with City planning policies • The percentage of total space dedicated to AT users versus vehicles is balanced at 50%. There is an approximate 15m collective streetscaping area	• Able to serve future population • Encourages TOD • Creates opportunities for place-making • Compatible with City Planning policies • The percentage of total space dedicated to people versus vehicles remains balanced at 50%. There is an approximate 5m collective streetscaping area	• Able to serve future population • Encourages TOD • Creates opportunities for place-making • Compatible with City Planning policies • The percentage of total space dedicated to people is increased to 55% compared to the 45% of space dedicated to vehicles. There is an approximate 10.7m collective streetscaping area
	Evaluation			
SUPPORTING PROSPERITY	**Affordability**	• No engineering complexity • No capital costs • Maintenance costs remain the same	• High capital costs due to the addition of one lane for lay-by parking • Feasible to implement as all improvements can be accommodated within the existing right-of-way • Costs associated with maintenance of added cycling infrastructure and lay-by parking lanes (i.e. repairs, winter maintenance, etc.)	• Low capital costs as an additional lane would not need to be implemented to accommodate lay-by parking (centre left turn lane would be removed to accommodate this lane) • Feasible to implement as all improvements can be implemented within the existing right-of-way • Costs associated with maintenance of added cycling infrastructure and lay-by parking lanes (i.e. repairs, winter maintenance, etc.)
	Support Growth	• Limited ability to serve future employment and development to the east and west • Maintain existing level of goods movement • No impact to businesses during construction	• Able to serve future employment and development in the neighborhood • Potential impact to goods movement from removal of centre left turn lane • Impacts to businesses due to construction • Potential to support local business with improved pedestrian and cycling facilities, and adding parking on both sides of the street	• Somewhat able to serve future employment and development in the neighborhood • Potential impact to goods movement from removal of centre left turn lane • Impacts to businesses due to construction • Potential to support local business with improved pedestrian and cycling facilities, and adding parking on one side of the street
	Resiliency	• Risks of climate change are not addressed • Relying on automobile as primary road user limits ability of transportation network to respond to technological and environmental changes in the future	• Risks of climate change addressed • Accommodates a diversity of road users, provides redundancy in transportation network to respond to technological and environmental changes in the future	• Risks of climate change addressed • Accommodates a diversity of road users, provides redundancy in transportation network to respond to technological and environmental changes in the future
	Evaluation			
OVERALL EVALUATION				
OVERALL RECOMMENDATION		**NOT PREFERRED**	**PREFERRED**	**LESS PREFERRED**
RECOMMENDATION SUMMARY		This option does not achieve the serving people, strengthening places, and supporting prosperity objectives of the study. No improvements are made.	This option achieves the serving people, strengthening places, and supporting prosperity objectives of the study. By providing separated AT facilities, people moving capacity increases as a result of increased safety for cyclists and pedestrians. The addition of lay-by parking also improves access to community services and facilities on both sides.	This option achieves the serving people, strengthening places, and supporting prosperity objectives of the study. However, people moving capacity is less than Option 2. Lay-by parking is only provided on one side.

Table 5-20: Segment 2C (Village Core Area) Evaluation

Criteria		Option 1 - Do Nothing	Option 2 - Separated Cycling + Parking (one side)
SERVING PEOPLE	**Choice**	• Pedestrian level of service: Poor • Cycling level of service: Poor • Accommodation for pick-up/drop-off locations for ridesharing services • Local bus in mixed traffic	• Pedestrian level of service: Good • Cycling level of service: Good • Opportunity for pick-up/drop-off locations for ridesharing services • Local bus in mixed traffic
	Experience	• Maintains four general purpose travel lanes (experiences peak hour peak direction congestion) • No improvements to multi-modal network connectivity • No improvements to safety for cyclists due to lack of separated cycling facilities • No improvements to safety for pedestrians • Transit line speed: 16-20km/h • No increase in transit ridership • The roadway capacity currently accommodates 6,800 people per hour per direction	• Maintains four general purpose travel lanes (experiences peak hour peak direction congestion) • Improved multi-modal network connectivity • Improved safety for pedestrians due to wider sidewalks and boulevard and separation from cyclists • Improved safety for cyclists due to presence of separated and dedicated cycling facilities • Transit line speed: 16-20km/h • No increase in transit ridership • The roadway capacity in this option would increase to accommodate 9,400 people per hour per direction
	Social Equity	• Lack of separated cycling facilities limits ability of children and seniors to cycle	• Supports equity in mobility by gender, income, family status, and age class
	Evaluation		
STRENGTHENING PLACES	**Public Health and the Environment**	• Potential decrease in air quality due to increased congestion and poor modal share distribution between autos and pedestrians/cyclists • No impact to cultural/heritage/archaeological features • No impacts on the natural environment.	• Potential improvement in air quality and opportunity to reduce GHG emissions as a result of improved active transportation facilities and associated mode shift from single occupancy vehicles • No impact to cultural/heritage/archaeological features • Minor improvement to natural environment due to decreased hard surface area (reduction of one vehicular lane). Stormwater quantity will decrease
	Healthy Neighborhoods	• No impact on existing stable neighborhoods • No impacts to existing properties • No noise and vibration impacts • No change to compatibility with parks, public spaces, and natural areas • No improvement to access of community services and facilities	• No impact on existing stable neighborhoods • No impacts to existing properties Potential for noise and vibration impact to properties from construction • Compatible with parks, public spaces, and natural areas • Improves access to community services and facilities for cyclists and pedestrians • Improved access to community services and facilities for vehicles
	Shaping the City	• Unable to serve future population • Does not encourage Transit Oriented Development (TOD) • No opportunity for place-making • Lack of accommodation for improved pedestrian and cycling facilities is not compatible with City planning policies • The percentage of total space dedicated to AT users is 30%, compared to the 70% of space dedicated to vehicles. There is an approximate 6m collective streetscaping area	• Able to serve future population • Encourages TOD • Creates opportunities for place-making • Compatible with City Planning policies • The percentage of total space dedicated to AT users increased to 40% in this option, meaning 60% of the total space is dedicated to vehicles. There is an approximate 3.4m collective streetscaping area
	Evaluation		
SUPPORTING PROSPERIT	**Affordability**	• No engineering complexity • No capital costs • Maintenance costs remain the same	• Low capital cost as no additional vehicular lanes are being introduced (removing centre left turn lane) • Feasible to implement by removing one lane to accommodate bike lanes • Maintenance costs associated with added cycling infrastructure and lay-by parking (i.e. repairs, winter maintenance, etc.)

	Support Growth	• Limited ability to serve future employment and development to the east and west • Maintain existing level of goods movement • No impact to businesses during construction	• Able to serve future employment and development in the neighborhood • Potential impact to goods movement due to removal of centre left turning lane • Impacts to businesses due to construction • Potential to support local business with improved pedestrian and cycling facilities, and adding parking on one side of the street
	Resiliency	• Risks of climate change are not addressed • Relying on automobile as primary road user limits ability of transportation network to respond to technological and environmental changes in the future	• Risks of climate change addressed • Accommodates a diversity of road users, provides redundancy in transportation network to respond to technological and environmental changes in the future
	Evaluation		
OVERALL EVALUATION			
OVERALL RECOMMENDATION		• **NOT PREFERRED**	**PREFERRED**
RECOMMENDATION SUMMARY		This option does not achieve the serving people, strengthening places, and supporting prosperity objectives of the study. No improvements are made.	This option achieves the serving people, strengthening places, and supporting prosperity objectives of the study. By providing separated AT facilities, people moving capacity increases as a result of increased safety for cyclists and pedestrians.

Table 5-21: Segment 2D (East Village Gateway) Evaluation

Criteria		Option 1 - Do Nothing	Option 2 - Separated Cycling	Option 3 – Multi-use Trail (Both Sides)
SERVING PEOPLE	**Choice**	• Pedestrian level of service: Poor • Cycling level of service: Moderate • No accommodation for pick-up/drop-off locations for ridesharing services • Local bus in mixed traffic	• Pedestrian level of service: Moderate • Cycling level of service: Good • No accommodation for pick-up/drop-off locations for ridesharing services • Local bus in mixed traffic	• Pedestrian level of service: Moderate • Cycling level of service: Moderate • No accommodation for pick-up/drop-off locations for ridesharing services • Local bus in mixed traffic
	Experience	• Maintains four general purpose travel lanes (experiences peak hour peak direction congestion) • No improvements to multi-modal network connectivity • No improvements to safety for cyclists due to lack of separated cycling facilities • No improvements to safety for pedestrians • Transit line speed: 16-20km/h • No increase in transit ridership • The roadway capacity currently accommodates 6,400-7,400 people per hour per direction	• Maintains four general purpose travel lanes (experiences peak hour peak direction congestion) • Improved multi-modal network connectivity • Improved safety for pedestrians due to wider sidewalks and boulevard and separation from cyclists • Improved safety for cyclists due to presence of separated and dedicated cycling facilities • Transit line speed: 16-20km/h • No increase in transit ridership • The roadway capacity in this option would increase to accommodate 9,400 people per hour per direction	• Maintains four general purpose travel lanes (experiences peak hour peak direction congestion) • Improved multi-modal network connectivity • Improved safety for pedestrians due to wider sidewalks and boulevard • Improved safety for cyclists due to multi-use trail • Potential for conflict between pedestrian and cyclists due to shared facility in one boulevard on both sides • Transit line speed: 16-20km/h • No increase in transit ridership • The roadway capacity in this option would accommodate 7,400 people per hour per direction
	Social Equity	• Lack of separated cycling facilities limits ability of children and seniors to cycle	• Supports equity in mobility by gender, income, family status, and age class	• Supports equity in mobility by gender, income, family status, and age class
	Evaluation	○	●	◔
STRENGTHENING PLACES	**Public Health and the Environment**	• Potential decrease in air quality due to increased congestion and poor modal share distribution between autos and pedestrians/cyclists • No impact to cultural/heritage/archaeological features • No impacts on the natural environment.	• Potential improvement in air quality and opportunity to reduce GHG emissions as a result of improved active transportation facilities and associated mode shift from single occupancy vehicles • No impact to cultural/heritage/archaeological features • Minor improvement to natural environment due to decreased hard surface area (reduction of one vehicular lane).Stormwater quantity will decrease	• Potential improvement in air quality and opportunity to reduce GHG emissions as a result of improved active transportation facilities and associated mode shift from single occupancy vehicles • No impact to cultural/heritage/archaeological features • Minor improvement to natural environment due to decreased hard surface area (reduction of one vehicular lane). Stormwater quantity will decrease
	Healthy Neighborhoods	• No impact on existing stable neighborhoods • No impacts to existing properties • No noise and vibration impacts • No change to compatibility with parks, public spaces, and natural areas • No improvement to access of community services and facilities	• No impact on existing stable neighborhoods • No impacts to existing properties • Potential for noise and vibration impact to properties from construction • Compatible with parks, public spaces, and natural areas • Improves access to community services and facilities for cyclists and pedestrians • Limited access to community services and facilities for vehicles	• No impact on existing stable neighborhoods • No impacts to existing properties • Potential for noise and vibration impact to properties from construction • Compatible with parks, public spaces, and natural areas • Improves access to community services and facilities for cyclists and pedestrians • Limited access to community services and facilities for vehicles
	Shaping the City	• Unable to serve future population • Does not encourage Transit Oriented Development (TOD) • No opportunity for place-making • Lack of accommodation for improved pedestrian and cycling facilities is not compatible with City planning policies	• Able to serve future population • Encourages TOD • Creates opportunities for place-making • Compatible with City Planning policies • The percentage of total space dedicated to AT users is increased to 60%, meaning total space dedicated to vehicles is 40%. The streetscaping area varies at this segment but exceeds 4.6m	• Able to serve future population • Encourages TOD • Creates opportunities for place-making • Compatible with City Planning policies • The percentage of total space dedicated to AT users is increased to 60%, meaning total space dedicated to vehicles is 40%. The streetscaping area varies at this segment but exceeds 6.2m

	• The percentage of total space dedicated to AT users versus vehicles is balanced at 50%. The streetscaping area varies at this segment but exceeds 6.5m		
	Evaluation			
SUPPORTING PROSPERITY	**Affordability**	• No engineering complexity • No capital costs • Maintenance costs remain the same	• Low capital cost as no additional lanes are being added • Feasible to implement as roadway width will be reduced allowing bike lanes to be accommodates • Costs associated with maintenance of added cycling infrastructure (i.e. repairs, winter maintenance, etc.)	• Low capital cost as no additional lanes are being added • Feasible to implement as roadway width will be reduced allowing bike lanes to be accommodates • Lower costs associated with maintenance of added cycling infrastructure as there will be only one shared facility on both sides (i.e. repairs, winter maintenance, etc.)
	Support Growth	• Limited ability to serve future employment and development to the east and west • Maintain existing level of goods movement • No impact to businesses during construction	• Able to serve future employment and development in the neighborhood • Maintain existing level of goods movement • Impacts to businesses due to construction • Potential to support local business with improved pedestrian and cycling facilities	• Able to serve future employment and development in the neighborhood • Maintain existing level of goods movement • Impacts to businesses due to construction • Potential to support local business with improved pedestrian and cycling facilities
	Resiliency	• Risks of climate change are not addressed • Relying on automobile as primary road user limits ability of transportation network to respond to technological and environmental changes in the future	• Risks of climate change addressed • Accommodates a diversity of road users, provides redundancy in transportation network to respond to technological and environmental changes in the future	• Risks of climate change addressed • Accommodates a diversity of road users, provides redundancy in transportation network to respond to technological and environmental changes in the future
	Evaluation			
OVERALL EVALUATION				
OVERALL RECOMMENDATION		• **NOT PREFERRED**	**PREFERRED**	**LESS PREFERRED**
RECOMMENDATION SUMMARY		This option does not achieve the serving people, strengthening places, and supporting prosperity objectives of the study. No improvements are made.	This option achieves the serving people, strengthening places, and supporting prosperity objectives of the study. By providing separated AT facilities, people moving capacity increases as a result of increased safety for cyclists and pedestrians.	This option achieves the serving people, strengthening places, and supporting prosperity objectives of the study. However, people moving capacity is less than Option 2 and there are potential conflicts between cyclists and pedestrians.

Table 5-22: Segment 3 Evaluation

Criteria		Option 1 - Do Nothing	Option 2 - Separated Cycling	Option 3 – Multi-use Trail (Both Sides)
SERVING PEOPLE	**Choice**	• Pedestrian level of service: Poor • Cycling level of service: Moderate • No accommodation for pick-up/drop-off locations for ridesharing services • Local bus in mixed traffic	• Pedestrian level of service: Moderate • Cycling level of service: Good • No accommodation for pick-up/drop-off locations for ridesharing services • Local bus in mixed traffic	• Pedestrian level of service: Moderate • Cycling level of service: Moderate • No accommodation for pick-up/drop-off locations for ridesharing services • Local bus in mixed traffic
	Experience	• Maintains four general purpose travel lanes (experiences peak hour peak direction congestion) • No improvements to multi-modal network connectivity • No improvements to safety for cyclists due to lack of separated cycling facilities • No improvements to safety for pedestrians • Potential for conflict between pedestrian and cyclists due to shared sidewalk space • Transit line speed: 16-20km/h • No increase in transit ridership • The roadway capacity currently accommodates 6,400-7,400 people per hour per direction	• Maintains four general purpose travel lanes (experiences peak hour peak direction congestion) • Improved multi-modal network connectivity • Improved safety for pedestrians due to wider sidewalks and boulevard and separation from cyclists • Improved safety for cyclists due to presence of separated and dedicated cycling facilities • Transit line speed: 16-20km/h • No increase in transit ridership • The roadway capacity in this option would increase to accommodate 9,400 people per hour per direction	• Maintains four general purpose travel lanes (experiences peak hour peak direction congestion) • Improved multi-modal network connectivity • Improved safety for pedestrians due to wider sidewalks and boulevard • Improved safety for cyclists due to multi-use trail • Potential for conflict between pedestrian and cyclists due to shared facility in one boulevard on both sides • Transit line speed: 16-20km/h • No increase in transit ridership • The roadway capacity in this option would accommodate 7,400 people per hour per direction
	Social Equity	• Lack of separated cycling facilities limits ability of children and seniors to cycle	• Supports equity in mobility by gender, income, family status, and age class	• Supports equity in mobility by gender, income, family status, and age class
	Evaluation			
STRENGTHENING PLACES	**Public Health and the Environment**	• Potential decrease in air quality due to increased congestion and poor modal share distribution between autos and pedestrians/cyclists • No impact to cultural/heritage/archaeological features • No impacts on the natural environment.	• Potential improvement in air quality and opportunity to reduce GHG emissions as a result of improved active transportation facilities and associated mode shift from single occupancy vehicles • No impact to cultural/heritage/archaeological features • Minor improvement to natural environment due to decreased hard surface area (reduction of vehicular lane widths). Stormwater quantity will decrease	• Potential improvement in air quality and opportunity to reduce GHG emissions as a result of improved active transportation facilities and associated mode shift from single occupancy vehicles • No impact to cultural/heritage/archaeological features • Minor improvement to natural environment due to decreased hard surface area (reduction of vehicular lane widths). Stormwater quantity will decrease
	Healthy Neighborhoods	• No impact on existing stable neighborhoods • No impacts to existing properties • No noise and vibration impacts • No change to compatibility with parks, public spaces, and natural areas • No improvement to access of community services and facilities	• No impact on existing stable neighborhoods • No impacts to existing properties • Potential for noise and vibration impact to properties from construction • Compatible with parks, public spaces, and natural areas • Improves access to community services and facilities for cyclists and pedestrians • No change in access to community services and facilities for vehicles	• No impact on existing stable neighborhoods • No impacts to existing properties • Potential for noise and vibration impact to properties from construction • Compatible with parks, public spaces, and natural areas • Improves access to community services and facilities for cyclists and pedestrians • No change in access to community services and facilities for vehicles
	Shaping the City	• Unable to serve future population • Does not encourage Transit Oriented Development (TOD)Lack of accommodation for improved pedestrian and cycling facilities is not compatible with City planning policies • The percentage of total space dedicated to AT users versus vehicles is balanced at 50%. The streetscaping area varies at this segment but exceeds 4.7m	• Able to serve future population • Encourages TOD • Creates opportunities for place-making • Compatible with City Planning policies • The percentage of total space dedicated to AT users is increased to 60%, meaning total space dedicated to vehicles is 40%. The streetscaping area varies at this segment but exceeds 2.8m	• Able to serve future population • Encourages TOD • Creates opportunities for place-making • Compatible with City Planning policies • The percentage of total space dedicated to AT users is increased to 60%, meaning total space dedicated to vehicles is 40%. The streetscaping area varies at this segment but exceeds 8.4m

	Evaluation			
SUPPORTING PROSPERITY	**Affordability**	• No engineering complexity • No capital costs • Maintenance costs remain the same	• Low capital cost as no additional vehicular lanes will be added • Feasible to implement within existing right-of-way • Costs associated with maintenance of upgraded facility on both sides (i.e. repairs, winter maintenance, etc.)	• Low capital cost as no additional vehicular lanes will be added • Feasible to implement within existing right-of-way • Costs associated with maintenance of upgraded shared facility on the north side (i.e. repairs, winter maintenance, etc.)
	Support Growth	• Limited ability to serve future employment and development to the east and west • Maintain existing level of goods movement • No impact to businesses during construction	• Able to serve future employment and development in the neighborhood • Maintain existing level of goods movement • Impacts to businesses due to construction • Potential to support local business with improved pedestrian and cycling facilities	• Able to serve future employment and development in the neighborhood • Maintain existing level of goods movement • Impacts to businesses due to construction • Potential to support local business with improved pedestrian and cycling facilities
	Resiliency	• Risks of climate change are not addressed • Relying on automobile as primary road user limits ability of transportation network to respond to technological and environmental changes in the future	• Risks of climate change addressed • Accommodates a diversity of road users, provides redundancy in transportation network to respond to technological and environmental changes in the future	• Risks of climate change addressed • Accommodates a diversity of road users, provides redundancy in transportation network to respond to technological and environmental changes in the future
	Evaluation			
OVERALL EVALUATION				
OVERALL RECOMMENDATION		• **NOT PREFERRED**	**PREFERRED**	**LESS PREFERRED**
RECOMMENDATION SUMMARY		This option does not achieve the serving people, strengthening places, and supporting prosperity objectives of the study. No improvements are made.	This option achieves the serving people, strengthening places, and supporting prosperity objectives of the study. By providing separated AT facilities, people moving capacity increases as a result of increased safety for cyclists and pedestrians.	This option achieves the serving people, strengthening places, and supporting prosperity objectives of the study. However, people moving capacity is less than Option 2 and there are potential conflicts between cyclists and pedestrians.

Table 5-23: Segment 4 Evaluation (Table continued on next page)

Criteria		Option 1 - Do Nothing	Option 2 - Separated Cycling	Option 3 - Separated Cycling + Parking (Both sides - Alternating with Planting Zones)
SERVING PEOPLE	**Choice**	• Pedestrian level of service: Poor • Cycling level of service: Moderate • Opportunity for pick-up/drop-off locations for ridesharing services • Local bus in mixed traffic	• Pedestrian level of service: Good • Cycling level of service: Good • No accommodation for pick-up/drop-off locations for ridesharing services • Local bus in mixed traffic	• Pedestrian level of service: Good • Cycling level of service: Good • Opportunity for pick-up/drop-off locations for ridesharing services • Local bus in mixed traffic
	Experience	• Maintains four general purpose travel lanes (experiences peak hour peak direction congestion) • No improvements to multi-modal network connectivity • No improvements to safety for cyclists due to lack of separated cycling facilities • No improvements to safety for pedestrians • Transit line speed: 16-20km/h • No increase in transit ridership • The roadway capacity currently accommodates 6,400 people per hour per direction	• Maintains four general purpose travel lanes (experiences peak hour peak direction congestion) • Removes ~44-48 parking spaces • Improved multi-modal network connectivity • Improved safety for pedestrians due to wider sidewalks and boulevard and separation from cyclists • Improved safety for cyclists due to presence of separated and dedicated cycling facilities • Transit line speed: 16-20km/h • No increase in transit ridership • The roadway capacity in this option would increase to accommodate 9,400 people per hour per direction	• Maintains four general purpose travel lanes (experiences peak hour peak direction congestion) • Improved multi-modal network connectivity • Improved safety for pedestrians due to separation from cyclists • Improved safety for cyclists due to separated and dedicated cycling facilities • Maintains some parking and alternates with planting zones • Transit line speed: 16-20km/h • No increase in transit ridership • The roadway capacity in this option would accommodate 9,400 people per hour per direction
	Social Equity	• Lack of separated cycling facilities limits ability of children and seniors to cycle	• Supports equity in mobility by gender, income, family status, and age class	• Supports equity in mobility by gender, income, family status, and age class
	Evaluation	○	◔	◔
STRENGTHENING PLACES	**Public Health and the Environment**	• Potential decrease in air quality due to increased congestion and poor modal share distribution between autos and pedestrians/cyclists • No impact to cultural/heritage/archaeological features • No impacts on the natural environment.	• Potential improvement in air quality and opportunity to reduce GHG emissions as a result of improved active transportation facilities and associated mode shift from single occupancy vehicles • No impact to cultural/heritage/archaeological features • Minor improvement to natural environment due to decreased hard surface area (reduction of one vehicular lane and median). Stormwater quantity will decrease	• Potential improvement in air quality and opportunity to reduce GHG emissions as a result of improved active transportation facilities and associated mode shift from single occupancy vehicles • No impact to cultural/heritage/archaeological features • No impact to storm water quantity
	Healthy Neighborhoods	• No impact on existing stable neighborhoods • No impacts to existing properties • No noise and vibration impacts • No change to compatibility with parks, public spaces, and natural areas • No improvement to access of community services and facilities	• No impact on existing stable neighborhoods • No impacts to existing properties • Potential for noise and vibration impact to properties from construction • Compatible with parks, public spaces, and natural areas • Improves access to community services and facilities for cyclists and pedestrians • Limited access to community services and facilities for vehicles	• No impact on existing stable neighborhoods • No impacts to existing properties • Addition of lay-by parking may ease parking demand on neighbouring roads • Potential for noise and vibration impact to properties from construction • Compatible with parks, public spaces, and natural areas • Improves access to community services and facilities for cyclists and pedestrians • Lay-by parking may cause delays in transit lanes while vehicles parallel park

	Shaping the City	• Unable to serve future population • Does not encourage Transit Oriented Development (TOD) • Creates opportunities for place-making • Lack of accommodation for improved pedestrian and cycling facilities is not compatible with City planning policies • The percentage of total space dedicated to AT users is 40%, meaning total space dedicated to vehicles is 60%. There is an approximate 1m collective streetscaping area	• Able to serve future population • Encourages TOD • Creates opportunities for place-making • Compatible with City Planning policies • The percentage of total space dedicated to AT people versus vehicles is balanced at 50% with this option. There is an approximate 3.4m collective streetscaping area	• Able to serve future population • Encourages TOD • Creates opportunities for place-making • Compatible with City Planning policies • The percentage of total space dedicated to people versus vehicles is balanced at 50% with this option. Opportunities for streetscaping area alternating with parking laybys.
	Evaluation			
SUPPORTING PROSPERITY	**Affordability**	• No engineering complexity • No capital costs • Maintenance costs remain the same	• Low capital cost as no additional vehicular lanes are being added (median and lay-by are removed) • Feasible to implement within existing right-of-way • Costs associated with maintenance of added cycling infrastructure (i.e. repairs, winter maintenance, etc.)	• High capital cost associated with adding an additional lane for lay-by/parking • Feasible to implement within existing right-of-way • Costs associated with maintenance of added cycling infrastructure and lay-by parking (i.e. repairs, winter maintenance, etc.)
	Support Growth	• Limited ability to serve future employment and development to the east and west • Maintain existing level of goods movement • No impact to businesses during construction	• Able to serve future employment and development in the neighborhood • Maintain existing level of goods movement • Impacts to businesses due to construction • Potential to support local business with improved pedestrian and cycling facilities	• Able to serve future employment and development in the neighborhood • Maintain existing level of goods movement • Impacts to businesses due to construction • Potential to support local business with improved pedestrian and cycling facilities, and adding parking on side of the street
	Resiliency	• Risks of climate change are not addressed • Relying on automobile as primary road user limits ability of transportation network to respond to technological and environmental changes in the future	• Risks of climate change addressed • Accommodates a diversity of road users, provides redundancy in transportation network to respond to technological and environmental changes in the future	• Risks of climate change addressed • Accommodates a diversity of road users, provides redundancy in transportation network to respond to technological and environmental changes in the future
	Evaluation			
OVERALL EVALUATION				
OVERALL RECOMMENDATION		**NOT PREFERRED**	**LESS PREFERRED**	**PREFERRED**
RECOMMENDATION SUMMARY		This option does not achieve the serving people, strengthening places, and supporting prosperity objectives of the study. No improvements are made.	This option achieves the serving people, strengthening places, and supporting prosperity objectives of the study. By providing separated AT facilities, people moving capacity increases as a result of increased safety for cyclists and pedestrians. However, removing parking supply (where fewer alternative offsite lots exist) is less preferred.	This option achieves the serving people, strengthening places, and supporting prosperity objectives of the study. By providing separated AT facilities, people moving capacity increases as a result of increased safety for cyclists and pedestrians. Although, the addition of lay-by parking may cause delays to transit vehicles, maintaining parking supply in the vicinity of the Port Credit Community Node is preferred (where fewer alternative offsite lots exist).

