1 PROJECT OVERVIEW

1.1 INTRODUCTION

The Ministry of Transportation (MTO) has completed a Class Environmental Assessment (EA) to examine rehabilitation and improvement needs for the Queen Elizabeth Way (QEW) from the north limit of the Burlington Skyway to Guelph Line, and for Highway 403 from the QEW to Grindstone Creek.

The study followed the approved environmental planning process for Group "B" projects under the *Class Environmental Assessment for Provincial Transportation Facilities* (2000). The MTO Class EA is a process approved under the *Ontario Environmental Assessment Act* for the planning and design of provincial highway projects.

The goal of this report is to document the environmentally significant aspects of the planning and design of the Recommended Plan. The study reviewed various bridge, mainline highway, and interchange alternatives to ultimately identify the Recommended Plan. Engineering, environmental, and property requirements were established, along with the identification of mitigation measures to reduce environmental impacts. The EA planning process satisfied all provincial and federal environmental legislation and included consideration of the cultural, natural, and social environments.

This Transportation Environmental Study Report (TESR) is made available for public review for a 30-day period.

This report includes the following:

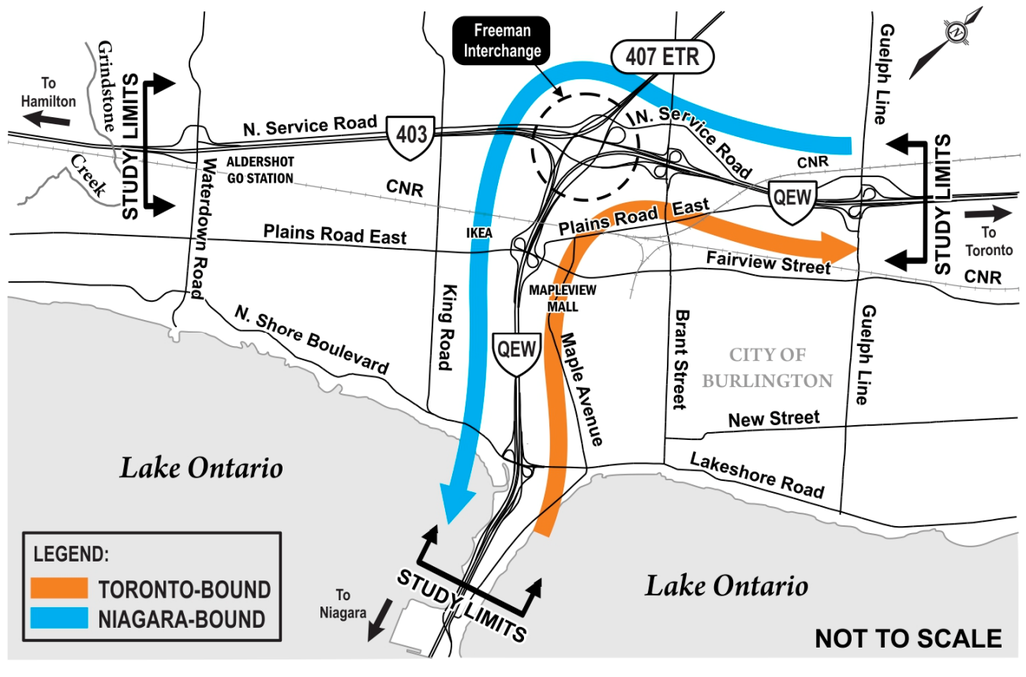
- Description of the project and its purpose;
- Range of alternatives considered; the evaluation and rationale for the selection of the Preferred Alternative;
- Existing natural, cultural, and socio-economic factors; anticipated environmental effects and proposed mitigation;
- Development of the Recommended Plan;
- Summary of the stakeholder consultation undertaken, and key public and agency comments; and
- Commitments to mitigate any remaining negative effects that may arise from the proposed works.

WSP Canada Group Limited was retained by MTO to conduct the Class EA and preliminary design of this study. WSP sub-contracted the services of AECOM to complete the drainage and structural components of the study, and SLR Consultants to complete the air quality assessment. Otherwise, all other assessment and engineering services were provided by WSP.

1.2 STUDY AREA

The study corridor includes a 7.2 km section of the QEW, from east of Guelph Line to the Burlington Skyway and 5.3 km along Highway 403 from the Freeman Interchange to Grindstone Creek, for a total study length of just under 13 km. The study area also includes the freeway-to-freeway interchange connecting the QEW, Highway 403 and 407 ETR, and interchanges with municipal roadways at Waterdown Road, Brant Street, Guelph Line, Fairview Street/Plains Road and North Shore Boulevard. The study area is located in the City of Burlington. For the purposes of this study, reference is made to the 'Niagara-bound' and 'Toronto-bound' directions of the QEW. As illustrated in **Exhibit 1-1** below, the Toronto-bound direction refers to lanes travelling northbound on the QEW from the Burlington Skyway to Freeman Interchange and continuing easterly towards Guelph Line. The Niagara-bound direction refers to lanes travelling westbound from Guelph Line to the Freeman Interchange and continuing southerly to the Burlington Skyway.

Exhibit 1-1: Study Area



1.3 BACKGROUND AND STUDY PURPOSE

The Queen Elizabeth Way (QEW) was the first intercity divided highway built in Ontario. The section of highway within the project study area dates back to the 1930's and is one of the oldest sections of the QEW. The Queen Elizabeth Way is a critical component of the provincial highway network and is one of Ontario's most important transportation facilities in terms of commuter and commercial trade traffic, connecting the Greater Toronto Area with Ontario's border with the United States at Niagara Falls and Fort Erie. The QEW also plays a key role as a commuter and transit corridor route and provides access to significant tourist and recreational areas.

