

 **TORONTO AND REGION**
Conservation
for The Living City

November 27, 2008

CFN 39971

BY MAIL AND EMAIL (mbricks@ecoplans.com)

Mr. Mike Bricks
Ecoplans Limited
2655 North Sheridan Way, Suite 280
Mississauga, ON L5K 2P8

Dear Mr. Bricks:

**Re: Response to Draft Environmental Assessment (EA) Addendum
Mississauga Bus Rapid Transit (BRT) - (Eastgate Parkway at Highway 403 to Eglinton
Avenue at Renforth Drive)
Etobicoke Creek Watershed; City of Mississauga; Regional Municipality of Peel**

Toronto and Region Conservation Authority (TRCA) staff received the draft Environmental Assessment (EA) Addendum report, dated September 2008, on October 8, 2008. It is our understanding that an Individual EA was approved by the Ministry of the Environment (MOE) for a bus-only roadway in the Highway 403/Eglinton Avenue corridor on July 6, 1993. In 2005 an Addendum was approved which included several design changes to the original EA including station changes at Cawthra Road and Renforth Drive. Staff understands that this second Addendum involves revisions, within TRCA's jurisdiction, to the design at Tomken Road, Dixie Station and Eastgate Parkway at Fieldgate Drive.

Changes at Tomken Road include shifting the alignment of the busway over Tomken Road such that it is constructed as an overpass rather than an underpass to avoid floodproofing measures. At Dixie Road, the addendum proposes removing the west side bus ramp and creating a full-move bus-only signalized intersection on Dixie Road, locating a larger parking lot on the west side of Dixie Road, with access from Encino Street, and providing a bus link to the parking lot access area with a turnaround loop and layover area at the Encino Street connector. At Eastgate Parkway the approved plan was to construct the busway under Eastgate Parkway. This option would require relocation of several buried and aerial utilities. In addition, a pumping station would be required to drain the busway during storm events. The proposed alternative involves elevating the busway over Eastgate Parkway and under Fieldgate Drive.

While staff has no objection in principle to the preferred changes, the comments provided in Appendix A must be addressed in the final EA document, and should be included as an appendix in the final EA report.

Please ensure that the TRCA receives a copy of the Notice of Study Completion and one (1) hard copy and one (1) digital copy, in pdf form, of the final EA Addendum. The final EA document should be accompanied by a covering letter which uses the numbering scheme provided in this letter and identifies how these comments have been addressed.

Member of Conservation Ontario



Should you have any questions please contact me at extension 5717 or by email at slingertat@trca.on.ca.

Yours truly,



Sharon Lingertat
Planner II, Environmental Assessments
Planning and Development

SL/

BY EMAIL

cc: Mississauga: Geoff Wright (geoff.wright@mississauga.ca)
Willy Ing (willy.ing@mississauga.ca)
TRCA: Beth Williston, Manager, Environmental Assessments
Carolyn Woodland, Director, Planning and Development
Quentin Hanchard, Manager, Development, Planning and Regulation
Chandra Sharma, Etobicoke/Mimico Watershed Specialist

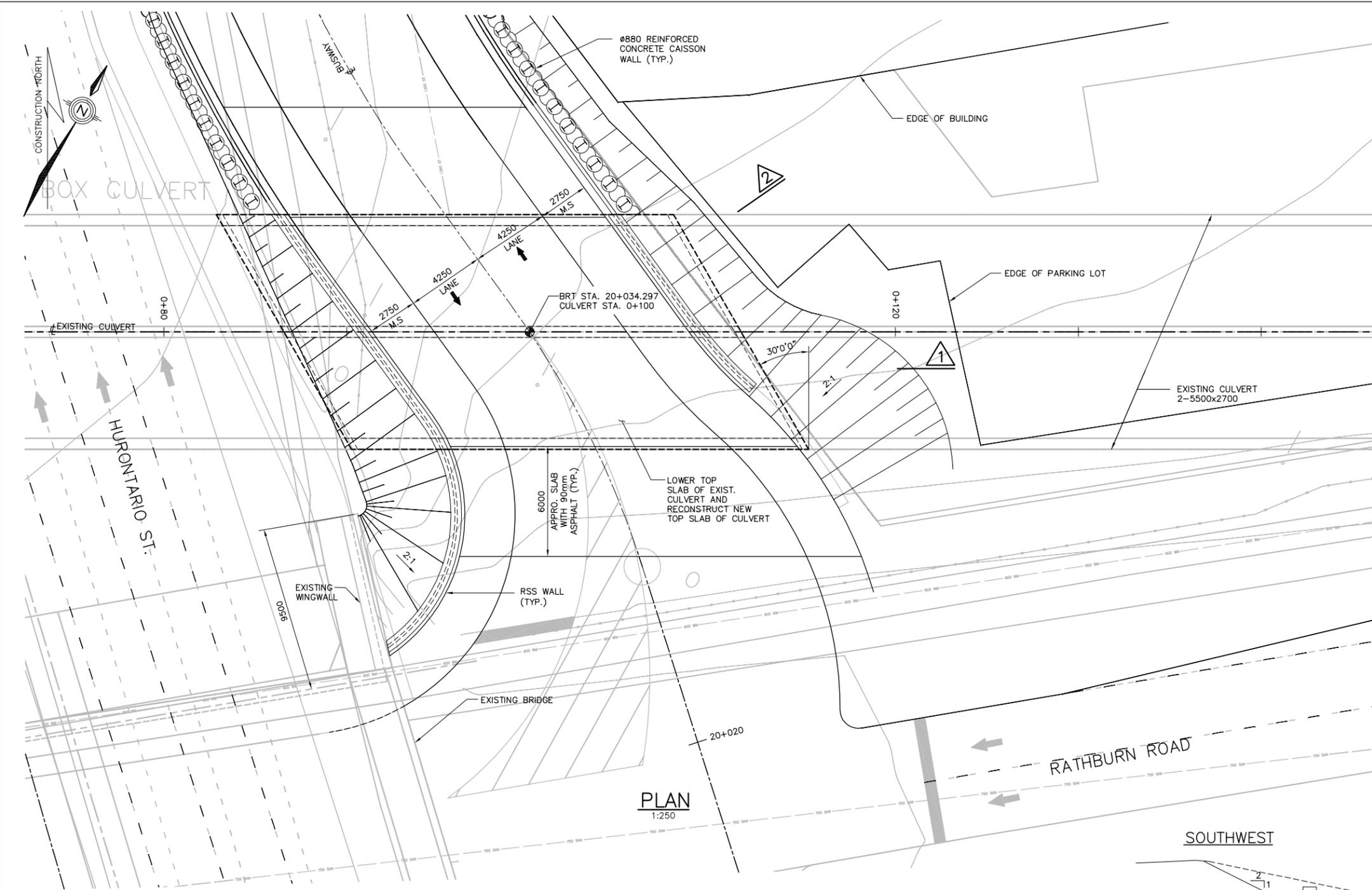
APPENDIX A

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 an opportunity to review the design briefs, prior to detailed design.
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.
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.
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.
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.
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.
7. Section 5.5.2.4 refers 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.
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 protection of the residential areas to the south. Portions of the existing berms are located within 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 updated to reflect the potential for floodplain impacts as a result of the proposed alternative (i.e., busway over Tomken Road).
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.
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.

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.
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.
13. Table 14c 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 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.
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.
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.
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. 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. 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.
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.
19. At detailed design, MNR should be contacted to determine wildlife collection/rescue requirements for any features to be altered or removed.
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.
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 located north of Eastgate Parkway.
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.
23. Please submit geotechnical and hydrogeology reports with the detailed design submission.
24. Please ensure that details for proposed retaining walls are provided at the detailed design stage.
25. Please ensure that the Regulation Limits are included on your detailed design submissions.
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.



PLAN
1:250

GENERAL NOTES

CLASS OF CONCRETE

ALL CONCRETE 30 MPa

CLEAR COVER TO REINFORCING STEEL

| | |
|----------------------------------|-------|
| SLAB | |
| TOP | 70±20 |
| BOTTOM | 50±10 |
| REMAINDER UNLESS OTHERWISE NOTED | 70±20 |

REINFORCING STEEL

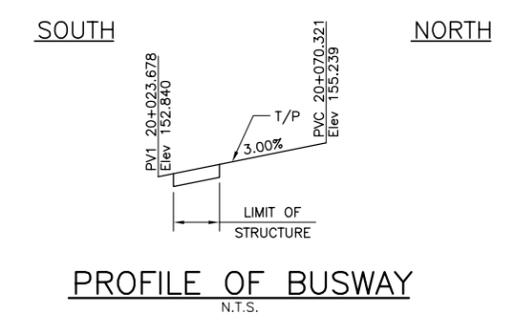
REINFORCING STEEL SHALL BE GRADE 400 UNLESS OTHERWISE SPECIFIED.
UNLESS SHOWN OTHERWISE, TENSION LAP SPLICES SHALL BE CLASS B.
BAR HOOKS SHALL HAVE STANDARD HOOK DIMENSIONS USING MINIMUM BEND DIAMETERS, WHILE STIRRUPS AND TIES SHALL HAVE MINIMUM HOOK DIMENSIONS. ALL HOOKS SHALL BE IN ACCORDANCE WITH THE STRUCTURAL STANDARD DRAWINGS SS12-1 AND SS12-2, UNLESS INDICATED OTHERWISE.

CONSTRUCTION NOTES

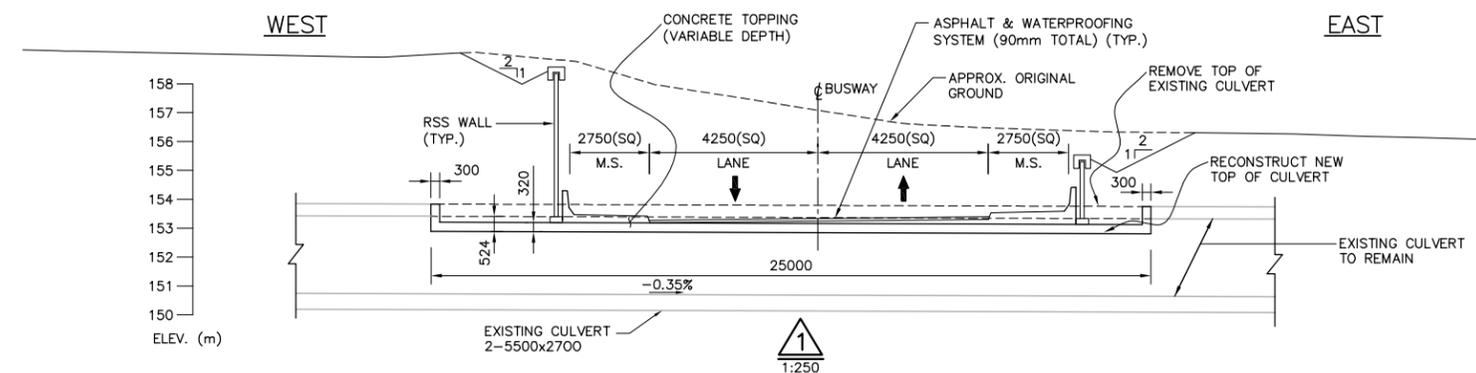
THE CONTRACTOR SHALL VERIFY ALL EXISTING ELEVATIONS AND DIMENSIONS AND REPORT ANY DISCREPANCIES TO THE CONTRACT ADMINISTRATOR PRIOR TO COMMENCING CONSTRUCTION.
ALL ELEVATIONS ARE TO GEODETIC DATUM.

ABBREVIATIONS

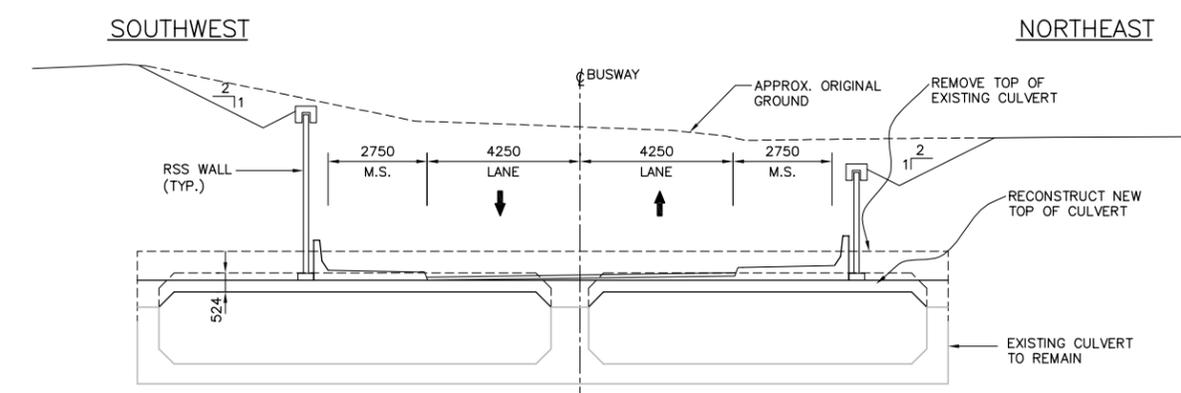
T/P DENOTES TOP OF PAVEMENT
M.S. DENOTES MAINTNANCE STRIP



PROFILE OF BUSWAY
N.T.S.



1
1:250



2
1:200

FILE LOCATION: S:\6964\7-BRT AT COOKSVILLE CREEK\ DRAWING NAME: 56964-307-001CAD.DWG
 DATE PLOTTED: 08/11/26 16:16:57
 MODIFIED: 08/11/26 16:16:57
 DRAWN BY: ANY ZHANG



**MISSISSAUGA BUS RAPID TRANSIT
PRELIMINARY DESIGN**

**BRT At Cooksville Creek
Preliminary General Arrangement**

| | | | |
|--------|---------------|------------|-----|
| Date: | NOVEMBER 2008 | FIGURE NO. | --- |
| Scale: | AS SHOWN | | |

MT O

Willy Ing

From: Tupaz, Aimee Rose (MTO) [AimeeRose.Tupaz@ontario.ca]
Sent: 2008/10/30 2:53 PM
To: Willy Ing
Cc: White, Jason (MTO)
Subject: RE: Mississauga Bus Rapid Transit Project - Draft Environmental Assessment Addendum

Importance: High

Willy,

MTO is in the process of reviewing the draft EA Addendum and will be providing comments to you shortly.

Aimee

From: Willy Ing [mailto:Willy.Ing@mississauga.ca]
Sent: October 20, 2008 3:26 PM
To: Willy Ing; White, Jason (MTO)
Cc: Tupaz, Aimee Rose (MTO); Geoff Wright; Scott W Anderson
Subject: RE: Mississauga Bus Rapid Transit Project - Draft Environmental Assessment Addendum

Hi Jason,

As a follow up, by now you should have your copies of the draft EA Addendum. Due to our schedule / time constraints, if the MTO is not able to provide comments by the end of October, you will have the opportunity to review the Final Addendum when we formally file it with the MOE in mid to late November. We hope that the MTO will not have any major comments that would delay our project during the formal 30 day review process. However, if you can anticipate any major issues at this time it would be very helpful to us.

