MISSISSAUGA BUS RAPID TRANSIT

ENVIRONMENTAL ASSESSMENT ADDENDUM

March 2010

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MISSISSAUGA BUS RAPID TRANSIT PROJECT

ENVIRONMENTAL ASSESSMENT ADDENDUM

March 2010

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1. INTRODUCTION

In 1992, the City of Mississauga submitted the three-volume *Mississauga Transitway Environmental Assessment Report* (City of Mississauga, January 1992) to the Ministry of the Environment and Energy of Ontario, seeking approval for the development of a bus-only roadway in the Highway 403 / Eglinton Avenue corridor extending from Ridgeway Drive to Renforth Drive. The Individual EA was found to comply with the requirements of the Environmental Assessment Act, RSO 1990, and approval to proceed was granted on July 6, 1993 (see Appendix A).

In the 1992 EA, provisions were made for an Addendum process if the need to revise the plan arose. This process was followed in 2004 when modified plans were subject to an EA Addendum. This was submitted in October 2004 and approved in 2005.

The City, in partnership with GO Transit, now intends to move forward with constructing and operating the Transitway. The project is being funded by the federal, provincial, and municipal governments. The Preliminary Design of the facility is currently being undertaken and construction is scheduled to be completed by 2013.

Through the course of the Preliminary Design, several changes to the design have been developed, aimed at reducing the cost and impact of the project. Since some of these changes to the plan differ from those previously approved, the City and GO are seeking a second Addendum to the EA.

Although the City of Mississauga and GO Transit have been the leading agencies in planning the Transitway (with financial support from the Ministry of Transportation of Ontario and from Transport Canada), responsibility for funding, constructing, and operating the facility remains subject to the outcome of future discussions and agreements among various levels of government and funding partners. No matter which agency or agencies are ultimately made responsible for the Transitway, it is intended that they be bound by the plans and commitments embodied in the EA Addendum document as modified by this second Addendum.

1.1 Background

Following the Transitway's approval in 1993, in the period 1994-1995 the City undertook the implementation of the first stages of the Transitway program with:

- the widening of Highway 403 between Erin Mills Parkway and Mavis Road to accommodate bus use of the highway shoulders (in conjunction with the Ministry of Transportation of Ontario),
- the construction of Centre View Drive; and
- The completion of the first phase of the City Centre transit terminal.

In recent years, the Transit plan has again moved forward, as:

- New funding programs for municipal transit have been established at the Provincial and Federal levels.

- The City undertook a strategic transit strategy study and confirmed the role of the Transitway in the municipal and regional transportation system.
- GO Transit undertook a study of an inter-regional Bus Rapid Transit (BRT) line across the Greater Toronto Area in 2002 and announced its intent in December 2002 to begin to implement it. The BRT plan incorporates the Mississauga Transitway in its entirety (see Figure 1-1).

It should be noted that the Mississauga Transitway, although recognized as a key element in the GO Inter-Regional BRT plan, is capable of functioning as a stand-alone facility within Mississauga until neighbouring segments of the GO BRT proposal are in place.

Accordingly, the City initiated an investigation to update the City's transit plans for the Highway 403 / Eglinton Avenue Corridor.

An EA Addendum dated October 2004 for an updated plan was approved in 2005. The EA Addendum included modification to the following elements of the facility:

- Western Terminal
- Ridgeway Drive to Erin Mills Parkway
- Highway 403 Bus Bypass Shoulders vs. Exclusive Transitway
- City Centre Terminal
- City Centre to Renforth Drive
- Design Standards
- Value Engineering Analysis

In 2007, capital funding was confirmed, and the City, in partnership with GO Transit, moved into the Preliminary Design phase. This second EA Addendum addresses various design changes that have impacts that differ from those of the previously approved plan. With approval of this second Addendum, the design plan and its approvals will be in sync and the project will be able to move into detail design and construction.

	MRC McCormick Rankin Corporation	MISSISSAUGA Transportation and Works Transit	DATE: September 2008 SCALE: 0 5 km	MISSISSAUGA BRT PROJECT ENVIRONMENTAL ASSESSMENT ADDENDUM GO Bus Rapid Transit Proposal	FIGURE 1-1

1.2 Purpose of the Environmental Assessment Addendum

This undertaking is subject to the requirements of the *Ontario Environmental Assessment Act* and is also subject to the requirements of the *Canadian Environmental Assessment Act* (CEAA).

Additional information about the provincial or federal Environmental Assessment Acts or about this project is available by contacting the key Project Team members involved in this project, as follows:

Name:	Scott Anderson Senior Project Manager Transportation Project Office City of Mississauga	Name:	Stephanie Davies, P.Eng. Manager, Bus Infrastructure - Corporate Infrastructure 20 Bay Street, Suite 600 Toronto, ON M5J 2W3
Telephone:	(905) 615-3200 ext. 4399	Telephone:	416 869 3600 ext 5433
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E-mail:	Scott.Anderson@mississauga.ca	E-mail:	Stephanie.davies@gotransit.com

It is likely that minor modifications to the recommended undertaking and its impacts on the environment will be identified during detailed design. However, these modifications are not expected to have any major changes in the magnitude of the impacts to the environment indicated in this submission and mitigating measures would be applied where appropriate following the commitments made in the EA and both subsequent Addenda. It is expected that any additional impacts to the environment would be addressed through standard mitigating measures.

1.3 Addendum Process

The approved (1992) EA for the Mississauga Transitway recognized the potential for subsequent changes in the plan. Chapter 7, "Mechanism for Changes to Approved Plan", was therefore included in the document. The section commented on the responsibilities of the proponent should changes to the approved plan be requested by the proponent, given the combination of a lengthy approvals, funding and construction process. The following is an excerpt:

> *The [1992 Mississauga Transitway EA Report] identifies property envelopes within which stations [could] feasibly be constructed. Their actual layout is subject to detail design and any variation from that shown in the report, unless it results in a more severe environmental impact, which cannot be accommodated within the committed mitigation measures, does not require a change to the approved plan. Significant changes in station location (for example, from one quadrant of an interchange to another) could potentially result in impacts which differed from those identified in the report; since such a change would have no bearing on the overall rationale for the Transitway, but would only occur in response to a localized design or property issue, it would be inappropriate to prepare and submit for approval an entire new EA report.*
>
> *Rather, the proponent would prepare an addendum to the EA report, undertake a public review process involving affected local interests, and file the addendum with the M.O.E. as an appendix to the existing report. MOE may approve the addendum or undertake a limited government review process to ensure that all concerns have been dealt with.*
>
> *Design shifts within the identified property envelope of the Transitway do not require changes to the EA approval.*

In consultation with the Ministry of the Environment (MOE), the proposed changes to the Transitway design were reviewed. Where impacts to the surroundings or the community were judged to be different than those associated with the previously approved plan, the EA Addendum process was triggered. This document is a result. Other design changes that did not result in significantly different impacts to adjacent residents or the environment are noted herein, but were not subject to the same level of public review and documentation.

1.4 Content of the Addendum

Section 2 provides an update to the project scope. **Section 3** discusses the public and stakeholder/agency consultation program. **Section 4** is an update of the study area conditions, including physical, socio-cultural and economic environment. The proposed changes to the project are fully described in **Section 5, 6, 7, 8 and 9**. The impacts of the changes on the study area are documented, as well as any commitments to mitigation that arise from the impact assessment. The public consultation comments and responses associated with the proposed changes are provided in their respective sections.

1.5 Study Organization

Overall project management for this study was carried out by the Mississauga BRT Project Office, comprised of members of the City of Mississauga's Transportation and Works department and GO Transit, including:

- City of Mississauga:
    - BRT Project Director: Geoff Wright, P. Eng
    - Project Engineer: Scott Anderson, P. Eng
    - Project Leader: Willy Ing
    - Procurement Specialist: Brian Smith
- GO Transit:
    - Project Manager: Stephanie Davies, P. Eng.; Mike Sone, MCIP, RPP
    - Project Coordinator: Muyiwa Adebayo

Engineering work was carried out by the consulting engineering firm of McCormick Rankin Corporation (MRC) with overall direction from the BRT Project Office. MRC staff with expertise in highway design, structural design, illumination, traffic signal design, drainage engineering, noise assessment, and the Environmental Assessment process contributed to the study, under the direction of Dale Turvey, P.Eng. and Project Manager Stephen Schijns, P.Eng.

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2. UPDATE OF PROJECT SCOPE

2.1 Revised Project Scope

The Mississauga Transitway received provincial EA approval in July 1993.

In 2003, in preparation for receiving funding and moving towards construction, the Ontario EA submission was reviewed to ensure that it reflected current design standards, appropriate alignment and station provisions and funding constraints. The Transitway plan was reviewed segment-by-segment, with consideration given to new alternatives alongside modifications to the approved plan. Several proposed changes to the plan were compiled in an EA Addendum which was submitted to the provincial Ministry of the Environment in late 2004. The Addendum was approved in March 2005.

In the course of the subsequent Preliminary Design study, additional opportunities and cost-saving alternatives came to light. Some of those changes were significant enough to trigger a second provincial EA Addendum, as compiled in this document. The proposed changes are limited in scope and are confined to the following areas (located in Figure 2-1):

- Winston Churchill Boulevard Interchange
- Hurontario Crossing
- Tomken Grade Separation
- Dixie Station
- Eastgate Parkway / Fieldgate Drive

These elements were reviewed with the public and are documented herein.

In accordance with the provisions of Section 7 of the 1992 EA Report, an EA Addendum is not required for every change to the approved plan. Minor changes, revisions which would have no net difference in impact on the environment, and changes that affect only specific (noted) stakeholders (and where those stakeholders have agreed with the changes) are incorporated in the Preliminary Design and are deemed to not require changes to the EA approval. They are therefore not included in this Addendum. Changes of this nature are related to:

- Winston Churchill Station layout (MTO, Hydro One)
- Erin Mills Station layout (MTO, Hydro One)
- Realignment of Highway 403 exit ramp to Eastgate Parkway (MTO)
- Cawthra Station layout (City of Mississauga, Toronto Region Conservation Authority)
- Little Etobicoke Creek crossing (Toronto Region Conservation Authority)
- Etobicoke Creek crossing (Toronto Region Conservation Authority)

The decision to not include these particular changes in the current EA Addendum was reviewed with, and endorsed by, the MOE. The plans and impacts associated with these non-Addendum design changes are documented in their respective Preliminary Design

Reports (PDRs). Separate PDRs for the West and East segments of the BRT project are available for review at the BRT Project Office, Department of Transportation and Works, City of Mississauga. All of the above revisions (including both Addendum and non-Addendum changes) were reviewed with the public and stakeholders through the Preliminary Design consultation process, as described in Section 3.

2.1.1 Winston Churchill Boulevard / Highway 403 Interchange

The busway plan as shown in the 2005 approved EA Addendum has it passing under the two Highway 403 ramps at the east side of the Winston Churchill Boulevard interchange.

However, this configuration would create a low point under the loop ramp that would be too deep to be drained by gravity and would require a pumping station, resulting in high capital cost and ongoing maintenance cost. Traffic detours and construction staging would also be a challenge.

Having investigated various alternatives to reduce cost and mitigate impact, the proposed approach at this location is to have the busway cross over the ramps instead (see Figure 2-2). The loop ramp to the highway would be enlarged at the same time. The busway would become visible to residents to the north of the right-of-way (the original plan had the busway below grade and out of sight). Due to concerns about noise impact, visual impact, and road reconfiguration, it was determined that this change warranted inclusion in an EA Addendum.

2.1.2 Hurontario Street Crossing

The approved EA plan (as modified by the 2005 Addendum) has the busway crossing under Hurontario Street and under the eastbound Highway 403 exit ramp to connect (via an interim link) to Centre View Drive. The alignment (in plan and profile) would be set so as to allow a future extension of the busway under Centre View Drive and into the City Centre area via a below-grade alignment immediately north of Rathburn Road.

Cooksville Creek would require minor works as part of the initial project, but the future extension of the busway would be tied to the ultimate Cooksville Creek plan, which requires lowering the existing creek, creating a major new overflow culvert (cutting across both Rathburn Road and Hurontario Street) and altering the south end of its existing Highway 403 culvert. The busway would be below the regional storm flood line and would require floodproofing, require significant creek works and flood protection.

Because approval of the initial scheme implies an endorsement of the ultimate busway plan as envisioned in the original Environmental Assessment Study approved in 1993 (even though the ultimate works are not currently funded and are not part of the current project), it would be necessary to seek the approval of both the Credit Valley Conservation (CVC) and the Canadian Environmental Assessment Act on the basis of the ultimate plan.

In addition to the implications for the creek, it would be very difficult to build the necessary structures without triggering major traffic disruption at a critical point on one of Mississauga's busiest arterials. The overall impact on capital cost is substantial.

In the meantime, there is considerable uncertainty surrounding the transit infrastructure strategy within the City Centre. The City is reviewing City Centre development plans, the

alignment and nature of the Hurontario Rapid Transit line through the area, and the configuration and location of the City Centre station.

In light of these issues, constraints, and costs, the proposed approach is to avoid a new Hurontario crossing and use the existing Rathburn Road crossing instead, by way of a busway alignment that passes under Sherwoodtowne Boulevard and along the east side of Hurontario Street to a new intersection with Rathburn Road (see Figure 2-3). Buses would use Rathburn Road (in general traffic, via curbside bus lanes, or in a median busway – all subject to further study) to connect to the City Centre station.

Because this new plan falls outside the property envelope identified in the earlier EA / Addendum (and therefore has the potential for impacts different than those addressed in the previous EA studies for the Busway, it is necessary to address the potential impacts associated with this plan in this new EA Addendum.

2.1.3 Tomken Grade Separation

The approved EA plan has the busway passing under Tomken Road immediately north of Eastgate Parkway, with a station at the crossing.

Similar to the Winston Churchill situation (Section 2.1.1), the busway under Tomken Road would be at a lower elevation than nearby Little Etobicoke Creek, which would require provision of a permanent pumping station, with its high capital cost and ongoing operational costs. Also, the station would need to be floodproofed so that the regional storm level at Little Etobicoke Creek does not cross the busway and enter the station. The cost of earth and rock excavation, protection of adjacent gas and oil pipelines, traffic disruption / detouring during construction, and added station features is significant.

The proposed approach is to lift the busway over Tomken Road (see Figure 2-4). The station location and busway alignment would not change. This proposal is included in the Addendum because increasing the height, and hence visibility, of the station and busway in this area is seen as having a potentially significant impact on residents to the south.

2.1.4 Dixie Station

In the plan approved under the 2004 EA Addendum, the busway would pass under Dixie Road. A busway station at that location would have bus access ramps on both the west and east sides of Dixie Road, connecting both directions of Dixie Road with the Busway via right-in / right-out moves. The right-in / right-out configuration at Dixie Road reflects the inability to insert a third signalized intersection between the nearby Eastgate Parkway and South Gateway Road signalized intersections on Dixie Road. A small parking area was shown (in concept) connected with the east side ramp.

Further operational planning has revealed that the approved plan places significant constraints on the ability of all buses to use the station, and the limited parking lot access would limit its usefulness.

The proposed alternative includes the following three improvements (see Figure 2-5):

- Delete the west side bus ramp and create a full-move bus-only signalized intersection on Dixie Road for all connecting buses to use the east-side ramp;

- Locate a larger parking lot on the west side of Dixie Road, with access from Encino Street off Fewster Drive (the lot could be extended westerly to the extent required by demand); and
- Provide a bus link to the parking lot access area, as well as a turnaround loop and layover area at the Encino Street connector.

The busway platforms would also be shifted to the west side of Dixie Road, in order to be accessible from both Dixie Road buses and the parking area.

The relocation of the parking lot access from Dixie Road to Encino Street was seen as significant enough to warrant inclusion in this Addendum. The proposed busway access road on the east side of Dixie Road approved under the 2005 EA Addendum, however, would remain relatively unchanged from the EA approved plan and is therefore not within the scope of proposed works under the current EA Addendum.

2.1.5 Eastgate Parkway / Fieldgate Drive

The EA Addendum approved plan has the busway passing under Eastgate Parkway and then turning through a 130 m radius horizontal curve to pass under Fieldgate Drive. This would require relocation / lowering of eight major oil and gas pipelines, the relocation of a Hydro One transmission line tower, and relocation of a 2100 mm storm sewer, a 1200 mm storm sewer, and a 400 mm sanitary sewer. The busway would be difficult and costly to drain from this low point; either a pumping station or a lengthy new outlet to Etobicoke Creek would be needed.

The primary concern with the approved plan is cost. The cost of pipeline relocation has soared since this plan was developed in the early 1990s. The excavation for the busway will involve rock and substantial retaining walls, both of which have risen substantially in unit cost since the busway estimates were last updated. The curve on Eastgate Parkway would make detouring traffic during structure construction a difficult and costly exercise. The excavation will generate a substantial amount of material to be trucked off site. Practical issues of construction sequencing and coordination would be significant, since only one pipeline could be relocated at a time. The north-south storm and sanitary sewers would need to be relocated prior to any lowering of an east-west pipeline.

To resolve all these issues, it is recommended to elevate the busway over Eastgate Parkway, over the pipelines, and under Fieldgate Drive, as shown in Figure 2-6. Due to concerns about the change in impact (visual, noise) to the residents to the south, this change is included in the EA Addendum.

2.2 Description of EA Addendum Study Area

The Study Area for this Addendum has been limited to those areas where changes from the 2004 alignment and profile are proposed. The Addendum Study Areas are shown in Figures 2-1 to 2-6.

LEGEND:

Addendum Study Area

McCormick Rankin Corporation

MISSISSAUGA Transportation and Works

Transit

DATE: September 2008

SCALE: Not to Scale

MISSISSAUGA BRT PROJECT
ENVIRONMENTAL ASSESSMENT ADDENDUM

Major Modifications to EA Proposal

FIGURE **2-1**

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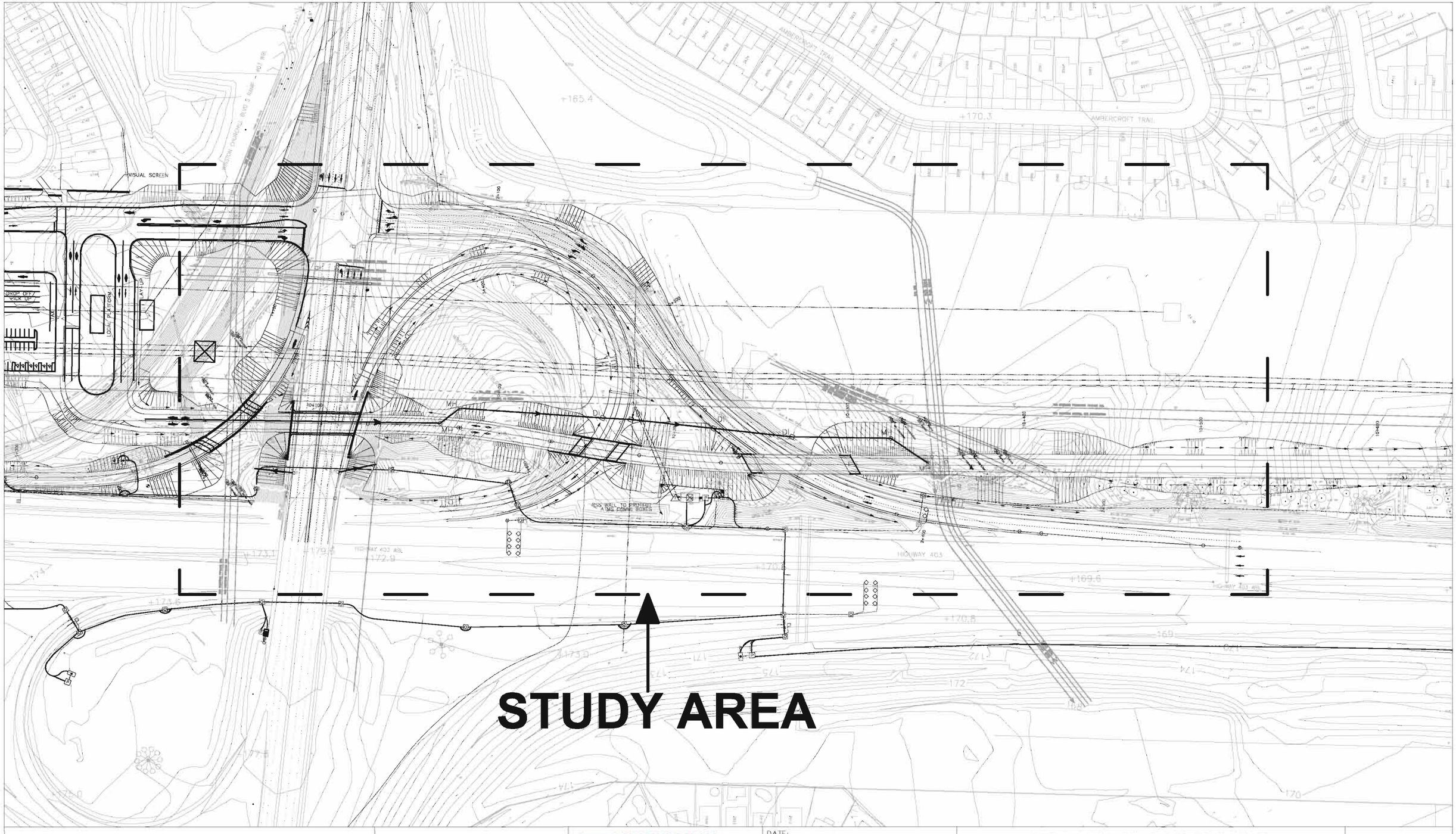
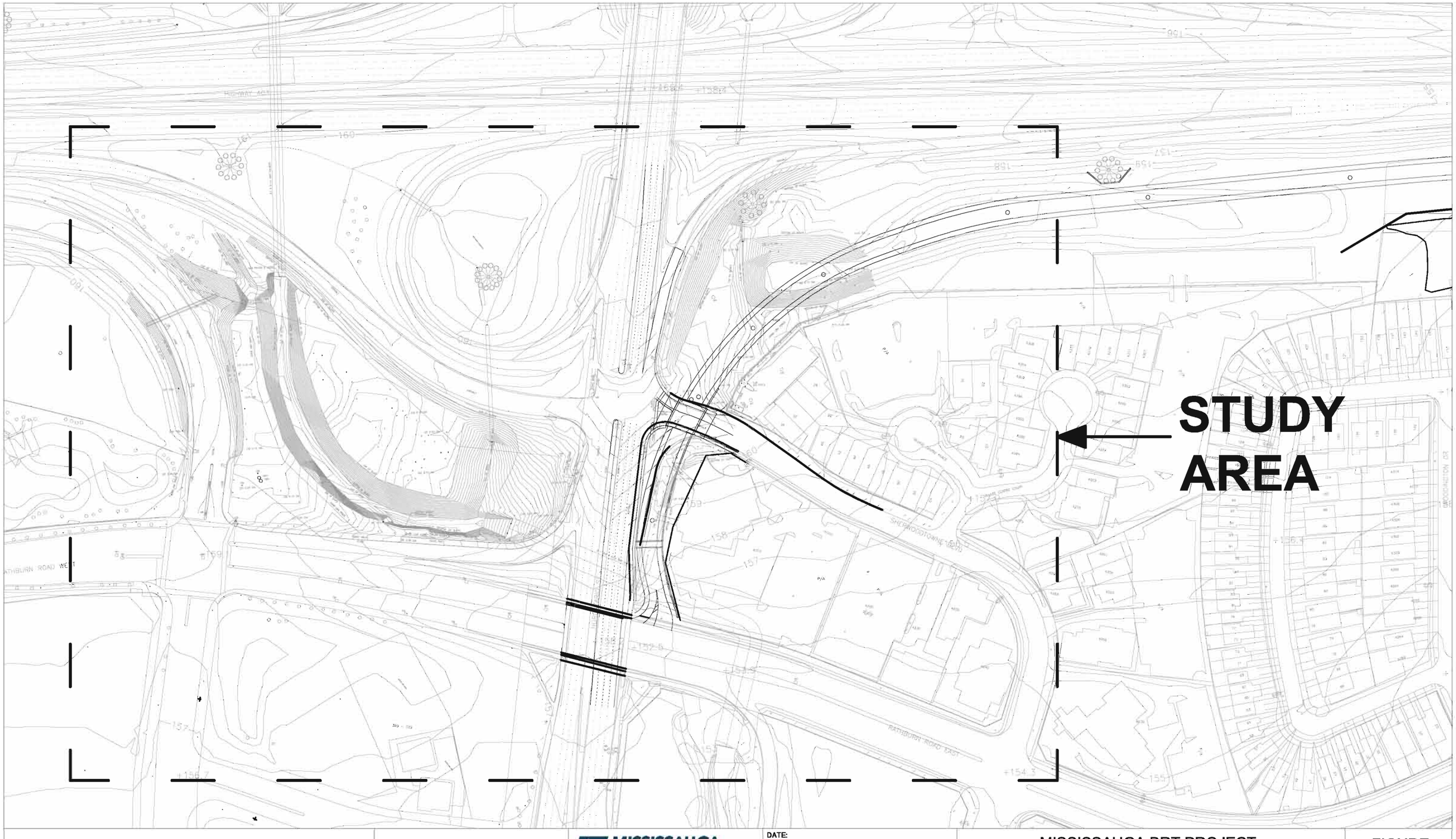


	McCORMICK RANKIN CORPORATION	MISSISSAUGA Transportation and Works Transit	DATE: December 2008 SCALE: 1:2,000	MISSISSAUGA BRT PROJECT ENVIRONMENTAL ASSESSMENT ADDENDUM WINSTON CHURCHILL BOULEVARD / HWY 403 INTERCHANGE EA ADDENDUM STUDY AREA	FIGURE 2-2



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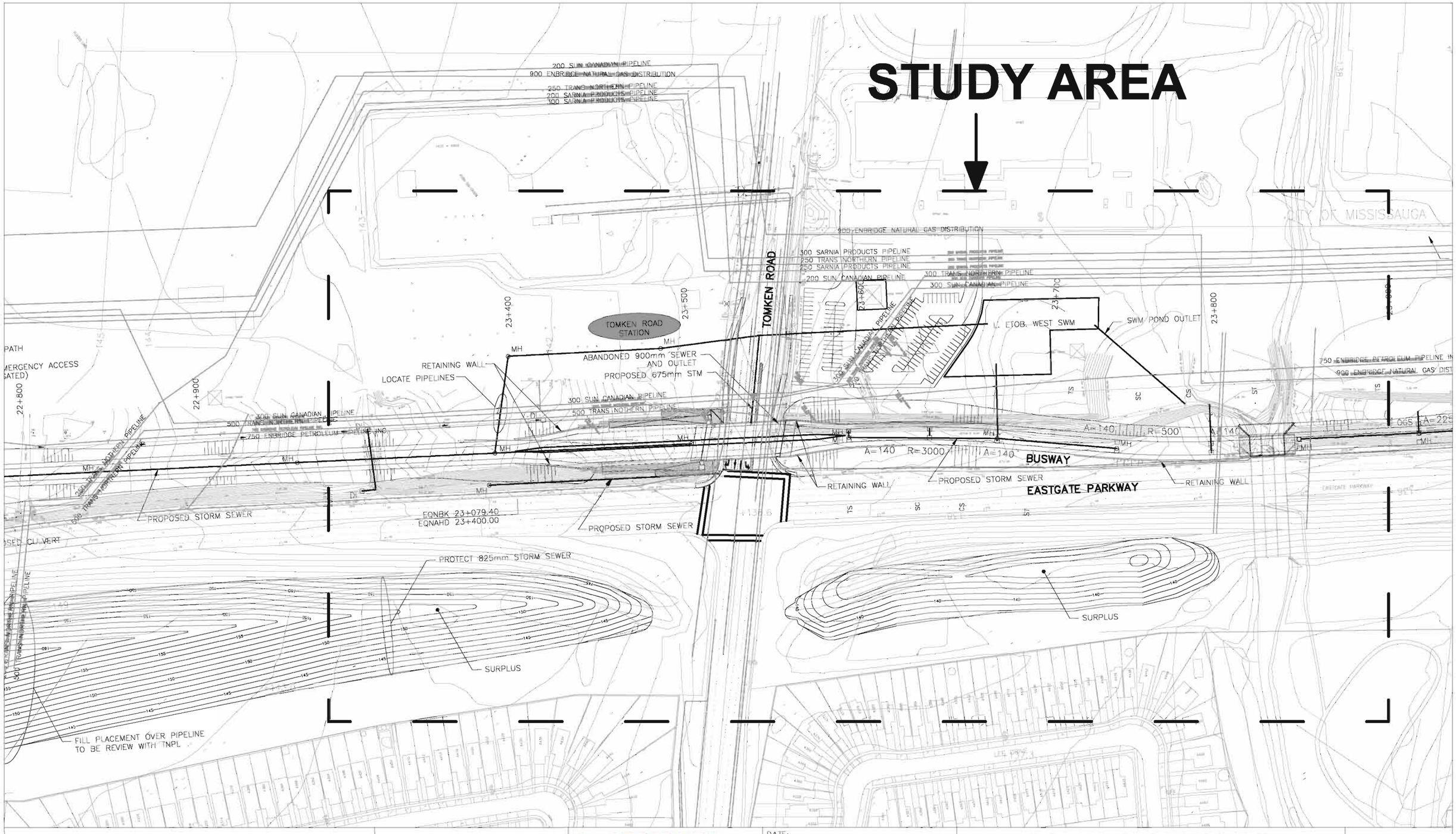
MISSISSAUGA BRT PROJECT
ENVIRONMENTAL ASSESSMENT ADDENDUM

HURONTARIO STREET / RATHBURN ROAD
EA ADDENDUM STUDY AREA

FIGURE
2-3

STUDY AREA



	McCORMICK RANKIN CORPORATION	MISSISSAUGA Transportation and Works Transit	DATE: December 2008 SCALE: 1:2,000	MISSISSAUGA BRT PROJECT ENVIRONMENTAL ASSESSMENT ADDENDUM TOMKEN ROAD / EASTGATE PARKWAY EA ADDENDUM STUDY AREA	FIGURE 2-4

McCORMICK RANKIN CORPORATION

MISSISSAUGA Transportation and Works

Transit

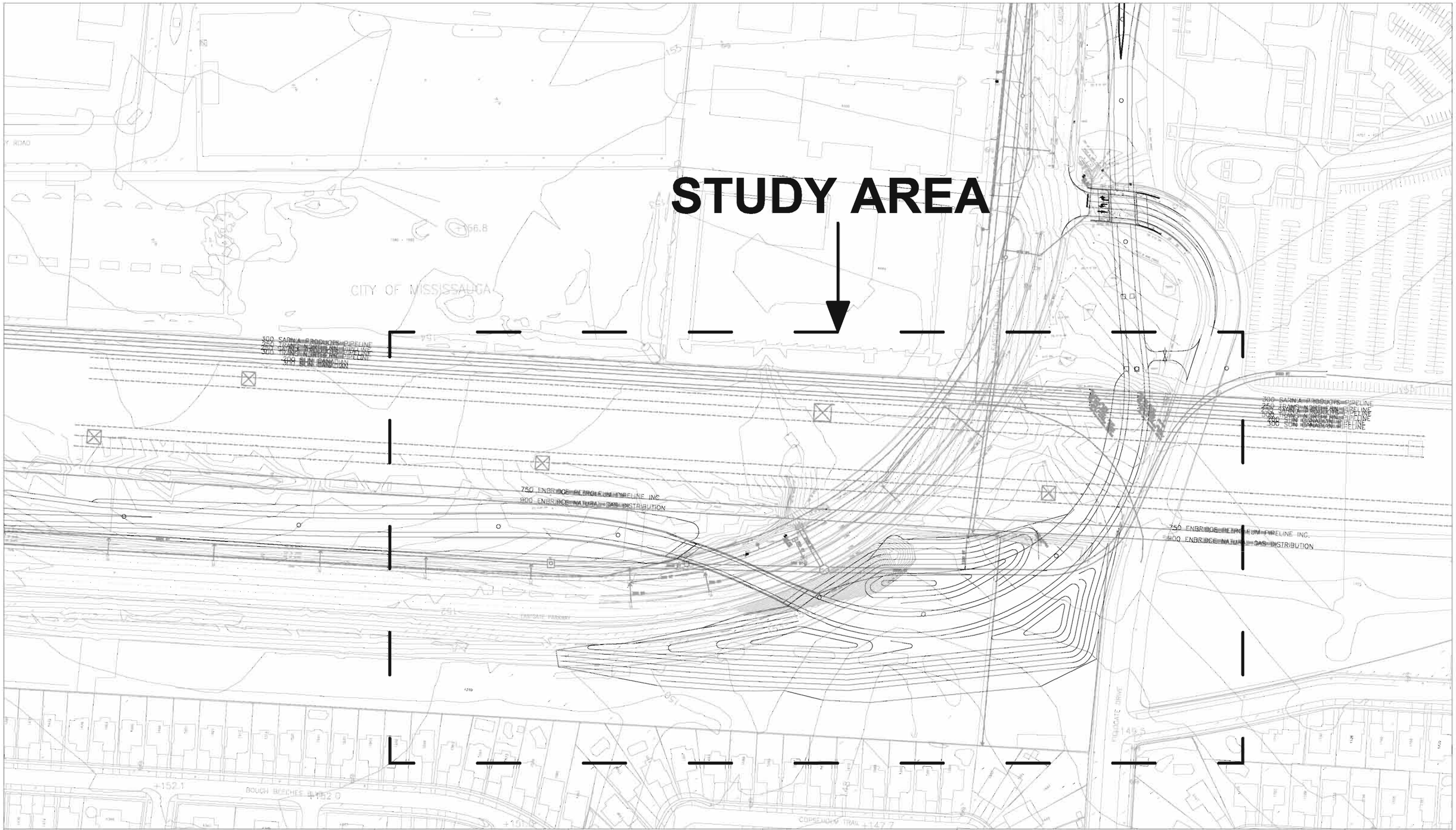
DATE: August 2008

SCALE: 1:3,000

MISSISSAUGA BRT PROJECT
ENVIRONMENTAL ASSESSMENT ADDENDUM

DIXIE ROAD / EASTGATE PARKWAY
EA ADDENDUM STUDY AREA

FIGURE
2-5



McCORMICK RANKIN CORPORATION	MISSISSAUGA Transportation and Works Transit	DATE: August 2008 SCALE: 1:2,000	MISSISSAUGA BRT PROJECT ENVIRONMENTAL ASSESSMENT ADDENDUM EASTGATE PARKWAY CROSSING EA ADDENDUM STUDY AREA	FIGURE 2-6

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3. CONSULTATION PROGRAM

The Mississauga BRT project has been the subject of an extensive consultation process, stretching back to the late 1980s with the development of the Mississauga Transportation Study which established the preferred corridor. An in-depth public and agency consultation process was included in the 1990 – 1993 Environmental Assessment process (documented in the EA Report). It included surveys, cable television presentations, opinion polls, newspaper advertising, individual meetings, open public meetings, and agency liaison.

The EA Addendum process in 2003 – 2004 also had a full public and agency consultation process, covering the whole project but with a focus on aspects of the project that had changed since the 1993 plan.

In June of 2008, consultation for this addendum included public consultation among residents in the specific affected areas. Newspaper and television coverage, combined with public notices and advertisements, have extended knowledge of the project among the general populace.

The following table provides a summary of the consultation approach for the range of stakeholders for the Mississauga BRT Project, including the 1992 EA, 2004 EA Addendum, and 2009 EA Addendum.

Table 3-1: Planning Study Consultation Process

Consulting Group	Environmental Assessment Study	Intersted / Affected Party	Involvement Mechanism
Directly Involved Agencies	1992 EA	• City of Mississauga • Ministry of Transportation • Ministry of Municipal Affairs • Ministry of the Environment • Regional Municipality of Peel • Municipality of Metropolitan Toronto • City of Etobicoke • GO Transit • Ontario Hydro	• Technical Coordinating Committee chaired by the City of Mississauga • Meetings every three weeks • Responsible for overall direction and results of study • Individual meetings as required
	2004 EA Addendum	• City of Mississauga • GO Transit	• Responsible for overall direction and results of study • Individual meetings as required
	2009 EA Addendum	• City of Mississauga • Ministry of the Environment • GO Transit (co-proponent)	• Responsible for overall direction and results of study • Individual meetings as required
Other Interested Agencies	1992 EA	• Ministry of Government Services • Ministry of Natural Resources	• External Team meeting prior to each Public Information Centre

Consulting Group	Environmental Assessment Study	Intersted / Affected Party	Involvement Mechanism
		• Credit Valley Conservation Authority • Metro Toronto Region Conservation Authority • Region of Halton • City of York • City of Brampton • Town of Oakville • Toronto Transit Commission • Transport Canada (Pearson Airport) • CP Rail • Hydro Mississauga • Consumers Gas • ESSO Petroleum • Inter Provincial Pipeline • Sun Canadian Pipeline • Trans-Northern Pipeline	• Individual meetings and correspondence as required
	2004 EA Addendum	• Ministry of Transportation • Ministry of Natural Resources • Enersource Hydro Mississauga • Enbridge Pipelines • Imperial Oil – ESSO – Sarnia Products Pipeline • Trans-Northern Pipeline • Enbridge Consumers Gas • CP Rail / SL&H • Credit Valley Conservation Authority • Toronto and Region Conservation Authority	• Circulation of documentation for agency review as appropriate / requested • Individual meetings and correspondence as required
	2009 EA Addendum	• Ministry of Transportation • Ministry of Culture • Ministry of Municipal Affairs and Housing • Ministry of Natural Resources • Ontario Realty Corporation (Ministry of Government Services) • Ministry of the Environment • GO Transit (co-proponent) • Hydro One (Ontario Hydro) • Credit Valley Conservation Authority • Toronto Region Conservation Authority • Regional Municipality of Halton • Ministry of Health and Long	• Circulation of documentation for agency review as appropriate / requested • Individual meetings and correspondence as required

Consulting Group	Environmental Assessment Study	Intersted / Affected Party	Involvement Mechanism
		Term Care • Region of Peel – Health Services • Trans-Northern Pipelines	
Interest Groups	1992 EA	• Ratepayers Association • Study Area Residents • Mississauga Residents • Commercial Property Owner	• Meeting with Ratepayers Associations prior to Public Information Centres • Advertising and publicity • Individual meetings and correspondence as required
	2004 EA Addendum	• Study Area Residents • Community Resident Groups	• Advertising and publicity • Individual meetings and correspondence as required
	2009 EA Addendum	• Commercial Property Owner • Study Area Residents	• Meeting with Ratepayers Associations prior to Public Information Centres • Advertising and publicity • Individual meetings and correspondence as required
Individuals	1992 EA	• MPs • MPPs • Municipal Councillors • Previous Information Centre Attendees • General Public	• Public Information Centres at four key points during the study • Advertising and publicity, including brochure distribution to all City residents • Newspaper and brochure questionnaires • Correspondence as required
	2004 EA Addendum	• Previous Information Centre Attendees • Municipal Councillors • General Public	• Public Information Centres during the study • Advertising and publicity, including brochure distribution to all Study Area residents • Newspaper and brochure notification • Correspondence as

Consulting Group	Environmental Assessment Study	Intersted / Affected Party	Involvement Mechanism
			required
	2009 EA Addendum	• Previous Information Centre Attendees • Municipal Councillors • General Public	• Public Information Centres during the study • Advertising and publicity, including brochure distribution to all Study Area residents • Newspaper and brochure notification • Correspondence as required

3.1 Public Consultation

The Mississauga BRT project has had a high public profile through the EA and EA Addendum processes, both of which featured full public consultation processes in accordance with the requirements of the Ontario EA Act.

At the current Preliminary Design stage, the City of Mississauga and GO Transit followed up on those earlier steps with a new public information program. This is to be carried out during the design, construction, and operation stages of the project. The program employs a number of means of informing the public of study developments and opportunities for interested members of the public to provide their input on the project, including:

- Project website (www.mississauga.ca/brt);
- Project newsletters;
- Public Information Centres (see below);
- Information displays and booths at related City events, including the Building a City for the 21st Century symposium; and
- Information brochures available on Mississauga Transit buses and in the City Centre Transit Terminal.

The following is a summary of the public information centres, and provides a timeline for the activities discussed in Sections 3.1.1 to 3.1.3.

- April 2008: Pre-EA Addendum consultation, related to the Mississauga BRT project as part of the Preliminary Design Study (Section 3.1.1);
- June 2008: Ontario EA Addendum consultation, specifically addressing the issues associated with the proposed changes resulting in impacts that are significantly different from those presented in the 2004 EA Addendum study (Section 3.1.2); and

- October 2008: Post-EA Addendum consultation, related to the Mississauga BRT project as part of the Preliminary Design Study and reflecting the recommendations of the 2008 Ontario EA Addendum study (Section 3.1.3).

3.1.1 Pre-EA Addendum Consultation

Prior the June 2008 EA Addendum public consultation process for the BRT Project, the City of Mississauga and GO Transit initiated a Preliminary Design study which identified five significant changes to the 2004 EA Addendum. These five changes were identified at Winston Churchill Boulevard, Hurontario Street, Tomken Road, Dixie Road, and Eastgate Parkway. As part of the Preliminary Design study, a series of Public Information Centres (PICs) were held on April 8th and 9th, 2008; one in the east and a second in the west segments of the study area.

The public information centres were held to give residents an opportunity to provide input into the Preliminary Design Study early in the process. Residents and businesses adjacent to the project corridor were notified of the meetings directly, and notices were placed in the Mississauga News and available on buses and in the City Centre transit terminal. At these meetings, the plan for the entire busway was presented, with notes that a number of potential changes were being investigated, including those identified in Section 2.1 of this report. These changes were subsequently assessed in detail and confirmed through the Ontario EA Addendum process (i.e. this study). Consultation activities focused on EA Addendum issues are discussed in Section 3.1.2.

The PICs used an "open house" format where members of the public could circulate through a series of display panels to familiarize themselves with the project, its history, and current state of development. Following that, the Project Director made a presentation of the overall project. The Project Team then carried out a series of group workshops with attendees focusing on key issues, and presented back to the attendees a summary of the workshop results. The first round of PICs attracted over 100 attendees with a total 53 signing in at the meetings. The workshops were designed to encourage public input to the proposed changes.

3.1.2 Public Consultation: Ontario EA Addendum – June 2008

Regarding the Ontario Environmental Assessment Addendum, proposed alignment changes resulting in effects that were different from those identified in the EA Addendum (2004) were presented to the public for comment / input in June of 2008. Residents were invited to public information "drop-in" centres at City Hall on June 24th and 26th, 2008 to review and comment on the proposed changes. Residents, landowners and businesses living adjacent to areas of proposed alignment changes were notified of the drop-in centres by hand-delivered notices two weeks prior to the sessions.

The focus of the Drop-In Centres was to present to the public proposed changes to the EA-approved BRT alignment in five locations:

- Highway 403 S-W and E-N/S Ramps at Winston Churchill Boulevard;
- Hurontario Street / Sherwoodtowne Boulevard;
- Tomken Road;

- Dixie Station; and
- Eastgate Parkway / Fieldgate Drive.

The Public Drop-In Centres were staffed and attracted a total of 43 registered attendees. In advance of the meetings, BRT Project Office staff met with a small community group (including Councillor Prentice) representing the Copseholm Trail residents to discuss the proposed modifications to the BRT alignment in the Eastgate / Fieldgate area on Monday, June 23rd, 2008. The community group expressed concern over the noise and visual impacts of the proposal for the BRT to cross over Eastgate Parkway.

A total of five comment sheets were submitted at the sessions by the public. There were comments at the sessions related to the Hurontario site, only one attendee commenting on the Tomken site, a single representative from a developer owning lands at the Dixie site, and one couple was interested in the Winston Churchill area. Most attendees were interested in the Fieldgate / Tomken location. BRT Project Office staff met individually with the most effected landowner at Hurontario Street.

While most attendees were supportive of the BRT concept, and recognized the need to introduce more environmentally-friendly and efficient travel options for Mississauga residents, there were some concerns related primarily to the potential for noise and visual impacts associated with the proposed modifications.

A copy of all public notices, public consultation material, and comments/responses related to the Environmental Assessment Addendum is provided in Appendix B.

The following table summarizes the comments submitted during the public consultation process for the study, and the proponent's responses. For details regarding the proposed changes and impact assessment are discussed in Sections 5-9 of this report.

Table 3-2: Public Comments and Responses

Summary of Concerns Regarding BRT Project Modifications (Public Consultation: June 24 & 26, 2008)		
Concern Raised By:	**Comment**	**Response**
WINSTON CHURCHILL SITE (Section 5)		
Resident	*Visual* "Raising the BRT above the 403 access ramps will result in the residents of Ambercroft Trail watching buses fly past on the elevated roadway apparently every two minutes. ...I questioned whether a fence and/or landscaping would be installed to block the view and received very vague comments.	The recommended plan includes a landscaping concept (see Figure 5-6) to mitigate the visual impacts of the busway embankment crossing the Highway 403 S-W and E-N/S ramps at Winston Churchill Boulevard. Due to the proximity of the hydro corridor (branches) and pipelines (roots), only small trees and shrubs are permitted in the landscape concept. The north-facing embankment will be fully landscaped in the areas where it is visible from residential properties. The busway is a minimum of 160 m away from adjacent homes and would have only one or two buses visible periodically, compared to the existing view of Winston Churchill Boulevard and the Highway 403 ramps, which are closer to many homes and feature constant traffic. City of Mississauga policy does not extend to providing fences along the Parkway Belt.
Resident	*Noise* "The elevated bus route	The noise analysis conducted as part of the preliminary design exercise concluded that although

Summary of Concerns Regarding BRT Project Modifications (Public Consultation: June 24 & 26, 2008)		
Concern Raised By:	**Comment**	**Response**
	will greatly increase noise levels particularly in our gardens."	there will be marginal increase in noise, it is insignificant given the existing noise generated in the Highway 403 corridor and therefore noise protection measures are not warranted. It is also important to note that the new busway profile would assist in mitigating the existing noise from the Highway 403 corridor.
Resident	*Pollution* "Heavier air pollution will roll down the unrestricted sides of the elevation into our back gardens."	One of the major benefits the Mississauga BRT Project will bring is a reduction in greenhouse gas (GHG) emissions resulting from a combination of increased transit ridership and a reduction of automobile trips. The initial project estimates identified in the project benefits case submission to Transport Canada was an annual reduction of 6.3 tonnes of GHG emissions.
Resident	*Drainage* The rear of my home is very poorly drained currently. Standing water is evident some 12-18 inches below grade...There is no plan to alleviate the run off water from the raised roadway (A pumping station originally planned is being cut...$$$$$$ savings)"	All drainage from the new busway shall be accommodated as part of a comprehensive stormwater management and drainage program, ultimately draining to the Sawmill Creek stormwater management facility on the south side of Highway 403 via the twin 2590mm storm sewers crossing the busway east of the E-N/S ramp. There will be no impact to the drainage situation on adjacent residential properties.
HURONTARIO SITE (Section 6)		
Business	"The proposal has given no regard to the huge expense I went to landscaping the city property at my expense and creating the bridge-like structures to invite walking traffic."	The busway would occupy public right-of-way. A pedestrian bridge is proposed to maintain the link between the private property and Hurontario Street. An extensive landscaping program would be applied, to screen the view of the busway from the private grounds.
Business	"It gives no consideration to how close the buses will be to my building and the extra noise and vibrations that will make it extremely difficult to keep my building leased and it will lower my net rent and drastically reduce the value of my building."	The distance between the top of the busway wall and the face of the building will be between 8 m and 11 m. This offset is within the typical range for street-facing office buildings in downtown areas. 4310 Sherwoodtown Boulevard sits within 7 m of Sherwoodtowne Boulevard (at grade).
Business	"It could easily affect the structure of my building and cause substantial structural problems."	The busway walls will be formed of drilled caissons, which require little space and are designed to avoid impact on adjacent properties. A detailed pre-construction structural condition survey of the office building will be undertaken, to serve as a base line

Summary of Concerns Regarding BRT Project Modifications (Public Consultation: June 24 & 26, 2008)		
Concern Raised By:	**Comment**	**Response**
		against which post-construction conditions may be compared.
Business	"I looked at the area and the city has lots of opportunities to route the buses under Hurontario that wouldn't disturb any existing structures"	The presence of the Highway 403 interchange and Cooksville Creek make it very costly to overcome technical constraints. There are in fact very few opportunities to cross Hurontario Street in the BRT corridor, and the opportunity to use the existing Rathburn Road structure is unique.
Business	"I have invested most of my net worth into this building and to have it threatened by the city who always indicated that the Rapid Transit would run along the North side of the 403, is just not acceptable."	The Mississauga Transitway alignment, as approved in 1993, is on the south side of Highway 403. The alignment is contained within public property designated for transportation functions and does not threaten any private property.
Business	"Alternatively, I would consider $8 million settlement as prepaid depreciation, with substantial engineered shoring at the city's expense to ensure no structural problems and a 100-year warranty as to future structural damage caused by the excavation so close to my building. Also, to have the route totally covered with the existing landscaping replaced about where it currently exists, above the new proposed bus route."	As noted above, the project does include drilled caisson walls as a means of avoiding any structural problems with the pre-existing building. The landscaping plan for the site (see Figure 6-4) screens the view of the busway from the building grounds. The architectural / landscaping treatment of the west wall of the Busway will reflect its visibility from offices on upper floors of the building. Financial considerations are not part of EA Addendum Review.
TOMKEN ROAD SITE (Section 7)		
Resident	The resident was concerned about traffic impacts on Tomken Road, and the potential noise and visual impacts associated with the proposed modifications.	Representatives from the project team advised that on-street parking would be prohibited, and that a separate parking lot would be provided via expanding the existing parking lot at the hockey arena immediately north of the station site. In addition, the existing berm between Eastgate Parkway and the residential development to the south will increased to mitigate noise and visual impacts of the proposed modification to the busway profile.
DIXIE SITE (Section 8)		
Business	*Traffic* "Fewster Drive is a narrow and winding road...[it] is already difficult enough to manoeuvre without the increased traffic a park-	Fewster Drive is 8 m wide, which provides adequate room for two travelled lanes (normally 3.75 m wide). On-street parking is prohibited. Park and Ride lot activity would generate up to 100 veh/h, or an average of one vehicle per 36 seconds. Traffic analysis shows that the added demand can be accommodated at the Dixie / Crestlawn intersection,

Summary of Concerns Regarding BRT Project Modifications (Public Consultation: June 24 & 26, 2008)		
Concern Raised By:	**Comment**	**Response**
	and-ride lot would bring. Furthermore, the intersection of Dixie Road and Crestlawn Drive, as well as Crestlawn Drive and Fewster Drive, would be subject to bottlenecks, with the increased traffic as is proposed."	with the provision of a protected signal phase for the northbound left turn (currently not protected).
	"What is the impact on current road traffic, particularly peak times – Eglinton/Dixie and Dundas?"	90% of the traffic destined to the Park and Ride lot is expected to access the area from the south (i.e. the Eastgate/Dixie intersection), therefore impacts to the Dixie and Dundas intersection are expected to be minimal. The traffic analysis indicates that the projected impacts on the Dixie/Eastgate intersection related to the incremental demand generated by the Dixie BRT Station and the proposed access can be accommodated with only marginal changes in the level of service with further opportunities for operational improvements through the introduction of protected left-turn phases.
	Concerns re: ongoing traffic impacts associated with the lot, and potential conflicts with transport trucks.	Further intersection improvements will be assessed at the detailed design phase of the study.
Business	*Parking* Concerns re: potential parking spillover from the Park and Ride lot onto Fewster Drive and into adjacent developments.	The Park and Ride lot is initially to be constructed with a 200-vehicle capacity. Should demand warrant it, the lot can be expanded into the hydro corridor lands to the west.
Business	*Pedestrians* Concerns re: pedestrian safety due to lack of sidewalks on Fewster and Encino.	The City is committed, as part of its capital sidewalk construction program, to include construction of sidewalks along Fewster Drive and Encino Drive once warranted.
Business	Suggestion – construct the Park and Ride lot on the east side of Dixie Road.	The presence of buried pipelines, hydro towers, and the need for exclusive bus access collectively preclude the viability of constructing a reasonably sized Park and Ride lot on the east side of Dixie Road. There is no public access to the east side of the corridor as there is via Encino Street to the west side.
Business	Provide access to the Park and Ride Lot from Eastgate Parkway	Such an access was considered but is not recommended as it requires cars to cross the busway, triggering the need for a grade separation and subsequently lowering the busway, bringing about a substantial increase in cost due to grading, retaining walls, pipeline protection, and additional structure.
EASTGATE PARKWAY SITE (Section 9)		

Summary of Concerns Regarding BRT Project Modifications (Public Consultation: June 24 & 26, 2008)		
Concern Raised By:	**Comment**	**Response**
Resident	*Visual Concerns* Many residents expressed concerns that the proposed modification brings the busway closer to their homes/backyards than the alignment indicated in the original EA or the 2004 EA Addendum.	The potential to realign the busway (horizontally and vertically) was investigated following the public meetings to maintain the greatest possible separation between the homes and the busway while adhering to minimum design parameters and avoiding impacts to buried and aerial utilities. The review resulted in a slight realignment of the overpass away from the residential development, and a lowering of the structure by approximately 2m at the expense of a longer structure. A visual barrier was proposed on top of the structure to screen the sight of vehicles from the houses, as illustrated in Figure 9-2.
Resident	*Suggestion* Realign the busway to the north "into the light industrial area and away from the residences". "Move the proposed raised bridge overpass more to the north and reduce the radius of the loop for the busway to align closer to and in parallel to Eastgate."	
Resident	*Noise-related Concerns* Many residents expressed concerns that the proposed modification to the busway alignment would bring about additional noise in the vicinity of the residential development.	A preliminary noise investigation indicated that, while the busway may bring about a minor increase in noise, traffic on Eastgate Parkway will remain the dominant noise source in the area, and the incremental increase attributed to the busway does not warrant additional noise protection. The proposed realignment of the busway (discussed above) and increase in berming will likely have a positive effect on the noise impacts attributed to both the busway and Eastgate Parkway.
Resident	*Suggestion* Increase the height and width of the berm and add pleasant landscaping.	The current plan is to increase both the height and the width of the berm between the busway and the residential development. The Project Team is developing a landscaping plan for the proposed berm that would mitigate some of the visual impacts of the increased berm. The BRT Project Office will review the landscaping plan for the proposed berm increase with the Copseholm Trail community for input prior to finalizing the plan.
Resident	*Suggestion* Designate a lane on Eastgate Parkway for BRT rather than construct a separate guideway.	Operating buses on Eastgate Parkway would not achieve the travel time savings desired to provide an attractive and efficient rapid transit service.
Resident	*Suggestion* "The best solution is that the BRT go under Eastgate Parkwaay at a	The impacts to the buried pipelines (i.e. relocation of 8 major oil and gas pipelines and 3m diameter storm sewer) at Eastgate Parkway / Fieldgate Drive under the EA-approved alignment would result in

Summary of Concerns Regarding BRT Project Modifications (Public Consultation: June 24 & 26, 2008)		
Concern Raised By:	**Comment**	**Response**
	convenience point and continue to go underground to Fieldgate and Tahoe."	significant and unjustified cost and construction schedule implications.

3.1.3 Post-EA Addendum Consultation – October 2008

A second round of Public Information Centres (PICs) associated with the Preliminary Design Study for the Mississauga busway were held on October 27th and 28th, 2008.

The October PICs used an "open house" format, as well. The purpose of the meetings were to follow up on the feedback provided at the April PICs, and to present the revised preliminary design plan for the BRT project to the public, to discuss the rationale for the design, and identify any outstanding issues to be addressed before finalizing the preliminary design.

Approximately 60 people attended the PICs over the two evenings in October, with a total of 16 people signing in. A total of two comment sheets were submitted at the meetings, with a single comment relating to the BRT alignment modifications addressed in this Environmental Assessment Addendum.

Appendix 'B' provides a summary of these PICs, including documentation of display materials, comments and responses to and from the various residents and business representatives that attended.

It important to note that all comments received through these meetings that were related to the five significant changes to the busway alignment are noted in the Ontario EA Addendum tables for each location.

3.2 Consultation with External Departments and Agencies

As noted above, the Mississauga BRT project has featured intense and ongoing consultation with all technical agencies, government departments, utilities, and stakeholders through the 1990 – 1993 EA and 2003 – 2004 EA Addendum process. The preparation of a Preliminary Design Report by the Ministry of Transportation of Ontario for the BRT West Park & Ride lots in 2006-07 also involved consultation with many of the same stakeholder agencies. Consultation has followed the City of Mississauga's and GO Transit's well-established protocols for involving and consulting with all interested and affected agencies in transportation projects, particularly those falling under the Ontario Environmental Assessment process.

City of Mississauga and GO Transit staff, departments, senior management, elected officials, and technical committees have been involved in the project on an as-needed basis, by written correspondence, telephone discussions, electronic mail, one-on-one meetings, group meetings, and presentations. This day-to-day liaison work within the proponent agencies is not documented here.

In the current Preliminary Design stage, the City of Mississauga and GO Transit have continued to liaise with agencies and stakeholders. The following agencies have received notification regarding this project; those marked * have been involved in focused, one-on-one correspondence and/or meetings regarding issues and solutions:

- Transport Canada*
- Indian and Northern Affairs Canada*
- Toronto Region Conservation Authority (TRCA)*
- Credit Valley Conservation (CVC)*
- Ministry of Transportation (MTO)*
- Ministry of the Environment (MOE)*
- Ministry of Natural Resources (MNR)*
- Ministry of Municipal Affairs*
- Ministry of Energy and Infrastructure*
- Ministry of Aboriginal Affairs*
- Region of Peel*
- Regional Municipality of Halton*
- City of Toronto*
- City of Brampton*
- Town of Oakville*
- Oakville Transit
- Toronto Transit Commission*
- Metrolinx (previously the Greater Toronto Transportation Authority)*
- Greater Toronto Airports Authority*
- Ontario Realty Corporation*
- Ontario Provincial Police – Port Credit*
- Mississauga Fire and Emergency Services*
- Peel Regional Police*
- Peel Paramedic Services*
- Hydro One*
- Bell Canada*
- Enersource Hydro Mississauga*
- Rogers Cable*
- Enbridge Distribution Inc.*

- Sun-Canadian Pipe Line Company*
- Trans-Northern Pipelines Inc.*
- Enbridge Pipelines Inc.*
- Imperial Oil (Sarnia Products Pipeline)*
- Canadian Pacific Railway

Liaison scope and timing is determined on an issue-by-issue basis, and varies from agency to agency. The BRT proponents will continue to liaise with these agencies and any other stakeholders that may emerge through the Detail Design and construction process. Furthermore, there is a full range of staff and departments within the City and GO Transit with an interest in the project, and the City's BRT Project Team continue to lead discussions with those on an as-needed basis. The City's senior staff and elected officials are briefed on the project on a regular basis.

3.3 Consultation with Aboriginal Communities

Indian and Northern Affairs Canada and the Ontario Ministry of Aboriginal Affairs were contacted to identify First Nations groups that should be consulted regarding this project. They advised that no First Nations groups are located directly within the study area. There are no known specific claims directly within the study area, but the Mississauga BRT Project is located within 50 km of two specific claims.

Notification letters were sent to the Mississaugas of the New Credit First Nation and the Six Nations of the Grand River, to encourage their involvement should they hold any particular interest in the study area. The Six Nations of the Grand River stated that they did not have an interest in reviewing the BRT project EA Addendum. However, are to be notified immediately should there be any findings of archaeological deposits. To date no response has been received from Mississaugas of the New Credit First Nation. Please refer to Appendix B for copies of related correspondence.

Please refer to Section 4.2.1.1 for commitments to notifying and involving First Nations who may have an interest in this project upon the discovery of any archaeological resources of potential interest to one or more First Nations groups.

Potential effects on lands and resources used for traditional purposes by aboriginal persons have been examined by taking into account the knowledge of the study area and identifying potential effects on specific resources. The City of Mississauga is not aware of any current use of lands and resources for traditional purposes by aboriginal persons within the study boundaries.

The urban and suburban nature of the study area limits many traditional land uses, including hunting, fishing and the gathering or harvesting of plants for traditional use. In addition, the sections specified below provide the information from which it has been concluded that this project will not likely result in significant adverse environmental effects to fish or fish habitat (Section 4.1.2.2), wildlife habitat (Section 4.1.2.4), vegetation (Section 4.1.2.3), or archaeological resources (Section 4.2.1).

3.4 Consultation with Property Owners and Developers

The BRT corridor is flanked by some commercial properties where development is ongoing or is planned (primarily between Fieldgate Road and Renforth Drive). The BRT Project Office is involved on an ongoing basis in support of the City's other departments (primarily the Planning Department) regarding active development applications. The intent is to coordinate the design and timing of private works with that of the BRT project, to optimize the outcome for both parties. These discussions range from development concept review to property protection to architectural / site plan review to field meetings regarding utility relocation coordination.

This process will continue through the busway design and construction period, in response to developer initiatives and owner enquiries. Resolution of any issues that arise is through the processes set out in the Planning Act.

3.5 Related Studies and Reports

The documents listed in this section have been completed in support of the Mississauga BRT project. They are available from the Mississauga BRT Project Office. In addition to the technical documents listed below, the BRT project has an active internet site (http://www.mississauga.ca/portal/residents/brt) under the Transit component of the municipal web site which features project information, brochures, public consultation materials, background documents, news releases, and contact resources.

3.5.1 Studies and Reports Under the Control of the Proponent

The following studies were prepared by the Proponent (i.e. the City of Mississauga BRT Project Office). Those marked with '*' are posted on the City of Mississauga website (www.mississauga.ca/brt). Other documents are available for viewing at the BRT Project Office within the City of Mississauga Department of Transportation and Works.

3.5.1.1 1992 Environmental Assessment

* City of Mississauga. January 1992. Mississauga Transitway Environmental Assessment Report.

3.5.1.2 2004 Environmental Assessment Addendum

GO Transit. December 2002. Inter-Regional Bus Rapid Transit plan

* City of Mississauga. October 2004. Mississauga Transitway Highway 403 – Eglinton Avenue Corridor Environmental Assessment Addendum.

3.5.1.3 2008 Preliminary Design Study / Second Environmental Assessment Addendum

City of Mississauga. February 2006. Inter-Regional Bus Rapid Transit (BRT) – Mississauga Segment Implementation Plan Update

* City of Mississauga, GO Transit. November 2008. Mississauga Bus Rapid Transit CEAA Screening Report

New Directions Archaeology, Ltd. February 2008. Stage 1 Archaeological Assessment of the Mississauga BRT, City of Mississauga

Ecoplans Ltd. February 2008. draft Contamination Overview Study

Thurber Engineering Ltd. October 28, 2008. Preliminary Geotechnical Investigation, Bus Rapid Transit Project

* S.S. Wilson Associates. January 30, 2009. Environmental Noise Study, Proposed Mississauga Bus Rapid Transit System (BRT West)

* S.S. Wilson Associates. May 28, 2009. Environmental Noise Study, Proposed Mississauga Bus Rapid Transit System (BRT East)

City of Mississauga, GO Transit. December 2008. draft Preliminary Design Report, Mississauga Bus Rapid Transit West Section

City of Mississauga, GO Transit. December 2008. draft Preliminary Design Report, Mississauga Bus Rapid Transit East Section

City of Mississauga, GO Transit. February 2008. draft Bus Rapid Transit Planning and Design Manual

* City of Mississauga, GO Transit. June 2008. Public Information Displays for EA Addendum

3.5.2 Other Relevant Studies and Reports

The following documents are related to the Mississauga BRT project but have not been prepared under the control of the BRT Project Office.