With the forecasted population growth in this region, the QEW will become even more significant to the transportation system of the future as it evolves to accommodate the growing needs of provincial and regional traffic, transit, goods movement, transportation demand management policies and the surrounding communities.

The purpose of this Class EA, referred to in this document as "the Study", is to identify rehabilitation, safety, and operational needs, and recommend transportation improvements along the QEW and Highway 403 within the study area. The Recommended Plan will form the basis for future design and construction projects.

1.4 RELATED AND ADJACENT STUDIES

The following studies and projects are related to this study and focus on locations in and adjacent the study area.

1.4.1 THE CITY OF BURLINGTON MOBILITY HUBS

The City of Burlington is planning for the next 20 years, designing where and how land will be developed and how people will move through the city. Mobility Hubs play a significant role in this future vision for Burlington.

A Mobility Hub is a location that has several transportation options and is a concentrated point for a mix of uses such as transit, employment, housing, recreation and shopping. Mobility Hubs will be neighbourhoods that are environmentally friendly, infrastructure-efficient, walkable, bikeable and transit-oriented. The City is planning for Mobility Hubs near the Aldershot, Burlington and Appleby GO stations as well as in the downtown.

Mobility Hubs will be planned to be complete, compact and sustainable communities as identified through the Province of Ontario's growth plan "Places to Grow", and supported by Halton Region's Official Plan.

Given Council's focus on the re-examination of the adopted Official Plan and the Interim Control Bylaw, passed on March 25, 2019, work on the Mobility Hubs Study, including the development of the Area Specific Plans (secondary plans), has been placed on hold at the time this TESR was prepared. More information on the Burlington Mobility Hubs can be obtained from the City of Burlington directly, and at https://www.burlington.ca/en/services-for-you/mobility-hubs.asp#.

1.4.2 THE CITY OF BURLINGTON PROSPERITY CORRIDOR

In its Strategic Plan 2015-2040, the City of Burlington outlines various strategic priorities for city-building to address economic and demographic changes and manage growth. As part of this plan, five centrally located employment districts have been identified to facilitate redevelopment and intensification. These districts create a signature business environment for major employers across the province.

Within the study area, there are two employment districts that are identified for investment: The 403 West Corridor and the QEW Prosperity Corridor. Planning for redevelopment of these corridors is ongoing. Further information is found in the Strategic Plan at https://www.burlington.ca/en/services-for-you/Strategic-Plan.asp or at the Burlington Economic Development Council website at https://investburlington.ca/

1.4.3 HIGHWAY 407 TRANSITWAY STUDIES

The Ministry of Transportation (MTO) is undertaking the planning and preliminary design for the 407 Transitway from west of Brant Street to west of Winston Churchill Boulevard.

The study is following the Transit Project Assessment Process (TPAP) prescribed in *Ontario Regulation 231/08, Transit Projects and Metrolinx Undertakings* under the *Environmental Assessment Act.* The 407 Transitway will be a two-lane, fully grade separated transit facility on an exclusive right-of-way, running along the 407 ETR Corridor.

This 35 km segment forms part of the 150 km long high-speed interregional facility planned to be ultimately constructed on a separate right-of-way that parallels 407 ETR from Burlington to Highway 35/115, with stations, parking and access connections. The 407 Transitway is a component within the official plans of the stakeholder municipalities and of the Province's commitment to support transit initiatives in the Greater Golden Horseshoe through the Regional Transportation Plan.

More information about the 407 Transitway Studies can be found at http://407transitway.com.

1.4.4 QEW AND NORTH SHORE BOULEVARD OVERPASS REPLACEMENT AND COLLECTOR BRIDGES REHABILIATION (CONTRACT 2018-2015)

Within the study area, MTO recently commenced construction of the replacement of the "core" QEW overpass structures at the North Shore Boulevard interchange and the rehabilitation of the adjacent collector bridges, due to structural needs. The anticipated completion date for all work is 2022.