Table 5-24: Segment 4 Evaluation (Continued)

Criteria		Option 4 - Multi-use Trail (One Side)	Option 5 – Multi-use Trail (Both Sides)
SERVING PEOPLE	**Choice**	• Pedestrian level of service: Moderate • Cycling level of service: Moderate • No accommodation for pick-up/drop-off locations for ridesharing services • Local bus in mixed traffic	• Pedestrian level of service: Moderate • Cycling level of service: Moderate • No accommodation for pick-up/drop-off locations for ridesharing services • Local bus in mixed traffic
	Experience	• Maintains four general purpose travel lanes (experiences peak hour peak direction congestion) • Removes ~44-48 parking spaces • Improved multi-modal network connectivity • Improved safety for pedestrians due to wider sidewalks and boulevard Potential for conflict between pedestrian and cyclists due to shared sidewalk space • Transit line speed: 16-20km/h • No increase in transit ridership • The roadway capacity in this option would accommodate 6,400- 7,400 people per hour per direction	• Maintains four general purpose travel lanes (experiences peak hour peak direction congestion) • Removes ~44-48 parking spaces • Improved multi-modal network connectivity • Improved safety for pedestrians due to wider sidewalks and boulevard Potential for conflict between pedestrian and cyclists due to shared facility in one boulevard on both sides • Transit line speed: 16-20km/h • No increase in transit ridership • The roadway capacity in this option would increase to accommodate 7,400 people per hour per direction
	Social Equity	• Supports equity in mobility by gender, income, family status, and age class	• Supports equity in mobility by gender, income, family status, and age class
	Evaluation		
STRENGTHENING PLACES	**Public Health and the Environment**	• Potential improvement in air quality and opportunity to reduce GHG emissions as a result of improved active transportation facilities and associated mode shift from single occupancy vehicles • No impact to cultural/heritage/archaeological features • Minor impact associated with decreased hard surface area (due to reduction of one vehicular lane and median), stormwater quantity will decrease	• Potential improvement in air quality and opportunity to reduce GHG emissions as a result of improved active transportation facilities and associated mode shift from single occupancy vehicles • No impact to cultural/heritage/archaeological features • Minor impact associated with decreased hard surface area (due to reduction of one vehicular lane and median), stormwater quantity will decrease
	Healthy Neighborhoods	• No impact on existing stable neighborhoods • No impacts to existing properties • Potential for noise and vibration impact to properties from construction • Compatible with parks, public spaces, and natural areas • Improves access to community services and facilities for cyclists and pedestrians • No change to access to community services and facilities for vehicles	• No impact on existing stable neighborhoods • No impacts to existing properties • Potential for noise and vibration impact to properties from construction • Compatible with parks, public spaces, and natural areas • Improves access to community services and facilities for cyclists and pedestrians • No change to access to community services and facilities for vehicles
	Shaping the City	• Able to serve future population • Encourages TOD • Creates opportunities for place-making • Compatible with City Planning policies • The percentage of total space dedicated to people versus vehicles is balanced at 50% with this option. There is an approximate 3.4m collective streetscaping area	• Able to serve future population • Encourages TOD • Creates opportunities for place-making • Compatible with City Planning policies • The percentage of total space dedicated to people versus vehicles is balanced at 50% with this option. There is an approximate 4.0m collective streetscaping area
	Evaluation		
SUPPORTING PROSPERITY	**Affordability**	• Low capital cost as no additional lanes are being added (median and lay-by are removed) • Feasible to implement within existing right-of-way • Minimal additional maintenance costs	• Low capital cost as no additional lanes are being added (median and lay-by are removed) • Feasible to implement within existing right-of-way • Costs associated with maintenance of upgraded shared facilities (i.e. repairs, winter maintenance, etc.)
	Support Growth	• Able to serve future employment and development in the neighborhood • Maintain existing level of goods movement • Impacts to businesses due to construction	• Able to serve future employment and development in the neighborhood • Maintain existing level of goods movement • Impacts to businesses due to construction

	• Potential to support local business with improved pedestrian and cycling facilities	• Potential to support local business with improved pedestrian and cycling facilities
Resiliency	• Risks of climate change addressed • Accommodates a diversity of road users, provides redundancy in transportation network to respond to technological and environmental changes in the future	• Risks of climate change addressed • Accommodates a diversity of road users, provides redundancy in transportation network to respond to technological and environmental changes in the future
Evaluation		
OVERALL EVALUATION		
OVERALL RECOMMENDATION	• **LESS PREFERRED**	**LESS PREFERRED**
RECOMMENDATION SUMMARY	This option achieves the serving people, strengthening places, and supporting prosperity objectives of the study. However, people moving capacity is less than Option 2 and there are potential conflicts between cyclists and pedestrians. A shared AT facility on one side does not provide connectivity along the corridor.	This option achieves the serving people, strengthening places, and supporting prosperity objectives of the study. A shared AT facility on both sides provide connectivity along the corridor. However, people moving capacity is less than Option 2 and there are potential conflicts between cyclists and pedestrians.

Table 5-25: Segment 5 Evaluation

Criteria		Option 1 - Do Nothing (4Lanes + Parking)	Option 2 - 4 Lanes (No Parking)	Option 3 - 4 Lanes + Parking (Both sides - Alternating with Planting Zones)	Option 4 - 2 Lanes + Parking (Both Sides)
SERVING PEOPLE	**Choice**	• Pedestrian level of service: Moderate • Cycling level of service: Poor • Maintains lay-by parking in current form • Opportunity for pick-up/drop-off locations for ridesharing services	• Pedestrian level of service: Good • Cycling level of service: Good • No lay-by parking provided • No accommodation for pick-up/drop-off locations for ridesharing services	• Pedestrian level of service: Good • Cycling level of service: Good • Maintains lay-by parking on one side of the street • Opportunity for pick-up/drop-off locations for ridesharing services	• Pedestrian level of service: Good • Cycling level of service: Good • Maintains lay-by parking on both sides of the street • Opportunity for pick-up/drop-off locations for ridesharing services
	Experience	• Maintains four general purpose travel lanes (experiences peak hour peak direction congestion) No improvements to multi-modal network connectivity • No improvements to safety for cyclists due to lack of separated cycling facilities • No improvements to safety for pedestrians • Transit line speed: 16-20km/h • No increase in transit ridership • The roadway capacity currently accommodates 6,400 people per hour per direction	• Experiences peak hour peak direction congestion • 5A: 22 spaces removed • 5B: 53 spaces removed • 5C: 139 spaces removed • Improved safety for pedestrians due to wider sidewalks and boulevard and separation from cyclists • Boulevard space between pedestrians and cyclists reduces potential conflicts due to larger separation and presents streetscaping opportunities to create a more welcoming pedestrian environment • Improved multi-modal network connectivity • Improved safety for cyclists due to presence of separated and dedicated cycling facilities • Transit line speed: 16-20km/h • Increase in transit ridership • The roadway capacity in this option would increase to accommodate 11,800 people per hour per direction	• Experiences peak hour peak direction congestion • Some parking spaces to be maintained and alternated with planting zones(exact number to be determined through design) • Improved safety for pedestrians due to wider sidewalks and separation from cyclists • No boulevard space between pedestrian and cyclist facilities • Improved multi-modal network connectivity • Improved safety for cyclists due to presence of separated and dedicated cycling facilities • Transit line speed: 16-20km/h • Increase in transit ridership • The roadway capacity in this option would increase to accommodate 11,800 people per hour per direction • Impact on transit operations due to potential conflicts with vehicles trying to park	• Very congested peak hour peak direction traffic conditions with the reduction of two general purpose travel lanes • 5A: 22 spaces maintained • 5B: 53 spaces maintained • 5C: 139 spaces maintained • Improved safety for pedestrians due to wider sidewalks and boulevard and separation from cyclists • Boulevard space between pedestrians and cyclists reduces potential conflicts due to larger separation and presents streetscaping opportunities to create a more welcoming pedestrian environment • Improved safety for cyclists due to presence of separated and dedicated cycling facilities • Improved multi-modal connectivity • Transit line speed: 16-20km/h Increase in transit ridership • The roadway capacity in this option would increase to accommodate 10,700 people per hour per direction • Impact on transit operations due to potential conflicts with vehicles trying to park
	Social Equity	• Lack of separated cycling facilities limits ability of children and seniors to cycle	• Supports equity in mobility by gender, income, family status, and age class	• Supports equity in mobility by gender, income, family status, and age class	• Supports equity in mobility by gender, income, family status, and age class
	Evaluation	○	◔	◑	◔
STRENGTHENING PLACES	**Public Health and the Environment**	• Potential decrease in air quality due to increased congestion and poor modal share distribution between autos and pedestrians/cyclists • No impact to cultural/heritage/archaeological features • No impacts on the natural environment.	• Potential improvement in air quality and opportunity to reduce GHG emissions as a result of improved active transportation facilities and associated mode shift from single occupancy vehicles • No impact to cultural/heritage/archaeological features • Not able to accommodate Transformative Parking Space Project;	• Potential improvement in air quality and opportunity to reduce GHG emissions as a result of improved active transportation facilities and associated mode shift from single occupancy vehicles • No impact to cultural/heritage/archaeological features	• Potential improvement in air quality and opportunity to reduce GHG emissions as a result of improved active transportation facilities and associated mode shift from single occupancy vehicles • No impact to cultural/heritage/archaeological features • Able to accommodate Transformative Parking Space Project on both sides of

		however, wider sidewalks provide potential for permanent patios • Moderate improvement to natural environment due to decreased hard surface area (reduction of two vehicular lanes). Stormwater quantity will decrease	• Able to accommodate Transformative Parking Space Project on one side of the street • Minor improvement to natural environment due to decreased hard surface area (reduction of one vehicular lane). Stormwater quantity will decrease	the street and wider sidewalks provide potential for permanent patios • Moderate improvement to natural environment due to decreased hard surface area (reduction of two vehicular lanes). Stormwater quantity will decrease
	Healthy Neighborhoods	• No impact on existing stable neighborhoods • No impacts to existing properties • No noise and vibration impacts • No change to compatibility with parks, public spaces, and natural areas • No improvement to access of community services and facilities	• No impacts to existing properties • Potential for increased parking on adjacent local roads as a result of removing lay-by parking on Lakeshore Road • Potential for noise and vibration impact to properties from construction • Improves access to community services and facilities for cyclists and pedestrians • Limited access to community services and facilities for vehicles • Opportunity to support place making objectives	• No impacts to existing properties • Addition of lay-by parking may ease parking demand on neighbouring roads • Potential for noise and vibration impact to properties from construction • Improves access to community services and facilities for cyclists and pedestrians • Lay-by parking may cause delays in transit lanes while vehicles parallel park	• No impacts to existing properties • Addition of lay-by parking may ease parking demand on neighbouring roads • Potential for increased traffic on adjacent local roads as a result of removing two general purpose lanes on Lakeshore Road • Potential for noise and vibration impact to properties from construction • Improves access to community services and facilities for cyclists and pedestrians • Lay-by parking may cause delays in transit lanes while vehicles parallel park
	Shaping the City	• Unable to serve future population • Does not encourage Transit Oriented Development (TOD) • No opportunity for place-making • Lack of accommodation for improved pedestrian and cycling facilities is not compatible with City planning policies • The percentage of total space dedicated to AT users is 20%, meaning total space dedicated to vehicles is 80%. There is an approximate 2.7m collective streetscaping area	• Able to serve future population • Encourages TOD • Creates opportunities for place-making • Compatible with City Planning policies • The percentage of total space dedicated to AT users versus vehicles is balanced at 50% for this option. There is an approximate 3.4m collective streetscaping area	• Able to serve future population • Encourages TOD • Fewer opportunities for place-making than Options 2 and 4 • Compatible with City Planning policies • The percentage of total space dedicated to people is increased to 40%, meaning total space dedicated to vehicles is 60%. Opportunities for streetscaping area alternating with parking laybys.	• Encourages TOD • Creates opportunities for place-making • Reduction of general purpose travel lanes on Lakeshore Road not compatible with City planning policies • The percentage of total space dedicated to people versus vehicles is balanced at 50% for this option. There is an approximate 3.4m collective streetscaping area
	Evaluation	○	◔	◔	◔
SUPPORTING PROSPERITY	**Affordability**	• No engineering complexity • No capital costs • Maintenance costs remain the same	• Low capital cost as no additional vehicular lanes are being added (two lay-by parking lanes are removed) • Feasible to implement within existing right-of-way • Costs associated with maintenance of added cycling infrastructure (i.e. repairs, winter maintenance, etc.)	• Low capital cost as no additional vehicular lanes are being added (one lay-by parking lane is removed) • Feasible to implement within existing right-of-way • Costs associated with maintenance of added cycling infrastructure and lay-by parking (i.e. repairs, winter maintenance, etc.)	• Low capital cost as no additional vehicular lanes are being added two general travel lanes are removed) • Feasible to implement within existing right-of-way • Maintenance costs are reduced since two vehicular lanes are removed
	Support Growth	• Limited ability to serve future employment and development to the east and west •	• Able to serve future employment and development to the east and west • Maintains existing level of goods movement	• Able to serve future employment and development to the east and west • Maintains existing level of goods movement	• Limited ability to serve future employment and development to the east and west due to congested travel conditions

	• Maintain existing level of goods movement • No impact to businesses during construction	• Impacts to businesses due to construction • Potential negative impacts on business due to removal of lay-by parking • Potential to support local business with improved pedestrian and cycling facilities	• Impacts to businesses due to construction • Potential to support local business with improved pedestrian and cycling facilities and maintaining parking on one side of the street	• Potential impact to goods movement due to reduced number of general purpose lanes and lower travelling speeds • Impacts to businesses due to construction • Potential to support local business with improved pedestrian and cycling facilities and maintaining parking on both sides of the street
Resiliency	• Risks of climate change are not addressed • Relying on automobile as primary road user limits ability of transportation network to respond to technological and environmental changes in the future	• Risks of climate change addressed • Accommodates a diversity of road users, provides redundancy in transportation network to respond to technological and environmental changes in the future	• Risks of climate change addressed • Accommodates a diversity of road users, provides redundancy in transportation network to respond to technological and environmental changes in the future	• Risks of climate change addressed • Accommodates a diversity of road users, provides redundancy in transportation network to respond to technological and environmental changes in the future • Reducing road capacity limits ability to respond to traffic diversion from QEW during emergency situations
Evaluation				
OVERALL EVALUATION				
OVERALL RECOMMENDATION	• **NOT PREFERRED**	**PREFERRED (Segment 5B)**	**PREFERRED (Segment 5A, 5C)**	**LESS PREFERRED**
RECOMMENDATION SUMMARY	This option does not achieve the serving people, strengthening places, and supporting prosperity objectives of the study. No improvements are made.	This option achieves the serving people, strengthening places, and supporting prosperity objectives of the study. By providing separated AT facilities, people moving capacity increases as a result of increased safety for cyclists and pedestrians. Publicly shared off-street parking alternatives exist in the area, including: Municipal Lots, Port Credit GO Station, and private lots; therefore, on-street parking supply is not as critical in this segment.	This option achieves the serving people, strengthening places, and supporting prosperity objectives of the study. By providing separated AT facilities, people moving capacity increases as a result of increased safety for cyclists and pedestrians. Although, the addition of lay-by parking may cause delays to transit vehicles, maintaining parking supply in the vicinity of the Port Credit Community Node is preferred (where fewer alternative offsite lots exist).	This option does not achieve the serving people, strengthening places, and supporting prosperity objectives of the study. By providing separated AT facilities, people moving capacity increases as a result of increased safety for cyclists and pedestrians. However, maintaining the existing lay-by parking results in the removal of 2 drive lanes, which does not support flow of traffic. Moreover, the lay-by parking may cause delays to transit vehicles.

Table 5-26: Segment 6 Evaluation

Criteria		Option 1 - Do Nothing (4 Lanes)	Option 2 - 4 Lanes (No Parking)	Option 3 - 4 Lanes + Parking (One Side)	Option 4 - 2 Lanes + Parking (Both Sides)
SERVING PEOPLE	**Choice**	• Pedestrian level of service: Moderate • Cycling level of service: Poor • No accommodation for pick-up/drop-off locations for ridesharing services	• Pedestrian level of service: Good • Cycling level of service: Good • No lay-by parking provided • No accommodation for pick-up/drop-off locations for ridesharing services	• Pedestrian level of service: Good • Cycling level of service: Good • Provides lay-by parking on one side of the street • Opportunity for pick-up/drop-off locations for ridesharing services	• Pedestrian level of service: Good • Cycling level of service: Good • Provides lay-by parking on both sides of the street • Opportunity for pick-up/drop-off locations for ridesharing services
	Experience	• Maintains four general purpose travel lanes (experiences peak hour peak direction congestion) • No improvements to multi-modal network connectivity • No improvements to safety for cyclists due to lack of separated cycling facilities • No improvements to safety for pedestrians • Transit line speed: 16-20km/h • No increase in transit ridership • The roadway capacity currently accommodates 6,400 people per hour per direction	• Maintains four general purpose travel lanes (experiences peak hour peak direction congestion) • Improved safety for pedestrians due to wider sidewalks and boulevard and separation from cyclists • Improved multi-modal network connectivity • Improved safety for cyclists due to presence of separated and dedicated cycling facilities • Transit line speed: 16-20km/h • Increase in transit ridership • The roadway capacity in this option would increase to accommodate 11,800 people per hour per direction	• Maintains four general purpose travel lanes (experiences peak hour peak direction congestion) • Improved safety for pedestrians due to wider sidewalks and boulevard and separation from cyclists • Improved multi-modal network connectivity • Improved safety for cyclists due to presence of separated and dedicated cycling facilities • Transit line speed: 16-20km/h • Increase in transit ridership • The roadway capacity in this option would increase to accommodate 11,800 people per hour per direction	• Reduction from four lanes to two lanes (very congested peak hour peak direction traffic conditions) • Improved safety for pedestrians due to wider sidewalks and boulevard and separation from cyclists • Improved safety for cyclists due to presence of separated and dedicated cycling facilities • Improved multi-modal connectivity • Transit line speed: 16-20km/h • Increase in transit ridership • The roadway capacity in this option would increase to accommodate 10,700 people per hour per direction
	Social Equity	• Lack of separated cycling facilities limits ability of children and seniors to cycle	• Supports equity in mobility by gender, income, family status, and age class	• Supports equity in mobility by gender, income, family status, and age class	• Supports equity in mobility by gender, income, family status, and age class
	Evaluation	○	●	●	◑
STRENGTHENING PLACES	**Public Health and the Environment**	• Potential decrease in air quality due to increased congestion and poor modal share distribution between autos and pedestrians/cyclists • No impact to cultural/heritage/archaeological features • No impacts on the natural environment.	• Potential improvement in air quality and opportunity to reduce GHG emissions as a result of improved active transportation facilities and associated mode shift from single occupancy vehicles • No impact to cultural/heritage/archaeological features • No impact to stormwater quantity	• Potential improvement in air quality and opportunity to reduce GHG emissions as a result of improved active transportation facilities and associated mode shift from single occupancy vehicles • No impact to cultural/heritage/archaeological features • Minor impact associated with increased hard surface area (due to addition of vehicular lane and increased width of AT facility), stormwater quantity will increase and quality mitigation may be required	• Potential improvement in air quality and opportunity to reduce GHG emissions as a result of improved active transportation facilities and associated mode shift from single occupancy vehicles • No impact to cultural/heritage/archaeological features • No impact to stormwater quantity
	Healthy Neighborhoods	• No impact on existing stable neighborhoods • No impacts to existing properties	• No impacts to existing properties • Potential for noise and vibration impact to properties from construction	• No impacts to existing properties • Addition of lay-by parking may ease parking demand on neighbouring roads	• No impacts to existing properties • Addition of lay-by parking may ease parking demand on neighbouring roads

		• No noise and vibration impacts • No change to compatibility with parks, public spaces, and natural areas • No improvement to access of community services and facilities	• Improves access to community services and facilities for cyclists and pedestrians • Limited access to community services and facilities for vehicles • Opportunity to support place making objectives	• Potential for noise and vibration impact to properties from construction • Improves access to community services and facilities for cyclists and pedestrians • Lay-by parking may cause delays in transit lanes while vehicles parallel park	• Potential for increased traffic on adjacent local roads as a result of removing two general purpose lanes on Lakeshore Road • Potential for noise and vibration impact to properties from construction • Improves access to community services and facilities for cyclists and pedestrians • Lay-by parking may cause delays in transit lanes while vehicles parallel park
	Shaping the City	• Unable to serve future population • Does not encourage Transit Oriented Development (TOD) • No opportunity for place-making • Lack of accommodation for improved pedestrian and cycling facilities is not compatible with City planning policies • The percentage of total space dedicated to AT users 30%, meaning total space dedicated to vehicles is 70%. The streetscaping area varies at this segment, but exceeds 7.2m	• Able to serve future population • Encourages TOD • Creates opportunities for place-making • Compatible with City Planning policies • The percentage of total space dedicated to AT users is increased to 55%, meaning total space dedicated to vehicles is 45%. The streetscaping area varies at this segment, but exceeds 3.4m	• Able to serve future population • Encourages TOD • Creates opportunities for place-making • Compatible with City Planning policies • The percentage of total space dedicated to AT users is increased to 45%, meaning total space dedicated to vehicles is 55%. There is an approximate 3.4m collective streetscaping area	• Encourages TOD • Creates opportunities for place-making • Reduction of general purpose travel lanes on Lakeshore Road not compatible with City planning policies • The percentage of total space dedicated to AT users versus vehicles is balanced at 50% for this option. There is an approximate 3.4m collective streetscaping area
	Evaluation	○	●	◔	○
SUPPORTING PROSPERITY	**Affordability**	• No engineering complexity • No capital costs • Maintenance costs remain the same	• Low capital cost as no additional vehicular lanes are added • Feasible to implement within existing right-of-way • Costs associated with maintenance of added cycling infrastructure (i.e. repairs, winter maintenance, etc.)	• High capital cost as one additional lay-by on-street parking lane is added • Feasible to implement within existing right-of-way • Costs associated with maintenance of added cycling infrastructure and lay-by parking (i.e. repairs, winter maintenance, etc.)	• Low capital cost as no additional vehicular lanes are added • Feasible to implement within existing right-of-way • Costs associated with maintenance of added cycling infrastructure and lay-by parking (i.e. repairs, winter maintenance, etc.)
	Support Growth	• Limited ability to serve future employment and development to the east and west • Maintain existing level of goods movement • No impact to businesses during construction	• Able to serve future employment and development to the east and west • Maintain existing level of goods movement • Impacts to businesses due to construction Potential to support local business with improved pedestrian and cycling facilities	• Able to serve future employment and development to the east and west • Maintain existing level of goods movement • Impacts to businesses due to construction • Potential to support local business with improved pedestrian and cycling facilities and addition of parking on one side of the street	• Able to serve future employment and development to the east and west • Potential impact to goods movement due to reduced number of general purpose lanes and lower travelling speeds • Impacts to businesses due to construction • Potential to support local business with improved pedestrian and cycling facilities and addition of parking on both sides of the street

	Resiliency	• Risks of climate change are not addressed • Relying on automobile as primary road user limits ability of transportation network to respond to technological and environmental changes in the future	• Risks of climate change addressed • Accommodates a diversity of road users, provides redundancy in transportation network to respond to technological and environmental changes in the future	• Risks of climate change addressed • Accommodates a diversity of road users, provides redundancy in transportation network to respond to technological and environmental changes in the future	• Risks of climate change addressed • Accommodates a diversity of road users, provides redundancy in transportation network to respond to technological and environmental changes in the future
	Evaluation				
OVERALL EVALUATION					
OVERALL RECOMMENDATION		• **NOT PREFERRED**	**PREFERRED**	**LESS PREFERRED**	**LESS PREFERRED**
RECOMMENDATION SUMMARY		This option does not achieve the serving people, strengthening places, and supporting prosperity objectives of the study. No improvements are made.	This option achieves the serving people, strengthening places, and supporting prosperity objectives of the study. By providing separated AT facilities, people moving capacity increases as a result of increased safety for cyclists and pedestrians. There is also great potential to support local business with improved pedestrian and cycling facilities.	This option achieves the serving people, strengthening places, and supporting prosperity objectives of the study. By providing separated AT facilities, people moving capacity increases as a result of increased safety for cyclists and pedestrians. However, the addition of lay-by parking may cause delays to transit vehicles.	This option does not achieve the serving people, strengthening places, and supporting prosperity objectives of the study. The removal of 2 drive lanes to accommodate 2 lay-by parking lanes does not support flow of traffic. The addition of lay-by parking may cause delays to transit vehicles and traffic flow.