City of Mississauga. 2005. Mississauga Plan (Official Plan) (available at. http://www.mississauga.ca/portal/residents/mississaugaplan)

City of Mississauga. March 2007. Transit Ridership Growth Strategy

Transport Canada. 2007. Scoping Document for the Mississauga BRT Project.

Ministry of Transportation of Ontario. October 2008. Draft Preliminary Design Report, Park & Ride Lots – Winston Churchill Boulevard / Highway 403 and Erin Mills Parkway / Highway 403.

3.6 Canadian Environmental Assessment Act (CEAA) Requirements

In accordance with the *Canadian Environmental Assessment Act* (CEAA), the federal government is required to ensure that an environmental assessment is conducted before a federal authority grants money or any other form of financial assistance to the project. Given the federal funds committed to the Mississauga BRT project, a CEAA screening is required. Transport Canada is acting as the Federal Environmental Assessment Coordinator for the screening.

Section 16 (1) of the Act identifies the factors that need to be considered in an environmental assessment at the screening level:

16(1) *Every screening…shall include a consideration of the following factors:*

(a) the environmental effects of the project, including the environmental effects of malfunctions or accidents that may occur in connection with the project and any

cumulative environmental effects that are likely to result from the project in combination with other projects or activities that have been or will be carried out;

(b) the significance of the effects referred to in paragraph (a);

(c) comments from the public that are received in accordance with this Act and the regulations;

(d) measures that are technically and economically feasible and that would mitigate any significant adverse environmental effects of the project; and

(e) *any other matter relevant to the screening… that the responsible authority… may require to be considered.*

The overall objective of undertaking the Federal Review at this stage of design is to allow the Responsible Authorities an opportunity to undertake a review of the project early in the design process.

The CEEA submission outlines potential effects, proposed mitigation measures and the commitments to future work and consultation to be completed as design proceeds to ensure that the mitigation commitments outlined in this document are realized during the design, construction and operation/maintenance stages.

Under CEAA, the potential effects to valued ecosystem and social components focuses on the following key steps:

- determine whether or not there are potential environmental effects and, if so, whether they are adverse;
- identify mitigation measures to address potential adverse environmental effects;
- determine whether the residual adverse effects are significant; and
- determine whether significant adverse environmental effects are likely based on probability of occurrence and scientific certainty.

The CEAA screening report for the Mississauga BRT project was filed with Transport Canada in January 2009.

3.7 Filing of EA Addendum – June 2009

This EA Addendum was filed for public and technical agency review on June 12, 2009. Where appropriate, comments submitted during and after the 30-day review period have been addressed in the report. A summary of the comments submitted and the Project Team's responses is provided in Section 11 of this report.

4. UPDATE OF STUDY AREA CONDITIONS

The following section discusses the existing conditions of the Study Area. For ease of reference, the description of the various elements provided in the 2004 EA Addendum as they relate to this Addendum are repeated in this section. Section 4.1 describes the existing physical environment in terms of built and natural environment. The socio-economic environment (Section 4.2) includes a description of the archaeological and heritage features within the corridor, as well as, the surrounding communities. Lastly, Section 4.3 describes the existing economic environment.

4.1 Physical Environment

4.1.1 Built Environment

4.1.1.1 Roads

The following is a summary of the roads within or adjacent to the sites of proposed changes to the EA-approved Mississauga Transitway plan.

- Highway 403 is a Controlled Access Highway with a 100 km/h posted speed and interchanges at major arterial roads including both Winston Churchill Boulevard and Hurontario Street. Highway 403 has three general purpose traffic lanes and one High Occupancy Vehicle lane in each direction. Buses are permitted (under certain conditions) to operate on the highway shoulders between Erin Mills Parkway and Mavis Road. Highway 403 sits within a basic 100 m wide right of way, and is the responsibility of the Ministry of Transportation of Ontario.
- Winston Churchill Boulevard is a four lane divided arterial and is a City of Mississauga road. It has a full Parclo "A" style interchange with Highway 403.
- Hurontario Street is a high standard six lane arterial and is a City of Mississauga road. It has a full Parclo "A" style interchange with Highway 403.
- Rathburn Road is a four lane collector and is a City of Mississauga road.
- Tomken Road is a high standard four lane arterial and is a City of Mississauga road.
- Dixie Road is a high standard six lane arterial and is a Region of Peel road.
- Fieldgate Drive is a two lane collector and is a City of Mississauga road.
- Eastgate Parkway is a high standard four lane arterial and is a City of Mississauga Road. Between Cawthra Road and Fieldgate Road, Eastgate Parkway lies within the provincially-owned Parkway Belt West.

None of the roads along or crossing the corridor currently feature marked or designated bicycle lanes.

4.1.1.2 Transit

Public transit services in the corridor are provided by Mississauga Transit (local) and GO Transit (interregional). There is no intercity bus service currently in operation in the corridor. Mississauga Transit operates a variety of express, regular, and feeder / shuttle bus routes, using all the arterials and most collectors in the corridor (although not every

road in the Eglinton Corridor has a route). GO Transit operates along Highway 403, stopping at the Mississauga City Centre. GO Transit also serves the Credit Valley Hospital on Erin Mills Parkway north of Highway 403.

4.1.1.3 Utilities Within / Crossing Corridor

There are eight pipelines (with five owners) running along the BRT corridor, along with various other crossing pipes. The pipeline operators were involved in both the 1992 EA and the 2004 EA Addendum for the Mississauga BRT. Specific crossing/relocation details were not identified at that time. All pipelines were exposed in the field in mid-2008, to confirm their location and depth in areas of potential conflict with the busway. All pipelines were found to have at least 1.5 m of ground cover.

In the area between Winston Churchill Boulevard and Erin Mills Parkway, the following pipelines are present:

- Enbridge Pipelines, Inc.: 762 mm diameter oil pipeline (formerly Interprovincial Pipeline) within a 3.048 m wide leased easement within the south side of the Hydro One corridor
- Enbridge Gas Distribution Inc.: 900 mm diameter natural gas pipeline parallel to and south of the Enbridge oil pipeline; also, two parallel north-south gas pipelines (500 mm and 250 mm high pressure) cross the corridor approximately 50 m west of Winston Churchill Boulevard.
- Sun-Canadian Pipe Line Company: parallel 200 mm and 300 mm diameter oil pipelines, running east-west immediately north of the hydro towers, at the Winston Churchill site only; the pipelines cross to the south of Highway 403 east of the interchange.
- Imperial Oil – Sarnia Products Pipeline: parallel 250 mm and 300 mm diameter oil pipelines running east-west approximately 20 m north of the hydro towers at the Winston Churchill site only; the pipelines also cross to the south of Highway 403.

In the area between Hurontario Street and Renforth Drive, the pipelines are present between Cawthra Road and Fieldgate Drive only. At Cawthra station, the Sun-Canadian pipelines are on the north side of the hydro corridor. The 300 mm Sun-Canadian pipeline does, however, swing to the south of the hydro line for 400 m at Tomken Road to get around the hydro substation there. Both Sun-Canadian pipelines stay to the north of the hydro lines for the rest of the segment.

The two Imperial Oil (Sarnia Products) pipelines run along the north edge of the corridor from Cawthra to Fieldgate.

East of Cawthra, the Enbridge oil pipeline shifts from the north side of the Parkway Belt to run along the south side of the hydro corridor to east of Fieldgate. The Enbridge gas line stays north of the Parkway Belt until east of Dixie Road, where it swings south to run alongside the Enbridge oil line to east of Fieldgate.

Two Trans-Northern oil pipelines (250 mm and 300 mm diameter) enter the Parkway Belt from the south, midway between Cawthra and Tomken. They split to get around the Tomken hydro substation, the 300 mm pipe staying to the south and the 250 mm pipe skirting the site to the north. They rejoin the Sun-Canadian and Imperial Oil (Sarnia

Products) pipelines east of Tomken Road to create a six-pipe corridor between the hydro towers and the north property line of the Parkway Belt. Along with the two Enbridge pipes to the south of the hydro line, this makes eight pipelines between Tomken and Fieldgate.

There is a 406 mm thick casing over the Trans-Northern 273 mm pipeline crossing Dixie Road. Pipelines crossing Tomken road must be investigated for any casings before the design. These casings may have to be extended beyond the road.

Over the course of the development of the Mississauga BRT plans, efforts have been made to avoid impacts to pipelines. However, some conflicts may be unavoidable. The following table summarizes discussions between the Project Team and the pipeline operators regarding National Energy Board (NEB) applicability and requirements related to possible effects associated with the Mississauga BRT. Although the study area includes pipelines regulated by the NEB none of the proposed works are anticipated to result in the need for a permit from the National Energy Board.

Table 4-1: Utilities: Summary of Activities by Project Phase

Pipeline	Pipeline Category / NEB Regulation	Agreement Requirements	
		Crossing	Relocation (with mutually acceptable design and cost sharing solution)
Sun-Canadian Pipe Line Company Limited	Provincial; not regulated by NEB	All crossings and relocations would only require agreement from Sun-Canadian Pipe Line Company Limited.	
Imperial Oil (Sarnia Products Pipeline)	Provincial; not regulated by NEB	All crossings and relocations would only require agreement from Imperial Oil.	
Enbridge Pipelines	Interprovincial; NEB regulated	Crossing agreement would be required.	NEB permit required only if relocation exceeds 100 m or is within 30 m of a body of water.
Enbridge Consumers Gas	Local: not regulated by NEB Interprovincial; NEB regulated	No NEB regulated pipelines in corridor. All crossings and relocations would only require agreement from Enbridge Consumers Gas.)	
Trans-Northern Pipelines	Interprovincial; NEB regulated	No NEB approvals required for crossings.	NEB approvals required for relocations.

Other Utilities – Around Winston Churchill Boulevard and Erin Mills Parkway

The following utilities are present around Winston Churchill Boulevard; please note that storm sewers are not included:

- Rogers Cable: buried fibre optic cable line along the east edge of Winston Churchill Boulevard; aerial fibre optic cable running north-south approximately 175 m east of the centre line of Winston Churchill Boulevard;
- Bell Canada: Buried cable along east side of Winston Churchill Boulevard, south of Highway 403, and conduit along east side of Winston Churchill Boulevard;

- Hydro One: two 230 kV overhead power lines (east-west) north of Highway 403 in the utility corridor. In addition, Hydro One is investigating a potential new line-tap to the transformer site in the north-west quadrant of the Winston Churchill Boulevard/Highway 403 interchange;
- Enersource (Hydro Mississauga): both buried and aerial hydro facilities at the Winston Churchill Boulevard site;
- Region of Peel (water):
  - 400 mm diameter concrete water main running north-south, approximately 30 m east of the centre line of Winston Churchill Boulevard;
  - 400 mm diameter concrete water main running north-south, approximately 30 m west of the centre line of Winston Churchill Boulevard (parallel to and immediately east of the pair of north-south Enbridge gas pipelines)
- Region of Peel (electrical): various buried electrical ducts within the arterial right-of-way, providing power to the traffic signals at the E-N/S ramp terminal intersections; and
- Ministry of Transportation of Ontario: High Mast Light standards at varying intervals (100 m – 250 m), approximately 25 m north of the edge of pavement of Highway 403; powered by buried electrical cable in PVC duct running along the outside edge of both interchanges (offset approximately 5 m from the edge of ramp pavement).

Other Utilities – between Hurontario Street and Fieldgate Drive

Between Hurontario Street and Cawthra Road, the BRT corridor encounters MTO high mast light standards at both interchanges, along with power and communications lines related to the Ministry's Traffic Management System on Highway 403.

Region of Peel water mains are present as follows:

- N-S along Tomken Road (1200 mm and 250 mm);
- N-S just west of Little Etobicoke Creek (regional Hanlan feeder main);
- N-S along Dixie Road (250 mm); and
- N-S along the west side of Eastgate Parkway, Fieldgate to Eglinton (300 mm).

There is a 250 mm Region of Peel sanitary sewer under the southbound lanes of the north-south leg of Eastgate Parkway between Fieldgate and Eglinton.

An Enersource pole line angles through the Parkway Belt in the vicinity of Cawthra Road. It continues along the north side of Eastgate Parkway to Fieldgate, along the west side of Eastgate from Fieldgate to Eglinton Avenue, and along the north side of Eglinton easterly to Renforth Drive. At Fieldgate, the Enersource lines are buried as they cross the Hydro One corridor, to avoid conflicts with Hydro One's east-west high-voltage lines.

Between Cawthra and Fieldgate, the twin 230 kV Hydro One overhead lines run in the utility corridor. A major Hydro One substation is located just north of the corridor, immediately west of Tomken Road.

There is an aerial Bell line along Dixie Road, and another running along the north side of Eastgate Parkway (on the Enersource poles) from Dixie to Fieldgate, continuing along the west side of Eastgate to Eglinton. On Eglinton, the Bell pole line runs along the south edge of the roadway, connecting with pole lines on the north-south crossing roads.

Electrical services and control boxes are provided at each signalized intersection in the corridor.

4.1.1.4 Adjacent Land Uses

The Mississauga BRT facility stretches across central Mississauga, through a variety of land uses. Most of the BRT facility is located in the Parkway Belt West, a broad swath of public lands stretching across the western half of the Greater Toronto Area. The Parkway Belt is reserved and designated for major interregional linear facilities, including hydroelectric transmission lines, pipelines, highways, and transit lines.

The following description focuses on the land uses immediately adjacent to the busway:

Around Winston Churchill Boulevard

In this segment, the busway is to be located between Highway 403 and the Hydro One transmission corridor. Several oil and gas pipelines have easements within and to the north of the Hydro corridor. The lands to the north of the Parkway Belt are developed for single family residential use; the homes back on the Parkway Belt and do not have direct access to the corridor.

Around Hurontario Street

The busway is located in the south part of the Parkway Belt, between Highway 403 and a vacant 30 m wide strip held by the provincial government in reserve for possible future Parkway Belt uses. These could be linear utilities or other interregional facilities in keeping with the intent of the Parkway Belt West Plan; there are no current or known plans for any use of the vacant lands. In order to preserve the lands for any potential Parkway Belt use, the Ontario Real Corporation (manager of the property on behalf of the Province) does not allow crossings, regrading, fill, permanent structures, or any other use of the vacant strip that would prevent, affect, or compromise the ability to use the land for Parkway Belt purposes in the future.

South of that strip, there is a condominium office complex immediately east of Hurontario Street, and single family residential lands from there east to Central Parkway. The Parkway Belt is fenced, with no direct access from adjacent properties.

Tomken Road to Fieldgate Drive

The busway in this segment is still in the Parkway Belt West, and runs between the Hydro One / pipeline corridor and the north side of Eastgate Parkway. The land uses along the north side of the Parkway Belt are largely warehouse industrial, although there is a two-pad arena at Tomken Road and the publicly-owned lands between Cawthra Road and Tomken Road are vacant. A high earth berm runs along most of the south side of Eastgate Parkway; south of the berm is a 30 m strip preserved for future Parkway Belt uses, then a single family residential neighbourhood. The residential properties back on the fenced Parkway Belt and do not have direct access to the corridor.

4.1.1.5 Future Land Uses

The Mississauga BRT corridor is relatively mature, although significant potential for development and intensification (residential and commercial / office) remains in the City Centre area west of Hurontario Street. The Airport Corporate Centre and vacant lands east of Fieldgate Drive will continue to be filled in over time with prestige office and commercial uses.

There is no vacant land immediately adjacent to the facility that would be suitable for residential development. The vacant property east of Cawthra Road and north of Eastgate Parkway is designated by the City as future employment and public open space, but there are no specific plans currently associated with that block.

4.1.1.6 Drainage and Surface Water

The existing drainage system consists primarily of open ditches, culverts and storm sewers. The outlet points were identified and the contributing drainage areas were divided according to these outlet points. A summary of the outlet points and their contributing drainage areas are summarized below (noting that only those outlets in the vicinity of the Transitway segments that are the subject of this EA Addendum are described herein):

Winston Churchill Boulevard Site

The Winston Churchill Boulevard site is part of a 31.0 ha area (consists entirely of Highway 403 and Hydro corridor areas) that drains via twin 1200 mm diameter pipes across Highway 403 just east of Winston Churchill Boulevard. Runoff generated from the portion of this area located north of Highway 403 (21.2 ha) is conveyed by side ditches and culverts under the highway ramps to the upstream end of the twin 1200 mm pipes. Minor event runoff from this area combines with runoff from Highway 403 (9.80 ha) and is conveyed through the twin 1200 mm pipes to a ditch on the south side of Highway 403. The ditch runs easterly to a stormwater management pond, and is ultimately discharged from this facility to Sawmill Creek through twin 2590 mm diameter storm trunk sewer.

Hurontario Street / Rathburn Road Site

Outlet 4 – Twin 1850 x 1000mm CSPA and Municipal Sewer: The twin culverts run southerly across Highway 403 just east of Hurontario Street and discharge to a 1350 mm diameter municipal storm sewer and ultimately to Cooksville Creek via the double box culvert at Rathburn Road. The overall contributing drainage area to Outlet 4 is approximately 9.35 ha, consisting primarily of Highway 403 corridor. Runoff from the area south of Highway 403 (1.30 ha) enters the 1350 mm diameter municipal sewer at a ditch inlet located in the south-east quadrant of the Highway 403 and Hurontario Street intersection.

Outlet 7 – Intermittent Drainage Channel and Municipal Sewer: Approximately 58.7 ha of vacant lands, Hydro and Highway 403 corridor and residential development drain to the intermittent drainage channel located approximately 200 m west of Tomken Road. Runoff collected by the drainage channel is discharged into a large municipal sewer at Eastgate Parkway via two ditch inlets. Runoff from an additional 2.54 ha of the Eastgate Parkway corridor is also conveyed to Outlet 7; therefore, the total drainage area to Outlet

7 is 61.2 ha. The municipal sewer conveys flows to the west bank of Little Etobicoke Creek. Flows in excess of the capacity of the ditch inlets from the 58.7 ha to the north are conveyed eastward via roadside ditch and ultimately to Outlet 8, discussed below. At the time of this report, the capacity of the ditch inlets and downstream municipal sewer were unknown. As a result, it was assumed that the ditch inlet and sewer system were designed to collect/convey the minor storm event (i.e. 10 year event). The capacity of this system must be confirmed at the final design stage; the BRT drainage system will then be designed to reflect the available capacity.

Outlet 8 – Little Etobicoke Creek (West Side): Drainage from approximately 8.9 ha is conveyed to the west bank of Little Etobicoke Creek via municipal storm sewers and open channels. Major event runoff from an additional 58.69 ha (Catchment 7-1) is also conveyed to this outlet via roadside ditches and channels. Runoff from the vacant lands and Hydro corridor west and east of Tomken road (Catchments 7-1, 8-3 and 8-4) is conveyed within a channel to a wet pocket prior to discharging to Little Etobicoke Creek. Runoff from Eastgate Parkway and Tomken Road is conveyed to Little Etobicoke Creek via storm sewers.

Outlet 9 – Little Etobicoke Creek (East Side): Major and minor event runoff from approximately 20.69 ha west of Dixie Road (Catchments 9-1 to 9-3), including Hydro corridor, light industrial/commercial development and Eastgate Parkway, is conveyed to the east bank of Little Etobicoke Creek via roadside ditch and overland flow. Runoff from approximately 14.82 ha of this area (Catchments 9-1 and 9-2) is conveyed through a wet pocket within the Hydro corridor prior to discharging to the creek. Major event runoff from an additional 1.76 ha constituting Dixie Road is also conveyed to the east bank of Little Etobicoke Creek. These flows do not enter the wet pocket and are conveyed via sheet flow along the Dixie Road and Eastgate Parkway to the roadside ditches and ultimately to the Creek.

Outlet 10 – Eastgate Trunk Sewer: This sewer was constructed in conjunction with the Eastgate Parkway extension which extended Eastgate Parkway northward to Eglinton Avenue. The sewer begins at Dixie Road and discharges to the west bank of Etobicoke Creek, as indicated in Figure 4-6. The trunk sewer collects major and minor event runoff from approximately 102.2 ha (Catchments 10-1 and 10-2), including Eastgate Parkway and light industrial/commercial lands. The sewer also collects minor event runoff from approximately 1.8 ha of Dixie Road. The Stormwater Management Report – Eastgate Parkway Extension (Dillon Consulting Ltd., February 1993) document indicates that the Eastgate Parkway trunk sewer was designed to convey minor and major system flows up to the Regional storm event for 95.48 ha and to accommodate any future flows generated by the proposed BRT.

The ditches along Highway 403 also provide water quality control to the flows in the highway corridor.

Existing drainage features in each of the Addendum Study Areas are illustrated in Figures 4-1 to 4-5.

4.1.2 Natural Environment

This section describes the existing natural environmental conditions along and in the vicinity of the BRT project. The general characteristics of the features are described, and

any relevant sensitivities identified, with specific consideration of the current federal, provincial and local policy context. Potential adverse effects of the proposed construction and operation of the BRT, including both permanent and temporary direct encroachment as well as indirect/secondary effects (e.g., spills, salt use) are identified. Measures to mitigate and/or 'compensate for' these potential negative effects associated with each of the five proposed modifications to the EA-Approved plan are discussed in their respective sections of this report.

This material refers to the portions of the BRT corridor that are subject to this Addendum as described in Sections 5 through 9; a more detailed description of the natural environmental conditions, impact assessment and mitigation for the entire project is provided in the original EA Report and the CEAA Screening Report.

The natural environment features are depicted in Figures 4-6 to 4-9.

4.1.2.1 Designated Natural Areas and Policy Areas

Provincial and Regional

Based on information from Ministry of Municipal Affairs and Housing (2002 and 2005), the project limits are outside of Provincial Land Use and Environmental Plans areas (Oak Ridges Moraine, Niagara Escarpment and Greenbelt). Based on a review of MNR Natural Resources and Values Information System (NRVIS) information, a Natural Heritage Information Centre (NHIC) database query, and information received from Credit Valley Conservation (CVC), and Toronto and Region Conservation Authority (TRCA) and the City of Mississauga, there are no designated natural features within or adjacent to the project limits including ANSIs (Areas of Natural or Scientific Interest – Life or Earth Science), evaluated wetlands (Provincially Significant or Locally Significant Wetlands) or other federally or provincially designated areas.

City of Mississauga Natural Areas

A Natural Areas Survey for the City of Mississauga was undertaken during 1995 and 1996 (Geomatics 1996). The Natural Areas Survey identified and designated natural features as Natural Areas (NA) Special Management Areas (SMAs), Linkage Areas (Linkages) and Residential Woodlands. The Natural Areas database current is reviewed and updated on a regular basis. Using the most recent maps and fact sheets (City of Mississauga 2006), several of the features within the project limits have local designations identified through these studies. These features within the project limits are discussed in the following Sections of the report.

4.1.2.2 Fish and Fish Habitat

The BRT alignment crosses Cooksville Creek (south of Hurontario Street / Highway 403 interchange) and Little Etobicoke Creek (east of Tomken Road)

Aquatic field surveys were conducted in 2007. Additional general information was collected during site visits with TRCA in 2007 and 2008. Fluvial geomorphic information was collected in 2008. The information collected was used to update and supplement the information provided by the agencies and gathered from background sources.

Specific fish community inventories (e.g., electrofishing) were not conducted by Ecoplans Limited (Ecoplans) staff given the availability of fish community sampling information and related input from TRCA, CVC and MNR.

Existing Conditions

Cooksville Creek

The BRT alignment crosses Cooksville Creek in the vicinity of Hurontario Street.

Upstream of Highway 403, the open section of creek channel is confined in a narrow corridor between the single and multi-family residential blocks north of the highway. It is enclosed for approximately 150 m under the highway. It then flows in an open but modified channel section between the highway ramp and Hurontario Street (which would have been crossed / modified under the EA approved busway plan), and is then enclosed in a large twin cell box culvert for another approximately 230 m downstream of Hurontario Street and Rathburn Road East. The channel flows along the base of a retaining wall along Rathburn Road East. Grade control structures at and downstream of the Hurontario Street crossing act as permanent barriers to upstream fish movement.

The currently proposed busway alignment crosses the culvert immediately east of Hurontario Street. The open reaches of Cooksville Creek upstream of the 'crossing', west of Hurontario Street and up and downstream of Highway 403, are not affected by the proposed alignment.

The CVC considers the open portions of this watercourse within the project limits to have the potential to support a warmwater fishery (City of Mississauga 1994); however, no fish were collected at the sampling station near Rathburn Road (upstream of the grade control structures) in July of 1995. Although flow is permanent, there may be insufficient refuge habitat available in the short open reach to support fish, and the grade control structures downstream of the project limits and the long enclosed reaches preclude re-colonization from downstream reaches. Therefore, these reaches do not appear to support direct fish use within the BRT project limits. However, these reaches contribute to downstream habitat through conveyance of flow and some limited inputs of allochthonous materials (e.g., nutrients and detritus).

Little Etobicoke Creek

The BRT alignment crosses Little Etobicoke Creek on the north side of Eastgate Parkway. The existing crossing at Eastgate Parkway is a 3 cell culvert with all cells set at the same elevation. Little Etobicoke Creek is considered by the TRCA to support a degraded warmwater fish community with common and prevalent habitat, affected by urbanization and stormwater issues (debris, water quality, etc.) (City of Mississauga 1994). Through the project limits and vicinity, it appears that the Little Etobicoke Creek channel was straightened and modified historically. Much of the channel banks are armoured with riprap (which is now overgrown with vegetation) or gabions (downstream).

When Eastgate Parkway was constructed across the creek (circa 1989) the triple box cell culvert was opened to all flow. Subsequently, a concrete barrier was installed to divert the creek into the easternmost cell under low flow conditions, while leaving the other two cells available for use under higher water levels. There is also a low concrete wall (weir)

extending across the channel upstream of the culvert that creates a barrier to movement under at least low flow conditions. As well, a weir made of stone-filled wire baskets and several steep concrete features downstream of the Eastgate Parkway crossing act as seasonal barriers to the upstream movement of fish.

The morphology of the channel is predominantly flats, with some riffles. Substrates are dominated by cobble, which may have been placed during the historical channel works, and/or sloughs off the banks. The woody riparian corridor is narrow upstream, widening downstream.

Historical (1949) fish sampling records at the closest sampling station located approximately 1.25 km downstream of the project limits near Burnhamthorpe Road East recorded the presence of three species of tolerant warmwater bait/forage fish (Common Shiner [Luxilus cornutus], Creek Chub [Semotilus atromaculatus], Brook Stickleback [Culaea inconstans]), as well as Redside Dace (Clinostomus elongates) (NHIC 2008). The Redside Dace record is considered 'historical', and this species is considered to be no longer present this creek.

4.1.2.3 Vegetation and Wetlands

The vegetation inventory focused on compiling and reviewing existing information within the project limits, augmented with field surveys focused in specific locations to refine the site specific data base and address any data gaps, and support the impact assessment process. The City's Natural Areas Survey (City of Mississauga 2006) provides an existing information base for most of the natural areas in the vicinity of the project. Initial field surveys were conducted in 2007 with additional surveys carried out in 2008. The scope of the field work and terrestrial resources analyses included:

- classifying or verifying previous classifications for vegetation communities, using the Ecological Land Classification (ELC) System for Southern Ontario (Lee et al. 1998);
- evaluating the sensitivity and significance of vegetation communities, using the "Natural Heritage Resources of Ontario: Vegetation Communities of Southern Ontario" (Bakowsky 1996; NHIC 2008);
- evaluating significance and sensitivity of flora and fauna recorded during field surveys, using Newmaster et al. (1998) and the NHIC website (2008) for provincial and national significance;
- preparing a vascular plant species list; and
- taking representative site photographs.

The BRT project limits traverse an urbanized landscape dominated by residential and commercial land uses. The project limits are located immediately adjacent to the existing road/highway network and much of the project is within the parkway belt infrastructure corridor. As a result, the terrestrial features are culturally influenced or anthropogenic in origin and character, and heavily influenced by the existing land uses.

The vegetation within the study corridor is dominated by cultural meadows (CUM 1-1), with scattered pockets of culturally-influenced meadow marsh/marsh, successional growth/treed patches and occasional remnant forest patches. The cultural meadow

communities are dominated by species such as Brome Grass (Bromus inermis ssp. Inermis), Canada Goldenrod (Solidago canadensis), New England Aster (Aster novae-angliae), Canada Thistle (Cirsium arvense), Teasel (Dipsacus fullonum ssp.sylvestris), Queen Anne's Lace (Daucus carota) and Red Raspberry (Rubus idaeus ssp. Melanolasius). This early-successional community is of low quality and low sensitivity, comprised of common species that are tolerant of disturbed conditions.

The cultural influence is reflected in the high proportion and wide distribution of non-native, disturbance-tolerant and invasive species.

Within the cultural meadow dominated landscape are numerous small pockets of wetland vegetation; the larger features are discussed below. These wetlands have formed in local topographic depressions (usually created through previous earth works in the utility corridor) that are poorly drained. Drainage ditches also contain pockets / strips of wetland vegetation. Given that the surface-level geology within the project limits consists of silt and clay associated with Halton Till deposits, it is unlikely that significant hydraulic connectivity with the underlying groundwater system exists. As such, these wetland pockets are likely sustained by precipitation and surface water runoff.

The wet pockets are dominated by a variety of common, disturbance tolerant wetland vegetation species that colonize wet areas quickly, such as Common Cattail and Reed Canary Grass. Giant Reed, an aggressive invasive species is abundant, and Purple Loosestrife also occurs commonly.

Specific characteristics of vegetation and habitat features along the BRT project limits are described below.

Around Winston Churchill Boulevard

The vegetation is dominated by cultural meadow. Scattered landscape plantings and successional growth include patches of Manitoba Maple (Acer negundo), Sugar Maple (A. saccharum), Trembling Aspen (Populus tremuloides), White Spruce (Picea glauca), Austrian Pine (Pinus nigra), Eastern White Cedar (Thuja occidentalis), Norway Spruce (Picea abies) and occasional Red Cedar (Juniperus sp.). These species are tolerant of disturbance and the vegetation communities are of low quality and diversity. Specific vegetation communities are described below.

- There are two small (>0.3 ha) patches of woody vegetation located north of Highway 403, west and east of the Winston Churchill Boulevard interchange. These patches contain maple, Red and White Oak, White Pine, White Ash and Trembling Aspen in the canopy with groundcover dominated by old field and invasive species. Additional landscape plantings and successional growth of White Spruce, Austrian Pine, Norway Spruce, Manitoba Maple and Eastern White Cedar are present within the N-W ramp loop. These species are common and tolerant of disturbance and several are non-native, likely planted for their tolerance to the surrounding conditions. The vegetation patches are of low ecological quality and sensitivity.
- Five small isolated pockets of mineral meadow marsh vegetation occur along the north side of Hwy 403, east and west of Winston Churchill Boulevard. These pockets are of low quality and sensitivity being almost exclusively dominated by either Reed Canary Grass or Narrow-leaved Cattail with some Phragmites, and Purple

Loosestrife. All of these species are aggressive and tend to out-compete other wetland plants to form homogeneous mats, and the latter two species are also non-native. These features are also cultural in origin, having formed in shallow depressions along the infrastructure corridor where water collects seasonally / following storm events on the till-based soils.

Around Hurontario Street

RW1 (City of Mississauga Natural Area Remnant Wooded Area – RW1) is a small (approximate 2 ha) linear dry-fresh sugar maple-white ash deciduous forest (FOD 5-5) located on a low berm adjacent to and south of Highway 403 between Hurontario Street and Central Parkway East. This wooded area is dominated by Sugar Maple (Acer saccharum ssp. Saccharum), Bitternut Hickory (Juglans cinerea), Shagbark Hickory (Carya ovata var ovata) and White Ash (Fraxinus americana), in association with, American Elm (Ulmus americana), Basswood (Tilia americana), and the occasional Red Oak (Quercus rubra). It is in fair condition but disturbed due to residential encroachment, dumping, compost, garbage, trails, and invasive plant species (Garlic Mustard and Buckthorn).

RW1 provides some local wildlife habitat and woody cover for common wildlife species, including common migratory bird nesting and foraging. However these functions are limited by the isolation of this small feature in the surrounding urban landscape and its proximity of Highway 403 (noise, bird song cannot be heard, etc.), and the understory disturbance due to active dumping by local residents and recreational uses (i.e., mountain bikes).

Tomken Road to Fieldgate Drive

NE4 (*City of Mississauga Natural Area NE4*) is a sub-mature to mature deciduous wooded area located approximately 300 m north of Eastgate Parkway and outside the project limits. This contains a variety of vegetation communities and provides habitat to a variety of forest flora and fauna species.

NE4SMA (*City of Mississauga Natural Area NE4 Associated Special Management Area)* is located immediately to the south of Natural Area NE4, along the north side of Eastgate west of Tomken Road. NE4SMA is predominantly cultural meadow (CUM 1-1) (e.g., Brome Grass, Canada Goldenrod, New England Aster, Canada Thistle, Teasel, Queen Anne's Lace and Red Raspberry), with numerous (approximately 9) small patches of wetland vegetation occupying the low-lying areas in the undulating / hummocky surface topography and adding to the overall diversity of the habitat mosaic. Digger Crayfish, a species of interest to TRCA (Pers. Comm. S. Lingertat November 30, 2007a) has been identified throughout this unit.

Of the several wet pockets located throughout NE4SMA, one of the largest and least disturbed is a Cattail Mineral Shallow Marsh (MAS 2-1), dominated by Narrow-leaved Cattail and located in the northern half of the natural area. This area is within TRCA's Generic Regulation Limits. Other smaller meadow/shallow marsh pockets include the following:

- MAS2-1b (roadside ditch – west section) is a Cattail Mineral Shallow Marsh dominated by Narrow-leaved Cattail (Typha angustifolia);

- MAS2-1b (roadside ditch – east section extending into NE4SMA) a Cattail Shallow Meadow Marsh dominated by Narrow-leaved Cattail;
- MAM2-b (central eastern section of NE4SMA) is a Mineral Meadow Marsh dominated by Purple Loosestrife (Lythrum salicaria); and
- MAM2-b (south western section of NE4SMA) is a Mineral Meadow Marsh dominated by Purple Loosestrife within the TRCA Generic Regulation Limits.

Overall vegetation quality and sensitivity are low. Communities and species are common. The area is heavily disturbed as a result of active dumping, occasional pipeline maintenance activities and on-going recreational use, including ATVs and dirt bikes, which have created an extensive trail system. The NE4SMA area is not designated as a Natural Area, but is recognized as a buffer zone, with potential for restoration, in relation to Natural Area NE4. The area exhibits good opportunities for enhancement based on its size and association with NE4. The NE4SMA is also identified by TRCA as a Habitat Implementation Plan (HIP) area (Pers. Comm. S. Smith, December 11, 2007d). The HIP is a targeted strategy that is the mechanism by which the concepts of the TRCA Terrestrial Natural Heritage Program, Fisheries Management Plan, and Watershed Management Strategy can be implemented.

There are two wetland pockets located on the east and west sides of Tomken Road, south of Eastgate Parkway. The first is a very small (>0.1 ha) Reed Canary Grass Mineral Meadow Marsh (MAM2-2) unit west of Tomken Road. The second is a slightly larger (~0.2 ha) Mineral Meadow Marsh dominated by Purple Loosestrife east of Tomken Road. Both of the features are small seasonally wet depressions along the south side of an existing earthen berm.

Dominated by common, disturbance tolerant and invasive wetland species, these wet pockets are of low sensitivity due to past construction disturbances (berm and residential creation), recreational practices (fire pits and bike trails), dumping, and proximity to major thoroughfares such as Eastgate Parkway and Tomken Road.

The Little Etobicoke Creek valley has multiple designations within the City of Mississauga. The valley slopes of Little Etobicoke Creek are designated Valley Effect Zone (protected to preserve natural environment of watercourse) and the valley is designated in the City of Mississauga's OP as Natural Heritage System. The north portion of the valley (~100 m north of BRT alignment) is identified as Natural Area NE3 and the south portion of the valley (south of Eastgate Parkway) is identified as RW6 in the Mississauga Natural Areas Study.

Within the project limits, riparian vegetation consists of Heart-leaved Willow (Salix eriocephala) and other willow species, Staghorn Sumac (Rhus typhina), Red Osier Dogwood (Cornus stolonifera), wild grape, golden rod species, sedges, rushes.

Two lower lying pockets, one just west of the Little Etobicoke Creek valley, and one just to the east of the creek, support small wetland communities (unlabeled on Natural Area Survey):

- The wetland pocket on the east contains a small (0.4 ha) Cattail Mineral Shallow Marsh (MAS2-1) dominated almost entirely by Narrow-leaved Cattail. Digger Crayfish, a species of interest to TRCA (Pers. Comm. S. Lingertat November 30,

2007a) has been identified along the north edge of this unit. A similar, very small wetland pocket is located further east of this larger unit.

- The wetland pocket on the west contains a mix of Mineral Meadow Marsh (MAM2) dominated by Phragmites. This area of hydroelectric corridor is actively mown (located south of an arena), and the Phragmites meadow marsh is mown up to the edges). A Narrow-leaved Cattail Shallow Meadow Marsh (MAS2-1b) within the roadside ditch also forms part of this unit. The marsh extends along the drainage ditch between Tomken Road and Dixie Road.
- Closer to Dixie Road, a portion of this unit has been bisected by a new access road within the hydroelectric corridor. A culvert has also been installed. All of these works are within the TRCA Generic Regulation Limits.

The vegetation and habitat system is dominated by tolerant and common species and communities, as such, the sensitivity of this system is low. However the location in and adjacent to the Little Etobicoke Valley, with natural areas further to north and south, provide opportunities for enhancement.

Two small (each 0.2 ha) pockets of Narrow-Leaved Cattail dominated Cattail Mineral Shallow Marsh (MAS2-1b) are located east of Dixie Road, north of Eastgate Parkway. Several very small wetland pockets (each <0.1 ha) dominated by narrow-leaved cattail are situated under the hydroelectric corridor and between two pipelines on the east side of Dixie Road. Surrounding vegetation consists of cultural meadow communities dominated by old field species.

Two other very small (each <0.1 ha) wetland pockets occur adjacent to the bend at Eastgate Parkway. Both of the features are small wet or seasonally wet depressions on the south side of an existing earthen berm. Typical of the landscape features generally, these wetlands are of low sensitivity and are culturally influenced due to their location and past disturbances with the development of the hydroelectric lines and towers, pipelines and access road.

City of Mississauga Linkage Area

Linkage Areas are defined as areas which serve to link two or more of the components of the Natural Area Systems within the City, or to natural areas outside of the City boundaries. Within the project limits, this Linkage Area extends along the north side of Highway 403 and Eastgate Parkway, within the hydroelectric / utility corridor, from near Mississauga Road, continuing to the east of the point where Eastgate Parkway curves north, to 'connect' the Etobicoke and Little Etobicoke Creek valleys. Within the project limits, it includes portions of the following areas (also discussed above):

- City of Mississauga Natural Area (NE4) and associated Special Management Area (NE4SMA) and associated wetlands;
- Cultural meadow with scattered woody successional growth and associated wet pockets north of Eastgate Parkway; and
- Valley of Little Etobicoke Creek.

The Linkage Area remains dominated by cultural meadow vegetation, ubiquitous along the project limits, with the typical meadow marsh pockets and occasional successional woody growth. The exception is the watercourse valleys.

The numerous small (<0.3 ha) seasonally wet, monoculture meadow and shallow marshes are dominated by common, disturbance tolerant wetland vegetation species. The Ecological Land Classification (ELC) communities are classified as Narrow-leaved Cattail Shallow Marsh (MAS 2-1), Reed Canary Grass Meadow Marsh (MAM 2-2) or Mineral Meadow Marsh (MAM 2). As noted, most appear to have formed in the minor topographic depressions created by the construction and maintenance of infrastructure and ditching that allow water to collect on the imperfectly to poorly drained clay soils. Several of the wet pockets are 'regulated' by TRCA (see below), including some of the roadside ditches along Eastgate Parkway (classified as Narrow-leaved Cattail Shallow Marsh [MAS 2-1]). These vegetation communities are of low sensitivity, comprised of common species that are tolerant of disturbed conditions and many are dominated by Phragmites.

Sensitivities and Management Implications

In general, the vegetation occupying the majority of the study corridor is cultural in character, reflecting the influence of the utility and transportation corridors within the urban landscape. Vegetation species are predominantly common and tolerant. The level of disturbance is generally high, as reflected by the high proportion and wide distribution of non-native and invasive species. The vegetation communities and species located along and immediately adjacent to the majority of the BRT alignment are therefore not considered sensitive.

4.1.2.4 Wildlife

Wildlife habitat values along this section of the project limits are limited generally given the characteristics of the predominantly cultural meadow habitat system, its proximity to a busy highway corridor and the broader highly urbanized landscape. While common meadow and urban-adapted species such as Meadow Vole, Gray Squirrel, Raccoon, Cottontail Rabbit and Striped Skunk will be present in the area generally, habitat for most species is limited by the lack of woody cover and the confinement between the urban area and highway. Foraging by common raptors such as Red-tailed Hawk is also likely, however the remnant woody patches in the vicinity do not provide nesting trees. Local migratory use by bird species passing through is also possible, however nesting opportunities for more sensitive species are limited by the general noise and lack of cover.

No wildlife species of conservation concern or significant or noteworthy habitat features have been recorded along this portion of the project limits, and their presence is considered unlikely given the disturbed and open character of the vegetation communities and its location adjacent to a busy highway. The highway noise and interference with calling activity would be expected to prevent use of the local meadow marsh habitat in the wetland pockets by species such as Red-winged Blackbird or common early breeding amphibians that might otherwise use these habitats.

Within the east-west 'Linkage Area' designated by the City, potential land-based wildlife movement is hindered by the general lack of cover, and at present, fragmented regularly

by the major road crossings (e.g., Hurontario Street, Highway 403, Tomken Road, Dixie Road and Eastgate Parkway) and their interchanges with Highway 403.

Given the overall habitat characteristics and functions, the effect of the BRT and associated facilities on wildlife and habitat is anticipated to be minimal. Therefore, implementation of standard construction mitigation measures are adequate, including minimizing removal of remnant habitat areas, protecting retained habitat areas and consideration of replacing and supplementing cover; protecting any wildlife incidentally encountered during construction, activities, and clearing woody vegetation to avoid the breeding window of migratory birds (or otherwise protecting any nests identified in a nesting inventory conducted prior to construction).

4.1.2.5 Species of Conservation Concern and Species at Risk

The NHIC database (which uses the provincial S-rank system to designate 'rare' species [S1, S2, S3]), MNR Aurora District, CVC and TRCA, DFO Species at Risk (SAR) mapping, Environment Canada's SAR search tool (available at: http://www.sararegistry.gc.ca/species) and various monitoring and background reports were consulted for information on species of conservation concern within the project limits.

Fish

The *Distribution of Fish Species at Risk* map (DFO 2007b) indicates that the reaches of Little Etobicoke Creek (within the project limits) have a "high potential" for Redside Dace and Atlantic Salmon. However, it was confirmed with DFO that the "potential" mapped for these creeks pertains only to Redside Dace (Andrea Doherty Pers. Comm. July 31, 2008).

Redside Dace is designated as Threatened by the Committee on the Status of Species at Risk in Ontario (COSSARO) and its federal status has recently been elevated to Endangered by the Committee on the Status of Endangered Species in Canada (COSEWIC).

Redside Dace was last recorded in Little Etobicoke Creek, at Burnamthorpe Road (downstream of the project limits) in 1949 (NHIC). The Redside Dace Recovery Strategy indicates that Redside Dace has likely no longer present in the Etobicoke Creek Watershed. TRCA (Pers. Comm. Scott Smith, Tuesday July 29, 2008) confirms this point.

Flora

There are no intact 'natural areas' associated with the Winston Churchill Boulevard interchange. The presence of species of conservation concern is therefore considered limited to the section of Hurontario Street and Eastgate Parkway.

Although not within the project limits, Butternut was the only flora SAR recorded within the Natural Areas Survey Update (City of Mississauga 2006) in the vicinity of the BRT alignment. This tree species is designated by COSEWIC as Endangered in Canada and it is listed on Schedule 1 of the SARA. It is also designated by MNR as Endangered, but is

not regulated in Ontario (i.e., the Ontario Endangered Species Act does not apply). This species also has a provincial rarity rank of S3.

Based on a query of the Environment Canada SAR search tool, American Ginseng (*Panax quinquefolius)* is also indicated as potentially being present in a broader area that encompasses the project limits. American Ginseng typically grows in mature, undisturbed deciduous forests, typically near the bottom of south-facing slopes where soils are well-drained and warm. Forest canopy is usually dominated by Sugar Maple, White Ash, Bitternut Hickory, and Basswood. These habitat conditions do not occur within the project limits; the most likely candidate habitat would be intact areas along the Etobicoke Creek valley. However, it is not known whether this species persists even there, as it has not been identified in recent surveys conducted (TRCA 2004).

Of the 95 species recorded in the general vicinity of Hurontario Street and Renforth Drive by Ecoplans or during the City of Mississauga's Natural Areas Survey Update (2006), 42 are regionally recognized as "species of special concern" by Peel Region and/or TRCA. The following summary comments are relevant:

- Of these 42 species, TRCA (2003) ranks one as L1 (Twinleaf), three as L2 (Toadflax, White Oak, Clinton Wood Fern), 17 as L3, and 19 as L4. One is considered no longer present within the TRCA's jurisdiction (Harbinger-of-spring).
- Of the L2 to L4-ranked species, only White Oak was recorded along the project limits and its occurrence was associated with landscape plantings.
- Of the 42 species, Peel Region (Varga et al. 1999) has designated 15 as regionally rare: 13 as 'rare', one as 'uncommon', and one as 'extirpated' (some of these have overlapping L-ranks); and the City of Mississauga has identified 24 plant species as uncommon and 8 as rare (some of which overlap with the Regional list):
- The locations of the regionally and municipally rare species within the project limits are noted as follows:
  - RW1 – Sharp-lobed Hepatica (uncommon within the City), Squirrel-corn (rare within the City, uncommon within the Region) and Bellwort (uncommon within the City).
  - White Spruce – present throughout the project limits, however they are most likely planted or seeded in from residential and landscape plantings.
- The locations of the Regionally rare species in the immediate vicinity of the project limits is NE4 (well outside of the project limits and is separated from the project limits by NE4SMA) – Bristly Sedge, Canada Moonseed, Toadflax, Cleavers.

The remainder of these species are located well outside of the project limits. Although it is possible that some may occur within the project limits, none was noted during the field surveys and most would be associated with the forest habitats or less disturbed habitats.

4.2 Socio-Cultural Environment

4.2.1 Archaeology and Heritage

4.2.1.1 Archaeology

Stage 1 Archaeological Assessment

New Directions Archaeology Ltd. was retained to undertake a Stage 1 Archaeological Assessment of the study area for the entire Mississauga BRT corridor as part of the Federal Environmental Assessment Study (2009), which included the five EA Addendum study areas discussed in this document. The Archaeological Assessment was carried out on November 27th, 2009, with the objectives of identifying known archaeological sites and determining the archaeological potential of the study corridor.

The Stage 1 Archaeological Assessment involved a review of documents pertaining to the corridor including, but not limited to, historic maps. The Ontario Ministry of Culture was contacted for current information on registered archaeological sites and previous archaeological assessments undertaken in the vicinity of the study area.

Based on historic populations in the study area and the fact that the study area is located near early roadways suggest a fairly high probability of locating historic sites along the subject corridor.

A survey of the Ministry of Culture archaeological site registry database in Toronto revealed that there are no registered sites located within the Mississauga BRT corridor. There are, however, 32 registered sites within a two kilometre radius of the EA Addendum study area. This is a fairly high frequency of archaeological sites near the study area.

Of the sites close to the Mississauga BRT corridor, there are nine historic Euro-Canadian sites and the remainder are prehistoric sites. Of the prehistoric sites for which the age was determined, there is one Late Archaic site, one Late Paleo-Indian site, one Early Woodland period site, one Late Woodland Iroquoian period site and two Late Woodland period village sites. The remaining 17 sites are simply identified as prehistoric because no culturally or temporally diagnostic artefacts were recovered. This is a fairly high frequency of archaeological sites near the study area.

A preliminary field assessment to examine the condition of this corridor was completed in 2007. It was found that the proposed corridor appears to be relatively undisturbed by previous construction activities (such as Highway 403 and the adjacent residential construction), nor does it appear to have been impacted by the adjacent residential construction or the hydro corridor.

Stage 2 Archaeological Assessment

Whereas Stage 1 Archaeological Assessment relies on published materials and an overview of the study area, Stage 2 is the initial field assessment of the study area. Given the historical use of the area and fallow condition of the corridor, it was determined that the majority of this corridor will require a Stage 2 Archaeological Assessment. A Stage 2 Archaeological Assessment will be required for the section at the Winston Churchill Boulevard Interchange, the area on the north side of Eastgate Parkway from Tomken

Road to east of Dixie Road and the area on the east side of Eastgate Parkway from Fieldgate Drive to Tahoe Boulevard. These areas requiring further assessment are noted on Figures 4-10 and 4-11. The figures do not include Winston Churchill Boulevard since the entire Winston Churchill area will be subject to a Stage 2 Archaeological Assessment.

Once plans of the preferred corridor are available, the Stage 2 assessment can begin. Stage 2 work is to be completed prior to busway construction. The Stage 2 assessment will determine whether there are any prehistoric or historic archaeological sites located within the high potential areas within the study area. The corridor will be assessed by either ploughing the surface and examining exposed materials, or using a test pit survey strategy whereby all topsoil from each 30 cm pit is sieved through ¼" mesh hardware cloth.

If artifacts are encountered, they are catalogued and analyzed to determine their cultural and temporal affiliation, as well as their archaeological and/or their historical significance. The Stage 2 report will include recommendations as to whether the findings are significant enough to warrant further archaeological assessment (Stage 3). Should any archaeological materials be found, all interested stakeholders (including identified First Nations) will be advised. The final report will be submitted to the Heritage Branch of the Ontario Ministry of Culture to obtain clearance and to fulfill licensing requirements. If the Stage 2 report documents archaeological finds, it should be noted that the archaeologist and the Ministry of Culture typically would not make the report available to the general public in order to protect archaeological sites from disturbance.

Stages 3 & 4 Archaeological Assessment

If Stage 3 assessment is required, it must again be undertaken prior to construction in the affected area. Stage 3 focuses on determining the extent of the archaeological deposit by detailed field survey and hand excavation. If the deposit is deemed significant in size, temporal affiliation and cultural material recovered, Stage 4 work may be required. Stage 4 involves the total excavation of the archaeological site, and can only be avoided by establishing a permanent protected space around the site.

4.2.1.2 Heritage

There are no known built heritage resources displaced by the project. During the original Environmental Assessment and the 2004 EA Addendum no built heritage features were noted within the EA Addendum study areas. The study areas are generally represented by relatively contemporary buildings and new development.

In the 1992 EA, the City of Mississauga identified a Heritage Resource at Eglinton and Mavis Road as the only Heritage Resource within the Study area. This site will not be impacted by the work proposed in the EA Addendum.

4.2.2 Noise

A noise assessment of the BRT project was undertaken in 1991 as part of the provincial Environmental Assessment process and is documented in Appendix N of the Mississauga Transitway Environmental Assessment Report (City of Mississauga 1992). Although portions of the assessment were later updated during the Mississauga Transitway Environmental Assessment Addendum (City of Mississauga 2004), the updated material

does not apply to the areas being considered under the current Addendum. The Conditions of Approval from the original EA were also not addressed in 2004.

The noise assessment was updated in 2008, with both field measurement of existing noise conditions and computer modeling of the busway's impact on noise at nearby noise sensitive properties. The material in this document related to the specific Addendum sites is drawn from the 2008 update (see Appendix C: Noise Analysis).

The applicable sound level criteria are based on the Ministry of the Environment (MOE), Ministry of Transportation (MTO), Region of Peel and City of Mississauga noise guidelines and policies for transportation and stationary sources of noise.

Numerous receptor locations were selected to represent typical properties within the study area. The Noise Receptors used in the areas that are the subject of this Addendum were:

- Winston Churchill Boulevard: Rw 7 (Residential)
- Hurontario Street: Re 22 (Commercial)
- Tomken Road: Re 14, Re 15 (Residential)
- Dixie Road: Re 11, Re 12 (Residential)
- Eastgate Parkway: Re 8, Re 9, Re 10 (Residential)

These locations are shown in Figure 4-12.

In accordance with MOE guidelines, calculations for the busway were based on an equivalent noise level (Leq) measured in decibels. The noise level is calculated over a 16 hour daytime descriptor (i.e. 0700-2300) and a Leq 8 hour nighttime descriptor (i.e. 2300-0700). Calculations for the stations were based on a Leq 1 hour descriptor for day (i.e. 0700 – 1000), evening (i.e. 1900 – 2000) and night (i.e. 0600-0700). The day, evening and night hours used for noise assessment were selected to represent the peak (i.e. worst-case) operational hours for the stations.

Receptor	16 hour (daytime) Leq Noise Level (dBA)			Impact of EA Addendum Plan
	Existing	Future with Approved Plan	Future Proposed (Revised) Plan	
Winston Churchill Boulevard Site				
Rw7	58.4	60.0	59.7	-0.3 (negligible)
Hurontario Street Site				
Re22 (Commercial)	72.1	74.2	75.0	+0.8 (insignificant)
Tomken Road Site				
Re14	53.6	55.5	56.2	+0.7 (insignificant)
Re15	52.9	56.6	54.1	- 2.5 (beneficial)
Dixie Road Site				
Re11	54.2	58.8	58.7	-0.1 (negligible)
Re12	54.5	56.0	56.0	0
Eastgate Parkway Site				
Re8	55.7	53.4	52.2	-1.2 (negligible)
Re9	53.9	55.7	56.7	+1.0 (insignificant)
Re10	54.4	56.2	56.5	+0.3 (negligible)

The difference in future noise levels between the previously approved plan/profile and the proposed revised plan/profile is seen to be less than 2 dBA. Even the difference

between the proposed plan/profile and existing daytime figures is less than the 5 dBA threshold at which noise mitigation measures should be considered. This result confirms that the proposed revisions to the EA approval will not result in an acoustically significant impact on nearby residential properties.