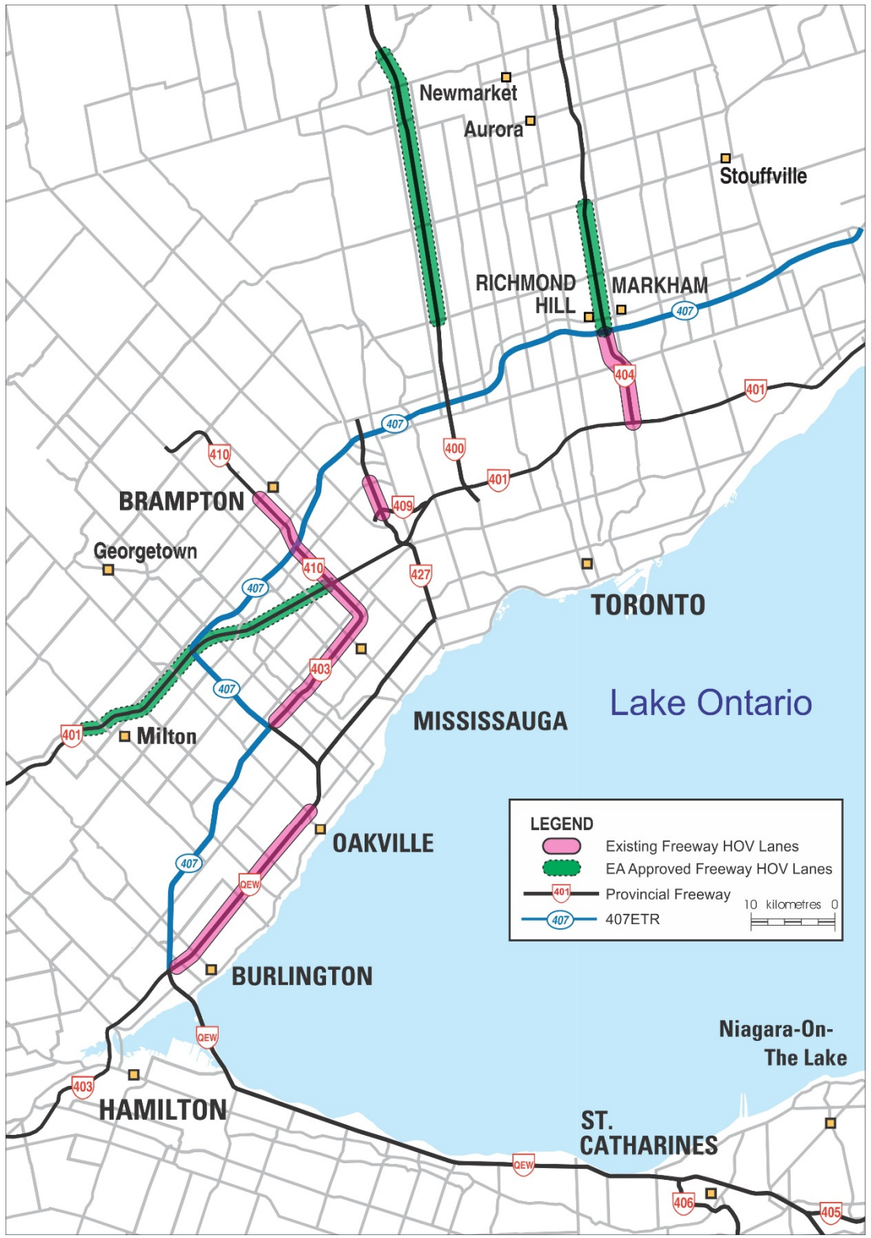
1.4.5 ONTARIO'S HIGH OCCUPANCY VEHICLE LANE NETWORK PLAN FOR THE 400-SERIES HIGHWAYS IN THE GREATER GOLDEN HORSESHOE (2007)

The "Growth Plan for the Greater Golden Horseshoe" provides the framework for an integrated transportation network across the Greater Golden Horseshoe that offers viable travel choices. This network allows for efficient travel both within and between urban growth centres throughout the region. Working together with other levels of government, transit operators and the private sector to realize this vision, MTO established a plan for the development of a network of over 450 kilometres of new High Occupancy Vehicle (HOV) lanes, which includes the QEW through Burlington (see **Exhibit 1-2**). HOV lanes are a form of 'managed lanes' which help move more people on Ontario's busiest highways by restricting the lane's use to certain types of vehicles or vehicles carrying at least two people.

1.4.6 HIGHWAY 403 AND HIGHWAY 6 INTERCHANGE IMPROVEMENTS PRELIMINARY DESIGN AND CLASS ENVIRONMENTAL ASSESSMENT STUDY (W.O. #16-20004)

The Ontario Ministry of Transportation (MTO) is undertaking a Preliminary Design and Class Environmental Assessment Study for Highway 403 and Highway 6 Interchange infrastructure renewal. The study limits extend from Grindstone Creek (the western limits of the QEW and Highway 403 (Freeman) interchange study) westerly to Old Guelph Road on Highway 403, and from Highway 6 and Highway 403 interchange to Bruce Trail on Highway 6. The Highway 403 and Highway 6 study encompasses fourteen bridges, three structural culverts, and fifteen retaining walls along Highway 403 and Highway 6. Structural and operational improvements will be developed and evaluated to identify preferred short- and long-term improvements, that will ensure the next round of infrastructure rehabilitation / renewal can accommodate the future traffic needs of Highway 403.

Exhibit 1-2: Ontario's Provincial HOV Lane Network (as of 2019)



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2 THE ENVIRONMENTAL ASSESSMENT PROCESS

2.1 THE ENVIRONMENTAL ASSESSMENT ACT

The Ontario Ministry of Transportation's *Class Environmental Assessment for Provincial Transportation Facilities* (MTO Class EA) was approved under the Ontario Environmental Assessment Act in 1999 and amended in 2000. This planning document defines groups of projects and activities, and the environmental assessment processes that MTO has committed to follow for these projects. Provided that this process is followed, and its requirements are met for a project, projects and activities included under the MTO Class EA are deemed to have been reviewed and approved under the EA Act.

The MTO Class EA process is principle based. Where appropriate, this Transportation Environmental Study Report (TESR) will reference the principles and how they were achieved during the environmental assessment process.

The following principles underline the Class EA process for all transportation projects:

- Transportation engineering
- Environmental protection
- External consultation
- Evaluation that is intended to achieve the best overall balance
- Documentation
- Part II Order (bump-up)
- Environmental clearance to proceed

This project is following the Class EA process for Group 'B' projects. Group 'B' projects are considered major improvements to provincial transportation facilities and generally include:

- Improvements to existing highways and freeways that provide a significant increase in capacity
- New interchanges or modifications to existing interchanges
- Major road realignments
- New or modified water crossings or watercourse alterations
- New highway service facilities

The Class EA process for Group 'B' projects is shown in **Exhibit 2-1**. This study addresses the Planning and Preliminary Design Phases and includes submission of a Transportation Environmental Study Report (TESR). This TESR will be filed for a 30-day period of public and external agency review.

