

**Date:** 2018-06-07

**Subject:** **Status Update – Planning for Queen Street Rapid Transit: Downtown Brampton to Vaughan Metropolitan Centre (File IB.C)**

**Contact:** Hank Wang, P.Eng., Strategic Planner, Service Development,  
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**Recommendations:**

1. That the report from Hank Wang, P.Eng., Strategic Planner, Service Development, Brampton Transit, dated June 7, 2018, to the Committee of Council Meeting of June 20, 2018, re: **Status Update – Planning for Queen Street Rapid Transit: Downtown Brampton to Vaughan Metropolitan Centre (File IB.C)**, be received.

**Overview:**

- The City of Brampton, through Brampton Transit, is developing a framework for advancing rapid transit in the Queen Street-Highway 7 corridor – with input from Metrolinx, Peel Region, York Region, and the City of Vaughan. The initiative, titled “Queen Street Transit Master Plan Study”, will recommend a preferred approach to upgrading the existing Züm “Priority Bus” service in the corridor from mixed-traffic operation to full rapid transit standard with dedicated transit lanes.
- York Region and Metrolinx are currently implementing dedicated transit lanes (“Rapidway”) for Bus Rapid Transit (BRT) operation in the Highway 7 corridor. The Brampton Züm service on Highway 7 is planned to operate on the new Rapidway upon completion.
- Feedback to date from York Region and Metrolinx staff on the Queen Street Study indicates a strong commitment to BRT and the Viva Rapidway program in the Highway 7 corridor; both partners have expressed a desire for Queen Street Rapid Transit to share a common transit mode with Viva BRT – as is the case today with Brampton Transit Züm.
- The 2013 Benefits Case Analysis for Queen Street Rapid Transit, prepared

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by Metrolinx in collaboration with the City of Brampton, found that forcing customers to transfer from one mode (i.e. light rail) to another (i.e. bus) to continue their journey in the same direction will have a negative impact on ridership. This was echoed by a high-level analysis on the Queen Street Study, which found that the forced transfer will make Queen Street Rapid Transit unattractive to customers – even in comparison with status quo.

- The existing Züm service in the Queen Street-Highway 7 corridor has been experiencing robust growth since the first full year of operation in 2011. Based on the planned service increase in the corridor over the next five years, it is anticipated there will be an emerging need to further expand capacity with dedicated transit lanes between the next 5 to 10 years.
- It has been determined that Bus Rapid Transit (BRT) in dedicated lanes should be the logical first step for implementing rapid transit on Queen Street, with a target implementation timeframe of 5 to 10 years – subject to funding availability and the necessary approvals in place. The design of the BRT corridor shall allow for future upgrades in capacity, infrastructure, technology (e.g. electric propulsion, vehicular automation, autonomous vehicles, Smart Lanes), or conversion to light rail, if warranted. The design of the BRT corridor shall also allow for potential commingle operation with light rail – in the longer term – if the Hurontario LRT were to be extended via Kennedy Road and Queen Street.
- Metrolinx will be initiating a BRT Planning Study and Initial Business Case (IBC) for the Queen Street-Highway 7 West Corridor in partnership with Brampton Transit staff. The IBC will compare investment options for Queen Street Rapid Transit, select a preferred option for further refinement, and to help secure funding for planning, preliminary design, and environmental assessment.
- Preparations are underway for a second public meeting on Thursday, June 21, 2018 at Bramalea Civic Centre, and Monday, June 25, 2018 at City Hall Conservatory. Staff and key individuals from the consulting team will be on hand to provide a status update on the following:
  - Proposed planning approaches for Queen Street Rapid Transit
  - Proposed transit solution for Queen Street Rapid Transit
  - Complete Streets approach to transit-lane design options
  - Potential Major Transit Station Areas and proposed Focus Areas

### **Background:**

The City of Brampton, through Brampton Transit, is undertaking the Queen Street Transit Master Plan Study (Queen Street Study) to develop a framework for advancing

## 7.2.1-3

rapid transit in the Queen Street-Highway 7 corridor. The study will recommend a preferred approach to upgrading the existing Züm “Priority Bus” service in the corridor to full rapid transit standard, while allowing for upgrades in infrastructure, technology, and capacity over the longer term as warranted by demand, operational requirements, and technology availability.

The Primary Study Area, as shown in **Appendix ‘A’**, is approximately 1 km wide centred on Queen Street between McLaughlin Road in the west and Highway 50 in the east. The study limits also encompass the entire boundary of the Downtown Brampton Mobility Hub, which is approximately 1.6 km wide in diameter centred on Brampton GO Station. The Secondary Study Area extends further west along Queen Street to Mississauga Road and further east along Highway 7 – through the City of Vaughan – to Vaughan Metropolitan Subway Station.

The study objectives are as follows:

- **Transit:** develop a true rapid transit line with dedicated transit lanes that will separate transit from general vehicular traffic, reduce overall runtime, increase service frequency, and increase overall people-moving capacity in the corridor
- **Transportation:** develop a multimodal corridor that moves people and goods more efficiently and safely using transit, walking, cycling, cars, and heavy vehicles
- **Land Use:** provide policy directions on future land use within the study area to direct land use intensification along the transit corridor, enable more transit-supportive development, and support economic growth in Brampton
- **Urban Design:** transform Queen Street into a pedestrian-friendly environment through successful public realm improvements and urban design concepts – creating vibrant public spaces for all ages and abilities

The Queen Street East corridor is currently the busiest transit corridor in Brampton with over 25,000 transit customers per day on a weekday (Fall 2017), of which around 19,000 are on the Züm service (Routes 501/501A/501C) while the rest are on the local service (Routes 1/1A). With population and employment anticipated to grow by over 40% to 50% over the next 25 years, transportation needs within the corridor will continue to grow as well, necessitating transit expansion in order to handle the anticipated growth in demand. Queen Street East is a designated rapid transit corridor in the City’s Official Plan and Transportation Master Plan, a transit spine in the Brampton Vision 2040 document, and a top transit priority in the City as identified by Council.