Table 5-27: Segment 7 Evaluation

Criteria		Option 1 - Do Nothing (4 Lanes)	Option 2 - Exclusive Transit (One Side) + Separated Cycling	Option 3 - Exclusive Transit (Median) + Separated Cycling	Option 4 - Exclusive Transit (Median) + Multi-use Trail (Both Sides)
SERVING PEOPLE	**Choice**	• Pedestrian level of service: Moderate • Cycling level of service: Moderate • No lay-by parking provided • No accommodation for pick-up/drop-off locations for ridesharing services	• Pedestrian level of service: Good • Cycling level of service: Good • No lay-by parking provided • No accommodation for pick-up/drop-off locations for ridesharing services • Introduces higher order transit	• Pedestrian level of service: Good • Cycling level of service: Good • No lay-by parking provided • No accommodation for pick-up/drop-off locations for ridesharing services • Introduces higher order transit	• Pedestrian level of service: Moderate • Cycling level of service: Moderate • No lay-by parking provided • No accommodation for pick-up/drop-off locations for ridesharing services • Introduces higher order transit
	Experience	• Maintains four general purpose travel lanes (experiences peak hour peak direction congestion) and centre left turn lane • No improvements to safety for cyclists • No improvements to safety for pedestrians • Potential tension between pedestrians and cyclists due to multi-use trail (shared facilities) • No improvements to multi-modal network connectivity • Transit line speed: 16-20km/h • No increase in transit ridership • The roadway capacity currently accommodates 6,400-7,900 people per hour per direction	• Maintains four general purpose travel lanes (experiences peak hour peak direction congestion) and centre left turn lane • Improved safety for pedestrians due to wider sidewalks and boulevard and separation from cyclists • Improved multi-modal network connectivity • Improved safety for cyclists due to presence of separated and dedicated cycling facilities • Improved multi-modal connectivity • Transit line speed: 26m/hr • Increase in transit ridership • The roadway capacity in this option would increase to accommodate 11,800 people per hour per direction • Dedicated right-turn phases required at intersections	• Maintains four general purpose travel lanes (experiences peak hour peak direction congestion) • Removes centre left turning lane • Improved safety for pedestrians due to wider sidewalks and boulevard and separation from cyclists • Improved multi-modal network connectivity • Improved safety for cyclists due to presence of separated and dedicated cycling facilities • Improved multi-modal connectivity • Transit line speed: 26km/h • Increase in transit ridership • The roadway capacity in this option would increase to accommodate 11,800 people per hour per direction • Dedicated left-turn phases required at intersections • Shorter crossing distances for pedestrians • Fewer potential conflicts with general traffic at intersections	• Maintains four general purpose travel lanes (very congested peak hour peak direction traffic conditions) • Removes centre left turning lane • Improved safety for pedestrians due to implementation of an additional multi-use trail • Potential tension between pedestrian and cyclists due to multi-use path (shared facilities) • Potential for conflict between pedestrian and cyclists due to shared facility in one boulevard on both sides • Improved multi-modal connectivity • Transit line speed: 26km/h • Increase in transit ridership • The roadway capacity in this option would increase to accommodate 10,300 people per hour per direction
	Social Equity	• Lack of separated cycling facilities limits ability of children and seniors to cycle	• Supports equity in mobility by gender, income, family status, and age class	• Supports equity in mobility by gender, income, family status, and age class	• Supports equity in mobility by gender, income, family status, and age class
	Evaluation	○	◕	●	◑
STRENGTHENING PLACES	**Public Health and the Environment**	• Potential decrease in air quality due to increased congestion and poor modal share distribution between autos and pedestrians/cyclists • No impact to cultural/heritage/archaeological features • No impacts on the natural environment.	• Potential improvement in air quality and opportunity to reduce GHG emissions as a result of improved active transportation facilities and associated mode shift from single occupancy vehicles • No impact to cultural/heritage/archaeological features • Moderate impact associated with increased hard surface area (due to	• Potential improvement in air quality and opportunity to reduce GHG emissions as a result of improved active transportation facilities and associated mode shift from single occupancy vehicles • No impact to cultural/heritage/archaeological features • Moderate impact associated with increased hard surface area (due to	• Potential improvement in air quality and opportunity to reduce GHG emissions as a result of improved active transportation facilities and associated mode shift from single occupancy vehicles • No impact to cultural/heritage/archaeological features • Moderate impact associated with increased hard surface area (due to

		addition of two lanes for transit vehicles), stormwater quantity will increase and quality mitigation may be required	addition of one lane for transit vehicles), stormwater quantity will increase and quality mitigation may be required	addition of one lane fortransit vehicles and increased width of AT facilities), stormwater quantity will increase and quality mitigation may be required
	Healthy Neighborhoods	• No impact on existing stable neighborhoods • No impacts to existing properties • No noise and vibration impacts • No change to compatibility with parks, public spaces, and natural areas • No improvement to access of community services and facilities	• No impacts to existing properties • Potential for noise and vibration impact to properties from construction • Improves access to community services and facilities for cyclists and pedestrians • No access to community services and facilities for vehicles on the south side	• No impacts to existing properties • Potential for noise and vibration impact to properties from construction • Improves access to community services and facilities for cyclists and pedestrians • Limited access to community services and facilities for vehicles	• No impacts to existing properties • Potential for noise and vibration impact to properties from construction • Improves access to community services and facilities for cyclists and pedestrians • Limited access to community services and facilities for vehicles
	Shaping the City	• Unable to serve future population • Does not encourage Transit Oriented Development (TOD)Compatible with City Planning policies • The percentage of total space dedicated to AT users is 60%, meaning total space dedicated to vehicles is 40%. The streetscaping area varies at this segment, but exceeds 4.1m	• Able to serve future population • Encourages TOD • Creates opportunities for place-making • Compatible with City Planning policies • The percentage of total space dedicated to AT users versus vehicles is balanced at 50%.There is an approximate 6.0m collective streetscaping area	• Able to serve future population • Encourages TOD • Creates opportunities for place-making • Compatible with City Planning policies • The percentage of total space dedicated to AT users versus vehicles is balanced at 50%.There is an approximate 12.8m collective streetscaping area • Reinforces the identity and visibility of the rapid transit system	• Able to serve future population • Encourages TOD • Creates opportunities for place-making • Compatible with City Planning policies • The percentage of total space dedicated to AT users is decreased to 55%, meaning total space dedicated to vehicles is 45%. There is an approximate 16m streetscaping area
	Evaluation				
SUPPORTING PROSPERITY	**Affordability**	• No engineering complexity • No capital costs • Maintenance costs remain the same	• High capital cost due to addition of two vehicular lanes dedicated for transit lane (one additional lane added for a total of two dedicated transit lanes) • Feasible to implement within existing right-of-way • High maintenance and operation costs associated with dedicated transit lanes	• High capital cost due to addition of one vehicular lane (centre left turn lane removed, one additional lane added for a total of two dedicated transit lanes) • Feasible to implement within existing right-of-way • High maintenance and operation costs associated with dedicated transit lanes	• High capital cost due to addition of one vehicular lane (centre left turn lane removed, one additional lane added for a total of two dedicated transit lanes) • Feasible to implement within existing right-of-way • High maintenance and operation costs associated with dedicated transit lanes
	Support Growth	• No Change in ability to serve future employment and development to the east and west • Maintain existing level of goods movement • No impact to businesses during construction	• Able to serve future employment and development to the east and west • Potential to impact level of goods movement • Impacts to businesses due to construction and lack of vehicular access along the south side • Potential to support local business with improved pedestrian and cycling facilities	• Able to serve future employment and development to the east and west • Potential impact to goods movement due to removal of centre left turning lane • Impacts to businesses due to construction • Potential to support local business with improved pedestrian and cycling facilities	• Able to serve future employment and development to the east and west • Potential impact to goods movement due to removal of centre left turning lane • Impacts to businesses due to construction • Potential to support local business with improved pedestrian and cycling facilities
	Resiliency	• Risks of climate change are not addressed • Relying on automobile as primary road user limits ability of transportation network to respond to technological and environmental changes in the future	• Risks of climate change addressed • Accommodates a diversity of road users, provides redundancy in transportation network to respond to technological and environmental changes in the future	• Risks of climate change addressed • Accommodates a diversity of road users, provides redundancy in transportation network to respond to technological and environmental changes in the future	• Risks of climate change addressed • Accommodates a diversity of road users, provides redundancy in transportation network to respond to technological and environmental changes in the future

	Evaluation			
OVERALL EVALUATION				
OVERALL RECOMMENDATION	• **NOT PREFERRED**	**LESS PREFERRED**	**PREFERRED**	**LESS PREFERRED**
RECOMMENDATION SUMMARY	This option does not achieve the serving people, strengthening places, and supporting prosperity objectives of the study. No improvements are made.	This option does not achieve the serving people, strengthening places, and supporting prosperity objectives of the study. By providing separated AT facilities, people moving capacity increases as a result of increased safety for cyclists and pedestrians. However, exclusive transit lanes on one side results in no vehicular access to community services and facilities.	This option achieves the serving people, strengthening places, and supporting prosperity objectives of the study. By providing separated AT facilities and exclusive transit lanes, people moving capacity increases as a result of increased safety for cyclists, pedestrians, and transit users. Separated cycling lanes also provides continuity along the Study Corridor. Rapid transit in the median improves transit and traffic operations.	This option achieves the serving people, strengthening places, and supporting prosperity objectives of the study. A shared AT facility on both sides provide connectivity along the corridor. However, there are potential conflicts between cyclists and pedestrians. Exclusive centre lane transit lanes allows for limited vehicular access to community services and facilities.

5.2.11 Identification of the Preferred Right of Way Alternative

This section summarizes the preferred cross-section for each segment of the Study Corridor. The preferred cross-sections were determined through discussions with the City of Mississauga internal departments and reflect input received following the evaluation of alternatives presented in previous sections. For all typical sections depicted in this TMP, north is to the left and south is to the right. A key map indicating the preferred cross section for each segment is provided in **Exhibit 5-55**.

5.2.11.1 SEGMENT 1: SOUTHDOWN EMPLOYMENT AREA

Based on the evaluation, Option 2 was the preferred alternative as shown in **Exhibit 5-44**. This option provides a five (5) lane cross-section including a centre turn lane with buses running in mixed traffic on both sides. This option also provides dedicated, unidirectional cycling facilities and sidewalks on both sides and a landscaped buffer between cycling and pedestrian facilities for added safety.

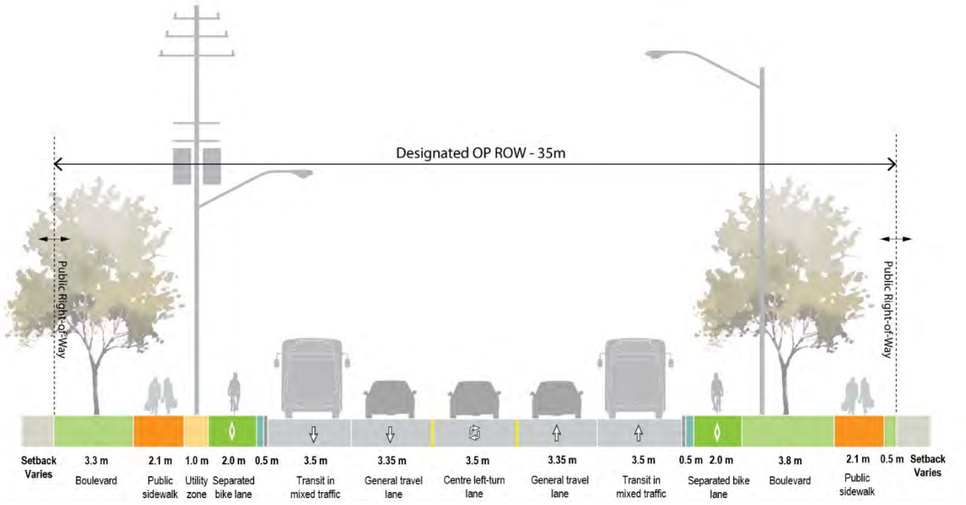

Exhibit 5-44 Preferred ROW Alternative (Segment 1)

5.2.11.2 SEGMENT 2A PREFERRED CROSS-SECTION

Option 2 was selected as the preferred alternative as shown in **Exhibit 5-45**, as it provides continuous dedicated, unidirectional cycling facilities and sidewalks on both sides and a landscaped buffer between cycling and pedestrian facilities for added safety. This segment provides four (4) lanes with buses running in mixed traffic. Following the evaluation of alternatives, it was determined that a centre left turn lane was required through most of this segment to provide access to properties on either side of Lakeshore Road; therefore, the space for the layby parking on one side was re-allocated to the centre left turn lane.

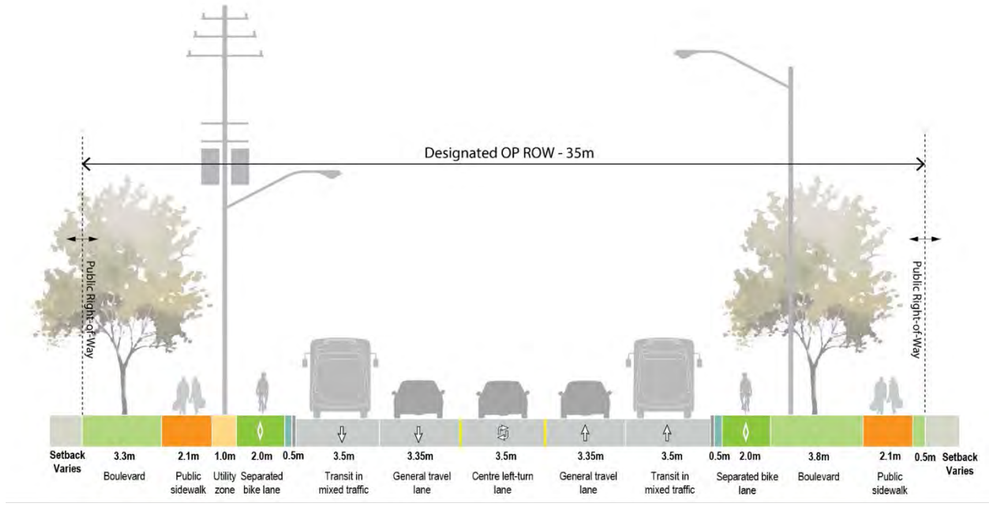

Exhibit 5-45 Preferred ROW Alternative (Segment 2A: Southdown Road to CN Railway Crossing)

5.2.11.3 SEGMENT 2B PREFERRED CROSS-SECTION

In order to maintain continuous dedicated, unidirectional cycling facilities and sidewalks on both sides, as well as a landscaped buffer between cycling and pedestrian facilities, Option 2 was selected as the preferred alternative for segment 2B as shown in **Exhibit 5-46**. This segment provides four (4) lanes with buses running in mixed traffic as well as lay-by parking on the both sides. A combined 2.0 m utility and tree zone on the north side of Lakeshore Road has been provided. The City of Mississauga Forestry Department recommends that smaller tree species such as Japanese Tree Lilac, Serviceberry, Amur Maple, Crab Apple be planted under the overhead hydro wires. The size of trees in the cross section are not to scale.

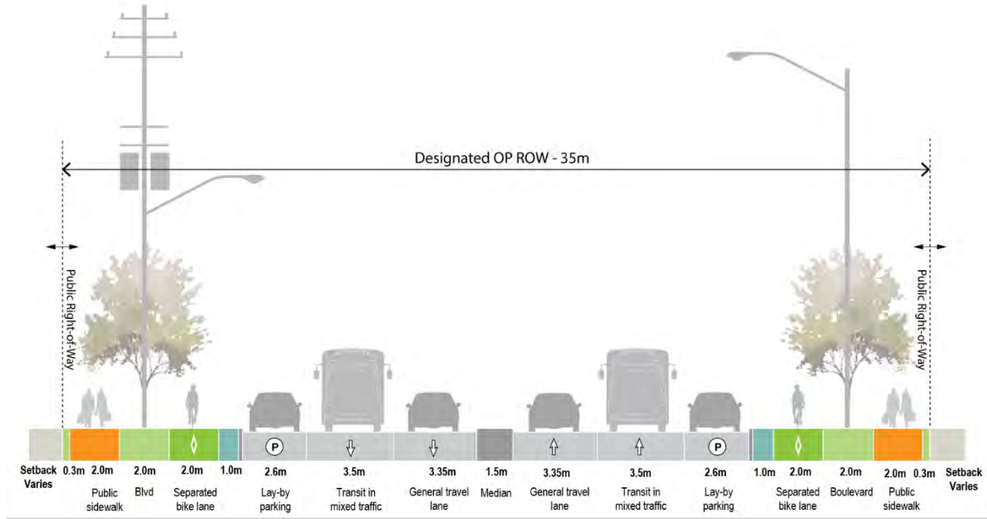

Exhibit 5-46 Preferred ROW Alternative (Segment 2B: CN Railway Crossing to Clarkson Road South)

5.2.11.4 SEGMENT 2C PREFERRED CROSS-SECTION

Option 2 was selected as the preferred alternative as shown in **Exhibit 5-47**. This option provides continuous, dedicated, unidirectional cycling facilities and sidewalks on both sides and a landscaped buffer between cycling and pedestrian facilities for added safety, four (4) lanes with buses running in mixed traffic, as well as lay-by parking on the north side. Although the OP designated ROW is 35 m in this segment, a 30 m preferred section has been provided as the full OP ROW may not be achieved by the time of implementation. To accommodate all the elements within the 30 m, 1.9 m sidewalks are provided on both sides and a combined 2.0 m utility and tree zone on the north side of Lakeshore Road has been provided. The City of Mississauga Forestry Department recommends that smaller tree species such as Japanese Tree Lilac, Serviceberry, Amur Maple, Crab Apple be planted under the overhead hydro wires. The size of trees in the cross section are not to scale.

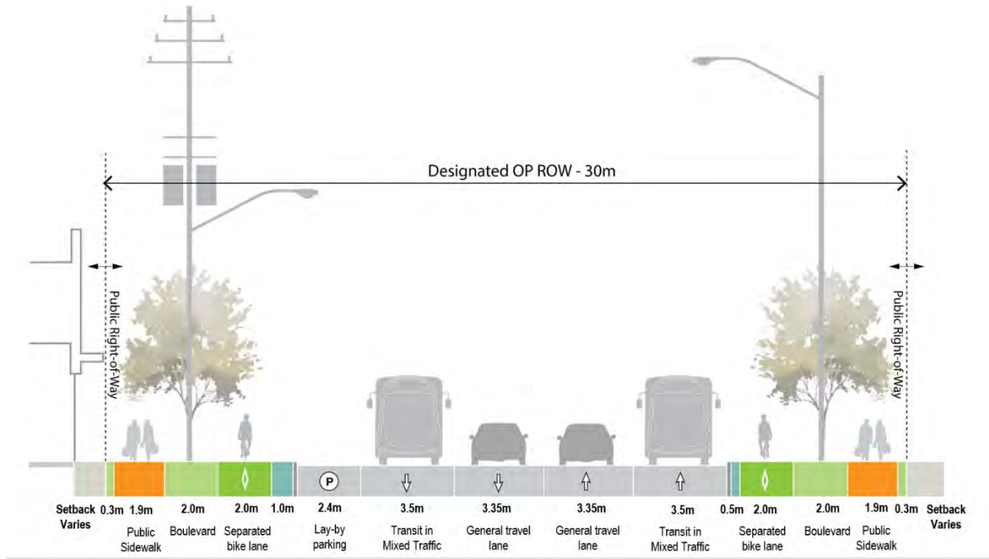

Exhibit 5-47 Preferred ROW Alternative (Segment 2C: Clarkson Road South to Meadow Wood Road)

5.2.11.5 SEGMENT 2D PREFERRED CROSS-SECTION

Option 2 was selected as the preferred alternative as shown in **Exhibit 5-48** to provide continuity of the dedicated, unidirectional cycling facilities and sidewalks on both sides of the street. This option provides four (4) lanes with buses running in mixed traffic. Due to physical constraints in this section a landscaped buffer cannot be accommodated between the active transportation facilities on the south side, and a 1 m utility zone is provided on the north side.

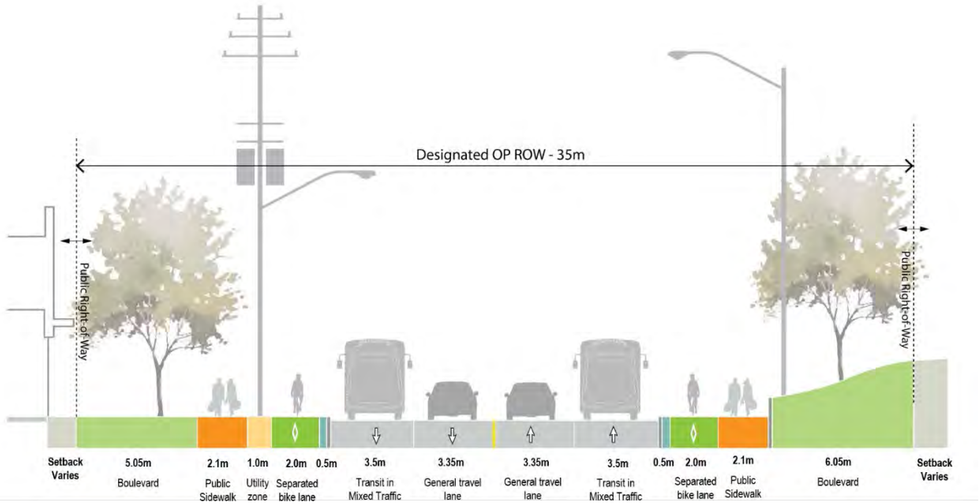

Exhibit 5-48 Preferred ROW Alternative (Segment 2D: Meadow Wood Road to Johnson's Lane)

5.2.11.6 SEGMENT 3: LORNE PARK NEIGHBOURHOOD

Option 2 was selected as the preferred alternative as shown in **Exhibit 5-49**. This option was selected as it provides a continuous connection from Segment 2D. This option maintains dedicated, unidirectional cycling facilities and sidewalks on both sides, with four (4) lanes and buses running in mixed traffic.

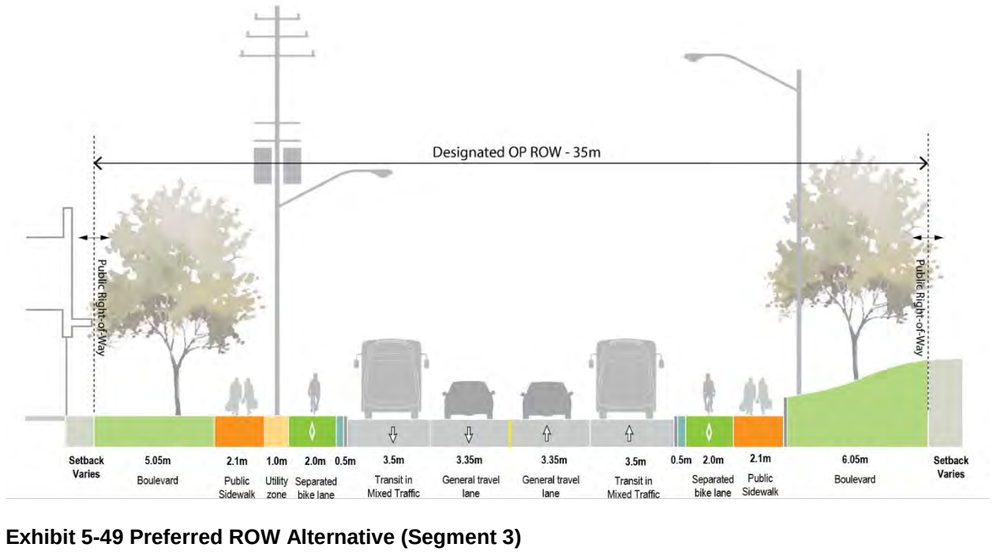

Exhibit 5-49 Preferred ROW Alternative (Segment 3)

5.2.11.7 SEGMENT 4: PORT CREDIT WEST NEIGHBOURHOOD

This segment was dependent on the outcome of Segment 5 as shown in **Exhibit 5-50**. Option 3 was selected as the preferred alternative. Similar to the rest of the Corridor, this option will provide four (4) lanes with buses running in mixed traffic, as well as dedicated, unidirectional cycling facilities and sidewalks on both sides. Lay-by parking, alternating with planting zones is also provided along this segment. Utilities are buried through this segment. Future studies should review the opportunity to increase buffer area between parking, cycling lanes and sidewalk. Some laybys may be used for patios under the existing Cultural Node project.