Willy

From: Willy Ing
Sent: 2008/10/15 10:08 AM
To: 'White, Jason (MTO)'
Cc: Tupaz, Aimee Rose (MTO); Geoff Wright; Scott W Anderson; 'ashea@mrc.ca'
Subject: RE: Mississauga Bus Rapid Transit Project - Draft Environmental Assessment Addendum

Jason,

My apologies that you have not received your copies. We were updating our e-mail system and our consultants did not receive our message. I have spoken to Andrew Shea at MRC they, will be sending you 4 copies by late today or tomorrow.

It is mainly an addendum to address BRT changes at 5 locations:

1. Winston Churchill Boulevard at Hwy 403 Interchange, BRT will go over the "from the east to N-S terminal ramp"
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We hope the MTO are able to meet our acute timelines. However, if you need more time as your comments are beneficial to us, we will see if the MOE can provide an exception.

Willy

From: White, Jason (MTO) [mailto:Jason.White@ontario.ca]
Sent: 2008/10/15 9:14 AM
To: Willy Ing
Cc: Tupaz, Aimee Rose (MTO); Geoff Wright; Scott W Anderson
Subject: RE: Mississauga Bus Rapid Transit Project - Draft Environmental Assessment Addendum

Willy

Before I commit us, any idea when we will be getting the draft report to look at? At this point, we aren't even sure what is covered off in the addendum. We will do our best to meet your deadline, so any information you could feed us now would be helpful.

Thanks

Jason

-----Original Message-----

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To: White, Jason (MTO)
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Jason,

Wanted to confirm as per our message to Lou Politano at the bottom of this message **that the MTO will be able to provide comments by the end of October?** Please let me know as we are working very closely with the MOE on this draft EA Addendum.

Willy

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To: Willy Ing
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Subject: FW: Mississauga Bus Rapid Transit Project - Draft EnvironmentalAssessment Addendum

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Can you include myself and Aimee Tupaz on the distribution for this addendum. We will also link up with our Transit Office to see who needs to be involved from their shop.

Thanks

Jason

-----Original Message-----

From: Politano, Lou (MTO)
Sent: September 29, 2008 9:47 PM

To: White, Jason (MTO)
Subject: RE: Mississauga Bus Rapid Transit Project - Draft EnvironmentalAssessment Addendum

ok. thanks. pl let him know

From: White, Jason (MTO)
Sent: Sat 27/09/2008 8:44 AM
To: Politano, Lou (MTO)
Cc: Korpala, Peter (MTO)
Subject: Re: Mississauga Bus Rapid Transit Project - Draft EnvironmentalAssessment Addendum

Lou

I seem to recall both CR and PP being involved in the EA addendum. CR has been in the design, but PP is also involved. I just am not sure what they do.

Since they aren't specific about what the new ea work is for, both groups should be involved. I know Willy and can let him know.

Jason

Sent from my BlackBerry Wireless Handheld

-----Original Message-----
From: Politano, Lou (MTO)
To: White, Jason (MTO)
CC: Korpala, Peter (MTO)
Sent: Fri Sep 26 22:53:46 2008
Subject: FW: Mississauga Bus Rapid Transit Project - Draft EnvironmentalAssessment Addendum

Jason, thoughts ?

who should represent MTO ? us, P&P, both?

who's been the primary contact so far?

Lou

From: Willy Ing [<mailto:Willy.Ing@mississauga.ca>]
Sent: Fri 26/09/2008 10:04 AM
To: Politano, Lou (MTO)
Cc: Geoff Wright
Subject: Mississauga Bus Rapid Transit Project - Draft EnvironmentalAssessment Addendum

Dear Mr. Politano:

The City of Mississauga in partnership with GO Transit are undertaking an Environmental Assessment Addendum of the

Mississauga Transitway, now known as the Mississauga Bus Rapid Transit (BRT) which received approval from the Ministry of the Environment (MOE) in 1992.

In order to move this addendum forward, the Ministry of the Environment suggests that there may be benefit to engaging some members of the Government Review Team (GRT) at a preliminary stage to expedite the final addendum review process. We are engaging the Ministry of Transportation Ontario to determine if the MTO would be interested in participating in this draft EA Addendum review process, and if possible, that any comments from the MTO be provided to the City of Mississauga by the end of October 2008.

It is important to note that the EA Addendum focuses on alternatives/evaluations for revisions to the design approved as part of the 1992 Environmental Assessment and the 2004 Environmental Assessment Addendum. This EA Addendum is not at a Preliminary Design level of detail and does not include the level of detail that will be included as part of Preliminary Design. Preliminary Design is separate from this EA Addendum and will be documented in Preliminary Design Reports which will be made available for stakeholder review.

For your information, our consultant McCormick Rankin Corporation (MRC) is consulting with various MTO staff regarding the Preliminary Design.

Please provide a response to this e-mail in 5 working days to the City of Mississauga.

Should you have any questions you may contact Mr. Geoff Wright, Director Bus Rapid Transit Project Office at 905-615-3200 Ext 4940 e-mail: geoff.wright@mississauga.ca <<mailto:geoff.wright@mississauga.ca>> , or you may contact me directly, my information is noted below.

Willy Ing
Project Leader, Bus Rapid Transit (BRT)
City of Mississauga
Transportation and Works Department
201 City Centre Drive
Suite 800
Mississauga, Ontario
L5B 2T4.
Phone: 905-615-3200 Ext. 5791
Fax: 905-896-5504
e-mail: willy.ing@mississauga.ca <<mailto:willy.ing@mississauga.ca>>

Willy Ing

From: Willy Ing
Sent: 2008/11/13 10:33 AM
To: 'Tupaz, Aimee Rose (MTO)'
Cc: White, Jason (MTO); Geoff Wright; Scott W Anderson; Schijns, Steve
Subject: RE: Mississauga Bus Rapid Transit Project - Draft Environmental Assessment Addendum

Hi Aimee and Jason,

This is to inform the MTO that the City of Mississauga's Bus Rapid Transit Project office has requested our consultant to review your concerns. We hope to provide you with a response or meet with you to discuss the issues soon.

Willy

From: Tupaz, Aimee Rose (MTO) [mailto:AimeeRose.Tupaz@ontario.ca]
Sent: 2008/11/03 3:12 PM
To: Willy Ing
Cc: White, Jason (MTO); Geoff Wright; Scott W Anderson
Subject: RE: Mississauga Bus Rapid Transit Project - Draft Environmental Assessment Addendum

Willy,

The ministry recognizes that the Mississauga BRT project is still in the preliminary design phase, however, there are several design concepts which have not yet been finalized that hinders the ministry's ability to comment. The ministry has identified areas for improvement within the current BRT preliminary design to the consultant at two meetings held in October. Given the short time frame to review the draft EA addendum (September 2008) for the Mississauga Bus Rapid Transit project, the ministry has the following comments.

- 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 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.
- 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.
- The ministry has concerns with the proposed design of a direct taper versus the existing dedicated parallel lane for the S-W ramp from Winston Churchill Boulevard to Highway 403. The preliminary design shows the addition of a third through lane in the northbound direction for Winston Churchill. Do the existing traffic volumes on Winston Churchill warrant an additional through lane? Has there been any traffic modelling done at the

intersection to assess the queuing for the S-W ramp with this new lane on Winston Churchill with this proposed design? If an additional through lane is warranted for Winston Churchill, the ministry would like the dedicated parallel lane for the S-W ramp to be reinstated.

- 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 addendum, should it not be included as part of this EA addendum?

The ministry is looking forward to meeting with you should you wish to discuss any of our comments further.

Regards,

Aimee

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Dear Mr. Politano:

The City of Mississauga in partnership with GO Transit are undertaking an Environmental Assessment Addendum of the Mississauga Transitway, now known as the Mississauga Bus Rapid Transit (BRT) which received approval from the Ministry of the Environment (MOE) in 1992.

In order to move this addendum forward, the Ministry of the Environment suggests that there may be benefit to engaging some members of the Government Review Team (GRT) at a preliminary stage to expedite the final addendum review process. We are engaging the Ministry of Transportation Ontario to determine if the MTO would be interested in participating in this draft EA Addendum review process, and if possible, that any comments from the MTO be provided to the City of Mississauga by the end of October 2008.

It is important to note that the EA Addendum focuses on alternatives/evaluations for revisions to the design approved as part of the 1992 Environmental Assessment and the 2004 Environmental Assessment Addendum. This EA Addendum is not at a Preliminary Design level of detail and does not include the level of detail that will be included as part of Preliminary Design. Preliminary Design is separate from this EA Addendum and will be documented in Preliminary Design Reports which will be made available for stakeholder review.

For your information, our consultant McCormick Rankin Corporation (MRC) is consulting with various MTO staff regarding the Preliminary Design.

Please provide a response to this e-mail in 5 working days to the City of Mississauga.

Should you have any questions you may contact Mr. Geoff Wright, Director Bus Rapid Transit Project Office at 905-615-3200 Ext 4940 e-mail: geoff.wright@mississauga.ca <<mailto:geoff.wright@mississauga.ca>> , or you may contact me directly, my information is noted below.

Willy Ing
Project Leader, Bus Rapid Transit (BRT)
City of Mississauga
Transportation and Works Department
201 City Centre Drive
Suite 800
Mississauga, Ontario
L5B 2T4.
Phone: 905-615-3200 Ext. 5791
Fax: 905-896-5504
e-mail: willy.ing@mississauga.ca <<mailto:willy.ing@mississauga.ca>>



**McCORMICK
RANKIN
CORPORATION**

2655 North Sheridan Way
Mississauga, Ontario, L5K 2P8
Tel: (905) 823-8500
Fax: (905) 823-8503
E-mail: mrc@mrc.ca
Website: www.mrc.ca

MEMO

SUBJECT: Mississauga BRT
TO: Aimee-Rose Tupaz, P.Eng.
FROM: Stephen Schijns, P.Eng.
DATE: December 10th, 2008
COPIES: **MTO:** Jason White, Ted Lagakos, Martin Sedkowski, Clement Shim, Chris Tschirhart, Chris Blaney, Ram Dharamdial, Branko Zivkovic
GO Transit: Stephanie Davies, Muyiwa Adebayo, Jeff Bateman
Mississauga: Geoff Wright
MRC: Dale Turvey, Andrew Shea, Kevin Rodger
OUR FILE: 6964
SUBJECT: Response to MTO Comments on draft Preliminary Design Reports

Geoff
copy: SCOTT
Willy
File: PO.04-DES
MRE 700

The following MTO comments were provided to the City, GO Transit, and/or MRC upon MTO review of the draft EA Addendum and a two-day review session (October 20, 21) for the Mississauga BRT project. The responses indicate how the comments are being addressed in the BRT PDRs.

| General Comments for the BRT | Response |
|---|---|
| 1. The ownership of the BRT lands is an important issue and needs to be addressed. | Noted. The City of Mississauga and GO Transit will be responsible for negotiating property lease and/or acquisition. |
| 2. There is still work to be done regarding the drainage for the BRT. There is concern that minor areas are being widowed in the drainage plan and are being conveyed to the ministry's ditch line with minor or no treatment. The ministry is still reviewing the expansion of its existing SWM ponds. | Noted. Without specific locations identified, this comment cannot be addressed further at this time. There is a commitment to treat all surface runoff affected by the BRT project, and that will be a guiding principle through detail design. |
| 3. The grading shown along the BRT still needs work and additional retaining walls may be required. The landscaping plan as shown in the EA Addendum may not be feasible based on the grading shown on the preliminary design drawings | Grading plan is complete, Landscaping plan is conceptual and will be reviewed and confirmed/modified as necessary during detailed design phase of study. |
| 4. Access to all SWM ponds must be maintained. | Access to one MTO SWM pond will be affected (east of Central Parkway); that access road will be relocated to preserve access. Access to all other MTO SWM ponds in the corridor is not affected. |
| 5. The ministry understands that due to physical constraints in the Highway 403 corridor, it may not be feasible to meet | Addressed in BRT PDR and in MTO P&R Lot PDR. |

| General Comments for the BRT | Response |
|--|--|
| all ministry standards on its facilities being impacted by the BRT. Justification as to why ministry standards can not be met and safety measures to mitigate these issues must be implemented in accordance with ministry standards. | |
| 6. 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. | All ramp grades and other proposed design features are within Ministry standards. See Table 1. |
| 7. MTO permits will be required for all works within our property limits. Sign permits will be required for any visible signs within 400 m of MTO property limits. | Noted. These approvals will be addressed during the detailed design / construction phases of the project. |
| BRT WEST | |
| 1. HML is being relocated on slope – accessibility for maintenance, constructability – auguring on slope and slope stability, impacts to nearby residents regarding the new lighting envelope. | Location of specific concern not identified. HMLs will, in general, be relocated to level, accessible sites within the corridor and as close as possible to existing sites. The location shown for the relocated HML adjacent to the N-W ramp at Winston Churchill Boulevard in the draft plans is altered to reflect updated grading requirements. |
| 2. The EP to EP ramp separation of the S-W and E-N/S ramp at Winston Churchill does not meet ministry standards. Installation of barrier curb is not acceptable. The consultant must provide justification as to why this does not meet ministry standards and propose mitigation measures, done in accordance with ministry standards, to address this concern. | At its closest, the two ramps are separated (e/p to e/p) by 4.2 m, which requires that they be barrier separated. The gap provides for a 1.0 m outer shoulder on the S-W ramp, 0.8 m for a standard OPSD concrete tallwall barrier on the loop ramp, and a 2.4 m paved inner shoulder on the E-N/S ramp. All dimensions meet or exceed MTO GDSOH standards. Due to the proximity of existing hydro towers to both the E-N/S and S-W ramps, they cannot be realigned without compromising minimum geometric design requirements, and the loop ramp cannot stay on its current alignment without creating a substandard grade on the busway. Relocation of one or both of the hydro towers is costly, not preferred by Hydro One, and not necessary in light of the proposed ramp layout meeting MTO standards. Furthermore, the E-N/S ramp exit terminal cannot be shifted due to the undesirability of reducing the upstream weave length on Highway 403, while the intersection with Winston Churchill Boulevard is similarly constrained by the presence of stormwater management ponds immediately to the north (the option of relocating the intersection northward was previously reviewed and rejected by MTO). |
| 3. The proposed relocated S-W ramp will be relocated closer to the existing Hydro tower. Clearance must be acceptable to Hydro One and the ministry has no | The inner edge of pavement of the proposed S-W ramp is at exactly the same offset from the existing hydro tower relocation as the edge of pavement of the current E-N/S ramp. This positioning is intentional, so as to avoid any |