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1.0
410.5 ha

2.0
189.2 ha

STUDY AREA

1-2
2.4 ha

1-4
5.3 ha

1-1
14.6 ha

HP? (177.39)

1-3
4.2 ha

TWIN-2590mmø STM SEWERS

EXIST. CONC. 1500mm INLET

OUTLET 1B

EXIST. CB

2-1
7.3 ha

HIGHWAY 403

INV. 166.50

TWIN-1210mm DIAM. PIPES

TWIN-2590mmø STM SEWERS

MTO 103
9.8 ha

WINSTON CHURCHILL BLVD

INV. 167.37

OUTLET 1A

SAWMILL CREEK SWM FACILITY

TO SAWMILL CREEK VIA TWIN-2590mmø STM SEWERS

MTO-HWY 403 SWM POND 2 (DRAINAGE AREA=26.90 ha)

PEPPER MILL COURT

LEGEND

- CATCHMENT BOUNDARY
- EXISTING CULVERT
- EXISTING STORM SEWER
- EXISTING DITCH/SWALE
- FLOW DIRECTION
- 1-1 / 14.6 ha — CATCHMENT ID / CATCHMENT AREA

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MISSISSAUGA Transportation and Works

Transit

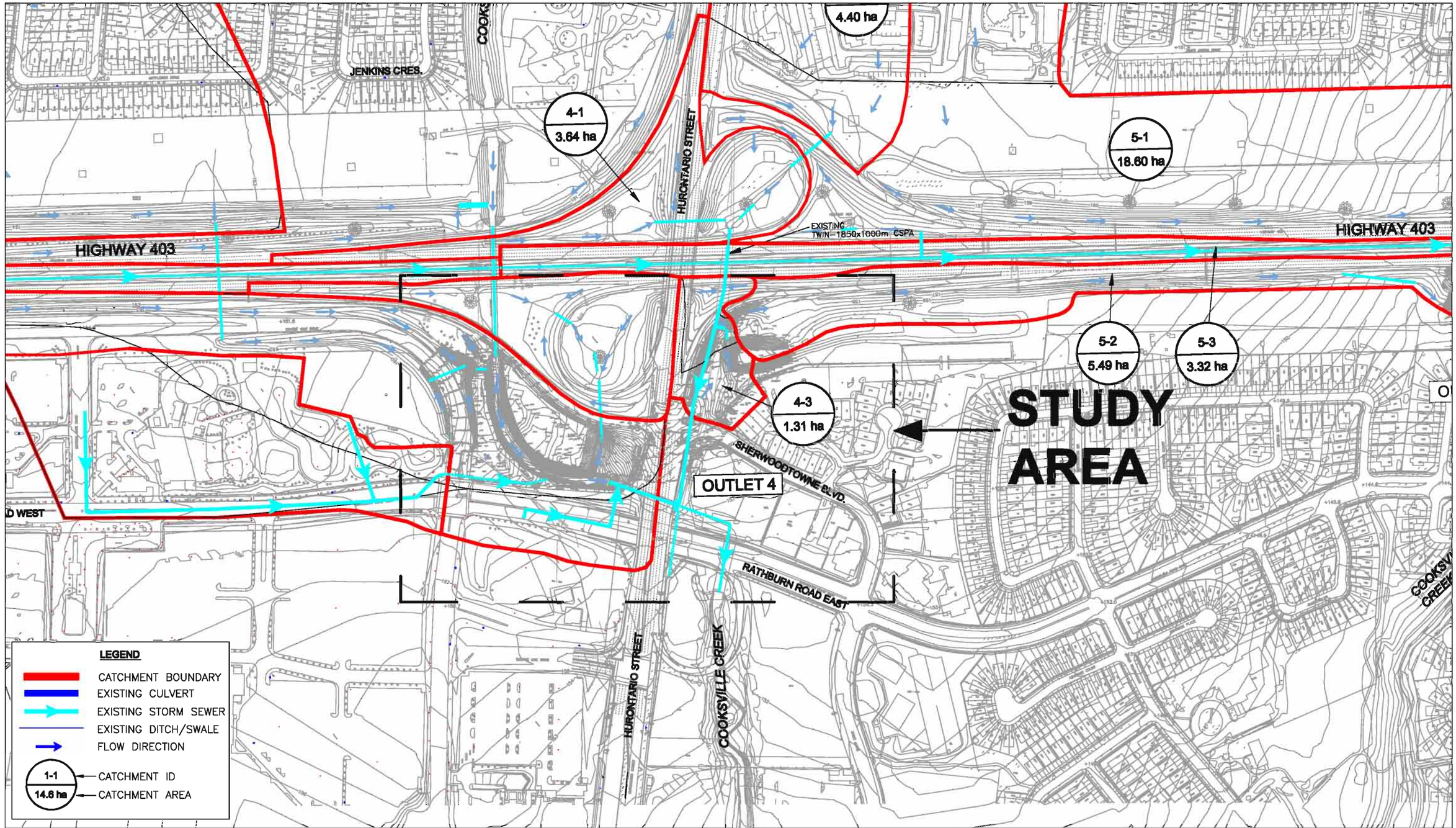
DATE: April 2009

SCALE: 1:4,000

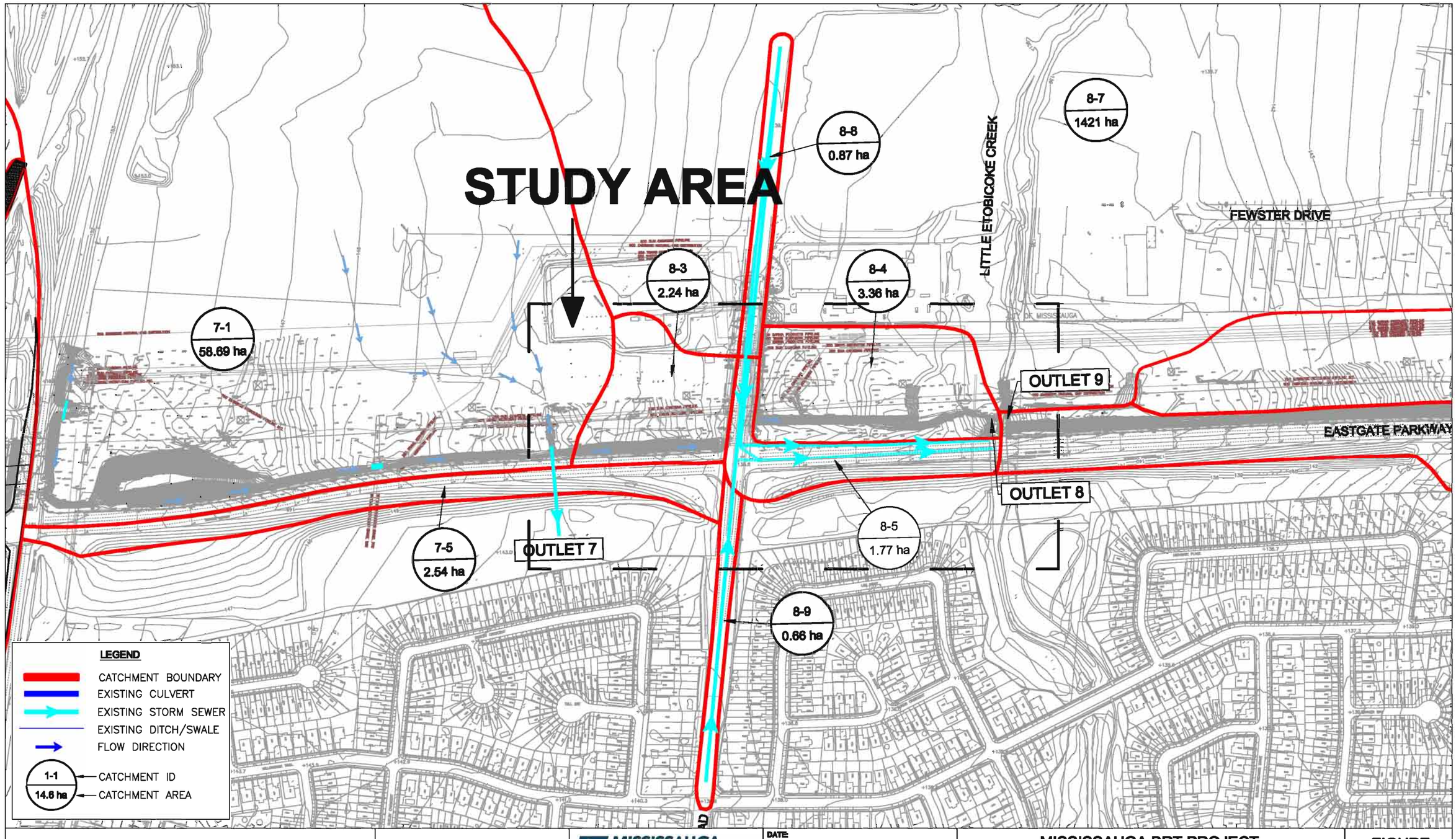
MISSISSAUGA BRT PROJECT
ENVIRONMENTAL ASSESSMENT ADDENDUM

WINSTON CHURCHILL BOULEVARD / HWY 403 INTERCHANGE
EXISTING DRAINAGE AND STORMWATER MANAGEMENT

FIGURE
4-1



	DATE: April 2009	MISSISSAUGA BRT PROJECT ENVIRONMENTAL ASSESSMENT ADDENDUM	FIGURE 4-2
McCORMICK RANKIN CORPORATION	SCALE: 1:4,000	HURONTARIO STREET / RATHBURN ROAD EXISTING DRAINAGE AND STORMWATER MANAGEMENT	



McCORMICK RANKIN CORPORATION	MISSISSAUGA Transportation and Works / Transit	DATE: April 2009 SCALE: 1:4,000	MISSISSAUGA BRT PROJECT ENVIRONMENTAL ASSESSMENT ADDENDUM TOMKEN ROAD / EASTGATE PARKWAY EXISTING DRAINAGE AND STORMWATER MANAGEMENT	FIGURE 4-3

LEGEND

- CATCHMENT BOUNDARY
- EXISTING CULVERT
- EXISTING STORM SEWER
- EXISTING DITCH/SWALE
- FLOW DIRECTION
- 1-1 / 14.6 ha — CATCHMENT ID / CATCHMENT AREA

9-7 / 1.25 ha

68.53 ha

CRESTLAWN DRIVE

9-2 / 6.16 ha

10-2 / 33.66 ha

STUDY AREA

9-7 / 1.25 ha

10-1 / 68.53 ha

FEWSTER DRIVE

SOUTH GATEWAY ROAD

CITY OF MISSISSAUGA

9-1 / 8.66 ha

EASTGATE PARKWAY

EXISTING 2100mmØ STM

EXISTING 1800mmØ STM

EXISTING 3000mmØ S

9-3 / 5.87 ha

DIXIE ROAD

TO OUTLET 10

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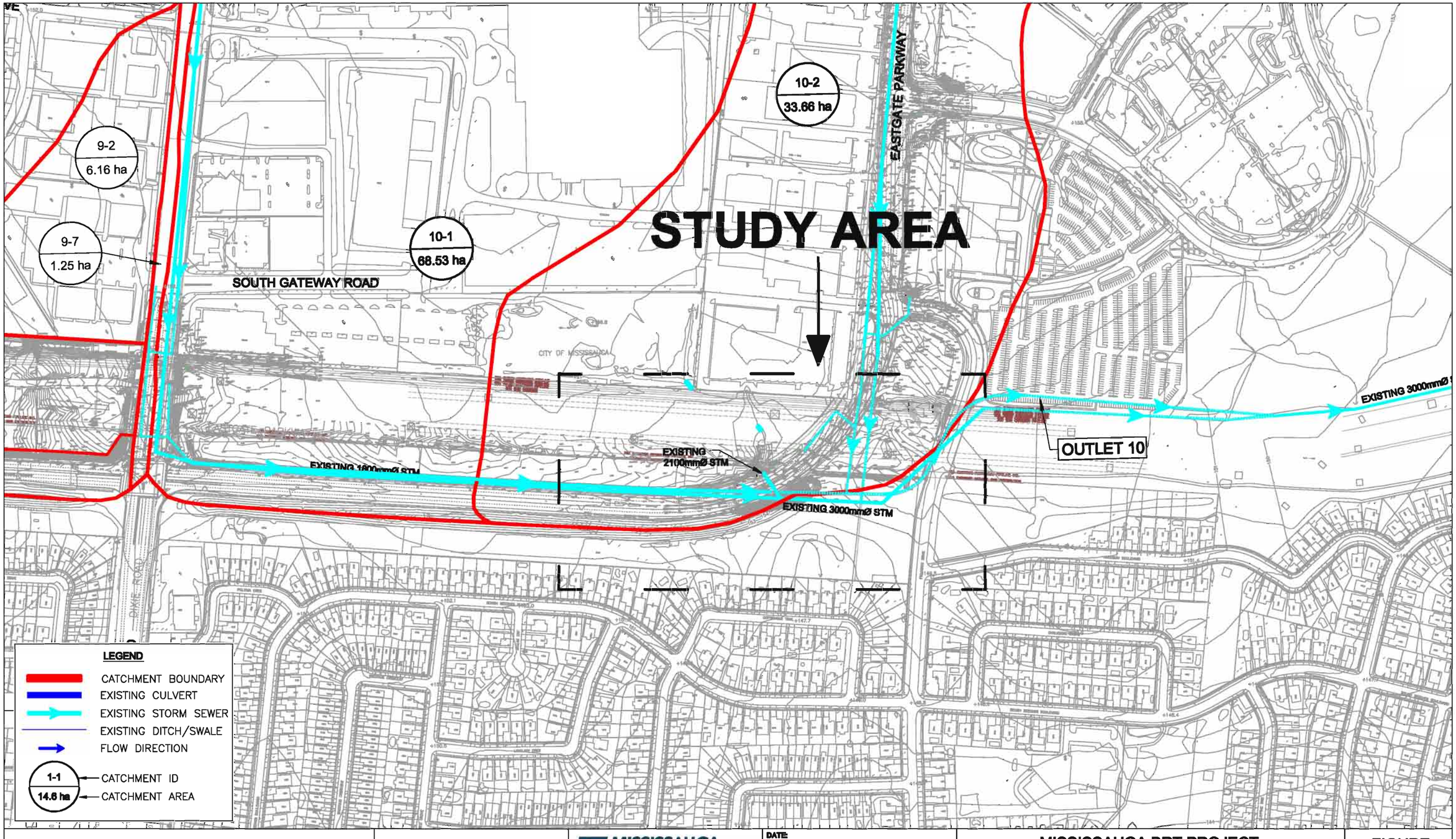
MISSISSAUGA BRT PROJECT
ENVIRONMENTAL ASSESSMENT ADDENDUM

DIXIE ROAD / EASTGATE PARKWAY
EXISTING DRAINAGE AND STORMWATER MANAGEMENT

FIGURE 4-4



	McCORMICK RANKIN CORPORATION	MISSISSAUGA Transportation and Works / Transit	DATE: December 2008 SCALE: 1:4,000	MISSISSAUGA BRT PROJECT ENVIRONMENTAL ASSESSMENT ADDENDUM EASTGATE PARKWAY CROSSING EXISTING DRAINAGE AND STORMWATER MANAGEMENT	FIGURE 4-5

Legend

Permanent Stream (OBM)

Ecoplans ELC Communities

FOD5-3: Sugar Maple - Hickroy Deciduous Forest
CUM1-1: Cultural Meadow/Old Field (Prevalent vegetation community unless otherwise marked.)
CUW: Cultural Woodland
MAM2-2: Reed Canary Grass - Mineral Meadow Marsh
MAS2-1: Cattail Mineral Meadow Marsh

MAM2-2
MAM2-2
CUW
MAM2-2
CUW
HIGHWAY 403
FOD5-3
WINSTON
CHURCHILL
BOULEVARD

McCormick Rankin Corporation

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DATE: September 2008

SCALE: 1 : 5,000

MISSISSAUGA BRT PROJECT
ENVIRONMENTAL ASSESSMENT ADDENDUM

Natural Environment Features
Winston Churchill Site

FIGURE
4-6

Legend

- Grade Control Structure
- Fish Observed During Assessment
- Burried/Piped Section of Channel
- Swale Feature/No Channel Definition
- Twinleaf
- Upstream Reach
- Right of Way Reach
- Downstream Reach
- Intermittent Stream (OBM)
- Permanent Stream (OBM)
- Waterbody (OBM)
- Wetland (OBM)
- City of Mississauga Natural Area
- City of Missisauga Special Management Area
- TRCA ELC Communities
- Ecoplans ELC Communities

FOD5: Sugar Maple Deciduous Forest
FOD5-5: Sugar Maple - Hickroy Deciduous Forest
FOD7: Lowland Deciduous Forest
CUM1-1: Cultural Meadow/Old Field (Prevalent vegetation community unless otherwise marked.)
CUW: Cultural Woodland
MAM2-2: Reed Canary Grass - Mineral Meadow Marsh
MAS2-1(b): Cattail Mineral Meadow Marsh
MAM2: Phragmites Mineral Meadow Warsh
MAM2-b: Purple Loosestrife Mineral Meadow Marsh

Cooksville Creek
HURONTARIO STREET
CENTRE VIEW DRIVE
RATHBURN ROAD WEST
RATHBURN ROAD EAST
DUKE OF YORK BOULEVARD
CITY CENTRE DRIVE
CUW
CUW
CUW
CUW
FOD5-5 RW1

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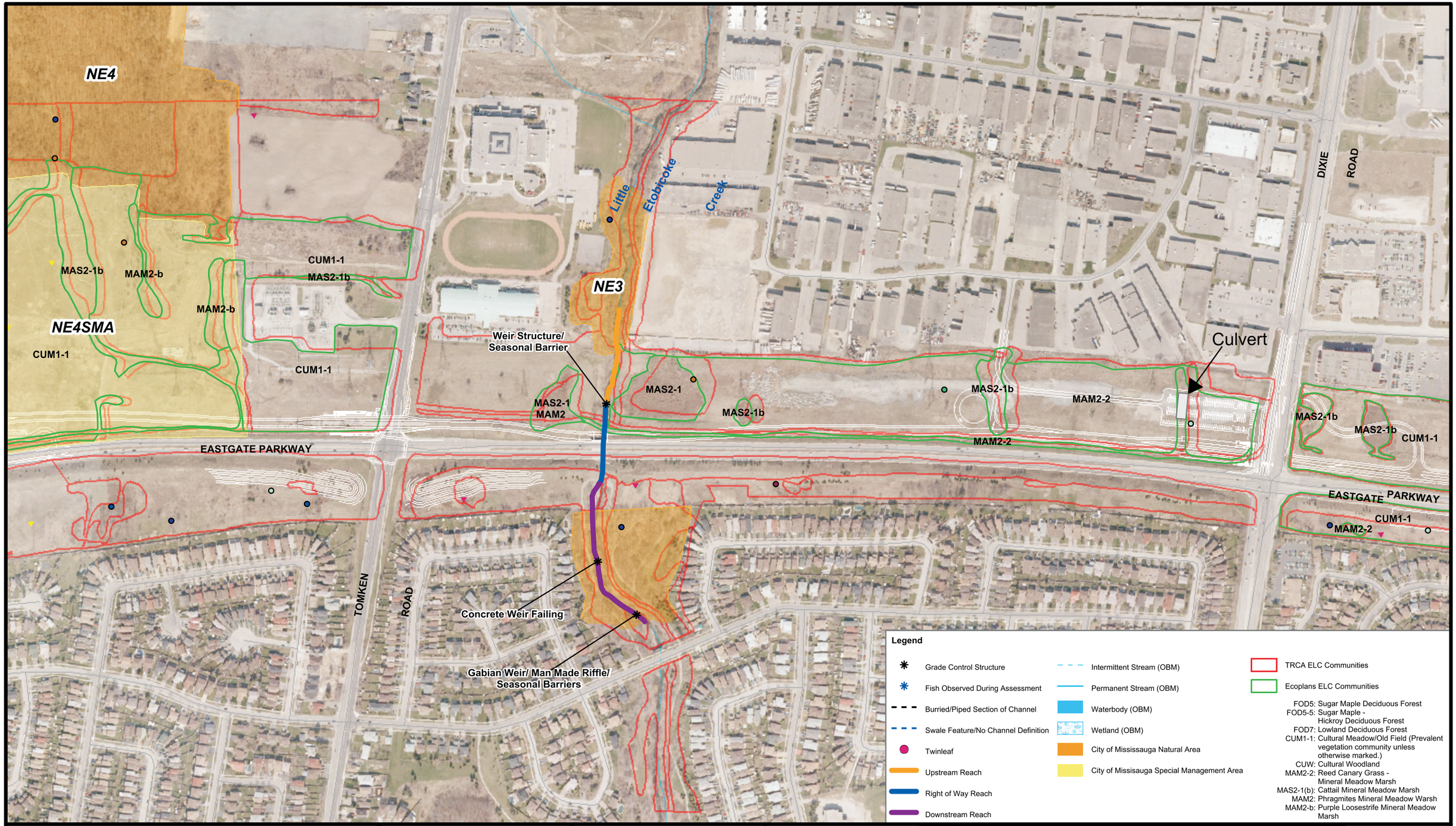
MISSISSAUGA BRT PROJECT
ENVIRONMENTAL ASSESSMENT ADDENDUM

Natural Environment Features
Hurontario Site

FIGURE
4-7



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MISSISSAUGA BRT PROJECT
ENVIRONMENTAL ASSESSMENT ADDENDUM

Natural Environment Features Tomken and Dixie Sites

FIGURE **4-8**

Legend

- Grade Control Structure
- Fish Observed During Assessment
- Burried/Piped Section of Channel
- Swale Feature/No Channel Definition
- Twinleaf
- Upstream Reach
- Right of Way Reach
- Downstream Reach
- Intermittent Stream (OBM)
- Permanent Stream (OBM)
- Waterbody (OBM)
- Wetland (OBM)
- City of Mississauga Natural Area
- City of Missisauga Special Management Area
- TRCA ELC Communities
- Ecoplans ELC Communities

FOD5: Sugar Maple Deciduous Forest
FOD5-5: Sugar Maple - Hickroy Deciduous Forest
FOD7: Lowland Deciduous Forest
CUM1-1: Cultural Meadow/Old Field (Prevalent vegetation community unless otherwise marked.)
CUW: Cultural Woodland
MAM2-2: Reed Canary Grass - Mineral Meadow Marsh
MAS2-1(b): Cattail Mineral Meadow Marsh
MAM2: Phragmites Mineral Meadow Warsh
MAM2-b: Purple Loosestrife Mineral Meadow Marsh

Large Scour Pool With Mixed Bait Fish Observed
FOD7
CUM1-1
ET04
FOD5
FOD5
CUW
EASTGATE
PARKWAY
DIXIE
ROAD
Culvert
MAM2-2
MAM2-2
MAS2-1b
MAS2-1b
MAM2-2
MAM2-2
MAM2-b
CUM1-1
MAM2-b
MAM2-b
EASTGATE
PARKWAY
MAM2-2
CUM1-1
MAM2-b
MAM2-b
MAM2-2

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SCALE: 1 : 5,000

MISSISSAUGA BRT PROJECT
ENVIRONMENTAL ASSESSMENT ADDENDUM

Natural Environment Features
Eastgate/Fieldgate Site

FIGURE
4-9

	MRC McCormick Rankin Corporation	MISSISSAUGA Transportation and Works Transit	DATE: September 2008 SCALE: Not to Scale	MISSISSAUGA BRT PROJECT ENVIRONMENTAL ASSESSMENT ADDENDUM Disturbed Areas and Areas Requiring Additional (Stage 2) Archaeological Assessment	FIGURE 4-10

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MISSISSAUGA
Leading today for tomorrow

PROPOSED MISSISSAUGA BUSWAY

McCormick Rankin Corporation

MISSISSAUGA Transportation and Works

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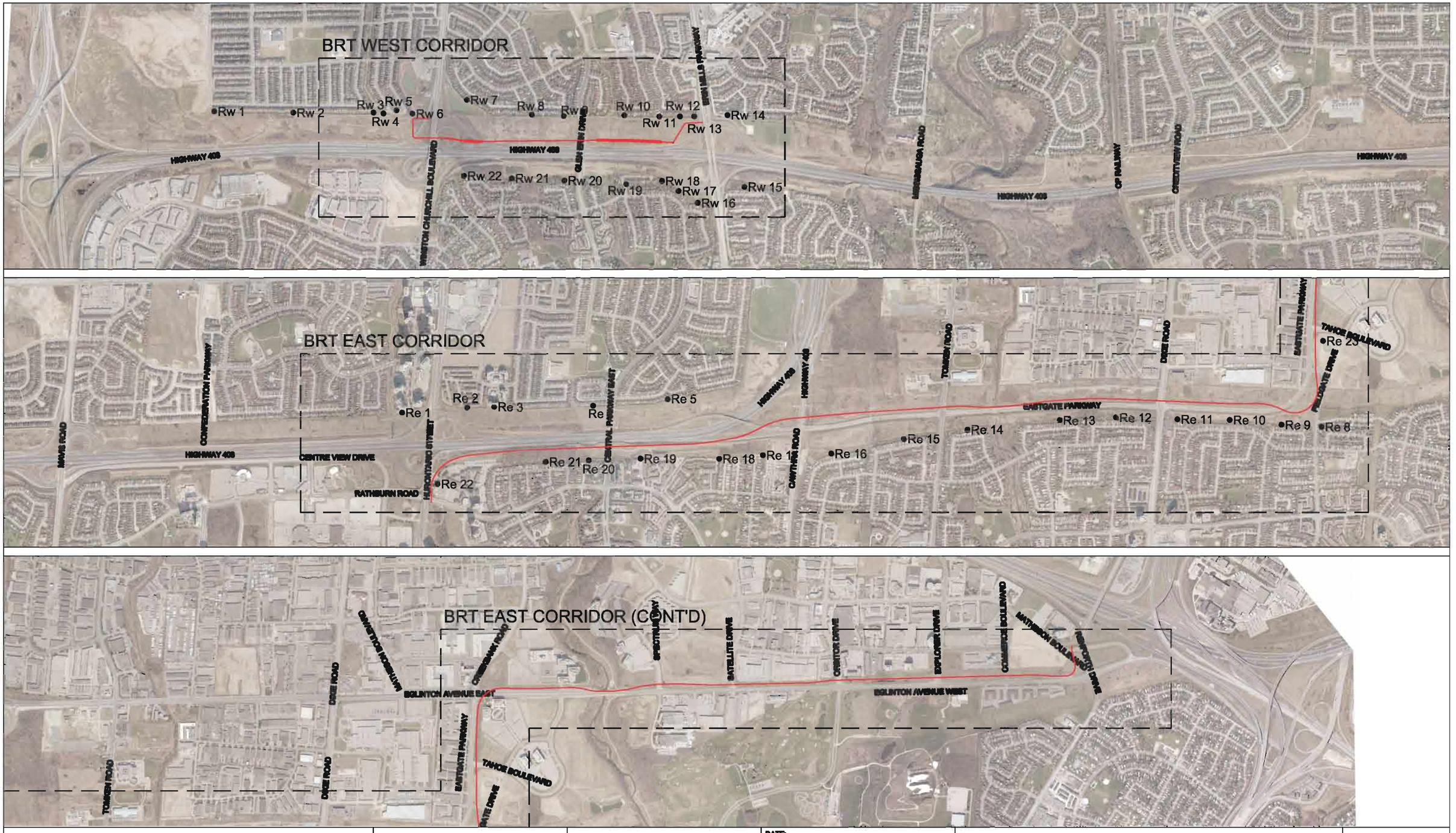
DATE: September 2008

SCALE: Not to Scale

MISSISSAUGA BRT PROJECT
ENVIRONMENTAL ASSESSMENT ADDENDUM

Disturbed Areas and Areas Requiring Additional (Stage 2) Archaeological Assessment

FIGURE
4-11



● Rw # / Re # - Noise Receiver Location

— - BRT Alignment

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MISSISSAUGA Transportation and Works

Transit

DATE: April, 2009

SCALE: 1:20,000

MISSISSAUGA BRT PRELIMINARY DESIGN STUDY

NOISE RECEPTOR LOCATIONS

FIGURE 4-12

5. WINSTON CHURCHILL BOULEVARD INTERCHANGE

5.1 Need & Justification / Rationale

5.1.1 Base Case BRT Plan

The Base Case (i.e. approved under the 2005 EA Addendum) BRT plan has the busway passing under the S-W and E-N/S Highway 403 ramps at the Winston Churchill interchange. The profile has been optimized (maximum grades, minimum vertical curves) in order to minimize or avoid utility impacts where possible.

5.1.2 Outstanding Issues

The concerns that arise with the approved BRT profile are:

- A sump is created under the S-W loop ramp that is too deep to be drained by gravity and would require a pumping station ($2.5M capital cost plus ongoing maintenance cost)
- The busway is likely to intercept several major utilities:
  - Twin 2.4 m diameter storm sewers, running from the Stormwater Management Pond on the north side of the corridor southward across Highway 403
  - A major sanitary sewer, located immediately west of the storm sewers
  - 300 mm and 200 mm Sarnia Products pipelines, which cross over the storm sewers at approximately the same location as the busway
  - 300 mm and 200 mm Sun Canadian oil pipelines, parallel to and slightly to the west of the Sarnia Products pipelines

  The cost of relocating each pipeline is conservatively estimated as $1 M - $2 M, and the duration and staging of such work would be a concern
- Both highway ramps will need detours constructed to a high standard

The total cost premium (over the basic roadway cost) of this segment may be in the $8 - $10M range.

5.2 Alternatives

It is not physically possible to increase the elevation of the S-W and E-N/W ramps to the extent that would allow the busway to pass under them and eliminate the need for a pumping station. The proposed alternative at this location is to have the busway cross over the S-W and E-N/S ramps, thereby eliminating the drainage problem, eliminating the need for a pumping station, avoiding the pipelines, and avoiding the need to detour the ramps during structure construction, and hence reduce cost substantially.

Since the existing S-W loop ramp cannot be lowered substantially (due to the pipelines it crosses just north of the busway and the sump that would be created before Winston Churchill Boulevard), either the busway profile would be set to go under Winston Churchill and over the loop ramp using maximum design criteria, or the loop ramp could be expanded so as to shift the busway crossing point approximately 30 m east. Enlarging the loop ramp would allow the structure to be built without disrupting the existing ramp, but it would entail reconstructing the full lengths of both the S-W ramp and the E-N/S

ramp in order to avoid the hydro tower situated between the two (noting that it is not feasible or cost-effective to move the tower).

5.3 Evaluation / Analysis

There are three alternatives to consider: busway under two ramps; busway over two ramps; and busway over two ramps with a shifted S-W loop ramp.

Table 5-1: Analysis of Alternatives for the Winston Churchill Interchange

Analysis Factor	Base Case: Busway Under	Busway Over – Existing Ramps	Busway Over – Relocated Ramps
Cost	Utilities $10.9 M Structures $1.9 M Walls $1.0 M Roadworks: $0.6 M Excavation: $1.0 M Traffic Mgmt $0.5 M Subtotal $15.9 M	Utilities $2.3 M Structures $2.1 M Walls $1.0 M Roadworks $0.6 M Fill: $0.4 M Traffic Mgmt $0.5 M Subtotal $6.9M	Utilities $2.3 M Structures $2.1 M Walls $0.5 M Roadworks $1.2 M Fill: $0.3 M Traffic Mgmt $0.2 M Subtotal $6.6 M
Utilities	Retaining wall needed to project parallel pipelines	Retaining wall needed to avoid parallel pipelines; lowered S-W ramp may impact two pipelines	Retaining wall needed to avoid parallel pipelines
Drainage	Pumping station required at loop ramp sump.	Gravity drainage to existing ditches.	Gravity drainage to existing ditches.
Construction Disruption	Detours and two-stage structure construction required for both ramps	Both structures require temporary ramp closures for girder placement. Ramp lowering in situ requires major detours for both.	S-W structure can be built off line; E-N/S girder structure requires temporary closure; ramp reconfiguration requires traffic restrictions
Environmental Assessment	Falls under previous approval. No change or impact.	Profile change triggers EA Addendum	Profile change triggers EA Addendum
Ramp Geometry	Existing: S-W loop ramp 52 m radius; E-N/S ramp radius 240m / 100m	Existing: S-W loop ramp 52 m radius; E-N/S ramp radius 240m / 100m	S-W loop ramp 65 m radius (increased); E-N/S ramp radius 240m / 90m (reduced)
Community Impact	Visual: No significant impact Noise: no change in the noise levels identified in the EA report.	Visual: busway embankment will be visible from north side residences; apply landscaping plan to north side of embankment (see Fig. 5-6) Noise: busway embankment reduces 403 traffic noise	Visual: busway embankment will be visible from north side residences (1 m lower than option #2); apply landscaping plan to north side of embankment (see Fig. 5-6) Noise: busway embank-ment reduces 403 traffic noise

5.4 Conclusions / Recommendations

The alternative of crossing over the ramps is significantly less costly than going under. The impacts of these options on the community are both minor and mitigatable. Of the two "over" options, the one involving a realigned S-W loop ramp is less costly and incrementally better in most respects. The recommended alternative is shown on Figure 5-3.

5.5 Environmental Effects and Commitments to Mitigation

The following section discusses environmental effects and commitments to mitigation only as they differ from those previously identified in the 1991 Environmental Assessment and the 2005 Environmental Assessment Addendum for the Mississauga Transitway.

5.5.1 Physical Environment

5.5.1.1 Roads

The busway in this section crosses (and is grade separated at) all interchange ramps on the north side of Highway 403, as well as at Winston Churchill Boulevard. The construction of a structure at each crossing will, in almost all cases, be disruptive to traffic operations. Table 5-2 provides details regarding construction staging and anticipated traffic effects. Traffic operation effects will be minimized by leaving an adequate amount of road capacity open at all times through the use of staged construction. Capacity reduction will not be scheduled simultaneously on parallel adjacent roads.

The construction of structures will have a localized disruptive effect on roadway traffic, as will the reconfiguration of the north parts of the Winston Churchill interchange with Highway 403. These effects will be mitigated through conventional traffic management programs that maintain a level of traffic capacity and safety acceptable to the respective road authorities (Ministry of Transportation of Ontario, Regional Municipality of Peel, City of Mississauga and City of Toronto). Detours, lane closures, temporary / overnight closures, special signals, lane markings, and signage will be used as appropriate. The motoring public will be advised of planned activities that may result in traffic disruption in advance (both temporally and physically). Bicycle and pedestrian access along roads (where pre-existing) will be maintained at all times. These mitigation measures should reduce impacts to a level acceptable to authorities and the public.

Table 5-2: Summary of Road Crossing Construction Staging and Anticipated Traffic Effects

Road Crossing	Construction Staging	Anticipated Traffic Effect
Winston Churchill N-W Ramp	Off line	Brief ramp closure to reconnect with realigned ramp
Winston Churchill Blvd	Three stages	Two through lanes in each direction maintained at all peak periods
Winston Churchill S-W Ramp	Off line	Brief ramp closure to reconnect with realigned ramp
Winston Churchill E-N/S Ramp	Busway over ramp	Brief ramp closure during placement of girders

In all the above situations, the adjacent or affected traffic signals will be re-timed as appropriate to accommodate the modified traffic patterns during the construction period. The duration of each disruption or lane closure will vary, but at most will occur over a single construction season (April – November).

The Winston Churchill interchange with Highway 403 will also encounter traffic effects associated with the relocation of the N-W ramp, the realignment of the E-N/S ramp and the introduction of a fourth (westerly) approach to the E-N/S ramp terminal. A program

of traffic management that maintains capacity and safety will be developed in the Detail Design process.

In addition to the disruption associated with the above noted structure construction, corridor roads will be used by construction equipment, temporary construction access points will be implemented, and a substantial amount of truck traffic will be associated with the disposal of excess fill.

Most construction will, however, take place within the BRT right-of-way and will not impinge on or affect traffic operations on the adjacent or nearby roads. Standard contract measures will be implemented to ensure that mud and debris is not tracked by construction equipment onto travelled roads.

Operation and Maintenance Effects

Once the BRT facility is in operation, there should be no special ongoing operational or maintenance effects on the road system or general traffic operations. The new structures will be added to the inventory of road structures in Mississauga and will follow conventional inspection, maintenance and rehabilitation schedules.

Significance

The construction of the busway structures will have a localized disruptive effect on roadway traffic. With the implementation of the above noted mitigation measures potential for adverse effects can be minimized and no significant residual effects should occur.

5.5.1.2 Utilities Within / Crossing Corridor

The presence of utilities is a guiding and constraining factor in the design and construction of the BRT project. The plans, profiles, structures, walls, and roadworks have all been adjusted during Preliminary Design in order to minimize effects on existing utilities, both permanently and through the construction period.

The utilities within the EA Addendum study area on the east side of the Winston Churchill interchange are:

Pipelines

- The busway crosses Sarnia Products and Sun Canadian pipelines (total 4 pipes) to the east of the E-N/S exit ramp from westbound Highway 403 to Winston Churchill Boulevard. At that point, the recommended profile for the busway is at or above grade, and there is no pipeline relocation required; as a consequence, there are no National Energy Board (NEB) permits required. The detail design of the crossing will be submitted to pipeline owners for their technical review and agreement. Pipeline owners will provide inspectors on site during construction in the vicinity of their facilities.

Other Utilities – Winston Churchill Boulevard Interchange

The busway in this section will affect the following utilities:

- Rogers Cable

  - buried fibre optic cable line along the east edge of Winston Churchill Boulevard: temporary realignment; replace after bridge construction
  - aerial fibre optic cable running north-south 175 m east of Winston Churchill Boulevard: drop into buried conduit under raised busway

- Bell Canada: Buried cable along Winston Churchill Boulevard: temporary realignment; replace after busway construction;
- Hydro One: two 230kV overhead power lines (east-west) north of Highway 403 in the utility corridor; provide adequate offset from towers
- Enersource (Hydro Mississauga): both buried and aerial hydro facilities at the Winston Churchill Boulevard site: temporary realignment; replace after busway construction;
- Ministry of Transportation of Ontario: High Mast Light standards at varying intervals (100 m – 250 m), approximately 25 m north of the edge of pavement of Highway 403: relocate four light standards at Winston Churchill interchange (slight shift only, to avoid BRT infrastructure); relocate associated buried power supply ducts.

Construction Effects

The process of revising, relocating, or reconstructing utilities will be designed and managed by the respective utility owner, to reflect the BRT design requirements at the Detail Design stage.

Utility relocation will generally be the first step in clearing a zone for construction; aerial lines (such as Rogers and Enersource) are normally the first utilities to be shifted, followed by buried pipes. Where possible, utilities will be relocated to their ultimate position, to avoid multiple shifts during the construction period. Multiple utility contractors will not be permitted to work at the same site simultaneously; the sequencing and timing of their work will be carefully scheduled to avoid conflicts.

Operation and Maintenance Effects

The following discussion applies to all utility-related impacts discussed in Sections 5.5.1.2, 6.5.1.2, 7.5.1.2, 8.5.1.2, and 9.5.1.2.

The BRT project will alter the utility owners' access to their infrastructure in the corridor. For the most part, the addition of a new roadway (with full shoulders to allow parking of service vehicles without impeding bus operations) will improve access to utilities along or crossing the busway. Utility agencies will obtain authorization before moving onto the busway. Busway and station infrastructure has been designed, where possible, to physically avoid buried utilities and to allow for access (including digging) along the entire length of existing buried plant without interfering with ongoing busway operations. Activities and access will be restricted to those which do not interfere with ongoing BRT operations and safety. Some utility maintenance work will be limited to overnight (when the busway is not in operation) or off-peak hours when there is less risk of effect on bus operations. Utility access from surrounding roads and crossing streets will be maintained as well.

The busway may restrict the timing or design of some particular maintenance practices, while it provides improved access to much of the corridor. In the event of utility maintenance or repair requiring closure or severe operating restrictions on a segment of busway or station, the BRT operator will work with the utility agency to minimize the disruption. If necessary, buses can be diverted off the busway to operate on the road network on a temporary basis.

Detailed protocols will be developed between the BRT operator and each utility to govern the practices and processes that will need to be followed to meet the functional requirements of each party. These protocols, while Mississauga-specific, will be able to draw on similar effective agreements that have been established for other similar facilities.

Significance

The construction of the BRT facility, while requiring some utility relocation, is not anticipated to result in any significant adverse effects to the utilities. The presence of the BRT facility is not expected to represent a significant adverse effect on the ability of utility owners / operators in the corridor to carry out their regular operations and maintenance programs. With the implementation of the above noted mitigation measures potential for adverse effects can be minimized and no significant residual effects should occur.

5.5.2 Natural Environment

5.5.2.1 Watercourse Crossings

There are no watercourse crossings in the study area.

5.5.2.2 Vegetation, Wetlands, and Wildlife

While the BRT facilities and associated changes in the Highway 403 interchange ramps for access to the BRT facilities result in permanent removal of cultural meadow and associated meadow habitat, the effect is limited given the common, tolerant nature of the vegetation communities. The incremental removal of this vegetation on a local scale given the urbanized nature of the landscape generally is noted; however, specific efforts to replace this community are not warranted given its characteristics and the urban setting.

These effects are not considered significantly different from those incurred under the previously approved alignment.

5.5.2.3 Species of Conservation Concern and Species at Risk

The proposed changes to the approved plan / profile will not have any effect on species of concern / risk.

5.5.2.4 Stormwater Management

Potential Construction Effects

The following provides an overview of the hydraulic and stormwater management criteria for this project. Standard measures to prevent erosion and sedimentation will be

implemented during construction. The Credit Valley Conservation Authority (CVC) will be consulted with as necessary during Detail Design regarding the placement of fill and any associated requirements for permits.

Hydraulic Criteria

The drainage system for the Mississauga BRT will be designed based on the *MTO Highway Drainage Design Standards* (MTO 2008) for a freeway. As such, the design criteria for the Preliminary Design are as follows:

- Minor system to be designed for the 10 year event;
- Major system to be designed for the 100 year event;
- Either an overland flow route (swale, ditch or realigned watercourse) or a storm sewer shall convey external runoff from the point of interception to the receiving watercourse. The capacity of this flow route shall be sufficient to convey the major system design flow; and
- Minimum culvert sizes are as follows:
  - 800 mm minimum diameter for circular culverts
  - 800 mm minimum rise for elliptical or arch culverts
  - 900 mm minimum rise for box culverts.

The criteria identified above allow for the preliminary design of conveyance systems within and external to the BRT and preliminary sizing of stormwater management measures. At the Detail Design stage, additional criteria/standards identified within the *MTO Highway Drainage Design Standards* (MTO 2008) will be applied to complete the detailed design of the drainage system including but not limited to: storm sewer sizing, catchbasin spacing, bridge deck drainage, sag and spread analyses, and ditch and culvert sizing. The minimum major culvert sizes will be re-evaluated for 100-year design flow from the respective catchment areas on the basis of final hardscape and morphology during the detail design of the structures.

Stormwater Management Criteria

In consultation with CVC, City of Mississauga, MTO, and available documentation, design criteria for the stormwater management strategy have been established. These criteria include:

- Provision of post-to-pre water quantity control for the 2 year to 100 year storm events for all runoff discharged to the Highway 403 drainage system, municipal sewers, Cooksville Creek and Little Etobicoke Creek; and
- Provision of Enhanced water quality control (i.e., 80% long-term removal of suspended solids), as identified in Table 3.2 of the MOE Stormwater Management Planning and Design Manual (MOE 2003), for runoff from all new development;

Provision for enhanced level of stormwater quality treatment shall be re-evaluated with the use of stormwater management best management practice elements for all the existing / established and future catchment areas of the BRT project during the final stage of the detail design, per MOE requirements.

Stormwater Management Plan

Following is a brief description of the stormwater management plan for the project.

The stormwater management plan at Winston Churchill Boulevard relies on the existing outlets, which is twin 1200 mm diameter pipes (Outlet 1A) and twin 2590 mm diameter trunk sewer (Outlet 1B). The same outlets will be utilized under proposed drainage conditions and the existing drainage regime will not be greatly altered under proposed conditions. Existing peak flow rates at each outlet will not be exceeded under proposed conditions. Enhanced water quality control will be provided for all new development.

Construction of the BRT at this location will require installation of 6 new culverts and relocation of several ditches to maintain existing drainage across the BRT and the Highway 403 interchange at Winston Churchill Boulevard.

The design will include:

- on-site controls such as parking lot storage, to minimize the land requirement of stormwater management facilities;
- oil grit separators used in combination with flat bottom grass swales to provide a treatment train and ensure that Enhanced water quality control is provided;
- at the Detail Design stage, catchbasin spacing and storm sewer sizing designed in accordance with the MTO Highway Drainage Design Standards; and
- sizing of each of the proposed new culverts will be re-examined at the final design stage as parking lot grading may require that additional flow be directed to some of them.

Water quantity control for the BRT corridor and its associated parking areas and stations will be provided by a combination of pipe, ditch, pond and parking lot storage. Water quality control for the BRT corridor and its associated parking areas and stations will be provided by a combination of stormwater management basins, flat bottom grass swales and oil and grit separators.

Potential Operation and Maintenance Effects

It is critical that the system perform as designed and in a reliable, consistent manner. The City of Mississauga has vast experience in managing and operating stormwater management systems, and the BRT-related improvements will be absorbed within the overall municipal program. The management of the construction process and the addition of new or revised system elements will focus on avoiding disruption to the existing system, again using experienced contractors, working closely with the CVC and MTO.

Once the BRT facility is operational, there should be no special ongoing operational or maintenance effects on the stormwater management / drainage system. The new culverts, pipes, and expanded ponds / ditches will be added to the inventory of such structures in Mississauga and will follow conventional inspection, maintenance and rehabilitation schedules.

Significance

The stormwater management and drainage system for the Mississauga BRT project is

notable, not only for the busway itself, but for all the roads and properties within the catchment area. Revisions to the existing system afford the opportunity to enhance its performance and bring it up-to-date using current standards.

The proposed drainage plan for this section of busway is illustrated in Figure 5-5.

5.5.2.5 Groundwater

The proposed change in busway profile will have the effect of reducing or eliminating the groundwater issues associated with the previously approved alignment.

5.5.3 Socio-Cultural Environment

5.5.3.1 Archaeology

As noted in Section 4.2.1.1, a Stage 1 Archaeological Assessment of the corridor has been undertaken. The purpose of this investigation was to identify areas of archaeological concern and identify any additional archaeological assessments that will be required prior to construction. Given the historical use of the area and fallow condition of the corridor, it was determined that the majority of the corridor will require a Stage 2 Archaeological Assessment. However, all of the areas of proposed changes are previously disturbed.

The following outlines the proposed mitigation and commitments to future work required to mitigate potential adverse environmental effects to archaeological resources, applicable to all sites of proposed change to the EA approved alignment:

- Undertake a Stage 2 Archaeological Assessment for works in the identified undisturbed areas. If archaeological finds are discovered, Stage 3-4 mitigation will be undertaken as required in accordance with the guidelines and policies of the Ministry of Culture. Consultation will occur with the Ministry of Culture and, if applicable, potentially interested First Nations to discuss mitigation strategies if sites are found as part of the Stage 2 Assessments. Copies of the Stage 2 Archaeological Assessments will be provided to the Responsible Authorities. If the Stage 2 report documents archaeological finds, the archaeologist and the Ministry of Culture typically would not make the report available to the general public, in order to protect archaeological sites from disturbance.
- Submit any additional Archaeological Assessments a minimum of 90 days prior to construction to the Ministry of Culture.
- Should buried archaeological deposits be found along any section of the corridor during construction activities, the Ministry of Culture and any First Nations who have an interest will be notified immediately.
- In the event that human remains are encountered during construction activities the Ministry of Culture, the Registrar or Deputy Registrar of the Cemeteries Regulation Unit of the Ministry of Consumer and Commercial Relations, the Peel Regional Police and any First Nations who have an interest will be notified immediately.

Significance

The potential for archaeological finds in areas of construction exists at some relatively undisturbed sites. With the implementation of the above mitigation measures potential for adverse effects can be minimized and no significant residual effects should occur.

5.5.3.2 Heritage

Compared to the approved plan, no additional adverse environmental effects to heritage resources are anticipated during this phase of the project.

5.5.3.3 Noise

An updated noise analysis for the Winston Churchill Boulevard interchange was carried out by specialist subconsultants S.S. Wilson and Associates.

Daytime sound levels at other residential properties on either side of the corridor (see Appendix E for specific locations), calculated on the basis of current traffic levels and topography, show figures largely in the 55 – 60 dBA range:

Receptor Code	**Street** (see map, Appendix E, for specific property)	**Existing Daytime Sound Levels** (dBA)
Rw1	Angel Pass Drive	58.9
Rw2		59.5
Rw3		59.3
Rw4	Columbo Crescent	58.9
Rw5		53.9
Rw6		59.0
Rw7	Ambercroft Trail	58.4
Rw8	Romfield Crescent	59.6
Rw9		60.0
Rw10	Idlewilde Crescent	60.5
Rw11	Radisson Crescent	60.3
Rw12		59.4
Rw13		65.9
Rw14	Haydock Park	58.5
Rw15	Sawmill Valley Dr.	58.4
Rw16	Trellis Crescent	60.0
Rw17	Folkway Drive	58.8
Rw18	Treetop Court	57.8
Rw19		50.0
Rw20	Thom Gardens	56.2
Rw21	Remea Court	59.4
Rw22		60.7

These levels are in many cases above the provincial objective of 55 dBA, reflecting the noise generated by traffic on Highway 403 and the major arterials in the corridor.

The noise analysis update conducted in June 2008 confirmed that the BRT project does not increase sound levels at residential properties in the corridor to a significant extent; the project does not meet the provincial criteria for mitigation (an increase of more than 5 dBA, or a noise level of > 65 dBA). The noise analysis is included in Appendix D, and

summarized in the table below. It reflects the proposed plan and profile as presented to the public (i.e. busway over the S-W and E-N/S ramps at Winston Churchill).

Table 5-3: Updated Noise Analysis – Winston Churchill Boulevard

Receptor Code	Street (see map in Appendix E for specific property)	Existing Sound Levels (dBA)	Future Sound Levels with BRT (dBA)	Change in Sound Levels due to BRT Project (dBA)	Significance* of the Change due to the BRT Project	Noise Mitigation **
North of Hydro Corridor						
Rw1	Angel Pass Dr.	58.9	59.9	1.0	Insignificant	Not required
Rw2		59.5	60.8	1.3	Insignificant	Not required
Rw3		59.3	60.9	1.6	Insignificant	Not required
Rw4	Columbo Cres.	58.9	60.5	1.6	Insignificant	Not required
Rw5		53.9	56.1	2.2	Insignificant	Not required
Rw6		59.0	60.6	1.6	Insignificant	Not required
Rw7	Ambercroft Trail	58.4	59.7	1.3	Insignificant	Not required
Rw8	Romfield Cres.	59.6	61.2	1.6	Insignificant	Not required
Rw9		60.0	61.3	1.3	Insignificant	Not required
Rw10	Idlewilde Cres.	60.5	62.2	1.7	Insignificant	Not required
Rw11	Radisson Cres.	60.3	63.5	3.2	Noticeable	Not required
Rw12		59.4	61.6	2.2	Insignificant	Not required
Rw13		65.9	67.5	1.6	Insignificant	Not required
Rw14	Haydock Park	58.5	61.1	2.6	Insignificant	Not required
South of Highway 403						
Rw15	Sawmill Valley Dr.	58.4	59.5	1.1	Insignificant	Not required
Rw16	Trellis Cr.	60.0	61.7	1.7	Insignificant	Not required
Rw17	Folkway Dr.	58.8	59.5	0.7	Insignificant	Not required
Rw18	Treetop Ct.	57.8	58.9	1.1	Insignificant	Not required
Rw19		50.0	51.1	1.1	Insignificant	Not required
Rw20	Thom Gardens	56.2	57.6	1.4	Insignificant	Not required
Rw21	Remea Ct.	59.4	60.7	1.3	Insignificant	Not required
Rw22		60.7	62.0	1.3	Insignificant	Not required
*** Impact Assessment Rating :**			< 3 dB change : Insignificant >3 to < 5 dB change : Noticeable > 5 to < 10 dB change: Significant > 10 dB change : Very Significant			
**** Criteria for mitigation:**			>5 dB change			

The impact of the proposed change to the plan and profile east of Winston Churchill Boulevard on residential noise levels is best represented by site Rw7, which lies immediately north of the subject area. The noise analysis was re-done with the new plan and profile and found that the noise level would be 59.9 dBA, an increase of 0.2 dBA over the predicted noise level with the EA-approved (below-grade) plan and an increase of 1.5 dBA over existing conditions. The proposed revision to the plan and profile are therefore concluded to have a negligible impact on noise levels and are consistent with the previously-approved plan in that respect.

The proposed busway plan / profile revisions east of Winston Churchill Boulevard do not affect noise levels at any other receptor.

5.6 Consultation with Property Owners

During the public consultation process for this area, little interest was exhibited by the public, with the exception of a single adjacent resident. The following table summarizes the resident's concerns and responses provided.

The City of Mississauga and GO Transit have committed to continue consultation with the resident to address and resolve any final design concerns that may be raised prior to construction. In addition, there will be a Public Information Centre (PIC) on the Mississauga BRT Project prior to construction where the final design will be presented for public review and comment. The resident will be sent an e-mail advising him of the PIC open house. The notice for the PIC will be advertised in the Mississauga News, and on the City of Mississauga's BRT Project Website.

Table 5-4: Summary of Comments and Responses – Winston Churchill Site

Summary of Concerns Regarding BRT Project Modifications (Public Consultation: June 24 & 26, 2008)		
Concern Raised By:	**Comment**	**Response**
Resident	*Visual* "Raising the BRT above the 403 access ramps will result in the residents of Ambercroft Trail watching buses fly past on the elevated roadway apparently every two minutes. ...I questioned whether a fence and/or landscaping would be installed to block the view and received very vague comments.	The recommended plan includes a landscaping concept (see Figure 5-6) to mitigate the visual impacts of the busway embankment crossing the Highway 403 S-W and E-N/S ramps at Winston Churchill Boulevard. Due to the proximity of the hydro corridor (branches) and pipelines (roots), only small trees and shrubs are permitted in the landscape concept. The north-facing embankment will be fully landscaped in the areas where it is visible from residential properties. The busway is a minimum of 160 m away from adjacent homes and would have only one or two buses visible periodically, compared to the existing view of Winston Churchill Boulevard and the Highway 403 ramps, which are closer to many homes and feature constant traffic. City of Mississauga policy does not extend to providing fences along the Parkway Belt.
Resident	*Noise* "The elevated bus route will greatly increase noise levels particularly in our gardens."	The noise analysis conducted as part of the preliminary design exercise concluded that although there will be marginal increase in noise, it is insignificant given the existing noise generated in the Highway 403 corridor and therefore noise protection measures are not warranted. It is also important to note that the new busway profile would assist in mitigating the existing noise from the Highway 403 corridor.
Resident	*Pollution* "Heavier air pollution will roll down the unrestricted sides of the elevation into our back gardens."	One of the major benefits the Mississauga BRT Project will bring is a reduction in greenhouse gas (GHG) emissions resulting from a combination of increased transit ridership and a reduction of automobile trips. The initial project estimates identified in the project benefits case submission to Transport Canada was an annual reduction of 6.3 tonnes of GHG emissions.
Resident	*Drainage* The rear of my home is very poorly drained currently. Standing water is evident some 12-18 inches below grade...There is no plan to alleviate the run off water from the raised roadway (A pumping station originally planned is being cut...$$$$$$ savings)"	All drainage from the new busway shall be accommodated as part of a comprehensive stormwater management and drainage program, ultimately draining to the Sawmill Creek stormwater management facility on the south side of Highway 403 via the twin 2590mm storm sewers crossing the busway east of the E-N/S ramp. There will be no impact to the drainage situation on adjacent residential properties.

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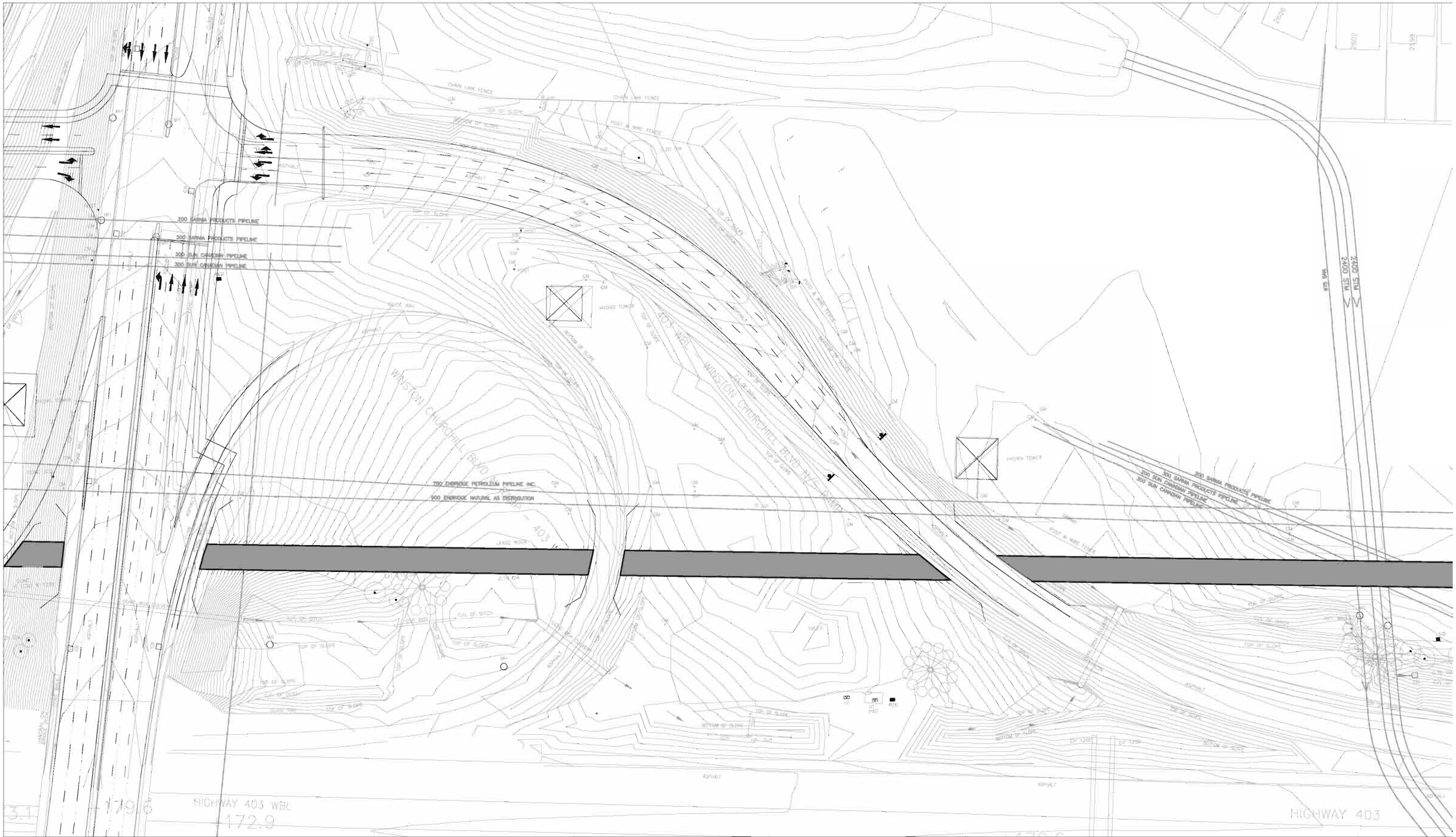
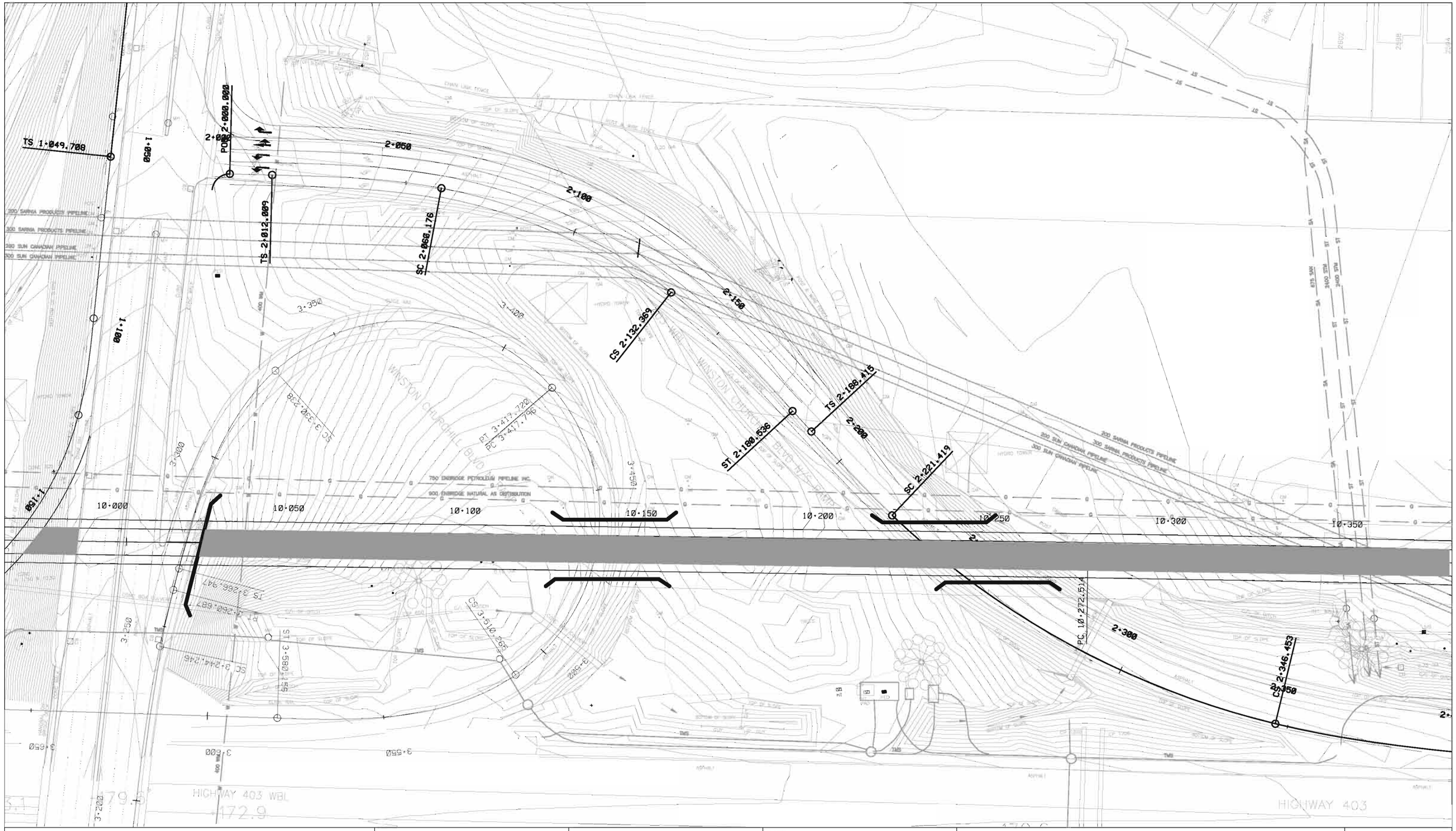
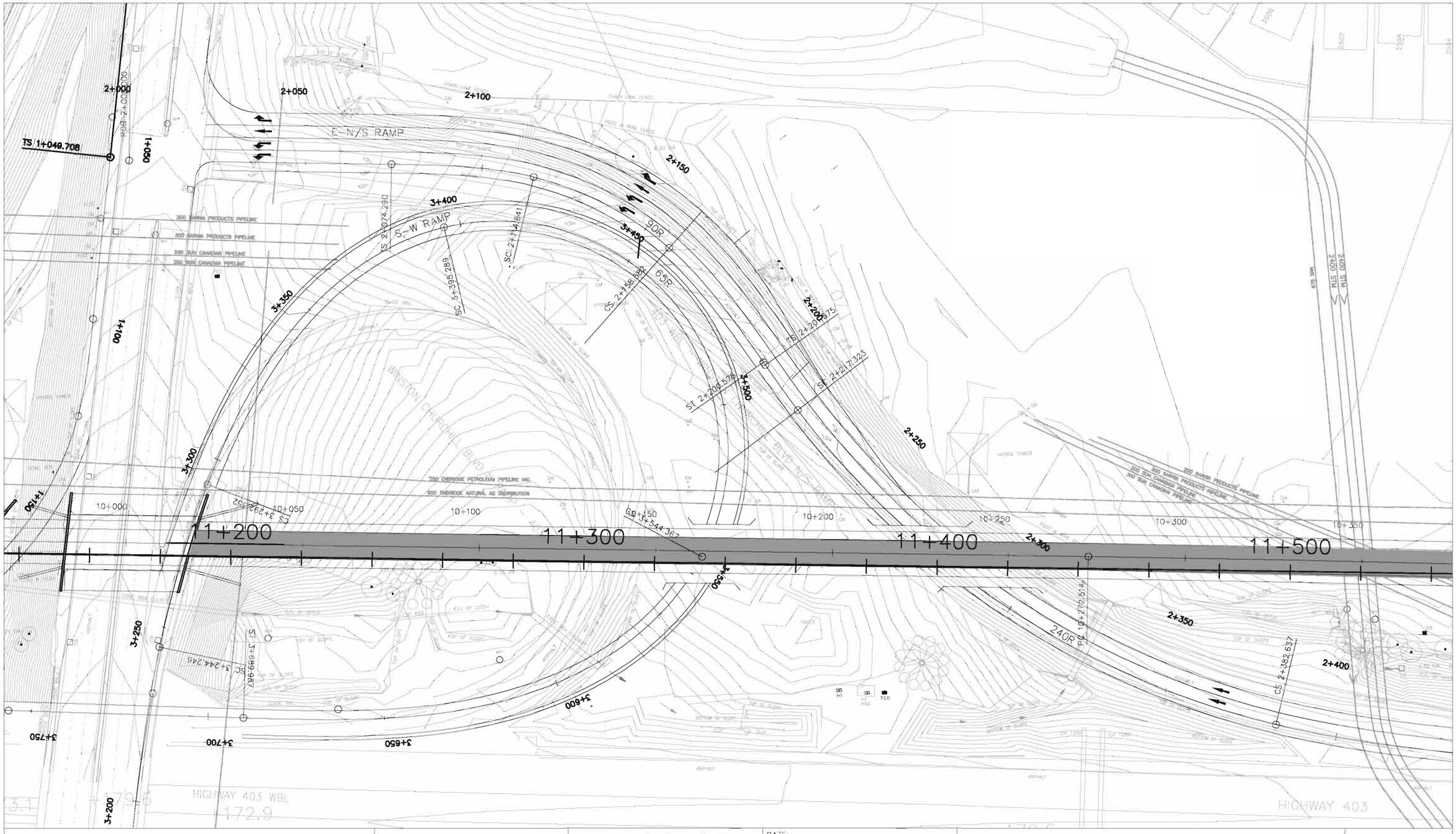


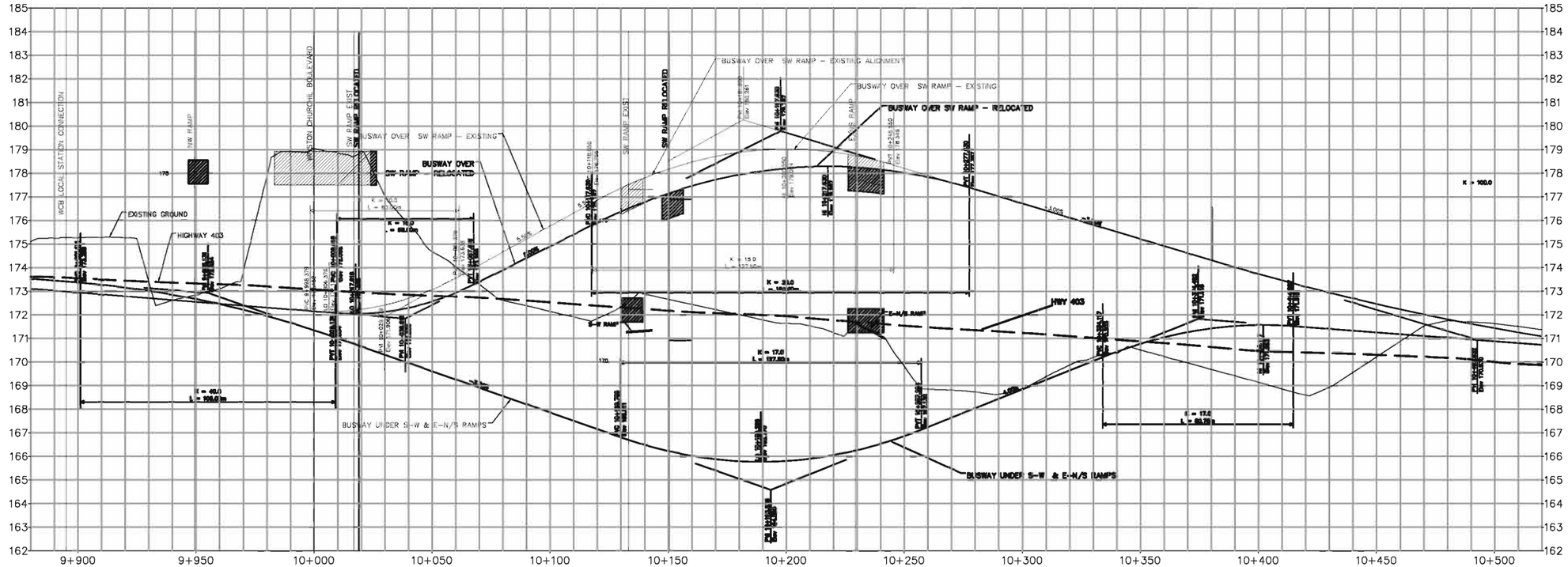
	McCORMICK RANKIN CORPORATION	MISSISSAUGA Transportation and Works Transit	DATE: December 2008 SCALE: 1:1,000	MISSISSAUGA BRT PROJECT ENVIRONMENTAL ASSESSMENT ADDENDUM WINSTON CHURCHILL BOULEVARD / HWY 403 INTERCHANGE BASE CASE ALTERNATIVE PLAN	FIGURE 5-1



	McCORMICK RANKIN CORPORATION	MISSISSAUGA Transportation and Works Transit	DATE: August 2008 SCALE: 1:1,000	MISSISSAUGA BRT PROJECT ENVIRONMENTAL ASSESSMENT ADDENDUM WINSTON CHURCHILL BOULEVARD / HWY 403 INTERCHANGE ALTERNATIVE B: BUSWAY OVER EXISTING RAMP LAYOUT	FIGURE 5-2



McCORMICK RANKIN CORPORATION	MISSISSAUGA Transportation and Works / Transit	DATE: August 2008 SCALE: 1:1,000	MISSISSAUGA BRT PROJECT ENVIRONMENTAL ASSESSMENT ADDENDUM WINSTON CHURCHILL BOULEVARD / HWY 403 INTERCHANGE ALTERNATIVE C: BUSWAY OVER RELOCATED S-W RAMP	FIGURE 5-3



	McCORMICK RANKIN CORPORATION	MISSISSAUGA Transportation and Works Transit	DATE: August 2008 SCALE: 1:2,000	MISSISSAUGA BRT PROJECT ENVIRONMENTAL ASSESSMENT ADDENDUM WINSTON CHURCHILL BOULEVARD ALTERNATIVE PROFILES	FIGURE 5-4

1.0
410.5 ha

-QUALITY CONTROL OF RUNOFF PROVIDED BY EITHER OIL AND GRIT SEPARATOR OR EXISTING SAW MILL SWM FACILITY.
-QUANTITY CONTROL PROVIDED ON-SITE (PARKING LOT) - 1500m³ STORAGE REQUIRED.

2.0
189.2 ha

QUANTITY CONTROL STORAGE PROVIDED IN FLAT BOTTOM GRASSED SWALES (PROVIDE 600m³ SWALE STORAGE)

1-1
12.30 ha

1-11
2.80 ha

1-12
1.0 ha

1-3
1.20 ha

1-31
1.0 ha

1-4
4.30 ha

1-33
1.10 ha

1-41
0.60 ha

2-11
0.55 ha

2-1
5.20 ha

OG1

OG2

SW RAMP

E-N/S RAMP

FC1

FC2

FC3

FC4

FC5

FC6

FC7

CB

10+300

10+400

OUTLET 1B

10+500

10+600

10+

TWIN-2590mmø STM SEWERS

INV. 168.50

BUSWAY

HIGHWAY 403

1-13
0.50 ha

1-2
0.65 ha

MTO 103
9.8 ha

1-32
0.60 ha

WINSTON CHURCHILL BLVD

TWIN-1220mm DIAM. PIPES

FUTURE INLET

TWIN-2590mm STM SEWERS

EXISTING CB TO REMAIN IF NOT IMPACTED BY GRADING

MAINTAIN EXISTING DITCH

STUDY AREA

OUTLET 1A

INV. 167.07

SAWMILL CREEK SWM FACILITY

TO SAWMILL CREEK

MTO-HWY 403 SWM POND 2 (DRAINAGE AREA=25.90 Ha)

FUTURE BRT STM SEWER OUTLET PIPE TO THE UPSTREAM END OF THE EXISTING TWIN 2400mm DIAM. STM SEWER (RD ELEV. AT SAG=171.70, TWIN PIPES INV. ELEV.=168.50). QUALITY AND QUANTITY CONTROL PROVIDED BY SAWMILLS CREEK SWM FACILITY.