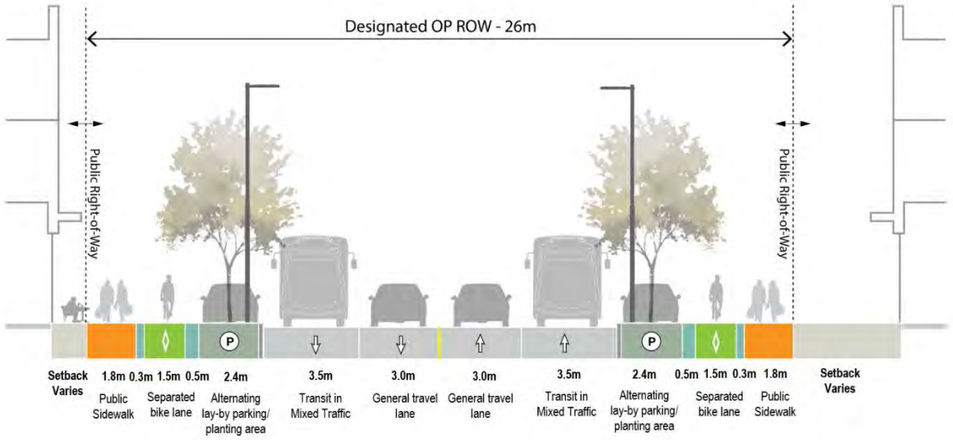

Exhibit 5-50 Preferred ROW Alternative (Segment 4)

5.2.11.8 SEGMENTS 5A AND 5C PREFERRED CROSS-SECTION

Segment 5 has the most constrained ROW along the corridor (26 metres) and several needs competing for limited space. Option 3 was selected as the preferred solution for Segments 5A and 5C as shown in **Exhibit 5-51**. Four (4) lanes with buses running in mixed traffic is provided in this segment, as well as dedicated, unidirectional cycling facilities and sidewalks on both sides. Lay-by parking, alternating with planting zones is also provided along these segments. Utilities are buried through this segment. Future studies should review the opportunity to increase buffer area between parking, cycling lanes and sidewalk. Some laybys may be used for patios under the existing Cultural Node project.

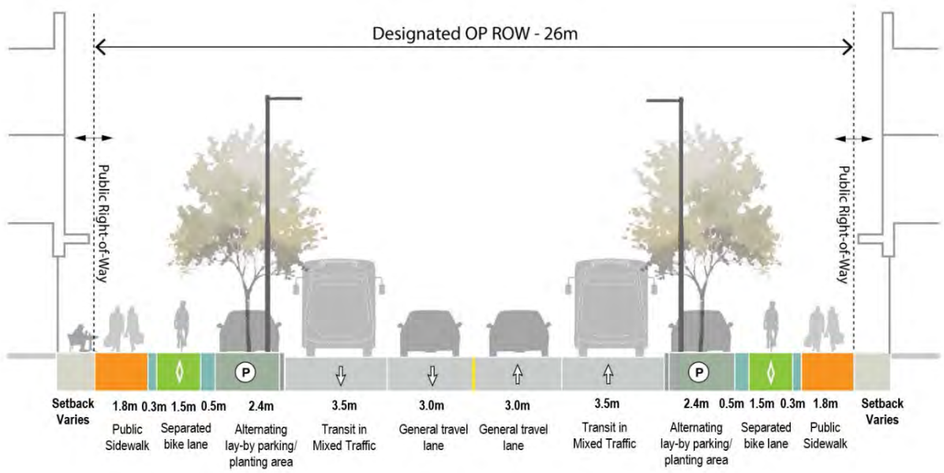

Exhibit 5-51 Preferred ROW Alternative (Segment 5A: Mississauga Road to Stavebank Road, and 5C: Hurontario Street to Seneca Avenue)

5.2.11.9 SEGMENT 5B PREFERRED CROSS-SECTION

Option 2 was selected as the preferred solution for Segment 5B as shown in **Exhibit 5-52**. Four (4) lanes with buses running in mixed traffic is provided in this segment, as well as dedicated, unidirectional cycling facilities and sidewalks on both sides. Lay-by parking is removed from this segment to support place making opportunities and cultural programming in the boulevard area. Utilities are buried in this segment.

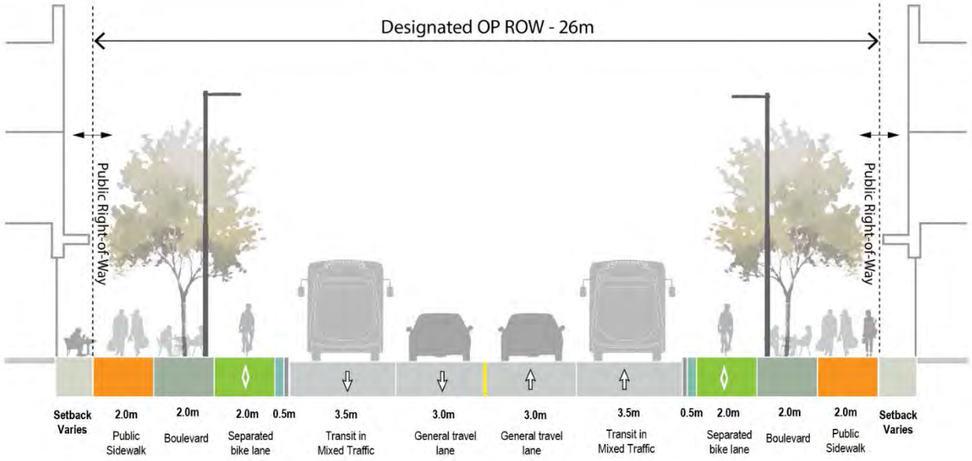

Exhibit 5-52 Preferred ROW Alternative (Segment 5B: Stavebank Road to Hurontario Street)

5.2.11.10 SEGMENT 6: LAKEVIEW WEST NEIGHBOURHOOD

The preferred alternative for this segment was dependent on Segment 5. Option 2 was selected as the preferred alternative with four (4) lanes and buses running in mixed traffic, as well as dedicated, unidirectional cycling facilities and sidewalks on both sides as shown in **Exhibit 5-53**. A buffer between cycling and pedestrian facilities on both sides is provided along this segment. Due to the number of closely spaced intersections and private driveway accesses, a 3.5 m centre left turn lane is provided throughout to provide access to properties on both sides of Lakeshore Road. A 0.3 m buffer is provided between the sidewalk and the property line for constructability; however, should it not be required, the buffer can be reallocated to the boulevard for tree planting.

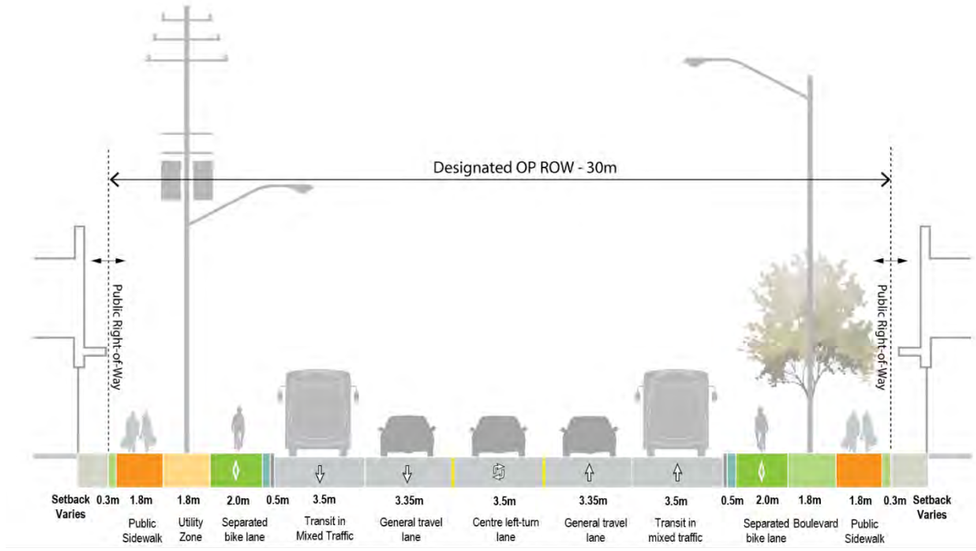

Exhibit 5-53 Preferred ROW Alternative (Segment 6)

5.2.11.11 SEGMENT 7: LAKEVIEW EMPLOYMENT AREA

Segment 7 has a 44.5 m right-of-way; therefore, dedicated transit options were considered. Option 3 was selected as the preferred alternative as shown in **Exhibit 5-54**. This option has six (6) lanes including two (2) exclusive transit lanes with separated cycling facilities on both sides. This option provides exclusive transit lanes in the median.

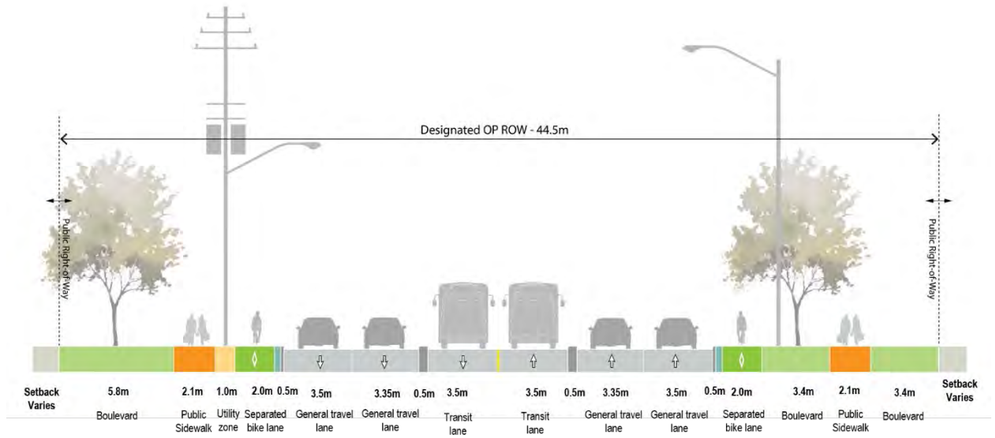

Exhibit 5-54 Preferred ROW Alternative (Segment 7)

5.2.12 Summary of Preferred Right of Way Alternatives

Exhibit 5-55 illustrates a summary of the preferred solution for the entire corridor. Continuous separated bike lanes are provided throughout as well as sidewalks on both sides of the street. Lay-by parking is to be provided on the north side along segments 2B and 2C, as well as on the south side along segment 2C. Segments 4, 5A, and 5C will have lay-by parking on one or both sides, alternating with planting zones. Segments 1, 2A, and 6 will provide a centre left turn lane. Finally, Segment 7 will have exclusive two-way transit lanes in the median. It should be noted that the median transit only lanes do not extend the entirety of Segment 7; the transitway is from East Avenue to just west of the Etobicoke Creek to minimize impacts to the Etobicoke Creek and so that the express bus can merge back into general purpose lanes prior to crossing into the City of Toronto. However, future studies should review the feasibility of extending the dedicated transit lanes into Toronto / Long Branch GO.

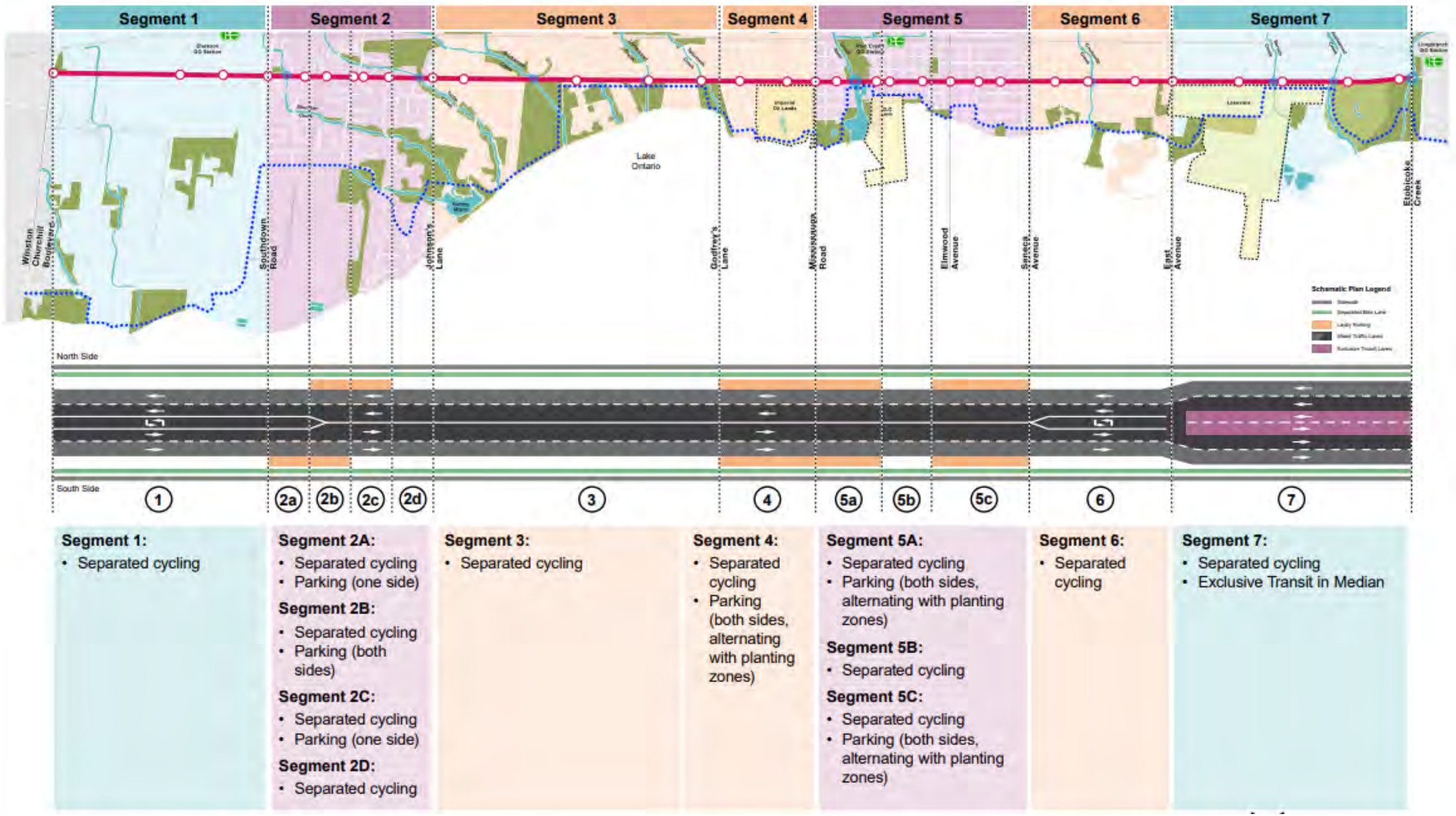

Exhibit 5-55: Summary of the Preferred Alternative Solution

5.2.13 Public and Stakeholder Input

Using the public's input on the vision for the Study Corridor from POH1, the Project Team developed all reasonable and feasible alternative right-of-way configurations as presented in the previous sections. At POH2, the right-of-way alternatives for each segment of the Study Corridor were presented to the public and they had the opportunity to give feedback and express their preference for an option. No recommendation for a preferred alternative was presented at POH2.

From the input received about the right-of-way alternatives at POH2 and following internal stakeholder meetings with the City of Mississauga staff the Project Team noted that layby parking in the Port Credit Neighbourhood was important; therefore, the right-of-way alternatives for Segment 5 were refined to include an option with 4 travel lanes and layby parking which alternates with streetscaping opportunities. The alternatives were then evaluated and a preferred alternative was selected. The preferred alternative for each segment was presented to the public at POH3. Feedback from POH3 confirmed the preferred alternative for each segment.

Frequently noted general themes were compiled and are listed below in **Table 5-28**. Additional comments received are documented in **Appendix A.4**.

Table 5-28 General Themes and Key Messages Heard (Right of Way Alternatives)

General Themes Frequently Noted	Key Messages Heard
Create a more welcoming and connected pedestrian environment	• Strong support for implementing sidewalks throughout Lakeshore Road on all segments. • Strong support for implementing street designs which create a more pedestrian friendly environment along Lakeshore. • Support for keeping cyclists and pedestrians separate with many concerns noted about safety concerns with cyclists riding on the sidewalks. • Create more shade respites for better walking along Lakeshore Road. Wider sidewalks, benches and weather protection are seen as important for creating a safer and more appealing environment for walking. • Improved wayfinding recommended. • Desire for improved pedestrian connection to and along the Waterfront and across the Credit River.
Significant support for and on-street separated bike lanes along Lakeshore	• There is significant support for implementing on-street separated bike lanes along Lakeshore. • Dedicated and protected bike lanes along Lakeshore Road were favoured in all segments (1 – 7). At Station 4, over 90% indicated that separated on-street bike lanes were preferred over off-street bike lanes. • There is a strong preference for a raised physical buffer on-street between the vehicles and bike lanes. • Creating protected cycling lanes is seen as having further advantages of moving bikes off sidewalks and making it safer for pedestrians as well. • More bike parking is needed along Lakeshore and at GO Stations. • Would like to see new north-south bike routes.
Address existing congestion problems and enhance and support Lakeshore as a local main street	• There is concern that congestion is worsening, that there are safety issues at crossings, and conflicts between users (i.e. cyclists and pedestrians on sidewalks) that need to be addressed in the near term. • Turning movements from Lakeshore were noted to be problematic particularly at Stavebank Road and Hurontario Street. • There are mixed views on on-street parking with some support for restricting peak hour parking through Port Credit to improve traffic flow.
There are mixed views on whether a multi-modal crossing or non-vehicular crossing would be feasible and address transportation needs. Desire noted for increasing safe opportunities for crossing the Credit River for pedestrians and cyclists	• There are mixed views on whether a multi-modal crossing or non-vehicular crossing would be feasible and address transportation needs. Many comments noted about benefits and impacts. • There is a desire for increasing safe opportunities for crossing the Credit River for pedestrians and cyclists. • Concerns were noted about the impact of slowdowns on the QEW and diversion of traffic onto Mississauga Road to Lakeshore for continued trips east and west. Suggestion also included service roads abutting the QEW. • If a crossing is considered, preferences are: • Multi-modal : preference for Mineola Road Extension (50%) or Queen Street Queen Street Extension crossings • Non-vehicular: Preference for Queen Street Extension (39%), Mineola Road (25%), or Inspiration Port Credit Bridge (23%) crossings.

General Themes Frequently Noted	Key Messages Heard
Desire for street design solutions that support rapid transit, separated on-street bike lanes and wider sidewalks for pedestrians while enhancing the village like qualify of Lakeshore communities	• Street design solutions that support rapid transit were favoured in all segments. • Supported street design elements included measures that would improve the pedestrian environment and separate cycling from pedestrian and vehicles in all Segments. • Mixed views were expressed on layby parking with restricted parking being favoured in some segments in Port Credit Segment. • The specific preference for each segment are as follows:

Segment	Preference Noted
1	Clear preference for Option 2 (separated cycling)
2A	Clear preference for Option 2 (separated cycling and parking)
2B	Preference for Option 2 (separated cycling and parking)
2C	Clear preference for Option 2 (separated cycling)
2D	Clear preference for Option 2 (separated cycling
3	Clear preference for Option 2 (separated cycling)
4	Preference split between Option 2 (38%) and 5 (36%)
5	Preference for Option 2 (4 lanes no parking) (52%)
6	Preference for Option 2 (4 lanes no parking) (50%)
7	Preference for Option 2 (exclusive transit one side and separated cycling – Inspiration Lakeview preferred section)

5.3 Credit River Crossing Alternatives

Through Phase 1 of the Study, it was determined that the existing Lakeshore Road crossing of the Credit River will become congested by 2041 and to accommodate future projected travel demand in the Study Area, a new crossing of the Credit River may improve traffic operations and provide a new connection between the QEW and Lakeshore Road to fill a 3 km gap in the east-west road network. Therefore, to address the needs identified in the problem/opportunity statement, in Phase 2 of the Study Credit River Crossing alternatives were identified, assessed and evaluated for the Study Corridor.

This section documents the types of crossings identified, the evaluation of alternatives, and the identification of the preferred solution. The “Do Nothing” alternative was carried forward as an option for all segments as a basis for comparison

5.3.1 Identification of Alternative Crossing Locations

Alternative crossing locations of the Credit River were identified for two types of crossings:

1. Multi-modal crossing – a crossing which accommodates pedestrians, cyclists, transit, and automobiles
2. Active Transportation only crossing – a crossing which only accommodates pedestrians and cyclists

5.3.1.1 MULTI-MODAL CROSSING ALTERNATIVES

Five multi-modal crossing alternatives were identified in addition to the Do Nothing alternative as listed below and shown in **Exhibit 5-56**:

- **Do Nothing (N):** No additional capacity over the Credit River for pedestrians, cyclists, transit users, or automobiles.
- **Streetcar/Express Bus on Existing Bridge (S):** Additional transit capacity over the Credit River by accommodating rapid transit (interim express bus and ultimate streetcar) on existing bridge in mixed traffic. This alternative was included to provide an option with no new crossing but increased people moving capacity.
- **Mineola Road (1):** Extend Mineola Road from west of Stavebank Road to Indian Road. Length: approximately 280 m.
- **Queen Street (2):** Connect Queen Street at Elizabeth Street to Front Street adjacent to the Lakeshore West GO Rail tracks. This would involve constructing a new road through the existing GO Station parking lot and potentially converting Queen Street to a two-way street. Length: approximately 600 m.
- **Park Street (3):** Extend Park Street from Stavebank to Front Street.
- **High Street (4):** Extend High Street from west of Stavebank Road to Front Street.

All multi-modal crossings were assumed to be one lane in each direction with a vehicular capacity ranging between 600 and 800 vehicles per hour per lane (vphpl) depending on the road classification (i.e. a local road versus a collector road). The capacity of the existing Lakeshore Road crossing is 900 vphpl (for an arterial road) with two lanes in each direction.

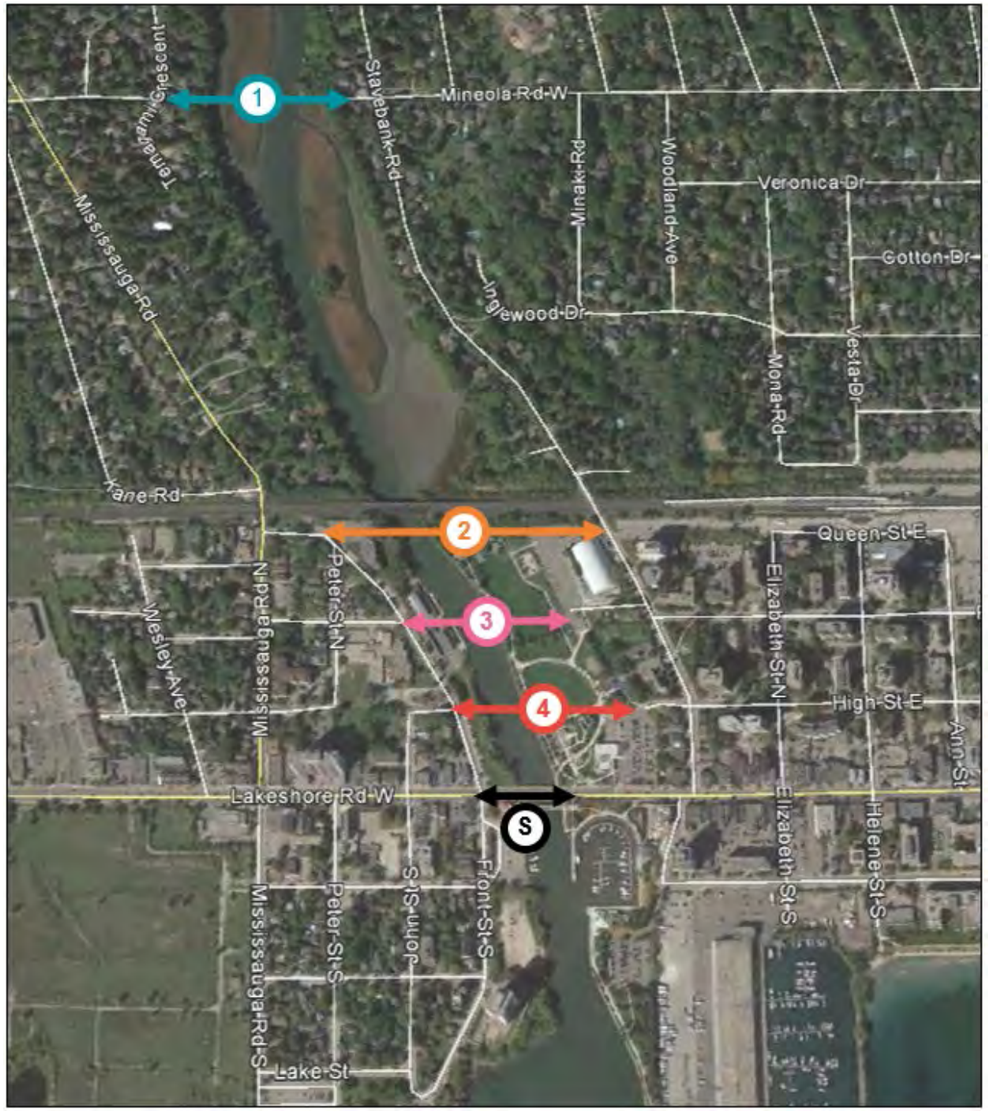

Exhibit 5-56 Location of Multi Modal Crossing Alternatives

5.3.1.2 ACTIVE TRANSPORTATION CROSSING ALTERNATIVES

Six active transportation (AT) only crossings were identified in addition to the Do Nothing alternative as listed below and shown in **Exhibit 5-57**:

- **Do Nothing (N):** No additional capacity over the Credit River for pedestrians or cyclists.
- **Mineola Road (1):** Connect Mineola Road from west of Stavebank Road to Indian Road.
- **Queen Street (2):** Create a connection between Stavebank Road and Front Street adjacent to the Lakeshore West GO Rail tracks in line with Queen Street to facilitate a direct connection to the GO Station. AT bridge to be incorporated into existing trail and transportation network and minimize impacts to natural areas by utilizing already disturbed areas as much as possible.
- **Park Street (3):** Create a connection between Stavebank Road and Front Street. Bridge to be incorporated into existing trail and transportation network and minimize impacts to natural areas by utilizing already disturbed areas as much as possible.
- **High Street (4):** Extend High Street from west of Stavebank Road to Front Street. Bridge to be incorporated into existing trail and transportation network and minimize impacts to natural areas by utilizing already disturbed areas as much as possible.
- **North of Existing Lakeshore Bridge (5):** Construct a new multi-use pathway bridge on the north side of the existing Lakeshore bridge to mirror the existing active transportation crossing on the south side of the bridge.
- **Inspiration Port Credit Bridge (6):** Identified by Inspiration Port Credit as a place-making exercise, place a new active-transportation bridge at an undefined location south of Lakeshore Road. This alternative was included in the analysis for completeness; however, it would not fully address the needs identified previously (i.e. providing an additional crossing north of the existing Lakeshore Road bridge and facilitating more direct access to the GO Station for commuters).