Planning for rapid transit on Queen Street is also in alignment with overall regional transportation being led by Metrolinx, which has reaffirmed Queen Street as an “In-Development” project and a key component of the Frequent Rapid Transit Network in

## 7.2.1-4

the 2041 Regional Transportation Plan (RTP), as shown in **Appendix 'B'**. Together with the Highway 7 Bus Rapid Transit (BRT) corridor in York Region, Queen Street Rapid Transit will provide a critical linkage in the larger, inter-regional corridor connecting Downtown Brampton with Bramalea City Centre, Vaughan Metropolitan Centre, Richmond Hill Centre, Markham Centre, and beyond.

### Last Committee Report

In the last report to Committee of Council dated May 3, 2017, staff provided an update on progress to date on the Queen Street Study, the inclusion of an urban design and planning review of the Downtown Mobility Hub area, and notification of the public meeting on May 18, 2017.

### **Current Situation:**

#### Study Process

The Queen Street Study was initiated under the Municipal Class Environmental Assessment process for Transportation Master Plans, which is the traditional approach for municipal infrastructure projects. Following the last Committee report, it was determined that the Municipal Class EA was not the best approach for Queen Street Rapid Transit – particularly in view of Metrolinx's current practice in planning, developing, and delivering rapid transit projects with municipalities. Given the inter-regional significance of Queen Street Rapid Transit, the recent involvement of external stakeholders on the Queen Street Study (i.e. Metrolinx, Peel Region, York Region, the City of Vaughan), and in anticipation of Metrolinx's forthcoming guidance on its business case requirements for transit projects (released in March 2018), it was determined that the best approach for completing the Queen Street Study was to focus on feasibility and options analyses, support the development of an Initial Business Case (IBC) with Metrolinx, and defer environmental assessment to a later date - once the transit project is better defined.

The IBC will compare investment options for the Queen Street project, select a preferred option for further refinement, and it is typically used to help secure funding from the Province for planning, preliminary design, and environmental assessment.

#### Coordination with Other Studies

Several key events occurred over the last 10 to 12 months – following the last report – that have led to a number of other adjustments in the Queen Street Study:

- **Planning Vision (Brampton Vision 2040):** public consultation activities on the Queen Street Study were postponed in the Fall and Winter of 2017 in an effort to avoid drawing attention away from Planning Vision and create consultation fatigue at the same time

## 7.2.1-5

- **Ryerson University:** the Mobility Hub review was put on pause until the City's effort in advancing the Ryerson University campus had progressed further along
- **LRT Extension Study:** the initiation of the LRT Extension Study, which overlaps with the Queen Street Study between Kennedy Road and McLaughlin Road, necessitated the two studies to coordinate closely

Overall, Transit staff have been working closely with the consulting team to ensure that the Queen Street Study is flexible enough to respond to changing priorities, remain focused on the most critical deliverables, while continuing to work within the existing budget envelope.

### Public Feedback to Date

The first public meeting of the Queen Street Study took place on May 18, 2017. An online survey was also launched in parallel that ran from May to September 2017. Transit staff also conducted targeted promotions at several public outreach events throughout August and September in an effort to maintain awareness of the study and increase survey response rate.

Key themes of what we heard from public meeting participants and survey respondents:

- Address the look, appearance, and feel of the public realm in the Downtown area
- Mitigate congestion on Queen Street, particularly within Downtown, at major intersections, and at the Highway 410 interchange
- A strong support for roadway and operational improvements

Top five factors most likely to improve the travelling experience on Queen Street:

- Frequent and reliable transit
- Dedicated transit and carpool lanes
- Separated off-road cycling facilities
- Safer pedestrian crossings
- Wider sidewalks with places to sit

The three most important factors that will make transit the likely choice for travel:

- Reliable service that arrives on time
- Ease of transfer to other transit services
- Shorter travel time with higher travel speeds and fewer stops

Further promotion of the Queen Street Study took place in March 2018 as part of a series of public meetings held by Transit staff to discuss the 2018 Brampton Transit

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Service Plan, and in April 2018 as part of the LRT Extension Study introductory open house.

Overall feedback to date from the public towards the Queen Street Study has been positive and supportive, though it is expected that individual preference for one type of rapid transit over another differs from one person to another – which is typical on any transit infrastructure project. Through a combination of reasoned arguments and quantitative analyses, staff will ensure that the recommendations for Queen Street are communicated clearly and logically.

### Engagement with Metrolinx Staff

Metrolinx Planning staff became directly involved in the Queen Street Study in September 2017 – at both the technical working level and the Steering Committee level. More recently, Metrolinx staff agreed to lead and fund the development of an Initial Business Case in partnership with Transit staff, which in turn will help free up the Queen Street Study to focus on feasibility analysis and support Metrolinx on the business case development. The business case will be developed with input from Peel Region, York Region, and the City of Vaughan staff.

Although the Queen Street Study is a municipality-led initiative, the greater regional interest in Queen Street Rapid Transit is evident in the Metrolinx 2041 Regional Transportation Plan. The desired outcome for Queen Street Rapid Transit is shared between Transit staff and Metrolinx staff – that it must maintain a continuous, one-seat ride for transit riders, and it must also be integrated with on-going BRT planning and implementation along Highway 7 in York Region. This is an important factor in the rationale behind the transit solution being proposed for Queen Street Rapid Transit.

### Engagement with Peel Region Staff

To date, Transit staff have held several meetings with Peel Region staff from the Infrastructure, Transportation Planning, and Sustainable Transportation groups to provide progress updates on the Queen Street Study, exchange background information relevant to the study, and discuss key issues. So far, some of the key areas of interest expressed by Regional staff are as follows:

- The functional roles of Queen Street as a multimodal corridor
- The importance of Queen Street as a corridor for Goods Movement
- The effect of dedicated transit lanes on the capacity of signalized intersections
- The tradeoffs between converting general purpose lanes into dedicated transit lanes, versus widening the roadway to implement transit lanes and maintain auto capacity
- Coordination with the Region's Major Transit Station Areas Study

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Overall, Regional staff are supportive of Queen Street Rapid Transit, and they have expressed a desire to work closely with Brampton staff on the Queen Street Study. As with Transit staff's engagement to date with Metrolinx staff, there is now an ongoing working relationship with Peel Region staff at both the working level and the Steering Committee level as well. Most of the interest areas above are in line with the questions that staff and the consulting team are seeking to answer through the Queen Street Study.