LEGEND

- CATCHMENT BOUNDARY
- FUTURE CULVERT
- FC1 — FUTURE CULVERT I.D.
- FUTURE DITCH
- FUTURE FLAT BOTTOM GRASSED SWALE
- FUTURE STM SEWER
- OG1 — FUTURE OIL AND GRIT SEPARATOR
- DI/CB — FUTURE DITCH INLET OR CATCHBASIN
- EXISTING CULVERT
- EXISTING STORM SEWER
- EXISTING DITCH/SWALE
- EXISTING FLOW DIRECTION
- 1-1 / 12.30 ha — CATCHMENT ID / CATCHMENT AREA

* ALL PROPOSED CULVERTS 800mm DIAMETER UNLESS OTHERWISE SPECIFIED. PROPOSED CULVERT SIZE SUBJECT TO CHANGE DURING DETAILED DESIGN STUDY

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DATE: December 2008

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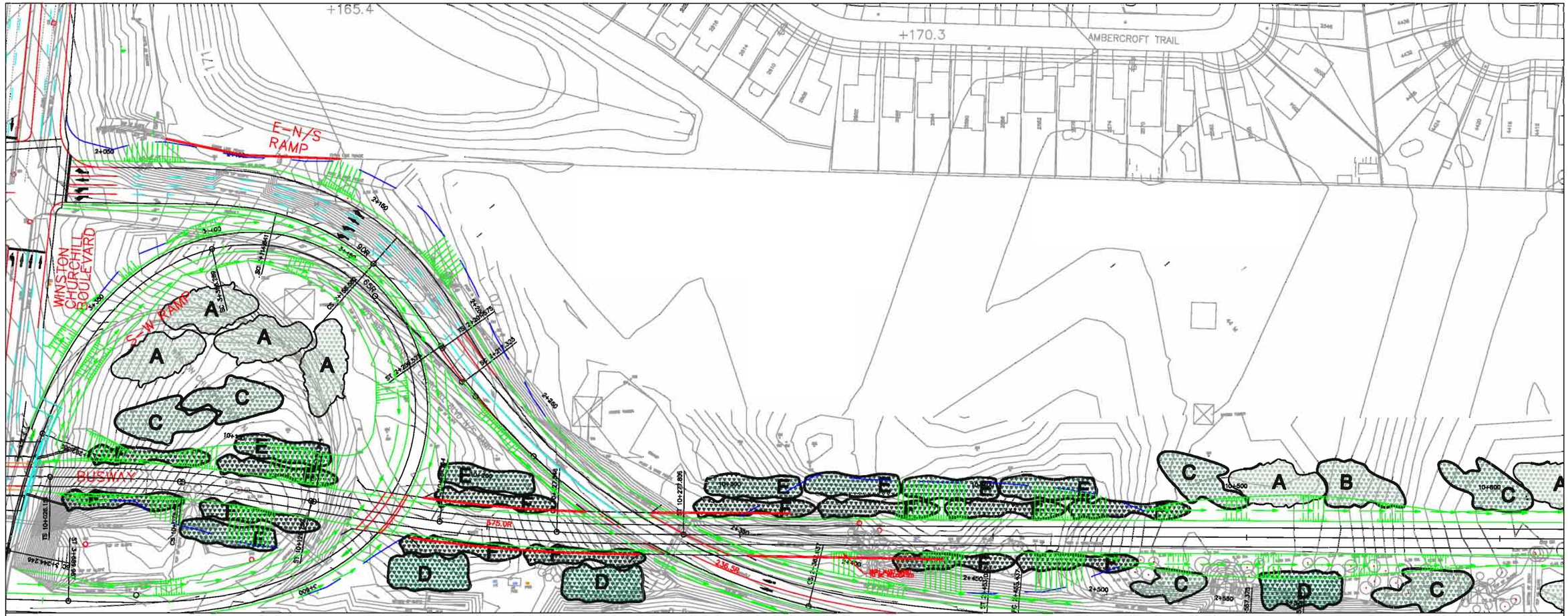
MISSISSAUGA BRT PROJECT ENVIRONMENTAL ASSESSMENT ADDENDUM

WINSTON CHURCHILL BOULEVARD / HWY 403 INTERCHANGE FUTURE DRAINAGE AND STORMWATER MANAGEMENT

FIGURE 5-5



LEGEND

- MEADOW MIX 1
- MEADOW MIX 2
- MEADOW MIX 3
- SMALL DECIDUOUS TREE
- CONIFEROUS SHRUB
- DECIDUOUS SHRUBS

A — SHRUB POCKETS WITHIN PRAIRIE–MEADOW

Nodal Planting Unit Type A

- Shrub plantings for within hydro corridor
- Approx: 40–50% plant coverage for open meadow and diverse bird habitat
- Three meadow mixture seed mixtures for diversity of coverage type and heights. Seed selection to be drought tolerant

B — DENSE SHRUB & SMALL TREE COVERAGE WITH PRAIRIE–MEADOW POCKETS

Nodal Planting Unit Type B

- Shrub plantings and small trees for within hydro corridor planting height restrictions
- Approx: 75–80% plant coverage for denser copse and bird habitat (grass pockets)
- Two meadow mixture seed mixtures for diversity of coverage type Seed selection to be drought tolerant

C — DOMINANT PRAIRIE–MEADOW WITH SCATTERED SHRUBS

Nodal Planting Unit Type C

- Shrub plantings and small trees for within hydro corridor planting height restrictions
- Approx: 20% plant coverage for provision of some habitat, food source and shelter
- Three meadow mixture seed mixtures for diversity of coverage type. Seed selection to be drought tolerant

D — INFORMAL LINEAR PLANTING

Nodal Planting Unit Type D

- Shrub plantings and small trees for which meet hydro corridor planting height restrictions
- Continuous coverage for screening / buffer purposes
- Plant selection to be drought tolerant, salt resistant and to provide multi–seasonal aesthetic interest
- Three meadow mixture seed mixtures for diversity of coverage type for aesthetic and seasonal interest. Seed selection should be salt and drought tolerant.

E — INFORMAL LINEAR PLANTING (NO TREES)

Nodal Planting Unit Type E

- As per Nodal Planting Unit Type D but with no trees (directly adjacent tor hydro wires)

F — INFILTRATION (SLOPE) PLANTING

Nodal Planting Unit Type F

- Intended to be interception planting strip between top of slope (start of run–off) and other Nodal Planting Unit.
- Strip to be composed of tightly knitted suckering shrubs to stabilize slope and to take brunt of air–borne salt spray. Species to include hardy dogwoods, willow and sumac.

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MISSISSAUGA BRT PROJECT
ENVIRONMENTAL ASSESSMENT ADDENDUM

CONCEPTUAL LANDSCAPING PLAN
WINSTON CHURCHILL SITE

FIGURE 5-6

6. HURONTARIO STREET CROSSING

6.1 Need & Justification / Rationale

6.1.1 Base Case BRT Plan

The Base Case alignment for the Busway (i.e. approved under the 2005 EA Addendum, illustrated in Figure 6-1) crosses under Hurontario Street and under the W-N/S ramp to connect via an interim link to Centre View Drive. The alignment (in plan and profile) would be set so as to allow a future extension of the busway under Centre View Drive and into the City Centre area via a below-grade alignment immediately north of Rathburn Road.

Under the Base Case plan, Cooksville Creek would require minor works as part of the initial project, but the future extension of the busway would require significant creek works and flood protection. Approval of the plan by Credit Valley Conservation and under the Canadian Environmental Assessment Act relates to the ultimate plan, even though it would not be constructed as part of the current project.

6.1.2 Outstanding Issues

This crossing is physically constrained and very difficult to implement in a manner that avoids major traffic disruption on one of Mississauga's busiest arterials right at its Highway 403 interchange. Furthermore, the ultimate Cooksville Creek plan requires lowering the existing creek, creating a major new overflow culvert (cutting across both Rathburn Road and Hurontario Street), and altering the south end of its existing Highway 403 culvert. The busway would be below the regional storm flood line and would require floodproofing. The overall impact on capital cost is substantial – the initial phase alone would cost in the order of $12 M, with significant additional costs for the creek works and busway extension.

A secondary issue is the uncertainty surrounding the transit infrastructure strategy within the City Centre. The City is reviewing City Centre development plans, the alignment and nature of the Hurontario Rapid Transit line through the area, and the configuration and location of the City Centre station.

6.2 Alternative

The alternative is to bring the busway to an intersection with Rathburn Road immediately east of Hurontario Street, allowing buses to use Rathburn Road (in general traffic, via curbside bus lanes, or in a median busway) to connect to the City Centre station.

Regarding the busway crossing of Sherwoodtowne Boulevard, there exist two options. Firstly, the Sherwoodtowne Boulevard could be closed, thereby allowing the Busway to either run alongside Hurontario Street (at grade) and either use the existing W-N loop ramp to connect the busway to the south side of Rathburn Road, or connect directly to the north side of Rathburn Road.

Secondly, if Sherwoodtowne Boulevard is to remain open, the busway would cross Sherwoodtowne via a new grade separation, connecting to the north side of Rathburn Road.

6.3 Evaluation / Analysis

Avoiding the creation of a new crossing of Hurontario Street (as is required under the Base Case plan) in this extremely constrained and sensitive environment yields numerous benefits, first among them being a capital cost savings of in the order of $7 million. All the concerns about Cooksville Creek (from both drainage engineering and environmental impact perspectives) are eliminated. The feasibility and operational impact of the construction on Hurontario Street / interchange traffic also become moot points and avoid significant MTO concerns regarding construction staging.

Given the uncertainty surrounding the City Centre transit strategy, it may well be better to minimize commitment to a particular piece of infrastructure - specifically the grade-separated crossing of Hurontario Street envisioned in the EA-approved plan - in favour of a smaller investment that is more flexible and does not create preconditions on the future Hurontario scheme.

Of the various east side options, the one that maintains Sherwoodtowne Boulevard's access to Hurontario Street is preferred, in that Sherwoodtowne plays a notable role in the City Centre road network and does not overload other intersections with diverted traffic. It also maintains good two-way access to the business development east of Hurontario Street. The loop ramp connecting Rathburn Road with northbound Hurontario Street and Highway 403 is also a significant component of the City Centre transportation system. The additional cost for the structure and associated retaining walls is seen as an acceptable price to pay for maintenance of the Sherwoodtowne functionality.

Although the proposed plan would differ in terms of visual and noise impact from the previously approved plan, there are no Noise Sensitive land uses affected by the change. An office building immediately east of the alignment and south of Sherwoodtowne Boulevard is the only property affected by the visual and noise changes. Specialized construction techniques (e.g. drilled caisson retaining walls, rather than gravity or Mechanically Stabilized Earth walls) will be used to avoid impact on private property, and a site-specific landscaping plan will be used to mitigate the visual impact of the project.

Table 6-1: Analysis of Alternatives for the Hurontario Street Crossing

Analysis Factor	Base Case: Busway Under Hurontario Street to Centre View Drive (Figure 6-1)	Alternative: Busway Connection to Rathburn Road (Figure 6-2)
Natural Environment Impact	Requires future lowering of Cooksville Creek to accommodate ultimate busway extension through City Centre, and new major overflow culvert under Rathburn Road and Hurontario Street.	No impacts to Cooksville Creek or significant environmental features.
Cost (focus on major items that differ between alternatives)	Base Case: Structures: $7.9 M Retaining Walls: $6.3 M Cooksville Creek crossing: $0.8 M (plus future overflow pipe est. $2 M) Construction / staging: $0.3 M	Saves approximately $7 million over baseline alternative: Structures: $2.2 M Retaining Walls: $6.8 M Cooksville Creek crossing: $1.3 M (permanent solution) Construction / staging: $minimal

Analysis Factor	Base Case: Busway Under Hurontario Street to Centre View Drive (Figure 6-1)	Alternative: Busway Connection to Rathburn Road (Figure 6-2)
Drainage	Busway would be below the Regional storm flood line, requiring floodproofing.	No drainage concerns.
Traffic Operations	No significant impact.	New intersection on Rathburn Road has no significant impact; Rathburn Road / Centre View Drive intersection will operate at capacity in peak hours; bus priority on Rathburn Road is subject to future study.
Transit Operations	Buses access City Centre Transit Terminal via Centre View Drive / Rathburn Road.	Buses access City Centre Transit Terminal via Rathburn Road.
Construction Disruption	Difficult to stage without major and costly traffic disruption to Hurontario Street and the eastbound Highway 403 off-ramp.	Temporary closure of Sherwoodtowne Blvd required during construction of busway crossing.
Future Commitments	Plan is tied to a grade-separated treatment (ultimate) along Rathburn corridor; may not match Hurontario Rapid Transit interface and evolving City Centre development plans.	Plan is flexible and does not create preconditions on a Hurontario rapid transit interface or City Centre development program.
Property Impact	BRT facility contained within public right-of-way	BRT facility contained within public right-of-way; temporary construction easement required for building retaining walls adjacent to existing development south of Sherwoodtowne Boulevard
Noise	No Noise Sensitive Receivers	Adjacent properties are commercial (not designated as Noise Sensitive Receivers). Existing noise level 72.1 dBA (Leq); Future noise level with previously approved BRT plan 74.6 dBA; Future noise level with BRT 75.0 dBA. Mitigation not warranted (per MOE / MTO Noise Protocol).
Visibility	Busway contained within Highway 403 interchange; no significant visual impact on adjacent properties.	Busway in walled cut adjacent to 4210 Sherwoodtowne Boulevard; on-site landscaping and walls will screen ground floor occupants from busway; upper floor offices will look down on busway alongside Hurontario Street. Landscaping and varied visual treatment of wall along west side of busway will be used to “soften” visual impact.

6.4 Conclusions / Recommendations

It is recommended that the BRT grade separation at Hurontario Street be achieved by use of the existing Rathburn Road structure rather than by building new structures through the Highway 403 interchange. The busway alignment would shift to pass under

Sherwoodtowne Boulevard and along the east side of Hurontario Street to a new intersection with Rathburn Road. The proposed alternative is shown on Figure 6-2.

Recognizing that under the recommended plan, the BRT connection to the City Centre area will be different from that envisioned in the 2005 EA Addendum study, the City will investigate alternative transit operational options along Rathburn Road as part of a separate study, beyond the scope of the current Preliminary Design project.

The City will work with the owner of the adjacent office building at Sherwoodtowne Boulevard to develop a mutually acceptable structural and landscaping plan for the segment of busway adjacent to the property.

6.5 Environmental Effects and Commitments to Mitigation

The following section discusses environmental effects and commitments to mitigation only as they differ from those previously identified in the 1991 Environmental Assessment and the 2005 Environmental Assessment Addendum for the Mississauga Transitway.

6.5.1 Physical Environment

6.5.1.1 Roads

Operations

The following is a summary of the analysis and anticipated operational impacts of BRT in vicinity of Hurontario Street:

- Impacts assessed assuming that
    - median eastbound through lane on Rathburn Road from west of Centre View Drive to proposed BRT access immediately east of Hurontario Street is designated for buses only.
    - Eastbound through lanes at transit terminal entrance assumed to be realigned to match curb lanes at Centre View Drive to develop BRT lane adjacent to eastbound left-turn lane.
    - Eastbound BRT lane on Rathburn Road ends at proposed entrance to BRT right of way (to be signalized if necessary).
- Rathburn Road/Centre View Road intersection will operate at capacity with critical movement volume-to-capacity ratios between 0.96 and 0.98 and levels-of-service 'E' during the weekday morning peak hour. Afternoon peak hour operating conditions reflect volume-to-capacity ratios between 0.97 and 1.01 and levels-of-service 'D'.
- Westbound queue extending from Centre View Drive (95^{th} percentile length = 200 metres) approaches the proposed BRT access at Rathburn Road. BRT lane will allow buses to avoid this queue.
- Operational impacts at the proposed BRT access to Rathburn Road reflect peak hour volume-to-capacity ratios of up to 0.45 and levels-of-service 'C' or better.

Subsequent design work to relocate the existing southbound Hurontario Street to westbound Rathburn Road ramp away from the Rathburn / City Centre Drive intersection

is anticipated to provide significant relief to the intersection and improve the Level of Service and queuing situations. It should be noted, however, that the relocation of the southbound Hurontario Street ramp to Rathburn Road is not within the scope of work for the EA Addendum, and will be subject to a separate approvals process in the future City Centre Bus Rapid Transit study.

The following is a summary of the analysis and anticipated operational impacts of construction staging for the proposed BRT access to Rathburn Road:

- Impacts assessed assuming that Sherwoodtowne Boulevard access to northbound Hurontario Street will be temporarily closed.
- Current demand approaching Hurontario Street from Sherwoodtowne Boulevard will divert to northbound Central Parkway, northbound Hurontario Street via Robert Speck Parkway or Square One Drive and Confederation Parkway or Mavis Road via Rathburn Road.
- Operating conditions will improve at the Highway 403 W-N/S Ramp terminal intersection while impacts at the recently signalized Hurontario Street intersection with Square One Drive can be adequately accommodated.
- Operating conditions at the Hurontario Street intersection with Robert Speck Parkway will reach capacity during the afternoon peak hour with critical volume-to-capacity ratios rising from between 0.70 and 0.94 under existing conditions to between 0.92 and 0.99 under the temporary conditions. While the southbound left-turn level-of-service deteriorates to 'F' (from 'E' under existing conditions), all other levels of service and queuing characteristics remain similar to existing conditions.

The temporary condition would be expected to last in the order of four months. Details of the traffic analysis are presented in Appendix D.

Construction

The busway in this section crosses (and is grade separated at) Sherwoodtowne Boulevard. Traffic operation effects during the period of structure construction will be mitigated through conventional traffic management programs that maintain a level of traffic capacity and safety acceptable to the City of Mississauga. Detours, lane closures, temporary / overnight closures, special signals, lane markings, and signage will be used as appropriate. The motoring public will be advised of planned activities that may result in traffic disruption in advance (both temporally and physically). Bicycle and pedestrian access along Sherwoodtowne Boulevard will be maintained at all times. Capacity reduction will not be scheduled simultaneously on parallel adjacent roads. These mitigation measures will reduce impacts to a level acceptable to authorities and the public.

The adjacent or affected traffic signals will be re-timed as appropriate to accommodate the modified traffic patterns during the construction period. The duration of each disruption or lane closure will vary, but at most will occur over a single construction season (April – November). A program of traffic management that maintains capacity and safety will be developed in the Detail Design process.

In addition to the disruption associated with the above noted structure construction, corridor roads will be used by construction equipment, temporary construction access points will be implemented, and a substantial amount of truck traffic will be associated with the disposal of excess fill.

Most construction will, however, take place within the BRT right-of-way and will not impinge on or affect traffic operations on the adjacent or nearby roads.

Operation and Maintenance Effects

Once the BRT facility is in operation, there should be no special ongoing operational or maintenance effects on the road system or general traffic operations. The new structures will be added to the inventory of road structures in Mississauga and will follow conventional inspection, maintenance and rehabilitation schedules.

Significance

The construction of the busway structure will have a localized disruptive effect on roadway traffic. With the implementation of the above noted mitigation measures potential for adverse effects can be minimized and no significant residual effects should occur.

6.5.1.2 Utilities Within / Crossing Corridor

Pipelines

No buried pipelines are affected by the proposed alignment modifications at the Hurontario Street / Sherwoodtowne Boulevard area.

Other Utilities – Hurontario Crossing

Between Hurontario Street and Cawthra Road, the BRT corridor encounters MTO high mast light standards at both interchanges, along with power and communications lines related to the Ministry's Traffic Management System on Highway 403. One high mast light pole is on the busway alignment approximately 250m east of Hurontario Street and will be shifted. The power and communications lines along Highway 403 may need to be relocated; the need to do so will be confirmed in Detail Design.

There are no effects on Hydro One facilities at this location.

For discussion related to *Construction Effects, Operation and Maintenance Effects* and *Significance* of utility impacts, please refer to Section 5.5.1.2.

6.5.2 Natural Environment

6.5.2.1 Watercourse Crossings

The recommended alignment significantly reduces any impacts of the EA-approved alignment on Cooksville Creek. As previously noted, the watercourse is crossed on a new alignment where the Creek is already in an enclosed culvert. The proposed construction methodology for altering the Cooksville Creek twin cell box culvert is to work on one cell at a time while the other remains in use by the creek. In this manner, there will be no introduction of sediment or other potential contaminants.

6.5.2.2 Vegetation, Wetlands, and Wildlife

The BRT facilities in this area will result in the permanent removal of cultural meadow and associated habitat. However, the effect is limited given the common, tolerant nature of this vegetation community, habitat type and associated wildlife compliment.

The proposed busway alignment change will have no impact on significant vegetation. The only vegetation impacted will be that of aesthetic landscaping. Impacts to the Cooksville Creek wetland incurred under the previously approved alignment are eliminated.

6.5.2.3 Species of Conservation Concern and Species at Risk

The proposed changes to the approved plan / profile will not have any effect on species of concern / risk.

6.5.2.4 Stormwater Management

Section 5.5.2.4 discusses the *Potential Construction Effects, Hydraulic Criteria,* and *Stormwater Management Criteria* for the entire Mississauga Bus Rapid Transit Project. The following is a summary of the stormwater management plan associated with the recommended alternative for this area of the project.

The outlets that have been identified under existing conditions for the Hurontario / Rathburn study area include:

- Outlet 4 – Twin 1850 x 1000mm CSPA and Municipal Sewer; and

The outlet listed above will be utilized under proposed drainage conditions and the existing drainage regime will not be greatly altered under proposed conditions. Existing peak flow rates to the outlet will not be exceeded under proposed conditions. All the existing storm sewer outlets will be re-evaluated during the detail design stage for carrying capacity of the 100-year peak flood flows under the proposed development condition.

Enhanced water quality control will be provided for all new development.

The drainage/stormwater management scheme for this Study Area is illustrated in Figure 6-3.

6.5.2.5 Groundwater

The proposed change in busway profile and alignment will have the effect of reducing the groundwater issues associated with the previously approved alignment. The busway will be similar in elevation to the adjacent building foundation, and will be above the Rathburn Road and Cooksville Creek elevations, so little impact on groundwater is expected.

6.5.3 Socio-Cultural Environment

6.5.3.1 Archaeology

For potential impacts and proposed approaches to mitigate impacts for the entire project, please refer to Section 5.5.3.1.

6.5.3.2 Heritage

Compared to the approved plan, no additional adverse environmental effects to heritage resources are anticipated during this phase of the project.

6.5.3.3 Noise

There are no noise sensitive areas affected by the proposed busway alignment modification at Hurontario Street. The commercial building adjacent to the site is soundproofed against the noise currently generated by traffic on Hurontario Street, Rathburn Road, and Highway 403. The existing noise level at the face of the building (72 dBA daytime Leq) is expected to increase to 74.6 dBA in the future without the BRT project, and to 75.0 dBA with the proposed BRT plan. The impact of the BRT project on noise levels at the adjacent building is therefore seen as negligible.

6.6 Consultation with Property Owners and Developers

There was very little interest in this section of the EA Addendum exhibited during the public consultation process. The owner of the commercial building adjacent to the Hurontario / Sherwoodtowne site, however, indicated a number of concerns regarding the project, as summarized below. Resolution of any issues that arise is through the processes set out in the *Planning Act*. Table 6-2 summarizes the comments submitted by the owner and the responses provided by the City of Mississauga. Discussions between the City of Mississauga and the Owner have continued throughout the period following filing of the EA Addendum on June 12th, 2009, and will continue until a resolution of the Owner's reasonable concerns is achieved. A record of correspondence that has occurred between the City and the Owner following the filing of the EA Addendum is included in Section 11 of this report. The commitments made by the City to address the Owner's concerns are reflected in Table 10-1 of this report.

Table 6-2: Summary of Comments and Responses – Hurontario Site

Summary of Concerns Regarding BRT Project Modifications (Public Consultation: June 24 & 26, 2008)		
Concern Raised By:	**Comment**	**Response**
Business	"The proposal has given no regard to the huge expense I went to landscaping the city property at my expense and creating the bridge-like structures to invite walking traffic."	The busway would occupy public right-of-way. A pedestrian bridge is proposed to maintain the link between the private property and Hurontario Street. An extensive landscaping program would be applied, to screen the view of the busway from the private grounds.
Business	"It gives no consideration to how close the buses will be to my building and the extra noise and vibrations that will make it extremely difficult to keep my building leased and it will lower my net rent and drastically reduce the value of my building."	The distance between the top of the busway wall and the face of the building will be between 8 m and 11 m. This offset is within the typical range for street-facing office buildings in downtown areas. 4310 Sherwoodtown Boulevard sits within 7 m of Sherwoodtowne Boulevard (at grade).
Business	"It could easily affect the structure of my building and cause substantial structural	The busway walls will be formed of drilled caissons, which require little space and are designed to avoid impact on adjacent

	problems."	properties. A detailed pre-construction structural condition survey of the office building will be undertaken, to serve as a base line against which post-construction conditions may be compared.
Business	"I looked at the area and the city has lots of opportunities to route the buses under Hurontario that wouldn't disturb any existing structures"	The presence of the Highway 403 interchange and Cooksville Creek make it challenging to overcome technical constraints. There are in fact very few opportunities to cross Hurontario Street in the BRT corridor, and the opportunity to use the existing Rathburn Road structure is unique.
Business	"I have invested most of my net worth into this building and to have it threatened by the city who always indicated that the Rapid Transit would run along the North side of the 403, is just not acceptable."	The Mississauga Transitway alignment, as approved in 1993, is on the south side of Highway 403. The alignment is contained within public property designated for transportation functions and does not threaten any private property.
Business	"Alternatively, I would consider $8 million settlement as prepaid depreciation, with substantial engineered shoring at the city's expense to ensure no structural problems and a 100-year warranty as to future structural damage caused by the excavation so close to my building. Also, to have the route totally covered with the existing landscaping replaced about where it currently exists, above the new proposed bus route."	As noted above, the project does include drilled caisson walls as a means of avoiding any structural problems with the pre-existing building. The landscaping plan for the site (see Figure 6-4) screens the view of the busway from the building grounds. The architectural / landscaping treatment of the west wall of the Busway will reflect its visibility from offices on upper floors of the building. Financial considerations are not part of EA Addendum Review.
Post-filing Comments and Responses (June 2009-March 2010)		
Business	Suggested alternative route for the busway under the existing Hurontario Street / Highway 403 structure.	There is insufficient horizontal distance between the existing edge of pavement of the 403 ramp and the existing south bridge abutment to safely install a single BRT lane at the grade of the existing Highway 403 using the existing Hurontario bridge. Moving the alignment south to avoid the existing bridge results in a similar alignment to the proposed alignment in the 1992 EA. There are also vertical alignment challenges with going over the existing Highway 403 ramps and Cooksville Creek on the west side of Hurontario Street and connecting with Centre View Drive.
Business	Consider the feasibility of allowing cars to turn left onto Sherwoodtowne Blvd from southbound Hurontario Street. The City will also consider the opportunity to create a left-turn access into the property from eastbound Rathburn Road to be	The implementation of a southbound left turn on Hurontario Street to Sherwoodtowne Boulevard would be under the jurisdiction of the MTO and would be subject to their review and approval. The City will request the MTO provide comment on this alternative.

	implemented as part of the Transit improvements on Rathburn Road.	The City has reviewed the request for an eastbound left on Rathburn Road to access the parking lot at 4310 Sherwoodtowne Boulevard. Upon review, this alternative appears feasible as there is approximately 60m of storage and taper that could be provided to accommodate an east-bound left-turn lane. The City will work with the property owner to estimate how many motorists would utilize an eastbound left-turn movement as well as what vehicle queue length might be anticipated. The City will also need to further assess sight lines and traffic lane balance before a decision can be made.
Business	What is the proximity of closest proposed Rapid Transit bus stop on Rathburn Road	The walking distance from the main entrance of 4310 Sherwoodtowne to the BRT Station at Rathburn Road and City Centre Drive is approximately 400 metres (or a 5-minute walk). This is a typical guideline for walking distance to rapid transit stations.
Business	In a meeting of February 19, 2010, the property owner had expressed concern with respect to the proximity of the active roadway to the property line and whether or not there are any standards or policies which require a minimum offset from the active roadway to the property line within the right-of-way.	The City will provide information about actual and allowable setbacks to property and to building. The existing set back from the building to the property line will be maintained. There are no standards or policies which stipulate that a roadway must be offset from the property line within the right-of-way. City standards and policies are specific to the offset of buildings from the road right-of-way or property line and this is identified and confirmed through the site plan approval process.
Business	Concern of visual impacts to 4310 Sherwoodtowne Boulevard offices resulting from proximity of BRT.	The City will work with the property owner to develop a plan for landscaping including height (~7ft) and colour of visual barrier wall along the east side of the BRT retaining wall.
Business	Property Owner requests to install signage on the Hurontario side of the proposed visual barrier wall.	The City is committed to continue working with the property owner to determine optimum signage location. The City will also review opportunities for signage along the BRT corridor.
Business	Concern regarding landscaping impacts and the relocation of the existing pylon sign at 4310 Sherwoodtowne Boulevard	The City will work with the property owner to confirm the proposed landscaping plan for the BRT and identify the most appropriate place for relocation of the existing pylon sign.
Business	Request for formal communications plan to continue consultation throughout detailed design / construction	The City will prepare a communications plan to continue dialogue with the property owner prior to and during construction.

	phase of project.	
Business	Concern regarding access to 4310 Sherwoodtowne Boulevard during the construction of the BRT structure crossing Sherwoodtowne Boulevard	The City will identify signage and detour requirements during the short-term closure of Sherwoodtowne Boulevard for the construction of the new BRT bridge.
Business	Concern regarding potential for structural impacts as a result of BRT construction in close proximity to underground parking garage at 4310 Sherwoodtowne.	The City will be mitigating this issue through the choice of retaining wall type and construction method of utilizing drilled caissons as to avoid impact on your property. To address the concerns on foundations, the City will be retaining a qualified firm to undertake a pre-condition survey inspection, monitor impacts during construction and perform a post-construction inspection. During construction, the City will have inspectors on-site to manage and monitor construction activity and vibration and make necessary adjustments to construction procedures to avoid impact. Additionally, the City has no objection to a peer review of the construction method and monitoring program proposed. The City would be willing to facilitate the peer review.
Business	Concern regarding the relocation of the garbage bin required for the construction of the Cooksville Creek culvert modification.	The City is committed to continue working with the property owner to determine the details of the garbage collection bin relocation.
Business	Concerns regarding potential for noise and air quality impacts. Request for peer reviews of technical studies carried out as part of the BRT project, including the noise assessment and the air quality assessment.	Copies of the noise and air quality impact assessment reports were provided to the property owner. The City is committed to continue working with the property owner to facilitate the peer review process and is committed to dealing with any recommendations stemming from the peer review process.

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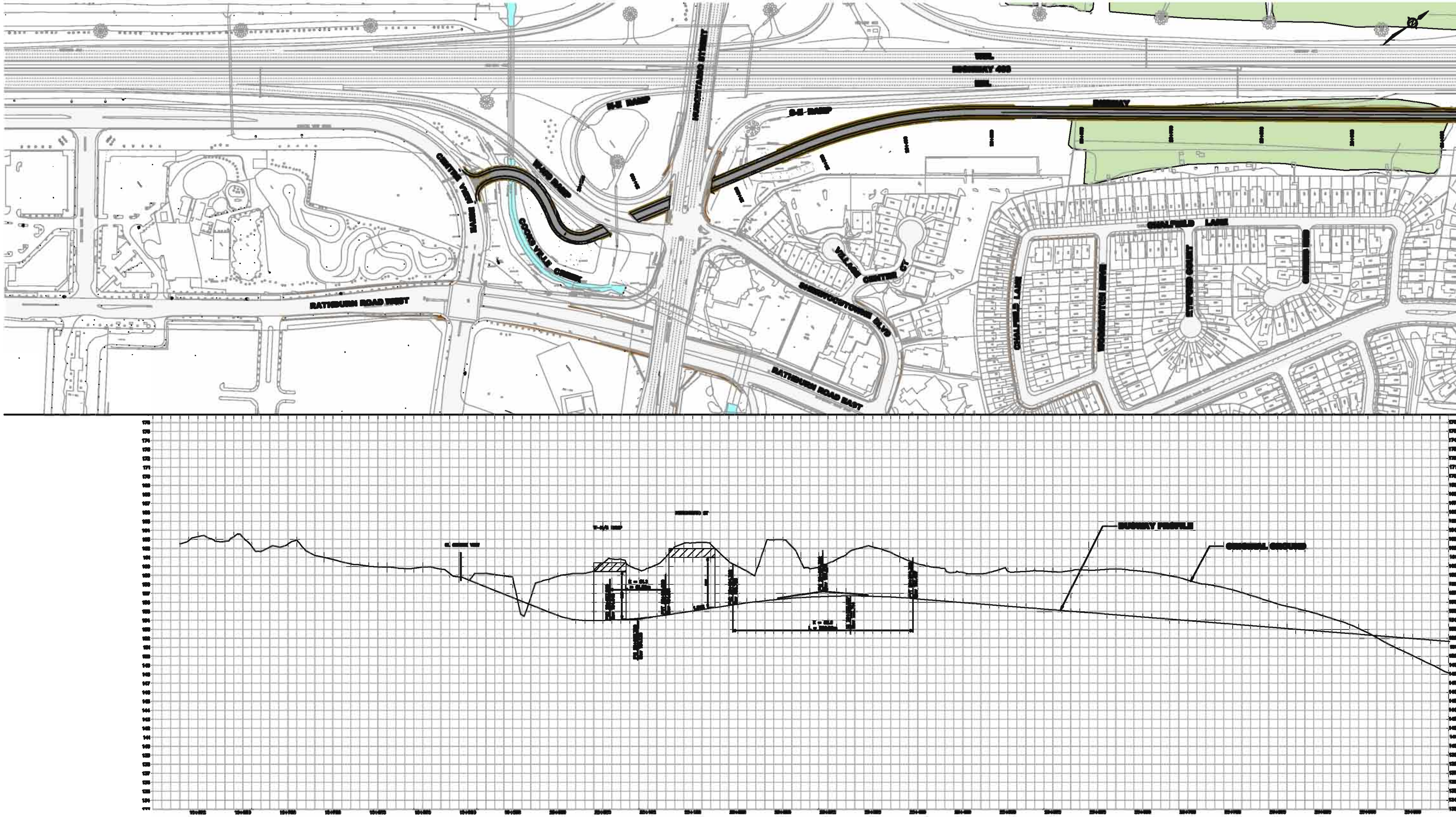


McCORMICK RANKIN CORPORATION

MISSISSAUGA Transportation and Works

GO Transit

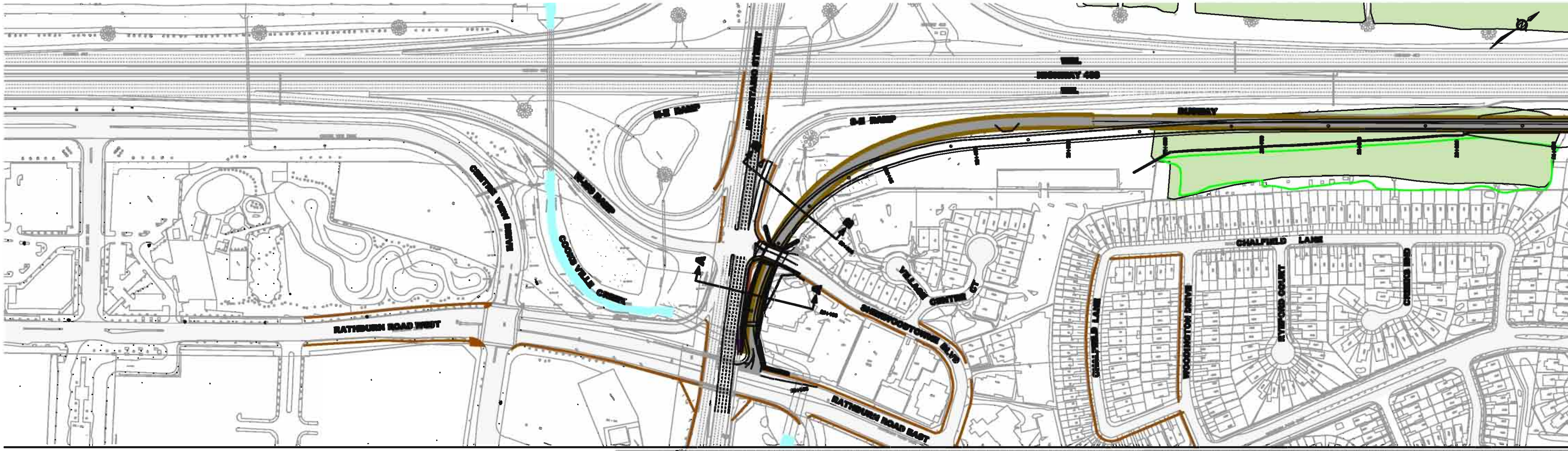
DATE: September 2009

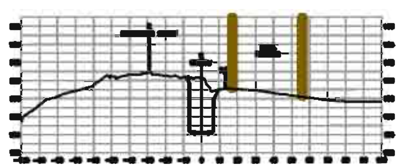
SCALE: 1:4,000

MISSISSAUGA BRT PROJECT
ENVIRONMENTAL ASSESSMENT ADDENDUM

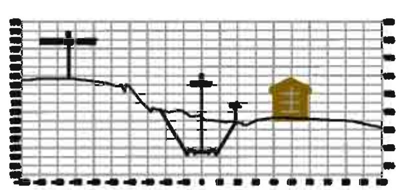
HURONTARIO STREET / RATHBURN ROAD
BASE CASE (EA ADDENDUM) BUSWAY ALIGNMENT

FIGURE 6-1

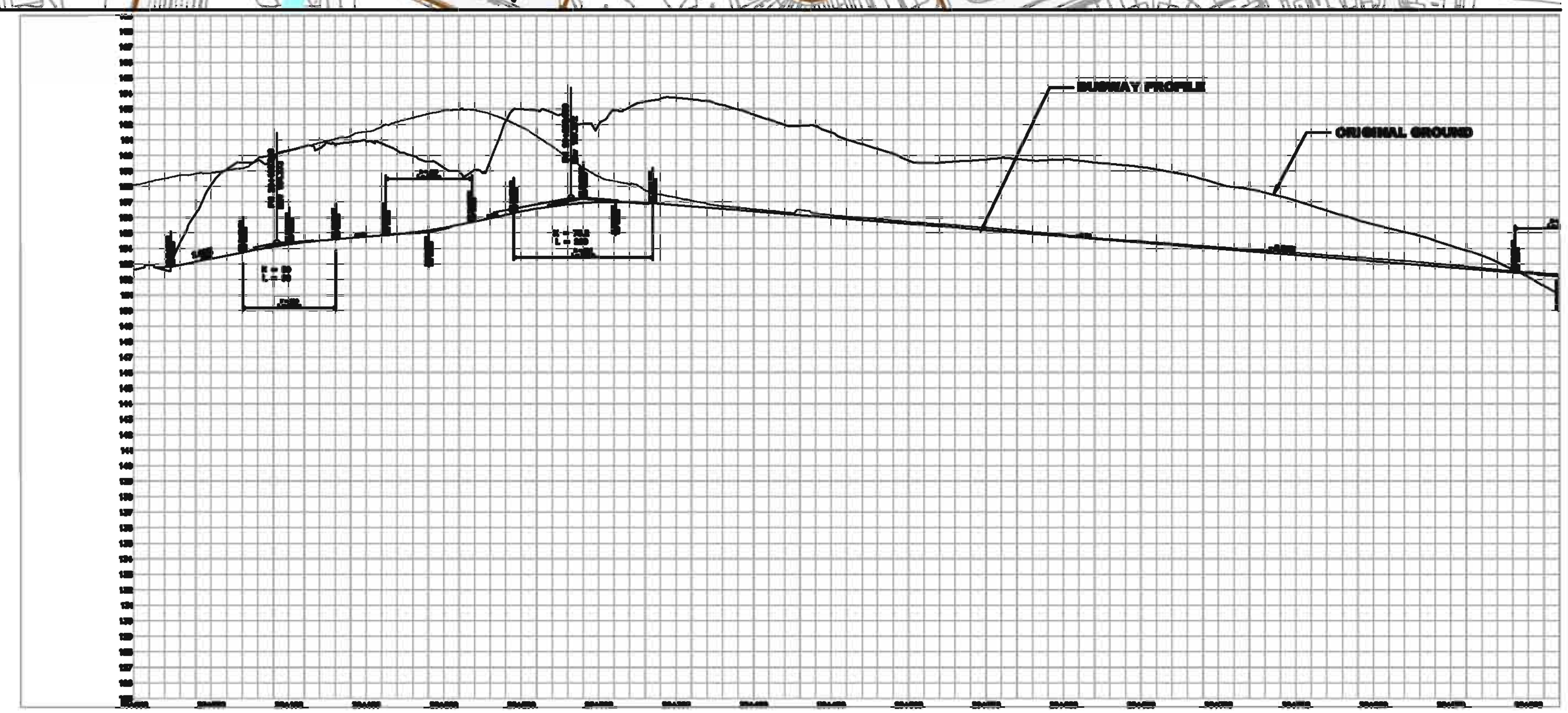




SECTION A-A



SECTION B-B



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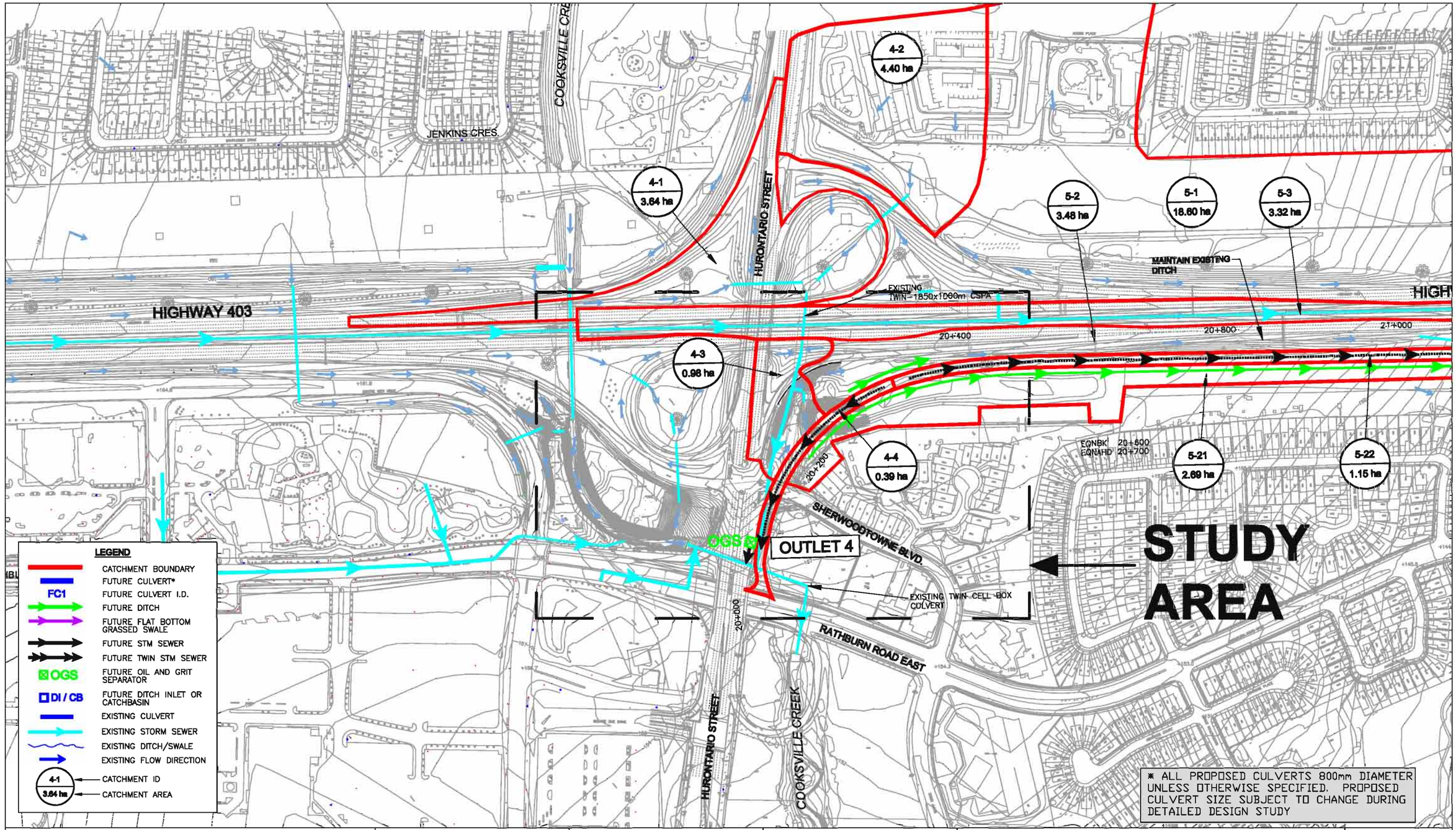
DATE: September 2009

SCALE: 1:4,000

MISSISSAUGA BRT PROJECT
ENVIRONMENTAL ASSESSMENT ADDENDUM

HURONTARIO STREET / RATHBURN ROAD
RECOMMENDED ALTERNATIVE ALIGNMENT

FIGURE 6-2



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DATE: May 2009

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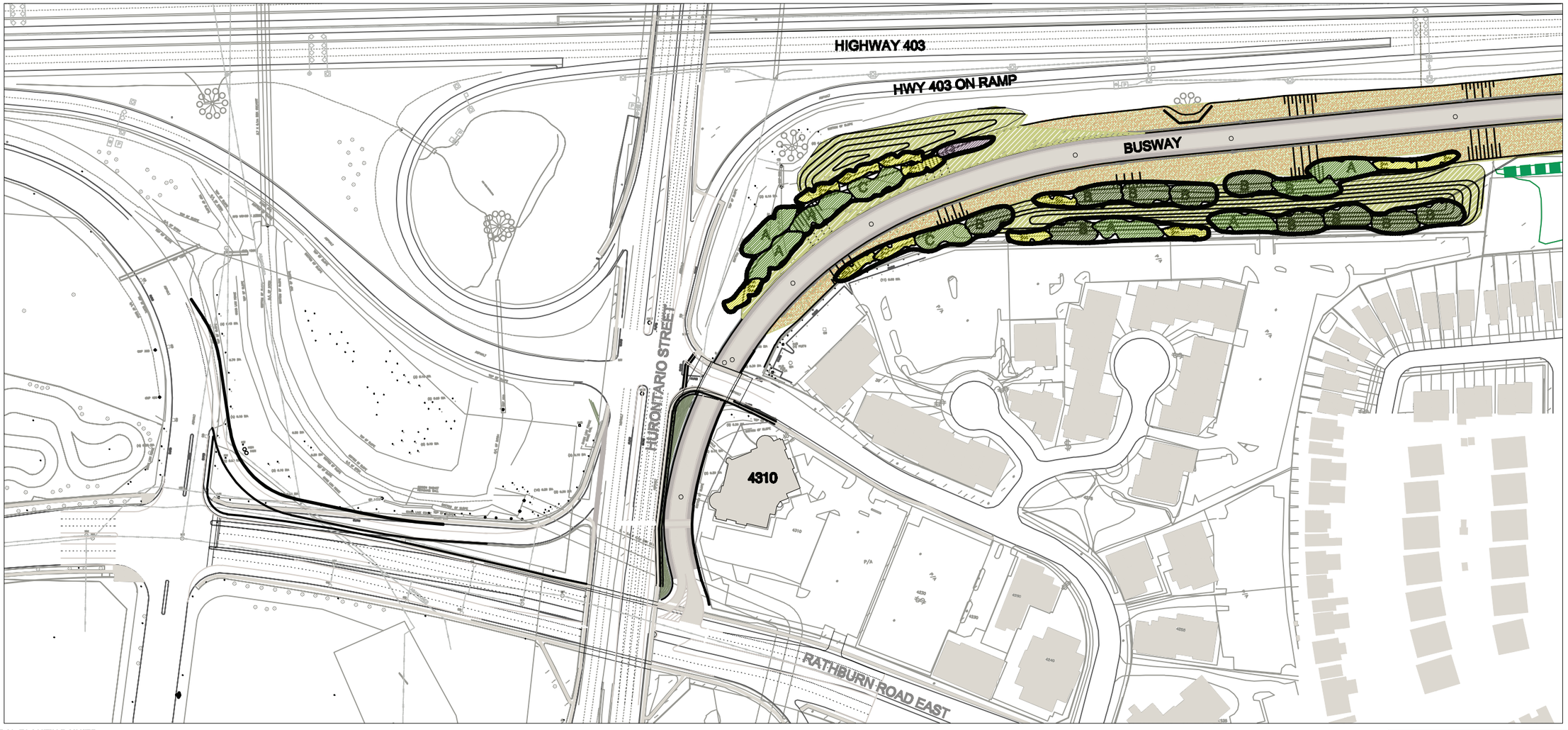
MISSISSAUGA BRT PROJECT
ENVIRONMENTAL ASSESSMENT ADDENDUM

HURONTARIO STREET / RATHBURN ROAD
FUTURE DRAINAGE AND STORMWATER MANAGEMENT

FIGURE
6-3



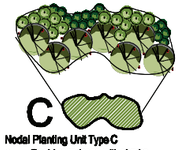
NODAL PLANTING UNITS

A

Nodal Planting Unit Type A
- Mixed deciduous and coniferous trees with shrubs
- Provides perforated visual screen to soften views to and from busway corridor
- Plant selection to be drought tolerant, salt resistant and to provide multi-seasonal aesthetic interest

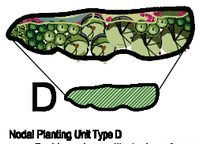
B

Nodal Planting Unit Type B
- Coniferous trees with shrubs and perennials
- Provides continuous visual buffer / screening
- Plant selection to be drought tolerant, salt resistant and to provide multi-seasonal aesthetic interest



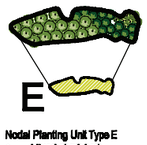
C

Nodal Planting Unit Type C
- Deciduous trees with shrubs
- Perforated visual buffer softens views to and from BRT
- Plant selection to be drought tolerant, salt resistant and to provide multi-seasonal aesthetic interest



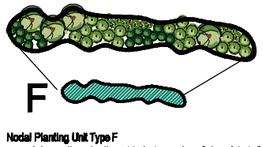
D

Nodal Planting Unit Type D
- Deciduous trees with shrubs and perennials
- Plants to be drought tolerant, salt resistant and provide multi-seasonal aesthetic interest
- Locate at approach / departure of stations to create visual signal to passengers and pedestrians the proximity to a station



E

Nodal Planting Unit Type E
- Mixed shrub bed
- Provides continuous low level visual buffer / screening
- Plant selection to be drought tolerant, salt resistant and to provide multi-seasonal aesthetic interest

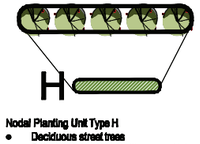


F

Nodal Planting Unit Type F
- Interception planting strip between top of slope (start of run-off) and other Planting Units
- Composed of tightly knitted suckering shrubs to stabilize slope and to take brunt of air-borne salt spray
- Species to include hardy dogwoods, willow, and sumac

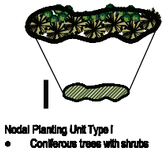
G

Nodal Planting Unit Type G
- Mixed perennials, wildflowers, ornamental, and or native grasses
- To provide seasonal colour and interest
- Ensure species are drought tolerant and salt resistant



H

Nodal Planting Unit Type H
- Deciduous street trees
- Select species with multi-seasonal interest
- Where adjacent to overhead utilities, select small to medium sized species
- Plant selection to be drought tolerant and salt resistant



I

Nodal Planting Unit Type I
- Coniferous trees with shrubs
- Provides visual buffer / screening
- For areas where space is limited but a dense visual screen is required
- Plant selection to be drought tolerant, salt resistant and to provide multi-seasonal interest

LEGEND

Deciduous Trees
Coniferous Tree
Deciduous Shrubs
Perennials

GROUND COVER ZONES
- SOD
- LOW MOW MIX
- NO MOW MIX
- SLOPE MIX
- SWALE SEED MIX

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Date: MARCH 2009

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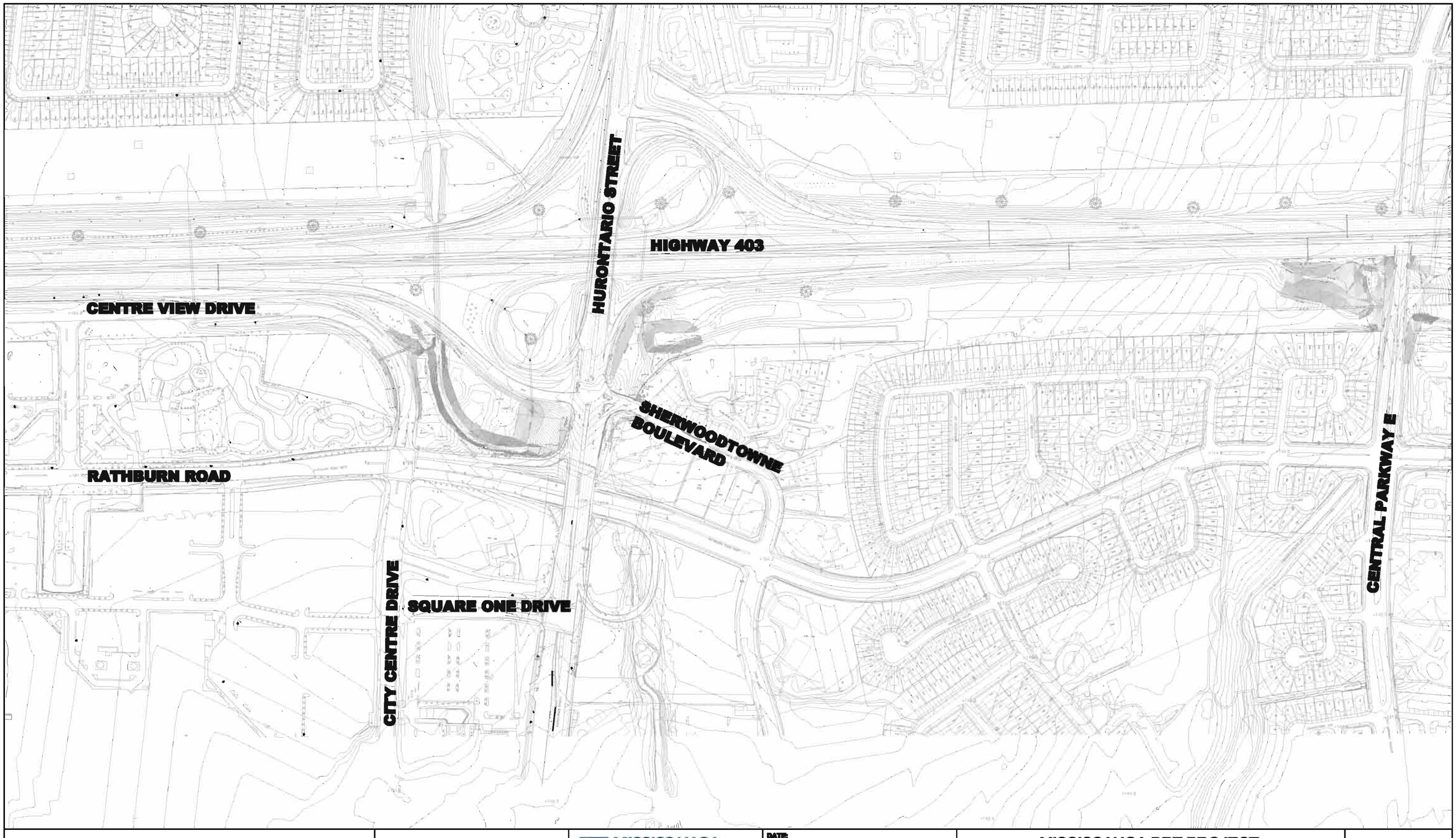
MISSISSAUGA BRT PROJECT
ENVIRONMENTAL ASSESSMENT ADDENDUM

CONCEPTUAL LANDSCAPING PLAN
HURONTARIO SITE

FIGURE
6-4



	MRC McCORMICK RANKIN CORPORATION	MISSISSAUGA Transportation and Works Transit	DATE: August 2009 SCALE: N.T.S.	MISSISSAUGA BRT PROJECT ENVIRONMENTAL ASSESSMENT ADDENDUM HURONTARIO STREET / RATHBURN ROAD ROAD NETWORK KEY PLAN	FIGURE 6-5

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7. TOMKEN GRADE SEPARATION

7.1 Need & Justification / Rationale

7.1.1 Base Case BRT Plan

The Base Case plan (i.e. plan approved under the 2005 EA Addendum) has the busway passing under Tomken Road, with a station at the crossing. Tomken Road remains at its existing grade.

7.1.2 Outstanding Issues

The sump created by the busway passing under Tomken Road is at a lower elevation than nearby Little Etobicoke Creek, triggering the need to provide a permanent pumping station (cost in the order of $2.5 M plus ongoing operational costs) and to floodproof the station so that the regional storm level at Little Etobicoke Creek does not cross the busway and enter the station.

The need to minimize the amount of excavation throughout the BRT East project (due to cost, rock exposure, retaining wall requirements, and disposal of excavated material) suggests that passing under Tomken Road would only exacerbate that problem.

The busway at Tomken is immediately adjacent to a set of large gas and oil pipelines, with Eastgate Parkway to the south. Being in a deep excavation amidst those constraints will require significant retaining walls and have limited opportunity for open slope grading and landscaping.

Crossing under Tomken Road while maintaining traffic will require 2- or 3-stage construction, yielding additional cost and disruption to traffic.

7.2 Alternative

It is proposed to lift the busway over Tomken Road. The busway alignment would not change. The station platforms would be shifted to the west side of Tomken Road, to allow for the grade down from the structure to the nearby Little Etobicoke Creek crossing.

Recognizing the need to continue to protect the residential community south of Eastgate Parkway from noise and visual intrusion, the existing berm south of Eastgate Parkway would be extended and supplemented by visual screening / landscaping along the north part of Tomken Road. This would screen the view of the tops of double decker buses along the busway from the second-floor windows of south side residences (as shown on Figure 7-2).

7.3 Evaluation / Analysis

Taking the Busway over Tomken Road would alter the station configuration, avoid the need for a pedestrian bridge at the station, eliminate the drainage sump and the need for a pumping station, floodproof the station, eliminate a substantial amount of excavation, provide a site to use excess material from elsewhere in the project, avoid pipeline impact,

reduce wall requirements, simplify construction staging, and overall result in a net cost reduction of in the order of $7 million.

The visual impact of the change on south side residents can be eliminated through berm expansion.

The elevated station would be considerably better positioned than the below-grade facility to create a visual landmark for the BRT project in the corridor, as the site would be clearly visible along Eastgate Parkway from Cawthra Road to Dixie Road, and from the north and south approaches on Tomken Road.

Table 7-1: Analysis of Alternatives for Tomken Road Crossing

Analysis Factor	Base Case (Busway Under Tomken Road)	Alternative (Busway Over Tomken Road)
Cost	Guideway: $1.4 M Structure: $0.7 M Retaining Walls: $4.6 M Utilities: $5.8 M Station: $3.7 M Miscellaneous: $1.5 M Total $17.7 M	Guideway: $1.3 M Structure: $0.7 M Retaining Walls: $3.5 M Utilities: $0.5 M Station: $3.2 M Miscellaneous: $1.6 M Total $10.9 M
Impact to Utilities	Retaining wall needed to protect parallel pipelines	Reduced retaining wall requirements to avoid parallel pipelines
Drainage	Pumping station required at Tomken Road crossing sump. Below-grade station would require floodproofing.	Gravity drainage to existing ditches and Little Etobicoke Creek.
Construction Issues	Detours and lengthy / costly two-stage structure construction required for Tomken Road crossing. Below-grade operation requires significant rock excavation and relocation for disposal.	Tomken Road structure can be built with temporary road closures during bridge-deck implementation. Above-grade construction offers opportunity to dispose of excess excavated material from busway construction elsewhere in corridor.
Community **Visual Impact**	Station structure visible from a few houses. See Fig. 7.1	Busway station and top of moving buses will be visible from some south side residences. Visual barrier treatment (including increased berm and landscaping) required as mitigation. See Fig. 7.2
Noise Impact	Daytime noise level (Leq) in dBA for two nearby sites (Re14, Re15) Existing 53.6/52.9 Future without BRT 54.5/54.0 Future with BRT 55.5/56.6 Impact +1.0/+2.6 Eastgate Parkway noise remains dominant noise source in corridor; revised busway grade has insignificant impact.	Daytime noise level (Leq) in dBA for two nearby sites (Re14, Re15) Existing 53.6/52.9 Future without BRT 54.5/54.0 Future with BRT 56.2/54.1 Impact +1.7/+0.1 Eastgate Parkway noise remains dominant noise source in corridor; revised busway grade has insignificant impact.
Urban Design	Station has low-key presence in corridor	Station more visible to users and motorists; greater opportunity to highlight BRT. Greater visibility improves passenger security.

7.4 Conclusions / Recommendations

The proposed alternative is to lift the busway over Tomken Road. The station location and busway alignment would not change. The recommended alternative is shown on Figure 7-2.

7.5 Environmental Effects and Commitments to Mitigation

The following section discusses environmental effects and commitments to mitigation only as they differ from those previously identified in the 1991 Environmental Assessment and the 2005 Environmental Assessment Addendum for the Mississauga Transitway.

7.5.1 Physical Environment

7.5.1.1 Roads

The construction of the Busway structure over Tomken Road will have a temporary localized disruptive effect on roadway traffic. These effects will be mitigated through conventional traffic management programs that maintain a level of traffic capacity and safety acceptable to the City of Mississauga. Lane closures, temporary / overnight closures, signal timing revisions, lane markings, and signage will be used as appropriate. The motoring public will be advised of planned activities that may result in traffic disruption in advance (both temporally and physically). Bicycle and pedestrian access along Tomken Road will be maintained at all times. These mitigation measures will reduce impacts to a level acceptable to authorities and the public.

A program of traffic management that maintains capacity and safety will be developed in the Detail Design process.

In addition to the disruption associated with the above noted structure construction, corridor roads will be used by construction equipment, temporary construction access points will be implemented, and a substantial amount of truck traffic will be associated with the disposal of excess fill.

Most construction will, however, take place within the BRT right-of-way and will not impinge on or affect traffic operations on the adjacent or nearby roads.

Operation and Maintenance Effects

Once the BRT facility is in operation, there should be no special ongoing operational or maintenance effects on the road system or general traffic operations. The new structure will be added to the inventory of road structures in Mississauga and will follow conventional inspection, maintenance and rehabilitation schedules.