| General Comments for the BRT | Response |
|---|--|
| influence on the required clearances by Hydro One. | Hydro One concerns.. This situation is to be reviewed with Hydro One. |
| 4. What will be the impacts to the existing water main and Enbridge gas facilities with the new structure of the N-W ramp? | The existing water main will be relocated to the east of the proposed N-W ramp structure prior to its construction, as illustrated in Figure 1 (attached). The north-south Enbridge pipelines will remain in situ, without being affected by the structure or footings. |
| 5. The ditches along Highway 403 in this section are gone, how will drainage be conveyed? | Ditches along Highway 403 are not affected, except at ramp locations. Drainage will continue to be conveyed along existing ditches, and reconfigured ramp drainage will feed into existing MTO Highway 403 ditches. |
| 6. There is no cross-section for the BRT in this section, is it to be the same as the cross section for BRT east? If so, BRT east is fully paved however BRT west is shown with a grass swale? | The cross-section for the BRT guideway is the same as in the BRT East, featuring 3.75 m wide lanes and 2.75 m wide paved shoulders. The "grass-swales" shown are grading limits, and will be present in both the BRT East and West wherever the elevation of the busway differs from that of the existing ground. |
| 7. The ministry has concerns with the proposed design of a direct taper versus the existing dedicated parallel lane for the S-W ramp from Winston Churchill Boulevard to Highway 403. The preliminary design shows the addition of a third through lane in the northbound direction for Winston Churchill. Do the existing traffic volumes on Winston Churchill warrant an additional through lane? | <p>The need to provide additional capacity on the northbound approach to the E-N/S ramp intersection was identified as part of the MTO's Transit Supportive Off Highway Improvements Study in 2005. Subsequent analysis has confirmed this conclusion. Existing PM peak period conditions at the E-N/S ramp terminal see the NB through move operating near or at capacity, and the introduction of a fourth leg to the intersection will take green time and necessitate greater throughput on the other legs.</p> <p>After an exhaustive analysis of alternative interchange and access designs, the direct taper approach was developed as part of the Highway 403 Park & Ride Lots Preliminary Design study, and was incorporated in the plan reviewed with MTO Senior Engineering staff on May 20, 2006, July 9, 2007 and August 20, 2007 (Presentations and notes of meeting attached).</p> <p>The design was also discussed at several Project Team meetings through 2005 and 2006. The design was endorsed by the project team, and no objection to the approach was voiced at any time during the study by senior management.</p> <p>The proposed configuration is not inconsistent with MTO practice and is familiar to Highway 403 users. The identical configuration exists at the adjacent Erin Mills Parkway interchange, with three through lanes and a direct taper to both the S-W and N-E loop ramps to Highway 403 having been in operation there for many years. The Mavis Road and Hurontario Street interchanges with Highway 403 offer more local examples of this configuration. These roads feature higher arterial and ramp volumes than Winston Churchill Boulevard. It may also be noted that the six lane + direct taper configuration (built as four lanes with parallel lanes) is the design guideline being used in new MTO freeways (e.g. Highway 407 East). The southbound approach to the Winston Churchill intersection has three through lanes.</p> |

| General Comments for the BRT | Response |
|---|---|
| | <p>thoroughly examined as part of the Park & Ride Lot Preliminary Design Study and all such alternatives have been rejected by the Ministry.</p> <p>In the absence of physically acceptable or reasonably cost-effective solutions to retaining a dedicated parallel lane for the S-W ramp, we would seek Ministry guidance and direction as to the approach to take.</p> |
| 8. There may be an issue with the grading of the ramp and drainage being conveyed close to the hydro tower in the S-W ramp. | There is a drainage ditch between the hydro tower and the E-N/S ramp at present. Several options exist to direct ramp drainage in a way that fits within Hydro One's design and maintenance parameters. Further review with Hydro One during detail design will determine the most appropriate. |
| 9. Lane designation at the intersection shows the right most left turn lane lining up with the left most through lane to the parking lot. How is that to be signed? Is this lane supposed to be a bus priority lane which will only allow that movement for buses? | Lane alignment at intersection has been modified to address alignment concerns (see Figure 1). The lane is for use by all vehicles destined to the Park & Ride facility. The four E-N/S ramp lanes will be signed as left – left – through/right – right, with both roadside and overhead signs per MTO standards. |
| 10. Lane configuration development on E-N/S ramp. Develops on right side from the two left turn lanes. If queuing occurs, people will not be able to get in the right lane, same problem again. Left lane and right lane should develop. | Lane marking revised to show left lane and right lane developed. |
| 11. The analysis of alternative structure types i.e. how they arrived at the proposed structure types for the 5 bridges. The same information should be included in the Preliminary Design Report. | Proposed structure types are based on MRC's structural design experience with bridges of similar spans and circumstances; recommendations consider factors such as span length, structure depth, any site-specific constraints (e.g. topography, utilities, foundation conditions), durability, constructability, and cost. |
| 12. Details of connecting the twin structures over Highway 403 at Winston Churchill Boulevard. MRC shall submit structural analysis and design calculations to demonstrate that the concrete in the structure will not be overstressed as a result of the proposed connection. | The 5 cm gap between the structures is proposed to be covered by a plate during the detour stage; the structures themselves will not be connected. Structural analysis details and calculations will be reviewed with MTO the detail design stage. |
| 13. There should be no decrease in the effectiveness of the berms or depressed Highway 403 for the noise sensitive areas on the north side of the highway. If there are noise problems from the operation of the parking lots and transitway, the proponent will need to provide solutions. | Noise analysis indicates no significant increases in noise, and EA approval has been granted on that basis. Noise impacts associated with the implementation of the busway do not warrant noise mitigation under the Region of Peel, City of Mississauga, or Ministry of the Environment noise criteria, and therefore no further noise mitigation measures are proposed. |
| 14. Maintain existing number of lanes on E-N/S Off-ramp to WCB during all construction phases. | Note included in BRT West PDR for construction / implementation. |
| 15. Revise NB lane arrangement on WCB south leg | Drafting revised to clearly show bullnose location and lane arrangement. |
| 16. Show bus turning templates at intersections to and from carpool. (Mississauga Transit also uses accordion style buses) | Due to shorter wheelbase, articulated buses track tighter than standard highway coaches and 12 m buses; GO Transit highway coach is the design vehicle. |

| General Comments for the BRT | Response |
|---|--|
| 17. What closures, if any are anticipated, on Hwy 403 mainline and ramp will be required? | No closures are required on the Highway 403 mainline. Temporary, short-term closures (overnight or, at most, a weekend) are proposed only to tie-in realigned ramps to the existing ramps. |
| 18. 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. | <p>On the north part of the crossing, the 5 cm gap between the existing Winston Churchill / 403 structures will need to be covered and the median modified to allow detouring to extend onto the northern end of the structures. This will allow four lanes of traffic to be shifted among the six lanes available on the structures, and will not require overbuilding the existing structure(s).</p> <p>The mechanics of removing the north part of the median, covering the gap with a temporary plate, adjusting the driving surface, and restoring the median after completion have been reviewed with our experienced structural engineers and they are satisfied that this is a reasonable and feasible approach. The details will be developed and presented to MTO for approval during the detail design stage.</p> |
| 19. Is the construction work required to be access from under the Winston Churchill bridge for the proposed connection? If so, MRC is required to get MTO Traffic's approval as the work will impact Highway 403 traffic underneath. It is advisable to have MRC contact Traffic Office in advance to ensure its constructability. | Various site access options exist; final access plan to be defined through consultation with MTO during detail design. |
| BRT EAST | |
| 1. Berms for disposal of excess fill are OK but some are too close to Hydro lines | Berming plan is conceptual at this point; it is to be reviewed with Hydro One / ORC prior to finalizing the preliminary design, and will be the subject of review and approval at the detail design stage. |
| 2. Berm proposed with tying in the noise fence west of Hurontario looks ok in principle and would be a better solution | Assuming this comment refers to "east" of Hurontario; the berm south of the busway will only be implemented if the parking lot is removed. It is our understanding that the parking lot lease has been or will be renewed by MTO and that the lot will remain for the foreseeable future. The berm proposal has therefore been removed from the plan. |
| 3. Replacement of noise walls like for like should not be impeded on the basis of cost | Any MTO noise walls impacted by the BRT will be replaced on the south side of the Busway. |
| 4. The analysis of alternative structure types i.e. how they arrived at the proposed structure types for the 4 bridges. The same information should be included in the Preliminary Design Report. | Proposed structure types are based on MRC's structural design experience with bridges of similar spans and circumstances; recommendations consider factors such as span length, structure depth, any site-specific constraints (e.g. topography, utilities, foundation conditions), durability, constructability, and cost. All structures are of standard types. Notes will be included in PDR. |
| 5. The noise barrier wall shown in Figure 1 needs to be extended westerly | Noise wall adjusted. Revised plan illustrated in Figure 2. |

| General Comments for the BRT | Response |
|---|---|
| approximately 300 metres to help reduce noise levels for the homes on the western end of Chalfield Lane. The Ministry constructed a berm here on the recent 8 laning of Highway 403 due to noise complaints in this area. | |
| 6. Cross section C – C shows the noise barrier to be removed and the note on the plan shows the wall to be retained. Which comment is correct? | The existing Highway 403 noise wall at the Central Parkway crossing is to be retained only in the station area. Beyond that, the noise barrier will be replaced with a new noise barrier on the south side of the busway, as illustrated on Figure 2. |
| 7. The barrier profile of the wall to remain shows that the wall is over 5 m in height. I believe that the wall is only 4 m high. The wall should be replaced as it is 27 years old and is at the end of its life span. It will look very bad if it is the only remaining section of old steel wall. | The BRT project will replace any MTO noise walls that are physically affected by construction Replacement of other existing MTO noise walls due to age, condition, or for aesthetic consistency with new walls is not part of the BRT project scope. |
| 8. Provide stopping sight distance on realigned W-N/S Cawthra Off-Ramp, does it meet ministry standards? | SSD on the proposed ramp meets MTO standards. See Table 1. |
| 9. What is the width between the BRT and Hwy 403 EB lanes, with respect to roadside protection and clear zone requirements? | The offset between the Highway 403 EB lanes and the proposed BRT is typically 27 m (from edge to edge of travelled way); it reduces to 14 m at part of the EB exit ramp to Eastgate Parkway. The existing guiderail adjacent to the eastbound Highway 403 shoulder (covering approximately 2/3 of the distance over which the busway is adjacent) will be retained, and extended as necessary to provide a continuous barrier between the two facilities. |
| 10. Provide staging drawings for the Ramp realignment and structure construction. | Staging drawings are included in current draft of BRT East PDR (Nov-08). See Figure 3. |
| 11. What closures, if any are anticipated, on Hwy 403 mainline and ramp will be required? | No mainline closures are required. Ramp closures will be limited to the brief time required to tie in the realigned Eastgate exit ramp with the existing ramp. |
| 12. Existing storm sewer location shown in profile in Figure 3, is it correct? | Yes. |
| 13. Existing HML pole not shown where excess fill will be placed on the existing berm. | Location of concern is not specified. In general, excess fill shown as conceptual; grading in the field will reflect all existing conditions and avoid the need to relocate HML poles, utilities, etc. This will be addressed in detail design. |
| Additional queries by e-mail, Dec. 2, 2008 | |
| 14. Is it possible to obtain a copy of the revised drawing at the Winston Churchill and E-N/S ramp terminal intersection? | Attached as Figure 1. |
| 15. With regards to the additional lane for Winston Churchill NB, it states that this additional lane was reviewed by MTO. I was not aware that this had been previously reviewed by the ministry. Can you please provide me with the documentation that warrants the additional lane for Winston Churchill and the removal of the existing dedicated lane for the S-W ramp and the relevant traffic analysis and any other supporting documentation relating | Documentation appended, drawn from the Off-Highway Transit-Supportive Improvements study (2005), the Park & Ride Lots Preliminary Design study (2007), and the Mississauga BRT West Preliminary Design report (2008). The proposed plan showing the intersection arrangement was reviewed by the Transit-Supportive Improvements Study project team and presented to MTO Central Region Senior Management on May 29, 2006, July 9, 2007 and again on August 20, 2007. The requirement for the third NB lane was laid out on May 29, 2006, and was accepted without comment; no concerns were raised at subsequent meetings. |

| General Comments for the BRT | Response |
|--|--|
| to this so that it can be included in my file? | Part of the problem in documentation may stem from the turnover of Ministry staff on this particular project; it may be that additional documentation may be found in the files of the previous Project Managers Nancy Adriano, Ayvun Jeganathan, Ansar Ahmed, Jason White, and/or Has Shah. |
| 16. Have there been any preliminary drawings for the PHM 125 for Winston Churchill and Erin Mills? | The draft PHM 125 drawings were included in Appendix D of the draft Preliminary Design Report for the Park & Ride Lots, submitted to MTO for review in August 2008. They are attached as Figures 4a and 4b. The drawings will need to be modified to reflect the changes in item 9 above. |

Table 1: MTO Interchange Ramps Affected by Mississauga BRT Project

| Ramp | Design Speed | Grade | | | Minimum Radius (m) | | | Stopping Sight Distance (m) | | |
|------------------------------------|--------------|--|--|--|--------------------|--------------------------------------|-----------------|-----------------------------|-----------------------------|--------------------|
| | | Existing | Standard | Proposed | Existing | Standard | Proposed | Existing | Standard | Proposed |
| Winston Churchill Blvd N-W ramp | 50 km/h | +1.7% / -1.2% K crest=40 K sag=60 | + 5% / - 8% (K crest > 15; K sag > 18) | +1.33% / -4.75% (K crest = 17) | 250 | 120 des (50 min) | 125 | 65 | 65 | 65 |
| Winston Churchill Blvd S-W ramp | 40 km/h | -4.5% / +1.0% K crest= 30 K sag = 35 | + 5% / - 8% (K crest > 4; K sag > 8) | -4% / +1.0% K crest=40 K sag = 14 | 50 | 50 | 65 | 45 | 45 | 45 |
| Winston Churchill Blvd E-N/S ramp | 50 - 80 km/h | +3.0% K sag = 50 | + 5% / - 8% (K crest > 35; K sag > 30) | +3.0% K crest=50 K sag = 80 | 100/236.5 | 230 des (120 min) / 120 des (50 min) | 236.5 / 90 | 65/135 | 65/135 | 66/135 |
| Erin Mills Parkway N-W ramp | 50 km/h | +1% / -1.2% K crest=50 K sag=40 | + 5% / - 8% (K crest > 15; K sag > 18) | +2.7% / -4.0% K crest = 17 K sag = 17 | 175 | 120 des (50 min) | 110 | 65 | 65 | 65 |
| Erin Mills Parkway E-N/S ramp | 50 - 80 km/h | +3% K crest= 25 | + 5% / - 8% (K crest > 35; K sag > 30) | +3% K crest=20 K sag = 70 | 95 | 230 des (120 min) / 120 des (50 min) | 100 | 65/135 | 65/135 | 66/135 |
| EB Exit to Eastgate / Cawthra ramp | 60 - 80 km/h | - 1 % max | + 5% / - 8% (K crest > 35; K sag > 30) | +2.8% / -2.68% (K crest = 38; K sag = 35) | straight | 230 | 340 / 250 / 380 | n/a | 135 (80 km/h); 85 (60 km/h) | 85 at BRT crossing |