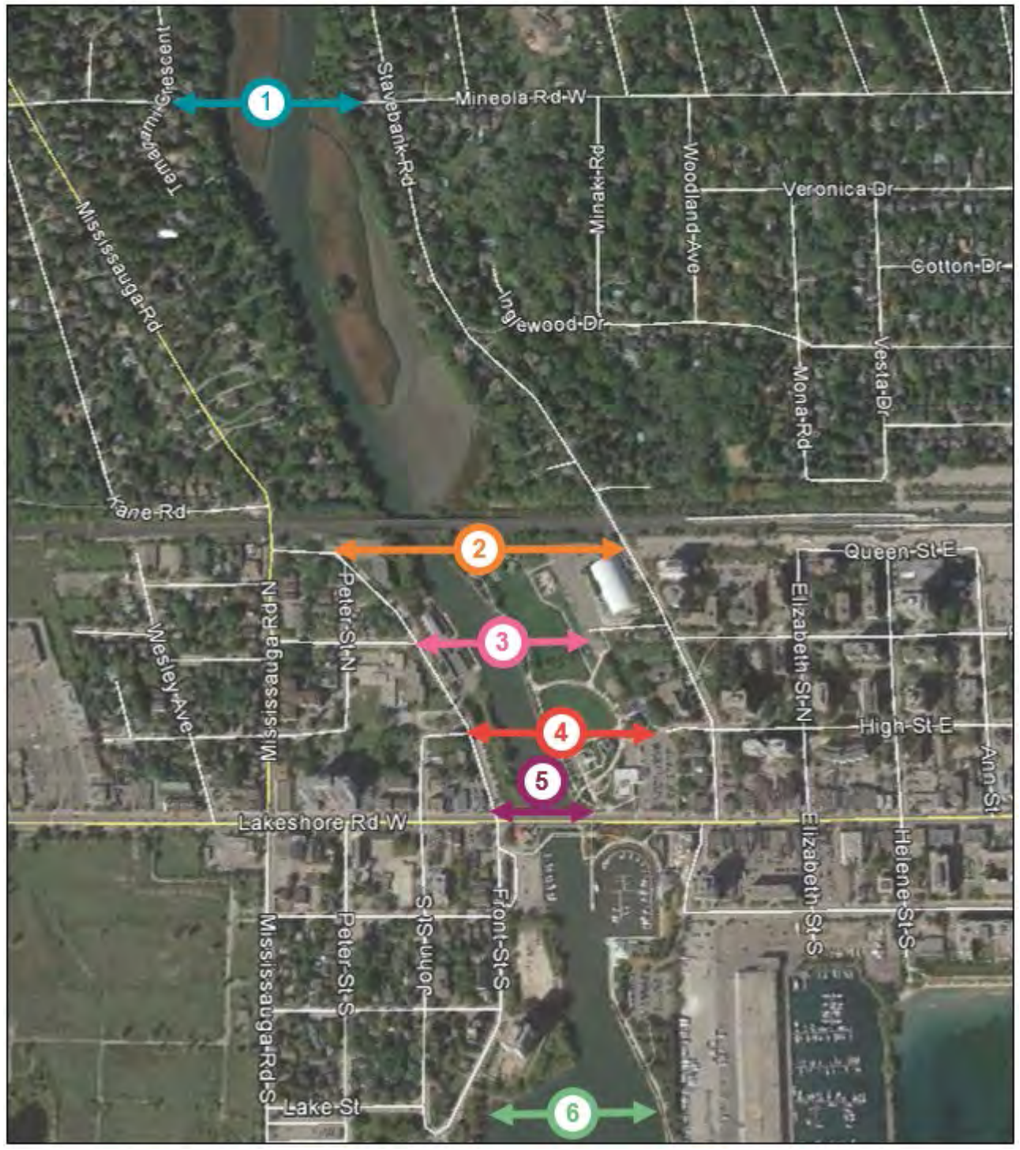

Exhibit 5-57 Location of Active Transportation Crossing Alternatives

5.3.2 Evaluation

The evaluation of alternative crossing locations included the formulation of high level evaluation criteria. The evaluation criteria include transportation considerations as well as impacts to the natural, cultural, and social environments. Criteria to be used in the evaluation of the alternative solutions have been categorized into three groups:

- Serving People
- Strengthening Places
- Supporting Prosperity

The alternative crossing locations identified were evaluated based on the criteria as shown in **Table 5-1** (same as transit network solutions) as presented in **Section 5.1.9**.

The alternative crossing locations identified have been evaluated at a high-level using the established criteria on a scale of least to most preferred. Multi-modal alternative crossing locations are presented in **Table 5-29** and active-transportation only alternative crossing locations are presented in **Table 5-30.**

Table 5-29 High-level Evaluation of Alternative Multi-Modal Crossing Locations

Criteria		N. BAU – Do Nothing	S. Streetcar/Express Bus on Existing Bridge	1. Mineola Road	2. Queen Street	3. Park Street	4. High Street
SERVING PEOPLE	**Choice**	• Multi-modal network connectivity remains the same. Supports existing transit connections only. • No change in pedestrian accessibility and connectivity. • Limited existing cycling accessibility and connectivity along existing Lakeshore crossing; existing cycling facility on parallel structure (Waterfront Trail). •	• Improves multi-modal network connectivity. • Supports improved cycling and pedestrian accessibility and connectivity. • No opportunity for additional east-west connectivity beyond Lakeshore Road	• Minimal improvements to multi-modal network connectivity. • Supports cycling and pedestrian accessibility and connectivity. • Opportunity to provide additional east-west connectivity between railway and QEW.	• Improves multi-modal network connectivity. • Promotes a more direct access to Port Credit GO Station for pedestrians and cyclists • Limited opportunity for improved connectivity south of railway.	• Opportunity to improve multi-modal network connectivity. • Supports cycling and pedestrian accessibility and connectivity. • Limited opportunity for improved connectivity south of railway.	• Opportunity to improve multi-modal network connectivity. • Supports pedestrian and cycling accessibility and connectivity. • Opportunity for High Street to be continuous between Hurontario Street and Pine Avenue with future redevelopment.
	Experience	• No change to multi-modal level of service. • Continue to experience peak hour congestion. • Safety operations remain the same for all corridor users.	• Maintains BAU level of service • Increases number of people moved per hour across bridge (i.e. higher capacity with streetcar) compared to Do Nothing alternative. • Increased safety for all corridor users due to reduced potential conflicts between modes. •	• Limited capacity to ease congestion. • Increased safety for all corridor users due to reduced potential conflicts between modes. • 14% reduction in PM peak hour congestion on existing Lakeshore Bridge. • Reduced traffic on Mississauga Rd, Hurontario St, and local roads west of the Credit River. • Increased traffic on Stavebank Rd., Mineola Rd., Atwater Av., and Cawthra Rd.	• Limited capacity to ease congestion. • Increased safety for all corridor users due to reduced potential conflicts between modes. • 17% reduction in PM peak hour congestion on existing Lakeshore Bridge. • Maintains existing auto level of service (although not satisfactory) • Increased traffic on Mississauga Rd., Hurontario St., and Queen St. • All left turn movements are expected to experience delays over one (1) minute at the intersection of Mississauga Road and Lakeshore Road as compared to BAU as a result of the new crossing. • Reduced traffic on local roads west of the Credit River.	• Limited capacity to ease congestion. • Increased safety for all corridor users due to reduced potential conflicts between modes. • 17% reduction in PM peak hour congestion on existing Lakeshore Bridge. • Maintains existing auto level of service (although not satisfactory) • Increased traffic on Mississauga Rd., Hurontario St., and Park St. • All left turn movements are expected to experience delays over one (1) minute at the intersection of Mississauga Road and Lakeshore Road as compared to BAU as a result of the new crossing. • Reduced traffic on local roads west of the Credit River.	• Limited capacity to ease congestion. • Increased safety for all corridor users due to reduced potential conflicts between modes. • 17% reduction in PM peak hour congestion on existing Lakeshore Bridge. • Maintains existing auto level of service (although not satisfactory) • Increased traffic on Mississauga Rd., Hurontario St., and High St. • All left turn movements are expected to experience delays over one (1) minute at the intersection of Mississauga Road and Lakeshore Road as compared to BAU as a result of the new crossing. • Reduced traffic on local roads west of the Credit River.
	Social Equity	• Service to areas of social need remains the same. • Equity in mobility by gender, income, family status, and age class remains the same	• No difference among alternatives	• No difference among alternatives	• No difference among alternatives	• No difference among alternatives	• No difference among alternatives

Criteria		N. BAU – Do Nothing	S. Streetcar/Express Bus on Existing Bridge	1. Mineola Road	2. Queen Street	3. Park Street	4. High Street
	Evaluation	○	●	◑	◕	◑	◑
STRENGTHENING PLACES	**Public Health and the Environment**	• Potential for poor air quality due to increased congestion. • No impact to cultural heritage/archaeological features • No impacts on the natural environment • No change in ability for Emergency vehicles to cross Credit River	• Greatest opportunity to minimize/ reduce negative air quality impacts due to potential increase of transit use as the preferred mode of travel along Lakeshore Rd instead of single-occupant vehicles • Limited potential disturbance to cultural heritage/archaeological features • Limited potential impacts on the natural environment as the streetcar would be added to the existing bridge; structural modifications may be required along the existing crossing location • Streetcars may create potential delays for Emergency vehicles	• Opportunities to minimize/ reduce negative impacts of congestion on air quality by adding an additional crossing accessible for all modes • Impacts to Credit River Marshes Wetland Complex, ANSI (Life Science), and Credit River CVC Regulated lands. • Impacts to Credit River Cultural Heritage Landscape. • Potential impact to two archeological sites. • Greater potential impacts to watercourse and aquatic habitat with new crossing of the Credit River • Provides additional route for Emergency vehicles to cross Credit River	• Opportunities to minimize/ reduce negative impacts of congestion on air quality by adding an additional crossing accessible for all modes • Impacts to Credit River (CVC Regulated) lands. • Impacts to Credit River Cultural Heritage Landscape. • Low to no archeological impact. • Greater potential impacts to watercourse and aquatic habitat with new crossing of the Credit River • Provides additional route for Emergency vehicles to cross Credit River	• Opportunities to minimize/ reduce negative impacts of congestion on air quality by adding an additional crossing accessible for all modes • Impacts to Credit River (CVC Regulated) lands. • Impacts to Credit River Cultural Heritage Landscape, Port Credit Arena, Port Credit Memorial Park, and Canoe Club. • Low to no archeological impact. • Greater potential impacts to watercourse and aquatic habitat with new crossing of the Credit River • Provides additional route for Emergency vehicles to cross Credit River	• Opportunities to minimize/ reduce negative impacts of congestion on air quality by adding an additional crossing accessible for all modes • Impacts to Credit River (CVC Regulated) lands • Impacts to Credit River Cultural Heritage Landscape, and Port Credit Memorial Park • Low to no archeological impact • Greater potential impacts to watercourse and aquatic habitat with new crossing of the Credit River • Provides additional route for Emergency vehicles to cross Credit River.
	Healthy Neighbourhoods	• No impacts on existing stable neighbourhoods. • No changes to levels of noise and vibration. • No change in access to community services and facilities. • No temporary or permanent property impacts.	• No impact to existing stable neighbourhoods • Increased noise levels due to added transit service • Provides transit access to public spaces and schools including Port Credit Library, Riverside Public School, and Port Credit Memorial Park. • No temporary or permanent property impacts •	• Impact to existing stable neighbourhoods (Mineola Road and Indian Road) • Noise and vibration impacts due to construction of new crossing. Increased traffic on local roads may result in increased noise. • Incompatible with natural areas. • Improves access to schools along Indian Road and Mineola Road. • Potential impact to pumping station on Indian Road. • Results in permanent property impacts	• Impact to existing stable neighbourhoods, • Noise and vibration impacts due to construction of new crossing. • Impacts to Port Credit Arena parking lot (City owned) and Royal Canadian Legion Branch 82 parking lot and potentially building. • Some impact to natural areas. • Lands potentially protected for road allowance. Potential for property requirements.	• Impact to existing stable neighbourhoods. • Noise and vibration impacts due to construction of new crossing. • Impact to Port Credit Memorial Park (City owned), by splitting the Park in two. • Impact to community programming in Port Credit Memorial Park, tourist destinations, Mississauga Canoe Club, and Don Rowing Club of Mississauga. • Results in permanent property impacts.	• Minimal impact to existing stable neighbourhoods. • Noise and vibration impacts due to construction of new crossing. • Impact to Port Credit Memorial Park (City owned), by splitting the Park in two. • Impact to community programming in Port Credit Memorial Park, tourist destination, and gathering spaces. • Disrupts existing spaces for place-making. • Results in permanent property impacts.

Criteria		N. BAU – Do Nothing	S. Streetcar/Express Bus on Existing Bridge	1. Mineola Road	2. Queen Street	3. Park Street	4. High Street
SUPPORTING PROSPERITY	**Shaping the City**	• Not sustainable to support future population. • No change in opportunities for place-making. • No existing barriers to connectivity (the bridge is already established) • Incompatible with City Planning Policy.	• Existing bridge over capacity by 2041 – not sustainable to support future population. • Encourages TOD in surrounding area. • No change in opportunities for place-making • No existing barriers to connectivity (the bridge is already established) • Compatible with City Planning Policy.	• New bridge at capacity by 2041 – not sustainable to support future population. • Not an ideal location for place-making. • Existing residential homes pose a physical barrier to connectivity. • Compatible with City Planning Policy.	• New bridge at capacity by 2041 – not sustainable to support future population. • Opportunity to create spaces for place-making. • Canadian Legion Branch 82 Building may pose a physical barrier to connectivity. • Compatible with City Planning Policy.	• New bridge at capacity by 2041 – not sustainable to support future population. • Disrupts existing spaces for place-making. • Mississauga Canoe Club and The Don Rowing Club of Mississauga poses a physical barrier to connectivity. • Incompatible with City Planning Policy.	• New bridge at capacity in 2041 – not sustainable to support future population. • Disrupts existing spaces for place-making. • Minimal physical barriers to connectivity. • Incompatible with City Planning Policy.
	Evaluation						
	Affordability	• No construction costs • Maintenance costs associated with existing Lakeshore Rd Bridge, especially since there are no additional crossings to distribute east-west trips.	• Low engineering complexity and low potential construction cost due to structural modifications to the existing bridge if required (will be implemented on existing Lakeshore Rd bridge) • High initial cost for construction of streetcar tracks • Feasible to implement – line length, maintenance and storage requirements, vehicle compatibility, operating agreements	• High engineering complexity and high capital cost due to large bridge span required to cross Credit River • High maintenance cost due to larger bridge span.	• Potential grade separation may be required for this option. • Moderate capital cost due to short span bridge •	• Low engineering complexity and moderate capital cost due to shorter bridge span required to cross Credit River. • Low maintenance cost due to shorter bridge span.	• Low engineering complexity and moderate capital cost due to shorter bridge span required to cross Credit River. • Low maintenance cost due to shorter bridge span.
	Support Growth	• No change to existing land uses. • No change in service to areas of existing and future employment and development. • No change in goods movement. • No impacts to businesses due to construction.	• Low/minimal impact to existing land uses. • Opportunity to serve areas of existing and future employment and development. • No change in movement of goods. • Minimal impacts to businesses due to construction and operation of the project. • Supports local businesses by providing more opportunities for transit users. •	• Impacts existing land uses. • Limited ability to serve areas of existing and future employment and development. • Inefficient movement of goods due to distance from main roads and nature of bridge through residential areas. • Construction not anticipated to significantly impact local businesses. • Takes vehicular, pedestrian, and cyclist traffic away from local businesses.	• Impacts existing land uses; however, provides greater connectivity to other land uses. • Opportunity to serve areas of existing and future employment and development. • Opportunity for efficient movement of goods. • Construction will impact local businesses. • Will bring higher vehicular, pedestrian, and cyclist traffic to locals businesses.	• Impacts existing land uses. • Opportunity to serves areas of existing and future employment and development. • Inefficient movement of goods due to nature of bridge connecting to local roads. • Construction will impact local businesses. • Will bring higher vehicular, pedestrian, and cyclist traffic to locals businesses.	• Impacts to existing and future park lands • Opportunity to serve areas of existing and future employment and development. • Opportunity for efficient movement of goods. • Construction not anticipated to significantly impact local businesses • Will bring higher vehicular, pedestrian, and cyclist traffic to locals businesses.

Criteria	N. BAU – Do Nothing	S. Streetcar/Express Bus on Existing Bridge	1. Mineola Road	2. Queen Street	3. Park Street	4. High Street
Resiliency	• No assigned climate change risk mitigation strategy. • No change in ability to accommodate unexpected disruption.	• Additional transit connections have the potential to help manage climate change risks. • Does not provide an alternative to accommodate unexpected disruptions.	• Additional active transportation facilities and transit connections have the potential to manage climate change risks. • Additional road capacity (and pavement area) increases potential associated risks with climate change. • Creates redundancy in the road network (i.e. provides alternative to Lakeshore Road bridge)	• Additional active transportation facilities and transit connections have the potential to manage climate change risks. • Additional road capacity (and pavement area) increases potential associated risks with climate change. • Creates redundancy in the road network (i.e. provides alternative to Lakeshore Road bridge)	• Additional active transportation facilities and transit connections have the potential to manage climate change risks. • Additional road capacity (and pavement area) increases potential associated risks with climate change. • Creates redundancy in the road network (i.e. provides alternative to Lakeshore Road bridge)	• Additional active transportation facilities and transit connections have the potential to manage climate change risks. • Additional road capacity (and pavement area) increases potential associated risks with climate change. • Creates redundancy in the road network (i.e. provides alternative to Lakeshore Road bridge)
Evaluation	◔	◕	◔	◑	◑	●
OVERALL EVALUATION	○	●	◔	◕	◑	◑
RECOMMENDATIONS	• **NOT RECOMMENDED** This alternative is not sustainable to support future population. Peak hour congestion issues are not addressed, and increasec congestion poses a threat to air quality.	**RECOMMENDED** Based on the high level evaluation, introduction of a streetcar/express bus on the existing Lakeshore Rd bridge is the most preferred alternative due to the limited impacts on cultural heritage, archaeology, and the natural environment. Introducing higher order transit on the existing bridge eliminates the cost of constructing a new crossing, while also promoting network connectivity for all modes and transit use.	• **NOT RECOMMENDED** • This alternative presents minimal improvement to multi-modal network connectivity. Permanent property impacts to residential areas would also result from the implementation of this alternative.	• **Carry Forward to be considered at a later time as part of a separate feasibility study.** • This alternative would impact properties including the Port Credit Arena parking lot and Royal Canadian Legion Branch 82 building.	**NOT RECOMMENDED** This alternative is incompatible with City Planning Policy and potentially impacts community programming in Port Credit Memorial Park, tourist destinations, Mississauga Canoe Club, and Don Rowing Club of Mississauga.	**NOT RECOMMENDED** This alternative is not compatible with City Planning Policy and disrupts existing spaces for place making.

Table 5-30 High-Level Evaluation of Alternative Active Transportation Only Crossing Locations

	Criteria	N. BAU – Do Nothing	1. Mineola Road	2. Queen Street	3. Park Street	4. High Street	5. North of Existing Lakeshore Bridge	6. Inspiration Port Credit Bridge
SERVING PEOPLE	**Choice**	• Pedestrian and cyclist network connectivity remains the same.	• Limited pedestrian and cyclist connections to points of interest. Additional connections to residential areas. • Identified in the Cycling Master Plan 2010 as a potential crossing location.	• Promotes a more direct access to Port Credit GO Station for pedestrians and cyclists • Improves east-west pedestrian and cyclist connectivity.	• Promotes more direct access for pedestrians and cyclists to community facilities including the Port Credit Arena, Don Rowing Club, and Mississauga Canoe Club.	• Promotes more direct access for pedestrians and cyclists to community facilities including Port Credit Memorial Park and Port Credit Library. • Opportunity for High Street to be continuous between Hurontario Street and Pine Avenue with future redevelopment.	• Limited improvement to walking and cycling connections as the existing bridge already supports active transportation.	• Provides more direct access for pedestrians and cyclists to community facilities including JJ Plaus Park, JC Saddington Park, and St. Lawrence Park. • Limited opportunity for improved connectivity north of Lakeshore Road.
	Experience	• Vehicles continue to experience peak hour congestion. • No change to pedestrian and cyclist level of service. • Safety remains the same for pedestrians and cyclists.	• Vehicles continue to experience peak hour congestion. • No transit improvements. • Improved facilities for active transportation and potential for increased safety with separation from vehicles	• Vehicles continue to experience peak hour congestion. • No transit improvements. • Improved facilities for active transportation and potential for increased safety with separation from vehicles	• Vehicles continue to experience peak hour congestion. • No transit improvements. • Improved facilities for active transportation and potential for increased safety with separation from vehicles	• Vehicles continue to experience peak hour congestion. • No transit improvements. • Improved facilities for active transportation and potential for increased safety with separation from vehicles	• Vehicles continue to experience peak hour congestion. • No transit improvements. • Improved facilities for active transportation and potential for increased safety with separation from vehicles	• Vehicles continue to experience peak hour congestion. • No transit improvements. • Improved facilities for active transportation and potential for increased safety with separation from vehicles
	Social Equity	• Service to areas of social need remains the same. • Equity in mobility by gender, income, family status, and age class remains the same	• No difference among alternatives	• No difference among alternatives	• No difference among alternatives	• No difference among alternatives	• No difference among alternatives	• No difference among alternatives
	Evaluation	○	◕	●	◑	◕	◔	◔

Criteria		N. BAU – Do Nothing	1. Mineola Road	2. Queen Street	3. Park Street	4. High Street	5. North of Existing Lakeshore Bridge	6. Inspiration Port Credit Bridge
STRENGTHENING PLACES	**Public Health and the Environment**	• Potential for poor air quality due to increased congestion. • No impact to cultural/heritage/archaeological features. • No impacts on the natural environment	• Opportunity for slight improvement to air quality due to potential increase in walking and cycling. No significant change to traffic congestion • Impacts to Credit River Marshes Wetland Complex, ANSI (Life Science), and Credit River CVC Regulated lands. • Impacts to Credit River Cultural Heritage Landscape. • Potential impact on two archeological sites. • Potential impacts to aquatic habitat due to construction of the crossing	• Opportunity for slight improvement to air quality due to potential increase in walking and cycling. No significant change to traffic congestion • Impacts to Credit River (CVC Regulated) lands. • Impacts to Credit River Cultural Heritage Landscape. • Low to no archeological impact. • Potential impacts to aquatic habitat due to construction of the crossing	• Opportunity for slight improvement to air quality due to potential increase in walking and cycling. No significant change to traffic congestion • Impacts to Credit River (CVC Regulated) lands. • Impacts to Credit River Cultural Heritage Landscape, Port Credit Arena, Port Credit Memorial Park, and Canoe Club. • Low to no archeological impact. • Potential impacts to aquatic habitat due to construction of the crossing	• Opportunity for slight improvement to air quality due to potential increase in walking and cycling. No significant change to traffic congestion • Impacts to Credit River (CVC Regulated) lands • Impacts to Credit River Cultural Heritage Landscape, and Port Credit Memorial Park • Low to no archeological impact • Potential impacts to aquatic habitat due to construction of the crossing	• Opportunity for slight improvement to air quality due to potential increase in walking and cycling. No significant change to traffic congestion • Impacts to Credit River (CVC Regulated) lands. • Impacts to Credit River Cultural Heritage Landscape, and Port Credit Lighthouse. However, pump house at the base of the lighthouse is planned to be decommissioned which may open up an opportunity for mitigating/minimizing impacts at this location. • Potential impact on one archeological site • Potential impacts to aquatic habitat due to construction of the crossing	• Opportunity for slight improvement to air quality due to potential increase in walking and cycling. No significant change to traffic congestion • Impacts to Credit River (CVC Regulated) lands. • Impacts to Credit River Cultural Heritage Landscape. • Potential impact on one archeological site • Potential impacts to aquatic habitat due to construction of the crossing

Criteria		N. BAU – Do Nothing	1. Mineola Road	2. Queen Street	3. Park Street	4. High Street	5. North of Existing Lakeshore Bridge	6. Inspiration Port Credit Bridge
	Healthy Neighbourhoods	• No impacts on existing stable neighbourhoods. • No temporary or permanent property impacts. • No change in access to community services and facilities.	• Improves access to schools along Indian Road and Mineola Road. • Minimal impacts to surrounding properties.	• Improves access to community facilities such as Port Credit Arena and Royal Canadian Legion Branch 82 Building. • Minimal impact to parks and public spaces with some impact to natural areas. • Improves access to Port Credit GO Station for all users.	• Improves access to community facilities such as Mississauga Canoe Club, and The Don Rowing Club of Mississauga. • Minimal impact to Port Credit Memorial Park (City owned) but overall improvement of access to parks and public spaces. • Minimal impact to surrounding properties.	• Minimal impact to surrounding properties. • Impact to Port Credit Memorial Park (City owned) • Improves access to community facilities such as Port Credit Memorial Park, tourist destinations, and gathering spaces. • Minimal impact to surrounding properties.	• Minimal impact to private property on north and south side of Lakeshore Road between Stavebank Road and Mississauga Road.	• Minimal impact to surrounding properties.
	Shaping the City	• No change in service to areas of existing and future population. • No strides towards TOD. • No change in service to areas of existing and future population. • No change in opportunities for place-making. • Incompatible with City Planning Policy.	• Increased pedestrian and cyclist service to areas of existing and future population. • Encourages TOD in surrounding area. • Not an ideal location for place-making. • Existing residential homes pose a physical barrier to connectivity. • Compatible with City Planning Policy.	• Increased pedestrian and cyclist service to areas of existing and future population. • Encourages TOD in surrounding area. • Opportunity to create spaces for place-making. • Canadian Legion Branch 82 Building may pose a physical barrier to connectivity. • Compatible with City Planning Policy.	• Increased pedestrian and cyclist service to areas of existing and future population. • Encourages TOD in surrounding area. • Opportunity to create improved place-making spaces. • Compatible with City Planning Policy.	• Increased pedestrian and cyclist service to areas of existing and future population. • Encourages TOD in surrounding area. • Opportunity to create improved place-making spaces. • Compatible with City Planning Policy.	• Increased pedestrian and cyclist service to areas of existing and future population, however currently serviced with Waterfront Trail connection • Encourages TOD in surrounding area. • Opportunity to improve place-making spaces. • Compatible with City Planning Policy.	• Increased pedestrian and cyclist service to areas of existing and future population. • Encourages TOD in surounding area. • Opportunity to improve place-making spaces. • Compatible with City Planning Policy.
	Evaluation							

Criteria		N. BAU – Do Nothing	1. Mineola Road	2. Queen Street	3. Park Street	4. High Street	5. North of Existing Lakeshore Bridge	6. Inspiration Port Credit Bridge
SUPPORTING PROSPERITY	**Affordability**	• No construction costs	• High engineering complexity and capital cost due to large bridge span required to cross Credit River. • High maintenance cost due to larger bridge span.	• Potential for grade separation at Stavebank may impact feasibility of Queen St. Bridge due to grade difference between new crossing and proposed Stavebank Road grade separation. • Potential for lower capital cost due to shorter span of bridge required to cross Credit River	• Low engineering complexity and capital cost due to shorter bridge span required to cross Credit River. • Lower maintenance cost due to shorter bridge span.	• Low engineering complexity and capital cost due to shorter bridge span required to cross Credit River. • Lower maintenance cost due to shorter bridge span.	• Low engineering complexity and capital cost due to shorter bridge span required to cross Credit River. • Lower maintenance cost due to shorter bridge span.	• High engineering complexity and capital cost due to large bridge span required to cross Credit River. • High maintenance cost due to larger bridge span.
	Support Growth	• No change to existing land uses. • No change in service to areas of existing and future employment and development. • No impacts to businesses due to construction.	• Impacts existing land uses. • Does not serve areas of existing and future employment and development.	• Impacts existing land uses; however, provides greater connectivity to other land uses. • Opportunity to serves areas of existing and future employment and development. • Construction will impact local businesses. • Opportunity to bring higher pedestrian and cyclist traffic to locals businesses.	• Impacts existing land uses. • Opportunity to serve areas of existing and future employment and development. • Construction will impact local businesses. • Opportunity to bring higher pedestrian and cyclist traffic to locals businesses.	• Opportunity for minimal impacts to existing land uses. • Opportunity to serve areas of existing and future employment and development. • Opportunity to bring higher pedestrian and cyclist traffic to locals businesses.	• Opportunity for minimal impacts to existing land uses. • Opportunity to serve areas of existing and future employment and development. • Construction will impact local businesses. • Opportunity to bring higher pedestrian and cyclist traffic to local businesses.	• Opportunity for minimal impacts to existing land uses. • Opportunity to serve areas of existing and future employment and development. • Opportunity for minimal construction impact on local businesses.
	Resiliency	• No assigned climate change risk mitigation strategy. • No change in ability to accommodate unexpected disruption.	• Additional active transportation facilities have the potential to manage climate change risks.	• Additional active transportation facilities have the potential to manage climate change risks.	• Additional active transportation facilities have the potential to manage climate change risks.	• Additional active transportation facilities have the potential to manage climate change risks.	• Additional active transportation facilities have the potential to manage climate change risks.	• Additional active transportation facilities have the potential to manage climate change risks.