### Engagement with York Region Staff

Transit staff's consultation with York Region staff, to date, offers several key lessons that are critical to the success of Queen Street Rapid Transit.

York Region, through York Region Rapid Transit Corporation and in partnership with Metrolinx, has been developing and implementing dedicated transit lanes for its Viva BRT network for almost 10 years. The dedicated lanes, branded "Viva Rapidway", are currently in operation in the Highway 7 East Corridor between Bayview Avenue in the Town of Richmond Hill and Warden Avenue in the City of Markham. Construction is currently underway along the Highway 7 West BRT Corridor between Richmond Hill Centre and Helen Street-Bruce Street in Vaughan, which is currently scheduled for completion in December 2019. Upon completion, it is understood that the current Züm service operating on Highway 7 (Route 501) will be able to utilize the Rapidway. A key plan illustrating the limits of the Highway 7 West Rapidway project can be found in **Appendix 'C'**.

York Region Rapid Transit is currently working to secure funding to complete the next phase of their Rapidway program, which includes a westerly extension of the Highway 7 West Rapidway from Helen Street to Highway 50 for BRT operation. As such, York Region staff have expressed the importance of having a common mode of rapid transit between the Highway 7 corridor and the Queen Street East corridor. There are three general reasons behind York Region's preference for BRT:

- Operational flexibility
- Ease of implementation through phasing
- Capital cost

The insight to date from York Region regarding the Queen Street-Highway 7 corridor is an important factor in the rationale behind the transit solution being proposed for Queen Street Rapid Transit.

### Proposed Planning Approaches for Queen Street Rapid Transit

Transit staff and the consulting team have identified three different approaches as potential ways to implement Queen Street Rapid Transit and address future transportation needs within the corridor:

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- **Convert two general-purpose lanes** into dedicated transit lanes, reallocating some of the auto-vehicular capacity into capacity for rapid transit, requiring minimal widening of the roadway. There would likely be limited widening of the right-of-way to accommodate boulevard improvements and other roadway improvements.
- **Widen the roadway and the right-of-way** to introduce dedicated transit lanes and maintain the existing number of general-purpose lanes, resulting in an overall increase in transportation capacity, but will likely have major property impacts along the corridor where right-of-way is insufficient. The width of the roadway at intersections would also be widened as a result.
- **Convert curb lanes into reserved lanes for buses and HOVs**, requiring no widening of the roadway, but it has less capacity to accommodate rapid transit and will be less effective in achieving transit-priority compared with dedicated transit lanes. There would still likely be limited widening of the right-of-way to accommodate boulevard improvements and other roadway improvements.

The consulting team is currently in the process of updating the transportation demand modelling work that it initiated prior to the May 2017 report to the Committee of Council. Transportation demand forecasts are critical to Transit staff's push towards a more robust assessment of future transportation needs within the Queen Street East corridor. They are the basis for the identification and evaluation of different approaches to planning rapid transit along the corridor. The rigour of the consultant's demand forecasting effort is being strengthened to ensure that the calibration of the demand model is reasonably sound, and that staff are comfortable using the model outputs to properly identify and assess the impact of each planning approach, and aide in selection of a preferred approach.

### Proposed Transit Solution

It has been determined that Bus Rapid Transit (BRT) in dedicated lanes should be the logical first step for implementing rapid transit on Queen Street, with a target implementation timeframe of 5 to 10 years – subject to funding availability and the necessary approvals in place.

The current Züm “Priority Bus” service in the Queen Street-Highway 7 corridor offers a continuous, inter-regional connection between Downtown Brampton, Vaughan Metropolitan Centre Subway Station, and York University. It is the most popular service operated by Brampton Transit with approximately 19,000 on a typical weekday (Fall 2017). From the first full year of service in 2011 to the most recent year-end data from 2017, weekday ridership grew tremendously at an average rate of 7% per year over the six-year period. The inter-regional destinations, the one-seat ride, and the value of the



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service are the key factors behind this success. Based on the planned service increase in the corridor over the next five years, as identified in the Brampton Transit 2018-2022 Business Plan approved by Council in December 2017, it is anticipated there will be an emerging need to further expand capacity with dedicated lanes within the next 5 to 10 years.

The 2013 Benefits Case Analysis (BCA), prepared by Metrolinx in collaboration with the City of Brampton, found that irrespective of the transit mode (BRT or LRT), the most desirable outcome for planning rapid transit in the Queen Street-Highway 7 corridor is to provide a continuous service within the corridor. Forcing customers to transfer from a Brampton light rail vehicle to a York Region bus midpoint in their journey will adversely impact ridership potential in the corridor. This is echoed by a high-level analysis carried out by the consulting team on the current Queen Street Study, which found that a forced transfer will make the rapid transit unattractive to riders, potentially worse than the status quo service in mixed traffic, and will result in less ridership potential for the corridor.

Feedback to date from Metrolinx and York Region staff have shown that their commitment to BRT on Highway 7 is high, with strong support from York Region Council, and the commitment to the Rapidway program will continue into the future. Both partners have expressed the importance for Queen Street Rapid Transit to share a common transit mode with Viva BRT, and a desire for Brampton to coordinate with the Rapidway program in York Region.

The rationale behind BRT as the starting point for Queen Street Rapid Transit also accounts for physical constraints within the Downtown Brampton area – particularly in and around the Brampton GO Station, the CN rail corridor, and available space in the roadway on Queen Street and Main Street following completion of the Downtown Reimagined project. With major transformations underway in the downtown area encompassing the Ryerson University campus, the future Centre for Innovation, and the potential future expansion of the Downtown Transit Terminal, the preferred solution for Queen Street Rapid Transit would need to be operationally flexible to respond to the changing landscape within the downtown area. BRT is advantageous because it is operationally flexible, less infrastructure-intensive, and less costly to implement.