Memo To File

Date: December 10, 2008

Page 10

Figure 1: Utility Relocation Plan and intersection layout – Winston Churchill Boulevard

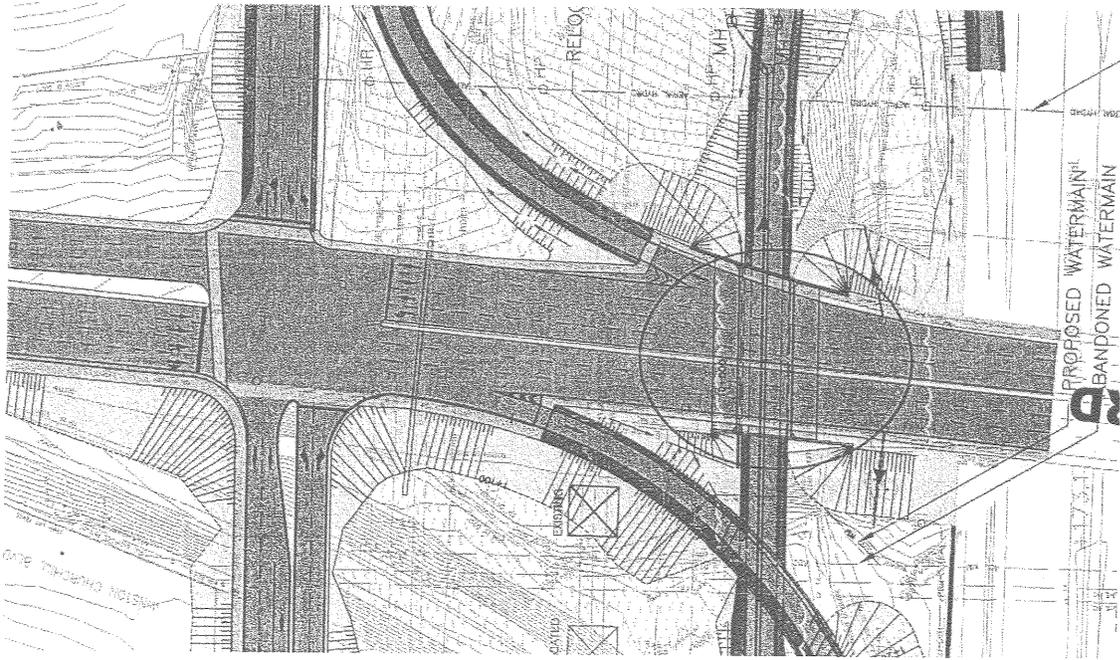
Figure 2: Noise Wall Plan – Hurontario to Central Parkway

Figure 3: Staging Plans for 403-Eastgate Exit Ramp and Structure

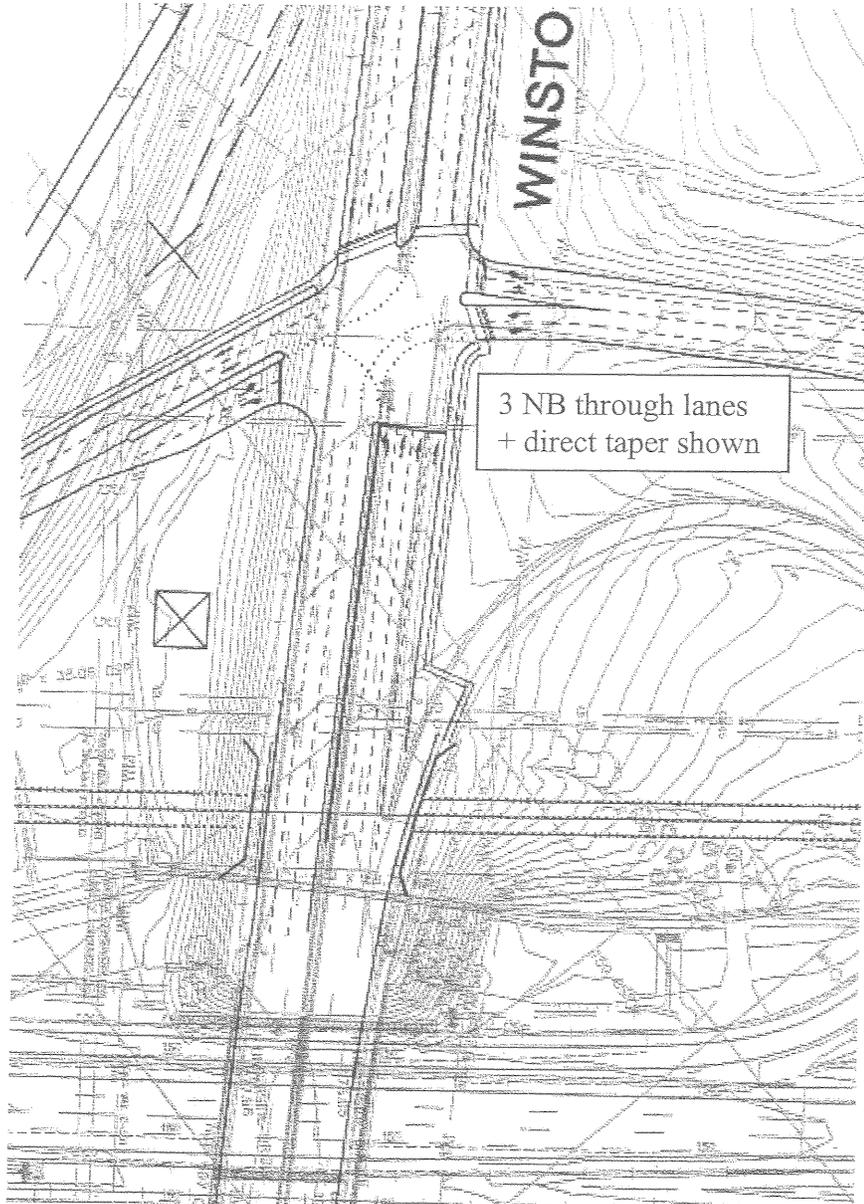
Figure 4a/4b: PHM Drawings for Winston Churchill Boulevard and Erin Mills / E-N/S Ramp Intersections

Appendix 1: Winston Churchill Interchange Third Northbound Lane Documentation

Figure 1: Utility Relocation Plan and intersection layout –
Winston Churchill Boulevard



Winston Churchill access configuration as shown and discussed at MTO Project Team meeting (Transit Supportive Off-Highway Improvements Study), January 11, 2005



Transit Supportive Off-Highway Improvements Study

MTO Central Region Engineering Meeting

May 29, 2006

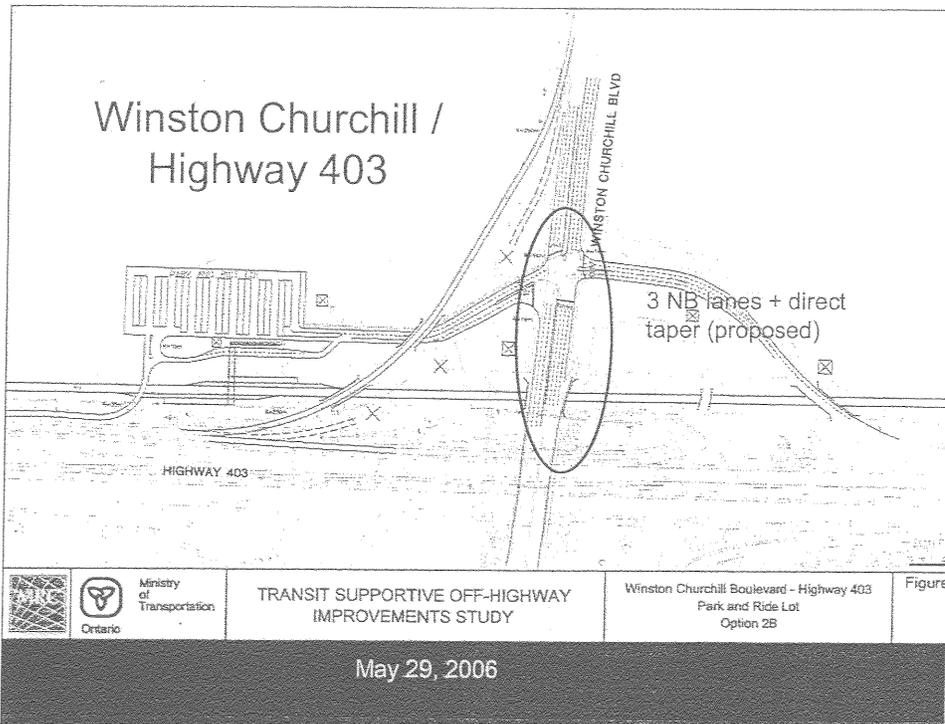
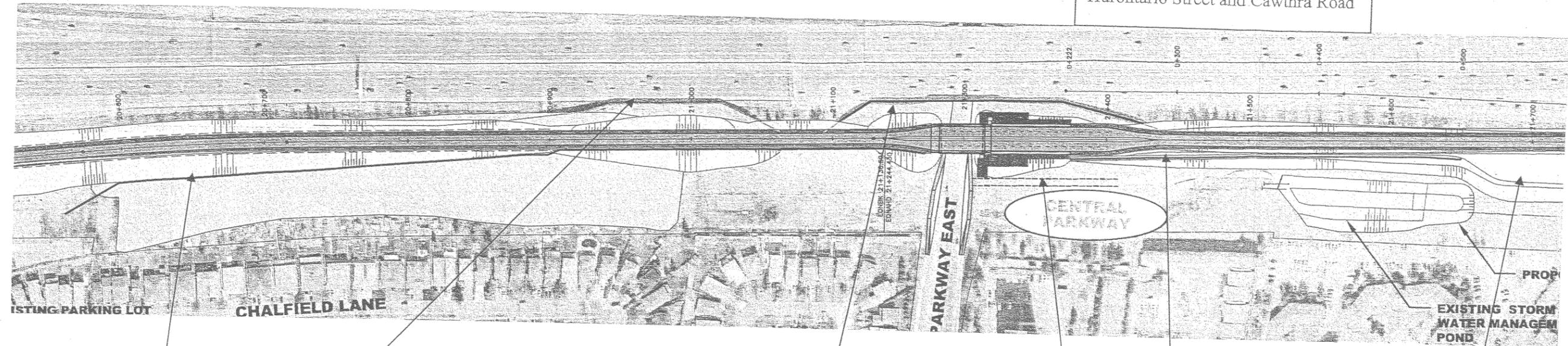


Figure 2: Noise Wall Plan between
Hurontario Street and Cawthra Road



Busway noise wall
(limit to be determined in
detail design)

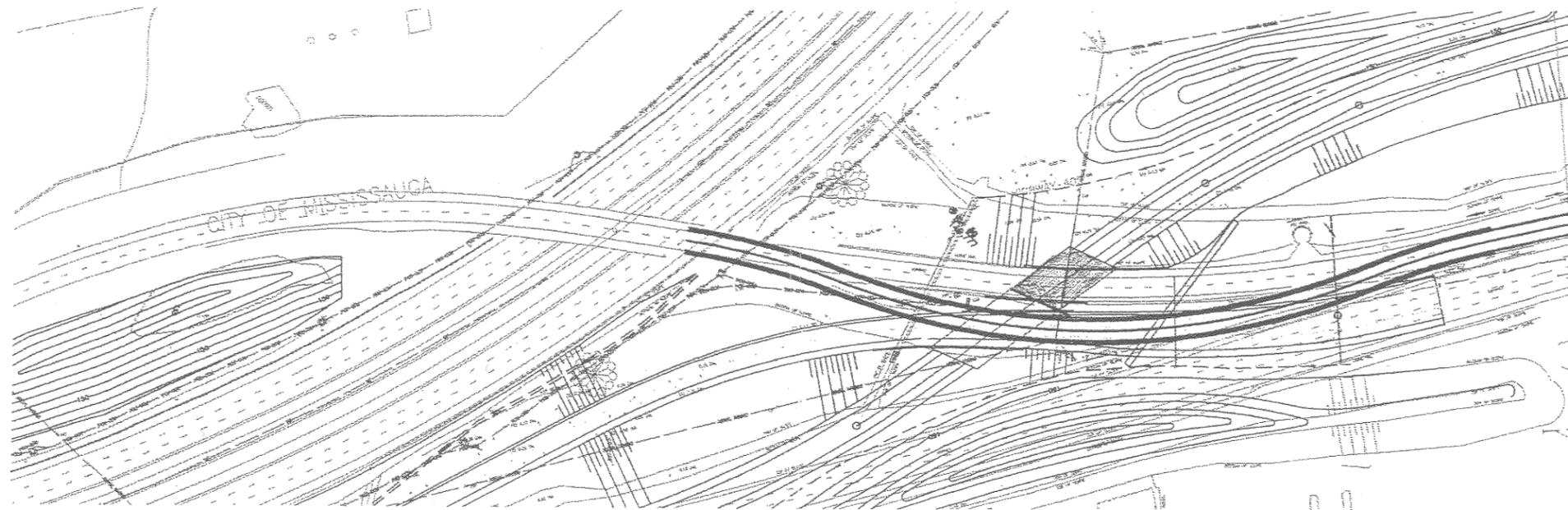
Existing MTO Noise Wall to be removed and
replaced by new wall south of busway

