BRT

### Welcome to the Queen Street-Highway 7 Bus Rapid Transit Project

Public Information Centre #1: Background Information





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#### Land Acknowledgment



#### Treaties and Reserves in the Greater Golden Horseshoe

Let us take a moment to acknowledge we are on lands that have been, and continue to be, home to many Indigenous communities including the Anishnabeg, the Haudenosaunee, and the Huron-Wendat peoples.

We are all Treaty people. Many of us have come here as settlers, as immigrants or involuntarily as part of the trans-Atlantic slave trade, in this generation or generations past.

We acknowledge the historic and continued impacts of colonization and the need to work towards meaningful reconciliation with the original caretakers of this land.

We acknowledge that Metrolinx operates on territories and lands covered by many treaties that affirm and value the rights of Indigenous Communities, Nations, and Peoples.

We understand the importance of working towards reconciliation with the original caretakers of this land. At Metrolinx, we will conduct business in a manner that is built on a foundation of trust, respect, and collaboration.

# What is Bus Rapid Transit (BRT)?





#### What is BRT?







Dedicated lanes and shorter travel times

Frequent service

Enhanced transit stops with higher standards of passenger amenities



Smart signals to support smoother traffic flow



Passenger information systems



#### **Examples of Frequent Rapid Transit**

#### **Priority Bus**

- On the corridor today (Züm).
- Traffic signal priority and bus-only queue jump lanes at key intersections along Queen Street, Main Street, and Steeles Avenue.
- Brampton Transit's rides per capita has increased by 78% since introducing Züm.

#### **Median Bus**

- York Region's Viva service.
- 34 km of dedicated bus rapidway.
- 15-39% faster than curbside transit before rapidway construction.
- Ridership on completed rapidways has increased by 18-67% since operations commenced.

#### **Curbside Bus Lane**

- Durham Region's Pulse BRT.
- First phase included segments of curbside bus lanes at strategic locations throughout corridor.



#### **BRT vs. Other Transit**



#### **Bus Rapid Transit**

- Express bus service, operating in dedicated lanes.
- Higher passenger capacity than traditional bus.
- Higher cost to construct than traditional bus, but less than LRT.
- Dedicated lanes improve travel time and reliability of service over traditional bus.
- Can go off-corridor rather than a fixed-route like LRT.
- 1-2 stops/stations per km.



#### **Traditional Bus**

- Local bus service, operating in mixed traffic.
- Lowest passenger capacity.
- Lowest cost to construct.
- Travels at the speed of general traffic.
- Stops are located every 400-600 m.



#### **Light Rail Transit**

- Passenger rail cars operating on fixed rails in dedicated lanes.
- Highest passenger capacity.
- Highest cost to construct.
- Express service with highest operating speed.
- 1-2 stops/stations per km.



# **Project Overview and History**





#### Project Overview

- 24 km study area of Queen Street and Highway 7 (18 km within Peel Region and 6 km within York Region).
- Main transit spine, connecting Brampton and Vaughan.
- Crucial transportation corridor connecting the northwest and northcentral sections of the Greater Toronto and Hamilton Area (GTHA).
- Enables faster, more reliable connections to:
  - Downtown Brampton transit hub.
  - Vaughan Metropolitan Centre.
  - Toronto-York Spadina Subway Extension (TYSSE).
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#### **Queen Street-Highway 7 BRT**

City Boundaries

Downtown Brampton

Queen Street BRT

Hazel McCallion Line

GO Rail

- Claireville Conservation Area
- Commercial/Industrial Area
- 🛃 Brampton GO
- Bramalea City Centre and Bus Terminal
- 🔎 Transit Hub

- College/University
- **Western end of the Viva Rapidway on Hwy 7**
- --- Proposed Rapid Transit Extension\*

#### \* Unfunded

#### ->>> METROLINX

#### **Project History**





# The Case for Change









#### The Case for Change





#### The Case for Change

The BRT will support both the City of Brampton and Vaughan's planned growth found in their Official Plans.

Without improved transportation options, the livability and economic development of the corridor will be constrained.

Traffic congestion and greenhouse gas emissions will increase. Access to employment and recreational activities will become more challenging.



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#### **Opportunities**

The Queen Street-Highway 7 Corridor is a crucial transportation corridor connecting people through Peel and York Region and the Greater Toronto/ Hamilton Area (GTHA).