While BRT is the proposed starting point for Queen Street Rapid Transit, an important requirement for the project will be that the design of the corridor allows for future upgrades in capacity, infrastructure, technology (e.g. electric propulsion, vehicular automation, autonomous vehicles, Smart Lanes), or conversion to light rail if warranted. Recognizing the emergence of new and evolving transit technologies in the industry, the proposed transit solution is flexible enough to adapt to the changing technological environment. A few illustrative precedent images can be found in **Appendix 'D'**.

Relationship with the LRT Extension Study

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Based on current timeline of the Hurontario LRT project, and the current status of the proposal to extend the LRT beyond Gateway Terminal, it is assumed that Queen Street Rapid Transit will be implemented in advance of any future extension of the Hurontario LRT. If the LRT Extension Study selects Kennedy Road-Queen Street as the preferred alignment for extending the Hurontario LRT, another key requirement for the Queen Street Rapid Transit project will be to ensure that the design of the BRT corridor allows for potential commingle operation with the LRT. The operational flexibility of BRT will allow Queen Street Rapid Transit to co-exist with any future extension of the Hurontario LRT.

### Complete Streets Approach

The desired outcome for Queen Street will be informed by policy direction for streets in the Greater Golden Horseshoe Growth Plan, the Peel Region Official Plan, the City's Official Plan and Transportation Master Plan, the recent Brampton 2040 Vision, and the ongoing Brampton Complete Streets Study. Each policy speaks to the inclusion of Complete Streets: an approach to street planning and design that considers the needs of all users and uses.

All of the street design options to be developed by the consulting team will strive to achieve two fundamental principles:

- **Context Sensitive Design:** a design that considers the place that streets exist within and whom they serve – moving beyond simply designing to satisfy an auto-centric transportation role and function
- **A Proportional and Equitable Street:** having adequate space for non-vehicular uses is important to create inviting and vibrant city streets that are places as well as corridors for movement. Working inward from the edge of the right-of-way to the centreline of the roadway, the street can provide a comfortable proportion that can support and encourage public life. Street design options will strive to achieve a 40/60 target ratio between the boulevard and the roadway: 40% of the right-of-way width dedicated to boulevard space which includes bike facilities, and 60% dedicated to the roadway which includes transit lanes

An illustrative explanation of these two design principles can be found in **Appendix 'E'**.

A series of typical street design options are being developed for the Queen Street corridor – with dedicated transit lanes in three possible configurations. Each of the options presents a change to the design of Queen Street from the existing condition:

- **Centre Median Transit Lanes:** the most common arrangement for rapid transit corridors like Queen Street, featured in most jurisdictions that operate at-grade rapid transit.
- **Curbside Transit Lanes:** transit operating in dedicated lanes adjacent to the curb is another common arrangement for corridors like Queen Street, but it is less

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effective in achieving transit-priority – and it comes with a greater impact on midblock vehicular access.

- **One-Side Transit Lanes:** transit in dedicated lanes adjacent to one side of the road (north or south, east or west) is not a typical arrangement, though it can be found in other jurisdictions in short segments along a corridor as a solution to a localized need or constraint. Any crossing over the transit lanes would require a signalized intersection.

A conceptual illustration of these three transit lane configurations, showing a general cross-section view at a typical midblock location, can be found in **Appendix 'F'**.

The design options are intended to test a range of transit, roadway, and boulevard configurations within a 40, 45, and 50-metre right-of-way – which is a general reflection of the Queen Street corridor east of Centre Street. One or more options are possible for the length of the corridor. A detailed transportation analysis and a detailed assessment of each street design option will inform the selection of the preferred design option.

### Major Transit Station Areas and Focus Areas

In response to the 2017 update to the *Growth Plan for the Greater Golden Horseshoe*, the land use component of the Queen Street Study was restructured into a preliminary identification, delineation, and review of potential Major Transit Station Areas (MTSAs) along the Queen Street East corridor. MTSAs are the areas around existing or planned higher order transit stations or stops. Provincial policies require these areas, generally within 500 metres or a 10-minute walk of a rapid transit stop, to be planned and designed to support transit use – with multimodal connections, a diverse mix of land uses, and minimum targets for population and employment densities within the MTSAs.

With Queen Street Rapid Transit, the area around each rapid transit stop will be considered an MTSA, and for the purpose of the Queen Street Study, all of the existing Züm stops on Queen Street are being considered as potential rapid transit stops – and potential MTSAs. Given that the current distances between existing Züm stops on Queen Street are already at the recommended minimums for a limited-stop, higher-speed service, no new rapid transit stops are being proposed as part of the Queen Street Study.

To help identify where and how each MTSA can grow in a way that supports transit use, the consulting team is currently defining potential station area boundaries around each of the potential MTSAs – for analysis purposes. A key plan of the potential boundaries can be found in **Appendix 'G'**.

Of the 16 potential MTSAs along the Queen Street Rapid Transit corridor, eight have been identified as Focus Areas:

- Brampton GO Station Area

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- Queen Street Central Area (between Kennedy Road and Rutherford Road)
- Bramalea (between Dixie Road and Central Park Drive)
- Gateway Boulevard Node
- Goreway Drive
- The Gore Road

Focus Areas are defined as areas that have a capacity to accommodate future residential, mixed-use, or employment growth – and where transit services converge. Each Focus Area has a different land use context and planning priorities. The next phase of the Queen Street Study will cover the development of planning priorities and urban design guidelines to support Queen Street Rapid Transit.

### BRT Planning Study and Initial Business Case

Metrolinx Planning staff will be initiating a BRT Planning Study along with an Initial Business Case for the Queen Street-Highway 7 West Corridor; Transit staff and the Queen Street Study will play a big part in the Metrolinx Study. A scope of work has been developed – with input from Transit staff as well as York Region staff – and a consultant (under contract with Metrolinx) will be selected from a short-list of candidates. The Metrolinx Study is anticipated to kick-off in late June or early July 2018. The study area will consist of the Queen Street/Highway 7 corridor from Mississauga Road in Brampton to Helen Street in the City of Vaughan – connecting into the west limit of the Highway 7 West BRT currently under construction. The Metrolinx Study will also carry out a sensitivity analysis to examine ridership potential further east along the corridor – through to Richmond Hill Centre, Markham Centre, and Cornell Terminal near the York-Durham boundary – consistent with the Metrolinx 2041 Frequent Rapid Transit Network.