Existing MTO Noise Wall
to be retained

SWM pond access road to
be shifted southerly

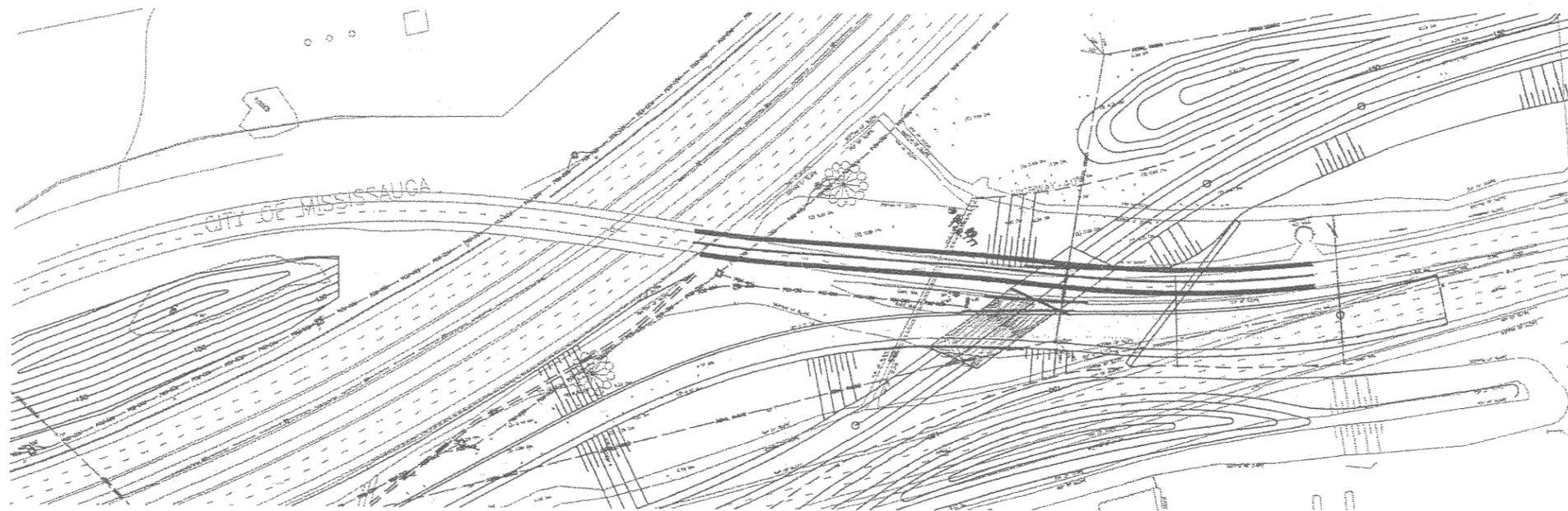
Existing MTO Noise Wall
to be supplemented by new
wall south of busway

Extend berm from
pond easterly



STAGE 1 DETOUR
1:1000

Figure 3a: Detour Plan at Highway 403 Exit ramp to Eastgate Parkway – Two Stage Alternative



STAGE 2 DETOUR
1:1000

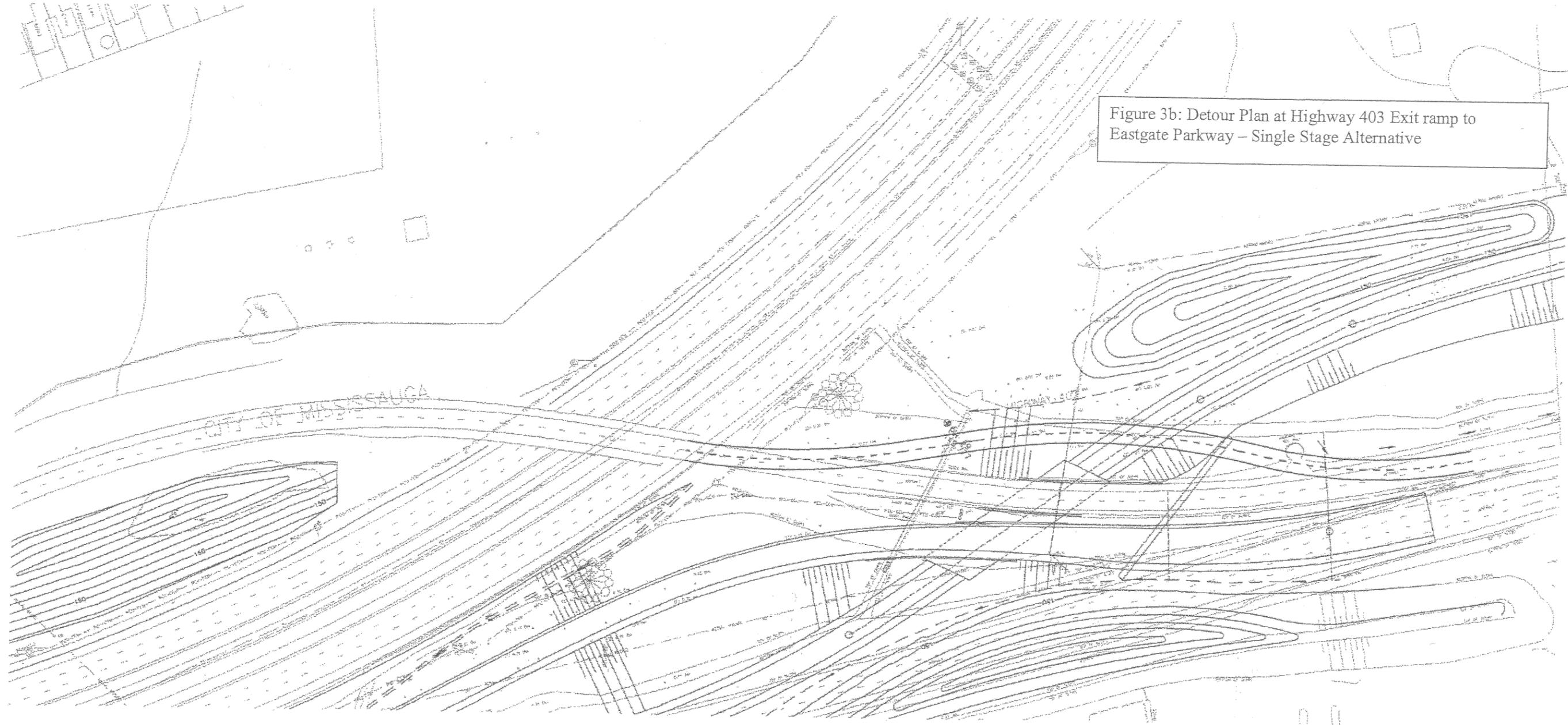


Figure 3b: Detour Plan at Highway 403 Exit ramp to Eastgate Parkway – Single Stage Alternative

DETOUR
1:1000

FORM PH-125 90-12

| COLLISION DIAGRAM | | NUMBER OF ANGLE COLLISIONS | |
|-------------------|-----|----------------------------|-----|
| Year | No. | Year | No. |
| | | | |
| TOTAL | | | |
| AVERAGE PER YEAR | | | |

MINIMUM REQUIREMENTS FOR INSTALLATION OF TRAFFIC SIGNALS
(WARRANT ANALYSIS FORMS SHOULD BE ATTACHED)

LOCATION _____ AT _____
MUNICIPALITY _____ DATE OF SURVEY _____

| WARRANT | DESCRIPTION | MINIMUM REQUIREMENT FOR TWO-LANE ROADWAYS | | COMPLIANCE |
|--------------------------------|--|---|-----------------|------------|
| | | FREE FLOW | RESTRICTED FLOW | |
| 1. MINIMUM VEHICLE VOLUME | (A) Vehicle Volume, All Approaches for Each of the Heaviest 8 Hours of an Average Day, and (B) Vehicle Volume Along Major Street for Each of the Same 8 Hours | 400 | 720 | |
| 2. DELAY TO CROSS TRAFFIC | (A) Vehicle Volume Along Major Street for Each of the Heaviest 8 Hours of an Average Day, and (B) Combined Vehicle and Pedestrian Volume Crossing the Major Street for Each of the Same 8 Hours | 400 | 720 | |
| 3. ACCIDENT HAZARD | A Total Reported Incidents of Types Susceptible to Correction by a Traffic Signal, per 100 Month Road Average Miles, a 24 Month Period, and B Adequate Trial of Lead/Restrictive Practices, Where Substantive Concerns and Enforcement Have Failed to Reduce the Number of Accidents, and C Fulfillment of One of the Above Warrants (Minimum Vehicular Volume or Delay to Cross Traffic) to the Category 3 or More. | 8 | | |
| 4. COMBINATION WARRANT | Two or More of the Above Warrants (A, 1, or 3) Satisfied to the Extent of 80% or More. | | | |
| 5. MID-BLOCK PEDESTRIAN VOLUME | (A) Pedestrian Volume Crossing the Major Street Average per Hour for the Heaviest 8 Hours of an Average Day, and (B) Vehicle Volume Along Major Street Average Per Hour for the Same 8 Hours. | 120 | 240 | |

NOTES: (1) Vehicle Volume Warrants (1A), (2A) and (2B) for Roadways Having Two or More Moving Lanes in one Direction should be 20% Higher than Values Given Above.
 (2) For Purposes of Crossing Volume Refer to Note (1) on the Signal Warrant Analysis Form PH-125.
 (3) The Lowest Sectional Percentage Governs the Entire Warrant.
 (4) For "Y" Intersections the Values for Warrant (1B) should be Increased by 50%.
 (5) Pedestrian Mid-Block Signals may also be warranted based on a Pedestrian cross over warrant.

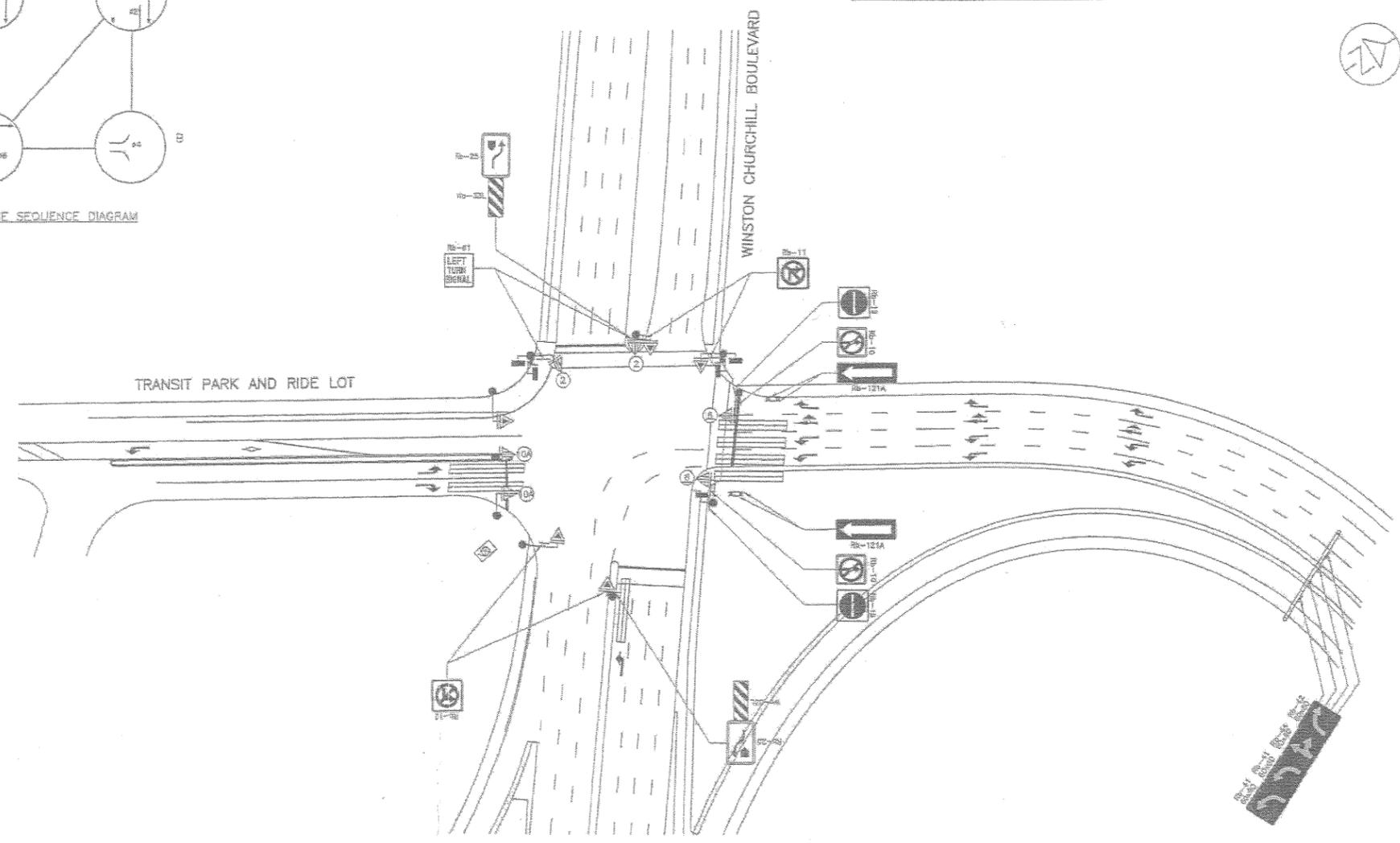
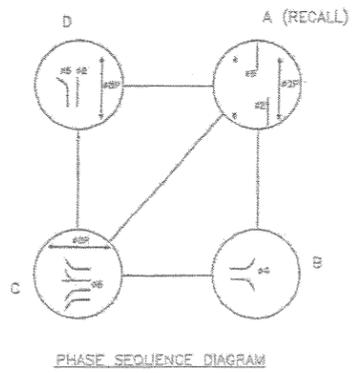
LEGEND

| | |
|--|--|
| | VEHICLE PASSAGE LOOP DETECTOR |
| | SIMPLE LOOP DETECTOR |
| | DUPLEX LOOP DETECTOR |
| | DIAMOND LOOP DETECTOR |
| | MICRO-LOOP DETECTOR |
| | EMERGENCY VEHICLE PRE-EMPTION DETECTOR |
| | LEAD-WAVE DETECTOR |
| | TRAFFIC CONTROLLER |
| | TRAFFIC CONTROLLER W/ PAS |
| | TRAFFIC SIGN |
| | TRAFFIC SIGN WITH FLASHING BEACON |
| | ILLUMINATED TRAFFIC SIGN |
| | POLE |

| CLASSIFICATION OF ROADWAY | TRAFFIC SIGNAL HEADS | | | LOCATION | |
|---|----------------------|--------|-----------|--------------|--|
| | TYPE | SIZE | BACKBOARD | MOUNTING HT. | OFFSET FROM POLE |
| ROADWAY WINSTON CHURCHILL BOULEVARD | PRIMARY | TYPE 2 | YES | 5.0m | W.B. 4.5m E.B. 7.3m N.E. 1.2m S.E. 5.5m |
| | SECONDARY | TYPE 2 | YES | 5.0m | W.B. 4.5m E.B. 5.5m N.E. 1.2m S.E. 5.5m |
| MULTILANE TWO-LANE ROADWAY 403 W-N/S RAMP | PRIMARY | TYPE 2 | YES | 5.0m | W.B. 4.5m E.B. 4.5m |
| | SECONDARY | TYPE 2 | YES | 5.0m | W.B. 4.5m E.B. 4.5m |
| MULTILANE TWO-LANE ROADWAY | PRIMARY | TYPE 2 | YES | 5.0m | W.B. 4.5m |
| | SECONDARY | TYPE 2 | YES | 5.0m | W.B. 4.5m |