The new BRT will support growing communities in Brampton and Vaughan and meet the growing demand for mobility. The BRT will improve regional mobility and regional interconnectivity between the two regions and the rest of the GTHA. There is opportunity for the BRT to support goals of sustainable mode shift and social equity.

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#### **Opportunities and Challenges**





# Benefits of BRT for Queen Street-Highway 7

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Why BRT?

### Continuous and Reliable



The 2013 Benefits Case Analysis (BCA), found that an important outcome of a Queen Street-Highway 7 rapid transit corridor is to provide continuous and seamless service. The continuous service eliminates the need to transfer service between Brampton in Peel Region and Vaughan in York Region, decreasing travel times and enhancing service reliability.



### Coordinated



It is important for the Queen Street-Highway 7 BRT to share a common transit mode with Viva BRT and coordinate the operations with York Region's Viva Rapidway program. Why BRT?

### Flexible



BRT accounts for physical constraints such as narrow streets in certain areas. BRT is operationally flexible and less infrastructure-intensive to build and maintain, making it less costly than other modes such as LRT. Why BRT?

### **Future-ready**



While BRT is the proposed starting point for Queen Street-Highway 7, an important requirement is a future-ready design for the corridor. This means that future upgrades in capacity, infrastructure, technology (electrification, autonomous vehicles, Smart Lanes), and conversion to light rail will be considered.

# The Business Case Process





#### **The Stage-Gate Process**

Metrolinx developed a stage-gate process to guide decisionmaking for evaluating major transit investments. From project inception to the start of construction, stage gates–also known as "decision gates"–are applied at major milestones identified below.





Identifies problem statement and defines benefits that the project needs to deliver.



Evaluates options and determines a preferred option. Typical point at which funding for planning and preliminary design is secured.



clarifying scope, and cost. Typical point at which funding for procurement and build is secured.



Develops project framework, designs, and requirements used as a basis for procurement.



Procures and delivers the project.



After the asset is in service, monitors the benefits and costs to identify opportunities for enhancements and lessons learned.





#### What is an Initial Business Case?

The Initial Business Case (IBC) evaluated the investment options and recommended a preferred option for further refinement and design.

The Brampton Queen Street–York Region Highway 7 BRT Initial Business Case was completed in 2020.



# PREFERRED

#### **Initial Business Case Study**

IBC tested three BRT service options and three infrastructure scenarios for the Queen Street-Highway 7 corridor:

#### **Service Option Scenarios**



**Infrastructure Scenarios** 



#### **Initial Business Case Findings**

IBC supported the need for rapid transit infrastructure in the Queen Street-Highway 7 corridor. Below are findings of infrastructure scenarios tested in the IBC:



#### Median BRT versus Curbside BRT

#### **Median BRT**





For illustration purposes only.

- 1. Dedicated BRT lanes in the centre of the street improve faster travel times and reliability
- 2. Stops located in the centre of the road at signalized intersections.
- Traffic can only make left-turns at signalized intersections, reducing the number of conflict points. A centre raised island restricts left turns into and out of unsignalized side streets and driveways.



For illustration purposes only.

- 1. Dedicated BRT in the outer lanes of the street.
- 2. Stops located on the side of the road at signalized intersections.
- 3. Traffic can cross transit lanes to access properties and make turns.



#### Why Median BRT versus Curbside?

### Median BRT is preferred for this corridor where possible for the following reasons:

- 1. Provides service reliability with fewer delays on busy streets.
- 2. Maintains seamless cross-regional transit network integrations.
- 3. Enhances safety with fewer conflicts between turning traffic and transit.
- 4. Future-ready for LRT, as dedicated lanes in the centre of the street are more flexible for future conversions.



For illustration purposes only.

#### What is a Preliminary Design Business Case?

- The PDBC evaluates the costs and benefits of the project based on preliminary design and environmental studies.
- This stage of the business case lifecycle typically occurs in parallel with the Environmental Assessment process.
- The initial phases of the Queen Street-Highway 7 BRT Preliminary Design Business Case commenced in May 2022.