### Next Public Meeting

Preparations are underway for a second public meeting scheduled for the evening of Thursday, June 21 at Bramalea Civic Centre, and the evening of Monday, June 25 at City Hall Conservatory – in parallel with the LRT Extension Study Open House taking place at City Hall at the same time. Staff and key individuals from the consulting team will be on hand to provide a status update on the Queen Street Study and answer questions.

### Current Milestone Target Dates (as of This Report)

<b>Description</b>	<b>Target Date</b>
Public Information Centre: Status Update and Proposed Transit Solution for Queen Street Rapid Transit	June 21 and June 25, 2018
Metrolinx BRT Planning Study and Initial Business Case for Queen Street-Highway 7 West Corridor: Study Kick-Off	End of June 2018
Selection of the preferred planning approach for Queen Street Rapid Transit	Q3 2018

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Selection of the preferred street design option for dedicated transit lanes on Queen Street	Q4 2018
Completion of the Metrolinx BRT Planning Study and Initial Business Case	Q1 2019
Final Report to Council	Q1 2019

### **Corporate Implications:**

There are no specific corporate implications at this time resulting from this report.

### **Strategic Plan:**

Queen Street Rapid Transit is part of Regional Connections – one of the six areas of focus for the Strategic Plan. It is a key initiative that builds on the strength of existing local and regional networks, achieves seamless integration within the overall multi-modal transportation network, and connects Brampton with the Greater Toronto and Hamilton Area (GTHA) and beyond. The proposed actions on the Queen Street Study are in alignment with the City's Strategic Plan priority – “**Move and Connect**” – to increase local transit options and invest in new infrastructure to keep people moving efficiently. The Queen Street Study also meets the Strategic Plan priority – “**Smart Growth**” – with respect to building complete communities to accommodate growth for people and jobs. Lastly, this report aligns with the “**Good Government**” priority by providing information on Transit staff 's effort to date in leveraging healthy partnerships with Peel Region, York Region, and Metrolinx.

### Living the Mosaic – 2040 Vision:

This report directly aligns with the vision that Brampton will be a mosaic of safe, integrated **transportation** choices and new modes, contributing to civic sustainability, and emphasizing walking, cycling, and transit. The proposed transit solution – BRT in dedicated lanes – is in alignment with Action #4-3 regarding an integrated transit network, particularly with regards to designation of bus lanes on streets and more connections to the subway system. The Complete Streets approach to developing street design options for Queen Street is consistent with Action #4-2 regarding Complete Streets, and it will also contribute to achieving the desired outcome in Action #3-4 regarding “Queen’s Boulevard”.

### **Conclusion:**

It has been determined that Bus Rapid Transit (BRT) in dedicated lanes should be the logical first step for implementing rapid transit on Queen Street, with a target implementation timeframe of 5 to 10 years – subject to funding availability and the necessary approvals in place. The design of the BRT corridor shall allow for future upgrades in capacity, infrastructure, technology (e.g. electric propulsion, vehicular automation, autonomous vehicles, Smart Lanes), or conversion to light rail if warranted. The design of the BRT corridor shall also allow for potential commingle operation with

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light rail – in the longer term – if the Hurontario LRT were to be extended via Kennedy Road and Queen Street.

Preparations are underway for a second public meeting on Thursday, June 21, 2018 at Bramalea Civic Centre, and Monday, June 25, 2018 at City Hall Conservatory. Staff and key individuals from the consulting team will be on hand to provide a status update on the following:

- Proposed planning approaches for Queen Street Rapid Transit
- Proposed transit solution for Queen Street Rapid Transit
- Complete Streets approach to transit-lane design options
- Potential Major Transit Station Areas and proposed Focus Areas

Approved by:

Approved by:

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Alex Milojevic,  
General Manager, Transit

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Harry Schlange,  
Chief Administrative Officer

### **Attachments:**

Appendix A – Queen Street Rapid Transit Study Area

Appendix B – Metrolinx 2041 Frequent Rapid Transit Network

Appendix C – Highway 7 West Rapidway Project Limits

Appendix D – Examples of New or Emerging Technologies in Transit

Appendix E – Complete Streets Approach

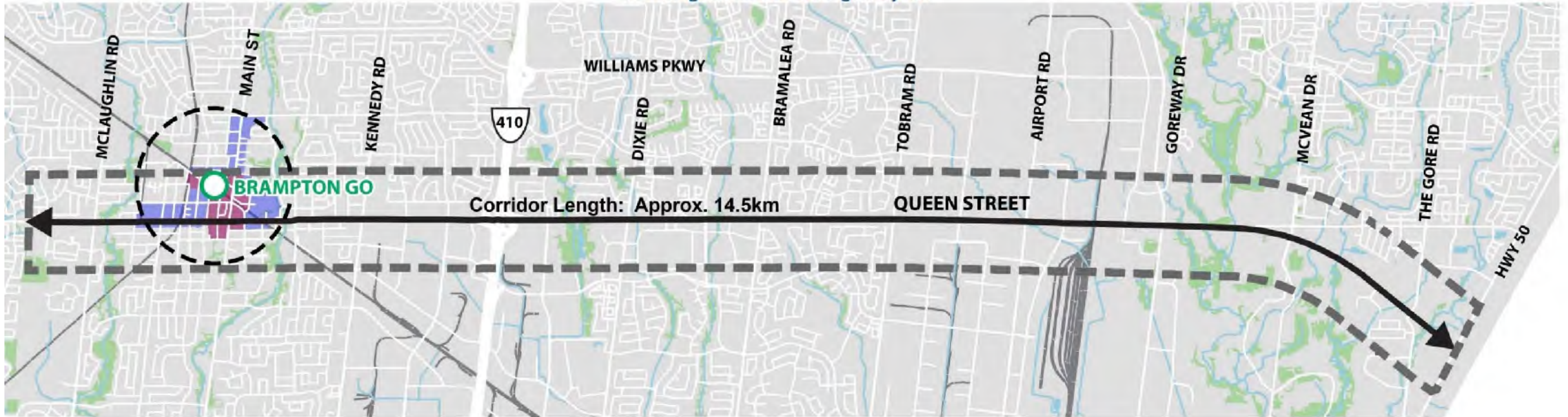
Appendix F – Typical Cross-Section of Proposed Transit Lane Options