Significance

The construction of the busway structure will have a localized disruptive effect on roadway traffic. With the implementation of the above noted mitigation measures, the potential for adverse effects can be minimized and no significant residual effects should occur.

7.5.1.2 Utilities Within / Crossing Corridor

Pipelines

Between Cawthra Road and Tomken Road, the busway will cross two Trans-Northern Pipelines at-grade. No utility relocation is required.

Avoiding the need to shift or otherwise affect pipelines is a key station design parameter, as is maintaining the ability for the pipeline owner to access, inspect, and maintain the pipeline without disrupting busway operations to an unacceptable degree. Ongoing liaison with the pipeline owners through the Detail Design stage will be required to satisfy their needs.

Tomken Road

There are no effects on Hydro One facilities at this location. Bell telephone lines should remain as is, although individual poles may need to be shifted in some station areas. No significant effects are expected to the electrical services and control boxes provided at the signalized intersection.

For discussion related to *Construction Effects, Operation and Maintenance Effects* and *Significance* of utility impacts, please refer to Section 5.5.1.2.

7.5.2 Natural Environment

7.5.2.1 Watercourse Crossings

The impacts to the Little Etobicoke Creek crossing under the recommended alternative at Tomken Road are not significantly different than those associated with the previously-approved plan. However, further capacity evaluation will be undertaken for appropriate measures, if necessary, during detail design stage in light of altered site geomorphology.

7.5.2.2 Vegetation, Wetlands, and Wildlife

The BRT facilities in this area will result in the permanent removal of cultural meadow and associated habitat. However, the effect is limited given the common, tolerant nature of this vegetation community, habitat type and associated wildlife compliment.

The two wetland pockets located on the east and west sides of Tomken Road, south of Eastgate Parkway will be removed with the expansion of the earthen berm. The expansion of the berm is being undertaken to mitigate social / cultural effects of the BRT alignment and provide additional screening to adjacent residences. These features are very small (both are less than 0.2 ha) and are comprised of common wetland vegetation species with non-native/invasive species present. The effect of removal of these wetland pockets is considered negligible. In accordance with the practice for the whole BRT project, the City will implement its typical vegetation replacement and enhancement protocols for both woody vegetation and the wetland pockets removed by the project, based on CVC and/or TRCA's guidelines, with consideration of land ownership and usage, including utilities.

The proposed changes to the busway alignment crossing Tomken Road will not affect the amount of vegetation impacted compared to the approved plan. The increase in grade will, however, eliminate groundwater drawdown and site drainage concerns.

7.5.2.3 Species of Conservation Concern and Species at Risk

The proposed changes to the approved plan / profile will not have any effect on species of concern / risk.

7.5.2.4 Stormwater Management

Section 5.5.2.4 discusses the *Potential Construction Effects, Hydraulic Criteria,* and *Stormwater Management Criteria* for the entire Mississauga Bus Rapid Transit Project. The existing outlets for the Tomken Road / Eastgate Parkway study area are:

- Outlet 8 – Little Etobicoke Creek West; and
- Outlet 9 – Little Etobicoke Creek East.

The outlets listed above will be utilized under proposed drainage conditions and the existing drainage regime will not be greatly altered under proposed conditions. Existing peak flow rates to each outlet will not be exceeded under proposed conditions.

Existing peak flow rates to the wet pockets on either side of Little Etobicoke Creek will not increase under proposed conditions. Runoff volumes to the wet pockets on either side of Little Etobicoke Creek will increase under proposed conditions; however measures can be taken to prevent this increase if required.

Construction of the approved busway plan would require floodproofing (berms) to protect the below-grade Tomken Station from overflow of Little Etobicoke Creek. Construction of the proposed "over" option will require installation of 4 new culverts and relocation of several ditches to maintain existing drainage characteristics.

The proposed extension of the Little Etobicoke Creek crossing structure will have a negligible impact on flood levels during the 100 year and Regional storm events; this impact does not vary whether the BRT crosses over or under Tomken Road.

7.5.2.5 Groundwater

The proposed change in busway profile will have the effect of reducing or eliminating the groundwater issues associated with the previously approved alignment.

7.5.3 Socio-Cultural Environment

7.5.3.1 Archaeology

For potential impacts and proposed approaches to mitigate impacts, please refer to Section 5.5.3.1.

7.5.3.2 Heritage

Compared to the approved plan, no additional adverse environmental effects to heritage resources are anticipated during this phase of the project.

7.5.3.3 Noise

Points of reception are considered any point on the premises of a person where sounds originating from other than the premises are received. For the purposes of this study, two

representative locations were selected to represent all the closest points of reception to the BRT system which may potentially be affected by noise. The receptor heights were considered as typical first and second storey levels in dwelling units when calculating the BRT system lane and stations sound levels, respectively. The following gives a brief description of the selected receptors:

- Re14 House #4402 Lee Drive, south of Eastgate Road between Cawthra Road and Dixie Road.
- Re15 House #4404 Shelby Circle, south of Eastgate Parkway between Cawthra Road and Tomken Road.

For the Tomken Station area, the potential noise impact was assessed at the 2nd storey windows on the most exposed building façades of the residential dwellings and is based on comparing the future (worst case scenario) BRT station noise levels with the higher of the existing highway/roadway ambient noise level or the minimum exclusionary sound level limits set by the MOE for urban Class 1 areas similar to the one under consideration.

The data included in Table 7-2 shows that the maximum calculated excess future sound level over the ambient is 1.7 dBA, i.e. acoustically insignificant and is within the maximum 5 dBA excess criterion.

Table 7-2: Noise Analysis – Tomken Road

Receptor	Street	Existing Sound Levels (dBA)	Future Sound Levels – No BRT (dBA)	Future Sound Levels with BRT – approved grade per EA (dBA)	Future Sound Levels with BRT – proposed grade per EA Addendum (dBA)
R14	Lee Dr	53.6	54.5	55.0 (+0.5)	56.2 (+1.7)
R15	Shelby Cr.	52.9	54.0	54.8 (+0.2)	54.1 (-0.7)

Impact Assessment Rating :
< 3 dB change : Insignificant
>3 to < 5 dB change : Noticeable
> 5 to < 10 dB change: Significant
> 10 dB change : Very Significant

Criteria for mitigation: >5 dB change

In accordance with the applicable sound level criteria, no noise mitigation is warranted since the noise impact due to bus movements along the modification to the busway profile at the Tomken Station site is predicted to be less than 5 dBA. The modification of the busway profile, in combination with the expanded berms on the south side of Eastgate Parkway, does not result in a significant noise impact to adjacent residential properties, nor does it significantly differ from the noise levels associated with the previously approved plan and profile. The project does, however, result in an increase in noise level at site Re14 to above the MOE/Region/City day-time Leq 55 dBA objective.

7.6 Consultation with Property Owners and Developers

During the public consultation process for this area, little interest was exhibited by the public, with the exception of a single adjacent resident. The following table summarizes the resident's concerns and responses provided.

Table 7-3: Summary of Comments and Responses – Tomken Road Site

Summary of Concerns Regarding BRT Project Modifications (Public Consultation: June 24 & 26, 2008)		
Concern Raised By:	**Comment**	**Response**
Resident	The resident was concerned about traffic impacts on Tomken Road, and the potential noise and visual impacts associated with the proposed modifications.	Representatives from the project team advised that on-street parking would be prohibited, and that a separate parking lot would be provided via expanding the existing parking lot at the hockey arena immediately north of the station site. In addition, the existing berm between Eastgate Parkway and the residential development to the south will increased to mitigate noise and visual impacts of the proposed modification to the busway profile.

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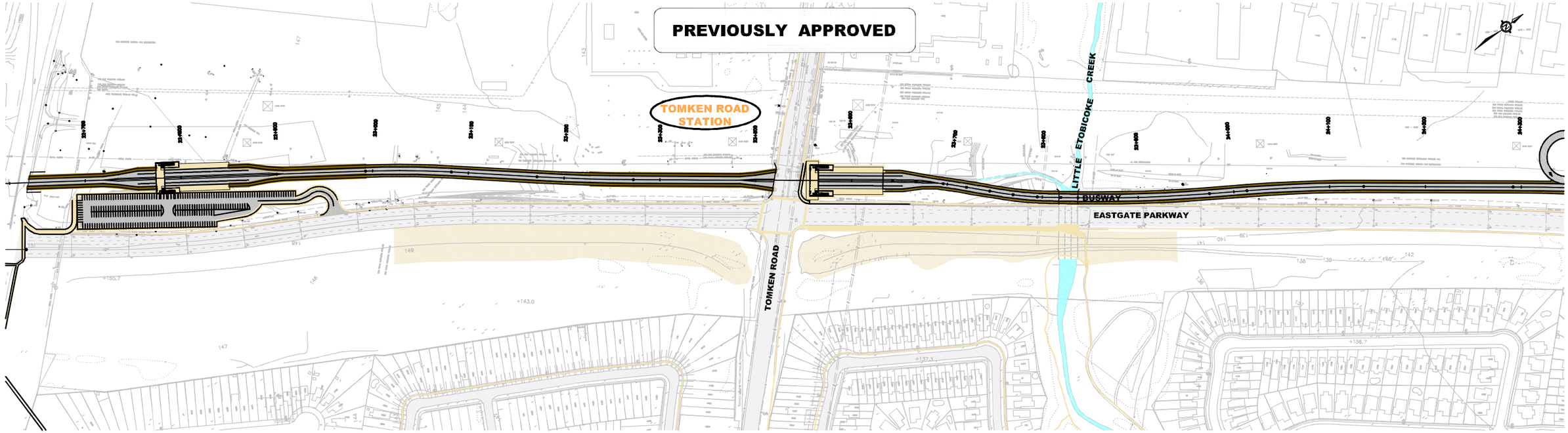
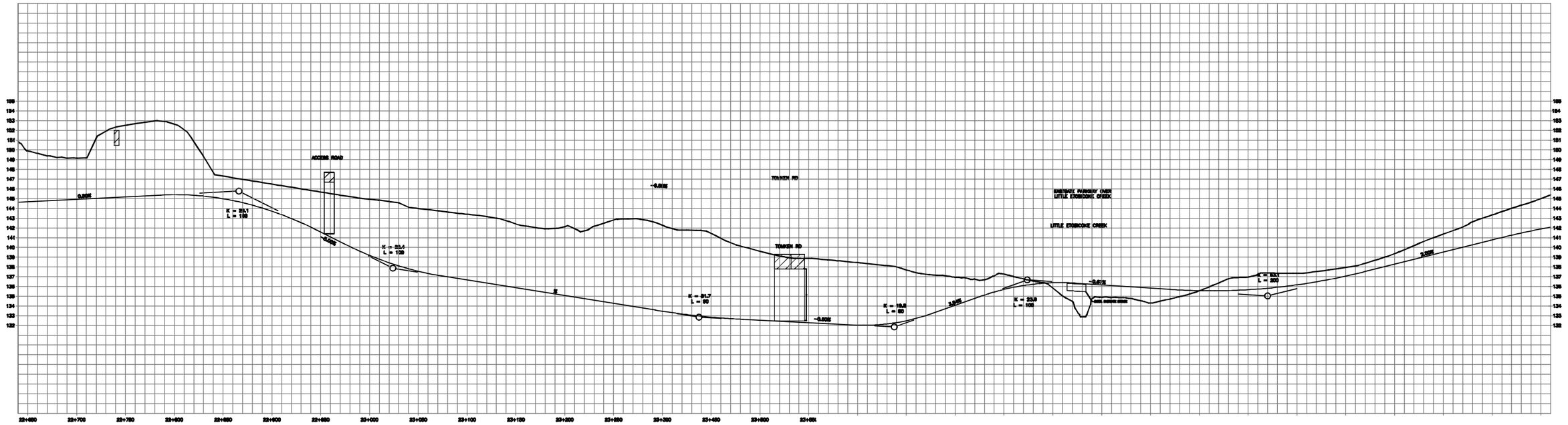




	MRC McCormick Rankin Corporation	MISSISSAUGA Transportation and Works	DATE: September 2008	MISSISSAUGA BRT PROJECT ENVIRONMENTAL ASSESSMENT ADDENDUM	FIGURE 7-1
		Transit	SCALE: N.T.S.	BASE CASE BUSWAY ALIGNMENT - UNDER TOMKEN	

PROPOSED

TOMKEN ROAD STATION

A

A

B

B

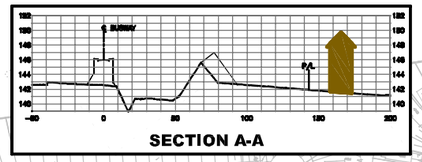
TOMKEN ROAD

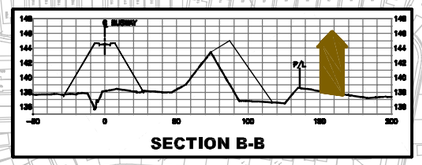
LITTLE ETOBICOKE CREEK

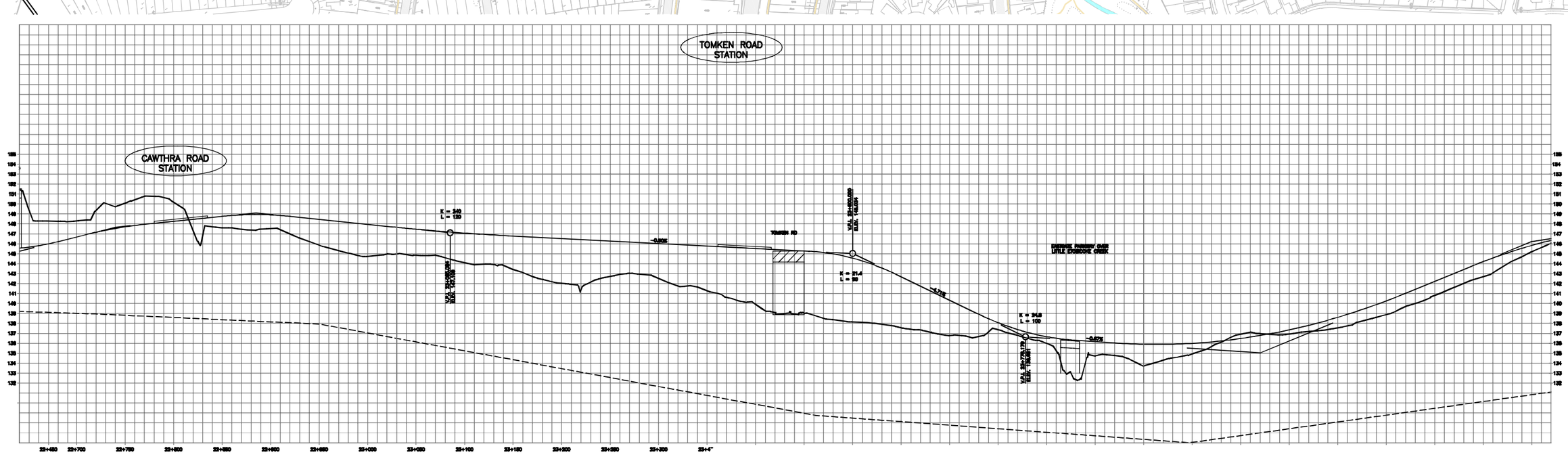
BUSWAY

EASTGATE PARKWAY

FUTURE PARKING







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DATE: September 2008

SCALE: N.T.S.

MISSISSAUGA BRT PROJECT
ENVIRONMENTAL ASSESSMENT ADDENDUM

RECOMMENDED ALTERNATIVE BUSWAY ALIGNMENT - OVER TOMKEN

FIGURE 7-2

STUDY AREA

7-1 51.9 ha
7-2 2.78 ha
7-3 0.76 ha
7-4 2.25 ha
8-1 1.59 ha
8-3 1.45 ha
8-10 0.44 ha
8-8 0.87 ha
8-7 1421 ha
8-4 2.91 ha
8-2 0.45 ha
8-6 1.77 ha
8-5 0.18 ha
9-1 0.08 ha
9-2 0.44 ha
7-5 2.54 ha
8-9 0.66 ha
9-42 5.04 ha

LIMIT OF REGULATED AREA
FEWSTER DRIVE
LITTLE ETOBICOKE CREEK
REDIRECT EXISTING DITCH
STORM SEWER SIZED TO CONVEY 100-YEAR EVENT FROM SAG TO SWM FACILITY
INSTALL NEW 900mm BOX CULVERT TO MAINTAIN DRAINAGE
INSTALL ADEQUATE NUMBER OF CB'S AT SAG OF BRT TO CAPTURE 100-YEAR EVENT
CONNECT EXISTING TOMKEN STM TO PROPOSED STM
SWM QUALITY AND QUANTITY FACILITY (OUTLET TO EXISTING WETLAND)
OUTLET SEWER TO EXISTING DITCH AND LITTLE ETOBICOKE CREEK
RELOCATE EXISTING EASTGATE DITCH TO NORTH OF BRT
900mm CIRCULAR CULVERT
SPREADER SWALE
L. ETOB. WEST SWM
L. ETOB. EAST SWM
OUTLET 9
OUTLET 8
OUTLET 7
PARKING LOT STORAGE
CAWTHRA ROAD STATION (PARKING LOT)
EASTGATE PARKWAY
UPGRADE EXISTING DITCH TO FBGS AND PROVIDE ADDITIONAL STORAGE IF REQUIRED
NEW SEWER REPLACES EXISTING DITCH AND DIRECTS EASTGATE PKWY FLOWS TO FBGS
QUALITY CONTROL OF RUNOFF WILL BE PROVIDED BY OIL AND GRIT SEPARATOR. QUANTITY CONTROL WILL BE PROVIDED ON-SITE (PARKING LOT).
SUPERPIPE IN BRT
INSTALL NEW LATERAL SEWERS FROM EXISTING CBs ON EASTGATE TO DITCH NORTH OF BRT
MAINTAIN EXISTING DITCH
TOMKEN ROAD
FC13 FC14 FC15 DL DI OGS
EQNBK 22+478.94 EQNAHD 22+700
EQNBK 23+300 EQNAHD 23+400
EQNBK 24+300 EQNAHD 24+400
22+800 23+000 23+200 23+600 23+800 24+000 24+200 0+800 22+400

LEGEND

- CATCHMENT BOUNDARY
- FUTURE CULVERT*
- FC1 FUTURE CULVERT I.D.
- FUTURE DITCH
- FUTURE FLAT BOTTOM GRASSED SWALE
- FUTURE STM SEWER
- FUTURE TWIN STM SEWER
- OGS FUTURE OIL AND GRIT SEPARATOR
- DI / CB FUTURE DITCH INLET OR CATCHBASIN
- EXISTING CULVERT
- EXISTING STORM SEWER
- EXISTING DITCH/SWALE
- EXISTING FLOW DIRECTION
- 4-1 / 3.84 ha CATCHMENT ID / CATCHMENT AREA

* ALL PROPOSED CULVERTS 800mm DIAMETER UNLESS OTHERWISE SPECIFIED. PROPOSED CULVERT SIZE SUBJECT TO CHANGE DURING DETAILED DESIGN STUDY

McCORMICK RANKIN CORPORATION

MISSISSAUGA Transportation and Works

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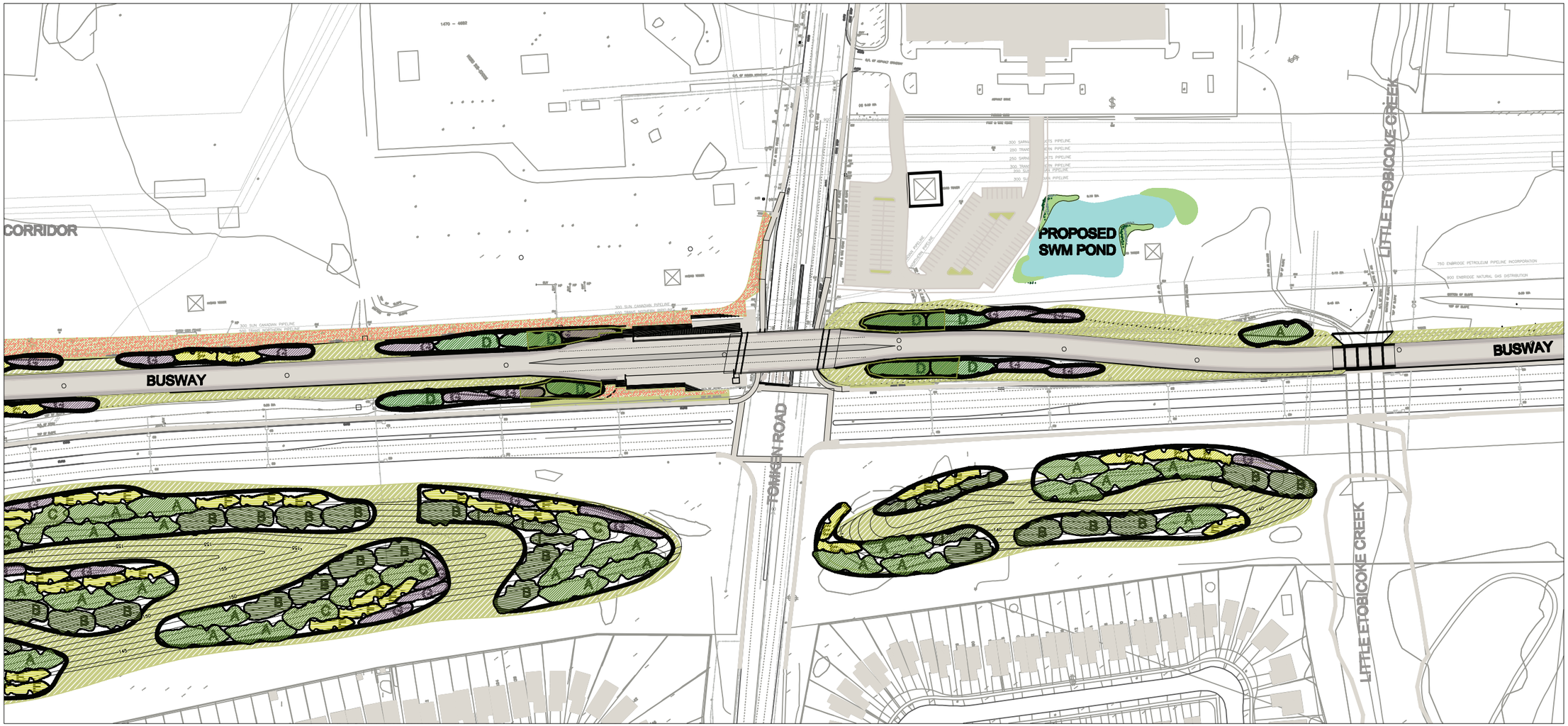
DATE: December 2008

SCALE: 1:4,000

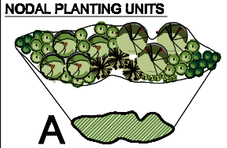
MISSISSAUGA BRT PROJECT
ENVIRONMENTAL ASSESSMENT ADDENDUM

TOMKEN ROAD / EASTGATE PARKWAY
FUTURE DRAINAGE AND STORMWATER MANAGEMENT

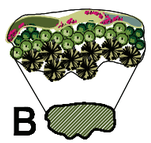
FIGURE 7-3



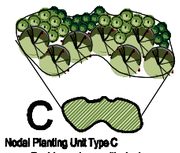
NODAL PLANTING UNITS



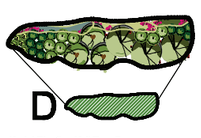
Nodal Planting Unit Type A
- Mixed deciduous and coniferous trees with shrubs
- Provides perforated visual screen to soften views to and from busway corridor
- Plant selection to be drought tolerant, salt resistant and to provide multi-seasonal aesthetic interest



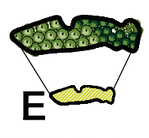
Nodal Planting Unit Type B
- Coniferous trees with shrubs and perennials
- Provides continuous visual buffer / screening
- Plant selection to be drought tolerant, salt resistant and to provide multi-seasonal aesthetic interest



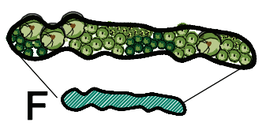
Nodal Planting Unit Type C
- Deciduous trees with shrubs
- Perforated visual buffer softens views to and from BRT
- Plant selection to be drought tolerant, salt resistant and to provide multi-seasonal aesthetic interest



Nodal Planting Unit Type D
- Deciduous trees with shrubs and perennials
- Plants to be drought tolerant, salt resistant and provide multi-seasonal aesthetic interest
- Locate at approach / departure of stations to create visual signal to passengers and pedestrians the proximity to a station

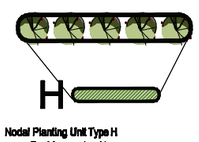


Nodal Planting Unit Type E
- Mixed shrub bed
- Provides continuous low level visual buffer / screening
- Plant selection to be drought tolerant, salt resistant and to provide multi-seasonal aesthetic interest



Nodal Planting Unit Type F
- Interception planting strip between top of slope (start of run-off) and other Planting Units
- Composed of tightly knitted suckering shrubs to stabilize slope and to take brunt of air-borne salt spray
- Species to include hardy dogwoods, willow, and sumac

Nodal Planting Unit Type G
- Mixed perennials, wildflowers, ornamental, and or native grasses
- To provide seasonal colour and interest
- Ensure species are drought tolerant and salt resistant



Nodal Planting Unit Type H
- Deciduous street trees
- Select species with multi-seasonal interest
- Where adjacent to overhead utilities, select small to medium sized species
- Plant selection to be drought tolerant and salt resistant

Nodal Planting Unit Type I
- Coniferous trees with shrubs
- Provides visual buffer / screening
- For areas where space is limited but a dense visual screen is required
- Plant selection to be drought tolerant, salt resistant and to provide multi-seasonal interest

LEGEND

Deciduous Trees
Coniferous Tree
Deciduous Shrubs
Perennials

GROUND COVER ZONES
- SOD
- LOW MOW MIX
- NO MOW MIX
- SLOPE MIX
- SWALE SEED MIX

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Date: MARCH 2009

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MISSISSAUGA BRT PROJECT
ENVIRONMENTAL ASSESSMENT ADDENDUM

CONCEPTUAL LANDSCAPING PLAN
TOMKEN SITE

FIGURE
7-4

8. DIXIE STATION

8.1 Need & Justification / Rationale

8.1.1 Base Case BRT Plan

In the Base Case (i.e. the plan approved in the 2005 EA Addendum), the busway passes under Dixie Road, where a station is located. The Dixie station has bus access ramps on both the west and east sides of Dixie, connecting both directions of Dixie Road with the Busway via right-in / right-out moves from Dixie Road. Buses can also stop on Dixie Road itself. A small parking area is shown (in concept) connected with the east side ramp.

The right-in / right-out configuration was used in the original plan due to the inability to insert a third signalized intersection for general traffic between the immediately adjacent Eastgate Parkway and South Gateway Road signalized intersections on Dixie Road.

8.1.2 Outstanding Issues

Transit/Traffic Operations

The approved configuration, due to the right-in / right-out access operation from both busway access links offers limited operational flexibility for both buses and parkers. For example, a City Centre – Dixie North route would pass through the busway station on its eastbound trip, but would not be able to use the station on the return (i.e. westbound) move. The opposite would be the case for buses coming from the east on the busway and destined to Dixie northbound; they would miss the station on the westbound trip but not on the eastbound trip.

Buses coming from the north and terminating at the Dixie station could loop via the ramps and eastbound platform, although there is no place for a layover such as is normally needed for a route terminus. The same applies to buses looping from the south.

The access to the parking lot would be right-in from the south and right-out to the north only. The inability to provide users with a return move would deter users and may result in motorists making unsafe U-turns on Dixie Road.

Utilities

The hydro corridor, immediately north of the proposed busway, contains a number of significant subsurface oil and gas pipelines, as indicated on Figures 8-1 and 8-2. The proposed busway access links from Dixie Road need to be repositioned (from those indicated in the Base Case plan) to avoid conflicting with the pipelines. The revised bus ramps are therefore lengthened and further separated from Dixie Road, thereby providing enough distance from the Dixie Road grade-separation to bring the busway up to grade and allow the ramp connections to pass over the existing pipelines.

8.2 Alternative

There are three improvements proposed at the Dixie station:

- Remove the west side bus ramp and create a full-move bus-only signalized intersection on Dixie Road for all connecting buses to use the east-side ramp;
- Locate a larger (200-space) parking lot on the west side of Dixie Road, with access from Encino Street off Fewster Drive (the lot could be extended westerly to the extent required by demand); and
- Provide a bus link to the parking lot access area, as well as a turnaround loop and layover area at the Encino Street connector. The western bus-access link, at the revised point of connection to the busway, offers the opportunity to connect to Fewster Drive (via Encino Street), which allows for access to the busway and Park and Ride lot without creating new intersection with Dixie Road.

The busway platforms would be shifted to the west side of Dixie Road, in order to be accessible from both Dixie Road buses and the parking area.

8.3 Evaluation / Analysis

The three modifications outlined in Section 8.2 would be low-cost, functional improvements that would substantially improve bus operations and Park and Ride access over the Base Case. The only concerns raised by agencies and the public relate to the traffic operational impact of the new bus intersection on Dixie Road and the potential impact of Park & Ride lot traffic on the Crestlawn / Dixie intersection operations.

It should be noted that the modifications associated with the recommended alternative are low cost and accordingly the cost differences are minimal between the options. For this reason, the impact assessment focused on the improvement to bus operations, potential implications on intersection level of service created by the localized traffic increases and access to the parking lot.

Table 8-1: Analysis of Alternatives for the Dixie Station Park and Ride Lot Access

Analysis Factor	**Base Case** **(EA Addendum Plan – Parking Access from Dixie Road)** (Figure 8-1)	**Alternative** **(Parking Access from Encino Street)** (Figure 8-2)
Traffic Operations	Right in – right out intersections on Dixie Road; no signal required. Minimal impact on Dixie Road operations. Out-of-way travel required by parking lot users (i.e. U-turns) in order to return to the direction from which they arrived.	Bus-only actuated signal north of Eastgate will be tied to adjacent signals to minimize disruption to Dixie Road operations. Park and Ride access / egress directed to Dixie Road / Crestlawn Drive intersection (supplemented by Eglinton Avenue / Burgoyne Street); an acceptable level of service can be maintained at that signal. Peak Hour trip generation is estimated to be 95 peak direction and 5 off-peak direction trips; the incremental traffic volume generated by the Dixie Station Park and Ride facility can be adequately accommodated by the existing road network capacity.

Analysis Factor	Base Case **(EA Addendum Plan – Parking Access from Dixie Road)** (Figure 8-1)	Alternative **(Parking Access from Encino Street)** (Figure 8-2)
Transit Operations	Transitway loops required east and west of station to allow full operational flexibility. Access ramp intersections on Dixie Road conflict with requirement for bus stops.	All transit operations are accommodated on segregated facilities.
Parking Lot Access	Right-in / Right-out arrangement on Dixie does not provide adequate access to Park and Ride lot (users cannot return to the direction from which they arrived).	Parking lot access is indirect (via Fewster Drive and Encino Street) but can be signed. All access routes are two-way through signal-controlled intersections.

8.4 Conclusions / Recommendations

It is recommended that the three improvements outlined above (Section 8.2) be implemented at the Dixie station site. The recommended alternative is shown on Figure 8-2.

8.5 Environmental Effects and Commitments to Mitigation

The following section discusses environmental effects and commitments to mitigation only as they differ from those previously identified in the 1991 Environmental Assessment and the 2005 Environmental Assessment Addendum for the Mississauga Transitway.

8.5.1 Physical Environment

8.5.1.1 Roads

Operations

The following is a summary of the analysis and anticipated operational impacts associated with the proposed park and ride lot and access configuration proposed:

- Planned capacity of Park and Ride lot is 200 parking spaces with access from Dixie Road via Crestlawn Road and Fewster Drive.
- Peak Hour trip generation is estimated to be 95 peak direction and 5 off-peak direction trips, based on observations at a similar transit Park and Ride lot at the Mississauga City Centre.
- The assumed distribution of Park and Ride trips reflects a) the proximity of residential land use to the south, b) the proximity of the planned Park and Ride lot at Cawthra Road and c) any traffic approaching from the east is likely to be coming only from Fieldgate Drive. The following distribution is expected:
    - Dixie Road to/from the north 10%
    - Dixie Road to/from the south 55%

- Eastgate Parkway to/from the west to Tomken Road 15%
- Eastgate Parkway to/from the east to Fieldgate Drive 20%

- Park and Ride traffic generation results in a relative increase in peak hour peak direction travel demand of less than 5% on Dixie Boulevard. The corresponding relative increase in the combined direction travel demand is approximately 3%.
- It is expected that the incremental traffic volume generated by the Dixie Station Park and Ride facility can be adequately accommodated by the existing road network capacity.

Signal timing modifications may be required at the Dixie / Eastgate intersection, to create an "all red" period (including a "no right on red for westbound Eastgate traffic) that would clear northbound Dixie Road in sync with a southbound bus left turn into the busway access ramp, or to allow a bus to turn left out of the access ramp.

The construction of the relocated Dixie Station Park and Ride Lot and associated parking/BRT access roadways will have a localized disruptive effect on roadway traffic. These effects will be mitigated through conventional traffic management programs that maintain a level of traffic capacity and safety acceptable to the Regional Municipality of Peel and the City of Mississauga. The motoring public will be advised of planned activities that may result in traffic disruption in advance (both temporally and physically). These mitigation measures will reduce impacts to a level acceptable to authorities and the public.

Corridor roads will be used by construction equipment, temporary construction access points will be implemented, and a substantial amount of truck traffic will be associated with the disposal of excess fill. Most construction will, however, take place within the BRT right-of-way and will not impinge on or affect traffic operations on the adjacent or nearby roads.

The detailed traffic analysis for the Dixie Road corridor is included as Appendix E.

Significance

The construction of the busway structures will have a localized disruptive effect on roadway traffic. With the implementation of the above noted mitigation measures potential for adverse effects can be minimized and no significant residual effects should occur.

8.5.1.2 Utilities Within / Crossing Corridor

Pipelines

The busway does not cross any buried pipelines in the Dixie Road / Eastgate Parkway area.

Dixie Road

The N-S Region of Peel water main along Dixie Road (250 mm) will need to be realigned (vertically and/or horizontally) to avoid the busway.

There are no effects on Hydro One facilities at this location. Bell telephone lines should remain as is, although individual poles may need to be shifted in some station areas. No significant effects are expected to the electrical services and control boxes provided at the signalized intersection.

For discussion related to *Construction Effects, Operation and Maintenance Effects* and *Significance* of utility impacts, please refer to Section 5.5.1.2.

8.5.2 Natural Environment

8.5.2.1 Watercourse Crossings

The busway does not cross any watercourses at the Dixie Road / Eastgate Parkway vicinity.

8.5.2.2 Vegetation, Wetlands, and Wildlife

The BRT facilities in this area will result in the permanent removal of cultural meadow and associated habitat. However, the effect is limited given the common, tolerant nature of this vegetation community, habitat type and associated wildlife compliment.

Shallow Marsh (MAS2-1b) is located east of Dixie Road, north of Eastgate Parkway. Also, several very small wetland pockets (each <0.1 ha) dominated by Narrow-leaved Cattail are situated under the hydroelectric corridor and between two pipelines on the east side of Dixie Road. The two wetland pockets east of Dixie Road are removed by the BRT alignment. Edge effects may result along two of the other small pockets of wetland vegetation depending on final grading limits, developed at Detail Design.

These effects are not significantly different from those incurred under the previously approved alignment.

8.5.2.3 Species of Conservation Concern and Species at Risk

The proposed changes to the approved plan / profile will not have any effect on species of concern / risk.

8.5.2.4 Stormwater Management

Section 5.5.2.4 discusses the *Potential Construction Effects, Hydraulic Criteria,* and *Stormwater Management Criteria* for the entire Mississauga Bus Rapid Transit Project. There is no significant difference between the approved and proposed alternatives at Dixie Road in terms of stormwater management requirements or impacts.

8.5.2.5 Groundwater

The proposed changes in the Dixie Road area will have no effect on the groundwater issues associated with the approved alignment.

8.5.3 Socio-Cultural Environment

8.5.3.1 Archaeology

For potential impacts and proposed approaches to mitigate impacts, please refer to Section 5.5.3.1.

8.5.3.2 Heritage

Compared to the approved plan, no additional adverse environmental effects to heritage resources are anticipated during this phase of the project.

8.5.3.3 Noise

There are no noise sensitive areas significantly affected by the proposed modification at the Dixie Station site.

8.6 Consultation with Property Owners and Developers

While little interest was exhibited at the public information centres regarding the modifications to the Dixie Park and Ride lot, an owner of property in the area raised some concerns, as summarized below.

Table 8-2: Summary of Comments and Responses – Dixie Site

Summary of Concerns Regarding BRT Project Modifications (Public Consultation: June 24 & 26, 2008)	
Comment	**Response**
Traffic "Fewster Drive is a narrow and winding road...[it] is already difficult enough to manoeuvre without the increased traffic a park-and-ride lot would bring. Furthermore, the intersection of Dixie Road and Crestlawn Drive, as well as Crestlawn Drive and Fewster Drive, would be subject to bottlenecks, with the increased traffic as is proposed."	Fewster Drive is 8 m wide, which provides adequate room for two travelled lanes (normally 3.75 m wide). On-street parking is prohibited. Park and Ride lot activity would generate up to 100 veh/h, or an average of one vehicle per 36 seconds. Traffic analysis shows that the added demand can be accommodated at the Dixie / Crestlawn intersection, with the provision of a protected signal phase for the northbound left turn (currently not protected).
"What is the impact on current road traffic, particularly peak times – Eglinton/Dixie and Dundas?"	90% of the traffic destined to the Park and Ride lot is expected to access the area from the south (i.e. the Eastgate/Dixie intersection), therefore impacts to the Dixie and Dundas intersection are expected to be minimal. The traffic analysis indicates that the projected impacts on the Dixie/Eastgate intersection related to the incremental demand generated by the Dixie BRT Station and the proposed access can be accommodated with only marginal changes in the level of service with further opportunities for operational improvements through the introduction of protected left-turn phases.
Concerns re: ongoing traffic impacts associated with the lot, and potential conflicts with transport trucks.	Further intersection improvements will be assessed at the detailed design phase of the study.
Parking Concerns re: potential parking spillover from the Park and Ride lot onto Fewster Drive and into adjacent developments.	The Park and Ride lot is initially to be constructed with a 200-vehicle capacity. Should demand warrant it, the lot can be expanded into the hydro corridor lands to the west.
Pedestrians Concerns re: pedestrian safety due to lack of sidewalks on Fewster and Encino.	The City is committed, as part of its capital sidewalk construction program, to include construction of sidewalks along Fewster Drive and Encino Drive once warranted.
Suggestion – construct the Park and Ride lot on the east side of Dixie Road.	The presence of buried pipelines, hydro towers, and the need for exclusive bus access collectively preclude the viability of constructing a reasonably sized Park and Ride lot on the east side of Dixie Road. There is no public access to the east side of the corridor as there is via Encino Street to the west side.
Provide access to the Park and Ride Lot from Eastgate Parkway	Such an access was considered but is not recommended as it requires cars to cross the busway, triggering the need for a grade separation and subsequently lowering the busway, bringing about a substantial increase in cost due to grading, retaining walls, pipeline protection, and additional structure.

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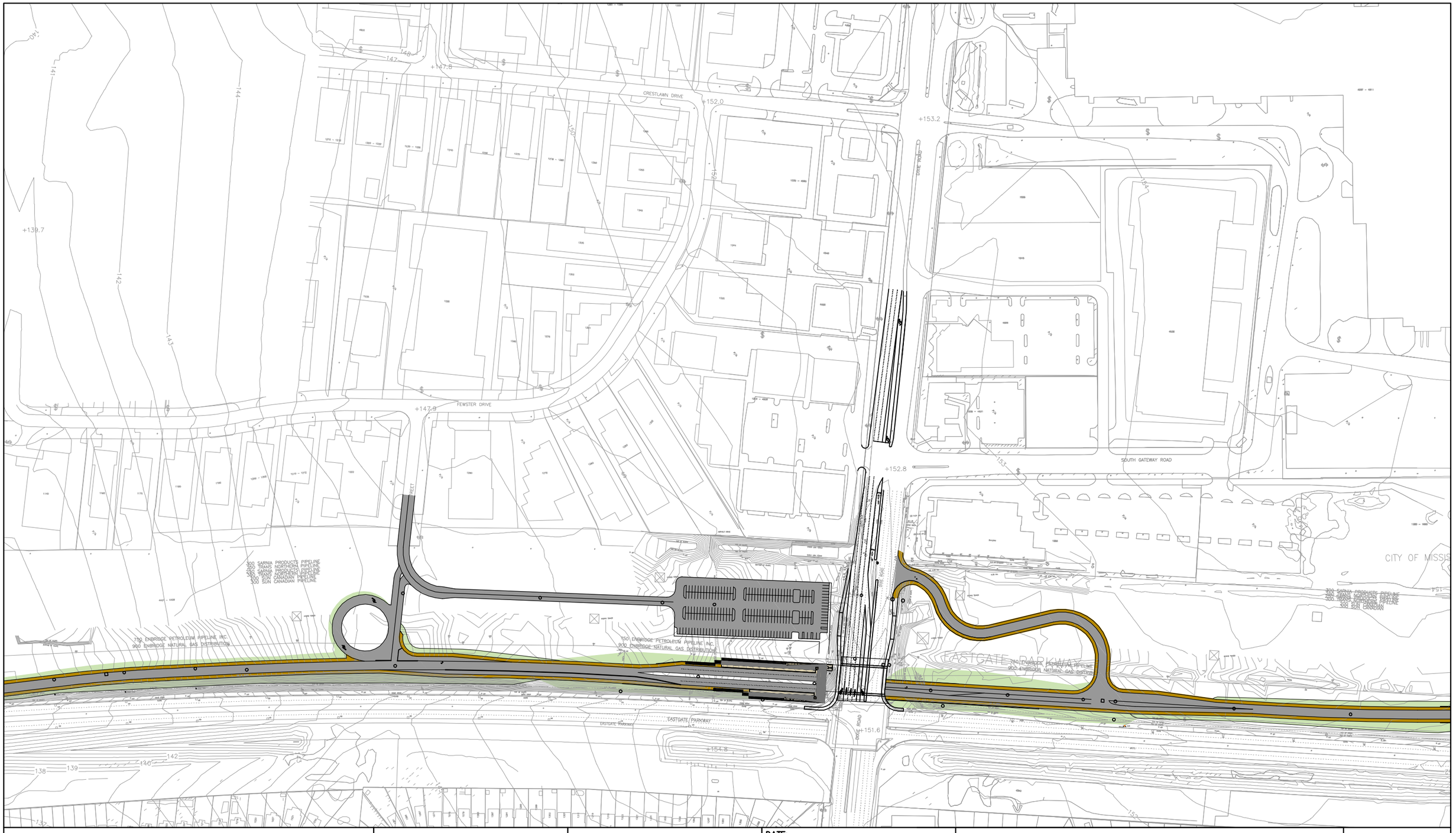
	MRC McCORMICK RANKIN CORPORATION	MISSISSAUGA Transportation and Works Transit	DATE: February 2009 SCALE: 1:3,000	MISSISSAUGA BRT PROJECT ENVIRONMENTAL ASSESSMENT ADDENDUM DIXIE ROAD / EASTGATE PARKWAY BASE CASE (EA ADDENDUM) PLAN - DIXIE STATION	FIGURE 8-1



	McCORMICK RANKIN CORPORATION	MISSISSAUGA Transportation and Works Transit	DATE: February 2009 SCALE: 1:3,000	MISSISSAUGA BRT PROJECT ENVIRONMENTAL ASSESSMENT ADDENDUM DIXIE ROAD / EASTGATE PARKWAY RECOMMENDED ALTERNATIVE - DIXIE STATION	FIGURE 8-2

LEGEND

- CATCHMENT BOUNDARY
- FUTURE CULVERT*
- FC1 — FUTURE CULVERT I.D.
- FUTURE DITCH
- FUTURE FLAT BOTTOM GRASSED SWALE
- FUTURE STM SEWER
- FUTURE TWIN STM SEWER
- OGS — FUTURE OIL AND GRIT SEPARATOR
- DI / CB — FUTURE DITCH INLET OR CATCHBASIN
- EXISTING CULVERT
- EXISTING STORM SEWER
- EXISTING DITCH/SWALE
- EXISTING FLOW DIRECTION
- 4-1 / 3.84 ha — CATCHMENT ID / CATCHMENT AREA

STUDY AREA

CRESTLAWN DRIVE

FEWSTER DRIVE

SOUTH GATEWAY ROAD

EASTGATE PARKWAY

DIXIE ROAD

LITTLE ETOBICOKE CREEK

LIMIT OF REGULATED AREA

10-1 / 65.89 ha

9-7 / 1.15 ha

9-42 / 5.04 ha

9-41 / 6.16 ha

900mm CIRCULAR CULVERT

DIVERSION DITCH

SPREADER SWALE

FC16

FC15

L ETOB. EAST SWM

EQNBK 24+300
EQNAHD 24+400

9-5 / 3.10 ha

9-6 / 0.87 ha

24+000

24+200

24+600

24+800

25+000

25+200

23+800

OUTLET 9

OUTLET 8

OUTLET SEWER TO EXISTING DITCH AND LITTLE ETOBICOKE CREEK

RELOCATE EXISTING EASTGATE DITCH TO NORTH OF BRT

OGS

SUPERPIPE IN BRT

INSTALL NEW LATERAL SEWERS FROM EXISTING CBs ON EASTGATE TO DITCH NORTH OF BRT

MAINTAIN EXISTING DITCH

STORM SEWER SIZED TO CONVEY 100-YEAR EVENT FROM SAG TO SWM FACILITY

INSTALL ADEQUATE NUMBER OF CBs AT BRT SAG TO CAPTURE 100-YEAR EVENT

RELOCATE EXISTING DIXIE/EASTGATE STORM SEWER THROUGH BRT ACCESS AREA

CONNECT NEW DI TO NEW SEWER

NEW DIXIE/EASTGATE STORM SEWER

DI

EXISTING 1800mmØ STM

CONNECT BRT STORM SEWER TO EXISTING 1800mmØ STM ON EASTGATE

EQNBK 25+300
EQNAHD 25+400

9-1 / 0.08 ha

9-2 / 0.44 ha

9-3 / 5.50 ha

10-4 / 0.68 ha

10-3 / 3.32 ha

CITY OF MISSISSAUGA

GRADE BO… EASTGATE… SUCH THAT… FROM EAST… DIRECTED…

EX… 210… ST…

* ALL PROPOSED CULVERTS 800mm DIAMETER UNLESS OTHERWISE SPECIFIED. PROPOSED CULVERT SIZE SUBJECT TO CHANGE DURING DETAILED DESIGN STUDY

McCORMICK RANKIN CORPORATION

MISSISSAUGA Transportation and Works

Transit

DATE: December 2008

SCALE: 1:4,000

MISSISSAUGA BRT PROJECT
ENVIRONMENTAL ASSESSMENT ADDENDUM

DIXIE ROAD / EASTGATE PARKWAY
FUTURE DRAINAGE AND STORMWATER MANAGEMENT

FIGURE 8-3

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9. EASTGATE PARKWAY / FIELDGATE DRIVE

9.1 Need & Justification / Rationale

9.1.1 Current BRT Plan

The EA approved plan has the busway passing under Eastgate Parkway and then turning through a 130 m radius horizontal curve to pass under Fieldgate Drive, as illustrated in Figure 9-1. This would require relocation / lowering of eight pipelines:

- two 250mm Imperial (oil)
- one 250mm and one 500mm TransNorthern (oil)
- one 200mm and one 300mm Sun Canadian (oil)
- one 750mm Interprovincial (oil)
- one 900mm Enbridge (gas)

The EA plan also involves the relocation of a Hydro One transmission line tower. The large (3 m) storm sewer crossing just south of the alignment may be unavoidable, and the busway would intercept a 2100 mm storm sewer at the crossing point; that sewer would require relocation. The busway would also intercept a 1200 mm storm sewer and a 400 mm sanitary sewer to the east of Eastgate Parkway, requiring their realignment.

9.1.2 Outstanding Issues

The primary issue in this segment is one of cost. The proposed alignment intercepts and requires relocation of numerous buried and aerial utilities. The cost of pipeline relocation has soared since this alternative was developed in the early 1990s.

- The estimated cost for lowering all the eight affected pipelines as cited in the 1992 EA report was $1,815,050. This involved lowering in place (noting that Eastgate Parkway was not yet constructed at that point) and re-use of existing pipe, not relocation and use of new pipe.
- Based on discussions with pipeline owners in the BRT West segment, each of the eight pipelines could now be expected to cost in the order of $0.5 M - $3 M to shift:
  - two 250mm Imperial (oil): $3M
  - one 250mm and one 500mm TransNorthern (oil): $4M - $5M
  - one 200mm and one 300mm Sun Canadian (oil): $2M - $3M
  - one 750mm Interprovincial (oil): $2M - $4M
  - one 900mm Enbridge (gas): $3M
- Pipeline relocation alone in this brief segment of busway could cost in the order of $15 M, or $13 M above the earlier estimate upon which the recommended alignment was based.

Practical issues of construction sequencing and coordination would be significant, since only one pipe could be relocated at a time. Lowering in situ would also have a potentially significant impact on Eastgate Parkway (traffic disruption).

The north-south storm and sanitary sewers would need to be relocated or lowered prior to any lowering of an east-west pipeline

The original EA did not assign any cost to the relocation of the affected hydro tower; current estimate (per BRT West) is in the order of $500,000.

The original EA did not include a drainage plan or associated costs; the current version of the plan shows that the sump created at the crossing would be too low to drain to the storm sewer system and would need either a pumping station ($2.5 - $3M) or an equivalently costly new low-level outlet sewer to Etobicoke Creek

The 130 m horizontal curve is the lowest-radius curve in the entire busway, restricting bus speeds in what would otherwise be a high-speed segment between the Dixie and Tahoe stations.

The busway, in crossing under Eastgate Parkway, will intercept a major 3 m diameter storm sewer that carries stormwater in the Eastgate corridor to Etobicoke Creek. The storm sewer would have to be relocated and reconstructed. The busway also intercepts a 1200 mm storm sewer and 900 mm sanitary sewer on the east side of Eastgate Parkway and a 2100 mm storm sewer to the west. These are costs that were not identified in the original estimate.

The excavation for the busway will involve rock and substantial retaining walls, both of which have risen substantially in unit cost since the busway estimates were last updated. The unit costs used for structures in 1992 were $1,350/m^2 for bridges and 650/m^2 for walls. Those figures are now $4,500 and $2,000. The excavation will generate a substantial amount of excavated material, for which no suitable depository has been identified.

Due to the skew of the crossing, the detour of Eastgate Parkway during the busway construction period would be difficult, leading to the use of potentially more costly three phase construction balanced against the incremental cost of a larger detour.

9.2 Alternatives

There are three alternatives at this site:

- Lower the busway so as to cross under the pipelines (requiring their suspension in a bridge structure across the busway cut)
- Shift the undercrossing of Eastgate Parkway westerly to allow the busway to rise over the pipelines then down under Fieldgate; or
- Elevate the busway over Eastgate Parkway, returning to grade at the pipelines and dropping under Fieldgate (see Figure 9-2).

The latter two options would increase the busway's horizontal radius to 150 m at Fieldgate. The first two options avoid the pipelines but still impact the 3 m storm sewer and the north-south utilities; the elevated option avoids all utility impact, and can use a girder structure to minimize the need to detour Eastgate Parkway during construction of the crossing.

9.3 Evaluation / Analysis

The following table summarizes the comparative features of the alternatives.

Table 9-1: Analysis of Alternatives for Eastgate Parkway / Fieldgate Drive

Analysis Factor	Base Case (EA Alignment)	Deep Cut Option	Under Eastgate / Over Pipelines	Over Eastgate / Over Pipelines
Cost	Pipelines $15M Utilities $4.8 Pump Stn $2.5M Structure $2M Walls $3.5M Detour $1.5M Fill / Ex $1.2M *Total $30.5M*	Pipelines $1M Utilities $4.8 Pump Stn $2.5M Structure $2M Walls $4.5M Detour $1.5M Fill / Ex $2.0M *Total $18.3M*	Pipelines $0 Utilities $2.5 Pump Stn $2.5M Structure $2M Walls $2.5M Detour $1.5M Fill / Ex $1.2M *Total $12.2M*	Pipelines $0 Utilities $0.5 Pump Stn $0 Structure $1.5M Walls $0.8M Detour $0.2M Fill / Ex $0.8M *Total $3.8M*
Utilities	Intercepts every utility in the area	Avoids pipelines, but intercepts all other utilities.	Avoids pipelines and hydro tower, but intercepts all other utilities.	Avoids all major utilities
Drainage	Pumping station required	Pumping station required	Pumping station required	Gravity drainage to ditches
Construction Disruption	Major multi-stage detour of Eastgate	Major multi-stage detour of Eastgate	Major multi-stage detour of Eastgate	No detour; short-term closure of Eastgate to place bridge girders.
Environmental Assessment	Approved	Falls under original approval	Minimal impact; no Addendum needed	Profile and alignment change requires Addendum
Busway Geometry	130 m radius	130 m radius	150 m radius; opportunity for emergency access from Fieldgate	150 m radius; opportunity for emergency access from Fieldgate
Community Impact - Visual	None	None	Buses visible when crossing pipelines; can mitigate via extended berm	Buses visible from first row of houses; can mitigate by combination of berm expansion and landscaping
Community Impact - Noise	Daytime noise level (Leq) in dBA for three nearby sites (Re8, 9, 10): *Existing* 55.7/53.9/54.4 *Future without BRT* 56.8/55.1/55.4 *Future with BRT* *57.7/51.5/55.9* *Impact* *+2.6/-3.9/+1.1* Eastgate Parkway noise remains dominant noise source in corridor; busway has insignificant impact.	Deeper busway profile would have slightly lower noise impact than base case.	Profile would yield a slightly lower noise impact than base case for Re9 and Re10; similar to "over" option for Re8	Daytime noise level (Leq) in dBA for three nearby sites (Re8, 9, 10): *Existing* 55.7/53.9/54.4 *Future without BRT* 56.8/55.1/55.4 *Future with BRT* 52.2/56.7/56.5 *Impact* -4.6/+1.6/+1.1 Eastgate Parkway noise remains dominant noise source in corridor; revised busway grade has insignificant impact.

Building the busway on its approved alignment (i.e. the Base Case) would be a costly and difficult proposal, even if it were to be lowered enough to pass under the eight east-west pipelines present. The deep walls, rock excavation, hydro tower relocation, complete disruption of the storm and sanitary sewer system, the need for a pumping station, disposal of excavated material, and the impacts on Eastgate Parkway during construction are all issues that remain and in most cases are worse than with the original profile.

Shifting the busway crossing to the west would allow many of these issues to be resolved, although issues regarding the major storm sewer, pumping station, retaining walls, rock excavation, and construction impact would remain, all requiring costly solutions.

Taking the busway over Eastgate Parkway avoids almost all the issues present with an underpass, and would be the simplest, least costly, least disruptive, and most beneficial of the alternatives. There is adequate room south of Eastgate Parkway to expand, extend, and heighten the existing berm (and/or top it with a wall) to mitigate perceived visual and noise-related impacts on the residential community to the south.

9.4 Conclusions / Recommendations

The proposed alternative is to take the busway over Eastgate Parkway, over the pipelines, and under Fieldgate Drive. Particular attention is required to mitigating the effects of the new facility on the existing residential area to the south, by improving the existing berm and installing visual screening. The recommended alternative is shown on Figure 9-2.

9.5 Environmental Effects and Commitments to Mitigation

The following section discusses environmental effects and commitments to mitigation only as they differ from those previously identified in the 1991 Environmental Assessment and the 2005 Environmental Assessment Addendum for the Mississauga Transitway.

9.5.1 Physical Environment

9.5.1.1 Roads

The construction of the structure's median pier and abutments near the road will have a localized disruptive effect on roadway traffic. Construction in the median, in particular, may require temporary closure of one lane on Eastgate Parkway. Localized widening will be used to maintain two lanes of traffic in each direction at all times. This will be supplemented through conventional traffic management programs that incorporate advisory detours, advance signs, and special lane markings as appropriate. The motoring public will be advised of planned activities that may result in traffic disruption in advance (both temporally and physically). Bicycle and pedestrian access along Eastgate Parkway (where pre-existing) will be maintained at all times.

The adjacent or affected traffic signals will be re-timed as appropriate to accommodate the modified traffic patterns during the construction period. The duration of each disruption or lane closure will vary, but at most will occur over a single construction season (April – November). Capacity reduction will not be scheduled simultaneously on parallel adjacent roads.

A program of traffic management that maintains capacity and safety will be developed in the Detail Design process.

In addition to the disruption associated with the above noted structure construction, corridor roads will be used by construction equipment, temporary construction access points will be implemented, and a substantial amount of truck traffic will be associated with the movement of excavated earth.

Most construction will, however, take place within the BRT right-of-way and will not impinge on or affect traffic operations on the adjacent or nearby roads.

Operation and Maintenance Effects

Once the BRT facility is in operation, there should be no special ongoing operational or maintenance effects on the road system or general traffic operations. The new structure will be added to the inventory of road structures in Mississauga and will follow conventional inspection, maintenance and rehabilitation schedules.

Significance

The construction of the busway structure will have a localized disruptive effect on roadway traffic. With the implementation of the above noted mitigation measures potential for adverse effects can be minimized and no significant residual effects should occur.

9.5.1.2 Utilities Within / Crossing Corridor

Pipelines

West of Fieldgate Drive, the busway crosses the following buried pipelines (8 in total):

- Enbridge Gas
- Enbridge Oil
- Sarnia Products
- Sun Canadian; and
- Trans-Northern

In all cases, the busway is at or above grade, and there is no pipeline relocation required. The design of the crossing requires pipeline owner agreement, but no NEB permits.

Avoiding the need to shift or otherwise affect pipelines is a key station design parameter, as is maintaining the ability for the pipeline owner to access, inspect, and maintain the pipeline without disrupting busway operations to an unacceptable degree. Ongoing liaison with the pipeline owners through the Detail Design stage will be required to satisfy their needs.

Eastgate Parkway / Fieldgate Drive

There are no effects on Hydro One facilities at this location.

For discussion related to *Construction Effects, Operation and Maintenance Effects* and *Significance* of utility impacts, please refer to Section 5.5.1.2.

9.5.2 Natural Environment

9.5.2.1 Watercourse Crossings

The busway does not cross any significant watercourses in the vicinity of the Eastgate Parkway crossing.

9.5.2.2 Vegetation, Wetlands, and Wildlife

The BRT facilities in this area will result in the permanent removal of cultural meadow and associated habitat. However, the effect is limited given the common, tolerant nature of this vegetation community, habitat type and associated wildlife compliment.

Two very small (each <0.1 ha) wetland pockets are located south of Eastgate Parkway at the proposed busway crossing. Both of the features are wet or seasonally wet depressions on the south side of an existing earthen berm. Both wetland pockets will be removed with the expansion of the earthen berm. The expansion of the earthen berm is being undertaken to mitigate social / cultural effects of the BRT alignment and provide additional screening to adjacent residences. The effect of removal of these wetland pockets is considered negligible.

These effects are not significantly different from those incurred under the previously approved alignment.

9.5.2.3 Species of Conservation Concern and Species at Risk

The proposed changes to the approved plan / profile will not have any effect on species of concern / risk.

9.5.2.4 Stormwater Management

Section 5.5.2.4 discusses the *Potential Construction Effects, Hydraulic Criteria*, and *Stormwater Management Criteria* for the entire Mississauga Bus Rapid Transit Project.

The only outlet identified under existing conditions for the Eastgate Parkway / Fieldgate Drive study area is Outlet 10 – Eastgate Trunk Sewer.

The outlet will be utilized under proposed drainage conditions and the existing drainage regime will not be greatly altered under proposed conditions. Existing peak flow rates to the outlet will not be exceeded under proposed conditions. However, further capacity evaluation will be undertaken for appropriate measures, if necessary, during the detail design stage in light of altered site geomorphology.

9.5.2.5 Groundwater

The proposed change in busway profile will have the effect of reducing or eliminating the groundwater issues associated with the previously approved alignment.

9.5.3 Socio-Cultural Environment

9.5.3.1 Archaeology

For potential impacts and proposed approaches to mitigate impacts, please refer to Section 5.5.3.1.

9.5.3.2 Heritage

Compared to the approved plan, no additional adverse environmental effects to heritage resources are anticipated during this phase of the project.

9.5.3.3 Noise

Methodology

Points of reception are considered any point on the premises of a person where sounds originating from other than the premises are received. For the purposes of this study, three representative locations were selected to represent all the closest points of reception to the BRT system which may potentially be affected by noise. The receptor heights were considered as typical first and second storey levels in dwelling units when calculating the BRT system lane and stations sound levels, respectively. The following gives a brief description of the selected receptors:

- Re8: house at #1713 Chalkdene Grove
- Re9: house at #1685 Copseholm Trail
- Re10: house at #4394 Poltava Circle

For the Eastgate Parkway crossing area, the potential noise impact was assessed at the 2nd storey windows on the most exposed building façades of the residential dwellings and is based on comparing the future (worst case scenario) BRT station noise levels with the higher of the existing highway/roadway ambient noise level or the minimum exclusionary sound level limits set by the MOE for urban Class 1 areas similar to the one under consideration.

Results

The data included in Table 9-2 shows that the maximum calculated excess future sound level over the ambient is 1.6 dBA, i.e. acoustically insignificant and is within the maximum 5 dBA excess criterion.

Table 9-2: Noise Analysis – Eastgate Parkway

Recep-tor	Street	Existing Sound Levels (dBA)	Future Sound Levels - No BRT (dBA)	Future Sound Levels with BRT – approved grade per EA (dBA)	Future Sound Levels with BRT – proposed grade per EA Addendum (dBA)
Re8	1713 Chalkdene Grove	55.7	56.8	53.4 (-3.4)	52.2 (-4.6)
Re9	1685 Copse-holm Trail	53.9	55.1	55.7 (+0.6)	56.7 (+1.6)
Re10	1507 Bough Beeches Blvd	54.4	55.4	56.2 (+0.8)	56.5 (+1.1)

Impact Assessment Rating : < 3 dB change : Insignificant
>3 to < 5 dB change : Noticeable
> 5 to < 10 dB change: Significant
> 10 dB change : Very Significant

Criteria for mitigation: >5 dB change

In accordance with the applicable sound level criteria, no noise mitigation is warranted since the noise impact due to bus movements along the modification to the busway profile at the Eastgate Parkway crossing site is predicted to be less than 5 dBA. The modification of the busway profile, in combination with the expanded berms on the south side of Eastgate Parkway, does not result in a significant noise impact to adjacent residential properties, nor does it significantly differ from the noise levels associated with the previously approved plan and profile. The berm modification will actually improve conditions for properties on Bough Beeches Boulevard. The project does not, however, result in an future noise levels being reduced to below the MOE/Region/City day-time Leq 55 dBA objective.

9.6 Consultation with Property Owners and Developers

The proposed modification to the EA-approved plan at the Eastgate Parkway crossing drew the most concern from the public. In particular, the residents of Copseholm Trail (immediately south of Eastgate Parkway, west of Fieldgate Drive) expressed considerable concern over the perceived visual and noise impacts of the proposed modification.

Members of the BRT Project Office attended an informal community meeting on June 25th, 2008 to present the rationale for the proposed changes to the EA-approved plan, and to discuss the residents' concerns and suggested improvements to the proposed alignment to mitigate the impacts.