Criteria	N. BAU – Do Nothing	1. Mineola Road	2. Queen Street	3. Park Street	4. High Street	5. North of Existing Lakeshore Bridge	6. Inspiration Port Credit Bridge
Evaluation							
OVERALL EVALUATION							
RECOMMENDATIONS	**NOT RECOMMENDED** This alternative presents no improvement to the pedestrian and cyclist level of service.	**NOT RECOMMENDED** There are limited connections to places of interest at this location. Additionally, this is not an ideal location for place making.	**RECOMMENDED** Based on the high level evaluation, the implementation of a non-vehicular crossing extending from Queen St is the most preferred alternative due to the opportunities for connectivity, including access to Port Credit GO Station.	**NOT RECOMMENDED** This alternative poses impacts to existing land uses.	**NOT RECOMMENDED** This alternative potentially impacts Port Credit Memorial Park.	**NOT RECOMMENDED** This alternative results in limited improvement to pedestrian and cyclist connections.	**NOT RECOMMENDED** This alternative provides limited opportunity for connections south of Lakeshore Road.

5.3.3 Identification of Preferred Crossing Locations

Five multi-modal crossing alternatives were identified in addition to the Do Nothing alternative. A high level evaluation of the crossing locations was carried out and opportunities to improve network connectivity and impacts on property, the natural environment, cultural heritage, archaeology, and the social environment were considered. From the high level assessment, introducing a streetcar on the existing Lakeshore Road bridge (Alternative S) was deemed to be the most preferred multi-modal alternative as it had the fewest impacts overall while addressing many of the needs for the corridor. Although not recommended as the preferred alternative in this report, the Queen Street Extension (Option 2) could be carried forward for future study at a later time as development occurs east and west of the Credit River. The high level assessment of AT only crossings resulted in the identification of a new crossing at Queen Street as the most preferred as this option is the most suited to meet the transportation objectives identified for this assignment. Summaries of the evaluations for the alternative multi-modal and active transportation crossing locations are provided in **Table 5-31** and **Table 5-32**.

Table 5-31 Summary Evaluation of Alternative Multi-Modal Crossing Locations

Criteria	N	S	1	2	3	4
	BAU - Do Nothing	Streetcar on Existing Bridge	Mineola Road Extension	Queen Street Extension	Park Street Extension	High Street Extension
SERVING PEOPLE						
STRENGTHENING PLACES						
SUPPORTING PROSPERITY						
OVERALL EVALUATION						

Table 5-32 Summary of Evaluation of Alternative Active Transportation Crossing Locations

Criteria	N	1	2	3	4	5	6
	BAU - Do Nothing	Mineola Road Extension	Queen Street Extension	Park Street Extension	High Street Extension	New Bridge on north side of Existing Lakeshore Rd Bridge	Inspiration Port Credit Bridge
SERVING PEOPLE							
STRENGTHENING PLACES							
SUPPORTING PROSPERITY							
OVERALL EVALUATION							

5.3.4 Public and Stakeholder Input

There was strong public interest surrounding the Credit River crossing. Public input was sought throughout the Study and helped confirm the recommendations.

At Public Open House (POH) 1, the public provided input on the need for a new Credit River crossing in the Port Credit area. Feedback indicated that there was interest in considering an additional crossing; however, the type and location were varied.

At POH2, the Project Team presented the two types of crossings (multi-modal and active transportation only) as well as the locations for each. Draft evaluation criteria were presented and an assessment of the benefits and impacts for each option were given. The public was able to comment on the criteria and give their preference for a crossing type and location.

The following evaluation categories were presented to the public at POH2:

- Transportation service;
- Property requirements;
- Cultural heritage and archaeology;
- Socio-economic environment; and,
- Natural environment.

Following POH2, the Project Team revised the categorization of the draft evaluation criteria presented to the public in order to align them with the categories of draft evaluation criteria being used to evaluate the transit and right-of-way alternatives (i.e. serving people, and strengthening places, supporting prosperity). It should be noted that while the categorization is different the criteria remained unchanged

At POH3, the evaluation of the alternative crossings and the recommended preferred alternatives were presented to the public. The public was able to comment on the recommendations and following POH3, the recommendations were confirmed.

Frequently noted general themes were compiled and are listed below in **Table 5-33**. Additional comments received are documented in **Appendix A.4**.

Table 5-33 General Themes and Key Messages Heard (Credit River Crossing Alternatives)

General Themes Frequently Noted	Key Messages Heard
Traffic congestion is worsening and operational improvements and new connections are needed. For example, ban left turns at Stavebank Road, eliminate jog at Clarkson Road, additional crossing(s) of the Credit River, and signal timing coordination	• There should be no left turns on Lakeshore unless the left turn lane is available at all times. • Ban left hand turns at Stavebank. • Eliminate the jog at Clarkson Road. • Layby parking for buses is essential as it slows other traffic and backs it up. • Coordinate traffic lights for smoother movement. • Develop a plan for an additional crossing of the Credit River to relieve congestion. • Implement operational improvement including signal timing. • Along some parts of the corridor, drivers speed up between congested areas. Plan for traffic calming measures in areas along the Lakeshore Corridor where speeding is dangerous e.g. reducing speed limit, adding more speed information devices and zero tolerance enforcement.
Network approach is needed to address traffic congestion along the Corridor. New connections across the Credit River north of the study area should be considered as well as improvements to the QEW	• Any improvements to QEW crossing of Credit River will have major improvement in reducing overflow traffic southbound at Mississauga Road and Lakeshore, when QEW east is blocked. Currently traffic issues require motorists to drop down to Lakeshore to cross the Credit River. Keep this traffic out of Port Credit and provide a better crossing. • Desire for improved pedestrian connection to and along the Waterfront and across the Credit River. • Replace the Lakeshore Bridge with a single, pedestrian and cycling and transit bridge, plus the rail and river mouth pedestrian crossings.

6 Corridor Design

This section documents the preferred conceptual design for the Study Corridor.

6.1 Project Description

The preferred transit alternative includes an interim solution Alternative 2B – Lakeshore Express Bus/BRT which plans to build ridership for the ultimate preferred solution Alternative 3B – Waterfront LRT Extension (streetcar configuration). The interim solution has a relatively lower construction complexity and is planned to service the corridor's transportation needs to 2041. The ultimate solution is required to address transportation needs beyond the 2041 horizon year.

The conceptual corridor design was prepared to address the interim solution Alternative 2B – Lakeshore Express Bus/BRT for the Study Corridor. It addresses the multi-modal vision while accommodating long term transportation needs.

The key components that informed the conceptual corridor design are:

- Reconfiguration / re-allocation of existing vehicular travel way to promote and prioritize multi-modal travel including goods movement;
- Provision of continuous, dedicated and separated facilities to support pedestrians and cyclists in the form of sidewalks and one-directional cycling facilities in each boulevard;
- Additional amenities and facilities to support local curbside transit and express transit service;
- Dedicated median transitway and stations to support future higher order transit in Segment 7 (Lakeview Employment Area); and
- Lay-by parking (Segments 2A, 2B, 4, 5A and 5C)
- Streetscaping and landscaping opportunities.

The conceptual design roll plan drawings are provided in **Appendix G**. The following sections detail the conceptual corridor design.

6.2 Design Criteria

The design criteria for the Royal Windsor Drive / Lakeshore Road study corridor is provided in **Table 6-1**.

Table 6-1: Design Criteria

Design Parameter	Design Standards	Proposed Standards	Source (TAC, MTO GDSM)
Design Speed		60km/h	
Posted Speed		50km/h	
Designated Official Plan R.O.W width	35m (Segments 1, 2A, 2B, 2C, 2D, 3) 26m (Segments 4, 5A, 5B, 5C) 30m (Segment 6) 44.5m (Segment 7)	35m (Segments 1, 2A, 2B, 2C, 2D, 3) 26m (Segments 4, 5A, 5B, 5C) 30m (Segment 6) 44.5m (Segment 7)	City of Mississauga Official Plan 2018
Design Vehicle	WB-20	WB-20 MSU	TAC Chapter 2. Section 2.4.5
Min. Stopping Sight Distance (m)	85m	85m	TAC Chapter 2. Table 2.5.2
Minimum Radius (m)	1290m (normal crown) 220m (reverse crown) 130m (4% Super Elevation)	The alignment accommodates a radius larger than 1700m (normal crown). Only exception is the transition between Segments 6 and 7, with a minimum radius of 600m (reverse crown)	TAC Chapter 3. Table 3.2.4
Median Width	1.5m (min)	1.5m (min)	TAC Chapter 9. Section 9.15.9.10
Lane Widths (m)	Curb Lane: 3 -3.7m Through Lane: 3-3.7m Continuous Centre Turn Lane:3.5m (min) Auxiliary Turn Lane: 3.25m min Rapidway Lane: 3.5 - 3.6m	Curb Lane: 3.50m Through Lane: • 3.00m (Segments 4 and 5) • 3.35m (Segments 1,2,3,6,7) Continuous Centre Turn Lane: 3.5m Auxiliary Turn Lane: 3.3m Rapidway Lane: 3.50m	TAC Chapter 4. Table 4.2.3 TAC Chapter 4. Section 4.3.3.5 TAC Chapter 8. Section 8.6.2
Parking Lane Width (m)	2.4m	2.4m (Segments 4, 5A and 5C) 2.6m (Segments 2B,2C)	TAC Chapter 4. Section 4.3.2.4
Cycling Facility Off-Street (m)	2.0m (1.8m min)	1.5m (Segments 4, 5A and 5C) 2.0m (Segments 1,2,3,5B, 6,7)	OTM Book 18. Table 4.7
Minimum Boulevard Width (m)	2 -3 m (1.5m min)	Varies	TAC Chapter 4. Figure 4.6.1
Min. Tangent Length (m)	45m from centreline for Intersection Approaches	Varies	Mississauga Standard No. 2211.010
Auxiliary Lane Length (m)	80m minimum (right/left turn taper) 80m minimum (right/left turn parallel) 15:1 – 36:1 taper ratio Parallel length based on number of vehicles approaching the intersection (15m min)	45m minimum (right/left turn) measured from stop bar 15:1 Minimum Taper Rate 15m minimum storage 30m deceleration length	Mississauga Standard 2211.210 TAC Chapter 9. Table 9.17.1 TAC Chapter 9. Section 9.17.4.3

Design Parameter	Design Standards	Proposed Standards	Source (TAC, MTO GDSM)
Curb radii	8m for residential-residential intersections 12 m for residential/collector intersections 15m for arterial/arterial intersections	Use vehicle turning path according to intersection type. Intersection Type Design Vehicle Trucks Allowed WB-20 No trucks allowed MSU Bus Route I-BUS 5.5m (min)	Mississauga Standard No. 2211.160, 2211.170, 2211.200
Intersection Approach Angle	70-90 degrees 70-110 degrees	As per existing	Mississauga Standard 2211.010 TAC Chapter 9. Section 9.7.2

Design Standard References:

- City of Mississauga Standards (http://www.mississauga.ca/portal/business/roadways accessed 2018)
- TAC Geometric Design Guidelines (June 2017)

6.3 Road Geometry

The horizontal alignment for the conceptual design is generally consistent with the existing centreline of Royal Windsor Drive / Lakeshore Road, with the exception:

- Southerly alignment shift at the intersection of Southdown Rd to minimize impact to bridge over Sheridan Creek
- Southerly alignment along segment 2C, from Clarkson Rd South to Meadow Wood Rd, to accommodate parking lane on north side.
- Southerly alignment shift at the intersection of Lorne Park Rd to minimize property impacts on north east corner.
- Northerly alignment shift at the intersection of Mississauga Rd (Existing westbound right turn lane at Mississauga Rd to be removed. Proposed road alignment can be shifted to the north)
- Northerly alignment shift along segment 6 , from Seneca Ave to West Ave, to center the road within the ROW
- Southerly alignment shift along Segment 7, from East Ave to Deta Rd, to accommodate rapid way and stations. Impact to north side of Lakeshore Rd minimized.

The horizontal alignment accommodates the required minimum roadway curvature radius of 1700 m based on a 60 km/h design speed expecting the transition between Segments 6 and 7 where the radius is 600 m as a reverse crown was required in that area.

Improvements to the vertical alignment were not reviewed as part of this study. As such the proposed vertical alignment is assumed to follow the existing road profile.

6.4 Typical Cross-Sections

The typical cross-sections for Royal Windsor Drive / Lakeshore Road were identified by corridor segment and are presented in **Section 5.2.12**.

For Segments 1 through 6, the typical cross-section generally consists of:

- Four general purpose lanes, two in each direction (3.0m and 3.35m inner lane widths and 3.5m outer lane width);
- 2.4m to 2.6m lay-by parking areas (for Segments 2B, 2C, 4, 5A and 5C);
- 1.5m minimum or 2.0m one-directional cycling facility, one in each direction ;
- 1.8m minimum to 2.1m sidewalk, one in each boulevard;
- Planting strips in one or both boulevards; and
- Utility buffers.

For Segment 7, the typical cross-section generally consists of the following to accommodate the median rapidway:

- Four general purpose lanes, two in each direction (3.35m inner lane width and 3.5m outer lane width);
- Two 3.5m dedicated rapidway lanes, one in each direction;
- 4.0m width rapid way station platform;
- 2.0m one-directional cycling facilities, one in each direction;
- 2.1m sidewalk, one in each boulevard;
- Planting strips in each boulevard; and
- Utility buffers.

Grading impacts will be reviewed in subsequent design stages. Grading will be contained within the proposed right-of-way where feasible. In areas where grading extends beyond the proposed right-of-way, grading easements or property acquisition may be required.

6.5 Cycling and Pedestrian Facilities

The conceptual corridor design incorporates sidewalks and one-directional off-road cycling facilities in each boulevard along the Study Corridor, from Winston Churchill Boulevard terminating east of Dixie Road. Both boulevards provide a continuous sidewalk that will be integrated with public space adjacent to commercial properties. The minimum sidewalk width varies amongst the segments, from 1.8m in Segments 4, 5A, 5C and 6, to 1.9m in Segment 2C, to 2.0m in Segment 2B, and finally to 2.1m in Segments 1, 2A, 2D, 3 and 7.

The design of the cycling facility is based on Ontario Traffic Manual (2014) OTM Book 18 – Cycling Facilities, which provides guidance on the design of safe active transportation facilities and intersection treatments. The cycling facility will be a raised cycle track and have a 2.0m width along the corridor, with the exception of in Segments 4, 5A, and 5C where it will have a minimum 1.5m width. In Segments 2B, 2C, 4, 5A and 5C where lay-by parking is proposed, additional buffer of 0.5m to 1.0m adjacent to the cycling facility is allocated to accommodate opening/closing of car doors. The selection of material type and treatment for the cycling facility will be reviewed and confirmed during subsequent design stages.

Bike boxes are provided at select signalized intersections to accommodate left turning cyclists for eastbound-to-northbound and westbound-to-southbound movements. The bike boxes are to be designed in accordance with the OTM Book 18 Figure 4.66 – an example of a context specific two-stage queue box within a boulevard (Pg. 97) and are proposed at the following intersections:

- Winston Churchill Boulevard and Royal Windsor Drive;
- Walden Circle and Lakeshore Road;
- Silver Birch Trail and Lakeshore Road;
- Lorne Park Road and Lakeshore Road; and

- Shawnmarr Road and Lakeshore Road.

These context specific two-stage queue boxes within the boulevard do not require right turns on red from the cross street to be restricted.

As requested by MiWay the need for mid-block pedestrian crossings at these locations are subject to future study:

- East of Winston Churchill Boulevard;
- Porcupine Avenue / Festavon Crescent;
- Ibar Way;
- Between Orchard Road and Fergus Avenue; and
- East of Dixie Road at the eastern study limits.

To provide a separated crossing of Lakeshore Road in the vicinity of the Lakeshore Road and Front Street area, the City of Mississauga has proposed a pedestrian crossing under the Lakeshore Road Bridge on the west side of the Credit River (currently included in the plans to redevelop Marina Park and the west side of Port Credit Memorial Park) and is subject to the approval of CVC. This connection will act as an alternative to implementing a signalized intersection at the intersection of Lakeshore Road and Front Street as the John Street intersection is less than 100 m to the west and a pedestrian crossing under the existing bridge would create a logical connection to the existing trail system.

Public and stakeholder consultation indicated support for continuous, dedicated and separated active transportation facilities in the conceptual corridor design.

6.5.1 Improved Pedestrian Connections

To promote transit usage on the express bus and adjacent rapid transit lines, it is recommended that the pedestrian connections on the fine grain street networks in major development areas be designed to enhance the pedestrian experience to create safe, interesting, and direct walking links to express bus stops. The following specific recommendations are made for consideration in future phases of the project:

- Widening of the sidewalk on Hurontario St (west side) between Lakeshore Road and Park St (i.e. future HuLRT station) to accommodate future pedestrian demand from transferring passengers from Lakeshore Road express bus to HuLRT.
- Improved walking and cycling connections on Ann St and Helene St for pedestrians and cyclists on Lakeshore Road to access the Port Credit GO Station.

6.6 Transit Facilities and Amenities

The conceptual design protects for local curbside transit facilities, express bus service and a median dedicated transitway to support the express bus service.

Local curbside transit facilities are proposed throughout the corridor from Winston Church Boulevard to east of Dixie Road. The design of the transit facilities are to adhere to the City's Standard Drawings Manual for the Transportation and Works Department, specifically Bus Stop Nearside Standard 2260.10, Bus Stop Farside 2260.020 and Accessible Bus Stop (Sidewalk in front of Bus Shelter) Standard 2250.040. As per MiWay's requirements a 15m clearance with concrete passenger landing pad is also incorporated in the conceptual corridor design to accommodate safe access for passengers exiting the rear doors of 40ft and 60ft transit vehicles.

This hard surface passenger landing pad is proposed to connect to the sidewalk and no street trees and/or street furniture are permitted within the15 metre clearance.

The proposed express transit stops are identified as near side locations where feasible with the exception of the stops within the median transitway where stops are located on the far side of intersections. Far side stops at each express stop location are desired to accommodate potential future transit priority improvements, such as Transit Signal Priority, and should be protected for in future design phases.

Express stops were identified using the following general principles:

- Place stops at existing or planned signalized intersections
- Place stops to support Transit Oriented Development (TOD)
- Maximize transit service coverage with the goal of serving the corridor using a 400m (~5 minute) walk to a transit stop
- Minimize transit travel time

The preferred stop locations were selected to strike the balance between good access and high transit route speed. Surrounding existing and future land use was also considered to determine appropriate stop locations (i.e. supporting mixed use developments, intensification areas, and transit supportive land uses).

Future transit activity areas include the following locations:

- 70 Mississauga Road (support major development and intensification area)
- Mississauga Road (connection to Route 14)
- Hurontario Street (connection to HuLRT and Port Credit GO Station, support intensification within the Port Credit Mobility Hub)
- Shaw Drive (existing and planned retail)
- Cawthra Avenue (connection to Route 8)
- Lakefront Promenade and Haig Boulevard (support major development intensification area)
- Dixie Road (connection to Route 5)

Express bus stops are identified at the following intersections with Lakehsore Road:

- 70 Mississauga Road (at the intersection with Credit Landing Plaza);
- Mississauga Road;
- Stavebank Road;
- Hurontario Street /St Lawrence Drive;
- Cumberland Drive;
- Shaw Drive;
- Cawthra Road;
- Lakefront Promenade/Alexandra Ave (median express bus stop within dedicated transitway);
- Haig Blvd (median express bus stop within dedicated transitway);
- Dixie Rd (median express bus stop within dedicated transitway); and,
- Long Branch GO Station (outside the Study Corridor)

Future express bus stops are illustrated in **Exhibit 6-2**.

A median transitway is proposed in Segment 7, initiating west of East Avenue and terminating east of Dixie Road. In addition to the curbside transit stops within this segment, median transitway stops are proposed as far side stops at the Lakeshore Road intersections with:

- Lakefront Promenade/Alexandra Avenue;
- Haig Boulevard; and
- Dixie Road.

The median transitway platform design is consistent with the design proposed for the Dundas Connects Study and protects for:

- 4.0m stop width, which accommodates a 3.0m wide pedestrian platform with 0.5m parapet wall/railing and 0.5m painted buffer to adjacent traffic lane. The 4.0m stop width will mirror the opposing 3.5m left-turn lane and 0.5m buffer; and
- 70m stop length, which accommodates a 5m pedestrian ramp, 45m stop to accommodate two articulated buses (21m each), and 20m mountable median for EMS and service vehicles.

Although the locations of transit stops and shelters are identified on the conceptual corridor design, they are subject to change. Additional property may also be required to accommodate transit shelters which will be confirmed during detailed design.

6.6.1 70 Mississauga Road Transit Hub

A new transit hub is proposed for the development at 70 Mississauga Road (**Exhibit 6-1**) to anchor the express bus running between Long Branch GO station and the site. The new transit hub will help achieve the transit usage objectives for the site and facilitate the movement of people between the west side of the Credit River and the east side via transit. Until the completion of the transit hub on the 70 Mississauga Road development site, MiWay may choose to run the express bus between Clarkson and Long Branch GO Stations.