Appendix G – Key Plan of Potential Major Transit Station Areas

Report authored by: Hank Wang, P.Eng. – Strategic Planner, Service Development

Appendix A – Queen Street Rapid Transit Study Area

Primary Study Area  
 McLaughlin Road to Highway 50



Corridor Length: Approx. 14.5km

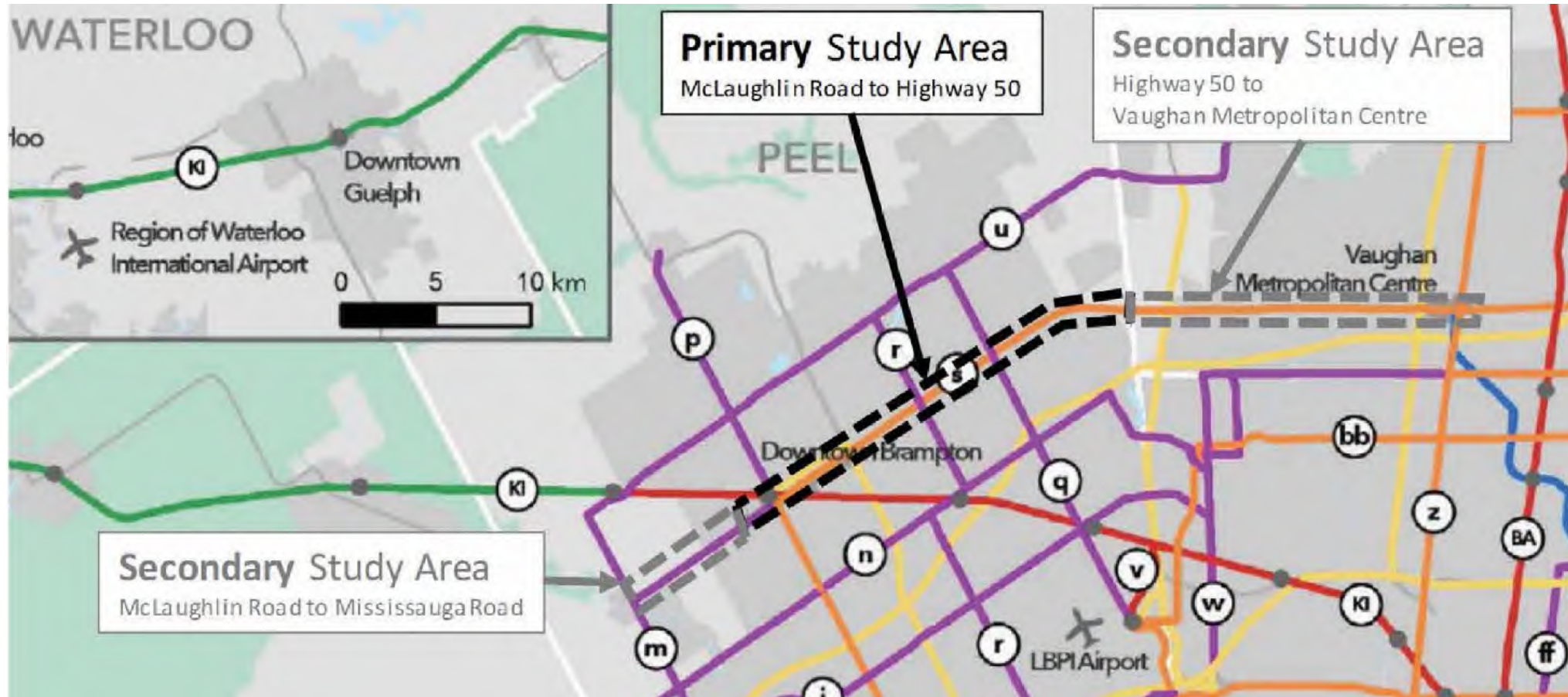
QUEEN STREET

■ ■ ■ ■ Queen St Corridor Study Area (500m)

○ Downtown Mobility Hub Area (800m)