The following table summarizes the main comments received. A copy of all comments and responses is provided in Appendix B.

Table 9-3: Summary of Comments and Responses - Eastgate Parkway Site

Summary of Concerns Regarding BRT Project Modifications (Public Consultation: June 24 & 26, 2008)	
Comment	**Response**
Visual Concerns Many residents expressed concerns that the proposed modification brings the busway closer to their homes/backyards than the alignment indicated in the original EA or the 2004 EA Addendum.	The potential to realign the busway (horizontally and vertically) was investigated following the public meetings to maintain the greatest possible separation between the homes and the busway while adhering to minimum design parameters and avoiding impacts to buried and aerial utilities. The review resulted in a slight realignment of the overpass away from the residential development, and a lowering of the structure by approximately 2m at the expense of a longer structure. A visual barrier was proposed on top of the structure to screen the sight of vehicles from the houses, as illustrated in Figure 9-2.
Suggestion Realign the busway to the north "into the light industrial area and away from the residences". "Move the proposed raised bridge overpass more to the north and reduce the radius of the loop for the busway to align closer to and in parallel to Eastgate."	
Noise-related Concerns Many residents expressed concerns that the proposed modification to the busway alignment would bring about additional noise in the vicinity of the residential development.	A preliminary noise investigation indicated that, while the busway may bring about a minor increase in noise, traffic on Eastgate Parkway will remain the dominant noise source in the area, and the incremental increase attributed to the busway does not warrant additional noise protection. The proposed realignment of the busway (discussed above) and increase in berming will likely have a positive effect on the noise impacts attributed to both the busway and Eastgate Parkway.
Suggestion Increase the height and width of the berm and add pleasant landscaping.	The current plan is to increase both the height and the width of the berm between the busway and the residential development. The Project Team is developing a landscaping plan for the proposed berm that would mitigate some of the visual impacts of the increased berm. The BRT Project Office will review the landscaping plan for the proposed berm increase with the Copseholm Trail community for input prior to finalizing the plan.
Suggestion Designate a lane on Eastgate Parkway for BRT rather than construct a separate guideway.	Operating buses on Eastgate Parkway would not achieve the travel time savings desired to provide an attractive and efficient rapid transit service.
Suggestion "The best solution is that the BRT go under Eastgate Parkwaay at a convenience point and continue to go underground to Fieldgate and Tahoe."	The impacts to the buried pipelines (i.e. relocation of 8 major oil and gas pipelines and 3m diameter storm sewer) at Eastgate Parkway / Fieldgate Drive under the EA-approved alignment would result in significant and unjustified cost and construction schedule implications.

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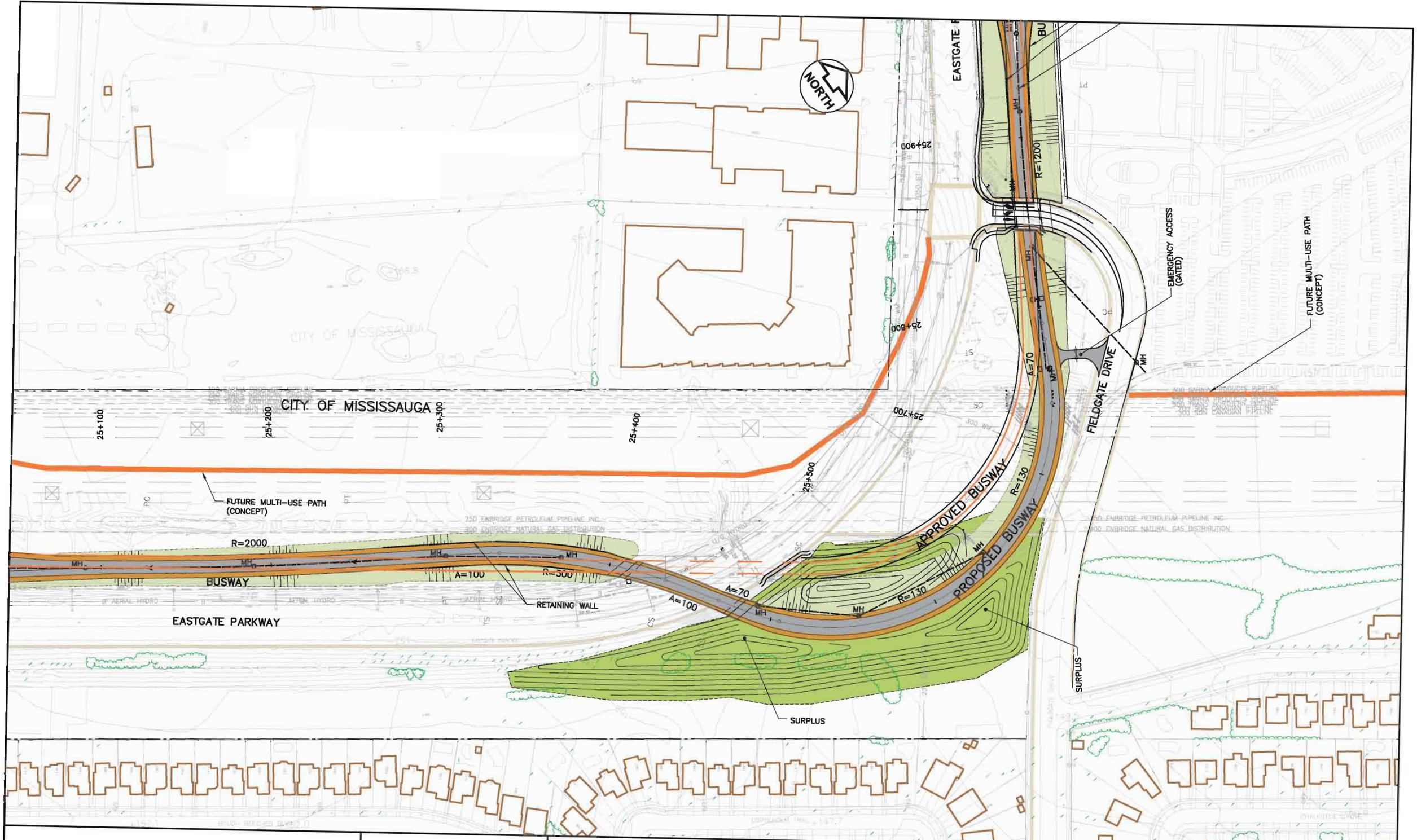
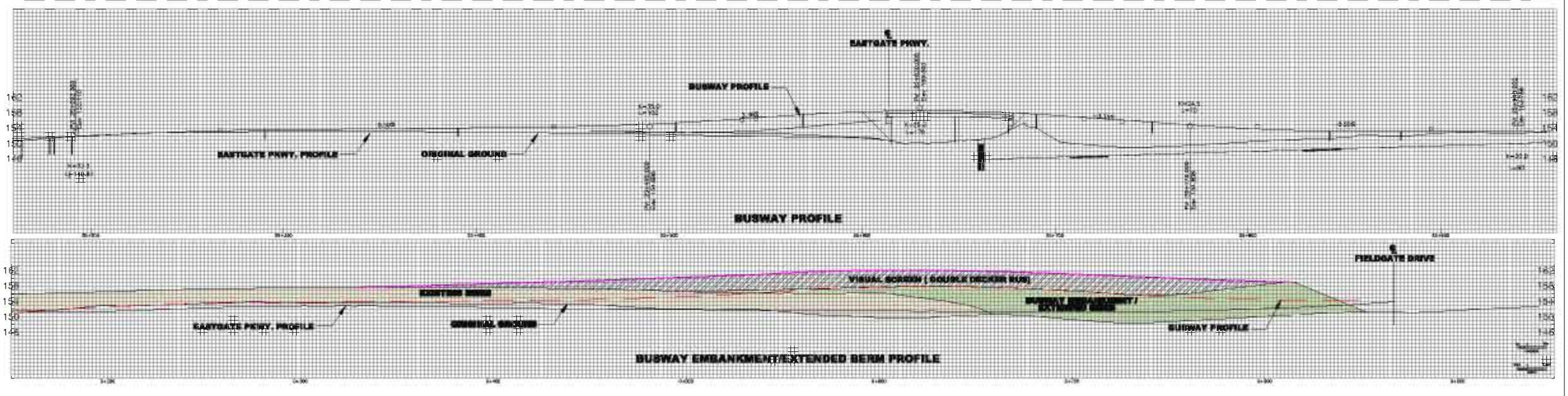


	McCORMICK RANKIN CORPORATION	Transit	Date: JAN-2009 Scale: HORIZONTAL 0m 20 40; VERTICAL 0m 2.0 4.0	MISSISSAUGA BRT PROJECT ENV. ASSESSMENT ADDENDUM PREVIOUSLY APPROVED AND RECOMMENDED ALTERNATIVES EASTGATE PARKWAY / FIELDGATE DRIVE	FIGURE 9.1



	McCORMICK RANKIN CORPORATION	MISSISSAUGA Transportation and Works Transit	DATE: December 2008 SCALE: 1:2,000	MISSISSAUGA BRT PROJECT ENVIRONMENTAL ASSESSMENT ADDENDUM RECOMMENDED ALTERNATIVE EASTGATE PARKWAY / FIELDGATE DRIVE	FIGURE 9–2

STUDY AREA

10-1
65.89 ha

10-2
22.51 ha

10-8
1.39 ha

FC17

10-7
7.56 ha

9-7
1.15 ha

SOUTH GATEWAY ROAD

RELOCATE EXISTING DIXIE/EASTGATE STORM SEWER THROUGH BRT ACCESS AREA

CONNECT NEW DI TO NEW SEWER

NEW DIXIE/EASTGATE STORM SEWER

GRADE BOULEVARD BETWEEN EASTGATE PARKWAY AND BRT SUCH THAT NO OVERLAND FLOW FROM EASTGATE PARKWAY IS DIRECTED TO BRT

EASTGATE PARKWAY

INSTALL ADEQUATE NUMBER OF CBs AT SAG TO CAPTURE 100-YEAR EVENT

STORM SEWER SIZED TO CONVEY 100-YEAR EVENT FROM SAG AT 25+843 TO OGS AT 25+950

CITY OF MISSISSAUGA

10-9
0.56 ha

9-6
0.87 ha

10-4
0.68 ha

DI

OGS

EXISTING 3000mmØ STM

OUTLET 10

EXISTING 3000mmØ STM

25+200

24+800

25+000

EXISTING 1800mmØ STM

EXISTING 2100mmØ STM

25+600

25+800

26+000

10-10
0.16 ha

10-11
0.15 ha

INSTALL ADEQUATE NUMBER OF CBs AT BRT SAG TO CAPTURE 100-YEAR EVENT

CONNECT BRT STORM SEWER TO EXISTING 1800mmØ STM ON EASTGATE

EQNBK 25+300
EQNAHD 25+400

CONNECT TO EXISTING 3000mmØ STM

10-3
3.32 ha

10-6
0.25 ha

LEGEND

- CATCHMENT BOUNDARY
- FUTURE CULVERT*
- FC1 — FUTURE CULVERT I.D.
- FUTURE DITCH
- FUTURE FLAT BOTTOM GRASSED SWALE
- FUTURE STM SEWER
- FUTURE TWIN STM SEWER
- OGS — FUTURE OIL AND GRIT SEPARATOR
- DI / CB — FUTURE DITCH INLET OR CATCHBASIN
- EXISTING CULVERT
- EXISTING STORM SEWER
- EXISTING DITCH/SWALE
- EXISTING FLOW DIRECTION
- 4-1 / 3.64 ha — CATCHMENT ID / CATCHMENT AREA

* ALL PROPOSED CULVERTS 800mm DIAMETER UNLESS OTHERWISE SPECIFIED. PROPOSED CULVERT SIZE SUBJECT TO CHANGE DURING DETAILED DESIGN STUDY

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MISSISSAUGA Transportation and Works

Transit

DATE: December 2008

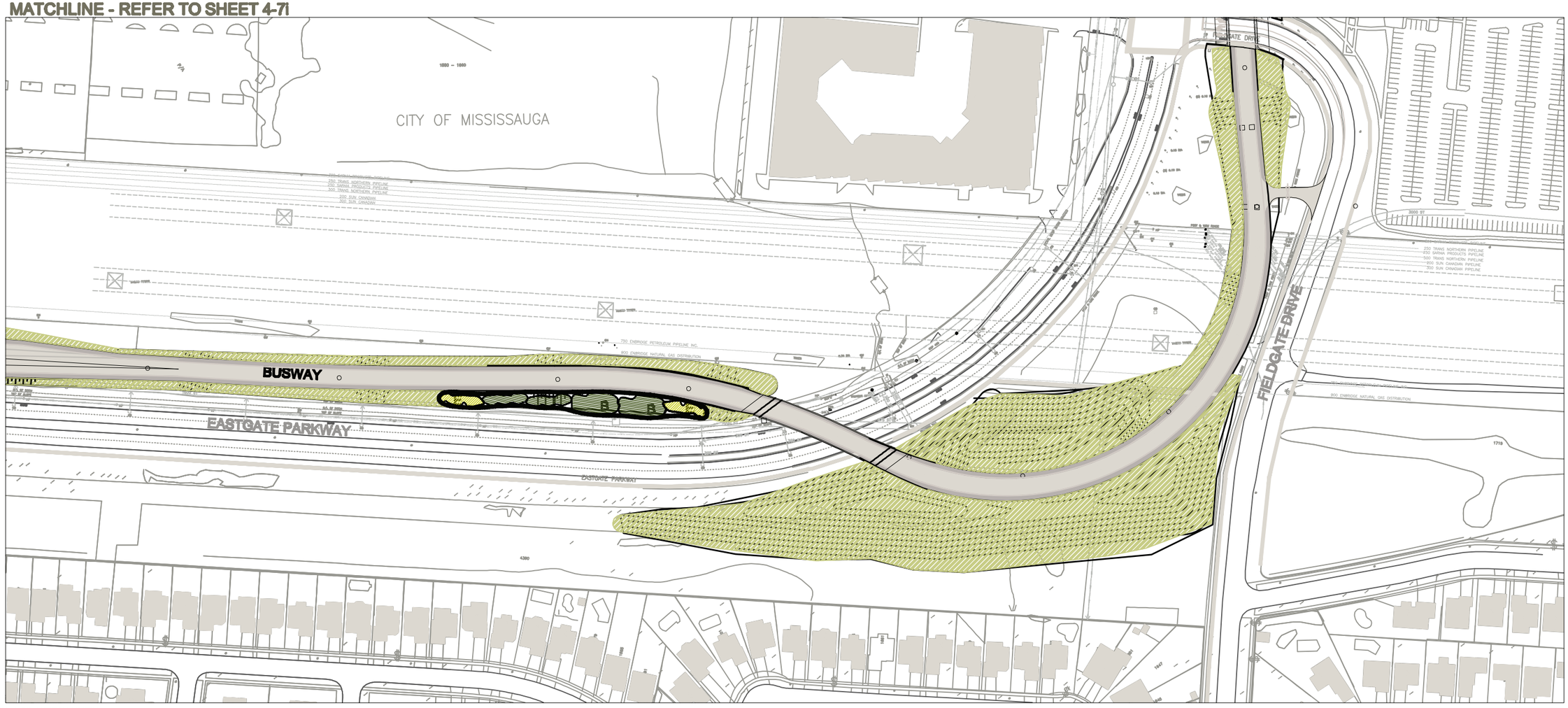
SCALE: 1:4,000

MISSISSAUGA BRT PROJECT
ENVIRONMENTAL ASSESSMENT ADDENDUM

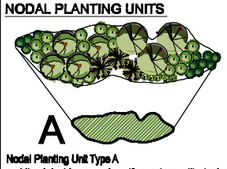
EASTGATE PARKWAY CROSSING
FUTURE DRAINAGE AND STORMWATER MANAGEMENT

FIGURE
9-3

MATCHLINE - REFER TO SHEET 4-71

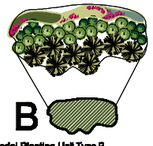


NODAL PLANTING UNITS



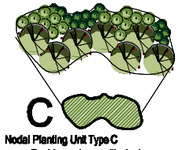
A

Nodal Planting Unit Type A
- Mixed deciduous and coniferous trees with shrubs
- Provides perforated visual screen to soften views to and from busway corridor
- Plant selection to be drought tolerant, salt resistant and to provide multi-seasonal aesthetic interest



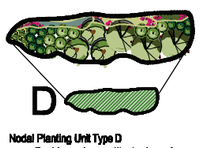
B

Nodal Planting Unit Type B
- Coniferous trees with shrubs and perennials
- Provides continuous visual buffer / screening
- Plant selection to be drought tolerant, salt resistant and to provide multi-seasonal aesthetic interest



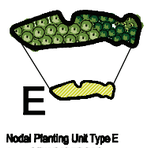
C

Nodal Planting Unit Type C
- Deciduous trees with shrubs
- Perforated visual buffer softens views to and from BRT
- Plant selection to be drought tolerant, salt resistant and to provide multi-seasonal aesthetic interest



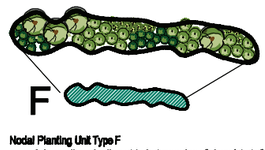
D

Nodal Planting Unit Type D
- Deciduous trees with shrubs and perennials
- Plants to be drought tolerant, salt resistant and provide multi-seasonal aesthetic interest
- Locate at approach / departure of stations to create visual signal to passengers and pedestrians the proximity to a station



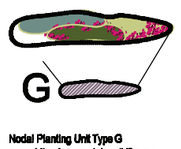
E

Nodal Planting Unit Type E
- Mixed shrub bed
- Provides continuous low level visual buffer / screening
- Plant selection to be drought tolerant, salt resistant and to provide multi-seasonal aesthetic interest



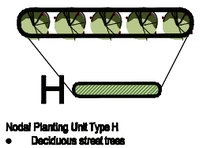
F

Nodal Planting Unit Type F
- Interception planting strip between top of slope (start of run-off) and other Planting Units
- Composed of tightly knitted suckering shrubs to stabilize slope and to take brunt of air-borne salt spray
- Species to include hardy dogwoods, willow, and sumac



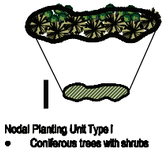
G

Nodal Planting Unit Type G
- Mixed perennials, wildflowers, ornamental, and or native grasses
- To provide seasonal colour and interest
- Ensure species are drought tolerant and salt resistant



H

Nodal Planting Unit Type H
- Deciduous street trees
- Select species with multi-seasonal interest
- Where adjacent to overhead utilities, select small to medium sized species
- Plant selection to be drought tolerant and salt resistant



I

Nodal Planting Unit Type I
- Coniferous trees with shrubs
- Provides visual buffer / screening
- For areas where space is limited but a dense visual screen is required
- Plant selection to be drought tolerant, salt resistant and to provide multi-seasonal interest

LEGEND

Deciduous Trees
Coniferous Tree
Deciduous Shrubs
Perennials

GROUND COVER ZONES
- SOD
- LOW MOW MIX
- NO MOW MIX
- SLOPE MIX
- SWALE SEED MIX

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Date: MARCH 2009

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MISSISSAUGA BRT PROJECT
ENVIRONMENTAL ASSESSMENT ADDENDUM

CONCEPTUAL LANDSCAPING PLAN
EASTGATE PARKWAY SITE

FIGURE
9-4

10. COMMITMENTS TO FUTURE WORK / MITIGATION MEASURES

Through this EA Addendum process, a number of concerns were identified by the Government Technical Review Team, external stakeholders and the public. Where possible (and applicable to this EA Addendum), these have been addressed in the preliminary design of the busway as presented in this document. There remain outstanding issues and concerns that, due to the current level of development of the BRT design, cannot be addressed at the time of submission of this EA Addendum. The following table summarizes these outstanding issues, concerns, and identifies the proposed course of action for the proponent to address these during the detailed design and implementation phases of the BRT project.

It should be noted that this table includes the full range of commitments identified for the Mississauga BRT Project, including those commitments made during the original 1992 Individual Environmental Assessment, the 2004 Environmental Assessment Addendum, and the current 2009 Environmental Assessment Addendum for the Mississauga BRT.

Please note that this table contains commitments made following filing of the EA Addendum for a 30-day public review period on June 12th, 2009, to address concerns raised as a result of the public review. Specific comments received during and after the filing period are presented in Section 11 of this report.

Table 10-1: EA Commitments

EA Potential Effects	EA/2004 EA Addendum/2009 EA Addendum Proposed Mitigation/ Commitments to Future Work	Source of Commitment
Natural Environment		
Physiography and Soils • Possible soil and physiography effects including erosion of exposed slopes and disturbance of bedrock fossils.	• Apply necessary temporary and permanent erosion control measures for exposed soils, slopes. • Develop erosion and sedimentation management plan in detailed design stage. • Continue review and reporting of conditions during and after construction. • Identify and assess bedrock fossil areas prior to construction.	• 1992 EA • 1992 EA • 1992 EA • 1992 EA
Watercourses and Fisheries • Creek crossings and realignments; erosion and sedimentation in streams; and, conflict between fish migration and construction activities. • Potential effect of roadway drainage. • Salt runoff from roadway. • Degradation of fish habitat. • Changes to hydraulic characteristics of watercourses.	• Continue to liaise with TRCA, CVC throughout detailed design process; submit design to TRCA, CVC for review • Obtain MNR/CVC/TRCA permits as required for any floodplain activity. *Note: floodplain activity does not require a permit from MNR.* • Direct bridge runoff away from stream. • Use standard MTO erosion/sediment control at creek crossing areas. • Install and maintain silt fence protection until site stabilized. • Apply CVC/MNR Sediment Control Guidelines (1990). • Proper work scheduling. • Continued review with concerned agencies regarding construction procedures and transitway developments. • Prepare comprehensive stormwater management design during detailed design stage. • Develop drainage plan using principles of no net loss of fisheries habitat, no degradation of stream hydrology and no negative effects on watercourses.	• 2004/2009 EA Addendum • 1992 EA • 1992 EA • 1992 EA • 1992 EA • 1992 EA • 1992 EA • 1992 EA • 1992 EA
Vegetation • Possible vegetation and woodland clearing and disruption during construction. • Reduction/alteration of wetlands.	• Minimize vegetation/woodlot clearing through both design and construction measures. • Restore and rehabilitate natural vegetation where possible; supplement elsewhere with plantings and landscaping. • Minimize physical intrusion through detailed design process. • Implement the City's typical vegetation replacement and enhancement protocols for both woody vegetation and the wetland pockets removed by the project, based on CVC and/or TRCA's guidelines, with consideration of land ownership and usage, including utilities. Specific vegetation replacement is anticipated to be required for RW1, as well as the larger regulated wetland pockets. Candidate areas that exhibit the best potential for vegetation and habitat enhancement are the Etobicoke Creek floodplain, the NE4SMA area east of Cawthra Road, and the Little Etobicoke riparian corridor. Other opportunities such as acquisition of existing forest areas will also be explored. Related consultation with TRCA and CVC will continue during Detail Design.	• 1992 EA • 1992 EA • 1992 EA • 2009 EA Addendum
Wildlife • Possible effect on terrestrial and aquatic wildlife movements and habitat.	• Vegetation retention and replanting to encourage terrestrial wildlife movements. • Construction scheduled to consider terrestrial and aquatic wildlife effects. • Proper staging of construction to minimize disruption to terrestrial and aquatic wildlife movement. For habitat, please see commitments regarding watercourses and vegetation.	• 1992 EA • 1992 EA • 1992 EA
Designated Environmentally Sensitive Areas • Change in character or effect on environment of designated areas.	• Please refer to measures to protect vegetation and wildlife. • Involve City Planning Departments regarding Environmental Policy Areas. • Continued consultation with interested agencies.	• NA • 1992 EA • 1992 EA

EA Potential Effects	EA/2004 EA Addendum/2009 EA Addendum Proposed Mitigation/ Commitments to Future Work	Source of Commitment
Social-Cultural Environment		
Noise • Effect of Transitway operation on outdoor noise levels in surrounding area.	• Noise barriers/berms to be provided where appropriate. • Liaison with MOE will be continued through design. Detailed design of each section to be reviewed by local residents prior to construction. • The City is committed to facilitating a peer review of the noise study for 4310 Sherwoodtowne Boulevard if requested by property owner and dealing with any recommendations stemming from the peer review process. • The City is committed to arranging a meeting between the owner of 4310 Sherwoodtowne Boulevard and the author of the noise impact report for the project, if requested by the owner.	• 1992 EA • 1992 EA • 2009 EA Addendum • 2009 EA Addendum

Visual Impact
• Credit River crossing – structure/piers and bridge profiles will attempt to match configuration of Highway 403 structure. *Note: this is not part of the current project (Phase 1).*
• Adjacent to Highway 403 – restrict Transitway and Station lighting so as not to spill over to Highway 403 or adjacent residential areas.
• Rathburn Road Tunnel – within Mississauga City Centre extensive architectural, planning, landscaping and structural review. *Note: this is not part of the current project (Phase 1).*
• Eglinton Avenue Corridor – aesthetic effects to be dealt with in conjunction with adjacent development at the Detail Design stage. *Note: this is not part of the current project (Phase 1).*
• East side of Winston Churchill – minimize visual impact of busway/interchange ramp grade separation for residents to the north
• Tomken Road crossing – minimize visual impact of busway/Tomken Road grade separation for residents to the south
• Eastgate Parkway crossing – minimize visual impact of busway/Eastgate Parkway grade separation for residents to the south
• Hurontario Street / Sherwoodtowne Boulevard area – mitigate visual impacts to 4310 Sherwoodtowne Boulevard
	• Reduction of visual impacts will be reviewed in Preliminary/Detail Design.
	• Where conflicts between the Transitway and existing High Mast light pole site (mainly near interchanges) occur, alternatives will be investigated at the Detail Design stage towards incorporating any relocations that may be required within the Transitway implementation plan. MTO highway and interchange lighting requirements will be maintained.
	• Implement landscaping concept and berm improvements (where applicable) illustrated in the Preliminary Design:
	  ◦ on north side of busway embankment at the crossing of the S-W, E-N/S ramps at the Winston Churchill / Highway 403 interchange
	  ◦ on the south side of the busway embankment at the crossing of Tomken Road
	  ◦ on the south side of the busway embankment at the crossing of Eastgate Parkway
	• The City will work with the property owner to identify the most appropriate place for relocation of the existing pylon sign.
	• The City will work with the property owner to develop a plan for landscaping including height (~7ft) and colour of visual barrier wall along the east side of the BRT retaining wall.
	• The City will investigate the feasibility of, and if feasible, work with the Property Owner to put signage on the Hurontario side of the proposed visual barrier wall. The City will also review opportunities for signage along the BRT corridor.
		• 1992 EA
		• 2004 EA Addendum
		• 2009 EA Addendum
		• 2009 EA Addendum
		• 2009 EA Addendum
		• 2009 EA Addendum

Air Quality • Possible increase in air pollutants as a result of the operation of the Transitway.	• Ensure design measures are developed to result in adequate levels of air quality in tunnels and stations. • Use of low emission vehicles for transit services. • The City is committed to facilitating a peer review of Air Quality Report for 4310 Sherwoodtowne	• 1992 EA • 1992 EA • 2009 EA Addendum

EA Potential Effects	EA/2004 EA Addendum/2009 EA Addendum Proposed Mitigation/ Commitments to Future Work	Source of Commitment
	Boulevard if requested by property owner and dealing with any recommendations stemming from the peer review process • The City is committed to arranging a meeting between the owner of 4310 Sherwoodtowne Boulevard and the author of the Air Quality Report for the project, if requested by the owner.	• 2009 EA Addendum
Property Value • Effect of Transitway on value of adjacent properties.	• Employ high architectural standards in the design. • Integrate development where feasible. • Minimize physical/environmental effects where integration is not feasible. • Commitment to well developed plans and continued discussion with adjacent property owners.	• 1992 EA • 1992 EA • 1992 EA • 1992 EA
Construction Disruption • Possible disruption to existing traffic. • Temporary noise level increase.	• Construction will comply with any bylaws regarding noise emission of equipment. • Blasting operations, if any are required, will be monitored for noise and vibration and a pre-blast survey will be carried out and reporting submitted to MOE. The Contractor will be advised of the recommended limits for blast-induced sound (concussion) and vibration levels contained in the MOE's Model Municipal Noise Control Bylaw. A copy of all reports on monitoring of these levels will be forwarded to the MOE. • The City will retain a qualified firm to undertake a pre-condition survey inspection, monitor impacts during construction, and perform a post-construction inspection. The City will consider providing the property owner with an opportunity to peer review the pre, during, and post construction project building condition inspection reports for 4310 Sherwoodtowne Blvd. • The City is committed to dealing with any recommendations stemming from the peer review process • The City will facilitate a peer review of the construction method and monitoring program proposed for 4310 Sherwoodtowne Boulevard if requested by property owner. • Restriction of construction activities during certain time periods. • Commitment to proper work schedules. • Review of detour arrangements with MTO for approval prior to construction.	• 1992 EA • 1992 EA • 2009 EA Addendum • 2009 EA Addendum • 2009 EA Addendum • 1992 EA • 1992 EA • 1992 EA
Vibration • Increased vibration due to Transitway; however, vibration limited to minimal air-propagated vibration.	• Since air-propagated vibration is essentially identical to noise in its characteristics it may be assumed that, in meeting criteria for noise levels at adjacent homes, the Transitway also would not result in residents experiencing air borne vibration.	• 1992 EA
Safety • Possible safety hazards associated with the Transitway and passenger safety.	The following measures will be incorporated in the Transitway system to ensure personal safety of all passengers: • Public awareness campaign. • All passenger areas will be well lit and visible. • Emergency telephones will be provided at each platform. • Passenger shelters will be transparent to the degree required to provide visibility both in and out of the shelter. • Pedestrian bridges to be preferred over pedestrian tunnels. • Where pedestrian tunnels are provided, retail or other commercial activity will be recommended for incorporation in the tunnel. • Provision of frequent off-peak service to all stations, to ensure minimum passenger waiting time; • Bus routes, schedules and safety information will be posted in all stations. In addition, the following measures have been identified:	• 1992 EA

EA Potential Effects	EA/2004 EA Addendum/2009 EA Addendum Proposed Mitigation/ Commitments to Future Work	Source of Commitment
	• 1.8 m high chain link fence will be place between the Transitway and adjacent development. The fence should be closed at each crossing roadway and it should be coordinated with any existing parallel fences. • Use of stormwater retention ponds as part of the Transitway drainage system will be minimized to the extent possible, and if used, pond perimeters will be enclosed with a chain link fence. • Where a significant amount of walk-in access occurs, pedestrian walkways will be clearly delineated, signed, and protected to the greatest extent possible. • At stations, loitering or unauthorized entry will be subject to enforcement by police and/or transit operators. • Consultation with agencies involved in safety review.	
Station Access • Effects associated with the protection for ultimate access into Transitway stations. • Provision of safe pedestrian access to Dixie Station	• Ensure stations are fully accessible to all persons (i.e. universally accessible) • Review and continued development of station layout in detailed design stages. • Pursue access from Forest Fire Lane to Cawthra Station via pathway through transformer station property with Hydro One. • As part of its capital sidewalk construction program, the City is committed to constructing sidewalks on Fewster Drive and Encino Drive once warranted.	• 1992 EA • 1992 EA • 1992 EA • 2009 EA Addendum
Heritage Resources • Potential unearthing of heritage/archaeological material during construction. *Note: There are no known built heritage features within the Mississauga BRT corridor. As a result, no mitigation is proposed for built heritage, no significant adverse effects are anticipated and no significant residual effects will occur.*	• Standard reporting for unearthed finds. • Transitway right-of-way to be assessed by licensed heritage resource consultant (i.e. archaeologist) prior to construction. Archaeology reports are to be circulated to Ministry of Culture for review by an Archaeological Review Officer prior to construction.	• 1992 EA • 1992 EA

Adjacent Development
• Protection for future development in accordance with the City of Mississauga Official Plan. *Note: consideration is limited to areas included in the current project (Phase 1).*
 	
• Loss of pedestrian connection from 4310 Sherwoodtowne Boulevard to Hurontario Street
• Relocation of the garbage collection bin at 4310 Sherwoodtowne Boulevard as required for the modification of the Cooksville Creek Culvert
	• Implement Transitway in accordance with passenger demand and development needs.
	• For section from Ninth Line to Mavis Road:
	  • Integrate Transitway and Winston Churchill Secondary Plan planning processes.
	  • Focus higher density development near stations.
	• For the section from Mavis Road to Renforth Drive
	  • Control type and timing of development to match transportation capacity.
	  • Assess demand and justification for "people-mover" higher-order transit system linking the Transitway with other parts of the City Centre and with the Airport.
	  • Continue liaison with developers of adjacent properties.
	  • Develop communications plan to continue dialogue with property owner of 4310 Sherwoodtowne Boulevard
	• Include a new pedestrian bridge connecting Hurontario Street and 4310 Sherwoodtowne Boulevard
	• The City will work with the property owner to relocate the garbage collection bin either temporarily or permanently as part of the work for the reconstruction of the Cooksville Creek culvert work.
		• 1992 EA
		• 1992 EA
		
		• 1992 EA
		
		• 2009 EA Addendum
		• 2009 EA Addendum

EA Potential Effects	EA/2004 EA Addendum/2009 EA Addendum Proposed Mitigation/ Commitments to Future Work	Source of Commitment
• Ongoing communication with owner of 4310 Sherwoodtowne	• The City will prepare a communications plan to continue dialogue with the property owner prior to and during construction.	• 2009 EA Addendum
Transportation/Roadways		

• Effects related to protection for ultimate Highway 403 expansion needs including:
  • Additional median lanes (*no effect*);
  • Ramp metering and ramp meter bypass lanes; and
  • Auxiliary lanes between sequential interchanges.
• Reconfiguration and/or crossing of numerous freeway entrance ramps.
	• Grade separation with all crossing roadways.
	• Structures to accommodate two lane on-ramps and three lane off-ramps.
	• Offset between Transitway and existing freeway edge of pavement to be no less than 10.25m, allowing for 3.75m auxiliary lanes, 3m shoulder, 1m barrier, and 2.5m Transitway shoulder.
	• Adequate separation to allow rural (open ditch) drainage to be provided wherever physically possible.
	• Reconfigured ramps to meet MTO design standards.
	• Cawthra Station access ramps designed to protect for possible ultimate grade separation and interchange between Cawthra Road and Eastgate Parkway.
	• Continued liaison with MTO Planning and Design staff through implementation period.
	• All interchange revisions will be subject to MTO design criteria and processes.
		• 1992 EA
		• 1992 EA
		• 1992 EA
		• 1992 EA
		• 1992 EA
		• 1992 EA
		• 1992 EA
		• 1992 EA

• Maintenance of operational integrity and adequate level of traffic service at ramp terminal intersection at Winston Churchill Boulevard, Erin Mill Parkway, and Mavis Road interchanges with Highway 403 • Additional access at terminal of E-N/S ramps • Rerouting of N-W ramp traffic through ramp terminal intersections • Northbound left turn lane for cars and buses • Changes in traffic signal phasing and timing • Reduction in overall vehicular traffic in corridor, as compared to the "do nothing" case.	• Limit size of Winston Churchill parking lot to that which can be accommodated by the intersection access. • Provide kiss and ride areas at each station to eliminate cars stopping on arterial to drop off / pick up passengers • Change parking fee at park and ride lots • Provide adequate turn provisions at station accesses • Restrict station access to buses only at times of high traffic volume (if necessary for acceptable signal operation) • Transit operation and marketing to encourage use of transit and discourage car access to Transitway Station • Encourage provisions of park and ride facilities west of Highway 407 in Halton. • Monitoring of traffic flow, volume, and signal operations at stations accesses.	• 1992 EA • 1992 EA • 1992 EA • 1992 EA • 1992 EA • 1992 EA • 1992 EA • 1992 EA
• Access to and from Cawthra Station. Direct access ramps introduced.	• All moves are freeflow; no signals introduced to adjacent roads/ramps • Station-oriented traffic diverted from Cawthra/Eastgate intersection to the greatest extend possible. • Continued liaison with MTO Planning and Design staff through implementation period • Monitoring of traffic flow at Cawthra Station area. • Park and Ride access / Eastgate Parkway intersection will be developed in detail and its traffic operations analyzed by the City in the detailed design stage. Adequate flexibility exists to accommodate a wide range of Park and Ride lot needs.	• 1992 EA • 1992 EA • 1992 EA • 1992 EA • 2004 EA Addendum
• Protection of current and future drainage requirements for MTO roadways • Alterations of existing drainage patterns	• Develop and implement Master Drainage Plan. • No deterioration of existing drainage conditions on MTO facilities will result from Transitway implementation.	• 1992 EA • 1992 EA

EA Potential Effects	EA/2004 EA Addendum/2009 EA Addendum Proposed Mitigation/ Commitments to Future Work	Source of Commitment
• Possible extension of existing MTO culverts	• Continued liaison with MTO Planning and Design staff • Comprehensive preliminary design of drainage system to be completed prior to construction of first Transitway segment. • Grading, retaining walls, and landscaping plans to be reviewed by MTO and confirmed during the detailed design phase of the project.	• 1992 EA • 1992 EA • 1992 EA
• Disruption during construction to Highway facilities and crossing roads • Detours required during construction of most Transitway structures. Feasible detours are available in each case.	• Maintenance of six lanes of traffic on Highway 403, four lanes of traffic of crossing arterials, and one lane of traffic on each ramp throughout construction. • Use of adequate design standards for all detours • Review of detail design and detour arrangements by MTO for approval prior to construction	• 1992 EA • 1992 EA • 1992 EA
• Protection for ultimate access requirements between Highway 403 and Mississauga City Centre. • Transitway occupies property that could otherwise be considered for City Centre collector/ramp facilities. • Early Transitway need for improved Highway 403 access in City Centre area.	• Transitway alignment developed under MTO review, does not preclude ability to implement the ultimate collector roadway network between Mavis Road and Eglinton Avenue. • Continued liaison with MTO Planning and Design staff.	• 1992 EA • 1992 EA
• Operational Safety, particularly headlight glare between Highway 403 and Transitway traffic, separation between S-W and E-N/S ramps at Winston Churchill / 403 interchange • Transitway grade similar to freeway grade in many areas.	• Visual screening for headlight glare where required • Standard physical separation and safety appurtenances. • Review of detail design by MTO for approval prior to construction.	• 1992 EA • 1992 EA • 1992 EA
• Access to 4310 Sherwoodtowne Boulevard	• Consider the feasibility of allowing cars to turn left onto Sherwoodtowne Blvd from southbound Hurontario Street and consider creating a left turn access into the property from eastbound Rathburn Road under a separate project.	• 2009 EA Addendum
• Dixie Station traffic impacts	• Assess potential intersection improvements to mitigate traffic impacts at detailed design stage	• 2009 EA Addendum
• Concerns regarding potential for on-street parking (and associated traffic impactcs) at Tomken Station	• Prohibit on-street parking on Tomken Road in the vicinity of Tomken Station	• 2009 EA Addendum
Utilities		
• Effects related to protection for ultimate Ontario Hydro expansion requirements: *Note: consideration is limited to areas included in the*	• Transitway alignment generally avoids Ontario Hydro right-of-way; one crossing is at least skew possible; ancillary features (e.g. park and ride lots, stormwater management ponds) in Hydro right-of-way.	• 1992 EA

EA Potential Effects	EA/2004 EA Addendum/2009 EA Addendum Proposed Mitigation/ Commitments to Future Work	Source of Commitment
current project (Phase 1). • Transitway adjacent to Ontario Hydro right-of-way from Ninth Line to Confederation Parkway and from Cawthra Road to Fieldgate Drive. • Transitway crosses Ontario Hydro right-of-way between Winston Churchill Boulevard and Glen Erin Drive • Parking, bus layovers, station access roads and walkways lie on Ontario Hydro property at several stations.	• Where open cut for Transitway extends into Ontario Hydro right-of-way, provide retaining wall instead if required by Ontario Hydro. • Continued liaison with Ontario Hydro through implementation phase. • Ontario Hydro review of preliminary and detail design drawings for approval of elements affecting Ontario Hydro property. • Public and government agency comment to be solicited (under Ontario Hydro OH-27 Exemption Order) regarding secondary use of Hydro lands.	• 1992 EA • 1992 EA • 1992 EA • 1992 EA
• Raising of towers to provide clearance for construction and/or permanent installations. Need for Environmental Assessment approval to raise Hydro Towers. • Transitway and ancillary facilities at or below grade; temporary raising of transmission wires may be required.	• Cost to be borne by Transitway project. • Impact to be defined during Detail Design.	• 1992 EA • 1992 EA
• Maintenance access to all Hydro towers and facilities and to all pipelines and utilities in the Parkway Belt. • Improved access to most of Hydro corridor and pipelines. • Access to some utilities in some station areas may be constrained. • Parking areas or internal station roadways cross underground utilities in numerous locations.	• Use of station roadways and Transitway by maintenance vehicles to be permitted (authorization required) • Temporary partial or full closure or when required for utility maintenance, emergency work or reconstruction in or around Transitway station areas. • Closure or restriction of Transitway to be permitted in cases of severe unavoidable or emergency utility requirements. • Station layout to permit utility access. • Specific access points to Ontario Hydro property to be incorporated in Detail Design, following identification by Hydro of needs. • Develop a permanent notification mechanism covering all Parkway Belt users to ensure mutual awareness of maintenance needs.	• 1992 EA • 1992 EA • 1992 EA • 1992 EA • 1992 EA • 1992 EA
• Access to future Hurontario Transformers Station (East of Hurontario Street, North of Highway 403 within Ontario Hydro right-of-way) • Transitway south of Highway 403, does not affects existing Hydro Mississauga installation in this area. • Possible redesignation of utility corridor in Parkway Belt West Plan to south side of corridor	• Share Transitway right-of-way with Hydro Mississauga where feasible and required • Reach a detailed understanding with Ministry of Municipal Affairs regarding need for Hydro Mississauga to locate future pole lines south of 403 in the event of utility corridor redesignation	• 1992 EA • 1992 EA

EA Potential Effects	EA/2004 EA Addendum/2009 EA Addendum Proposed Mitigation/ Commitments to Future Work	Source of Commitment
resulting from Transitway plan: if future Hydro Mississauga pole lines were restricted to this corridor a major underground crossing of Highway 403 would be required to access Hurontario Street.		
• Relocation of existing oil pipelines • Relocation, realignment, and lowering of existing pipelines required at numerous points between Ninth Line and Fieldgate Drive (particularly at station sites) • Exact definition of Transitway effects can not be made pending detail design completion	• Transitway plan developed to minimize utility impacts plans reviewed by all utilities and revised by all utilities and revised based on comments received. • Transitway proponent to pay for utility reconstruction costs associated with Transitway implementation • Relocation of existing pipelines within Ontario Hydro right-of-way to be subject of agreement between Ontario Hydro and affected pipeline companies • Ongoing liaison process between Transitway proponent and utilities • Address specific requirements in detail design; plans to be reviewed and approved by all affected utilities prior to construction • Proponent to compensate utilities for major inspection requirements during construction	• 1992 EA • 1992 EA • 1992 EA • 1992 EA • 1992 EA • 1992 EA
• Location of future utilities within Parkway Belt West • Transitway may trigger a shift in designation of some corridor uses within the Parkway Belt West Plan	• Address future utility needs as they occur, all existing and currently proposed utilities incorporated in the development of recommended plan. • Recommended Transitway plan has continuous utility strip protected in Parkway Belt. • Review plans with Ministry of Municipal Affairs to ensure conformity with intent of Parkway Belt West Plan • Request deeming of necessary property following EA approval.	• 1992 EA • 1992 EA • 1992 EA • 1992 EA
• Provision for Hydro Mississauga requirements at Credit River crossing • Transitway crossing in potential conflict with desired hydro alignment	• Provide duct bank or pole supports in Transitway structure • Review needs with Hydro Mississauga at time of detail design.	• 1992 EA • 1992 EA
• Secondary Use of Ontario Hydro property • Parking, access roads, bus layovers, and walkways are recommended at most stations as secondary uses on Ontario Hydro property	• Provide visual/noise mitigation measures as required • Structure and market transit operations so as to minimize demand for use of ancillary station facilities (parking, kiss, and ride, etc.) • Implement secondary use facilities in accordance with Ontario Hydro OH-27 Exemption Order. At the time of implementation, solicit additional public comment and document comments from interested Government Agencies	• 1992 EA • 1992 EA • 1992 EA
• Property ownership and acquisition of easements on Ontario Hydro right-of-way • Property required for Transitway crossing of Ontario Hydro right-of-way	• Restrictions to be placed on Transitway property acquired from Ontario Hydro in order to protect Ontario Hydro's interest • Definitions of type of document to be agreed between City, MTO, and Ontario Hydro (sale, license, easement, etc.)	• 1992 EA • 1992 EA

EA Potential Effects	EA/2004 EA Addendum/2009 EA Addendum Proposed Mitigation/ Commitments to Future Work	Source of Commitment
Approvals and Permits		
• Requirement for approvals under provincial statues (e.g. Environmental Assessment Act, Planning Act, Parkway Belt West Plan).	• Obtain all necessary approvals and permits • Obtain MOE Certificate of Approval for proposed stormwater management ponds and storm sewers	• 1992 EA • 1992 EA
• Agency review commitments	• Provide final copies of any Contaminant Overview Studies and Archaeological investigations pertaining to ORC lands to ORC for review	• 2009 EA Addendum
Monitoring		
• Traffic conditions at freeway interchange access points.	• Annual traffic count program; ongoing signal timing review.	• 1992 EA
• Water quality and siltation of new crossings on Credit River, Mullet Creek, Cooksville Creek and Etobicoke Creek.	• Sample monitoring for a period of one year following construction.	• 1992 EA
• Noise levels in adjacent areas	• Field noise level measurement prior to and following Transitway operation at potentially affected residential sites. • In addition, please refer to commitments listed under "Construction Disruption"	• 1992 EA • NA
• Air pollution levels in adjacent areas.	• Field air quality level measurement prior to and following Transitway operation at potentially affected residential sites.	• 1992 EA
• Community disruption due to noise, truck movement, dust, etc. during construction.	• On-site supervision during the period of construction.	• 1992 EA

11. RECORD OF CONSULTATION FOLLOWING FILING OF EA ADDENDUM

The following tables provide a record of the comments received and subsequent consultation that has occurred as a result of reviewing the 2009 EA Addendum report as filed in May of 2009.

Table 11-1 summarizes the comments submitted by the Government Review Team and subsequent correspondence with the project team to address the comments. Table 11-2 summarizes the comments submitted by members of the public and subsequent correspondence with the project team to address the comments.

Table 11-1: GRT Consultation Summary

Submitter	Summary of Initial Comments Received	Proponent's Response to Initial Comments	Stakeholder's Subsequent Comments	Proponent's Response to Subsequent Comments	Status as of Addendum Submission
Federal Agencies					
Canadian Environmental Assessment Agency	The CEAA Agency was involved (2007) and provided the text for the City of Mississauga as described in Section 3.6. We see that a federal screening report was provided to Transport Canada January 2009 as per page 3-9. Continue to work with Transport Canada to determine their requirements given federal funding. The BRT may be subject to Exclusion List Regulation, which will be determined by Transport Canada.	Comment noted. See Transport Canada response below. MOE Project Officer, in an email to the City of Mississauga BRT office dated July 29, 2009, advised that "I don't believe there is a need for the City to formally respond to CEAA."			No further agency involvement required in EA Addendum review process.
Canadian Pacific Railway	CPR has No comments. See e-mail dated August 28, 2009 from David Lukianow. Would like to continue to be informed of the project.				No further EA review required.
Department of Fisheries and Oceans Canada	The DFO has no comments. The Federal EA conducted by Transport Canada included all the changes proposed in the EA Addendum. As part of that process, Transport Canada consulted with the various Federal Authorities that had an interest or could provide expert advice (including Environment Canada, DFO and Health Canada). All of these agencies have reviewed the CEAA Screening Report and Transport Canada is satisfied that the project will not result in significant adverse environmental effect. See emails dated January 21 & 22, 2009. In keeping with MOE requirements and discussions, a copy of the EA Addendum was sent to this agency for information.				No further EA review required.
Environment Canada	Environment Canada has no comments. The Federal EA conducted by Transport Canada included all the changes proposed in the EA Addendum. As part of that process, Transport Canada consulted with the various Federal Authorities that had an interest or could provide expert advice (including Environment Canada, DFO and Health Canada). All of these agencies have reviewed the CEAA Screening Report and Transport Canada is satisfied that the project will not result in significant adverse environmental effect. See emails dated January 21 & 22, 2009. In keeping with MOE requirements and discussions, a copy of the EA Addendum was sent to this agency for information.				No further EA review required.
Greater Toronto Airport Authority	No comments. See email dated August 28, 2009 from Gene Corazzola of the GTAA.				No further EA review required.
Health Canada	Health Canada has no comments. The Federal EA conducted by Transport Canada included all the changes proposed in the EA Addendum. As part of that process, Transport Canada consulted with the various Federal Authorities that had an interest or could provide expert advice (including Environment Canada, DFO and Health Canada). All of these agencies have reviewed the CEAA Screening Report and Transport Canada is satisfied that the project will not result in significant adverse environmental effect. See emails dated January 21 & 22, 2009.				No further EA review required.

Submitter	Summary of Initial Comments Received	Proponent's Response to Initial Comments	Stakeholder's Subsequent Comments	Proponent's Response to Subsequent Comments	Status as of Addendum Submission
	In keeping with MOE requirements and discussions, a copy of the EA Addendum was sent to this agency for information.				
Infrastructure Canada	Infrastructure Canada has no comments. See e-mail dated February 2, 2009 from Kathryn Cooper of Transport Canada and letter dated February 2, 2009 from Mo Tayyaran of Transport Canada, indicating with the implementation of the mitigation measures described in the CEAA Environmental Assessment Screening Report for the Mississauga BRT Project and Monitoring Plan the responsible authorities (RAs) have determined " the project is not likely to cause significant adverse environmental effects"". However, in keeping with MOE requirements and discussions, a copy of the EA Addendum was sent to this agency for information.				No further EA review required.
Transport Canada	Transport Canada has no comments. See e-mail dated February 2, 2009 from Kathryn Cooper of Transport Canada and letter dated February 2, 2009 from Mo Tayyaran of Transport Canada, indicating with the implementation of the mitigation measures described in the CEAA Environmental Assessment Screening Report for the Mississauga BRT Project and Monitoring Plan the responsible authorities (RAs) have determined " the project is not likely to cause significant adverse environmental effects"". However, in keeping with MOE requirements and discussions, a copy of the EA Addendum was sent to this agency for information.				No further EA review required.
Provincial Agencies					
GO Transit	CO-PROPONENT				Continue as co-proponent
Hydro One Inc.	Has been working directly with the proponent. Will not be providing general comments on the EA Addendum. Comments, as applicable, will be provided by the ORC.				Continue liaison through design process. See ORC response below.
Metrolinx	Follow up email sent August 27, 2009 to James O'Mara requesting comments by September 4, 2009. To date, have received no comments from Metrolinx.				No further EA review required.
Ministry of Citizenship and Immigration	Follow up email sent August 27, 2009 to Tom Chrzan requesting comments by September 4, 2009. To date, have received no comments from the Ministry of Citizenship and Immigration.				No further EA review required.
Ministry of Culture	As part of the Planning Act process, the Ministry of Culture has an interest in the conservation of cultural heritage resources including: Archaeological resources; built heritage resources; and cultural heritage landscapes. We have reviewed the following information: Mississauga Bus Rapid Transit Project Environmental				All MCC comments received have been addressed in final EA Addendum.

Submitter	Summary of Initial Comments Received	Proponent's Response to Initial Comments	Stakeholder's Subsequent Comments	Proponent's Response to Subsequent Comments	Status as of Addendum Submission
	Assessment Addendum May 2009 by McCormick Rankin Corporation in association with Ecoplans, Ltd. Ministry of Culture staff reviewed the above noted report and provide the following: Sections 4.2 Socio Cultural Environment, 4.2.1 Archaeology and Heritage, 4.2.1.1 Archaeology – MCL understands from this section the New Directions Archaeology Ltd. has completed a Stage 1 Archaeological Assessment of the study area. The following information needs to be included in the report:				
	• What was the duration of the archaeological assessment; when was the archaeological assessment completed?	The Stage 1 Assessment field visit occurred on November 27, 2007. A Stage 2 investigation will be completed in September 2009	Thank you. Ensure that this comment is reflected in the body of the EAA report.	Stage 2 investigation completed in fall 2009.	
	• There is a discrepancy with the number of known sites reported in a 2 km radius of the study area (MCL has 64 known archaeological sites recorded). Needs to be verified and accurately reported.	The information included in the report came directly from the Ministry of Culture's Data Coordinator. The important point is that there are no registered sites located along the proposed corridor.	Report needs to clarify that there are 32 known sites within a 2 km radius within the study area <u>of the Addendum</u> (and not the entire corridor).	Text revised.	
	• Any archaeological reports should be submitted to Programs and Services Branch, Ministry of Culture – not the Heritage Branch.	The report was submitted to the Ministry of Culture	MCL comment was in regard to future archaeological report submissions.		
	• In the event that human remains are found, the local police and the coroner's office must be notified immediately, followed promptly by notification to the Ministry of Culture.	As required by the Ministry of Culture, recommendation #4 in both of the reports states that "In the event that human remains are encountered during construction, the proponent should immediately contact both Ministry of the Culture (416) 314-7452, and the Registrar of the Cemeteries Branch of the Ministry of Government	MCL staff recommend the following current telephone numbers be used: MCL 416-314-7148. Registrar is now part of the Ministry of Consumer Services:		

Submitter	Summary of Initial Comments Received	Proponent's Response to Initial Comments	Stakeholder's Subsequent Comments	Proponent's Response to Subsequent Comments	Status as of Addendum Submission
		Services (416) 326-8404. The local police department should also be notified."	1-800-889-9768.		
	• Section 4.2.1.2 Heritage – The following information needs to be included in the report: Who made the determination that there will be "no known built heritage resources displaced by the project"? (i.e.: list sources of information including Built Heritage Consultant/City of Mississauga staff and any other authority consulted).	In the 1992 EA, the City of Mississauga identified a Heritage Resource at Eglinton and Mavis Road as the only Heritage Resource within the Study area. This site will not be impacted by the work proposed in the EA Addendum.	Thank you. Please ensure that this information is included in the EAA.	Text added to Section 4.2.1.2	
	• While references to the original EA and the 2004 EAA are mentioned, specific references to existing built heritage / cultural landscape reports are needed in this section.	No specific built heritage / cultural landscape reports were completed for this EA Addendum	No further comment.		
	Further archaeological assessment(s) by an archaeologist licensed under the Ontario Heritage Act are required for this project prior to any ground disturbances and/or site alterations. The assessment report(s) must be in compliance with the Ministry of Culture's *Standards and Guidelines for Consultant Archaeologists*. The licensed archaeologist will forward all completed archaeological assessment reports to the Ministry of Culture for review by an Archaeological Review Officer. In the event that human remains are found, the local police and the coroner's office must be notified immediately, followed promptly by notification to the Ministry of Culture.	A Stage 2 Assessment has been completed for the areas identified within the Stage 1 Assessment.	This paragraph appears to be copied from another section of our original comments. Ensure that the EAA has current information on archaeological assessment.	The EA Addendum contains information regarding the Archaeological Assessment that was current at the time of filing of the report on June 12th, 2009. Subsequently, a Stage 3 Assessment has been carried out (late 2009) for a single location identified as having potential historic interest, located on the busway main line alignment to the west of	Any further archaeological assessments required for the BRT project will be submitted to the Ministry of Culture for review prior to commencing any construction activities on the subject lands

Submitter	Summary of Initial Comments Received	Proponent's Response to Initial Comments	Stakeholder's Subsequent Comments	Proponent's Response to Subsequent Comments	Status as of Addendum Submission
				Dixie Road. A copy of the Stage 3 Archaeological Assessment has been submitted to the Ministry of Culture.	
Ministry of Energy and Infrastructure	Follow up email sent August 27, 2009 to Kevin Pal requesting comments by September 4, 2009. To date, have received no comments from the Ministry of Energy and Infrastructure.				No further EA review required.
Ministry of the Environment Environmental Assessment and Approvals Branch Project The Addendum was reviewed by MOE staff of the Environmental Assessment and Approvals Branch, Project Coordination (EAPC) Section; Air & Noise (ANU) and Water & Wastewater (WWU) Approval Units; the Central Region Office Technical Support Section (TSS), as well as the Halton-Peel District Office.	The Ministry of the Environment (MOE) has reviewed the Environmental Assessment Addendum Report (Addendum) dated May 2009, submitted on June 9, 2009. **GENERAL** **Commitments and Monitoring** – As indicated in Section 4.3.5 of the EA Code of Practice, the EA Addendum must include details of commitments made to stakeholders regarding mitigation and monitoring. For ease of reference, all commitments should be presented in a table format, listed by category. **Table of Contents**: • Reference to Noise-Related Conditions of Approval, Section 2.1.6 should be removed as this discussion was eliminated from the final Addendum. • Some Figure titles as they appear here are not consistent with the titles that appear on the actual figure (see: Figures 2-6, 5-1, 6-4, 7-4, 8-1, 8-2, 9-4). • Table 7-3 has a spelling error in the title.	A table summarizing the commitments made during the original EA, the 2004 EA Addendum, and the current (2009) EA Addendum has been included in the main report as Table 10-1. Revised Noted. Revised			All MOE EA Branch comments received have been addressed in final EA Addendum.

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Comments from EAPC and ANU are provided here. Comments submitted by the TSS are provided above. The Halton-Peel District Office and Water & Wastewater Unit (WWU) did not have any comments or concerns with the changes proposed in the Addendum.	• Table 9-3 does not include site identification information in the title. **Figures and Tables:** • Not all tables and figures provided were specifically discussed which made it difficult to determine the relevance of the material being presented. • Care should be taken to ensure that the legends provided with the figures reflect all information charted (e.g.: Figure 5-5, orange and brown lines not identified in legend). • When referring to previously approved alignments consistency should be sought to avoid confusion. In this document, in addition to *previously* approved, the alignments have been referred to as *Base Case*, *Approved* and *Alternative*. **INTRODUCTION** **Section 1.1 – Background:** • Page 1-2, last paragraph, second sentence: spelling error. **Section 1.4 – Content of the Addendum:** • All mitigation commitments are to be presented in table format (see comments under General section above). **UPDATE OF PROJECT SCOPE** **Section 2.1 – Revised Project Scope:** • Reference to the 1993 EA Conditions of Approval	Revised Noted. Text will be revised accordingly. Drainage figures revised. Revised Revised See response above. Revised			

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	should be removed. **Section 2.1.2 – Hurontario Crossing:** • Second paragraph: last sentence is an incomplete sentence. Point needs to be clarified. • Reference to the ultimate plan made in the third paragraph needs to be better explained. **Figure 2-5:** • The Study Area does not encompass the proposed east side ramp. Adjust appropriately or provide an explanation. • The scale used in this figure is 1:3,000 whereas the scale used for all other figures in this section is 1:2,000. All relative figures are to be presented using a consistent scale. **CONSULTATION PROGRAM** **Section 3.1.2 – Public Consultation: Ontario EA Addendum – June 2008** • Presenting key issues raised, resolutions reached and identification of any outstanding concerns in a summary table is required in this section. In essence, it is a summary table of the consultation summary tables presented in Section 5 through 9. **Section 3.6 – Canadian Environmental Assessment Act (CEAA) Requirements** • Page 3-8, second last paragraph: spelling error.	Revised Revised The ramp connection from the east side of Dixie to the busway was approved under the previous EA studies and no significant change to the ramp is proposed. The figures in this section are not directly related – they illustrate different study areas of differing sizes. The scale used in the Dixie Road study area figure (1:3,000) is required to illustrate the route proposed to access the lot, which otherwise would not fit within the page size at a scale of 1:2,000. Table added. Revised			

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	UPDATE OF STUDY AREA CONDITIONS				
	Section 4.1.1.3 – Utilities Within/Crossing Corridor • Providing figures mapping out the utilities as discussed in this section would be helpful.	Utility information is included on the respective plans for the alternatives			
	Section 4.1.1.4 – Adjacent Land Uses • As above, providing figures detailing land use as discussed would be helpful.	Adjacent land use is shown on the respective plans for the alternatives			
	Section 4.1.1.6 – Drainage and Surface Water • Page 4-7, Outlet 10: The Etobicoke Creek is referenced but is not detailed in the related figure (4-5). Adjust appropriately or provide an explanation.	Outlet 10 has been identified on Figure 4-7.			
	Section 4.1.2 – Natural Environment • What are the six proposed modifications referenced in the first paragraph?	The reference to "six" modifications has been deleted			
	Section 4.1.2.2 – Fish and Fish Habitat • Last paragraph: Last sentence in this section, page 4-10, is incomplete.	Revised			
	Section 4.2.1.1 - Archaeology • First paragraph: first sentence is incomplete.	First sentence is complete. No change required.			
	Section 4.2.2 - Noise • The representative receptor chosen for the Winston Churchill Boulevard site was Rw7, however, this receptor is neither the receptor with	The receptor was chosen at it is the closest to the area of change within this area. Detailed noise results are included in the Appendix.			

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	the highest existing sound levels nor is it the closest to the BRT alignment. What is the rationale for the choice?				
	Figures 4-1 Through 4-5 • Information is presented inconsistently in these figures (e.g. street names are not always visible, existing culverts, ditches and swales don't appear on all figures, HP numbers are only shown on 4-1).	Noted.			
	Figures 4-8 Through 4-9 • Legend does not include descriptive information pertaining to all identified subjects referenced in these two figures. Adjust appropriately or provide an explanation.	Noted.			
	Figures 4-10 Through 4-11 • Providing a two page map scaled to include the entire project area marking out the particular areas requiring further assessment would be easier to read than four close-up project segments shown in different directional orientation that has been provided here.	These are the plans from the previous EA reports, no changes are proposed.			
	WINSTON CHURCHILL BLVD. INTERCHANGE **Section 5.3 – Evaluation/Analysis** • When referencing the three alternatives the approved alternative should be identified as such to avoid misunderstanding.	Revised			

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	Section 5.5.2.4 – Stormwater Management • Under the subheading *Stormwater Management Criteria*, top of page 5-8, provide a definition of the acronym SWM BMP.	Revised			
	• Under the subheading *Potential Operation and Maintenance Effects*, first paragraph, the MTO is referenced as an example of local property owners that the City of Mississauga will be consulting with. Who are the others?	The adjacent residential property owners to the pond will be consulted. Text revised.			
	Section 5.5.3.1 - Archaeology • Page 5-9, first bullet point: provide details of what is involved in Stage 3-4 mitigation.	This is standard terminology by Ministry of Culture, no further details will be provided.			
	• Page 5-9, first bullet point: second sentence does not make sense.	Revised			
	Figure 5-5 • Orange and brown lines marked on figure have not been defined in the legend.	Revised.			
	Figure 5-6 • Showing the proposed landscape plan at a scale that would include the location of the resident on Ambercroft Trail that raised issues about visual impact would be helpful.	Revised.			
	• Why is the scale used in Figure 5-6 different from the scale used in Figures 6-4 and 7-4?	The scale is different to reflect the different study areas.			