Exhibit 6-1 Proposed transit hub at 70 Mississauga Road

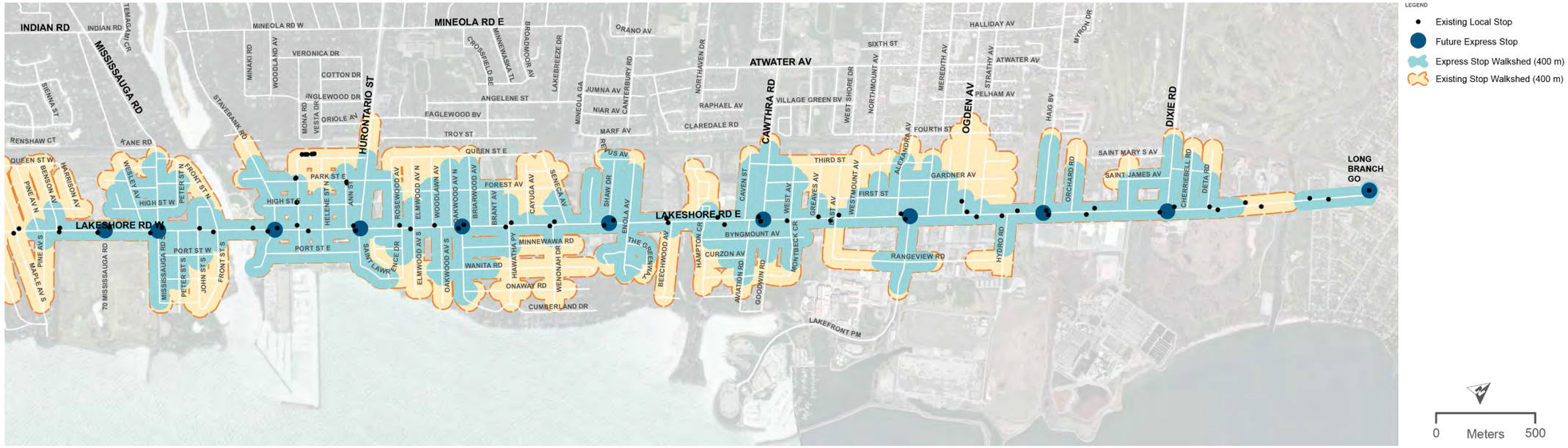

Exhibit 6-2 Existing and Future Stop Locations and 400 m Walkshed (~5 min walk)

6.7 Traffic Operations

A multi-modal micro simulation model (i.e. VISSIM) was also used to analyze key segments of the Study Corridor regarding travel time and intersection delay as a result of the implementation of median transit lanes and projected population and employment growth. The results of the analysis are provided in **Appendix H** which documents the analysis of preferred alternative, benefits of the median transit lanes, and Transit Signal Priority (TSP) implementation.

The key recommendations for the preferred alternative were as follows:

- Median transit lanes and TSP will benefit the express bus;
- Only green extension TSP should be applied at Mississauga Road;
- The eastbound left (EBL) should not be truncated at Cawthra Road and Dixie Road;
- Refinements to signal timing plans, such as adjusting pedestrian clearance times where intersections are widened for median transit lanes or changing the base signal timing plan to maximize the 10 s extend/early green TSP should be considered in future phases of the project.

Through this micro simulation analysis of future traffic conditions to confirm the preferred alternative it was found that the implementation of the transitway has minimal impact on traffic. Priority measures proposed at the intersections of Lakeshore Road and Ogden Avenue and Lakeshore Road and Lagoon Street may have some undesirable impacts to the cross streets; however, these can be refined and assessed in future stages of design.

6.8 Intersection Design, Traffic Signals and Illumination

Intersections have been designed in accordance with Accessibility for Ontarians with Disabilities (AODA) standards and to facilitate the movement of all road users, including pedestrians and cyclists. Pedestrians will cross signalized and unsignalized intersections via a crosswalk and east-west cyclists via a crossride. In addition the following elements are incorporated into the conceptual corridor design:

- Exclusive right turn lanes are not proposed along the corridor to minimize pedestrian crossing distances, with the exception of at the following locations:
  - **Segment 1**
    - Conversion of the existing channelized right-turn lane on the westbound approach at Winston Churchill Boulevard and Royal Windsor Drive intersection to an exclusive westbound right-turn lane.
    - Eastbound and westbound right-turn lanes at Clarkson Yard GO Access Road / Private Retail Access Road / Royal Windsor Drive.
    - Removal of the existing right-turn channelized lanes on all four approaches at the Southdown Road and Lakeshore Road intersection. The intersection is proposed to accommodate exclusive eastbound and west-bound right-turn lanes.
  - **Segment 2**
    - Westbound right-turn lane east of Southdown Road / Lakeshore Road intersection to access development.
  - **Segment 3**
    - Eastbound and westbound right-turn lanes at Tennyson Avenue / Lorne Park Road / Lakeshore Road intersection.
- Dual left-turn lanes are not proposed to minimize pedestrian crossing distances.
- One-side crosswalk for north-south crossings is proposed at the following locations to accommodate high volume of left turn vehicles:
  - **Segment 1:**
    - Avonhead Road and Royal Windsor Drive;
  - **Segment 2D:**
    - Johnson's Lane and Lakeshore Road;
  - **Segment 6:**
    - Beechwood Avenue / Future Development Access Road and Lakeshore Road; and
    - Cawthra Road and Lakeshore Road.
- Bike boxes provided at the following signalized intersections to assist with left-turning cyclists to facilitate eastbound-to-northbound and westbound-to-southbound movements:
  - **Segment 1**
    - Winston Churchill Boulevard and Royal Windsor Drive;
  - **Segment 2**
    - Walden Circle and Lakeshore Road;
  - **Segment 3**
    - Silver Birch Trail and Lakeshore Road;
    - Lorne Park Road and Lakeshore Road; and
    - Shawnmarr Road and Lakeshore Road.
- Transition for transit vehicles into and out of the dedicated median rapidway west of East Avenue and east of Dixie Road.
- The existing traffic signals within the study corridor are proposed to be maintained. No new signalized intersections have been identified beyond those in approved site plans as illustrated on the conceptual corridor design.
- Recommend both eastbound and westbound left turn restrictions during the AM and PM peak periods at the intersection of Lakeshore Road and Stavebank Road, subject to analysis and engagement of the Ward Councillor, including the Stavebank community.
- Illumination along the study corridor will consider the roadway profile, the urban cross-section, and active transportation requirements. Details will be based on City's illumination standards and will be reviewed during detailed design, at which time the type and location of poles and luminaires will be confirmed.
- Intersection curb radii were design in a context sensitive way to minimize crossing distances for pedestrians; however, the following intersections had larger curb radii to accommodate bus turning movements and/or truck traffic:
  - Ann St (bus)
  - Avonhead Rd (truck)
  - Cawthra Rd (bus and truck)
  - Dixie Road (bus and truck)
  - Elizabeth St (bus)
  - Front St (bus)
  - Hurontario St (bus and truck)
  - Hydro Rd (truck)
  - Inverhouse Dr (bus)
  - Lakefront Prom (truck)
  - Mississauga Rd (bus)
  - Southdown Rd (bus and truck)
  - Winston Churchill Blvd (bus and truck)
- Transit signal priority is proposed at all signalized intersections along the express bus route.

6.9 Access Management

The following describes the access management resulting from the conceptual corridor design:

- Vehicles are permitted to access adjacent developments through a centre left-turn lane (Segments 1, 2A and 6).

- Existing access is maintained into the condo development on the northeast side of Southdown Road and Lakeshore Road intersection through provision of an exclusive right-turn lane (Segment 2A).
- A raised median is proposed between Walden Circle and Clarkson Road South (Segments 2A and 2B) and between Maple Avenue North/Maple Avenue South and Pine Avenue North (Segment 4). Where the raised median restricts full access to individual properties, only right-in-right-out access is accommodated.
- As per the recommendations of the Clarkson Village Study, lay-by parking was identified for the north and south side of Lakeshore Road between approximately 100 m east of the CN rail overpass and Meadow Wood Road. To accommodate the lay-by parking, driveway consolidation was also recommended as development occurs.
- For future developments along the Study Corridor, the proposed access locations are shown on the conceptual design drawings. Access is provided at the following proposed side roads:
  - 1575 Lakeshore Road West
  - 501 Lakeshore Road East
  - 70 Mississauga Road (accesses onto Lakeshore Road)
- With the introduction of the median transitway (Segment 7), locations where there is existing full-moves access will be restricted to right-turn-in-right-turn-out access only. At the median transitway station platforms, a 20 m mountable median is provided for EMS and service vehicles.
- U-turns are permitted at signalized intersections.

Property owners will be notified of temporary impacts to driveway access prior to construction and in advance of work related to their access.

6.10 Goods Movement

Four general purpose travel lanes have been provided throughout the Study Corridor to maintain existing capacity for vehicles, including trucks. Channelized right turn lanes at Southdown Road and Royal Windsor Drive have been eliminated to minimize pedestrian crossing distances.

Intersection curb radii were design in a context sensitive way to minimize crossing distances for pedestrians; however, the following intersections had larger curb radii to accommodate bus turning movements and/or truck traffic:

- Ann St (bus)
- Avonhead Rd (truck)
- Cawthra Rd (bus and truck)
- Dixie Road (bus and truck)
- Elizabeth St (bus)
- Front St (bus)
- Hurontario St (bus and truck)
- Hydro Rd (truck)
- Inverhouse Dr (bus)
- Lakefront Prom (truck)
- Mississauga Rd (bus)
- Southdown Rd (bus and truck)
- Winston Churchill Blvd (bus and truck)

6.11 Parking Strategy

Lay-by parking bays are provided in Segments 2A, 2B, 4, 5A and 5C. Through discussions with the City of Mississauga the following parking recommendations were made:

- A cross-section for Segment 5 between Stavebank Road and Hurontario Street with no layby parking was recommended. The rationale for removing layby parking in this section is to support place-making objectives, prioritize active transportation and because publicly shared off-street parking alternatives exist in the area, including: Municipal Lots, Port Credit GO Station, and private lots. However, it is recognized that existing studies and modeling show that these parking facilities will be fully utilized in the study time horizon of 2041 due to the intensification coming on-stream in Port Credit and as a result, the need for additional public, shared parking facilities will be exacerbated.
- A recommended cross-section for Segment 4 (Godfrey's Lane to Mississauga Road) and Segment 5 between Hurontario Street and Seneca Avenue and between Mississauga Road and Front Street maintained some layby parking. The rationale for maintaining some layby parking in this section is to provide parking for businesses where fewer alternative offsite lots exist and since there are fewer demands in the cross-section from a place-making and cultural programming perspective.

Based on the configuration from the conceptual corridor design the following summarizes the provision of layby parking along the Study Corridor:

- 57 lay-by parking spaces in Segments 4 and 5 (loss of 201spaces from existing condition)
- 32 lay-by parking spaces in Segment 2 (no loss in spaces from existing condition)

In total 89 layby parking spaces are to be provided along the Study Corridor, this represents an overall net loss of 169 layby parking spaces, and a loss in revenue to the City of Mississauga.

6.12 Streetscaping

A context sensitive and thoughtful streetscape is integral to promote high quality urban design, serve as community entrances and encourage the development of pedestrian-friendly and transit-oriented neighbourhoods. Opportunities for streetscaping are identified on the conceptual corridor design and may include elements such as plantings in boulevards, street lighting, street furnishings, and public art.

Lakeshore Road traverses a number of unique communities along its length, and the streetscape associated with the preferred sections will reflect each unique condition.

The preferred cross-sections for Segments 1, 2 (A & D), 3 and 7 have a wider right-of-way and large setbacks to commercial and residential buildings. In these segments, the streetscape is more transitional, characterized by little at-grade frontage adjacent to the right-of-way but with wide boulevards that can accommodate pedestrian and cycling amenities, site furnishings and generous street tree planting.

6.12.1 Furnishing Zones, Pavements and Street furniture

In order to provide continuous, unimpeded sidewalks and bike lanes, furnishing zones are proposed to accommodate street lighting, transit shelters, site furnishings, street trees and utilities. These furnishing zones also serve as buffers between cycling infrastructure and the pedestrian clearway to one side and the roadway to the other.

In the segments with more urban cross-sections, furnishing zones should be paved to better support higher pedestrian activity. These areas should have high-quality, durable paving materials such as stone or concrete unit pavers that provide an accessible walking surface, yet still provide a visual buffer between the sidewalk and bike lanes.

Street furnishings, including benches, planters, waste receptacles and other amenities should be constructed of durable and high-quality materials, and placed along the length of the corridor, with increased concentrations in the segments with more urban cross-sections, where pedestrian volumes are greater, and people are more likely to congregate.

Street lighting should be a unifying element along the entire length of the Lakeshore Road corridor. Light poles should be simple, clean-lined vertical tapered poles, at regular intervals along the road, with energy-efficient LED fixtures. Pedestrian-scale lighting should be provided at a consistent height in the more urban segments including the Clarkson, Port Credit and Lakeview communities and where increased light levels are required for pedestrian safety.

6.12.2 Street Trees

Street trees are proposed on both sides of the corridor, and along the entire length of Lakeshore Road. Trees on Lakeshore Road should be large, high branching species that are suited for urban conditions, hardy, drought and salt-tolerant, selected from the City of Mississauga list of recommended street trees. Trees should be planted in groupings of no more than 6 trees of a single species in a row to minimize the spread of disease and pests, planted a minimum of 8 metres apart to ensure long-term canopy development.

In the urban cross-sections through Clarkson, Port Credit and Lakeview in particular, trees will be planted in paved furnishing zones, with the potential for below-grade soil cells to ensure the provision of adequate volumes of uncompacted soil. In the more transitional cross-sections, there is ample space to plant trees in in sodded boulevards and achieve the minimum recommended 30m^3 of soil volume per tree, or a minimum of 20m^3 if planted in shared tree planting trenches. In situations where the proposed tree planting zone is less than 2 metres wide, soil cells may still be required to extend under the bike lane or sidewalk to provide an acceptable soil volume for the street trees.

6.12.3 Safety and Accessibility

The streetscape for Lakeshore Road should be designed according to current best practices for accessibility and in compliance with the city of Mississauga's Facility Accessibility Design Standards and the accessibility for Ontarians with disabilities Act (AODA).

The preferred cross sections for Lakshore Road ensure safe, separated and continuous facilities for pedestrians and cyclists along the entire length of the corridor. The streetscape should also contribute to safety and accessibility of the street through lighting, sufficient seating and rest areas, intuitive wayfinding and barrier-free access in every segment along the corridor.

The preferred cross-sections for Segments 2 (B &C), 4, 5 (A, B, C) and 6 have a narrower right-of-way with little or no setbacks for commercial, retail and residential frontages. In these segments, the streetscape has a more urban character, with shorter distances between crossings, higher volumes of pedestrian activity and active ground-level commercial and retail frontages on Lakeshore road.

6.12.4 Public Art

The City's Public Art Master Plan has identified the Study Corridor as a possible location for permanent or temporary public art. The inclusion of public art as part of the streetscape elements will enhance the community's character, create a memorable pedestrian experience and create a strong sense of place for residents and visitors alike. Considerations for public art should be made which specifically reference the historical aspects of the Study Corridor through contemporary contextualization and interpretation. Public art should be site specific, connecting to the location of the proposed artwork and drawing on natural and living heritage, culture and the local environment.

6.13 Property Requirements

The proposed improvements attempt to minimize property requirements as the majority of the improvements are able to be accommodated within the existing municipally owned right-of-way (ROW). Where improvements cannot be accommodated within the municipally owned ROW, the City of Mississauga will seek to complete the Official Plan ROW through development applications, when applicable. Property acquisition has been identified at select locations along the corridor as shown on the corridor design plans as follows:

- **Segment 2:**
  - East of Clarkson Road South (south side)
  - West of Walden Circle at Sheridan Creek (north side)
- **Segment 4:** East of Benson Avenue (north side)
- **Segment 5A:** Front Street to Stavebank Road North (north side)
- **Segment 5B:** Ann Street and Hurontario Street (north side)
- **Segment 6:**
  - West of Shaw Drive (north side)
  - Cawthra Road to east of West Avenue (north side)
- **Segment 7:**
  - East of Fergus Avenue (south side)
  - Hydro Road to Haig Boulevard (south side)

The location of transit stops and shelters as identified on the conceptual design are subject to change. Additional property may be required to accommodate transit shelters as well as future far side stops at express stop locations to accommodate transit priority improvements.

Property requirements will be reviewed and confirmed during subsequent design stages.

6.14 Flood Mitigation

A future EA study will be required to confirm and advance the preferred flood mitigation strategy, either as part of a future EA for transportation improvements on Royal Windsor Drive / Lakeshore Road, or as a separate EA study. The EA study will summarize existing technical evaluations of flooding locations, and provide additional evaluations of flood mitigation alternatives in terms of expected reductions in flood damages; opportunities for reclassification of hazard land; opportunities to provide naturalization enhancements to the stream corridor; and opportunities for other social, cultural, and environmental benefits. The EA study would include detailed cost estimates, identify the extent of any property acquisition if required, and provide sufficient functional design details to allow the preferred alternative to proceed to detailed design.

As part of future EA studies, any watercourse crossing impacted by proposed infrastructure or the transit solution is to be assessed to confirm and review regulatory flows, hydraulics and hydrology, and impacts. This is to be completed for relevant bridges, culverts and storm sewers.

Within intensification areas, it will be imperative that the natural corridor widths and dimensions be established early in the planning process to ensure property requirements to establish the flood remediation measures needed for intensification are acquired and so that sizing of the crossings and integration with the plans for the public realm are clear and tangible alternatives in the final EA process.

In support of the above, there should be provision for sufficient property to provide treatment for stormwater through incorporation of Low Impact Development (LID) measures and utilities. Coordination between EA's for the watercourse crossings should ensure no increases to flood risk and that the crossings are consistent with recommendations developed through the flood mitigation study. At the crossing locations NHS connectivity and pedestrian access should continue to be provided for as needed.

6.15 Structural Design

Within the Royal Windsor Drive / Lakeshore Road corridor there are eight (8) structures that may be impacted by future planned improvements. Potential structural modifications required to meet the planned improvements along the study corridor are summarized in **Table 6-2** which will need to be reviewed and confirmed during future EA and detailed design phases. Two (2) watercourses cross Lakeshore Road in trunk storm sewers, specifically, Lornewood Creek and Turtle Creek. Condition assessment reports were not available for these structures at the time of writing; therefore, should be reviewed again during future phases of the project.

Table 6-2: Structural Improvements

Structure	Existing Structure Dimensions	Structural Condition	Structural Modification Required
Segment 2A **Lakeshore over Sheridan Creek** **(Not considered a heritage structure)**	L = 16.5 m W=32.3 m TW = 22.5 m Clearance = 2.8 m	Good	Rehabilitate
Segment 2A **CNR over Lakeshore** **(Not considered a heritage structure)**	L = 28.08 m Clearance = 4.3 m (substandard)	Fair	Lower roadway or raise bridge to meet clearance requirement. Rehabilitate structure
Segment 3 **Lakeshore over Tecumseh Creek** **(Not considered a heritage structure)**	L = 150 m Span =2.4 m TW = 15.7 m Clearance 1 m	Excellent	None
Segment 5A **Lakeshore over Credit River** **(Not considered a heritage structure)**	L = 56 m W= 19.3 m TW = 14.3 m Clearance = 4.5 m	Fair	Widen and rehabilitate
Segment 6 **Lakeshore over Cooksville Creek** **(Not considered a heritage structure)**	L = 27.3 m W=23.1 m TW = 17 m Clearance = 3 m	Good	Retain and widen
Segment 7 **Lakeshore over Serson Creek** **(Not considered a heritage structure)**	1 Span = 10 m Length = 30.2 m TW = 24.1 m Clearance 1.1 m	Excellent	Retain and widen
Segment 7 **Lakeshore over Applewood Creek**	L=22 m Span = 3.05 m, H = 1.25 m TW = 15.0 m	Excellent	Retain and widen
Segment 7 **Lakeshore over Etobicoke Creek** **(Not considered a heritage structure)**	L = 48.8m W=23 m TW = 18.58 m Clearance = 5 m	Very good	Widen

To facilitate planned future improvements to the Study Corridor there are major infrastructure elements that will pose significant challenges during design and construction and require major expenditures. These are identified as follows:

- CN Rail over Lakeshore Road – The Single Span Steel Through Plate Girder Bridge currently does not have adequate clearance and is posted with a height restriction of 4.3 m. To meet current standards there are three options available, raise the bridge, lower the road or do both. Rail service will have to be maintained at all times during construction. Consultation will be required with CN Rail.
- Lakeshore Road over the Credit River – The three span continuous slab on steel I girder bridge built in 1960 will have to be rehabilitated and widened to accommodate the proposed improvements. In-water works will be required to extend the existing piers. Consultation will the Credit Valley Conservation and Transport Canada – NPP, MECP and other environmental agencies is required.

6.16 Utilities

Coordination with the utilities stakeholders will be required during detailed design to confirm the existing utility location and alignment, which may result in design adjustments and/or changes/relocation due to the roadway improvement. Formal definition of impacts on utilities will be determined during detailed design, in consultation with individual utility companies.

Hydro poles are located primarily on the north side of the study corridor while light standards line the both sides. Based on the conceptual corridor design, it is anticipated that several hydro pole relocations will be required and a common utility trench would be required to consolidate underground utilities between Mississauga Road and Seneca Avenue.

6.16.1 Hydro One

The affected transmission corridor may have provisions for future lines or already contain secondary land uses (i.e. pipelines, water mains, parking, etc). Therefore, appropriate lead-time in in future project schedules should be considered in the event that the proposed development impacts Hydro One infrastructure to the extent that it would require modifications to their infrastructure.

The following were also requested to be included as considerations in future phases of design:

- That developments should not reduce line clearances or limit access to facilities at any time in the Study Area. Any construction activities must maintain the electrical clearance from the transmission line conductors as specified in the Ontario Health and Safety Act for the respective line voltage.

- The integrity of the structure foundations must be maintained at all times, with no disturbance of the earth around the poles, guy wires and tower footings. There must not be any grading, excavating, filling or other civil work close to the structures.

6.16.2 Rogers

- Roger's standard offset in Mississauga is: 1.75m P/L on Regional roads and 2.3m P/L on City roads. Clearances of 0.3 m vertically and 0.6m horizontally must be maintained.

6.16.3 Enbridge

- Enbridge Gas Distribution provided their "Third Party Requirements in the Vicinity of Natural Gas facilitates" document. The document should be reviewed during future phases of design to ensure that work is undertaken in accordance with Enbridge's requirements.

7 Implementation and Future Commitments

7.1 Implementation and Phasing

Implementation of improvements is dependent on administrative prioritization. Depending on available funding and municipal priorities, the timing for this project to proceed with environmental assessment approvals, detailed design and construction may vary.

The implementation strategy of the interim recommendation and ultimate recommendation follows a phased approach. For all phases of implementation the existing local service (Route 23) will be maintained to complement express bus service between Clarkson GO Station and Long Branch GO Station, via Port Credit GO Station. Changes to transit service concepts are at the discretion of MiWay.

7.1.1 Phase 1 Transit Service Improvements (Short to Medium Term)

Phase 1 of the implementation strategy makes transit service improvements along the Study Corridor between 2019 and 2025 with minimal infrastructure requirements. Phase 1 will be realized in three sub-phases as follows:

A. Increase local bus service by doubling the peak frequency of the local bus
B. Upgrade local bus service from 40 ft to 60 ft buses to increase capacity
C. Introduce express bus service layered on top of the local bus service

Once Phase 1 is fully implemented, the express bus will operate in mixed traffic and provide an express route from 70 Mississauga Road to Long Branch GO Station while maintaining local transit service. As a quick win, the express bus will be a higher capacity limited stop service with higher service frequency than the current conventional bus service. New transit stop infrastructure (i.e. bus shelters) would be required to implement this phase; however, no new major transportation infrastructure would be required (i.e. road widening or re-construction). Transit implementation in Phase 1C is illustrated in **Exhibit 7-1**.

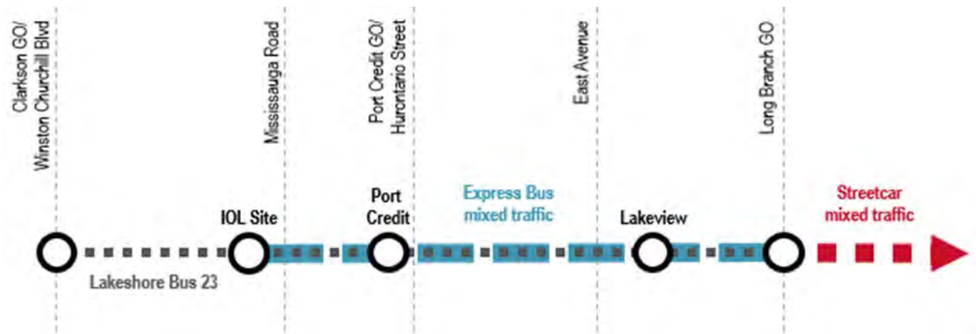

Exhibit 7-1 Phase 1C Implementation

7.1.2 Phase 2 Multi-Modal Road Work and Further Transit Improvements

Phase 2 of the implementation strategy builds on Phase 1 and includes multi-modal road work improvements and further transit service improvements. Phase 2 will be realized in two sub-phases as follows:

A. Multi-modal road work (Shawnmarr Road to the Etobicoke Creek) and more frequent express bus service (70 Mississauga Road to Long Branch GO Station) to be implemented between 2025 and 2030. This phase involves constructing exclusive median transit lanes between East Avenue and the Etobicoke Creek. This should be completed with the development of the Lakeview Village development site to support transit oriented development and facilitate direct, fast, and reliable transit trips to and from the site to the Long Branch GO station and future regional express rail (RER) service on the Lakeshore West GO Line. In addition to the exclusive transit lanes, multi-modal road work improvements (as shown in the preferred corridor design for Segments 4 to 7) between Shawnmarr Road and East Avenue are also implemented during this phase. Transit signal priority at intersections along the route can also be implemented to provide travel time reliability in the mixed traffic section.
B. Multi-modal road work (Winston Churchill Boulevard to Shawnmarr Road) to be implemented following the completion of Phase 2A between 2031 and 2041. This phase includes multi-modal road work improvements (as shown in the preferred corridor design for Segments 1-3) between Winston Churchill Boulevard and Shawnmarr Road.

Transit implementation in Phase 2B is illustrated in **Exhibit 7-2**.