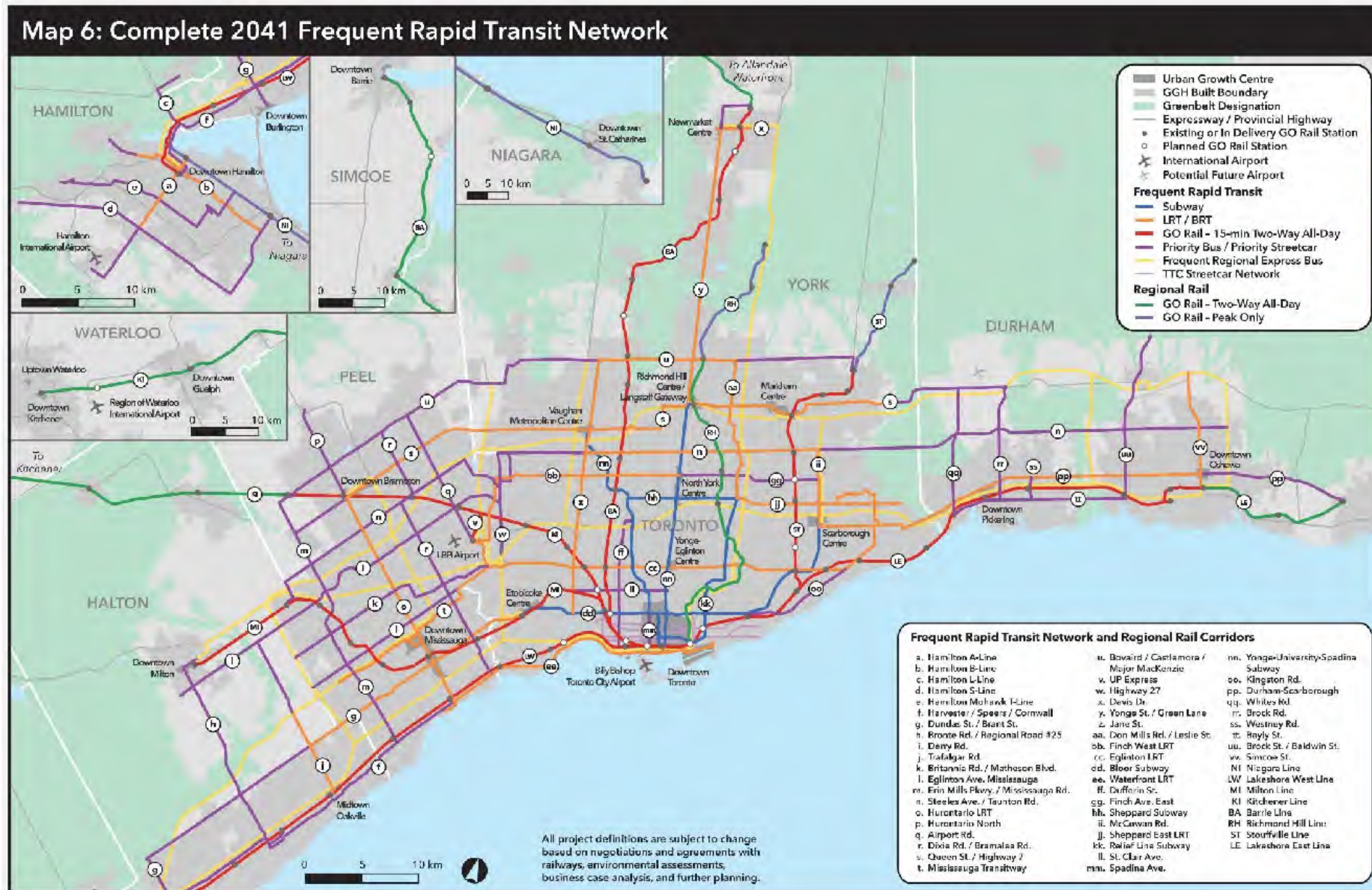
\*The Queen Street Rapid Transit Master Plan was expanded to also include an urban design and planning review of the Downtown Brampton Mobility Hub area.

## Appendix A – Queen Street Rapid Transit Study Area





Appendix B – Metrolinx 2041 Frequent Rapid Transit Network



## Appendix C – Highway 7 West Rapidway Project Limits



## Legend

- |  |  |
|--|--|
|  Phase 1 rapidway construction [2012–2016/2018] |  Vivastation  |
|  Phase 2 rapidway construction [2016–2019]      |  SmartREIT Terminal                                 |
|  Full dedicated rapidway                        |  Richmond Hill Centre Terminal                      |
|  Partial rapidway                               |  Toronto-York Spadina Subway Extension [2011–2017]  |
|  Transit in mixed traffic                       |  VMC development area designated by City of Vaughan |

## Appendix D – Examples of New or Emerging Technologies in Transit



Electric Bus with End-of-Line Charging  
(Montreal, Quebec, Canada)



Catenary-Free Light Rail with Onboard Energy Storage and In-Station Charging  
(Kaohsiung, Taiwan)



High Capacity Vehicle, Battery Electric Propulsion, Trackless Guideway, Vehicular Automation  
(Zhuzhou, China)



Higher Capacity Bus in Bus Rapid Transit Application  
(Malmo, Sweden)

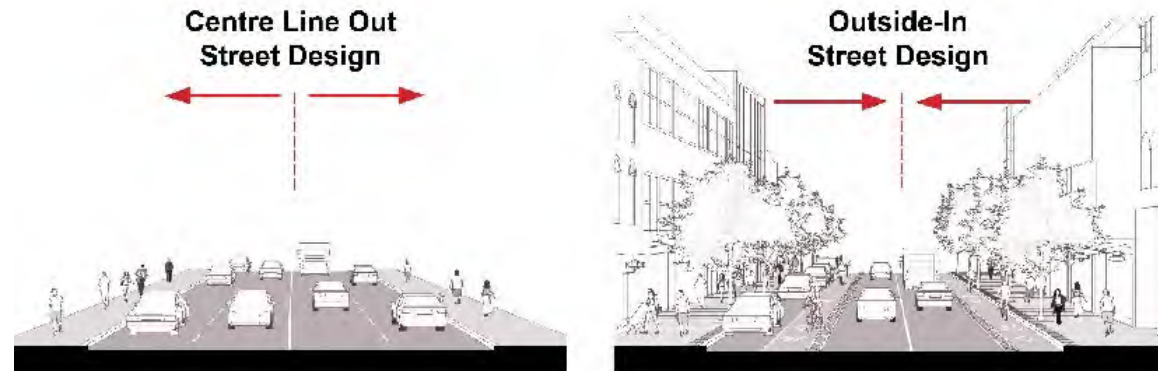


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## Appendix E – Complete Streets Approach

### Context Sensitive Design

Fundamental to Complete Streets is to consider the place that streets exist within and whom they serve, moving beyond simply designing to satisfy an auto-centric transportation role and function.