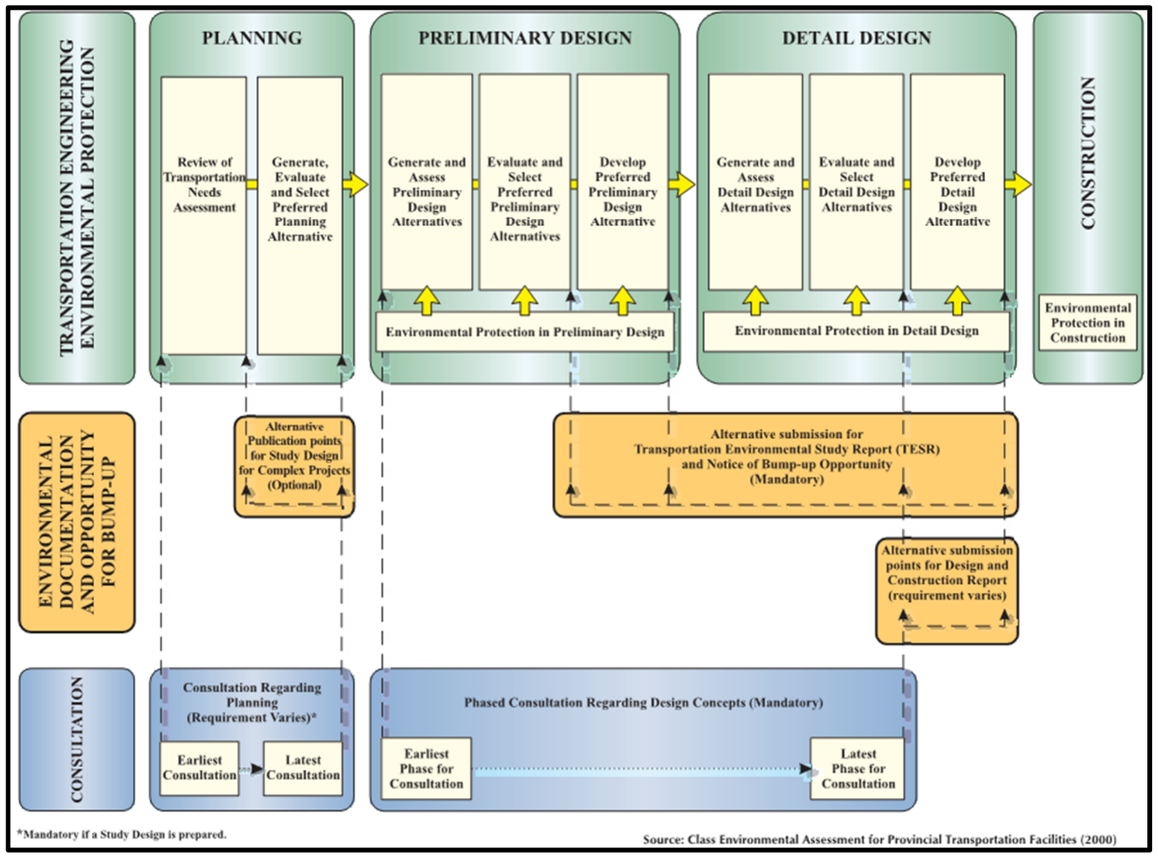
All comments and concerns should be sent directly to the Ontario Ministry of Transportation (MTO).

In addition, a request may be made to the Ministry of the Environment, Conservation and Parks for an order requiring a higher level of study (i.e. requiring an individual/comprehensive EA approval before being able to proceed), or that conditions be imposed (e.g. require further studies), only on the grounds that the requested order may prevent, mitigate or remedy adverse impacts on constitutionally protected Aboriginal and treaty rights. Requests on other grounds will not be considered. Requests should include the requester contact information and full name for the ministry.

Requests should specify what kind of order is being requested (request for additional conditions or a request for an individual/comprehensive environmental assessment), how an order may prevent, mitigate or remedy those potential adverse impacts, and any information in support of the statements in the request. This will ensure that the ministry is able to efficiently begin reviewing the request.

Commitments and minor changes to the Recommended Plan (detailed in **Section 7.0**) will be documented in Design and Construction Reports, and/or other documents, prepared during a subsequent design phase.

Exhibit 2-1: MTO Class EA Process



2.2 THE IMPACT ASSESSMENT ACT

The *Impact Assessment Act,* 2019 (IAA 2019) and associated regulations came into effect on August 28, 2019. Under IAA 2019, a federal environmental assessment is required for "designated projects". A designated project is one that includes one or more physical activities that are set out in the regulations under IAA 2019 or by order of the Federal Minister of the Environment and Climate Change.

This Preliminary Design and Class Environmental Assessment Study was reviewed by the Project Team against the Federal Regulations Designating Physical Activities, and the Project Team determined that the study is not "designated" and therefore will not require a federal environmental assessment.

More information about the *Impact Assessment Act* (2019) is available at the following link: https://www.canada.ca/en/impact-assessment-agency.html.

2.3 STUDY PROCESS

The study's overall EA planning process approach and key study tasks are illustrated in **Exhibit 2-2**. The generalized flow chart details the various activities completed in the two study phases: Planning and Preliminary Design.