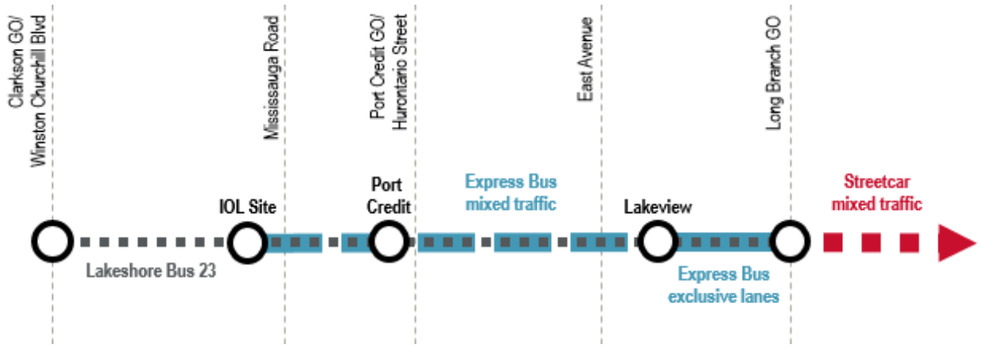

Exhibit 7-2 Phase 2B Implementation

7.1.3 Phase 3 Long Term Protection for Extension of TTC Streetcar from Long Branch GO to 70 Mississauga Road

Phase 3 (i.e. the final phase of implementation and ultimate transit configuration) involves the conversion of the express bus based transit service to an extension of the Toronto streetcar service operating in mixed traffic between Mississauga Road and East Avenue, and in exclusive lanes between East Avenue and the Etobicoke Creek to Long Branch GO Station.

In the fullness of time (i.e. beyond 2041), the Study Corridor has been designed such that the extension of the TTC streetcar into Mississauga from the Long Branch GO Station is protected for, subject to discussions with the City of Toronto. The extension of the TTC streetcar will allow for seamless transit travel between Toronto and Mississauga by eliminating a forced transfer and additional fare at the border. Transit implementation in Phase 3 is illustrated in **Exhibit 7-3**.

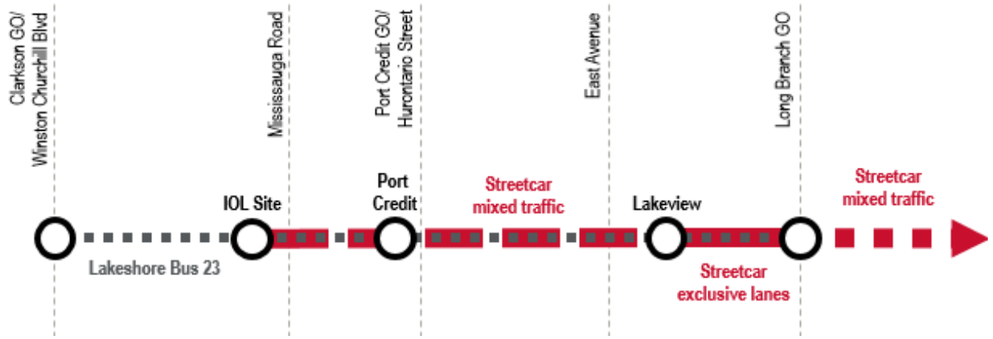

Exhibit 7-3 Phase 3 Implementation

7.2 Preliminary Capital Cost Estimate

The preliminary capital cost estimate was developed based on the Ministry of Transportation (MTO) parametric estimating guide and included costs for roadway construction (widening, rehabilitation, and reconstruction), transitway platforms, and major structure improvements including structural culverts (widening, rehabilitation, and reconstruction). Roadway construction costs included grading, drainage, urban sections, paving, granular materials, pavement markings, traffic control devices, roadside safety and minor utility relocation. Landscaping cost included enhanced landscaping features such as the soil cell system. The preliminary capital cost estimates did not include property costs or operating and maintenance costs. The preliminary capital cost estimate was prepared for the complete improvements to the Study Corridor as described in **Section 6**. The estimated capital cost of the improvements (full implementation of Phase 2) is approximately $154 – 251 million.

The proposed improvements are not expected to be completed at once and a phased implementation is proposed. The capital cost estimates for each phase are presented below. A capital cost for Phase 3 (i.e. extension of the Streetcar) has not been presented as it is beyond the study horizon and not within the scope of this Study.

Phase	Description	Timeline	Additional Person Capacity (Peak hour in peak direction)	Approximate Capital Costs	Additional Annual Operating Cost
Phase 1 (Short to Medium Term Transit Service Improvement)		**2019 to 2025**	**Transit Capacity**		
A	Increase Local Bus Service		100	$2.4M	$1.6M
B	Improve Local Bus Service and upgrade to 60 ft buses		280	$3.6M	$0
C	Introduction of Express Bus Service		300	$4.8M	$3.5M
	Total		**680**	**$10.8M**	**$5.1M**
Phase 2 (Medium to Long Term Multi-modal Road Work)			**Multi-Modal Capacity**		
A	Multi-Modal Road Work and Frequent Express Bus Service (Shawnmarr Road to Etobicoke Creek)	**2025 to 2030**	3,200-4,700	$94M - $151M	**TBD**
B	Multi-Modal Road Work (Winston Churchill Blvd to Shanmarr Rd)	**2031 to 2041**	2,000-3,000	$60M - $100M	
	Total			**$154 - 251M**	
Phase 3		**Post 2041**	**To be explored in future years / studies**		

More details on the preliminary capital cost estimate are provided in Appendix I. These preliminary capital cost estimates are to be reviewed and confirmed during subsequent studies and design.

7.3 Agency and Stakeholder Feedback

Key comments and requirements from agencies are outlined in the following sections. Details and correspondence is maintained in City of Mississauga's project files. These comments are included as future commitments in **Section 7.5**.

7.3.1 City of Toronto and Toronto Transit Commission (TTC)

The City of Toronto and TTC participated throughout the Study and provided input and feedback as required. Early on in the Study, the City of Mississauga and City of Toronto worked together to have common assumptions (land use and network) for future transportation and traffic analysis and transit forecasting.

The City of Toronto's Waterfront Transit Reset Study (Phase 2) recommendations (i.e. Streetcars in mixed traffic from Park Lawn to Long Branch by 2041 with potential for dedicated lanes in the future) influenced the recommendations for the Lakeshore Road Corridor in Mississauga as an extension of the streetcar would not be feasible pre-2041 and therefore the interim express bus was recommended.

The City of Toronto noted that they are agreeable to discussing an extension of the TTC streetcar into Mississauga in the future.

The City of Toronto also noted that to accommodate their transit vehicles, a platform dimension of 2.4 m by 30 m is required. The conceptual design for the Study Corridor is 4 m by 70 m.

7.3.2 Conservation Authorities (CVC and TRCA)

Credit Valley Conservation Authority (CVC) and Toronto and Region Conservation Authority (TRCA) were consulted. Any proposed works west of Cherriebell Road are within the jurisdiction of CVC and any proposed works east of Cherriebell Road are within the jurisdiction of TRCA.

7.3.2.1 CVC COMMENTS

Following the final TAC meeting, CVC staff had the following comments:

- The proposed ROW sections will likely result in increases to impervious cover throughout the study corridor. As part of the study objective to preserve the natural environment, beyond any minimum requirements for stormwater management, during the redesign of the Lakeshore Road corridor CVC encourages the City to find concrete opportunities to implement LID technologies into any future proposed stormwater management solutions. CVC encourages the City to provide direction for future phases of the projects during the master plan process.
- Restoration/enhancement – With the conceptual nature of the design at this stage it is not clear how much impacts will result around the watercourse crossings and natural areas adjacent to the Lakeshore Road corridor. The future phases of this project will need to assess these features and properly evaluate any impacts. CVC's target will be to ensure any plan will result in an enhancement to the exiting features. CVC will provide reference material during the future phases of this project.
- A study of the need for crossing improvements and to address any natural hazard and natural heritage features will need to be undertaken during the future phases of this project for the following crossings. CVC noted that it is working on updating hydrology and hydraulic models along with the City of Mississauga to update floodplain maps of Lake Ontario Tributaries, which should be completed by the end of 2018. Approval from CVC in the form of a permit will be required for works at these locations:
  - Applewood Creek
  - Avonhead Creek
  - Birchwood Creek
  - Cooksville Creek
  - Credit River
  - Lornewood Creek
  - Moore Creek,
  - Serson Creek
  - Sheridan Creek
  - Tecumseh Creek
  - Turtle Creek

7.3.2.2 TRCA COMMENTS

Following the final TAC meeting, TRCA staff had the following comments:

- For minor widening to accommodate bike lanes, the requirements in accordance with the TRCA Stormwater Management Criteria (August 2012) document may apply, which may include the implementation of Low Impact Development (LID) and green infrastructure measures.
- Suggested that a "green streets" approach be adopted to not only enrich the experience of users through the integration of streetscaping elements such as street trees and landscaping, but to also integrate and extend the urban terrestrial ecosystem into the road network. Native street trees and plantings serve to augment the urban canopy which reduces the heat island effect, and provide habitat and linkages for terrestrial species, such as songbirds, into the Natural Heritage System (NHS). A "green streets" approach can also incorporate LID measures into road design to reduce surface run-off and improve water quality by increasing infiltration and evapotranspiration.
- Noted that the proposed cycling network should include links to existing and proposed trails on TRCA property on the south side of Lakeshore Road East, as well as into adjoining municipalities (City of Toronto) to ensure a fully connected cycling network. Furthermore, the cycling network should include connections from Lakeshore Road East into the future Jim Tovey Lakeview Conservation Area.
- Noted that plans for the Study are to be coordinated with the Lakeview Waterfront Connection Project.
- Please ensure that TRCA staff are consulted during the future study to determine the need for a pedestrian crossing across Lakeshore Road East just north of TRCA property located at 1352 Lakeshore Road East.

7.3.3 Infrastructure Ontario (IO)

Infrastructure Ontario identified that their property parcel (i.e. the Hydro One Transmission Corridor) is adjacent to the Study Corridor. Property has not been identified through this Study; however, should the land be required, that the Ministry of Infrastructure (MOI) be consulted so that the process for land acquisition can be provided.

7.3.4 Metrolinx

Metrolinx participated throughout the Study and provided input and feedback as required. Following the final TAC meeting, Metrolinx staff had the following comments:

- Provide a straightforward connection between the Lakeshore Road cycling facility and the multi-use path on the east side of Southdown Road as identified in Metrolinx' GO Rail Station Access Plan. It was also noted that intersection designs should provide cyclists the ability to connect to GO stations via cross rides, left turn boxes and adjoining facilities.
- Consider the connection/transfer between bus riders on Lakeshore Road and the future Hurontario LRT as well as compatibility with the future multi-use path on Hurontario Street.

7.3.5 Ministry of Natural Resources and Forestry (MNRF)

MNRF was consulted throughout the Study. MNRF noted that their involvement in this Study would be limited and should any species at risk be identified during the study, MNRF should be contacted.

7.3.6 Ministry of the Environment, Parks and Conservation (MECP)

MECP was consulted throughout the Study. MECP provided direction on the notification requirements for the study, specifically, it was noted that the Notice of Commencement should indicate what approach to the Master Planning process the Study will follow. Following this direction, the Project Team revised future Study notifications to indicate that the master plan will become the basis for future investigations for specific Schedule B and C projects and will follow Approach 1 of the Municipal Engineers Association's Municipal Class Environmental Assessment (Class EA) process.

7.3.7 Ministry of Transportation (MTO)

MTO participated throughout the Study and provided input and feedback as required. Following the second TAC meeting, MTO noted that preferred ultimate transit strategy along Lakeshore Road was streetcars in mixed traffic. MTO noted that this may add to congestion on Lakeshore Road and result in more vehicles accessing the Queen Elizabeth Way (QEW). MTO requested a Traffic Impact Study to review diversion rates of traffic to the QEW, impacts to the existing QEW interchanges, and identify the improvements to the interchanges necessary to accommodate the increased traffic. The Project Team noted that a Transportation Impact Study (TIS) would not be completed as part of this Master Plan Study; however, can be completed during the next phases of the project.

7.3.8 Town of Oakville and Oakville Transit

The Town of Oakville and Oakville Transit participated throughout the Study and provided input and feedback as required, with special interest on the segment of Royal Windsor Drive from Winston Churchill Boulevard to Clarkson GO Station. Oakville Transit reviewed the proposed bus stops along this segment and are in agreement with the proposed locations.

7.3.9 Region of Peel

The Region of Peel participated throughout the Study and provided input and feedback as required through TAC meetings. Region of Peel had no major comments on the Study recommendations; however, further consultation and coordination will be required during future phases of design for connections to north-south Regional roads and utilities.

7.4 City of Mississauga Internal Stakeholder Feedback

The following comments are included as future commitments in **Section 7.5**.

7.4.1 Heritage Advisory Committee

A representative from the Heritage Advisory Committee participated throughout the Study and provided input and feedback as required through TAC meetings. The following comments/requests were made throughout the Study:

- The project should support the City's stated goal of achieving "net zero carbon" footprint
- Incorporate a design strategy with the goal of creating future heritage (i.e. not limiting heritage to older home, landscapes, roads, and natural areas)
- Consider a street tree strategy which incorporates trees as an attraction (i.e. Cherry trees or Maple trees)
- Designated areas should be available for street art

7.4.2 Accessibility Advisory Committee

A representative from the Accessibility Advisory Committee participated throughout the Study and provided input and feedback as required through TAC meetings. The following comments/requests were made throughout the Study for going beyond the minimum standards and guidelines set out by Mississauga Facility Accessibility Design Standards, the Ontario Building Code (OBC) and AODA:

- During construction ensure accessibility and ease of access is upheld
- Provide accessible seating options and shading from trees (where possible) with wide sidewalks
- Keep the sidewalks clear for walking
- Bike racks/storage should be ample to discourage people from obstructing walking paths or seating areas by locking their bikes onto trees/poles or seating
- Adequate lighting is extremely important
- Wayfinding is important for people with varying disabilities
- Colour contrast even in outdoor spaces is vital
- Include clearly marked street crossings, tactile ground indicators, good lighting, unobstructed access to crossing button, and adequate length of time for crossing of a street for people with disabilities and older adults
- Provide dog relieving sites/stations for people with service animals many times have a hard time finding relieving sites and drinking sites for their service animals

7.4.3 MiWay

MiWay was a key stakeholder throughout the Study and provided input and feedback through TAC meetings and individual meetings. Key comments from MiWay were:

- To encourage transit use, and ensure enhanced customer amenities, shelters shall be protected for at all MiWay local stops along Lakeshore Blvd. Exact location of stops and shelters are subject to change. Property may be required to accommodate transit shelters. To be confirmed during detailed design.

- Require 15m clearance with concrete passenger landing pad to provide safe access for passengers existing from the back doors of a 40ft, and 60ft, bus. The passenger landing pad is to connect with proposed sidewalk/pedestrian linkage and be clear of all proposed trees and/or any other street furniture.
- All proposed curbside express stops (i.e. not within the transitway section) should be placed at the near side location. To provide for future transit priority improvements, such as transit signal priority, MiWay requested that far side stops be protected for at each curbside express stop location as well.
- The Master Plan recommends a future transit hub as part of the development at 70 Mississauga Road. If express service is to be anchored at this site, the planned transit hub/bus loop would need to be designed to provide sufficient operational space to allow buses to layover and loop around without being impeded from entering/exiting the facility. The bus loop/turnaround can be either comprised of roads or a dedicated bus loop.
- MiWay requires this transit facility/turnaround to include: a minimum of a single in-service articulated bus bay and shelter, an additional articulated layover area, and as well 24/7 access to operator facilities. Please be advised that the bus bay, layover area, and operator facility should be in close proximity to each other to improve operational efficiency.
- The location of this facility is critical as it cannot hinder traffic flow nor block driveways/access roads. As well, every effort must be made to ensure minimal impacts to residents as well as future business/commercial uses for the area (e.g., concerns regarding noise, fumes, traffic infiltration, etc.)
- MiWay confirmed the proposed locations for all local and express stops.

7.4.4 Parking

City of Mississauga Municipal Parking was concerned with the loss of parking supply along the Study Corridor as they have identified through their Parking Master Plan that additional parking supply is required within the Study Corridor to meet future demand. Through consultation with the Parking Department, it was determined that the parking supply along Lakeshore Road between Mississauga Road and Seneca Avenue could be reduced to achieve the goals and objectives of this Study; however, however, the net loss in supply and lost revenue should be clearly communicated.

7.5 Future Commitments

This section documents specific items to be reviewed and confirmed during future phases of the project (EA/TPAP, Detailed Design). Some of these commitments address specific concerns raised by stakeholders and review agencies during the TMP process.

7.5.1 Property Requirements

- Review opportunities to minimize or reduce property acquisition requirements due to the proposed improvements.
- Property may be required to accommodate transit shelters as illustrated in the conceptual design. Exact property requirements to be confirmed during the next phase of the project.
- Consult with property owner regarding property acquisition between Hydro Road and Haig Boulevard on south side of Lakeshore Road.

7.5.2 Access Modifications/Redevelopment

- Access modifications should be reviewed during the next phase of the project to ensure each property along the corridor maintains existing access unless consolidation of accesses is possible through redevelopment.
- Development applications should be reviewed and proposed accesses should be confirmed and accommodated in the proposed design during the next phases of the project.
- It is recommended that an access management strategy for Lakeshore Road be developed during subsequent phases of the Study to define the City's policies for consolidating accesses such as through the development application process.

7.5.3 Cultural/Heritage Resources

- Complete a Stage 1 archaeological assessment to determine whether the potential exists for as-yet unidentified archaeological sites within potential development areas and to assess potential development impacts to any of the registered sites listed in this Study.
- Complete a Cultural Heritage Assessment Report (CHAR) to identify and determine the impacts to any known or potential cultural heritage resources through potential development as required by the PPS 2014, and the City of Mississauga Official Plan, and as described in the City of Mississauga Heritage Impact Assessment Terms of Reference (2015).
- Incorporate a design strategy with the goal of creating future heritage (i.e. not limiting heritage to older home, landscapes, roads, and natural areas)
- Subsequent archaeological assessments are to be filed with the Ministry of Tourism, Culture and Sport (MTCS).

7.5.4 Natural Environment

- Find opportunities to implement LID technologies into any future proposed stormwater management solutions to fulfill study objective to preserve the natural environment, beyond any minimum requirements for stormwater management, during the redesign of the Lakeshore Road corridor.
- The project should support the City's stated goal of achieving "net zero carbon" footprint.
- Consider a street tree strategy which incorporates trees as an attraction (i.e. Cherry trees or Maple trees).
- A study of the need for crossing improvements and to address any natural hazard and natural heritage features will need to be undertaken during the future phases of this project for crossings identified by CVC as noted in **Section 7.3.2.1**.

- Address need for improvements at watercourse crossings and impacts to any natural hazard and/or natural heritage features in separate Environmental Assessment (EA) Study in the next phases of the project.

7.5.5 Drainage and Stormwater Management

- Confirm and advance the preferred flood mitigation strategy through a separate Environmental Assessment (EA) Study in the next phases of the project.
- Summarize existing technical evaluations of flooding locations, and provide additional evaluations of flood mitigation alternatives in terms of expected reductions in flood damages; opportunities for reclassification of hazard land; opportunities to provide naturalization enhancements to the stream corridor; and opportunities for other social, cultural, and environmental benefits.
- Assess and confirm if any watercourse crossing are impacted by proposed infrastructure or the transit solution and review regulatory flows, hydraulics and hydrology, and impacts. This is to be completed for relevant bridges, culverts and storm sewers.

7.5.6 Structural Requirements

- Review all structures along the Study Corridor to confirm the structural requirements for each structure.
- The newly reconstructed Etobicoke Creek Bridge should be reviewed during future phases of design in coordination with the City of Toronto and TRCA to determine if the bridge can accommodate dedicated transit lanes should they be extended to the Port Credit GO Station in the future.

7.5.7 Utilities

- Confirm location and potential impact to aboveground and belowground utilities during next phases of the project.
- Coordination amongst utility companies, the City of Mississauga, and Peel Region for a common utility zone throughout the Study Corridor.

7.5.8 Streetscaping and Landscaping

- Adopt a “green streets” approach with respect to streetscaping and tree planting to not only enrich the experience of users through the integration of streetscaping elements such as street trees and landscaping, but to also integrate and extend the urban terrestrial ecosystem into the road network. Streetscaping opportunities as identified in the conceptual design are to be confirmed.
- Review opportunities to provide designated areas for street art during future design phases.
- In order to establish an unencumbered tree planting zone along the Lakeshore Road corridor, consultation with the individual utility companies to locate and finance a common utility trench outside of the tree corridor is recommended prior to commencing detailed design.
- The installation of any LID features within the Study Corridor will need to be coordinated with the street tree planting strategy.
- Any planting, including street trees, will need to be tolerant of road salt and other urban conditions. Maintenance requirements will also need to be considered as part of the detailed design.
- Provide a below grade soil trench (dimension to be determined through future phases of the Study) within Lakeshore to accommodate an amended boulevard treatment or a green infrastructure corridor (LIDS). There is an opportunity to interchange street tree locations with shrubs or LIDs if street trees are not able to be installed in the proposed locations.
- All utilities within the municipal boulevard are to accommodate the below grade street tree trench and above grade tree canopy clearances.
- Tree locations to consider sight lines, daylight triangles, traffic light, transit and street light requirements.
- Street furnishings are typically located within the 2 m wide street tree corridor. During future phases of the Study, explore opportunities to continue street furnishings in areas where street trees are not proposed.

7.5.9 Cycling and Pedestrian Facilities

- Implement a cross-ride and waiting area on the eastern crosswalk at the intersection of Lakeshore and Southdown Road.
- Consider opportunities to include additional cross rides, left turn bike boxes, and general adjoining facility compatibility at intersections used by cyclists to connect to the GO Station.
- The Credit River Crossing Multi-modal Alternative (Option 2: Queen Street Extension) is to be carried forward for future study at a later time as development occurs east and west of the Credit River. The recommendation for an active transportation crossing at this location should also be considered in parallel with the multi-modal crossing for coordination of a single bridge if deemed necessary by the future study.
- City to investigate potential pedestrian crossing under the existing Lakeshore Road crossing on the west side of the Credit River adjacent to Front St.
- Material type and treatment for separation of cycling facility from travel lanes and sidewalks to be confirmed. Active transportation treatment at intersections and across driveways to be confirmed during next phases of the project.
- Consider widening of sidewalk on Hurontario St (west side) between Lakeshore Road and Park St (i.e. future HuLRT station) to accommodate future pedestrian demand from transferring passengers from Lakeshore Road express bus to HuLRT.
- Consider improved walking and cycling connections on Ann St and Helene St for pedestrians and cyclists on Lakeshore Road to access the Port Credit GO Station.
- The opportunity to increase the buffer area between parking, cycling lanes and sidewalk to be reviewed in subsequent phases of design.

7.5.10 Transit

- Location of local bus stops to be reviewed with MiWay during the next phases of the project as they are subject to change.
- The feasibility of extending the dedicated transit lanes into Toronto (i.e. to Long Branch GO Station) should be reviewed in subsequent phases of design in coordination with the City of Toronto.

7.5.11 Traffic

- Consult with the Ward Councillor, including the Stavebank community regarding the recommendation for both eastbound and westbound left turn restrictions during the AM and PM peak periods at the intersection of Lakeshore Road and Stavebank Road.
- Only green extension TSP should be applied at Mississauga Road;
- The eastbound left (EBL) should not be truncated at Cawthra Road and Dixie Road;
- Refinements to signal timing plans, such as adjusting pedestrian clearance times where intersections are widened for median transit lanes or changing the base signal timing plan to

maximize the 10 s extend/early green TSP should be considered in future phases of the project.
- Transportation Impact Study (TIS) is to be completed during the next phases of the project to consider diversion of traffic from Lakeshore Road to the QEW.

7.5.12 Additional Consultation and Coordination

- Mississauga's of the New Credit First Nation (MNCFN) requested a copy of all associated environmental and/or archaeological reports. Furthermore, MNCFN employs Field Liaison Representatives who must be on location whenever any fieldwork for environmental and/or archaeological assessments is undertaken. If additional work is scheduled, MNCFN should be notified as soon as possible to discuss and arrange for MNCFN's participation.
- Mohawks of the Bay of Quinte requested that Stage 1 Archaeological Study be forwarded to them when completed during future studies.
- Consult with impacted utility stakeholders and property owners along the Study Corridor in the next phases of the project.

7.5.13 Summary of Anticipated Permits and Approvals

- CVC permit under Ontario Regulation Ontario Regulation 166/06 – Development, Interference with Wetlands and Alterations to Shorelines and Watercourses
- TRCA permit under Ontario Regulation 166/06 – Development, Interference with Wetlands and Alterations to Shorelines and Watercourses (should there be impact to their regulated areas)
- MECP Environmental Compliance Approval (ECA) for stormwater management facilities and storm sewers.
- Permission to Enter Agreements
- Clearance for archaeology from the MTCS based on findings from subsequent archaeological assessments
- Complete an HIA as required and obtain a Heritage Permit application for any development taking place within or adjacent to Port Credit Heritage Conservation District (HCD)

8 Next Steps

This report documents the approach and recommendations from the Transportation Master Plan process per the Municipal Class EA process. It serves as the basis for, and will be used in support of, future investigations to fulfill Municipal Class EA requirements for the project recommendations identified from this Master Plan.

The Final Lakeshore Connecting Communities Transportation Master Plan Report will be presented to City Council for endorsement and should its recommendations be endorsed, the project will progress to the next phase as follows:

- Schedule ‘C’ Municipal Class Environmental Assessment (EA) for Royal Windsor Drive (from Winston Churchill Boulevard to Southdown Road) and for Lakeshore Road (from Southdown Road to the Etobicoke Creek).
- Schedule ‘C’ Municipal Class Environmental Assessment (EA) for a new crossing of the Credit River linking the east and west side of the River south of the existing railway crossing generally to connect the Front St and Queen St right-of-ways. This TMP recommended an active transportation only crossing at this location; however, the EA should consider both an active transportation and vehicular crossing at this location.