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	HURONTARIO STREET CROSSINGS				
	Section 6.1.1 – Current BRT Plan • The description of the approved alignment must be written consistently. The description provided here is different than that provided in Section 2.	Revised			
	• Reference to the ultimate plan made in the second paragraph needs to be better explained (see comments in Section 2.1.2).	Revised			
	Section 6.2 - Alternatives • First paragraph, what is meant by the *primary* alternative?	The word primary has been removed.			
	• For clarification recommend that the second paragraph be re-written.	Paragraph has been reworded			
	Section 6.3 – Evaluation/Analysis • First paragraph: is avoiding the creation of a new crossing of Hurontario Street a new alternative? Recommend re-writing to provide clarification.	Avoiding the crossing of Hurontario is the alternative. Text revised.			
	• Second paragraph: what is the context for introducing the Hurontario Tunnel?	The Hurontario tunnel is the previous EA approved alternative for this location. Clarified in text.			
	• Third paragraph, third sentence: is Sherwoodtowne Boulevard the loop ramp that connects Rathburn Road with northbound Hurontario Street? Provide clarification.	Sherwoodtowne Boulevard is not the westbound Rathburn to northbound Hurontario loop ramp, they are two separate road segments.			
	• Third paragraph, fourth sentence: are the retaining walls referenced here busway cuts?	Yes			

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	• Table 6-1, Property impact: are the retaining walls referenced here busway cuts?	Yes			
	Section 6.4 – Conclusions/Recommendations • Top of page 6-4: for what purpose is the City going to investigate alternative transit operational options along Rathburn Road? How is this related to the proposed changes? How is this a conclusion of the evaluation/analysis?	As a result of the revised connection at Rathburn Road, the exclusive busway connection at Centre View Drive is removed. The City will investigate options along Rathburn to provide Transit priority for buses travelling between the City Centre and the Rathburn connection with the BRT East.			
	Section 6.5.1.1 – Roads • Under the subheading *Operations* is relocating the existing southbound Hurontario Street to westbound Rathburn Road ramp being proposed in this Addendum?	No, this ramp relocation or closure of the ramp is not proposed as part of this project.			
	• Top of page 6-5, second bullet: a figure that includes all streets referenced needs to be provided in this section in order to understand what is being proposed here.	A new key-plan figure has been included.			
	Section 6.5.2.4 – Stormwater Management • Second paragraph, second bullet: Outlet 7 is in the Tomken Road area not the Hurontario Street area. Adjust appropriately or provide explanation.	The reference to Outlet 7 has been removed.			
	Section 6.5.3.3 - Noise • A Noise Analysis table should be provided presenting data on the four receptors in the area (as was provided in Section 5.5.3.3).	Only one receptor is affected as a result of the proposed change and it is a commercial property, the other 3 receptors are not affected.			
	Section 6-2 • The existing southbound Hurontario Street to	The reference is for Figure 6-2, this ramp relocation or			

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	westbound Rathburn Road ramp is marked as being closed yet in Section 6.5.1.1 relocation of this ramp is discussed. What is being proposed in this Addendum?	closure of the ramp is not proposed as part of this project. The figure will be revised.			
	• If closing this ramp is being proposed, what is the impact to residents, motorists and other stakeholders? Where is this presented?	The reference is for Figure 6-2, this ramp relocation or closure of the ramp is not proposed as part of this project. The figure will be revised.			
	Section 6-4 • The existing southbound Hurontario Street to westbound Rathburn Road ramp is marked as being relocated on this figure yet this proposal has not been fully presented in this Addendum.	The reference is for Figure 6-4, this ramp relocation or closure of the ramp is not proposed as part of this project. The figure will be revised.			
	TOMKEN GRADE SEPARATION **Section 7.5.3.3 - Noise** • A subheading titled *Methodology* is presented here. However it does not appear in Section 5, 6, or 8. What is the relevance of including here and in Section 9 only?	Comment noted, text has been revised to remain consistent with other Noise sections.			
	Figures 7-3 and 7-4 • Why is a proposed stormwater management pond indicated on the proposed landscape plan (7-4) but not on the future drainage and stormwater management figure (7-3)? Where is the rationale for the proposed stormwater management pond?	The Tomken ponds are consistent, the pond to the east of Little Etobicoke Creek is not shown on Figure 7-4 as it is beyond the viewport illustrated in the figure. The rationale for the pond is included in the Preliminary Stormwater Management Report for the BRT East.			
	DIXIE STATION **Section 8.1.1 – Current BRT Plan**	No change.			

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	• Based on the narrative description provided in this section and the illustration provided in Figure 8-1 it is unclear how the current plan was supposed to work. **Section 8.1.2 – Outstanding Issues** • Based on the narrative description provided in this section and the illustration provided in Figure 8-2 the outstanding issues are unclear. **Section 8.2 - Alternatives** • Based on the narrative description provided in this section and the illustrations provided in Figures 8-1 and 8-2 it is unclear what is being proposed. **Section 8.3 – Evaluation/Analysis** • Table 8-1, financial analysis was provided in all other Sections, why not here? **Section 8.5.1.2 – Utilities Within/Crossing Corridor** • Under the subheading *Pipelines*, a statement that the busway does not cross any pipelines in the Dixie Road/Eastgate Parkway areas seems to be later contradicted in Table 8-2 (see below). Adjust appropriately or provide explanation. • Under the subheading *Dixie Road*, first paragraph:	Text revised to clarify. Text revised to clarify. As indicated the modifications associated with the recommended alternative are low cost and accordingly the cost differences are minimal between the options. For this reason, the impact assessment focused on the improvement to bus operations, potential implications on intersection level of service created by the localized traffic increases and access to the parking lot. The proposed change to relocate the parking area to the west and relocate the BRT access roads removes any conflicts with the existing pipelines. The response to the resident was in reference to the previous alternative which was in conflict with the pipelines on the east side of Dixie Road.			

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	how significant is the required horizontal and/or vertical realignment of the watermain along Dixie Road? What are the potential impacts? Required mitigation measures? Are there figures illustrating the proposed realignment?	The proposed realignment of the watermain is a result of the BRT construction and is not a result of the proposed change. The realignment of the watermain is minor in nature and will be reviewed and approved by the Region of Peel to meet their requirements.			
	Table 8-2 • The response to a suggestion from a resident to relocate the Park and Ride lot on the east side of Dixie Road indicated that the presence of buried pipelines, hydro towers, etc. precluded the viability to relocate the lot to the east side of Dixie Road. However, this seems to be contradicted in Section 8.5.1.2 (see above).	The proposed change to relocate the parking area to the west and relocate the BRT access roads removes any conflicts with the existing pipelines. The response to the resident was in reference to the previous alternative which was in conflict with the pipelines on the east side of Dixie Road.			
	EASTGATE PARKWAY/FIELDGATE DRIVE **Section 9.3 – Evaluation/Analysis** • Table 9-1, under Cost: are the referenced walls busway cuts?	Yes			
	• Table 9-1, under Community Impact – Visual: has a mitigation commitment been made?	The berm will be modified and landscaping will be added to visually screen the BRT from neighbouring residential properties.			
	• Page 9-4, second paragraph: an alternative is discussed yet it does not appear in the figures provided for this section. Why?	This is just a modification of the EA approved base case and is not a new alternative			
	• Same page, third paragraph, first sentence: is the residential community to the south satisfied that noise and visual intrusion will not be felt?	Noise analysis has identified that the noise impacts will not be significant. This has been communicated to the residents at PICs and community meetings.			

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	Figure 9-1 • Scale used here is unlike all other figures illustrating alternatives. Why?	The scale of the drawing reflects the study area.			
	Figure 9-2 • What is the purpose of this figure?	This figure was used to illustrate the visual mitigation required to screen the top of a double deck GO bus as presented at the public meetings.			
	Figure 9-4 • Showing the proposed landscape plan at a scale that would include the location of the residents that raised issues about noise and visual impact would be helpful.	The scale illustrates the location of of residents that would potentially experience visual impacts as a result of the recommended busway profile.			
	APPENDIX B – CONSULTATION MATERIAL: PUBLIC, AGENCY, FIRST NATIONS				
	Comment/Response Table (Appendix B- Part 5) • The correct location reference for the addition of CEAA Requirements is Section 3.6 however the section referenced here is 3.7. • The response should acknowledge that Section 10 was removed from the Addendum. • Reference to an "ultimate plan" has not been sufficiently clarified (see comments in Sections 2 and 6 above). • The descriptions of alternatives in Section 6 are still not clear (see comments in Section 6 above).	Revised. Revised. See responses above See responses above			
	Air & Noise • Reference to the 1993 Conditions of Approval should be removed from the Table of Contents (2.1.6) and Section 2.1.	Removed			

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	Technical Standards Section • Comments from our Technical Standards Section, Central Region Office are attached. **Concluding Remarks** • The foregoing comments, along with any feedback received by government review agencies, the public, and Aboriginals should be considered as you prepare your responses. The City is responsible for identifying and resolving (or attempting to resolve) any issues raised.	Noted Noted			
Ministry of the Environment Technical Support Section	The Technical Support Section (TSS) has reviewed the Environmental Assessment Addendum and Appendices for the above project, dated May 2009, and the Drainage and Stormwater Management Draft Preliminary Design Reports dated June and July 2008, and offers the following comments: **Surface Water** – TSS recommends the proponents consult with the Ministry of Natural Resources (MNR) regarding sensitive fish species, particularly that of the Red Side Dace which were previously found in Little Etobicoke Creek (as stated in the report) and confirm that this species is no longer found in this area. We defer any comments on the assessment, impacts and mitigation of natural features and fish habitat to the MNR.	Please note that as outlined in the EA, "this species was last recorded in Little Etobicoke Creek in 1949 near Burnhamthorpe Road. (NHIC, 2008). Redside Dace has likely been extirpated from the Etobicoke Creek Watershed (Redside Dace Recovery Strategy, and Pers. Comm. Scott Smith, TRCA, July 29, 2008)." Therefore, while we can consult with MNR regarding the status of the creek as Recovery Habitat, based on the Recovery Strategy, the species does not presently persist in the creek. MNR was also consulted during the EA and had the opportunity to comment regarding this species.	Our original comment has not been addressed. MNR should be consulted to confirm that the Red Side Dace or other sensitive fish species are not affected by the project.	MNR has deferred comment on this project to the respective Conservation Authorities (Toronto Region and Credit Valley). The Authorities agree that the Addendum proposals will have reduced or no impact on water quality and fish habitat all three creeks (Cooksville, Little Etobicoke, and Etobicoke) compared to the approved	All MOE TSS comments received have been addressed in final EA Addendum. It should be noted that many of the comments from the Ministry of the Environment's Technical Support Section pertain to the stormwater management plan for the BRT project as a whole (which is already approved per the 1992 Individual EA). The changes proposed in this EA Addendum do not materially affect the

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				EA plan. TRCA has confirmed that Redside Dace have been extirpated from Etobicoke Creek.	overall stormwater management plan for the project.
	As was previously recommended in the TSS review of the draft Addendum, a review of the current practice on road salt management and an evaluation of the impacts on these surface waters and fish habitats from this increased salt load should be conducted by the proponents. Direct discharge from increased paved surfaces to the watercourses has the potential to harm nearby watercourses by altering the quality and quantity of water reaching the tributaries. An analysis and assessment of the pre-development versus post-development roadway salt impacts should be developed. There is a concern over the dissolved road salts entering the local surface water system at these watercourse crossings and culverts. Road salts washed away into ditches and lost to the surrounding environment may greatly harm fish habitat and wildlife.	Winter Maintenance activities are currently managed under the City of Mississauga's Salt Management Program which was developed in accordance with Transport Canada Guidelines.	A discussion should be included in the EA on the practices and procedures of salt management and measures taken to avoid dissolved road salts from entering surface and groundwater.	As noted above, the Addendum currently under review refers to the underlying approved 1992 EA document. The current Addendum does not seek to alter any practices, impacts, mitigation, or commitments related to salt management as reflected in the original EA. The Storm Water Management system developed in the Preliminary Design stage addresses runoff water quality and quantity. The SWM system is subject to various technical reviews and approvals but is not the subject of the current Addendum. Salt management will be part of the BRT project's detailed operating and maintenance procedures and policies which will, as noted previously, be in accordance with the City	

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				of Mississauga's Salt Management Program.	
	It is noted that some fish barriers have been identified at existing watercourse-crossing structures. We recommend that the proponents, in consultation with related fishery agencies and other practitioners involved in BRT design process develop a better alternative in terms of both providing fish passage and protecting habitat at the water crossing sites so that the free passage of migratory fish is not impeded by river-crossing structures associated with BRT Project. An improved level of fish habitat protection should be achieved at these crossings after project completion.	As outlined in the EA, the new or extended crossings will all be designed to ensure fish movement is maintained, and in the case of Little Etobicoke Creek where there is a partial barrier to movement, the design specifically incorporates removal of the barrier and facilitation of fish movement.	Comment addressed. No further comments.		
	Water quantity controls should be considered for outlets discharging to Etobicoke Creek. In conducting analysis during the detail design phase to determine whether storm water discharge outlets can accommodate proposed increase in flows, consideration should be given to the receiver streams(s) already effected by ongoing flow alterations, stream bank erosion and sedimentation of the stream bed. Even small increases in peak flow would be expected to further deteriorate existing conditions. The BRT project provides a valuable opportunity to improve upon hydrological and ecological conditions of the watercourses within the study area.	Comment noted, the City of Mississauga is currently working with TRCA and CVC to address these issues.	Please provide the results of your discussions with the CAs and a description of the measures that you will put in place to address these issues.	Water quantity controls are being addressed through the Design stages rather than the EA Addendum. At Etobicoke Creek, the Addendum plan utilizes the existing bridge rather than creating a new crossing, therefore yields a reduction in runoff quantity compared with the original plan. The TRCA has reviewed and commented on the EA Addendum (Aug. 20, 2009) and the draft Preliminary Design Report (Oct. 26, 2009) and will continue to be involved through the	
	Several interchanges involve nearby watercourses with environmentally sensitive areas and fish habitat. To be adequately protected, MOE's "Enhanced Water Quality Protection" level should be applied to the total stormwater runoff generated by the BRT project in	Comment noted, the City of Mississauga is currently working with TRCA and CVC to address these issues.	Please provide the results of your discussions with the CAs and a description of the measures that you will put in place to address these issues.		

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	these areas, not just the additional input generated by the expansion.			Detail Design stage. Water quantity control measures are part of that dialogue and approvals process. Water quantity control measures developed at the detail design stage can be reviewed by MOE if desired. A memorandum summarizing the consultation with TRCA (and CVC) to date is provided in Appendix B of this EA Addendum.	
	A pre-construction surface water quality monitoring program with a commitment to conduct a post-development assessment is recommended. Water quality data should be compared to the Provincial Water Quality Objectives and collected at multiple locations in the waterbodies abutting the BRT corridor, for a minimum of 50m downstream of the water crossings. A post-development assessment should be prepared to document the environmental impacts/changes caused by the BRT project, assess the effectiveness of mitigation measures and stormwater management and identify further measures for improvement.	A water quality monitoring program is not proposed for this project as the design and construction measures will be designed and implemented in accordance with current regulations and approved by the appropriate agency. Level 1 treatment will be provided and there is no anticipated change in water quality as a result of this project.	Comment addressed.		
	The MOE's Environmental Assessment and Approval's Branch should be consulted and stormwater management plan details should be submitted to them during the detailed design phase to ensure that level 1 'Enhanced' treatment can be provided by correctly sized oil and grit separators for the runoff generated in accordance with the requirements described in the MOE's *Stormwater Management Planning and Design Manual.*	The City of Mississauga is committed to acquiring all permits and approvals for the project, including MOE Certificate of Approval for stormwater ponds and storm sewers.	Comment addressed.		
	Groundwater – Each area where excavations will be dug below the seasonal water table will probably require a Permit to Take Water (PTTW) for construction dewatering, assuming that the proposed water taking will be greater than 50,000 l/d. However, details are not required at this time and can be discussed at a later date when the proponent is	Comment noted, PTTW applications will be submitted during detailed design.	Comment addressed.		

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	applying for a PTTW. Was the air quality screening completed in 2008 done for the whole project area or simply the intersections modified in the addenda? Was this screening made available as part of the addendum report or appendices, and if not, can we have a PDF or paper copy? Does the proponent have a continuous map showing the entire study area, with proposed improvements, that can be viewed in PDF or paper copy? Can the proponent send us a copy? We would like this information to better provide our comments on the proposed monitoring plans.	The air quality screening done in 2008 was carried out as part of the CEAA assessment of the BRT project, and covers the whole of the project. Air quality was not identified as a significant issue related to the changes that are subject to the current EA Addendum, so there has been no site-specific air quality assessment done for the Addendum. The air quality screening was documented in the CEAA report. Section 4.1.5 deals with existing conditions and Section 5.1.1.4 addresses project effects and mitigation measures. The report can be viewed on the internet at http://www5.mississauga.ca/brt/CEAA209/book1/CEAAScreeningFinalJan2009.pdf. A project map is attached. More detailed information is readily available on the project web site, http://www.mississauga.ca/portal/residents/brt.			
Ministry of Health and Long-Term Care	Although the Public Health Protection and Prevention Branch, Environmental Health Section is interested in the public health aspects of this EA and wishes to be kept informed of any further developments, we recommend that you request input from the local Medical Officer of Health for the health unit in which the EA is located (the Peel Region Health Department.)	A letter was sent by courier on July 28th to the Medical Officer of Health of the Peel Region Health Department enclosing a copy of the Ministry of Health and Long-term Care's letter, along with a copy of the Mississauga Environmental Assessment Addendum, dated May 2009, for review and comment by August 10, 2009. Mississauga followed up with Peel Health on August 13, 2009. Peel Health indicated they will advise Mississauga	Received letter dated September 4, 2009 from Region of Peel Medical Officer advising that Peel Public Health has no concerns based on the BRT Environmental Assessment Addendum Report dated May, 2009.		No further EA review required.

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		whether or not the Medical Health Officer had forwarded our EA Addendum document to Peel Regions Environmental Health Section for comment.			
Ministry of Municipal Affairs and Housing	This letter is in response to your letter dated June 12, 2009, regarding the Environmental Assessment (EA) Addendum for the Mississauga Bus Rapid Transit (BRT). The purpose of the report is to address design changes to the approved 1993 original EA and 2005 Addendum BRT Plan. The proposed changes are focused on five main areas: Winston Churchill Boulevard, Hurontario Street, Tomken Road Station, Dixie Road Station, and Eastgate Parkway. Based on the information provided, below are the Ministry of Municipal Affairs and Housing's (MMAH) comments. **Parkway Belt West Plan** – The Mississauga Bus Rapid Transit (BRT) line will be crossing lands that are within the Parkway Belt West Plan (PBWP), a provincial plan that was established in 1978. The five study areas as indicated on Figure 2-1: Major Modifications to EA Proposal of the EA Addendum (Page 2-5), are shown on Map 3: Southern Link of the PBWP. The lands are designated as 'Electric Power Facility', 'Utility', 'Road', and 'Inter-Urban Transit' within the 'Public Use Area' of the PBWP. For your information, a consolidated version of the PBWP is available on the Ministry website, under Land Use Planning at www.mah.gov.on.ca Section 5.4.1 of the PBWP outlines the permitted uses within the 'Public Use Area'. Through these policies, linear transportation, communication, and utility				No further EA review required.

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	facilities, including necessary accessory facilities and installations such as interchanges, transit including stations, parking, maintenance/storage years, transformer stations, and treatment plants that are part of the linear distribution or collection networks are considered to be permitted uses (as per Section 5.4.1(b)). In addition, Section 6.3.1 of the PBWP outlines the specific objectives and implementing actions for lands located on Map 3: Southern Link. The general purpose of the Link is to reserve land for future public uses, and to protect for public open space areas. Based on Section 5.5.1.2: Utilities Within/Crossing the Corridor of the EA Addendum, the busway will be crossing several existing oil and gas pipelines, and utility facilities. To ensure a coordinated design with adjacent uses, the proposed study must consider other applicable provisions of the Plan (under Section 6.3.1), which includes providing for right-of-ways for existing hydro facilities, Highway 403 and expansion of future utilities, as well as, minimizing detrimental effects on natural areas or features. Based on the foregoing, the proposed use would not be in conflict with the PBWP, provided that the following conditions are satisfied: 1. The design of the proposed use ensures that the PBWP linear infrastructure corridors remain protected from fragmentation and that the proposed use will not preclude or hinder existing and future infrastructure uses within the PBWP linear infrastructure corridors.	Conditions noted. The City of Mississauga will keep the Ministry informed regarding the progress of the process. The proposal does not preclude or hinder the ability to implement the designated uses within the PWBP corridors.			

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	2. Hydro One is satisfied with the proposal and any required approvals and/or permits are secured. 3. The Ministry of Transportation is satisfied with the proposal and any required permits and/or approvals are secured. 4. Any utility company having jurisdiction over the subject lands is satisfied with the proposal and any required permits and/or approvals are secured. By copy of this letter, the Ministry requests to be kept informed on the progress of this process.	Hydro One, MTO, and all affected utility owners have been involved in the project from a review perspective and are providing both technical and property review to ensure that the proposal complies with their requirements. The Project Team will continue to liaise with Hydro One, MTO, and utility owners throughout the design process.			
Ministry of Natural Resources	Email dated February 19, 2009 from Jeffrey Dea indicates that the memo to file dated October 5, 2007 from Katie Bright of Ecoplans Limited, which states that Mark Heaton of the MNR "explained that since the natural environment interests are primarily focused on water crossings, MNR is satisfied that involvement from TRCA, CVC and DFO will be sufficient to address any natural environment concerns. Mr. Heaton also noted that with MNR's reduced role in relation to the Fisheries Act and Lakes and Rivers Improvement Act, MNR is becoming less involved with works related to fish, fish habitat and watercourses.", is sufficient Re: MNR's decision not to participate in the formal review.				No further EA review required.
Ministry of Transportation of Ontario	1. Are the data, analysis and conclusions in the EA addendum satisfactory, i.e., are these relevant and substantiated? **Section 5.5.2.4 Stormwater Management (p. 5-7)** ➢ The ministry still has some concerns with the overall drainage plan and would like further clarification. For example, the lack of ditches for surface runoff along Highway 403 and the N-W ramp at the Winston Churchill Boulevard interchange.	The proposed change to the N-W ramp at Winston Churchill Boulevard was approved under the Mississauga Transitway Individual Environmental Assessment Study (1992), and does not form a component of this Environmental Assessment Addendum. Specific concerns previously provided by MTO were responded to on September 24, 2008 and October 16, 2008 discussing the Stormwater Management Reports for the BRT (see Attachment 1)	There are still a number of details on the drainage design that still need resolution. MTO will continue to work with GO Transit as they progress in their design to ensure they address the ministry's concerns. Resolution of drainage issues will be needed prior to release of the necessary MTO permits.	Liaison with MTO is ongoing through the detail design process, aimed at resolving drainage issues to the extent that the necessary MTO permits can be issued.	All MTO comments either addressed in correspondence, addressed in the EA Addendum, reflected in revisions to the draft Addendum, or subject to proponent's and MTO's joint commitment to continue to work together through the detail design stage to resolve outstanding issues. No further EA review required.
	➢ New SWM pond proposed as a concept for the BRT at 403/Erin Mills interchange is not	The SWM pond proposed at the Highway 403/Erin Mills Parkway interchange is not included in the scope of this	These comments will need to be addressed as part of the detail	Agreed.	As indicated in the

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	identified as part of this document and there are no details with respect to when this pond would be required to address drainage concerns within the interchange.	Environmental Assessment Addendum.	design for the drainage system.		"Stakeholder's Subsequent Comments" column of table, MTO staff have noted that they will continue to work with the proponent and their outstanding issues / concerns will be addressed during the detailed design and permitting phase of the project.
	➢ Can the proponent clarify if they are intending to use the Sawmill Creek Pond?	Per Figure 5-5 of the EA Addendum, and the BRT West Drainage Analysis Summary Report, the drainage system for the BRT is intended to tie in to the existing MTO drainage system, including the Sawmill Creek SWM pond, and ultimately drain into Sawmill Creek itself.	The proposed strategy will need to be reviewed in detail design to confirm there is adequate capacity in the ministry's drainage system to accommodate any additional runoff.	Review is ongoing through the detail design process.	
	2. Does the information in the EA Addendum cover relevant issues at an appropriate level of detail?				
	• The information in the EA addendum covers relevant issues in a general manner.	No response required			
	• There is not much detail provided with regards to the construction staging for the Winston Churchill and Hurontario. There are no staging plans provided or cross sections to show the feasibility of maintaining pedestrian access and two lanes per direction for Winston Churchill Boulevard during construction.	The proposed BRT crossing at Winston Churchill Boulevard was approved under the Mississauga Transitway: Highway 403 – Eglinton Avenue Corridor Environmental Assessment Addendum (2004), and does not form a component of this Environmental Assessment Addendum. The staging plan at the Hurontario site is limited to closing Sherwoodtowne Boulevard on the approach to Hurontario Street for the duration of the BRT structure construction.	Traffic staging will be reviewed as GO proceeds through detail design. Adequate mitigation for traffic impacts will be required and no closures (other than overnight closures within acceptable times provided by MTO) will be permitted.	Construction and traffic staging plans will be developed in greater detail during the detail design process, and will be reviewed with the Ministry at that time.	
	3. Are you satisfied with the methods and techniques described in the EA Addendum to describe the environment, potential environmental effects and any mitigation measures necessary to reduce those effects?				
	• Work being done within land under				

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	MTO's jurisdiction will require a permit from MTO; the proponent will need to obtain all required environmental approvals, such as those required from Ministry of Culture for archaeology, MNR for Species at Risk, and DFO for fisheries.	Noted. These approvals will be obtained during the detailed design phase of the study and will be forwarded to the Ministry of Transportation when available.	Noted		
	• As this is not an MTO project, should any concerns arise, such as for noise or air quality (which is not addressed, it is up to MOE or the public to press for this), the proponent will be the one to respond.	Noted.	No comments.		
	• The proponent does not address whether or not the proposed MTO SWM facilities to be used as part of the drainage plan for the BRT will have enough capacity to accommodate any future widening of Highway 403. If there is not enough capacity to accommodate for the future widening of Highway 403, the proponent shall ensure that there are provisions for this as part of the design.	The only MTO stormwater facilities affected by the proposed changes addressed in the EA Addendum are those at the Winston Churchill Boulevard interchange. The BRT West Preliminary Design Report and associated drainage analysis summary (copy provided with EA Addendum) notes that a *"stage-storage-discharge relationship for MTO Pond 2 was developed for this study based on the details provided within the Drainage and Stormwater Management Report – Highway 403 Widening from Highway 407 to Highway 401 and the drawings for MTO Contract No.2003-2012. Based on this assessment, the existing MTO Pond 2 has adequate capacity to provide the required water quantity and quality control for the approximate 350 m of BRT within this catchment area".* Based on the review of the October 2001 Report, adding the BRT drainage areas, including the parking lot with peak flow control, the existing pond can accommodate the BRT and a 10 lane cross section of Highway 403.	Addressed in previous comments.		

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	• The proponent does not address, under Section 5.5.1 Physical Environment – Operation and Maintenance Effects, the BRT structures that are under the jurisdiction of MTO. As well, any agreements with MTO regarding routine maintenance and any major rehabilitation required as part of the life cycle of these structures.	The EA Addendum addresses only the type and magnitude of environmental impacts attributable to the proposed changes to the EA-approved BRT facility. The determination of operational and maintenance responsibilities for the future MTO-owned structures and SWM pond will be the subject of discussions between the City of Mississauga, GO Transit, and the Ministry of Transportation during the detailed design phase of the project.	Noted and to be discussed during design to ensure all appropriate agreements are entered into prior to application for the necessary permits for construction.		
	• The proponent does not address, under Section 5.5.2.4 Stormwater Management – Potential Operation and Maintenance Effects, the MTO-owned facilities that will be utilized as part of the BRT drainage plan. As well, any agreements with MTO regarding routine maintenance of these facilities.	The EA Addendum addresses only the type and magnitude of environmental impacts attributable to the proposed changes to the EA-approved BRT facility. The determination of operational and maintenance responsibilities for the future MTO-owned structures and SWM pond will be the subject of discussions between the City of Mississauga, GO Transit, and the Ministry of Transportation during the detailed design phase of the project.	As above.		
	4. Does the way in which the proponents intend to implement the Project comply with your ministry's or agency's legislative requirements? MTO has been working co-operatively with GO through the planning and preliminary design phases to ensure that the proposed plan will be in conformance with our requirements.	Comment noted.			
	5. Are the monitoring and contingency plans specified by the proponents in the EA Addendum adequate?	The EA Addendum addresses only the type and magnitude of environmental impacts attributable to the			

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	The monitoring and contingency plans specified by the proponents in the EA Addendum are general in nature with regards to the stormwater management and future routine structural maintenance. The proponent also does not identify any of the facilities that are MTO owned or fall within MTO jurisdiction that will be used as part of the BRT and the need for agreements with MTO to address these facilities once the BRT is operational and for its future life cycle maintenance requirements. 6. Did the proponents address comments provided by your agency in the preparation of the EA addendum? The following were comments made by MTO to the proponent from the review of the draft Environmental Assessment Addendum (September 2008). The ministry would like clarification as to where the outstanding comments have been addressed within this document. ➢ The ministry understands that due to physical constraints in the Highway 403 corridor, it may not be feasible to meet all ministry standards on its facilities being impacted by the BRT, however; safety measures to mitigate these issues must be implemented in accordance with ministry standards. For example, the separation of the E-N/S and S-W ramp at the Winston Churchill Boulevard interchange does not meet current ministry standards. The ministry would like to ensure that the proper mitigation	proposed changes to the EA-approved BRT facility. The determination of operational and maintenance responsibilities for the future MTO-owned structures and SWM pond will be the subject of discussions between the City of Mississauga, GO Transit, and the Ministry of Transportation during the detailed design phase of the project. The attached cross-section (see Attachment 2) indicates a proposed configuration/barrier treatment for the ramp separation to meet MTO safety and sight distance requirements, provided to the MTO on August 14th, 2008 for comment. No response was received as to the suitability of the treatment from the MTO. The proposed BRT crossing at Winston Churchill	Comments as above. Comments related to the geometric design for the interchange and ramp modifications have been on-going with GO Transit during detail design to ensure appropriate standards are achieved and mitigation provided where necessary. While MTO believes that traffic		

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	measures are provided for both ramps to address this concern. ➢ The ministry has concerns with the feasibility of the staging plan outlined in the EA addendum for Winston Churchill Boulevard. It states that two lanes per direction as well as existing pedestrian access will be maintained throughout construction. Based on the construction staging drawings shown for the BRT West section, overbuilding of the existing Winston Churchill Boulevard structure may be required to maintain the traffic/pedestrian flow stated in the EA addendum. Cross section details for the construction staging plan on Winston Churchill Boulevard were not provided to the ministry to assess the feasibility of maintaining two lanes per direction and pedestrian access during construction without the need to overbuild the existing structure. The ministry has yet to receive the staging plan for the BRT East segment for a preliminary review. *While the document (p. 5-3) does address that existing pedestrian access will be maintained, no details have been provided to assess its feasibility. It is not clear what duration of temporary closures will be required for construction; however the EA Addendum mentions closures for a construction season. MTO will need to be assured that ramp closures will be for a short duration only (overnight) and that any longer term closures have appropriate staging plans developed to maintain all existing*	Boulevard was approved under the Mississauga Transitway: Highway 403 – Eglinton Avenue Corridor Environmental Assessment Addendum (2004), and does not form a component of this Environmental Assessment Addendum. The cross-sections provided in the BRT East PDR (Figure 4-3b) identifies the future widening of Highway 403, the BRT alignment does not preclude the Ministry's	staging should be addressed as part of the EA, as noted previously, MTO will continue to work with GO Transit on the detail design to ensure that traffic stating is completed to our requirements prior to issuing the necessary permits. No comments.		

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	connections to the highway. ➢ The ministry has concerns with its ability to widen Highway 403 in the future once the BRT is operational. The ministry would like a future commitment from the proponent of the BRT that they will undertake the appropriate safety measures for the BRT as required during construction when the ministry proceeds with Highway 403 widening. ➢ There are a number of the ministry's ramps which will now be impacted by the BRT. After review of the preliminary design, the ministry would like the proposed grades of these ramps to be minimized and confirmation that the new alignments for all ramps meets ministry standards for stopping sight distance, sight lines and other relevant design criteria. ➢ Drainage and grading work still needs to be finalized in the preliminary design. For instance, based on the grading shown in the preliminary design, additional retaining walls may be required along the BRT. The landscaping plan as shown in the EA Addendum may not be feasible based on the grading shown on the preliminary design drawings. ➢ There is a change in the BRT East segment with the Cawthra ramp alignment being modified and this has not been addressed in this EA	ability to widen Highway 403 in the future to 5 lanes per direction. The MTO ramps being modified as part of this Environmental Assessment Addendum are the S-W and E-N/S ramps at the Winston Churchill Boulevard / Highway 403 interchange. The BRT West Preliminary Design Report indicates that their horizontal curve radii and vertical grades fall within the Ministry's standards. Structures have been designed to provide adequate sight-distances per the Ministry's Geometric Design Manual for Ontario Highways. Grading, retaining wall, and landscaping will be reviewed with the MTO and confirmed during the detailed design stage of the project. As a result of discussions with the MOE, the proposed Highway 403/Eastgate Parkway ramp modifications at Cawthra Road are not included in the scope of this Environmental Assessment Addendum. This has been addressed in the EA Addendum under Section 2.1 Revised Project Scope.	As noted previously, MTO will work with GO Transit to ensure that the ramps are designed to meet our standards or that appropriate mitigation is put in place. No comment.		

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	addendum, should it not be included as part of this EA addendum?				
	7. Have the proponents clearly indicated how compliance reporting regarding commitments in the EA Addendum related to your mandate will be fulfilled?	The EA Addendum addresses only the type and magnitude of environmental impacts attributable to the proposed changes to the EA-approved BRT facility. The determination of operational and maintenance responsibilities for the future MTO-owned structures and SWM pond will be the subject of discussions between the City of Mississauga, GO Transit, and the Ministry of Transportation during the detailed design phase of the project.	MTO understands that these comments will not be addressed in the EA but will need to be addressed prior to any work occurring on the highway or before the Ministry will issue the necessary permits.		
	➢ The EA Addendum does not address the need for agreements with MTO regarding BRT structures that fall under the jurisdiction of MTO as per the PTHIA and are within MTO right-of-way. This will need to be addressed prior to construction and/or operation of the facility.	The EA Addendum addresses only the type and magnitude of environmental impacts attributable to the proposed changes to the EA-approved BRT facility. The determination of operational and maintenance responsibilities for the future MTO-owned structures and SWM pond will be the subject of discussions between the City of Mississauga, GO Transit, and the Ministry of Transportation during the detailed design phase of the project.	Addressed previously.		
	➢ The EA Addendum does not address the need for agreements with MTO in utilizing MTO owned SWM ponds that are proposed for BRT drainage. These details will need to be finalized once a comprehensive stormwater management plan is developed.	Noted. These approvals will be obtained during the detailed design phase of the study and will be forwarded to the Ministry of Transportation when available.	Addressed previously.		
	➢ MTO should be provided copies of all permits and approvals the proponent is required to obtain, including the final MOE approval, as MTO is the owner – operator of Hwy 403 and there are instances where components of the BRT are on MTO Right of way or fall under	The only MTO stormwater facilities affected by the proposed changes addressed in the EA Addendum are those at the Winston Churchill Boulevard interchange.	No comments.		

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	the jurisdiction of MTO as per the PTHIA. ➢ The ministry would like confirmation that the proponent will not impact any future uses of the Highway 403 right-of-way with respect to stormwater management and any future widening required will be able to meet the ministry's design standards throughout the identified BRT corridor. Should any existing ministry facility not be able to accommodate any future ministry ROW use due to the inclusion of the BRT, the proponent is responsible to provide the appropriate mitigation to ministry standards. ➢ The proponent will be required to obtain an encroachment permit from the ministry. ➢ The ministry has been working with the proponent (GO Transit and City of Mississauga) and will continue to do so to address the items noted in our comments.	The BRT West Preliminary Design Report and associated drainage analysis summary (copy provided with EA Addendum) notes that a *"stage-storage-discharge relationship for MTO Pond 2 was developed for this study based on the details provided within the Drainage and Stormwater Management Report – Highway 403 Widening from Highway 407 to Highway 401 and the drawings for MTO Contract No.2003-2012. Based on this assessment, the existing MTO Pond 2 has adequate capacity to provide the required water quantity and quality control for the approximate 350 m of BRT within this catchment area".* Based on the review of the October 2001 Report, adding the BRT drainage areas, including the parking lot with peak flow control, the existing pond can accommodate the BRT and a 10 lane cross section of Highway 403. Noted. No response required.	Addressed previously.		
Ontario Provincial Police	City of Mississauga staff contacted OPP for comments on EA Addendum on August 26th, 27th, and 28th, 2009. No comments were received – will continue to liaise with O.P.P. through the detail design process.				No further EA review required.
Ontario Realty	Letter dated July 17, 2009: On behalf of the Ministry	***These comments are superseded by the August 10,***			ORC comments relate

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Corporation	of Energy and Infrastructure (MEI) and the Ontario Realty Corporation (ORC), this letter is in response to the Mississauga Bus Rapid Transit Environmental Assessment Addendum (EA File No. EA-02-06). This letter is solely in response to ORC's ability to utilize the addendum as part of a deferral for MEI's Class EA. ORC is required by the MOE and the environmental assessment act, to follow the "MEI Class EA Process for Realty Activities Other Than Electricity Projects (approved April 2004, amended September 11, 2008)" prior to any activities on ORC managed lands. Please note ORC's Class EA Parent document can be found at: www.ontariorealty.ca/Assets/MEI+Class+EA+Document+(amended)_11Sep2008.pdf ORC has provided comments below for the benefit of the proponent and to provide some clarification with regards to ORC EA requirements and rationale. **MEI Class EA Requirements Need to be Met:** Based on reviews of the addendum report, ORC will approve deferral to this EA for any realty activity on either Hydro corridor (Bill 58 lands) or other ORC managed lands, such as the Parkway Belt pending verification that the required land from ORC has not changed from that in the original EA. The proponent will be responsible to sign off on a deferral sheet, if the area requested is not different. Should the area in the addendum have changed from the area originally requested by the ORC in the original EA document,	***2009 letter.*** See response below. Email dated August 10th from the Project Officer of the MOE advised that they confirmed with ORC that "the City is not required to respond to their (ORC) July 17th letter as all ORC concerns have been compiled in the attached comment submission (dated August 10, 2009).			not to adequacy of EA Addendum, but to its potential role in addressing MEI EA requirements. The City is to proceed with finalizing and obtaining approval for the EA Addendum (which encompasses all affected ORC lands), which will then allow MEI to document its conformity with the MEI Class EA. Through consultation with the ORC (in a meeting of February 26th, 2010), ORC has indicated that they will defer their Class EA requirements to the approval of the 1992 EA and subsequent Addenda for the Mississauga Transitway.

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	then the following requirements are required. **Issue #1: Articulation and identification of ORC's undertaking** – Generally for EA projects, the ORC is consulted regarding their EA processes and requirements. This would ensure that ORC's undertaking is clearly addressed. Please refer to section 9.7 of the Class EA, referenced in the preceding section, which explains the requirement to articulate ORC's. ORC's undertaking should be clearly articulated, and separate from Hydro Ones. The section should identify how the alternative EA meets ORC's requirements through the seven point analysis. According to ORC's Class EA, an undertaking is defined on Page 9-11 in the Glossary of Terms. Undertakings identified as real estate activities include license/lease, easement, or disposition. Each undertaking has a different level of consultation and analysis associated with it. **Issue #2: Identifying the associated EA Category and ability to defer to an alternative EA** – Please note that ORC would like to clarify any confusion regarding some of the rationale used to identify the relevant EA category. Part of this determination is considering the type of land to be impacted by the undertaking. As an example, an easement on ORC managed lands is considered a Category "B" and an easement on ORC lands managed by Hydro One is considered a Category "A"; however, a Category "A" is applied to undertakings that are minor in scale and have minimal or no adverse environmental effects and requires no EA undertaking. Therefore, depending on the scale of the area to be impacted by an undertaking,				

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	proper due diligence of an easement, impacting hydro corridor land, could require an elevation of the Class to a Category "B" from an "A". Please note that licenses and leases on Hydro corridor lands are considered a Category "A" and therefore, would not require any EA work; however, the purchase of Hydro corridor lands is considered a Category "B" EA, according to the Figure 2.2 Category Listing Matrix. If the area requested from ORC has changed from that in the original EA document, then rearticulating ORC's undertaking is required. **Issue #3: Consultation with ORC Stakeholders** – ORC is required to circulate major stakeholders prior to land transfer, dispositions or easements, depending on the type of land to be impacted. Alternatively, it is possible under the MEI Class EA Process to defer to an alternative EA, if the client ministry or agency's EA circulates the appropriate stakeholders. According to the supporting documentation in the original EA, an attempt to contact the MNR is apparent. Again it is unclear if the lands and areas requested from ORC have changed from the original EA document. If the area has changed, then a re-consultation with the MNR and TRCA is required. Regarding future consultations with MNR, ORC would request a more detailed and stronger attempt to contact the stakeholder documented. **Issue #4: Phase 1 Environmental Site Assessment** – Depending on the type of realty activity to be completed, there is potential, based on the MEI Class EA Process, that a Phase I Environmental Site Assessment (ESA) may be required. The Phase I ESA				

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	must be within CSA standards and reliance must be extended to the ORC, to properly evaluate potential environmental concerns. A Phase I ESA has been provided by the proponent to the ORC; however, if the area requested has changed from the area identified in the Phase I ESA, then an addendum, updated or new Phase I ESA is required to follow the same requirements. **Issue #5: Ability to Defer** - The ability to defer to an alternative EA is determined if the EA meets the 7 point analysis. The original MBRT does meet the requirements of ORC's Class EA. However, if additional lands are required from ORC, then these requirements must also be articulated in the addendum EA. **Concluding Remarks** – MEI and ORC recognize the significance and importance of this proposed undertaking for the benefit of the province, the Greater Toronto Area and the City of Mississauga. Nonetheless, the proposed undertaking has a potential to cause impacts to MEI-owned property, not previously involved in the original EA and may cause net negative environmental effects. Our comments are intended to ensure that outstanding issues of environmental, socio-economic and cultural heritage concerns related to this property, as well as complying with all regulations, will be appropriately addressed prior to the commencement of this undertaking.				

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	Letter dated August 10, 2009: On behalf of the Ministry of Energy and Infrastructure (MEI) and the Ontario Realty Corporation (ORC), we thank you for allowing ORC to comment on the Mississauga Bus Rapid Transit IEA and associated addendum work. ORC appreciates the effort of the study team to integrate the MEI Class EA study requirements into this project. This letter is in response to the Project Team Response Summary of Draft EA Addendum Government Review Comments.	The scope of the current review is limited to the proposed changes to the project as documented in the EA Addendum. The underlying IEA was subject to extensive review by all government ministries and agencies prior to its approval in 1993.			
	Please note that ORC will be deferring to the IEA regarding the Mississauga Bus Rapid Transit Project; however, it is unclear, to the ORC, if the study area identified in the addendum is different than the area identified in the IEA. Should the area in the addendum be different, then rearticulating and meeting ORC's Class EA requirements, in the addendum, for the additional lands, is required.	The changes proposed in this addendum are relatively minor from a property and impact point of view and the 1992 EA Report study area for the overall project has not changed.	Follow-up (September 17, 2009): Regardless if the changes are minor from a property impact perspective, the EA still has to fulfill regulatory requirements, even if the property has only minorily changed.	The Addendum deals with five specific sites within the overall (approved) BRT project. The study area(s) for those sites is therefore a subset of the study area set out in the IEA.	
	Please note that Section 9.7.1 simply addresses that the EA has to be approved and subject to the EA act, in order to be able to defer. Please see Section 9.7.2 which articulates when ORC can defer to the EA and the requirements of the Class EA for ORC's use. If an EA articulates all of ORC's requirements (Section 9.7.2) but is not approved under the EA act (Section 9.7.1) then ORC will not be able to defer to the EA. Conversely, if the EA is approved under the EA act (Section 9.7.1) but does not cover ORC's requirements (Section 9.7.2), then ORC also cannot defer to this EA. ORC's concern is not that the addendum may be	The Mississauga BRT, including all ancillary projects (e.g. the acquisition of property), was planned and approved under the Ontario Environmental Assessment Act (Order-in-Council 1799/93). To address Section 9.7.1 of MEI's Class EA, our letter of November 7, 2008 outlined how the 1992 EA Report addressed ORC's seven point analysis criteria for a Category B Consultation and Documentation Report.	Follow-Up (September 17 2009): Please note that even if it was approved under Section 9.7.1, the EA still has to have the requirements of Section 9.7.2.	The MEI / ORC Class EA specifies (Table 2.1) that, when the undertaking is approved under an individual EA (verified in writing), no further EA procedures are required under the MEI Class EA. If we consider that the elements of the project that are subject to the current EA Addendum are effectively "not yet	

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	approved under Section 9.7.1 of ORC's Class EA, but the addendum work does not have all of the stipulated requirements under Section 9.7.2. The proponent makes an incorrect assumption that all IEAs automatically meet the requirements of the MEI Class EA due to its broader scope and more complex process. MEI and its authorized agents can only defer its Class EA obligations to another ministry's or government agency's Class EA or IEA, if the MEI undertaking is specifically addressed and evaluated in the other EA study and such evaluation (including the consultation component) meets the minimum requirements of the MEI Class EA. MEI has a legal obligation to protect the environment and comply with its Class EA Process on all of the properties that it owns, manages and/or leases. Until MEI and its authorized agents can be assured in writing that its lands have been properly evaluated, then MEI cannot release its EA obligations to another party.			approved" (even though the underlying base case retains its approval from 1993), ORC's Class EA guidance is to "wait until the client agency applies its own approval process" then proceed with the undertaking. If that occurs, "No further EA procedures are required under MEI Class EA." Therefore, it would be appropriate for the City to proceed with finalizing and obtaining approval for the EA Addendum (which encompasses all affected ORC lands), which would then allow MEI to document its conformity with the MEI Class EA.	
	Some of the minimum requirements under the MEI Class EA must include an archaeological assessment (Stage 1 and Stage 2) and a Phase 1 Environmental Site Assessment (ESA). A Phase 1 ESA has been provided to the ORC. However, it remains unclear if there is a change in provincial land needs from those in the IEA and those in the addendum. If the area evaluated has changed in the addendum from the IEA, then a Phase 1 ESA, also addressing these new lands is required.	In response to your comment regarding the need for an archaeological assessment and Phase I Environmental Site Assessment (ESA) we wish to reiterate our commitment to provide the required documentation to ORC. A Stage 1 Archaeological Assessment was completed in the 2008 and a copy of the associated reporting has been submitted to ORC. The necessary Stage 2 Archaeological Assessment works were completed in the fall of 2009 and a copy of the Stage 2 reporting will be submitted to ORC.	Follow-up (September 17, 2009): If additional lands are included in the amendment, then an assessment of the additional lands is required.	During the Stage 2 archaeological assessment, no archaeological sites of interest were found on ORC lands. A Stage 3 investigation is underway (November 2009) for a site on MTO lands near Eastgate Parkway. ORC expressed no concerns	

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		A Contamination Overview Study (COS) was undertaken for the whole corridor (similar to a Phase 1 ESA) to identify areas with the potential for contamination. In addition, a Phase I ESA has been completed for ORC properties within the study corridor. Phase II ESA works, including subsurface investigation (boreholes), are being carried out for areas with potential for contamination and the associated reporting will be provided to ORC. The commitment to submit any outstanding reports (ESA and archaeology) to ORC will be noted in the Final EA Addendum Report (see Table 10-1).		about the site, since it is not on ORC lands. ORC will be advised of the outcome. All affected ORC lands have been included in the assessments to date.	
	ORC also requires an evaluation of potential impacts on the sensitive natural areas on the ORC managed lands, which would include consultation with the Ontario Ministry of Natural Resources (MNR). The MNR does not have as great an interest in projects driven by private developers or municipal governments; however, as the MNR is a provincial government agency, it has a greater interest in projects that affect provincial lands. The MBRT is affecting provincially managed lands and as such, the MNR will respond to an EA notice regarding ORC's undertaking and Class EA process. **Concluding Remarks**: MEI and ORC recognize the significance and importance of this proposed undertaking for the benefit of the province, the Greater Toronto Area and the City of Mississauga.	MNR was part of the Government Review Team during the review of the IEA Report. With that in mind, please be assured that environmental issues have been carefully considered and reviewed. As previously noted (see January 19, 2009 email from the City of Mississauga), the focus of consultation regarding the natural environment has been with the Conservation Authorities. As part of the ongoing design efforts MNR was invited to participate in the project; however, they have deferred involvement to the local Conservation Authorities.			
Municipal Agencies					
City of Brampton	Email of August 28, 2009 from Bishnu Parajuli of the City of Brampton provided a copy of the Acknowledgement of Receipt which was faxed back to the MOE by Chris Duyvestyn				No further EA review

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	advising that Brampton is "satisfied with the Environmental Assessment Addendum. Please keep us informed about the proposal."				required.
City of Toronto	City of Mississauga staff contacted Toronto for comments on EA Addendum on August 12th, 18th, and 25th, 2009. No comments were received.				No further EA review required.
Credit Valley Conservation	Mississauga Bus Rapid Transit Environmental Assessment Addendum May 2009. Staff of the Credit Valley Conservation (CVC) have had an opportunity to review the above-noted report and provide the following comments for your consideration. The proposal traverses Cooksville Creek and associated hazards including the Regulatory Storm Flood Plain. On this basis, the project is subject to the Development, Interference with Wetlands and Alteration to Watercourses and Shorelines (Ontario Regulation 160/06). This regulation prohibits development within a regulated area, alteration to ing a watercourse interference with a wetland without prior written approval from CVC (i.e.: permit). The proposal includes a reduction in the size of Cooksville Creek culvert and may result in an increase in flooding in the area. At present, there is a spill across Rathburn Road which may be increased resulting in an increase to risk to life and property. CVC previously identified this issue including in a meeting on January 12, 2009. The minutes of this meeting were included in our package with the Addendum. To date, the CVC has not received the any information to address this concern. Due to the	Cooksville Creek Hydraulic Assessment Report was sent to CVC on Tuesday August 4, 2009 for their review and comment.			CVC submitted a letter to the MOE dated December 18th, 2010, indicating that "CVC will work with the proponent during detail design and our permitting process to ensure that any revisions that may be required will be undertaken. On this basis, CVC has no objection to the approval the Environmental Assessment Addendum or the proponent proceeding to detail design."

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	increase risk to life and property, it is not clear that the selected preferred option is actually the preferred. Furthermore, CVC would not be able to issue a permit for this project, which may be required depending on the proponent. CVC has recently been in contact with McCormick Rankin with respect to this issue; however, to date we have not received the required documentation to address our concerns. McCormick Rankin has verbally advised that they may willing to provide an extension to the review period but we have not received any written confirmation. On this basis, CVC recommends that the Ministry of Environment should not approve this addendum until this matter has been appropriately addressed. Through discussion with McCormick Rankin it is believe that approximately 3 weeks would be required to address this matter. ---------- Staff has undertaken a preliminary review of Cooksville Creek Crossing, Hydraulic Assessment – Draft Report, McCormick Rankin Corporation, August 2009, which was prepared to address our concerns with the Cooksville Crossing as outlined in our letter of July 17, 2009. The Hydraulic analysis was completed to address the lowering of Cooksville Creek culvert near Hurontario and Rathburn Road. Two future scenarios were modelled: both showed impacts with the first scenario	----------			

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	showing more impacts than the second scenario, are discussed below: **Method 1 (Conventional Method)** – results in significant upstream impacts: increase in water surface elevation by 1.42m and increase in flood spill to Rathburn Road from 2.86 m^3/s (existing) to 13.93 m^3/s (future). **Method 2 (LID Option) with lateral spill option** – resulted in upstream water surface increase by 1.25m and flood spill increase to Rathburn by 0.02m^3/s. CVC staff does not agree by the way the LID Option is modeled. The expansion and contraction ratios for culvert sections have been changed compared to the existing conditions model. As a test, the LID HEC-RAS model was re-ran with the expansion and contraction ratios consistent with the existing condition model. Results are same as the results of Method 1 that is significant upstream impacts both spill and water surface elevation. Nevertheless, we think LID approach is not an appropriate for this situation. The HEC-RAS model has limited capabilities in calculating such shock losses through the culverts. A better approach may be using hand calculation by a qualified and experienced professional. The culvert is very long and has a 90° bend in the middle, which should also be considered in the hydraulic analysis. Section 4, bullet 2 – It is not clear how this recommendation could be implemented, especially any	In response to the CVC letter of August 13, a meeting between the CVC, City of Mississauga and MRC, was held on September 25th, 2009 to review the results of the revised hydraulic analysis and discuss alternative methods of addressing the CVCs concerns. Hand calculations were provided for the entire length of the culvert. The results indicate a slight increase in the flood elevation within 15 m of the culvert inlet and no increase to flood levels at the lateral spill location (~ 30 m upstream of the culvert). Modelling was also performed with a 0.5 m blockage of the culvert inlet and the results indicate no increase to the lateral spill volume to Rathburn Road.	Additional information / analysis was requested by the CVC at the meeting of Sept. 25, 2009.	The hydraulic analysis was revised to reflect the requested modifications and presented to the CVC on November 11th, 2009 at a follow-up meeting. The revised analysis confirmed that the impacts did not require any additional mitigation measures above those already identified in the EA Addendum. CVC staff agreed with the manual calculations on head loss through the culvert, but requested additional information to allow for internal review and confirmation of the model, calculations, and conclusions. MRC provided a	

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	short term blockage (through large junk item or tree trunk) during any intense storm can enhanced flood spillage on Rathburn Road. The design should incorporate such scenarios. Based upon our preliminary analysis, CVC staff does not agree with the results of hydraulic analysis provided. If Method 2 is continue to be pursued and due to the complex nature and current ongoing flooding issues in Crooksville Creek, one of the options would be to have a peer review by a qualified hydraulic engineer in consultation with the CVC staff, we would also request concurrence of the methodology by City Engineering and GO Transit Engineering. CVC also has concerns with respect to the use of a wall that is approximately 2 metres in height to eliminate the spill. Staff would be willing to meet to discuss available options upon request.			memorandum to CVC on Dec. 8, 2009 with this information. CVC responded in a letter to MOE on Dec. 18, 2009 advising that CVC "have agreed in principle that the project will ~~be*~~ not result in increase in flooding off-site or an increase in the spill." The Project Team has committed to working with the CVC throughout the detailed design phase of the study to address the concerns of the CVC and achieve a mutually acceptable design. **typo in original letter from CVC has been corrected*	
Mississauga Fire and Emergency Services	Follow up email sent August 27, 2009 to Kevin Duffy requesting comments by September 4, 2009. To date, have received no comments from Mississauga Fire and Emergency Services.				No further EA review required.
Oakville Transit	No comments.				No further EA review required.
Peel Regional Police	Follow up email sent August 12, 2009 to Timothy Vanbokhorst and Gegory Greene at Peel Regional Police. An additional email was sent to Thomas McKay dated August 14, 2009, asking that a response be sent as soon as possible to the MOE. To date, we have received no response from Peel Regional Police.				No further EA review required.
Regional Municipality of	Halton Region Transportation Services has reviewed the Mississauga Bus Rapid Transit Environmental	Given the minor reduction in capacity in the peak hours expected during construction of the interchange	Letter dated September 17, 2009 from Regional Municipality of		No further EA review required.

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Halton	Assessment (EA) Addendum, dated May 2009 (prepared by McCormick Rankin Corporation in association with Ecoplans Ltd.). Based on our review of the report, Transportation Services provides the following comments: 1. The 2006 Transportation Tomorrow Survey (TTS) data shows that approximately 16% of work trips destined for Halton Region originate in the Region of Peel and 27% of work trips made by Halton Region residents are destined to the Region of Peel. Some of these trips currently use the Winston Churchill Boulevard/ Highway 403 interchange and will need to be diverted during construction. We feel that much of this diversion will be to/from the Highway 403 interchange at Dundas Street located in Halton Region. The report acknowledges (page 5-3) that the construction of the busway at each crossing and the reconfiguration of the north parts of the Winston Churchill interchange with Highway 403 will be disruptive of traffic operations. The report further notes (page 5-4) that a program of traffic management that maintains capacity and safety will be developed in the detailed design process. We feel that traffic analysis of the Highway 403 interchanges at Winston Churchill Boulevard and Dundas Street and the intersection of Winston Churchill Boulevard at Dundas Street should be included in this analysis. 2. The report notes (page 3-4) that during the Preliminary Design stage, the City of Mississauga	modifications at the Highway 403/Winston Churchill interchange, it is reasonable to assume that the potential for traffic impacts to the Dundas/Highway 403 interchange and Dundas/Winston Churchill intersection will not be significant enough to warrant a detailed traffic analysis. Note: McCormick Rankin Corporation staff met with Transportation Services staff from the Region on September 3rd, 2009 to discuss the concerns of the Region of Halton's Transportation Services department and to provide additional detail regarding the traffic analysis conducted for the BRT project. The Region was satisfied that their concerns, as they related to the EA Addendum, had been addressed. Subsequently, the Regional Municipality of Halton agreed to submit a letter to the MOE advising of the status of the Region's concerns. Noted.	Halton to Ministry of the Environment: Halton Region provided comments on August 28, 2009 on the proponent's response to our first set of comments on the final Addendum. Subsequent to providing the aforementioned comments, we have met with Dale Turvey from McCormick Rankin Corporation (MRC) on September 3, 2009. Based on our discussion, we understand that none of the Highway 403 ramps at Winston Churchill Boulevard will be fully closed to traffic at any point of time during construction and at least 3 lanes of traffic will be maintained at all times during the peak periods on Winston Churchill Boulevard. Therefore, the amount of traffic that is anticipated to be diverted to the Highway 403 at Dundas Street interchange in Halton Region would be significantly less than if the ramp were fully closed. Based on our meeting, Halton Region's concerns were addressed and we have no further		

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	and GO Transit have continued to liaise with agencies and stakeholders, including Halton Region. We suggest continuing to consult with us during the detail design process regarding construction staging of the Highway 403 interchange at Winston Churchill Boulevard.		concerns with the study.		
Region of Peel	Follow up email sent August 27, 2009 to Damian Albanese requesting comments by September 4, 2009. To date, have received no comments from the Region of Peel.				No further EA review required.
Region of Peel – Health Services (see also Ministry of Health and Long-Term Care)		A letter was sent by courier on July 28th to the Medical Officer of Health of the Peel Region Health Department enclosing a copy of the Ministry of Health and Long-term Care's letter, along with a copy of the Mississauga Environmental Assessment Addendum, dated May 2009, for review and comment by August 10, 2009. Mississauga followed up with Peel Health on August 13, 2009. Peel Health indicated they will advise Mississauga whether or not the Medical Health Officer had forwarded our EA Addendum document to Peel Regions Environmental Health Section for comment.	Received letter dated September 4, 2009 from Region of Peel Medical Officer advising that Peel Public Health has no concerns based on the BRT Environmental Assessment Addendum Report dated May, 2009.		No concerns
Toronto Fire Services	No comments.				No further EA review required.
Toronto Region Conservation Authority	Toronto and Region Conservation Authority (TRCA) staff received the final Environmental Assessment (EA) Addendum report, dated May 2009, and the Notice of Filing of Environmental Assessment Addendum on June 10, 2009. The Draft Final Preliminary Design Report (PDR), dated March 2009 was received on August 6, 2009. Staff has reviewed the EA Addendum and engineering staff has completed a preliminary review of the Draft				The City has worked with and will continue to work with TRCA through the detail design and construction process to meet their policy and statutory requirements. TRCA comments and

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	Final PDR. Please note that there remain several outstanding comments from a stormwater management (SWM) and natural features perspective. The addendum reinforces the previous commitment to implement SWM controls; however, there is no mention of water balance requirements. It is staff's opinion that this project may present an opportunity for the City of Mississauga and GO Transit to work with TRCA staff to implement Low Impact Development (LID) design techniques for this project. A commitment that the SWM facilities will address future development to the extent feasible is not included in the addendum. Future development is expected north of Eastgate Parkway and the SWM plan should incorporate future land use assumptions for this area. A commitment to not increasing flood elevations or generate flood impacts is noted in the addendum, however, supporting modeling and design details have not been provided. With respect to the natural features, compensation and restoration will need to be reviewed and discussed before site plan signoff and permits will be issued. It is important that these discussions begin during the preliminary design stage. Comments provided in Appendix A relate to the Final EA Addendum Report and a commitment from the City of Mississauga and GO Transit is required to ensure these comments are addressed. It is our				input are reflected in EA Addendum as appropriate. No further EA review required. Any outstanding issues / concerns will be addressed by the City through the detailed design study, and TRCA approval will be obtained through obtaining the necessary permits from TRCA for the BRT construction.

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	understanding that a meeting will be set up with McCormick Rankin in September 2009 to discuss SWM related issues. It is also important to note that TRCA staff still needs to review and comment on the Final Draft PDR. As a result, staff needs to review and provide comments on the following, in order to have a clear understanding of the project, and to ensure our requirements are addressed. Draft Final PDR – Please ensure four (4) complete copies of the report, including all appendices (i.e., the Drainage and Stormwater Management report, Appendix B, has appendices that are missing within that report) are sent for review). Detailed Design – Please submit five (5) copies of the detailed design plans, along with the required permit applications and fees. The permit requirements were outlined in our letter dated November 30, 2007. Site Plans – Site plans for the bus terminals have been received. Staff is awaiting additional copies before they are circulated for review and comment. Please note that there are separate site plan application/signoff fees which will be required. Details will be provided under separate cover.	Five copies of the Preliminary Design Report and complete appendices were sent to the TRCA on August 21st, 2009. Five (5) copies of the detailed design plans and permit applications/fees will be submitted to TRCA when available. Noted.			
"Appendix A": Comment /Response Table appended to	1. Section 2.1 refers to the Preliminary Design Reports for the Little Etobicoke Creek and Etobicoke Creek crossings. Please clarify whether TRCA staff will have	City of Mississauga will circulate the BRT East Preliminary Design Report to TRCA prior to Detail Design.	The PDR has been submitted for review; however, formal comments have not been		

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TRCA letter of August 20th, 2009.	an opportunity to review the design briefs, prior to detailed design.	Noted. Additional comments on the preliminary and detailed design will be considered upon receipt by the project team.	provided on that report. Staff will need to provide formal comments on the PDR, prior to detailed design, as noted in the cover letter.		
	2. Section 4.1.1.5 refers to future land use within and adjacent to the BRT corridor. In the absence of any specific detail, please try to accommodate flexibility into the designs of the proposed stormwater management (SWM) facilities such that additional treatment can be accommodated, where required, for future development.	Storm water management systems are designed to accommodate busway related needs.	The updated Addendum does not include any revisions with respect to the design of the west SWM facility and its ability to accommodate future drainage from the undeveloped lands. The addendum should include a commitment to look at future development in the area and investigate the logistics of providing treatment for these areas in one of the BRT SWM ponds, if possible. The PDR does include some preliminary pond volumes; however, the detailed hydrology modeling and calculations are not included in the report. As a result, staff is unable to determine if the pond volumes are based on BRT system only or if they incorporate any storage for future land use.	Due to the competing objectives for land in the Hydro One corridor (e.g. utility easements, hydro one tower access requirements, protection for future expansion of facilities, etc.), the project team has been advised by Hydro One to minimize the size of any SWM ponds in the Hydro corridor. As such, the ponds required for the BRT will be sized to accommodate only the stormwater runoff associated with the BRT. Detailed modeling will be provided during detail design.	
	3. Please ensure that the "west" and "east" designations are accurate in the descriptions for Outlets 8 and 9 in section 4.1.1.6.	The EA Addendum will be revised accordingly.	Comment addressed.		