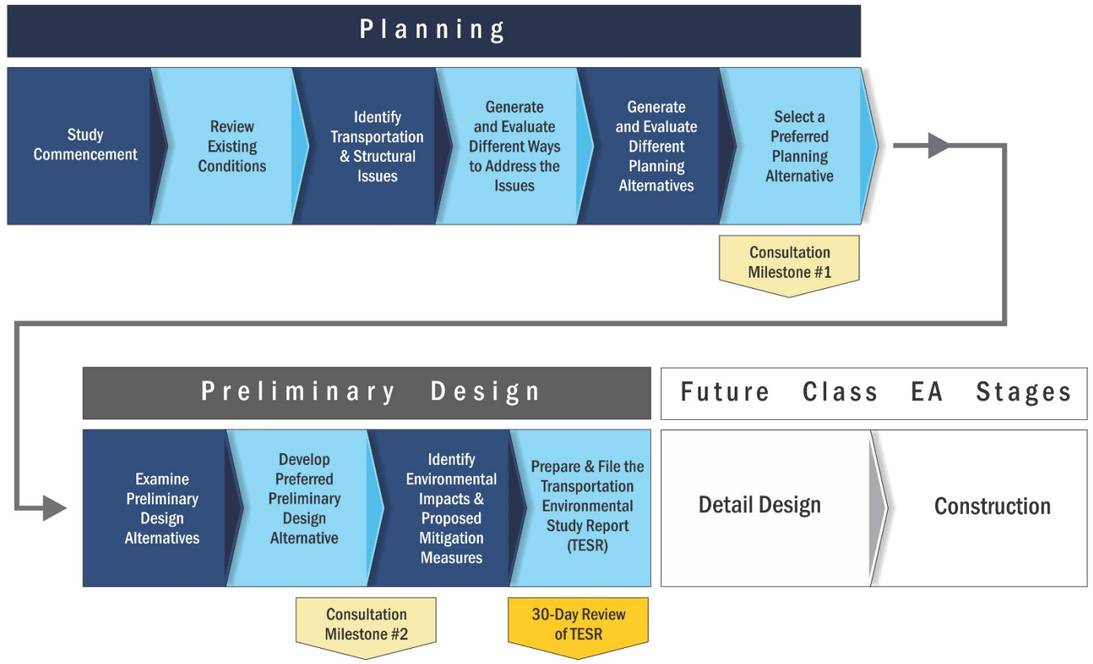
The Planning Phase consists of:

- Study Commencement (Section 6.0)
- Reviewing Existing Conditions (Section 4.0)
- Identifying Transportation & Structural Issues (Section 3.0)
- Generating and Evaluating Different Ways to Address the Issues (Section 5.0)
- Generating and Evaluating Different Planning Alternatives (Section 5.6)
- Selection of a Preferred Planning Alternative (Section 5.7)

The Preliminary Design Phase consists of:

- Examining Preliminary Design Alternatives
- Developing Preferred Preliminary Design Alternative
- Identifying Environmental Impacts and Proposed Mitigation Measures
- Preparing and Filing the Transportation Environmental Study Report (TESR)

Exhibit 2-2: Study Planning Process



2.4 PURPOSE OF THE TRANSPORTATION ENVIRONMENTAL STUDY REPORT

This Transportation Environmental Study Report (TESR) documents the environmentally significant aspects of the planning and design of the Recommended Plan. The TESR includes a description of the Study and its purpose; the existing natural, social, economic and cultural environmental factors; the analysis and evaluation of alternatives that were considered in the selection of the Preferred Alternative, the anticipated environmental effects and proposed mitigation measures for the Recommended Plan; commitments to further work, and consultation.

Additional information about the Class Environmental Assessment process for Group 'B' projects is contained in the MTO Class EA (2000).

This TESR is being made available to the public, other interested parties and external agencies for a 30-day review as required under the MTO Class EA. A notice of TESR submission was placed in local newspapers (*Hamilton Spectator* and *Burlington Post*) and letters were mailed to notify government agencies, stakeholders, Indigenous Communities and members of the public on the Project Team's mailing list.

All comments and concerns should be sent directly to Cameron Bevers at the Ontario Ministry of Transportation (MTO).

Mr. Cameron Bevers
Project Manager
Ministry of Transportation - Central Region
159 Sir William Hearst Avenue, 4th Floor
Toronto, ON M3M 0B7
Cameron.Bevers@ontario.ca

In addition, a request may be made to the Ministry of the Environment, Conservation and Parks for an order requiring a higher level of study (i.e. requiring an individual/comprehensive EA approval before being able to proceed), or that conditions be imposed (e.g. require further studies), only on the grounds that the requested order may prevent, mitigate or remedy adverse impacts on constitutionally protected Aboriginal and treaty rights. Requests on other grounds will not be considered. Requests should include the requester contact information and full name for the ministry.

Requests should specify what kind of order is being requested (request for additional conditions or a request for an individual/comprehensive environmental assessment), how an order may prevent, mitigate or remedy those potential adverse impacts, and any information in support of the statements in the request. This will ensure that the ministry is able to efficiently begin reviewing the request.

The request should be sent in writing or by email to:

Minister of the Environment Conservation and Parks
Ministry of Environment, Conservation and Parks
777 Bay Street, 5th Floor
Toronto ON M7A 2J3
minister.mecp@ontario.ca

and

Director, Environmental Assessment Branch
Ministry of Environment, Conservation and Parks
135 St. Clair Ave. W, 1st Floor
Toronto ON, M4V 1P5
EABDirector@ontario.ca

Requests should also be sent to Cameron Bevers by mail or by e-mail.

3 TRANSPORTATION NEEDS AND OPPORTUNITIES

The Queen Elizabeth Way (QEW) was the first intercity divided-highway built in Ontario. The section of highway within the study area dates to the 1930's and is one of the oldest sections of the QEW. The QEW is a critical component of the provincial highway network and is one of Ontario's most important transportation facilities in terms of commuter and commercial trade traffic, connecting the Greater Toronto Area with Ontario's border with the United States at Niagara Falls and Fort Erie. The QEW also plays a key role as a commuter / transit corridor route and provides access to significant tourist and recreational areas.

3.1 STRUCTURAL NEEDS

The QEW in the study area went through several improvement phases during the 1980s and 1990s, which included the construction of the current QEW mainline crossing structures at the Brant Street and Plains Road East / Fairview Street Interchanges, and the CN Rail Crossing north of Fairview Street. These structures are now coming up to their first major rehabilitation cycle and would require traffic-impacting work such as concrete repairs, replacement of asphalt/waterproofing, expansion joints and abutment bearings, and the potential replacement of barrier walls.