**Focus of Traditional Approaches:**

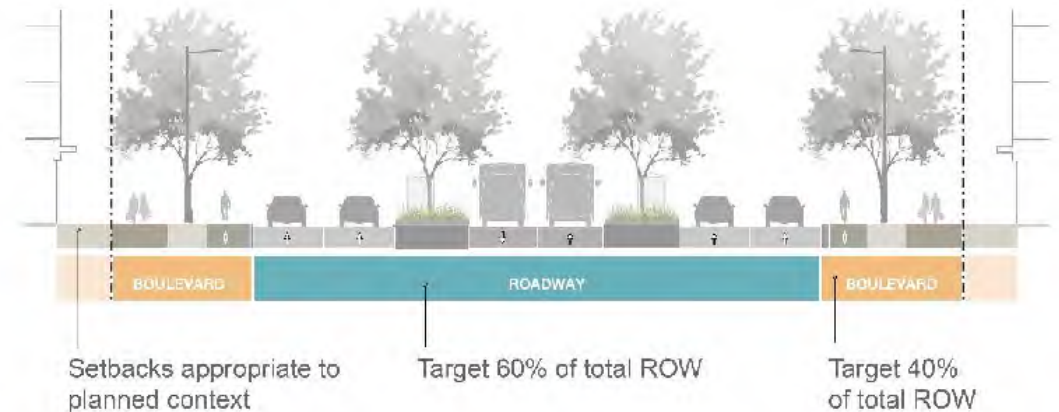
- Auto Mobility
- Automobile Safety

**Complete Street Approach:**

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

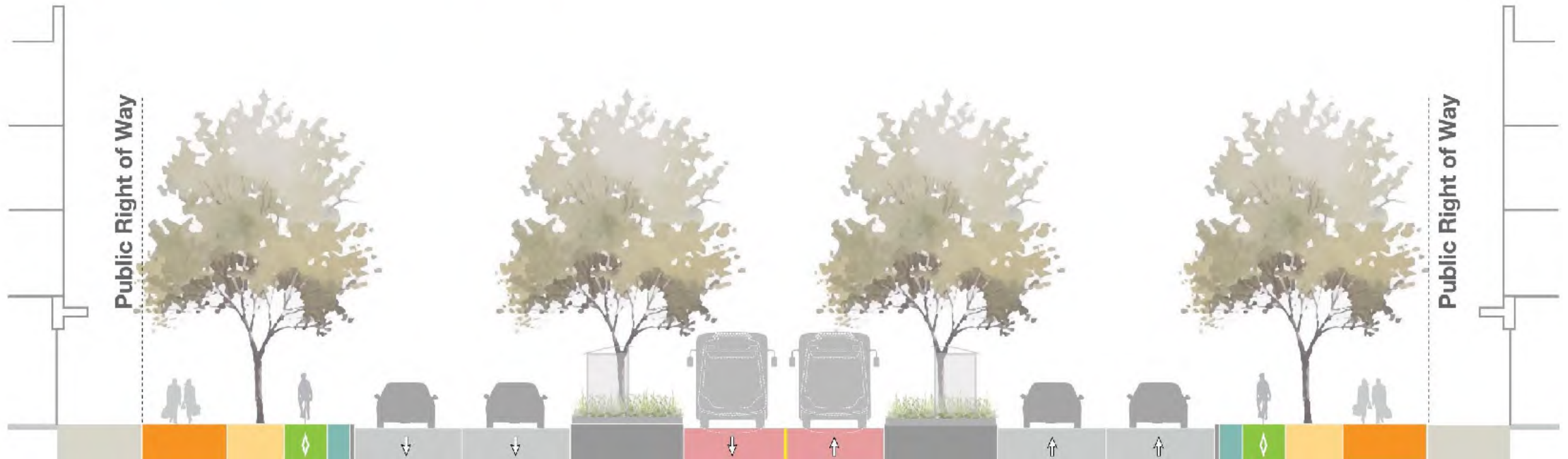
### A Proportional and Equitable Street

Having adequate space for non-vehicular uses is important to create inviting and vibrant city streets that are places as well as corridors for movement. Working from the Outside-In, the street can provide a comfortable proportion that can support and encourage public life.

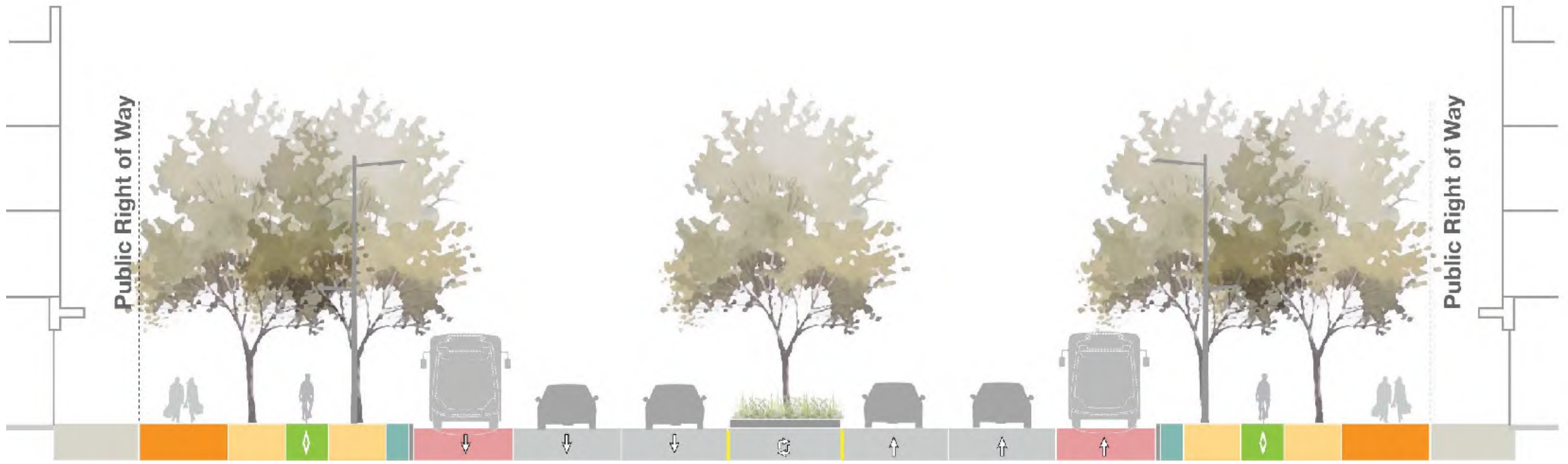


1

# Median Transit



# 2 Curbside Transit



3

# One-Side Transit



Appendix G – Key Plan of Potential Major Transit Station Areas