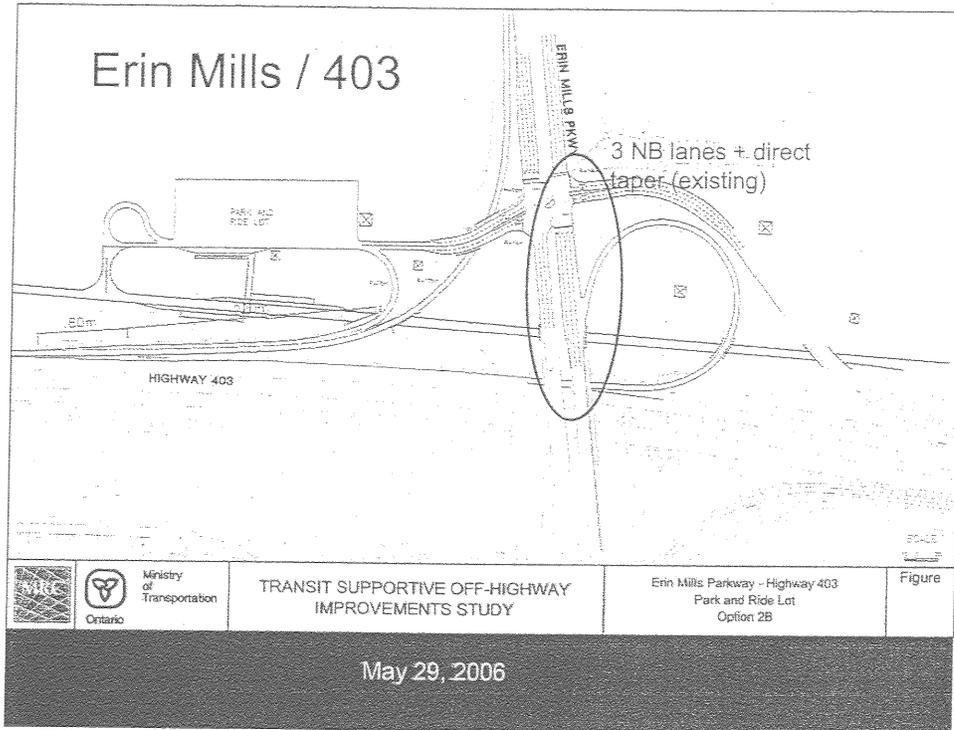
TYPES OF SPECIAL ARROW HEADS WITH BACKBOARD
ALL 300mm LENSES, EXCEPT AS NOTED

NOTE: FOR SPECIAL ARROW HEADS (1), (2), (3) AND (4), THE "V" REFERENCE INDICATES ALL 300mm LENS INDICATIONS.



| DATE | ANALYST | DESCRIPTION OF REVISIONS | RECOMMENDED BY |
|------|---------|--------------------------|----------------|
| | | | |
| | | | |
| | | | |

| | |
|--|---|
| MUNICIPALITY REGION OF BRANT/DRYDEN | MINISTRY OF TRANSPORTATION, ONTARIO |
| INTERSECTION WINSTON CHURCHILL BOULEVARD AT HWY 403 E-N/S RAMP | SIGNALS WARRANTED |
| DATE FEBRUARY 26, 2008 SCALE 1:500 | SIGNAL DESIGN RECOMMENDED FOR APPROVAL |
| RECOMMENDED BY | SIGNAL INSTALLATION APPROVED AS PER SECTION 144 (31) R.T.A. |
| MUNICIPAL OFFICIAL (ORIGINAL INSTALLATION) | APPROVAL DATE: |
| REGIONAL TRAFFIC REPRESENTATIVE (SUNSHINE INSTALLATION) | |



<excerpts from memorandum sent to MTO (Ayvun Jeganathan) on March 14, 2007 regarding traffic operations at the Winston Churchill site; this memo summarized traffic analysis and modelling that extended back to 2005 and which had been the subject of review and discussion with the Ministry over the 2005 – 2007 period. The rationale for the third northbound lane at the ramp terminal intersection is highlighted.>

MEMO TO FILE - DRAFT

RE: Highway 403 Park and Ride Lots
OUR FILE: 6121-100
PREPARED BY: Andrew Shea
CC: Steve Schijns
DATE: February 12, 2007, Revised March 13th, 2007
SUBJECT: Alternative Concept Plans for Park and Ride Lots

W:\6k\6121 Transit Supportive Off Hwy Improvements\403 P&R Lot Preliminary Design 2006\6121-100ss - Draft memo re alternative concepts - Mar08-07.doc

This memorandum summarizes the physical and operational characteristics of alternative concept plans for park and ride lots along Highway 403 at Winston Churchill Boulevard and Erin Mills Parkway.

Traffic Analysis

The alternatives described in the previous section were compared in a traffic impact evaluation. The existing traffic volumes were modified to include the assumed Park and Ride lot traffic, and redistributed as necessary. Initially, all alternatives were compared using the same lane configuration on the crossing street and ramp terminal. Subsequent revisions to the intersection configurations were made under some alternatives to improve operations in cases where significant delays were observed. All signal phasings were optimized to achieve the best possible intersection Level of Service and minimize overall intersection delay.

The existing and future traffic conditions under all short-listed alternatives were input into a computer traffic simulation model (Synchro) to determine the impacts on level of service and intersection capacity.

Methodology

In order to understand the impacts of a parking facility on the adjacent street network, it was first necessary to estimate the demand that would be generated by the facility. Given the limited availability in traffic data available specific to carpool/Park and Ride facilities, MRC was required to make a number of assumptions, discussed in later

sections of this memorandum. The estimated traffic generated by these parking facilities was then incorporated into the background traffic for the subsequent analysis.

Alternative access configurations were developed for both sites (Winston Churchill Boulevard/Highway 403 and Erin Mills Parkway/Highway 403) taking into consideration physical constraints and operational requirements. The forecast traffic volumes were then applied to each alternative in a Synchro traffic simulation to determine the performance of the alternative with regard to traffic operations. The results, along with a number of other factors, will provide a basis for selecting a preferred access configuration for each parking facility.

Park & Ride Lot Demand and Assumptions

In order to best evaluate the alternative park and ride lot access configurations from a traffic impact perspective, it was necessary to establish traffic volumes destined to/from the lot. Given the limited availability of survey data to establish Park and Ride lot traffic demand patterns, the park and ride lot demand analysis for the proposed Highway 403/Winston Churchill Boulevard lot was based on recent usage surveys of five MTO carpool/park and ride lots. They were:

- Highway 400 at Innisfil Beach Road
- Highway 400 at Highway 9
- Highway 400 at Highway 7
- Highway 407 at Trafalgar Road
- Highway 401E at Brock Street

The knowledge gained through the Carpool Lot Usage surveys was combined with previous experience in carpool/park and ride operations to develop the following assumptions used in the impact analysis for the park and ride lots at both Winston Churchill Boulevard and Erin Mills Parkway:

1. The Park and Ride lot utilization occurring during the AM Peak Period for background traffic would be in the order of 66% of the lot capacity.
2. 80% of the lot activity identified above would occur during the peak hour of Park and Ride lot activity. For a conservative estimate, this activity was assumed to coincide with the peak hour for background traffic (noting that many carpool lots have peak access / egress activity outside peak road traffic hours).
3. Given the uncertainty in staging/timing of the Mississauga Transitway, the usage of the lot was assumed to be split evenly between park and ride (bus passenger) activity and carpool activity.
4. Carpools would carry two persons, including driver.
5. The inbound lot activity in the PM Peak Hour would be the opposite of the outbound lot activity in the AM Peak Hour. Similarly, the outbound PM Peak Hour activity would be the opposite of the inbound AM Peak Hour activity.

6. The outbound lot activity was distributed according to interchange activity, with a nominal 5% of outbound traffic assumed destined to the north, and an additional 5% of outbound traffic assumed destined to the south.

The traffic analysis was conducted for scenarios including 200-space Park and Ride lots with an assumed 6 buses per hour operating on 10-minute headways. Note that each lot is intended to be built to 100 paved spaces initially, with grading for 200 spaces and the potential for further capacity increases if need be.

Future Growth

Northbound traffic through the intersections is anticipated to increase at a rate of 2.75% per year. Likewise, southbound traffic through the intersections is anticipated to increase at a rate of 3.25% per year (per the Region of Peel Development Charges Update Study, 2006, Zone 1 Screenline Analysis, 2006-2014 Growth Rate). These growth factors were also applied to Highway 403 traffic exiting at the interchanges.

It is recognized that the growth in background traffic will put a significant strain on both the intersection of the Highway 403 E-N/S ramp at Winston Churchill, and the intersection of the Highway 403 E-N/S ramp at Erin Mills Parkway. The intersections at both Winston Churchill Boulevard and Erin Mills Parkway will reach capacity conditions before the background traffic growth ends. It was therefore determined that any analysis of the future long term impact of implementing a Park and Ride lot at this location would indicate a failing intersection.

While the Park and Ride lot would contribute to this ultimate condition, it would not necessarily be fair to position the lot as being any more responsible for the deterioration in intersection LOS than any other contributor to background traffic growth. In fact, the function of the facility is to take cars off the road and promote more efficient shared-ride travel. With this in mind, it was determined that the traffic impact analysis would focus on the immediate impact of the lot, with consideration given to the ability of the alternatives to accommodate future demand.

Source of Base Traffic Counts:

- Highway 403 E-N/S Ramp at Winston Churchill Boulevard (2004), inflated to 2006 volumes using growth factors derived from the Region of Peel EMME/2 model (Peel Development Charges Study, 2006). The forecast 2006 volumes were then modified according to observed 2006 E-N/S ramp volumes (Highway 403 HOV Monitoring Study, 2006), with additional growth indicated in the HOV study being applied proportionately to the ramp movements, attributing the growth to the increased capacity on Highway 403.
- Highway 403 E-N/S Ramp at Erin Mills Parkway (2006)

Recognizing that the Ministry and GO Transit intend to develop the Park and Ride lots initially with a 100-vehicle capacity, the analysis was conducted based on a 200-capacity lot as an *ultimate* condition, and therefore no growth factors were applied to the lot-based activity throughout the future conditions analysis.

Intersection Configuration Assumptions/Refinements

The potential to better the intersection level of service at both Winston Churchill Boulevard and Erin Mills Parkway exists through modifications to the intersection geometry. However, these improvements to traffic flow should consider pedestrian needs as well.

For example, the channelization of right-turns from the E-N/S ramp to the crossing road may encourage drivers to perform the turning movement at a high rate of speed without providing the necessary breaks for pedestrian crossings. It was this concern that led to the assumption that right turns would not be channelized in the Synchro analysis.

Initial analyses have indicated that westbound right-turning movements at both the Winston Churchill Boulevard and Erin Mills Parkway interchanges would experience significant delays and queues due to a combination of high traffic volumes and the loss of green time to accommodate the additional eastbound signal phase at the ramp terminal. Indeed, this configuration is already a concern in day-to-day operations. As a result, right-turn manoeuvres were allowed from both the rightmost lane and the adjacent through lane. Given the relatively low westbound through movements at the intersection, it was determined that the residual capacity offered by the through lane could be better spent enhancing westbound right-turn operations. This operation requires that the eastbound and westbound signal phases be separated to avoid potential vehicle conflicts between eastbound left-turning vehicles and westbound through or right-turning vehicles.

Initial analyses also assumed a limited number of pedestrian crossings of Winston Churchill Boulevard and Erin Mills Parkway at the E-N/S ramp terminals. The effects of these crossings were considered negligible and were excluded from the analyses. Subsequent consideration has concluded that the effects of pedestrian crossings, although limited, should be considered in the analysis. Pedestrian crossing times of Winston Churchill Boulevard and Erin Mills Parkway were calculated at 39 seconds – considerably higher than the green time allotted to the eastbound/westbound movements at these intersections. Given the low (almost nonexistent) pedestrian crossings during peak hours at these interchanges today, a minimal amount of pedestrian phases were included in the revised traffic operational analysis. A total of three phases per peak hour were assumed to be affected by pedestrian crossings. These movements were assumed to occur with the westbound phase of the signal cycle, recognizing that the eastbound phase will require a considerably shorter phase to accommodate the limited traffic leaving the Park and Ride lots.

One outstanding issue is that of the N-W ramp traffic under Alternatives 1 and 2, and how the intersection will be configured to accommodate it. Typical practice is to develop the N-W ramp entry as a direct taper south of the E-N/S ramp terminal intersection. This would result in three southbound through lanes at both interchanges. Given the physical constraints at both Winston Churchill Erin Mills Parkway, substandard ramp geometry is required to retrofit the typical treatment into the chosen locations. Another option would be to develop a fourth through lane north of the E-N/S ramp terminal intersection that would, south of the intersection, become the exiting N-W ramp. This would allow ramp traffic to exit the stream of through vehicles north of the intersection, enhancing the intersection level-of-service.

The traffic capacity analyses for Alternatives 1 and 2 were initially conducted with the assumption that the N-W ramp would be developed south of the intersection at both sites; however, the preliminary analysis indicated that development of the ramp lane north of the intersection - and thereby providing a fourth southbound combined through/right-turn lane at the ramp terminal intersection - would be required at the Erin Mills Parkway site to maintain an acceptable level-of-service for the intersection during peak periods. The Winston Churchill Boulevard site appears to operate at an acceptable level-of-service with the existing three southbound-through lanes at the intersection; however, consideration should be given to developing the ramp lane north of the intersection to improve the N-W ramp geometry. This treatment can be found in many freeway interchanges in Ontario, for example the QEW at Erin Mills Parkway, or Highway 403 at Hurontario Street.

All alternatives were evaluated assuming an additional eastbound through/right lane would be constructed on the ramp to provide access to a new eastern intersection leg. The resulting configuration would offer two right-turn lanes and two left-turn lanes at both intersections. This configuration would require offset eastbound and westbound signal phases to eliminate potential turning movement conflicts. In order to further minimize conflicts between traffic exiting the lot and N-W ramp traffic under Alternatives 1 and 2, eastbound right-turns-on-red were restricted.

Results of Traffic Analysis

The details of the traffic analysis are included in the Appendix of this Technical Memorandum.

Although both intersections (Winston Churchill Boulevard and Erin Mills Parkway) appear to operate quite well in the AM peaks, the traffic analysis indicates that the E-N/S ramp terminal intersection at Winston Churchill Boulevard is operating at capacity in the PM peak hour.

At Winston Churchill Boulevard, the existing intersection operates with significant delays for all movements, resulting in a calculated level-of-service of F in the PM peak hour.

Improvements to the intersection are required under all alternatives to result in a system that operates at an acceptable level-of-service. Addition of third northbound through lane will offer some relief to this congestion, as will an additional westbound right-turn lane on the E-N/S ramp. For comparison against the Park and Ride alternatives, the traffic analysis was conducted for both the existing configuration and an alternative with these intersection improvements in place.

While the analyses focused on the existing (2006) conditions, average intersection delays were forecast for the PM peak hour (recognizing that the PM peak represents the critical period for both intersections) for each alternative, at 2-year intervals until 2016 to provide an indication of the long-term impact of the Park and Ride lot alternatives on the overall intersection operations.