As the QEW is a critical element in the provincial highway network, traffic impacts due to the rehabilitation work would have a large, far-reaching impact if they required long term lane closures. To mitigate these impacts, the structures are proposed to be widened in addition to their rehabilitation so that all QEW lanes can be maintained during construction.

To ensure future QEW improvements are not precluded and to minimize throw-away costs associated with the improvements, it is prudent to make sure the QEW structural widening that occurs now for the rehabilitation work is compatible with a long-term plan. As a result, the study also examined the longer-term capacity needs within a project horizon of 2041 to identify the future lane and interchange ramp requirements. This includes requirements for future structural rehabilitation, or replacement where structures have reached the end of their service life.

3.2 OPERATIONAL NEEDS

3.2.1 EXISTING CONDITIONS

The QEW and Highway 403 currently experience significant congestion and operational issues through the study limits and through the QEW / Highway 403 / 407 ETR (Freeman) interchange. Given current population and employment forecasts, the traffic volumes will likely continue to grow, and congestion will worsen. The increasing population and employment within the City of Burlington are the drivers behind the City's ongoing Mobility Hubs and Prosperity Corridor studies, which aim to promote development and movement within the study area, (further outlined in **Section 1.0).** The Aldershot GO Mobility Hub is located at the GO station at the western limits of this study, and the Burlington GO Mobility Hub is located immediately south of the QEW, between the Brant Street and Guelph Line interchanges. Of the Prosperity Corridors studies, the '403 West Corridor' encompasses Highway 403 within the study limits and the 'QEW Prosperity Corridor' starts at the Guelph Line Interchange and extends easterly.

On the mainlines, the following locations are particularly problematic in terms of traffic operations. Detailed existing conditions analysis was conducted as part of the traffic analysis component of this study and is included in **Section 4.4.7**. **Exhibit 3-1(A-C)** details the key operational issues within the study area.

The QEW Niagara-bound (westbound) approach to the QEW-to-Niagara and QEW-to-Highway 403 split at the Freeman Interchange, just west of Brant Street:

- QEW lanes are subject to heavy congestion, especially during the PM peak.
- At this location, four westbound QEW lanes split into two lanes heading south to the Burlington Skyway and two lanes heading west to Highway 403. This configuration is not desirable as the lack of lane balance (i.e. an either-or lane) forces a decision to be made by the driver prior to the split. This promotes an area of intense weaving on the QEW between the Brant Street and Guelph line interchanges, which is exacerbated during times of congestion. The existing HOV lanes originally extended to near Brant Street however the weaving issues at this location were the driver behind shifting the HOV limits further easterly to provide more time for drivers to maneuver.

QEW Toronto-bound (northbound) and Niagara-bound (southbound), through the Freeman Interchange:

- Two lanes in each direction accommodate these movements and they routinely operate over their capacity, in both AM and PM peak hours and on weekends.

Highway 403 Hamilton-bound (westbound) through the Freeman Interchange and continuing to Hamilton:

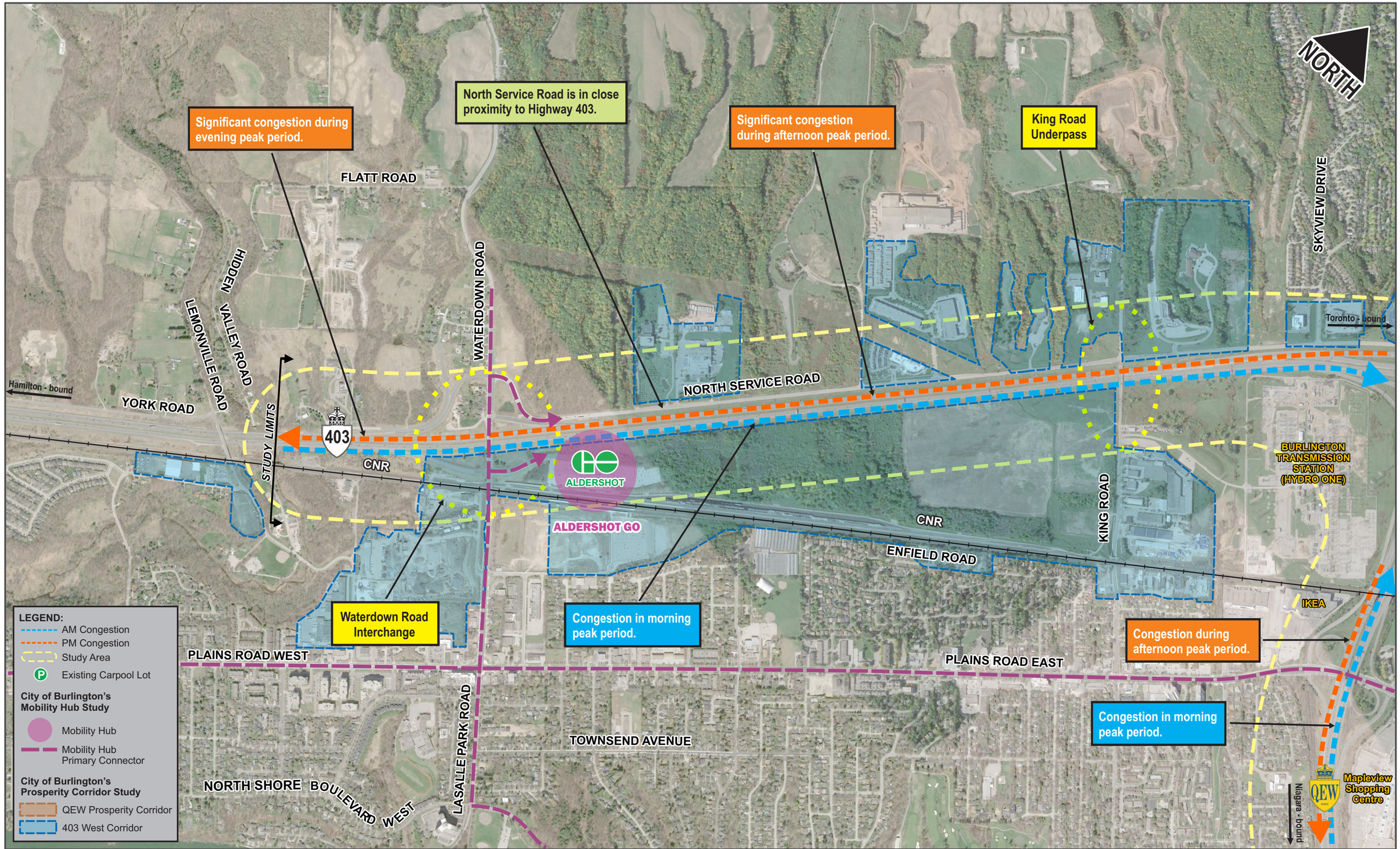
- The Highway 403 lanes are subject to heavy congestion, especially during the PM peak.
- West of Brant Street, the two QEW-to-Highway 403 lanes are then joined by the Brant Street interchange on-ramp. A little further downstream the QEW northbound to Highway 403 westbound on-ramp and a lane from the 407 ETR then also merge with these westbound lanes. The mergence of all these lanes creates increased driver workload and heavy congestion heading westbound on Highway 403.