#### What is the Transit Project Assessment Process?

Environmental impacts of the Queen Street-Highway 7 BRT Project are being assessed in accordance with Ontario Regulation 231/08: *Transit Project Assessment Process* (TPAP), under the Environmental Assessment Act. This process involves a pre-planning phase followed by a regulated timeline (up to 120 days) for public consultation, assessing impacts, developing measures to mitigate negative impacts, and documentation.



Field work and information gathering has commenced for preparing studies. Reviewing and examining Project components and activities also includes:

- Understanding local environmental conditions through desktop reviews and field studies;
- 2. Assessing and evaluating potential impacts that project components and activities may have on the environment;
- 3. Proposing mitigation measures to avoid or reduce impacts and recommending monitoring activities to verify effectiveness of mitigation measures;
- Identifying municipal, provincial, federal, or other permits and approvals that may be required to support project planning and implementation; and,
- Engagement with Agencies, Municipalities, Indigenous Nations, Property owners, and members of the public.



#### **Transit Project Assessment Process**



How is the community involved?

Metrolinx believes that when you have your say our transportation system gets stronger. We are committed to keeping you informed, building understanding and collecting your feedback. Engagement presents an opportunity for you to provide your input.



#### **Matters of Provincial Importance**

The project is required to consider matters of provincial importance and constitutionally protected Aboriginal or Treaty rights, including:



#### **Indigenous Relations**

 Constitutionally protected Aboriginal or Treaty rights and areas of concern.

#### Natural Heritage

- Park, conservation, or protected area.
- Species at risk or of special concern and their habitat.
- Wetland, woodland, wildlife habitat, or other natural heritage areas.
- Areas of natural or scientific interest.
- Rivers, tributaries, or lakes containing fish and fish habitat.



#### Hydrology

- Area of surface water or groundwater or other important hydrological feature.
- Areas that may be impacted by a known, suspected, or off-site source of contamination.



#### Cultural Heritage and Archaeology

- Protected heritage properties and built heritage resources.
- Cultural heritage landscapes.
- Archaeological resources and areas of potential archaeological interest.

#### **Environmental Studies**

- Environmental studies document existing conditions, assess potential construction or operations impacts from the project, and identify mitigation measures to reduce or eliminate potential impacts.
- Study recommendations and identified mitigation measures will be used by the design team to improve the design.
- These studies form part of the EPR that will be posted for 30-day public review, during the 120-day TPAP period, and once all studies are complete.



Natural Environment Technical Report



Socio-Economic and Land Use Characteristics Assessment



Multi-Modal Transportation Analysis



Stage 1 Archaeological Assessment



Air Quality Technical Report



Noise & Vibration Technical Report



Cultural Heritage Report



Climate Change and Sustainability



Phase 1 Environmental Site Assessment Report

#### **Our Goals for this Phase of Work**

- 1. Plan, design, and advance an enhanced transit corridor along Queen Street and Highway 7 to support greater regional connectivity and mobility.
- 2. Advance the Preliminary Design, Environmental Assessment Process for Transit Project Assessment Process (TPAP), and Preliminary Design Business Case.



#### **Our Process for this Phase of Work**





# **Project Study Area**





#### **Corridor Segments and Focus Areas**

#### SEGMENTS



(6)

McLaughlin Road to Kennedy Road Kennedy Road to Highway 410

Mississauga Road to McLaughlin Road

Highway 410 to Highway 50

Highway 50 to Kipling Avenue

**Kipling Avenue to Wigwoss Drive** 

#### **FOCUS AREAS**

- $(\mathbf{A})$ Downtown Bus Terminal / GO Station Kitchener-Georgetown GO Rail Corridor B Underpass  $(\mathbf{C})$ Highway 410 Interchange **Bramalea City Centre Transit Hub** (D **Delta Park Boulevard to Auction Lane** E & Rail Structure at CN Intermodal Yard (F **Claireville Conservation Area** (Goreway Drive to The Gore Road)
- (**G** Highway 427 Interchange - 6 Lane Structure

 $(\mathbf{H})$ Humber River / Rail Corridor The characteristics of Queen Street-Highway 7 vary throughout the 24 km study area. To ensure that the unique features and conditions of each location are considered, the study area has been divided into **SEGMENTS**. Each **SEGMENT** has its own set of concepts for BRT design.

Within the segments, there are **FOCUS AREAS** which have specific challenges and opportunities. Each FOCUS AREA has its own set of concepts for BRT design.



Nashville Rd



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