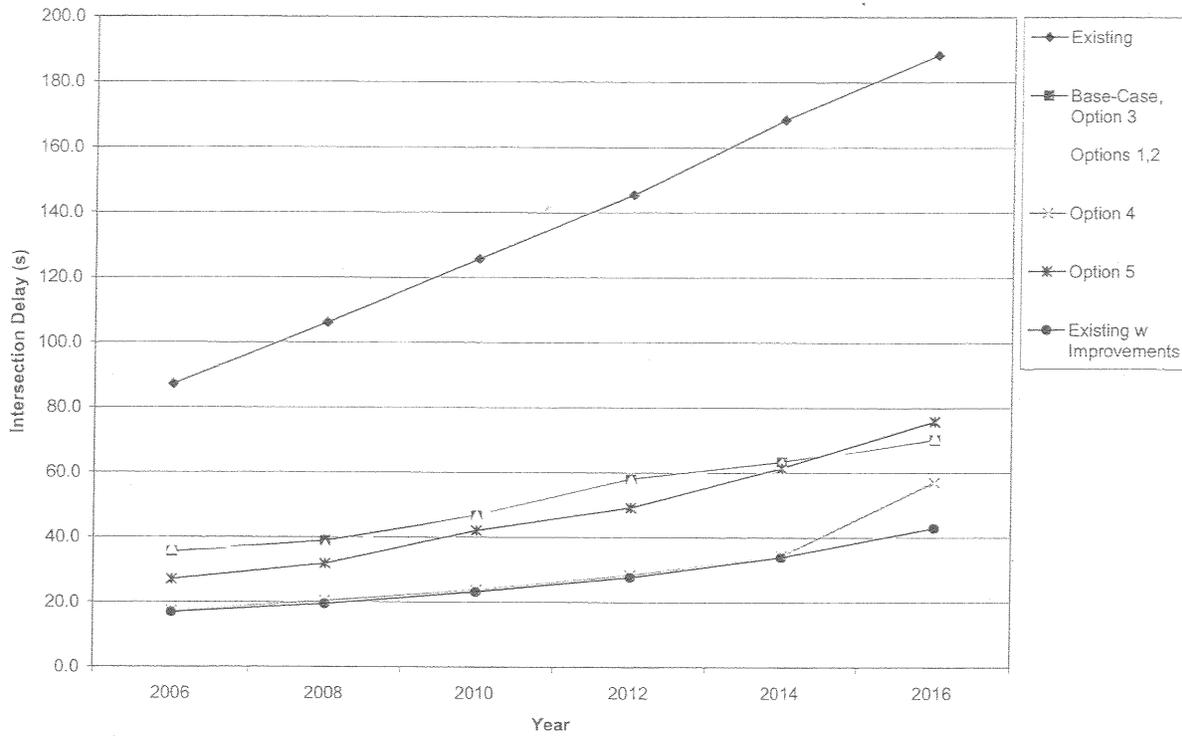
Winston Churchill Boulevard

The level-of-service (LOS) analysis indicates that, in the AM peak hour, all alternatives will function at an acceptable LOS, achieving B or C. However, in the PM peak, intersection improvements are required to implement a Park and Ride access configuration with adequate capacity. The analysis indicates that Alternatives 1 and 2 can achieve a level-of-service of D in the PM peak hour - similar to that of the Base Case at Winston Churchill Boulevard - recognizing that the additional N-W ramp traffic can be accommodated within the excess southbound capacity at the ramp terminal intersection. Alternatives 4 and 5 both offer operational benefits over Alternatives 1 and 2 by eliminating the need for an eastbound signal phase at the ramp terminal intersection, providing a LOS of B or C in the PM peak.

The following figure summarizes the future delay forecast under each alternative.

<note that the third NB through lane and the fourth WB ramp lane are assumed in all cases other than "Existing"; much of the delay reduction from "Existing" stems from this additional capacity.>

Winston Churchill Boulevard - PM Peak Hour Operations



| ENGINEERING MEETING Form Rev. Jan 07 | |
|--|--|
| MEETING No: 07-18 | MEETING DATE: Monday, July 9, 2007 |
| ITEM: Highway 403 Commuter Parking Lots at North-West Quadrants of Winston Churchill Blvd. (WCB) and Erin Mills Pkwy. (EMP) Interchanges, Mississauga | |
| Submitted By: H. Shah Section: Hwy. Engineering – P/H | Previous Engineering Meeting Items # 05-34 & 05-36 - attached |
| Requested Attendees: (Name & Section) L. Politano (Engineering) L. Smith (Traffic) P. Korpai (Planning & Design) J. White, H. Shah (Hwy. Eng. – P/H) F. Saccon (Traffic) J. Stevens (Urban Planning Office) D. Turvey (MRC) | In Attendance: (Name & Section) L. Politano (Engineering) L. Smith (Traffic) P. Korpai (Planning & Design) H. Shah (Hwy. Eng. – P/H) F. Saccon (Traffic) Martin Sedkowski.(Traffic) D. Turvey (MRC) S. Bowers (MRC) |
| 1/ ISSUE Preferred scheme for the alignment of the N-W ramp in order to accommodate commuter parking lot and the proposed Mississauga Transitway. | |
| 2/ OPTIONS/DISCUSSION The memo prepared by MRC dated May 11, 2007 which evaluated various alternatives is attached. D. Turvey made the presentation and the discussion was focussed mainly on the layout plans shown in Figures 1 and 2, and a quick overview was made on the layout plans shown in Figures 3,4,5,6 and 10. In brief, the analysis determined that with enhancements at the E- N/S ramp terminal and the development of an auxiliary lane on the southbound approach to the E – N/S ramp terminal intersection, the current LOS (B during AM.and C during PM peak periods) could be maintained until 2014. This is based on an assumption of the historical growth in background | |

traffic and a 400 space park'n'ride lot. MRC pointed out that MTO would have an opportunity to assess the performance of the intersection prior to full development of the 400 space facility. The details of the SYNCHRO analysis have just been provided to MTO Traffic.

The introduction of an 80m radius for the N-W ramp of both interchanges would avoid significant utility relocation costs. Under the assumption of an 80 km design speed on the arterial roads, Table F5-1 of the 'Geometric Design Standards for Ontario Highways' shows a desirable standard radius of 130 m and a minimum radius of 55 m..

At WCB, the option shown in Figure 1 which retains the present N-W ramp alignment is estimated to cost \$32.3M, while the option shown in Figure 2 that uses an 80 m ramp radius is estimated to cost \$16.3M. The additional \$16M in cost to retain the existing ramp alignment includes \$10M for relocation of four pipelines, and \$6M for additional impacts to the proposed transitway (additional retaining walls, more excavation and more staging). Besides significant additional cost, this option would introduce additional risk with respect to the construction schedule since the pipeline companies would be responsible for the timing of the relocation. At EMP, the cost premium is estimated to be similar in magnitude.

3/ RECOMMENDATION

Recommend that a N-W ramp radius of 80 m - Alternative 1 (Figure 2) at WCB and Alternative 1 (Figure 8) at EMP be approved.

4/ ENGINEERING MEETING DECISIONS

1. Investigate the option of relocating the hydro tower and if this would allow increasing the radius of the N-W ramp at WCB and EMP interchanges.
2. Review SYNCHRO analysis prepared by MRC.
3. Provide updated HOV and BRT demand forecasts.
4. Obtain information on performance of the E/N ramp at QEW/Thoroldstone Rd
5. Review possibility of bringing the 2 lots closer together.
6. Present findings of the above action items at an Engineering Meeting in 2 to 3 weeks time.

ACTION BY

MRC
 M. Sedkowski
 MRC
 H. Shah
 MRC
 MRC / H. Shah

| ENGINEERING MEETING | |
|---|---|
| Form Rev. Jan 07 | |
| MEETING No: 07-20 | MEETING DATE: Monday, August 20, 2007 |
| ITEM: Highway 403 Commuter Parking Lots at North-West Quadrants of Winston Churchill Blvd. (WCB) and Erin Mills Pkwy. (EMP) Interchanges, Mississauga | |
| Submitted By: H. Shah Section: Hwy. Engineering – P/H | Previous Engineering Meeting Items # 07-18, 05-34 & 05-36 |
| Requested Attendees: (Name & Section) L. Politano (Engineering) L. Smith (Traffic) P. Korpil (Planning & Design) J. White, H. Shah (Hwy. Eng. – P/H) R. De Gannes, B. Zivkovic (Traffic) J. Stevens (Urban Planning Office) S. Schijns, D. Turvey (MRC) | In Attendance: (Name & Section) L. Politano (Engineering) L. Smith (Traffic) J. White, H. Shah (Hwy. Eng. – P/H) R. De Gannes, M. Sedkowski (Traffic) S. Schijns, D. Turvey (MRC) |
| 1/ ISSUE A follow-up meeting to go over the alternatives and also the action items from Engineering Meeting 07-18. | |
| 2/ OPTIONS/DISCUSSION The attached material by MRC was provided at the meeting. A review of other ramps with tighter ramp radii was undertaken by the MTO (see Minutes of Engineering Meeting 05-36) The number of collisions and collision rates were obtained. Generally, a very small number of collisions occur or get reported on MTO on-ramps (average of < 1 collision / year). With a limited database, statistically significant conclusions on the relationship of collision experience and radii of the on-ramps cannot be made Using a design speed of 80 km/h for Winston Churchill Blvd. and Erin Mills Parkway, the MTO Geometric Design Standards for Ontario Highways states that for a 6% maximum cross-fall, the minimum radius is 55 m and the standard radius is 130 m. This Manual also states the following: "Ramp designs are based on the standard design speeds where | |

| | |
|--|---|
| <p>feasible. Where ramps so designed are out of balance with the interchange or are unduly costly, a lower design speed is appropriate.”</p> <p>As stated in the Minutes of Engineering Meeting 07-18, maintaining the existing N-W ramp alignment will cost an additional \$16M compared to using a ramp radius of 80 M to 90 M.</p> <p>The standard minimum offset to hydro tower is believed to be around 15 m. Hydro tower relocation would provide a ramp radius of 125 m, but the offset to the hydro tower is about 7 m. It is not known at this time if Hydro One will accept a minimum offset of only 7 m.</p> <p>The details of the layout of the parking lot, including bringing the two parking lots within each interchange closer together, can be worked out during detail design phase.</p> <p>The parking lots can accommodate up to 400 vehicles. It is anticipated that a lot with a capacity of 200 vehicles would be sufficient. As part of the BRT design work, operation of the ramp terminal can be controlled to some extent by limiting the size of the lot.</p> <p>The schedule to implement the Bus Rapid Transitway is very aggressive in order for the Transitway project to receive Federal funding.</p> <p>POST MEETING NOTE – At the Mississauga BRT Project Team Meeting this week, Steve Schijns of MRC informed that the City and GO agreed that the BRT Project Office would pursue the issue of Hydro tower relocation with Hydro One, and would fund the Hydro One engineering study if necessary.</p> | <p>3/ RECOMMENDATION</p> <p>Implement 90 m radius for the N-W on-ramps at Winston Churchill Blvd. and Erin Mills Parkway interchanges.</p> |
| <p>4/ ENGINEERING MEETING DECISIONS</p> <p>See Post Meeting Note above, If Hydro One requires a minimum of 15 m clearance, then proceed with a minimum N-W on-ramp radius of 90 m at Winston Churchill Boulevard and Erin Mills Parkway interchanges, as we don't have a history of a collision problem with similar radius ramps elsewhere.</p> <p>If Hydro One will accept a minimum clearance of about 7 m, then proceed with a ramp radius of around 125 m.</p> | <p>ACTION BY</p> <p>Highway Engineering</p> |

Memo To File

Date: December 10, 2008

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HIGHWAY 403
PARK AND RIDE LOTS
Preliminary Design Study

Winston Churchill Boulevard
Erin Mills Parkway



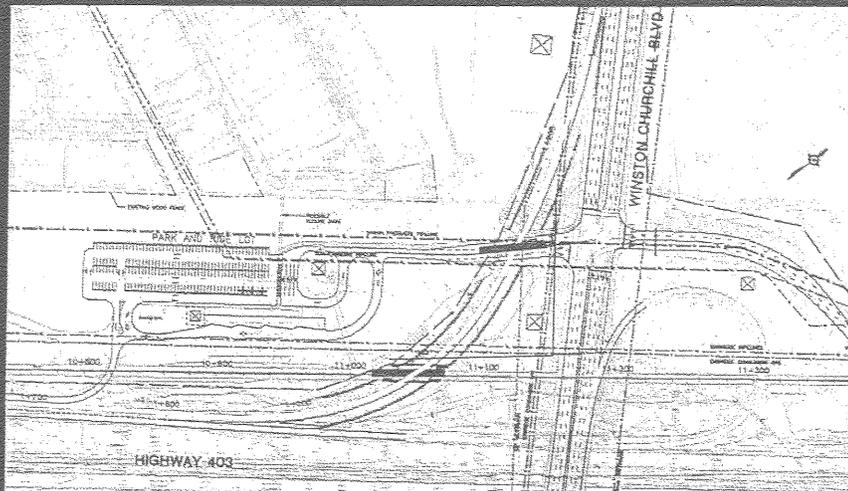
August 20, 2007

1. Alternatives

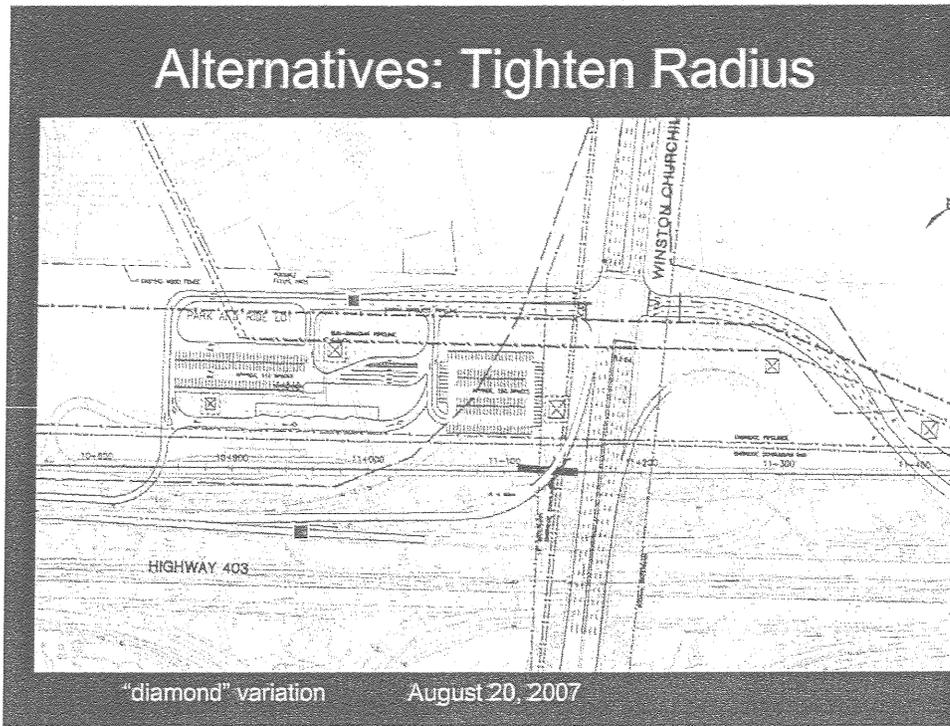
Note – all Winston Churchill alternatives show three through lanes + direct taper