Highway 403 Toronto-bound (eastbound) approaching the Freeman Interchange:

- The Highway 403 lanes are subject to heavy congestion, especially during the AM Peak.
- At this location, the Highway 403 lanes split and develop into two lanes leading to 407 ETR, two lanes leading to QEW Toronto-bound and two lanes leading to QEW Niagara-bound. The direction choice promotes weaving on approach to the interchange and this is exacerbated in times of congestion.

QEW Niagara-bound (southbound) approaching North Shore Boulevard:

- The QEW lanes are subject to congestion and increased driver workload as a collector system is used through the North Shore Boulevard interchange. Five Niagara-bound lanes split to two lanes heading to the collector system / North Shore Boulevard, and three lanes to the QEW Burlington Skyway. This configuration is not desirable as the lack of lane balance (i.e. an either-or lane) forces a decision to be made by the driver prior to the split. This promotes an area of weaving on the QEW between the Fairview Street and Guelph line interchanges, which is exacerbated during times of congestion.



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QEW AND HIGHWAY 403 (FREEMAN) INTERCHANGE
TRANSPORTATION ENVIRONMENTAL STUDY REPORT
MTO Project # 2016-E-0005

Exhibit 3-1A
Existing Operational Issues and Key Study Area Features
Highway 403 (Freeman Interchange to Grindstone Creek)

Existing lane configuration with no 'either or' lane.

Example of lane balance at Hwy 427 to Hwy 401 split

Significant congestion in afternoon peak period.

Absence of lane balance (i.e. an 'either or' lane) at this diverge point forces drivers to weave causing mainline speed reduction.

Significant congestion in afternoon peak period.

Congestion in morning peak period.

Potential Carpool Lot location identified as part of MTO's Carpool Lot Opportunity Study 2007.

Brant Street Interchange

Guelph Line Interchange

HOV Lanes

PALMER DRIVE

NORTH

KERNS ROAD

407 ETR

Hamilton - bound

403

MOUNTAINSIDE DRIVE

NORTH SERVICE ROAD

FISHER AVENUE

GUELPH LINE

1

MAINWAY

INDUSTRIAL STREET

CNR

STUDY LIMITS

Toronto - bound

QEW

403

SOUTH SERVICE ROAD

QUEENSWAY DRIVE

BRANT STREET

PLAINS ROAD EAST

HARVESTER ROAD

CNR / GO

BURLINGTON

BURLINGTON GO

FAIRVIEW STREET

CNR / GO

PROSPECT STREET

Niagara - bound

Mapleview Shopping Centre

LEGEND:

- AM Congestion
- PM Congestion
- Study Area
- Existing Carpool Lot

City of Burlington's Mobility Hub Study

- Mobility Hub
- Mobility Hub Primary Connector

City of Burlington's Prosperity Corridor Study

- QEW Prosperity Corridor
- 403 West Corridor

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QEW AND HIGHWAY 403 (FREEMAN) INTERCHANGE
TRANSPORTATION ENVIRONMENTAL STUDY REPORT
MTO Project # 2016-E-0005

Exhibit 3-1B
Existing Operational Issues and Key Study Area Features
QEW East Leg (Freeman Interchange to Guelph Line)

Significant congestion during afternoon peak period.

'Lane balance' not met at QEW leading to North Shore Boulevard off-ramp.

Indian Creek crosses under QEW and runs in close proximity to the freeway.

Congestion during afternoon peak period.

Congestion in morning peak period.

King Road Underpass

Significant congestion during afternoon peak period.

407ETR ramps enter and exit from the median.

Significant congestion during morning peak period.

North Shore Boulevard Interchange

Core-Collector System

Potential Carpool Lot location identified as part of MTO's Carpool Lot Opportunity Study 2007.

Significant congestion in afternoon peak period.