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	4. The information provided for Outlet 10 (Section 4.1.16) indicates that the Eastgate Parkway Trunk sewer was designed to convey flows up to the Regional event. Please note that TRCA has recently updated the Etobicoke Creek hydrology model such that new Regional flow rates have been established. The new rates will need to be considered as part of the drainage strategy for the proposed busway.	The new Regional flow rates will be an input to the Detail Design process.	No new information relating to the updated Regional flow rate has been included; however, it does appear that the PDR includes a discussion of sewer capacity, the impacts of the BRT on this system and the need for Regional conveyance.	The updated Regional flow rate will be incorporated into the refinement of the stormwater management plan for the BRT during the detailed design phase of the project. TRCA will be provided an opportunity to review and comment on the revisions at that time.	
	5. Section 5.5.2.4 outlines the hydraulic and SWM criteria for the project. It is noted that appropriate erosion and sediment (ESC) measures will be implemented during construction. Please ensure that the ESC plan is submitted at detailed design.	The Detail Design of erosion and sediment control measures will be submitted to TRCA for review.	To be addressed at detailed design.		
	6. Section 5.5.2.4 notes that TRCA and CVC will be consulted at detail design regarding the placement of fill. As noted in comment 9 below, TRCA staff will require a hydraulic assessment to. confirm that the placement of fill within the floodplain will not have any adverse impacts on flood levels.	No response required. If fill is to be placed within the floodplain, TRCA and CVC will be consulted at the Detail Design stage. The fill placement will be designed to avoid any adverse impacts Sec. 5.5.2.4 on flood levels. A hydraulic assessment will be undertaken at the Detail Design stage and submitted to TRCA for review and the necessary permits and approvals will be obtained.	The PDR includes a hydraulic analysis; however, the report does not include a digital copy of the model. As a result, TRCA staff is unable to confirm if the proposed fill areas and structure changes have been appropriately modeled. The results discussed in the report seem to indicate that no impacts will result. This will need to be confirmed through a detailed review of the hydraulic model.	A digital copy of the hydraulic analysis model will be provided for TRCA review during the detailed design phase of the project.	

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	7. Section 5.5.2.4refers to preliminary pond sizing and preliminary design of conveyance systems. Please clarify whether this information will be submitted as part of the preliminary design process.	This information is in the PDR which will be submitted to TRCA prior to Detail Design.	As noted above, the PDR provides some preliminary pond volumes; however, the supporting hydrologic modeling and design calculations have not been provided. Further comments on the PDR will be provided under separate cover once all of the information is received, as outlined in the cover letter.	See response to TRCA comment #2.	
	8. The proposed option to lift the busway over Tomken Road is preferable from a flood management perspective. In Section 7.2 it is noted that the existing berms will need to be extended to augment protectidn of the residential areas to the south, Portions of the existing berms are located with the Regional Floodplain. Please clarify the extent of the proposed berm modifications. Where modifications are proposed within the Regional Floodplain, please undertake a-hydraulic assessment to confirm that there are no adverse impacts to flood levels. Table 7-1 should also be.updatedto reflect the potential for floodplain impacts as a result of the proposed alternative (i.e., busway over Tomken Road).	Berm-extension in floodplain is conceptual only and subject to review and TRCA consultation in detail design. Visual screens (walls, landscaping) will also be considered in lieu of berms-in Detail Design. A hydraulic assessment will be undertaken in Detail Design and will be submitted to TRCA for review and the necessary permits and approvals will be obtained.	Table 7-1 has not been updated to include potential floodplain impacts; however, the drawings provided indicate that the berm modifications will not likely extend into the floodplain. The hydraulic analysis and grading information will be reviewed as part of the preliminary design.	Noted. Final design will confirm that fill placement will not extend into the floodplain.	
	9. The proponent has indicated in Section 7.5.2.4 that the proposed extension of the Etobicoke Creek crossing will have a negligible impact on flood levels. Please submit a hydraulic assessment that shows results for all frequency events and the Regional storm event.	The Etobicoke Creek structure will be revised at deck level only. There will be no change to the crossing below deck level and therefore no impact on flood levels.	The PDR includes a discussion of the results of the hydraulic analysis; however, as previously mentioned, the hydraulic model has not been provided for review.	The work at Etobicoke Creek Bridge does not impact existing flood levels as no work is proposed below the level of the existing bridge	

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				deck. A digital copy of the hydraulic analysis model will be provided for TRCA review during the detailed design phase of the project.	
	10. Section 4.1.2 provides an overview of the natural features in and around the proposed alignment and it is recognized that the majority of the natural features found along the proposed alignment are of 'low sensitivity', due to prior disturbance and invasive species. However, the document does not include a detailed description of the specific features and functions that will be impacted. As a result, impact assessment and potential mitigation and compensation have not been determined at this time. Further detail will be required at detailed design, once the areas to be disturbed are confirmed.	The original (approved) EA included a full description of the project's impacts, mitigation, and commitments to further work; the Addendum focuses strictly on those segments of the busway that vary in plan or profile from that previously approved. Accordingly, the focus in the Addendum is on changes in impacts and mitigation related to those specific sites, rather than a re-stating of the commitments previously made and approved. In almost all cases, the original commitments adequately cover the proposed changes to the infrastructure plan. Further consultation regarding specific areas and issues will occur with TRCA Sec. 4.1.2 as part of the Detail Design process. Please note that a specific EIS is not a typical requirement for projects being reviewed under the Environmental Assessment Act. Ecoplans (Anne MacMillan) discussed the suggestion of further amphibian and fish surveys with TRCA (Brad Stephens) and it is understood that this suggestion pertained specifically to completion of a spring amphibian breeding survey in the affected wetland pockets. Mr. Stephens verified the above comment that most of the features are of low sensitivity' and clarified that the suggestion was made simply to confirm that	Comment addressed. Further consultation will be required at detailed design.	Noted.	

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		there is no important breeding function associated with these pockets.			
	11. Staff suggests that at detailed design the existing flora and fauna data be augmented with further amphibian and fish surveys, specifically digger crayfish. This will allow for an environmental impact study (EIS) to determine the impacts as a result of the proposed busway, parking lots and stations. It should be clarified that the scale of this study can be scoped down significantly. Once the more intensive data is collected, a characterization of the possible impacts to the features, functions and any linkages between them will be required. If the data and analysis determine that the natural features are of low quality, TRCA staff will be in a position to support their removal or alteration, if appropriate mitigation and compensation is provided.	Any further study is subject to discussions between TRCA and the City of Mississauga. The need to augment existing data and undertake an EIS is not related to or triggered by the specific changes to the approved plan as proposed in the EA Addendum.	Comment addressed. Further consultation will be required at detailed design.	Noted.	
	12. It appears that the initial intent of Section 4.1.2, Natural Environment, was to include a discussion on mitigation and compensation in the EA Addendum. However, this section refers to Section XX which does not exist. Please update this section accordingly.	The EA Addendum will be updated per the response to #10 above.	Comment addressed.		
	13. Table 1 4c in the original EA (January 1992) indicates that there will be "possible removal of some vegetation and alteration of wet pockets . Given the current alignment constraints, it appears as if several existing "wet pockets" will be removed entirely. The EA also indicates that natural vegetation will be supplemented with plantings and landscaping. TRCA staff requirements for a net ecological gain have been	The following commitment will be included in the EA Addendum: *Implement the City's typical vegetation replacement and enhancement protocols for both woody vegetation and the wetland pockets removed by the project, based on CVC and/or TRCA's guidelines, with consideration of landownership and usage, including utilities. Specific vegetation replacement is anticipated to be required for*	A portion of the commitment was included in the EA. Further discussions will need to take place at detailed design regarding restoration and compensation. It is important that a net ecological gain is achieved at this site and that a commitment to	Noted. The City is committed to compensation for loss of habitat and a net ecological gain for the project.	

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	highlighted in previous comments and meetings. While several of the features to be impacted are tolerant, common communities, mitigation for the loss of these features will be required. Please include in the EA Addendum a commitment to supplement for vegetation loss such that compensation for this loss as a result of the proposed works can be provided in a manner reasonable to all parties and landowners involved.	*RW1, as well as the larger regulated wetland pockets. Candidate areas that exhibit the best potential for vegetation and habitat enhancement are the Etobicoke Creek floodplain, the NE4SMA area east of Cawthra Road, and the Little Etobicoke riparian corridor. Other opportunities such as acquisition of existing forest areas will also be explored. Related consultation with TRCA and CVC will continue during Detail Design.*	compensation for loss of habitat is received.		
	14. Drawing 7.4, for example, shows the proposed location of the SWM ponds along with proposed landscape plans. Please note that details for these features will be reviewed, and comments provided, at detailed design.	Proposed SWM ponds will be reviewed with TRCA in the Detail Design stage and the necessary permits and approvals will be obtained.	Please refer to the comments provided above.	Noted.	
	15. Please provide a commitment in the EA Addendum that a net ecological gain will be achieved for this project. Areas and requirements will be further considered at detailed design	The proposed mitigation measures integrate specific enhancement opportunities and habitat replacement measures that should result in some net ecological gain. For example, it is anticipated that there will be a net benefit for Monarch butterfly habitat and it is also anticipated that there will be a net improvement in fish movement and habitat opportunities in Little Etobicoke Creek. The City's vegetation replacement and enhancement protocols (see response to Comment #13 above) are also intended to achieve this overall net gain objective.	Please refer to item 13 above.	Please see response to Item 13 above.	
	16. Land ownership constraints and restoration opportunities will be assessed to provide the greatest possible net ecological gain as land ownership issues may not provide compensation opportunities along or near the Bus Rapid Transit. (BRT) alignment.	Comment noted. This comment is general to the project and not specifically related to the sites, changes in impacts, and mitigation measures associated with the locations that are the subject the EA Addendum. The City will implement its typical vegetation replacement	Please refer to item 13 above. Compensation will be required, and impacts mitigated, either on site or at another location off site. In addition, the PDR still needs to	Please see response to Item 13 above.	

Submitter	Summary of Initial Comments Received	Proponent's Response to Initial Comments	Stakeholder's Subsequent Comments	Proponent's Response to Subsequent Comments	Status as of Addendum Submission
	However, as indicated during previous meetings and site visits, staff would like to work with the City to determine appropriate locations for off site compensation. The Region of Peel is currently starting an EA for the Hanlan Feedermain and the City of Mississauga is going to be starting detailed design for the rehabilitation of the Little Etobicoke Creek valley between Highway 401 and Eglinton Avenue.	protocols for both woody vegetation and the wetland pockets removed by the project, based on CVC and/or TRCA's guidelines, with consideration of landownership and usage, including utilities. Specific vegetation replacement is anticipated to be required for RW1 as well as the larger regulated wetland pockets. Candidate areas that exhibit the best potential for vegetation and habitat enhancement are the Etobicoke Creek floodplain, the NE4SMA area east of Cawthra Road, and the Little Etobicoke riparian corridor, but these are not subject to the EA Addendum. Other opportunities such as acquisition of existing forest areas will also be explored. Related consultation with TRCA and CVC will continue during Detail Design.	be reviewed by staff. Proposed works in this reach may not fully restore the valley to its full potential and there may be additional opportunities, using existing construction access in the valley, for significant planting within the valley. If a net ecological gain is not possible for lands along the BRT route, this requirement may be satisfied by enhancing city lands where opportunities and access exist:		
	17. It should be noted that the digger crayfish found in and near the alignment are considered fish under the Federal Fisheries Act. Following internal discussions with Fisheries and Oceans Canada (DFO) staff, any crayfish sites that are connected to a watercourse are considered federal fisheries waters. This means that the mineral meadow marsh on the north side of the alignment, immediately east of Little Etobicoke Creek, is considered fish habitat. Works in and around this feature will require a Fisheries Act review. .	Follow-up discussions have occurred since this comment was provided. The DFO contact for this project has indicated to Ecoplans that although digger crayfish are covered under the Fisheries Act as crustaceans, and therefore are 'fish', they would not be considered to constitute a 'fishery' under the Act unless the habitat is directly connected to a watercourse. In following-up with TRCA (Brad Stephens) it has been determined that the although the meadow marsh on the north side of the alignment immediately east of Little Etobicoke Creek may potentially be connected to the Little Etobicoke Creek under very high flow conditions the proposed mitigation measures (to be documented in the EA Addendum) will mitigate the effect. As a result, the "clearance in relation to the Fisheries Act" for the proposed works at that meadow marsh will be included in the Letter of Advice to be prepared by TRCA. In discussion with TRCA (Brad Stephens) is has also been	Comment addressed.		

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		agreed that the wet pockets within the hydro corridor that support digger crayfish would definitely not be considered fish habitat since those wet pockets do not connect to a watercourse.			
	18. Please consider additional surveys for digger crayfish. This will allow for identification of other locations where alteration to features containing digger crayfish requires a Fisheries Act review.	Please see the response to Comment #11.	Comment addressed.		
	19. At detailed design, MNR should be contacted to determine wildlife collection/rescue requirements for any features to be altered or removed.	Comment noted. MNR will be contacted as appropriate in the detail design stage.	Comment addressed.		
	20. The above mentioned EIS should also consider impacts and possible improvements to fish habitat at the Etobicoke Creek and Little Etobicoke Creek crossings. Discussions have taken place with Ecoplans and MRC regarding possible improvements at Little Etobicoke Creek. Additionally, concrete repairs near pier locations for the Etobicoke Creek crossing should also be considered.	Please see the response to Comment #11 re: EIS. TRCA will continue to be consulted during Detail Design regarding potential impacts to fish and fish habitat towards obtaining a Letter of Advice. Additional in-season aquatic assessment will be completed as warranted based on any changes to the design that may occur during Detail Design. It is worth noting that with the implementation of the proposed design and mitigation measures it is anticipated that there will be a net improvement in fish movement and habitat opportunities in Little Etobicoke Creek. The BRT project does not involve any work below deck level on or near the existing Etobicoke Creek bridge. If concrete repair work is needed in the Etobicoke Creek valley, it should be discussed directly with the City of Mississauga and/or the City of Toronto.	Comment addressed.		

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	21. Section 7.5.1.2 indicates that between Cawthra Road and Tomken Road no utility relocation is required. Please note that consideration should also be made for the Regulated wetland features north of Eastgate Parkway.	The change in the BRT plan represented by the EA Addendum does not alter the commitments in the original EA regarding the wetland features north of Eastgate Parkway.	Comment addressed.		
	22. The above-noted requirements should be included in the EA Addendum and it should be made clear to the proponent and in the file that these issues will need to be addressed at detailed design.	The commitments will be noted in EA Addendum where appropriate; otherwise they will be incorporated in the BRT East Preliminary Design Report and Detailed Design documentation.	The PDR and detailed design plans will need to be reviewed by staff.	Noted. See response to Comment #1.	
	23. Please submit geotechnical and hydrogeology reports with the detailed design submission.	Preliminary geotechnical investigations are appended to Preliminary Design Report. Additional geotechnical and hydrogeology reports generated during the Detail Design stage will be provided to TRCA for review and the necessary permits and approvals will be obtained.	It should be noted that the results of these reports may impact the design. Further comment will be provided once copies of the PDR are received and at the detailed design stage.	Noted.	
	24. Please ensure that details for proposed retaining walls are provided at the detailed design stage.	Typical retaining wall plans are included in Preliminary Design Report. Detailed wall designs developed during the Detail Design stage will be provided to TRCA for review.	Comment addressed.		
	25. Please ensure that the Regulation Limits are included on your detailed design submissions.	Regulation limits will be marked on the Detail Design plans.	Comment addressed.		
	26. TRCA correspondence is missing from the report. Please add TRCA letters dated November 30, 2007, April 4, 2008, April 25, 2008 and October 3, 2008 to Appendix C, Agency Consultation.	TRCA correspondence will be added to Appendix C (now B).	Comment addressed.		
	Section 9.5.2.4, Stormwater Management, has been revised since our last review. The section regarding		Section 9.5.2.4 Stormwater Management, has been revised	TRCA will forward a copy of their LID manual	

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	water quality should be added back into the report. In addition, the design should examine low impact development techniques for stormwater management.		since our last review. The section regarding water quality should be added back into the report. In addition, the design should examine low impact development techniques for stormwater management.	for review. The City will implement LID if opportunities exist. The City will consider low impact development design techniques where appropriate during the detailed design phase of the project. However, it should be noted that this comment is not specific to the areas of change proposed in the EA Addendum, and will be considered over the entirety of the BRT East.	
Toronto Police	Follow up email sent August 27, 2009 to Ronald Tavener and Donald Bevers requesting comments by September 4, 2009. To date, have received no comments from the Toronto Police .				No further EA review required.
Town of Oakville	Follow up email sent August 27, 2009 to Scott McMillan requesting comments by September 4, 2009. To date, have received no comments from the Town of Oakville.				No further EA review required.
Other Review Agencies					
Trans-Northern Pipelines Inc.	Notice of Filing of Environmental Assessment Addendum, Mississauga Bus Rapid Transit (BRT) Project, TNPI Ref.: LA-14 to LA18 Thank you for notice of the subject filing. I confirm that Trans-Northern's petroleum products transmission pipelines interact with the proposed busway facilities at a number of locations, as noted in the environmental assessment and addenda. Trans-Northern's main	Concerns acknowledged. The City will ensure the design of safe and efficient crossings along with the protection of pipeline facilities during construction and operation of the busway, and maintain access to pipeline facilities for inspection, maintenance and emergency response along	Proponent's Response to Comments on Environmental Assessment Addendum, Mississauga Bus Rapid Transit Project, TNPI Ref: LA-14 to LA-18 dated August 25th, 2009 This is to confirm that the undertakings given in the		No further EA review required. The City will continue to liaise with TNPI through the detail design and construction process to meet functional, statutory, and safety requirements related to

Submitter	Summary of Initial Comments Received	Proponent's Response to Initial Comments	Stakeholder's Subsequent Comments	Proponent's Response to Subsequent Comments	Status as of Addendum Submission
	concerns are the design of safe and efficient crossings, protection of pipeline facilities during construction and operation of the busway, continuity of access to pipeline facilities for inspection, maintenance, and emergency response, and accommodation of on-going needs related to cathodic protection and possible leak detection. In particular, the project calls for at-grade busway crossings of the pipelines between Cawthra and Tomken Roads, and again at the busway undercrossing of Fieldgate Drive. In addition, new station and parking access roads will cross the pipeline at Dixie and Tomken stations. As noted in the report, suitably designed crossings may be approved by Trans-Northern in accordance with the Pipeline Crossing Regulations, while a lowering or relocation would require application to the National Energy Board (NEB) in accordance with procedures under the NEB Act. In addition, construction of busway-related facilities and associated landscaping is proposed within the 30-metre safety zone around the pipeline right-of-way. Construction and planting work there must be carried out in a safe manner and in compliance with Section 112 of the NEB Act. Trans-Northern appreciates the early consultation undertaken by the co-proponents and their consultants, and the effort made thus far to address pipeline concerns. Trans-Northern looks forward to continued liaison through the detailed design and implementation phases of the project. Thank you for including Trans-Northern in your circulation.	with accommodation of on-going needs related to cathodic protection and possible leak detection. In addition, construction and planting works within the 30-metre safety zone around the pipeline right-of-way are to be carried out in a safe manner and in compliance with Section 112 of the National Energy Board (NEB) Act. We shall continue to work with you throughout detailed design and implementation phases of this project.	Proponent's letter of July 6th, 2009 satisfactorily address Trans-Northern's present concerns. Trans-Northern looks forward to continuing the coorperative approach throughout the detailed design and implementation pases of the project. Once again, thank you for including Trans-Northern in the consultation process.		TNPI facilities.

Table 11-2. Public Comment Summary Table

Submitter	Summary of Comments Received	Proponent's Response	Status
Resident on Ambercroft Trail	I attended the drop-in session to review the new design for the BRT on June 24th. I discussed my comments with several people there and again at a subsequent meeting at City Hall but came away with the feeling that they would be totally ignored. The overall rationale for the "new design" appears to be solely financial and while I appreciate the need for fiscal responsibility, I do not feel it should be achieved at the expense of the local residents' quality of life. Indeed at a time of economic turbulence I question the wisdom of the project at all… The amount of traffic carried in the Oakville-Square 1 corridor seems perfectly adequately served at the moment judging by all the empty buses that can be seen on the various routes…particularly the "double deckers"… My concerns lie in 4 categories… 1) Visual…raising the BRT above the 403 access ramps will result in the residents of nearby streets watching buses fly past on an elevated roadway apparently every two minutes. Obviously this is undesirable…I questioned whether a "fence" and/or landscaping would be installed to block the view and received very vague comments..Indeed plans still contain only a few low bushes for landscaping which will certainly not resolve these issues.	It was acknowledged that the resident's concerns were consistent with those that were responded to in a letter addressed to him dated August 15, 2008, and at a followup meeting on September 22, 2008 held with his Ward Councillor. The resident was directed to review the EA document as the City believes his concerns expressed in the July 6, 2009 email have been addressed in the Addendum document. Responses specific to his four areas of concern are as follows: 1. Visual - The recommended plan includes a landscaping concept (Figure 5-6 in the EA document) to mitigate the visual impacts of the busway embankment crossing the Highway 403 S-W and E-N/S ramps at Winston Churchill Boulevard. Due to the proximity of the hydro corridor (branches) and pipelines (roots), only small trees and shrubs are permitted in the landscape concept. The north-facing embankment will be fully landscaped in the areas where it is visible from residential properties. The busway is a minimum of 160 m away from adjacent homes and would have only one or two buses visible periodically, compared to the existing view of Winston Churchill Boulevard and the Highway 403 ramps, which are closer to many homes and feature constant traffic. City of Mississauga policy does not extend to providing fences along the Parkway Belt.	The City of Mississauga submitted a letter to the resident, dated January 22nd, 2010 responding to the resident's concerns. There will be a Public Information Centre (PIC) on the Mississauga BRT Project prior to construction where the final design will be presented for public review and comment. The resident will be sent an e-mail advising him of the PIC open house. The notice for the PIC will be advertised in the Mississauga News, and on the City of Mississauga's BRT Project Website. There will be on-going consultation with the resident to address and resolve any final design concerns that may be raised prior to construction.

Submitter	Summary of Comments Received	Proponent's Response	Status
	2) Noise…the elevated bus route will greatly increase noise levels particularly in our gardens. Again ways of suppressing the noise were met with vague statements about the combined noise level with the existing 403 traffic not increasing…I have waded through the piles of statistics quoted on the website by hired "experts" and find them totally fantastical…and completely illogical…as the plan to move a bus every two minutes along a passage where none currently run surely must increase noise significantly. I have questioned the noise of buses and was advised that "hybrid" buses will be used which are quieter…these are also much more expensive which seems to counteract the premise for the redesign and are particularly interesting in view of the City of Toronto cancelling their orders because of unreliability and high maintenance cost (See Toronto Star/Toronto Sun). I questioned the volume of bus traffic…no data was available and I was referred to the web site to check schedules for route "46"…However no "46" is listed on the sites drop down list…???????	2. Noise - The noise analysis conducted as part of the preliminary design exercise concluded that there will be marginal increase in noise. Per Table 5-3 in the EA Addendum report, the calculated future noise levels experienced by residents on the north side of the hydro corridor are anticipated to be in the range of +1.3 to +1.6 dBA (Leq) over current noise levels after the implementation of the proposed BRT. This increase is insignificant given the existing noise generated in the Highway 403 corridor and, therefore, noise protection measures are not warranted. It is also important to note that the new busway profile would assist in mitigating the existing noise from the Highway 403 corridor. The overall noise level would remain under the Province's 65 dBA threshold for noise mitigation (per the Ontario Ministry of Transportation's Guide for Noise, October, 2006). The reference provided was for GO Transit's Table 46, which provides schedule data for GO's Highway 407 bus service, which would operate on the busway.	
	3) Pollution…heavier than air toxic pollution will roll down the unrestricted sides of the elevation into our back gardens…Again discussions of barriers of some form (the original plan had the road running along Hwy 403 protected by an	3. Pollution - One of the major benefits the Mississauga BRT Project will bring is a reduction in greenhouse gas (GHG) emissions resulting from a combination of increased transit ridership and a reduction of automobile trips. The initial project estimates identified in the project benefits case submission to Transport Canada was an annual reduction of 6.3 tones of GHG emissions. A detailed air quality assessment conducted as part of the CEAA Screening	

Submitter	Summary of Comments Received	Proponent's Response	Status
	embankment) met with little response and indeed a degree of ridicule. Again the hired "experts" say very little increase in toxicity will be felt…Interesting that experts studying every other transit corridor heavily condemn use of buses because of this very reason. (Other people may reason that ANY increase in toxins is too great a risk). 4) Drainage…the rear of my home is very poorly drained currently. Standing water is evident some just below grade (and above in Spring) necessitating my replacement of all wooden fence poles because of water damage. There is no plan to alleviate the run off of water from the raised roadway. A pumping station originally planned is being cut..$$$$$ savings…The engineers on the project agree that water will flow downhill (at least they can get that right)…but suggest current drainage is sufficient…. Logically this is nonsense. All in all I left the meetings very frustrated. I would appreciate my concerns being raised at the appropriate levels and your providing a response outlining action that will be taken to alleviate these very critical concerns.	(Section 5.1.1.4 of the *CEAA Screening Report, 2008*) for the BRT Project concluded the following: • "emissions associated with the transitway are relatively minor compared with local background concentrations" • "the project is not expected to result in any significant adverse air quality effects either locally or regionally during the operations phase" • "It is anticipated that the project will likely have local and regional air quality benefits during the operations phase, as it is anticipated to reduce the dependency of automobile use within the City of Mississauga. The projected 75% increase in peak period transit passengers in Mississauga generated by the implementation of the BRT program will have benefits to both local and regional air quality" 4. Drainage - All drainage from the new busway shall be accommodated as part of a comprehensive stormwater management and drainage program, ultimately draining to the Sawmill Creek stormwater management facility on the south side of Highway 403 via the twin 2590 mm storm sewers crossing the busway east of the E-N/S ramp. There will be no impact to the drainage situation on adjacent residential properties.	
Blaney	We have been retained by 583167 Ontario Inc.,	A letter was submitted to Blaney McMurtry dated February 2, 2010 with the following response	The City of Mississauga submitted a letter to Blaney

Submitter	Summary of Comments Received	Proponent's Response	Status
McMurtry, Barristers and Solicitors for 583167 Ontario Inc.	owner of the property and building located at 4310 Sherwoodtowne Blvd. ("Impacted Property" or "Property") to object to the City of Mississauga's Bus Rapid Transit Program ("BRT") most recent revisions set out in the Environmental Assessment Addendum dated May 2009 (the "2009 EA Addendum"). **History:** The City of Mississauga (the "City") 1992 Mississauga Transitway Environmental Assessment Report was approved in 1993 by the Ministry of Environment and Energy (the "1992 EA"). Likewise in 2003-2004, the City again modified its plans which were subsequently approved in 2005 by the ministry of Environment ("MOE"). The current BRT project is subject to both the *Ontario Environmental Assessment Act* and the *Canadian Environmental Assessment Act* processes. In 2008, the City again began yet another process to change the routing of the BRT. In this reiteration for the first time, our client's direct interest became affected with the proposed changes known as the Hurontario Street/Sherwoodtowne Blvd. proposal. The 1992 EA and subsequent amendments contemplated a different route than currently under consideration. Throughout the current May 2009 EA Addendum documents and indeed in the City's public announcements, the City references the need for change based on the need to "mitigate the costs of the project due to unusual rise in cost of materials and the cost of relocating existing utilities. The study	(see below): The 1992 Transitway alignment at Cooksville Creek / Hurontario Street was not approved by Credit Valley Conservation (CVC). However, the CVC approved the *process* for subsequently assessing alternatives as a means of ultimately defining a preferred plan that met their design criteria and planning requirements. Section 6 of the 2009 EA Addendum outlines the rationale for the change. Cost is one of several	McMurty, Barristers and Solicitors, dated February 2, 2010 which addresses all of the comments received. The City of Mississauga met with the owner and solicitor representing 4310 Sherwoodtowne Boulevard on February 19, 2010 as a follow up to the letter of February 2, 2010. During this meeting, 18 Action Items were identified for additional response by the City. The status and details of the 18 Action Items is found on Page 10 under the Section: " Action Items as a result of February 19, 2010 meeting with Property Owner."

Submitter	Summary of Comments Received	Proponent's Response	Status
	highlights improvements … to save costs." (see public notice dated June 10, 2009 from the City of Mississauga). As well, the City states on page 6-2 of the 2009 EA Addendum, "Avoiding the creation of a new crossing of Hurontario Street, … yields numerous benefits, first among them being a capital cost savings in the order of $7 million". The City already had an Approved EA to deal with the "sensitive environment". The bottom line is the proposed 2009 EA addendum will save the City a substantial amount of money. However, cost savings where an approval already exists and millions of dollars have been spent on that existing approval, does not justify the current process of yet another change to the Approved EA. The current EA Addendum describes processes being carried out pursuant to the requirements set out in the 1992 EA. An excerpt from that document states: "Significant changes in station location … could potentially result in impacts which differed from those identified in the report; then such a change would have no bearing on the overall rationale for Transitway, *but would only occur in response to a localized design or property issue* … the proponent would prepare an addendum to the EA report, undertake a public review process *involving effected local interest* … The MOE may approve the addendum or *undertake a limited government review process to ensure that all concerns have been dealt with.*" (page 1-4, 2009 EA Addendum) [emphasis added] However, this current process has failed to deal with	reasons. In addition to reducing costs, the rationale includes: - significantly reducing future environmental impacts to the natural environmental (primarily to Cooksville Creek) - busway drainage - minimizing traffic impact on Hurontario Street and the Highway 403 interchange (along with traffic management), - eliminating the need to construct new structures - improving transit operations and access to/from Rathburn Road in accordance with the City Centre vision, - ensuring flexibility in future City Centre planning and interface with a future Hurontario Rapid Transit line. The environmental challenges associated with crossing Cooksville Creek were recognized in the original (1992) EA. The alternatives considered then (Section 5.2.8.1.3, 1992 EA) were tied to the design of the Transitway through the City Centre via a tunnel below Rathburn Road. No agreement with or commitment to a preferred design was set out at that time. Rather, a commitment was made to carry forward several options for detailed analysis, which has now been completed. As noted above, the preferred design in the 2009 EA Addendum drastically reduces future environmental impacts to Cooksville Creek,. Meetings were convened on June 17, 2008 and June 2, 2009 to present to the owners of 4310	

Submitter	Summary of Comments Received	Proponent's Response	Status
	substantial impacts to our client's Property which is locally affected by the proposal. Meetings with the City have not provided a satisfactory resolution to the issues and concerns raised by our client. We require that the MOE review the 2009 EA Addendum to assist our client in ensuring that our client's concerns have been dealt with in a matter that is satisfactory to it. **The Impacted Property and Proposed Hurontario Street Crossing**: Our client purchased its Property in 1996 after the initial 1992 EA and specifically noted that the proposed BRT route would not impact its proposed purchase. The cost of the Property was a substantial investment for our client. The proposed changes will have a profound detrimental impact on the value of the building. Our client would never have entertained the purchase of the Property in the first instance had the current 2009 route been proposed (even as an alternative). The initial route for using Hurontario Street was carefully considered by the proponent including all the potential constraints, approvals, impacts and costs. Suddenly in 2008, the City is backtracking to say that the previously obtained approvals and impacts to the creek are now not acceptable and are too costly to undertake. The City must also consider the economic impact of their constantly changing decisions on local businesses and decisions that were taken while the City touted the then amendments of the best scheme and route for the BRT. Businesses require fairness and certainty. The City's constant change of opinion as to where the bus way should be located are neither fair to businesses nor provide any	Sherwoodtowne the outline and design respectively of the proposed modifications to the BRT at Hurontario Street. The current alignment proposal is based on the factors listed above, some of which are significantly different from those present a few years ago. It is appropriate to base route selection and facility design on current and foreseen conditions, not on superseded conditions of previous years. The revision to the busway alignment is a logical outcome of the planning process which ensures that all relevant factors are considered. It follows from the process agreed to in the original 1992 EA, that several alternatives would be carried forward for more detailed analysis in the Preliminary Design stage. Based on the updated evaluation of alternatives, the City, the CVC, and the Ontario Ministry of Transportation have all endorsed the recommended alignment revision at Hurontario Street. The City is committed to ongoing discussion with local business owners to apprise them of changes, as they occur, and to mitigate any potential impacts.	

Submitter	Summary of Comments Received	Proponent's Response	Status
	certainty that the City will not once again change its mind as to where it wants its BRT route to go.		
	The 2009 EA Addendum proposed a completely new route for the Hurontario Crossing. The original EA route and subsequent amendment in 2005 approved route has the bus way crossing under Hurontario Street and under the eastbound Highway 403 exit ramp to connect (via an interim link) to Centre view Drive. Just three years later, the City proposed a new route in their 2008 consultation. The current approach is now to use the Rathburn Road crossing instead, by way of a bus way alignment that passes under Sherwoodtowne Blvd. and along the eastside of Hurontario Street. The new plan is outside the Property envelope identified in the earlier EA/Addendum. The City has not yet decided at this point where the bus way intersects Sherwoodtowne Blvd., whether the street could be closed or remained opened. The impact as to whether the Sherwoodtowne Blvd. is to remain open or closed could have an additional unanticipated impact on our client that will need to be assessed when more information is available. **Potential Impacts:** Our client participated in the 2009 consultation process and has had individual meetings with the City.	The City has undertaken a public review and consultation process as part of its 2009 EA Addendum. The impacts to the Property and the City's proposed mitigation measures are documented in Table 3-1 and Section 6 of the 2009 EA Addendum. The following responses above under Long Term Impacts and Short Term Impacts. Mitigation measures address noise, traffic, visual, and other identified concerns. These measures are consistent with the practice for the whole of the BRT project and reflect standards, regulations, by-laws, design guidelines, and the normal range of construction practices. The City has met with the Property Owner and is committed to continued dialogue in an effort to address concerns. An MOE review is not required given the City's commitments.	
	Some of the concerns of our client have been set out in the 2009 EA Addendum. The cursory way in which our client's concerns have been dealt with by the City is unacceptable. The potential impacts to our client's Property include but are not limited to, the detrimental impact on tenant relations during the	The City of Mississauga is committed to continuing its dialogue with the property owner through the design and construction process.	

Submitter	Summary of Comments Received	Proponent's Response	Status
	construction process. It will be difficult to negotiate lease renewals and to attract new tenants at current rates during this time. As most leases are longer term, the impact could be for the entire term of the lease and not just for the duration of the construction. If the result is lower rent rates, then this will affect both the income generating potential of the business and also the building's value far into the future. In addition, we believe there are both short and long term impacts that must be addressed. **Short Term Impacts:** 1) Lost of easy access to the building by pedestrians, tenants, visitors and delivery of supplies; 2) Construction noise, which has not been accounted for in the noise assessment survey 3) Loss of enjoyment of use of the Property 4) Ability to attract new tenants during the construction process 5) Ability to renew existing tenants 6) Ability o obtain mortgage financing 7) Ability to maintain rent levels 8) Structural impacts of construction	**Short Term Impacts:** 1) Access to the Property will be provided at all times throughout the project. There will be a short term closure of Sherwoodtowne Boulevard at Hurontario Street which is required to complete the bridge structure's construction. Appropriate road closure and detour signage will be in place at all times during construction. 2) Construction noise will be typical of road construction projects. The City will mitigate the temporary construction disruption by notifying the Property Owner and adjacent businesses of the construction schedule, preparing an emergency program for quick resolution of servicing problems, and employing noise and dust control measures as needed. Construction equipment will be maintained to keep noise and emissions levels at a minimum. 3) No response required 4) **Ability to Attract New Tenants, 5) Renew Existing Tenants, 6) Ability to Maintain Rent Levels, 7) Obtain Mortgage Financing, 10) Increased difficulty in Attracting Tenants:** These comments are outside of the scope of the EA Addendum review. We have seen no evidence that the Property will be less attractive to tenants. To the contrary, once complete, the BRT System will increase transit service to the City Centre. Short term impacts will be mitigated and long term benefits include increased accessibility to the Property, with the potential of attracting new business and increasing property value. Also, the building pylon sign will remain in situ as will the grades of Sherwoodtowne Blvd. and Hurontario Street.	

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		8) **Structural Impacts of Construction**: The busway wall type and construction methods of utilizing drilled caissons were selected to avoid impact on adjacent properties. To address the concern of building impacts on the Property, the City will retain a qualified firm to undertake a pre-condition inspection to ensure structural stability of the building, monitor impacts during construction, and perform a post-construction inspection. During construction, we will have inspectors on-site to manage and monitor construction activity and vibration and make necessary adjustments to construction procedures to avoid impact.	
	9) Costs to represent our client's concerns – legal, appraisals, acoustical and structural engineers, etc.	9) **Costs to Represent Our Concerns**: The City has facilitated meetings with the Property Owner to ensure concerns are addressed. Further, the City conducted a noise study (2009 EA Addendum) and will conduct structural testing, at its cost.	
	10) Increased difficulty in attracting tenants due to loss of visibility of building's pylon sign, which attracts business for tenants and creates revenue	See above.	
	Long Term Impacts:	**Long Term Impacts:**	
	1) Excessive noise from buses on both pedestrians and building use	1) **Bus Noise**: The noise analysis conducted as part of the BRT East Preliminary Design Study (2008) included a noise receptor at 4310 Sherwoodtowne Boulevard. The results of the analysis are summarized in Table 6-1 and the detailed noise report is at Appendix C of the 2009 EA Addendum. The analysis concludes that future noise level attributable to the proposed realignment of the BRT adjacent to the Property is in the order of 0.4 dBA (Leq) over the noise levels predicted with the previously-approved alignment, and an increase of 2.9 dBA over the existing noise level of 72.1 dBA (Leq). This difference is negligible. The study further concludes that, based on MOE sound level criteria, all noise sensitive areas are predicted to have insignificant noise impacts, and accordingly, there is no need to consider noise control measures.	
	2) Impact of exhaust fumes on pedestrians and tenants	2) **Exhaust Fumes**: A detailed air quality assessment conducted as part of the CEAA Screening (Section 5.1.1.4) for the BRT Project concluded the following: - "emissions associated with the transitway are relatively minor compared with local background concentrations" - "the project is not expected to result in any significant adverse air quality effects either locally or regionally during the operations phase" - "It is anticipated that the project will likely have local and regional air quality benefits during the operations phase, as it is anticipated to reduce the dependency of automobile	

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		use within the City of Mississauga. The projected 75% increase in peak period transit passengers in Mississauga generated by the implementation of the BRT program will have benefits to both local and regional air quality"	
	3) Loss of enjoyment of use of the Property	**3), 5), 6), 7), 8), 9), 10), 11), 13) Attracting New Tenants, Renewing Existing Tenants, Financing, Rent Levels, Building Value and Structural, Insurance Rates, Increased Difficult in Attracting New Tenants Due to Loss of Visibility of Building's Pylon Sign**: These comments are outside of the scope of the EA Addendum review. We have seen no evidence that the Property will be less attractive to tenants. To the contrary, once complete, the BRT System will increase transit service to the City Centre. Short term impacts will be mitigated and long term benefits include increased accessibility to the Property, with the potential of attracting new business and increasing property value. Also, the building pylon sign will remain in situ as will the grades of Sherwoodtowne Blvd. and Hurontario Street.	
	4) Views for pedestrians and tenants on upper floors (there will be a 20' deep ditch adjacent to the property)	**4) Views**: The outward view from the upper floors of the Property will include the busway. The busway will feature new construction and a comprehensive landscaping scheme that will shield the view of the busway from ground-level.	
	5) Attracting new tenants 6) Renewing existing tenants 7) Financing 8) Rent levels 9) Structural concerns		
	10) Increased insurance rates 11) Building value		
	12) Aesthetics (ie, proposed canopy design)	**12) Aesthetics**: As shown in the BRT project Preliminary Design report, the segment of the busway between Sherwoodtowne Boulevard and Rathburn Road will be in walled cut for the most part, and will feature a specifically designed landscape plan to reflect the aesthetic quality of the surroundings. The building pylon sign will remain in situ as will the grades of Sherwoodtowne Blvd. and Hurontario Street.	
	13) Increased difficulty in attracting tenants due to loss of visibility of building's pylon sign, which attracts business for tenants and creates revenue.		

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	Our client reserves its right to provide additional details regarding the impact on its business. Upon request, our client is willing to submit additional detail regarding the impact to its business. **Request:** The definition of "Environment" in the *Ontario Environmental Assessment Act*, means "environment" means a) air, land or water, b) plant and animal life, including human life, c) the social, economic and cultural conditions that influence the life of humans or a community, d) any building, structure, machine or other device or thing made by humans, e) any solid, liquid, gas, odour, heat, sound, vibration or radiation resulting directly or indirectly from human activities, or f) any part or combination of the foregoing and the inter-relationships between any two or more of them, in or of Ontario ("environment"). We encourage the City and the MOE to consider the broad definition of the environment noted above and the totality of the environmental impact that will burden our client should the proposed Hurontario Crossing go ahead as planned without proper and acceptable mitigation to our client. Specifically, 1. We respectively request that the MOE not make any decision respecting the City's proposed 2009 EA Addendum until the issues between the City	**Request:** The City of Mississauga is committed to continuing its dialogue with the Property Owner through the design and construction process and does not foresee the need for active MOE involvement or mediation. Also, as noted above, Section 6 of the 2009 EA Addendum outlines the rationale for the proposed change, which includes significantly reducing future environmental impacts to the natural environmental (primarily to Cooksville Creek), minimizing traffic impact and improving transit operations thereby improving local air quality, and ensuring flexibility in future City Centre planning, and reducing costs. The long term benefits of the proposal, particularly the environmental benefits, are significant. The City is taking every measure to mitigate the short term impacts of the proposal, which are primarily related to disturbance from construction.	

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	and our client are resolved to our client's satisfaction; 2. We respectively request that the MOE become actively involved in attempting to resolve the issues arising from the City's 2009 EA Addendum as it relates to the impact on our client; 3. We respectively request that the MOE follow the procedures set out in the 1992 EA (as amended) regarding the 2009 EA Addendum and undertake a review process to ensure that all our client's concerns have been dealt with to their satisfaction following consultation with our client on how these issues could be resolved; 4. We respectively request that the MOE appoint a mediator to assist our client and the City in resolving the issues in dispute; and 5. We respectively request that the City negotiate in a timely manner and in good faith with our client to resolve its concerns and issues arising out of the 2009 EA Addendum prior to any approvals of the 2009 EA Addendum. We look forward to your response prior to any decisions being made by either the City of Mississauga or the Ministry of the Environment in relation to the 2009 EA Addendum. Our client is willing and able to participate in mediation upon acceptable terms to resolve the issues raised in this correspondence.		

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	Action Items as a result of February 19, 2010 meeting with Property Owner		
	The following are the responses to the 18 Action Items that were provided in letters to the property owner dated March 4, 2010 and March 9, 2010.		
	1. The City will provide comments on the alternative route for the BRT proposed by the property owner.	March 4, 2010 Letter: Commitment to provide a response by March 9, 2010. March 9, 2010 Letter: The City has reviewed this alternative and note that there is insufficient horizontal distance between the existing edge of pavement of the 403 ramp and the existing south bridge abutment to safely install a single BRT lane at the grade of the existing Highway 403 using the existing Hurontario bridge. Moving the alignment south to avoid the existing bridge results in a similar alignment to the proposed alignment in the 1992 EA. There are also vertical alignment challenges with going over the existing Highway 403 ramps and Cooksville Creek on the west side of Hurontario Street and connecting with Centre View Drive.	Action item is complete.
	2. The City will consider the feasibility of allowing cars to turn left onto Sherwoodtowne Blvd from southbound Hurontario Street. The City will also consider the opportunity to create a left-turn access into the property from eastbound Rathburn Road to be implemented as part of the Transit improvements on Rathburn Road.	March 4, 2010 Letter: Commitment to provide a response by March 9, 2010. March 9, 2010 Letter: The implementation of a southbound left turn on Hurontario Street to Sherwoodtowne Boulevard would be under the jurisdiction of the MTO and would be subject to their review and approval. The City will request the MTO provide comment on this alternative. The City has also reviewed your request for an eastbound left on Rathburn Road to access the parking lot at 4310 Sherwoodtowne Boulevard. Upon review, this alternative appears feasible as there is approximately 60m of storage and taper that could be provided to accommodate an east-bound left-turn lane. We will need to work with you to estimate how many motorists would utilize an eastbound left-turn movement as well as what vehicle queue length might be anticipated. We also need to further assess sight lines and traffic lane balance before a decision can be made. The City is committed to continue working with you to assess the viability of providing this	The City is committed to continue working with the property owner to assess additional access opportunities.

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		access. March 12, 2010: Email from City to MTO requesting review.	
	3. The City will confirm the proximity of closest proposed Rapid Transit bus stop on Rathburn Road.	March 4, 2010 Letter: The walking distance from the main entrance of 4310 Sherwoodtowne to the BRT Station at Rathburn Road and City Centre Drive is approximately 400 metres (or a 5-minute walk). This is a typical guideline for walking distance to rapid transit stations.	Action item is complete.
	4. The City will provide information about actual and allowable setbacks to property and to building.	March 4, 2010 Letter: Note: the existing set back from the building to the property line is not changing. This item is currently being reviewed. Commitment to provide a response by March 9, 2010. March 9, 2010: As was noted in the comments of the letter dated March 4, 2010, the existing set back from the building to the property line will be maintained. In the meeting of February 19, 2010, you had expressed concern with respect to the proximity of the active roadway to the property line and whether or not there are any standards or policies which require a minimum offset from the active roadway to the property line within the right-of-way. There are no standards or policies which stipulate that a roadway must be offset from the property line within the right-of-way. City standards and policies are specific to the offset of buildings from the road right-of-way or property line and this is identified and confirmed through the site plan approval process.	Action item is complete.
	5. The City will investigate the feasibility of, and if feasible, work with the Property Owner to put signage on the Hurontario side of the proposed visual barrier wall. The City will also review opportunities for signage along the BRT corridor.	March 4, 2010 Letter: New signage located in the ROW between 4310 Sherwoodtowne and Hurontario Street would be on MTO Property. We will assess signage opportunities with the Property Owner as part of the detailed landscaping plan. Commitment to provide landscape plan on March 9, 2010. March 9, 2010 Letter: Landscape plan provided.	The City is committed to continue working with the property owner to determine optimum signage location.

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	6. The City will prepare a summary of action items from the meeting. [*i.e. this list of action items, submitted separately to the Property Owner and Lawyer on February 24th, 2010*]	February 24, 2010 Letter: Action items provided.	Action item is complete.
	7. The City will prepare and provide a summary of and time line for construction activities in the vicinity of the property.	March 4, 2010 Letter: Commitment to provide construction activity plan on March 9, 2010. March 9, 2010 Letter: Schedule of construction activities provided.	Action item is complete.
	8. The City will provide the by-law related to parking enforcement to the Property Owner for the Property Owner to obtain legal advice regarding private parking enforcement.	February 22, 2010 Email: contact information for the Manager of Parking Enforcement at the City of Mississauga provided.	Action item is complete.
	9. The City will prepare a communications plan to continue dialogue with the property owner prior to and during construction.	March 4, 2010 Letter: This action item will be discussed and the communication plan details will be determined at our next status meeting with the Property Owner.	The City is committed to continue working with the property owner to develop a communications plan.
	10. The City will identify signage and detour requirements during the short-term closure of Sherwoodtowne Boulevard for the construction of the new BRT bridge.	March 4, 2010 Letter: Will ultimately be finalized when a contractor is in place but the initial requirements will be provided to the Property Owner. Commitment to providing initial signage and detour plan by March 9, 2010. March 9, 2010 Letter: Plan showing signage and detour requirements provided.	Action item is complete.
	11. The City will work with the property owner to identify the most appropriate place for relocation of the existing pylon sign.	March 4, 2010 Letter: We will seek input from the Property Owner on the preferred sign location as part of the detailed landscaping plan. March 9, 2010 Letter: Although this action item is not referenced in the March 9, 2010 letter, the landscape plan was provided.	The City is committed to continue working with the property owner on the preferred sign location.

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	12. The City will work with the property owner to develop a plan for landscaping including height (~7ft) and colour of visual barrier wall along the east side of the BRT retaining wall.	March 4, 2010 Letter: We will seek input from the Property Owner on the detailed landscaping plan. March 9, 2010 Letter: Although this action item is not referenced in the March 9, 2010 letter, the landscape plan was provided.	The City is committed to continue working with the property owner on the final landscape plan.
	13. The City will consider providing the property owner with an opportunity to peer review the pre, during, and post construction project building condition inspection reports for 4310 Sherwoodtowne Blvd.	March 4, 2010 Letter: (referencing Issue #3) As discussed at our meeting on February 19, 2010 we will be mitigating this issue through the choice of retaining wall type and construction method of utilizing drilled caissons as to avoid impact on your property. To address the concerns on foundations, we will be retaining a qualified firm to undertake a pre-condition survey inspection, monitor impacts during construction and perform a post-construction inspection. During construction, we will have inspectors on-site to manage and monitor construction activity and vibration and make necessary adjustments to construction procedures to avoid impact. If you have additional questions on the geotechnical report for the project that was provided as well as the construction methods being proposed, we would be pleased to arrange a meeting to discuss. Additionally, we have no objection to a peer review of the construction method and monitoring program proposed. [The City will facilitate the peer review]	Action item is complete. The City is committed to continue working with the property owner to facilitate the peer review process and is committed to dealing with any recommendations stemming from the peer review process.
	14. The City will provide a copy of the geotechnical assessment report to the property owner.	Geotechnical report for the project has been provided.	Action item is complete.
	15. The City will work with the property owner to relocate the garbage collection bin either temporarily or permanently as part of the work for the reconstruction of the Cooksville Creek culvert work.	March 4, 2010 Letter: We will seek input from the Property Owner on the preferred arrangements for the garbage collection bin as part of the detailed landscaping plan. March 9, 2010 Letter: Landscape plan provided which will form the basis for input on the garbage collection bin.	The City is committed to continue working with the property owner to determine the details of the garbage collection bin.

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	16. The City will provide a copy of the SS Wilson noise study to the property owner.	S.S. Wilson Noise Study for the project has been provided.	Action item is complete.
	17. The City will consider the property owner's requests for financing for various peer reviews and legal costs.	March 4, 2010 Letter: Response provided on requests for financing various peer reviews. The City will not provide reimbursement for legal costs.	Action item is complete. The City is committed to continue working with the property owner to facilitate the peer review process and is committed to dealing with any recommendations stemming from the peer review process.
	18. The City will provide a copy of the air quality study prepared for the project.	The air quality report has been provided.	Action item is complete.
	The Following Information is a Summary of Issues Received From the Property Owner Via Email Dated February 26, 2010		
	No environmental report was provided to show the effect of additional Diesel exhaust fumes being sucked into our fresh air intake. We have the report but don't understand its contents.	March 4, 2010 Letter: As previously stated, a detailed air quality assessment was undertaken which concluded that, "the project is not expected to result in any significant air quality effects either locally or regionally during the operations phase". To help you understand the technical report, we would be pleased to arrange a meeting with the report author at your convenience to discuss the report findings with you in detail. Additionally, we have no objection to a peer review of the air quality report. [The City will facilitate the peer review]	Complete. The City is committed to continue working with the property owner to facilitate the peer review process and is committed to dealing with any recommendations stemming from the peer review process.
	You mention that my building is one of only 2 negatively effected by the change in route as when purchasing the property, the route was shown along	March 4, 2010 Letter: It is not clear on the request of the City on this issue. If this issue refers to the alternative route for the BRT corridor presented at our meeting on February 19, 2010, we are currently reviewing and will provide comments on this option on Tuesday March 9, 2010.	Complete.

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	the 403, not effecting my property, the city saves $24,000,000 by reducing my property value, does not seem fair.	March 9, 2010 Letter: The City has reviewed this alternative and note that there is insufficient horizontal distance between the existing edge of pavement of the 403 ramp and the existing south bridge abutment to safely install a single BRT lane at the grade of the existing Highway 403 using the existing Hurontario bridge. Moving the alignment south to avoid the existing bridge results in a similar alignment to the proposed alignment in the 1992 EA. There are also vertical alignment challenges with going over the existing Highway 403 ramps and Cooksville Creek on the west side of Hurontario Street and connecting with Centre View Drive.	
	The soil tests have shown hard shale which must be broken to excavate, which could crack my foundations as they are going below my foundations & within 1 metre of the property.	March 4, 2010 Letter: As discussed at our meeting on February 19, 2010 we will be mitigating this issue through the choice of retaining wall type and construction method of utilizing drilled caissons as to avoid impact on your property. To address the concerns on foundations, we will be retaining a qualified firm to undertake a pre-condition survey inspection, monitor impacts during construction and perform a post-construction inspection. During construction, we will have inspectors on-site to manage and monitor construction activity and vibration and make necessary adjustments to construction procedures to avoid impact. If you have additional questions on the geotechnical report for the project that was provided as well as the construction methods being proposed, we would be pleased to arrange a meeting to discuss. Additionally, we have no objection to a peer review of the construction method and monitoring program proposed. [The City will facilitate the peer review]	Complete. The City is committed to continue working with the property owner to facilitate the peer review process and is committed to dealing with any recommendations stemming from the peer review process.
	The city would be removing "thousands of dollars of landscaping paid by me" on the city property as part of site plan agreement, could I get compensation?	March 4, 2010 Letter: As discussed at our meeting on February 19, 2010 we would like to seek your input in finalizing the design details on a number of features that will replace the existing landscaping as well as improve the liveability of outdoor space around your building. These include seeking your input on selecting the most appropriate place for the building pylon sign, the development of a comprehensive landscaping plan including the height (~7 feet) and colour of the visual barrier wall along the east side of the BRT retaining wall and the re-location of the garbage collection bin (either temporarily or permanently).	Complete. The City is committed to continue working with the property owner on the final landscape plan.

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		It is not the City's policy to provide for any compensation or reimbursement of any costs incurred for landscaping or otherwise located on City property that were required to be placed/paid for by the owner as part of any site plan agreement. However, as a measure of good faith in this instance, the City will bear the full cost of the above landscaping and site elements.	
	Noise study has been provided but again I don't understand it.	March 4, 2010 Letter: To help you understand the technical noise report, we would be pleased to arrange a meeting with the report author at your convenience to discuss the report findings in detail. Additionally, we have no objection to a peer review of the noise study. [The City will facilitate the peer review]	Complete. If requested by the property owner, the City is committed to continue working with the property owner to facilitate the peer review process for a noise study and is committed to dealing with any recommendations stemming from the peer review process.
	Expert opinions: I should be provided with funds to hire experts to interpret studies on traffic, air & noise (not yet provided) & how they will effect my property. We are looking at getting quotes from our own experts for your consideration.	March 4, 2010 Letter: We are unclear on your issue related to traffic as described in issue #6. As mentioned above, it is not the City's general practice to provide compensation for peer reviews. We have no objection to a peer review process and are also willing to set-up meetings with the various report authors for you to ask specific questions in accordance with the terms above.	Complete. The City is committed to continue working with the property owner to facilitate the peer review process and is committed to dealing with any recommendations stemming from the peer review process.
	The Following Information is a Summary of Issues Received From the Property Owner Via Email Dated March 8, 2010:		
	My main concern is how much more will the fresh air intake of my building be effected by having the buses so close & coming by so often. The original route along the 403 was far enough away that it would have no effect on my building. Do I need better filter systems, do the filters need to be changed more often. BDC is very concerned about their air quality.	March 9, 2010 Letter: As identified in our letter dated March 4, 2010 a detailed air quality assessment was undertaken and we have no objection to a peer review of the air quality report. The City is committed to dealing with the recommendations of a peer review process which could recommend such actions as the establishment of an air quality monitoring program during operations. Determination of any impacts to the building filter system will be addressed once the system is in operation.	The City is committed to continue working with the property owner to facilitate the peer review process and is committed to dealing with any recommendations stemming from the peer review process.

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	The original route along the 403 did not effect my building, this route may decrease the value of my building with extra noise, diesel fumes, which may lower my rental income, possibly making tenants harder to get.	March 9, 2010 Letter: Your comments are noted.	Complete.
	How much more noise & how much more fumes will effect the quiet enjoyment of my tenants & my ability to attract new tenants? My legal costs are already substantial, there should be some allowance for my legal fees.	March 9, 2010 Letter: This confirms our understanding that your issues on traffic are related to noise and air quality. We have no objection to the peer review process to review the noise and air quality reports and are committed to dealing with any recommendations stemming from the peer review process. As previously identified, the City will not provide reimbursement for legal costs.	The City is committed to continue working with the property owner to facilitate the peer review process for air quality and is committed to dealing with any recommendations stemming from the peer review process. The City is committed to continue working with the property owner to facilitate the peer review process for a noise study for 4310 Sherwoodtowne Boulevard, if requested by the property owner.
	The Following Information is a Summary of Issues Discussed With the Property Owner at a Meeting Held on March 17, 2010:		
	Next steps were discussed regarding peer review process. It was discussed that the City's Project Manager could be copied on correspondence with property owner's consultant (Trow) to help facilitate the scope of work definition.	The property owner will follow up with the City on the peer review process with a greater focus on air quality and building structural once he has reviewed the construction schedule that was provided in the City's March 9, 2010, email.	Outstanding. Property owner to follow up with the City on the peer review process.
	Discussion related to pylon sign relocation options.	The City will review the pylon sign relocation options as they relate to the height of the visual barrier wall and sight lines from Hurontario Street.	Outstanding.

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			City to investigate and follow up with property owner.
	Discussion regarding possible EB left turn from Rathburn Road and follow up with MTO on request to assess the SB left turn from Hurontario Street.	The City will assess the vehicle queue length based on existing vehicle turning movements for the possible EB left turn from Rathburn Road and will follow up with MTO regarding assessment of the SB left turn from Hurontario Street.	Outstanding. City to investigate queue length and follow up with MTO on SB left turn from Hurontario Street and respond back to property owner.
	Discussion of landscape plans and garbage bin relocation.	The property owner will provide the City with comments on the landscape plan as well as the preferred location for the garbage bin relocation.	Outstanding. Property owner to respond back to the City on landscape plan and preferred location for garbage bin.
	Discussion regarding a Communications Plan and Construction Consultation Plan. It was confirmed that the City and property owner will jointly establish a construction consultation plan prior to construction once a contractor is in place.	The property owner is to let the City know the date of the next meeting to discuss the above-noted items.	Outstanding. The property owner to advise the City of next meeting date.
Oxford Properties Group Inc.	We write on behalf of the co-owners of Square One Shopping Centre and adjacent land which comprise a total of over 130 acres with 1200 metres of frontage along the South side of Rathburn road in the Mississauga City Centre, the location of a major BRT station. We have concerns with the proposed BRT design and its impact on accessibility to our properties. These lands include the 1.7 million square foot Square One shopping centre, one of the largest such facilities in Canada. Square One attracts	The City concurs with Oxford Properties that for study of any proposed treatments along Rathburn Road consultation with adjacent landowners and the public shall be required. The City is undertaking preliminary design and Transit Project Assessment Process for this length of Rathburn Road west of Hurontario Street. The City acknowledges Oxford Properties' concerns and shall address them in this separate Rathburn Road study; however, the City does not believe that their concerns fall within the bounds of the current BRT EA Addendum submission. Should improvements not be carried out along Rathburn Road, it has always been the City's intention that the BRT along Rathburn Road would run in general mixed traffic.	The City of Mississauga submitted a letter to Oxford Properties Group Inc., dated January 22nd, 2010, responding to their comments. Based on a discussion held on January 28th, 2010 with Oxford Properties' transportation consultant, there are no further concerns with respect to the Mississauga BRT EA Addendum.

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	approximately 23 million customers per year and includes major retailers such as The Bay, Walmart, Sears and Zellers, as well as over 300 smaller shops. The lands also include other commercial development and substantial future development potential. To the north of Rathburn road in this area is a further 208,000 square feet of retail, cinemas, restaurants and entertainment uses. We are generally supportive of improved transit service to the City Centre area, including the BRT project. The current Mississauga Transit Station is situated adjacent to the shopping centre, and the shopping centre has a history of cooperating with the City to improve transit, including the provision of Land to expand transportation infrastructure. However, we are concerned with the proposed resolution of the Rathburn road interface with the BRT service and how this would impact upon vehicular access to existing and future development. We understand from reading the EA Addendum that the BRT buses will use Rathburn road either in general traffic, via curb side bus lanes or in a median bus way. On page 6-4, the study states that "The City will investigate alternative transit operational options along Rathburn road as part of a separate study, beyond the scope of the current preliminary design project." Separately, the City has approached Oxford with a plan that proposes to provide exclusive bus lanes along Rathburn road by eliminating one existing lane for through traffic in each direction and removing the existing and only traffic signal on Rathburn (at	Discussions have commenced with Oxford Properties regarding Rathburn Road as a result of funding approval for road improvement works along this section of Rathburn Road under Ontario's Infrastructure Stimulus Funding Program. However, any proposed Rathburn Road works fall outside of the limits of the current EA Addendum for the BRT Project. The City will investigate alternative transit operational options along Rathburn Road as part of a separate study beyond the scope of the current preliminary design project. Oxford Properties has noted in their comments that the proposed re-alignment of the BRT east of Hurontario Street immediately north of Rathburn Road falls outside the limits of the property envelope identified in the previous EA Addendum. The re-aligned BRT at Rathburn Road falls entirely within public lands, and upon construction shall be dedicated as public highway.	

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	Hammerson Drive) which serves the Square One Regional shopping centre. The same plan also proposes to eliminate another signalized access opposite the existing bus terminal which services substantial commercial development which we own on the north side of Rathburn road. We find this proposal alarming. It will substantially reduce access to major existing commercial development as well as future development on both sides of Rathburn. By eliminating the traffic signal, it is contrary to recent efforts by the City to create a Downtown 21 Master Plan which encourages a finer street grid and pedestrian connectivity across major streets. We believe that reduction in through lane capacity along Rathburn road will lead to excessive traffic congestion and queuing which will limit future development potential and deter existing customers of the regional centre from visiting the site. While we recognize that transit improvements such as the BRT will reduce our usage, our analysis shows that the substantial future intensification potential of these lands will require that the existing traffic capacity on Rathburn be maintained. The existing Rathburn road right-of-way is some 40 metres in width. It was provided from the lands which we represent in order to ensure that future road system capacity and site access would be available to service the future development of the area. This right-of-way is sufficient to provide exclusive bus lanes and maintain four through lanes by widening the street to accommodate the transit lanes. At the City's prior request, we also agreed to provide the City with a 14.2 meter easement along the north side of		

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	Rathburn road, which was ostensibly to be used for the BRT route. With all of this space available, it is quite clear that sufficient room exists to add the BRT lanes and maintain signalized access to lands along the street; however, the City has not prepared such an alternative for proper review. We are concerned that the City has not yet produced a transparent and properly scoped study which examines alternatives such as those referred to on page 5.4 of the EA addendum and engage major landowners in serious consultation regarding a mutually acceptable resolution of the Rathburn road interface with the BRT. We will continue to dialogue with the City regarding this matter, but respectfully request that the Ministry extend the review period for a further 60 days to allow for additional consultation with the City, or direct the City (under subsection 16(2) of the Environmental Assessment Act) to undertake further environmental assessment with respect to alternative transit design options for Rathburn road; or establish some other process for the resolution of this matter.		