NORTH SHORE BOULEVARD EAST

PLAINS ROAD EAST

CNR

Hamilton - bound

NORTH

KING ROAD

403

Niagara - bound

STUDY LIMITS

EASTPORT DRIVE

QEW

BURLINGTON TRANSMISSION STATION (HYDRO ONE)

IKEA

SKYVIEW DRIVE

O.P.P

Joseph Brant Hospital

Maple Park

Mapleview Shopping Centre

KERNS ROAD

MAPLE AVENUE

LAKESHORE ROAD

ELGIN STREET

DOWNTOWN

BRANT STREET

CNR / GO

Toronto - bound

NORTH SERVICE ROAD

407 ETR

LEGEND:

- AM Congestion
- PM Congestion
- Study Area
- Existing Carpool Lot

City of Burlington's Mobility Hub Study

- Mobility Hub
- Mobility Hub Primary Connector

City of Burlington's Prosperity Corridor Study

- QEW Prosperity Corridor
- 403 West Corridor

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QEW AND HIGHWAY 403 (FREEMAN) INTERCHANGE
TRANSPORTATION ENVIRONMENTAL STUDY REPORT
MTO Project # 2016-E-0005

Exhibit 3-1C
Existing Operational Issues and Key Study Area Features
QEW South Leg (Freeman Interchange to Burlington Skyway)

3.3 OPPORTUNITIES

The reoccurring issues identified by the assessment of existing conditions revolve around the lack of capacity. Capacity expansion improvements can range from localized operational improvements to the widening and/or replacement of infrastructure to accommodate additional lanes and/or managed lanes. Managed lanes are lanes within a highway that are different from the general-purpose lanes. The use of managed lanes is governed by variables such as pricing, vehicle eligibility, and access control. Types of managed lanes include High-Occupancy Toll (HOT) lanes and High-Occupancy Vehicle (HOV) Lanes.

The study considered capacity expansion improvements as they could not only alleviate current capacity and operational issues but are also in-line with provincial aims and objectives:

- The Province has a vision for building strong, prosperous communities by managing growth in this region to the year 2031 and beyond. To this end, several documents, including the Growth Plan for the Greater Golden Horseshoe (GGH), The Greenbelt Plan and The Big Move (Metrolinx), have been established.
- Recognizing the need to provide for the efficient movement of people and goods, MTO's Southern Highways Program has established the potential for expanding the existing high-occupancy vehicle (HOV) network plan for 400-series highways within the GGH to optimize network capacity by encouraging carpooling and transit use. This program includes considering HOV lanes for the Highway 403 and QEW corridors within the study area.
- MTO is developing a bold, new long-range multimodal transportation plan for the Greater Golden Horseshoe (GGH). The GGH Transportation Plan aims at providing a strategic network that reduces congestion and supports economic growth and job creation, a system that is resilient and can adapt to climate change and other major shifts in the global context.

Existing attributes of the study area also lend well to improvement opportunities:

- HOV lanes are currently operating on the QEW, at the east limits of the study area and extend easterly to Trafalgar Road in Oakville.
- MTO-owned land in the northeast quadrant of the Plains Road East/Fairview Street intersection provides a potential location for a carpool lot. The location was previously identified in the MTO Central Region Carpool Lots Opportunity Study (2007).
- MTO is planning for a future Highway 407 transitway that would eventually stretch from Highway 35/115 in the east to Burlington in the west. This work is being undertaken by MTO under a separate Transit Project Assessment Process (TPAP) prescribed in *Ontario Regulation 231/08, Transit Projects and Metrolinx Undertakings* under the *Environmental Assessment Act.*

3.3.1 STUDY OBJECTIVES

Through the assessment of needs and opportunities, the study objectives were identified and summarized to the following:

- Rehabilitation, widening or replacement of bridges in the study area;
- Capacity expansion improvements to the QEW and Highway 403 within the study area and through the Freeman Interchange, including freeway widening to accommodate additional general-purpose lanes and/or managed lanes;
- Improvements to interchange ramps, drainage and illumination and other related works; and,
- Environmental mitigation measures.

A conceptual design of a transitway connecting Aldershot GO Station to the future 407 Transitway was previously included as an objective of this study. However, the transitway has since been removed from the scope of this study and will be the subject of a future, separate EA process.

3.3.1.1 *IDENTIFYING FUTURE CAPACITY EXPANSION REQUIREMENTS*

To identify the future traffic capacity requirements, the study included a comprehensive traffic analysis component. The QEW and Highway 403 (Freeman) Interchange provides a critical link in the provincial highway network and so regional traffic growth and movement, extending far outside of the study limits, can have an impact on the operations within the study area. Thus, the traffic analysis completed for this study was conducted on two levels: a higher-level analysis to identify forecasted regional demand and a lower-level, more detailed analysis to assess how the identified demand impacted operations within the study area.

Recognizing the study area's key location within the Golden Horseshoe, the latest traffic model and data from MTO's ongoing GGH Transportation Masterplan was used to forecast future traffic growth and demand within the region. The model (GGHMv4) is an advanced, micro-simulated hybrid regional travel demand forecasting model developed for MTO and used extensively by MTO and by Metrolinx to forecast road and transit movement within the GGH region. The model is the flagship transportation model for both agencies, who continue to invest in the model's ongoing improvements and development. The model is designed from the outset to predict travel behaviours such as commuters' response to road pricing and managed lanes.

The modelling concluded that future congestion levels will be high and continue to worsen unless network improvements are made. In the 'Do Nothing' scenario (i.e. no freeway improvements) the entire QEW from the Burlington Skyway to Guelph Line will operate over its capacity in the AM peak. Likewise, large sections of Highway 403, west of the QEW and Highway 403 (Freeman) Interchange, are also expected to operate over capacity during peak hours. If the freeways were improved with additional capacity, congestion levels were improved on both the freeways and parallel local roads. The model was then used to forecast the demand for several improvement scenarios which were then further assessed in the lower-level, more detailed analysis. The Traffic Analysis Report included in **Appendix B** and details the lower-level traffic analysis conducted and the analysis is also summarized in **Section 4.4.7** and **Section 7.7.**

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