August 20, 2007

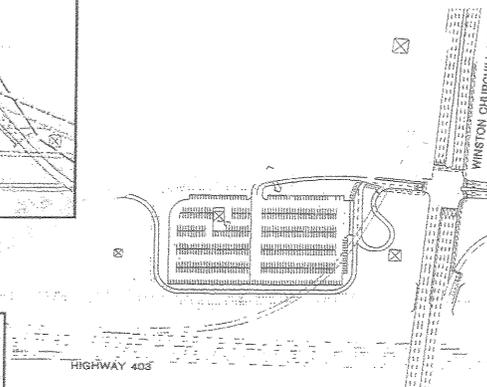
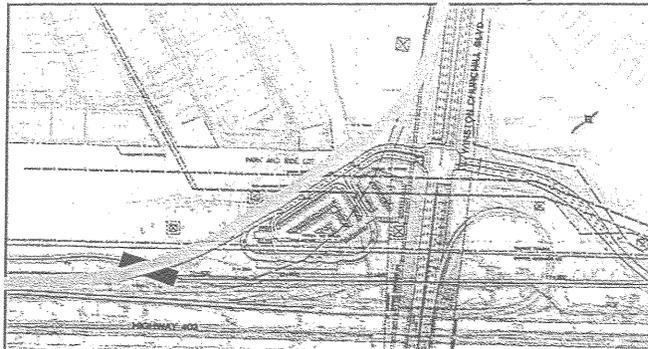
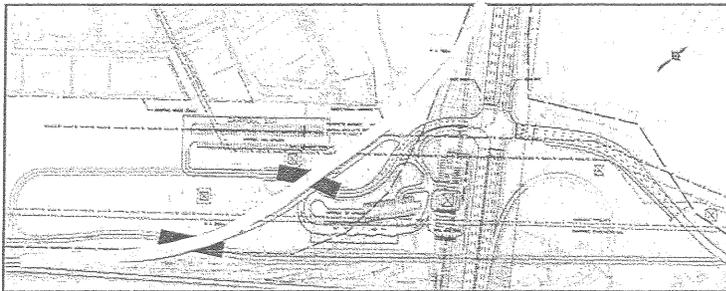
Alternatives – Grade Separation / Existing N-W Ramp Alignment

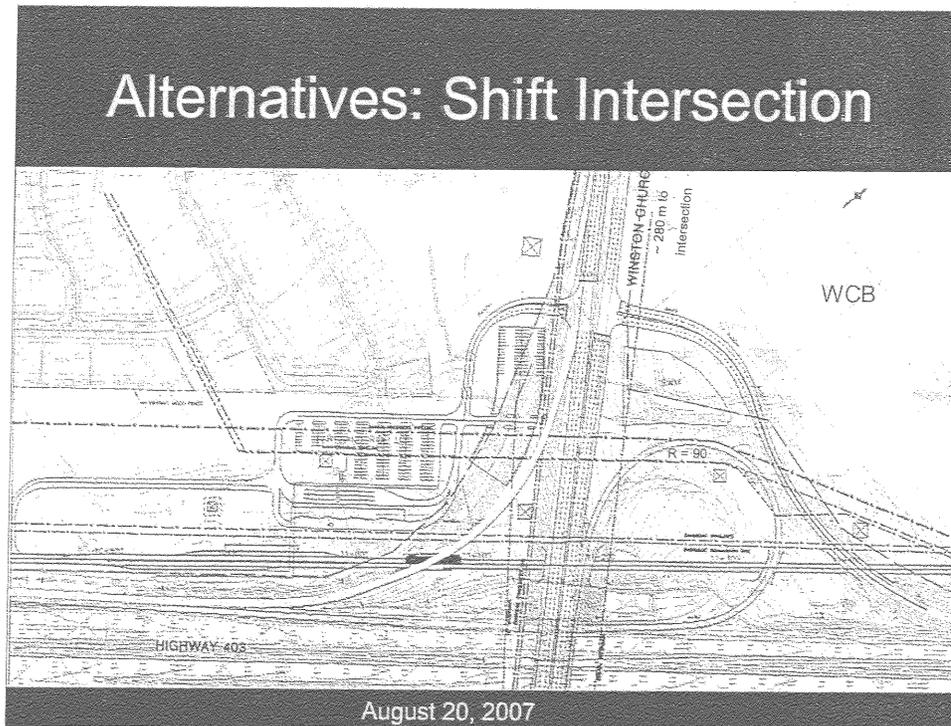
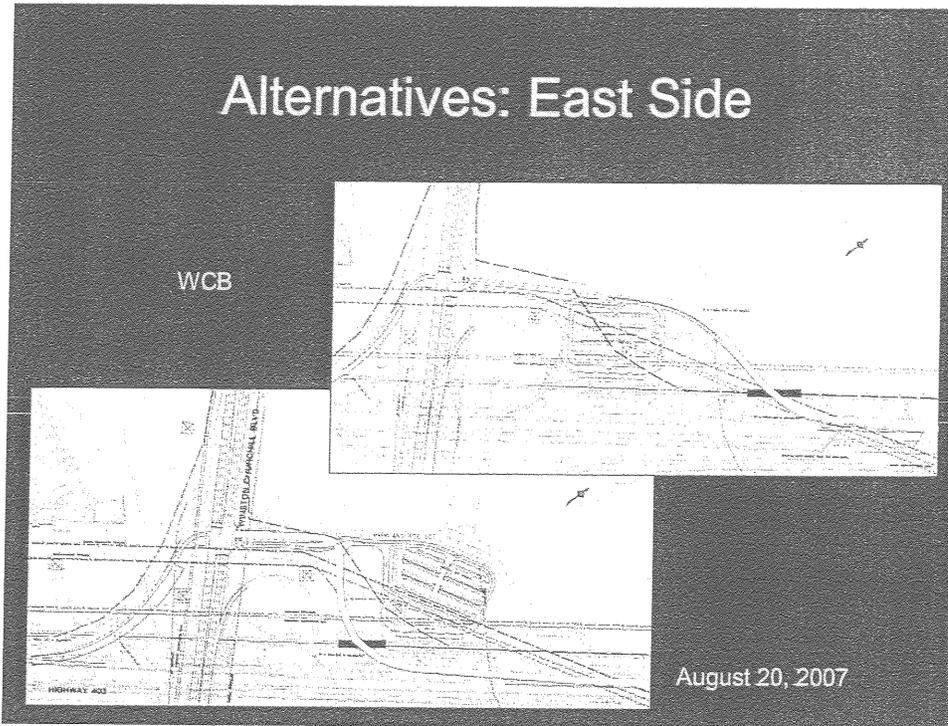


August 20, 2007



Alternatives: Skirt to West





3. Traffic Analysis

Note – traffic analysis confirms requirement to introduce third northbound lane at intersection

August 20, 2007

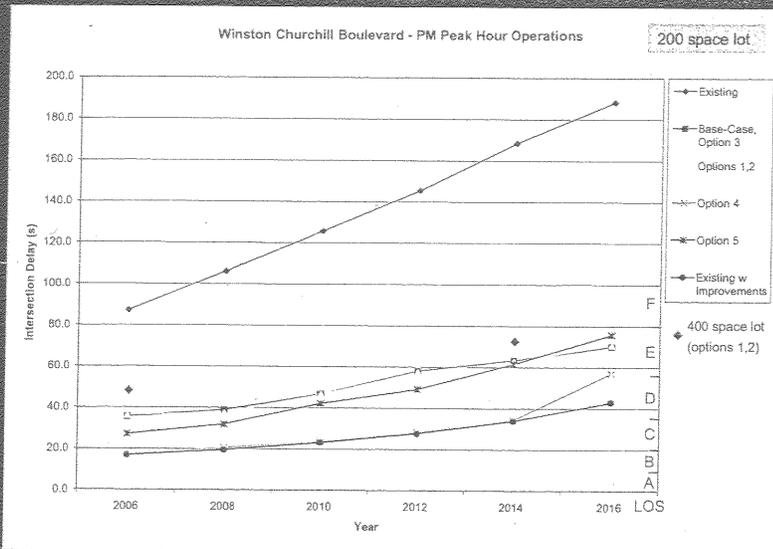
Winston Churchill Ramp Terminal

- Existing volumes exceed capacity in PM Peak Hour
 - LOS = B/F (AM/PM)
- Requires intersection improvements
 - 3rd northbound through lane
 - 2nd westbound right-turn lane
- With improvements:
 - LOS = B/B (AM/PM)
 - Avg. Delay = 15.8s/16.9s (AM/PM)

*based on 2004 traffic counts increased to 2006 per Region of Peel EMME/2 model growth factors

August 20, 2007

Future Traffic Analysis Winston Churchill Boulevard Ramp Terminal



August 20, 2007

Conclusions and Recommendations

Note – Recommended layout at Winston Churchill shows three through lanes + direct taper

August 20, 2007

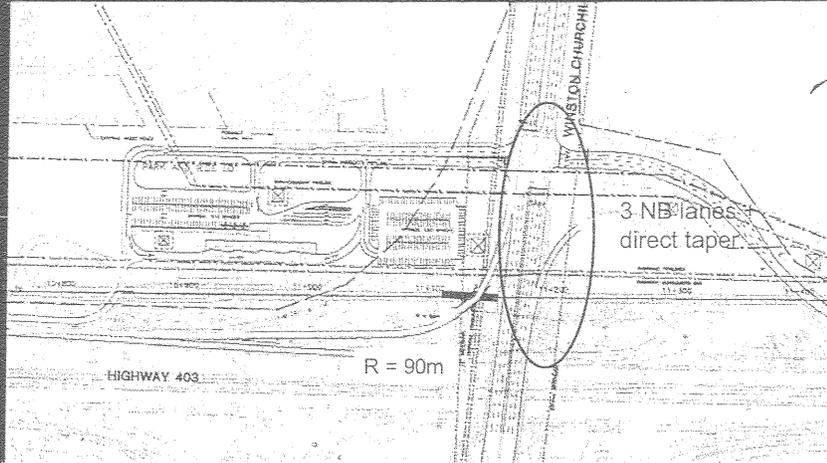
Memo To File

Date: December 10, 2008

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Recommended Concept Plan

Winston Churchill Boulevard Interchange



August 20, 2007

15

Willy Ing

From: Willy Ing
Sent: 2009/01/09 3:46 PM
To: 'Tupaz, Aimee Rose (MTO)'
Cc: White, Jason (MTO); Geoff Wright; Scott W Anderson; 'stephanie.davies@gotransit.com'; 'Schijns, Steve'
Subject: FW: Mississauga Bus Rapid Transit Project - Draft Environmental Assessment Addendum

Hi Again Aimee,

Please see response with respect to the Hwy 403 Ramps at Cawthra Road. If the MTO has concerns with the way this is being addressed through the EA Addendum and discussions with the MOE, please advise. However, Mississauga and our consultants will endeavour to work with the MTO through the various stages of the detailed design to ensure your requirements are met.

Willy

From: Schijns, Steve [mailto:SSchijns@mrc.ca]
Sent: 2009/01/09 9:26 AM
To: Willy Ing
Cc: Geoff Wright; Scott W Anderson; stephanie.davies@gotransit.com
Subject: RE: Mississauga Bus Rapid Transit Project - Draft Environmental Assessment Addendum

Willy – The original Transitway EA states: “Their (stations) 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.” Also, “Design shifts within the identified property envelope of the Transitway do not require changes to the EA approval.”

Since it was agreed by the Project Team (and by Jeffrey Dea at MOE) that the shift at Cawthra Road did not result in a more severe environmental impact than the approved plan, and the design shift did not involve any property impact, it was not included in the EA Addendum. This position was based on the fact that the ramp is shifted farther away from noise sensitive receivers, the ramp is relatively distant from noise sensitive receivers, ramp traffic volume does not change, the busway remains at or below grade, the busway alignment does not change significantly, and there is no change in visual impact (since the new ramp is immediately adjacent to an existing ramp and the busway remains below the existing berm). The potential to increase the size of the existing berm is noted in the Preliminary Design. Note that the changes to the highway ramp are covered under the Transitway EA, and are not subject to a separate MTO Class EA process.

Upon reflection, the change to the Cawthra ramp should have been listed in the EA Addendum (Section 2.1, page 2-1) as follows:

“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 not documented further. Changes of this nature are relate to:

- Winston Churchill Station layout (MTO, Hydro One)
- Erin Mills Station layout (MTO, Hydro One)
- *Highway 403 exit ramp to Cawthra Road / 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 plans and impacts associated with these design changes are documented in their respective Preliminary Design Reports.”

Stephen Schijns, P.Eng.
McCormick Rankin Corp.
2655 North Sheridan Way
Mississauga, ON
Canada
L5K 2P8

Tel: 905 823 8500 x 1268
Fax: 905 823 8503
E-mail: sschijns@mrc.ca
Web: www.mrc.ca

From: Willy Ing [<mailto:Willy.Ing@mississauga.ca>]
Sent: January 9, 2009 9:04 AM
To: Willy Ing; Schijns, Steve
Cc: Geoff Wright; Scott W Anderson; stephanie.davies@gotransit.com
Subject: RE: Mississauga Bus Rapid Transit Project - Draft Environmental Assessment Addendum

Hi Steve,

I was looking through the memo dated December 8, 2008 responding to various MTO issues. I did not see a response to the last bullet concerning the changes to the Hwy 403 ramps at Cawthra Road other than a stopping sight distance issue. Aimee Tupaz Rose requires a response to the last bullet asap.

Willy

From: Willy Ing
Sent: 2008/11/03 3:32 PM
To: 'Schijns, Steve'; 'Shea, Andrew'
Cc: Andrea McLeod; Geoff Wright
Subject: FW: Mississauga Bus Rapid Transit Project - Draft Environmental Assessment Addendum

Hi Steve and Andrew,

See below from MTO.

Willy

From: Tupaz, Aimee Rose (MTO) [<mailto:AimeeRose.Tupaz@ontario.ca>]
Sent: 2008/11/03 3:12 PM
To: Willy Ing
Cc: White, Jason (MTO); Geoff Wright; Scott W Anderson
Subject: RE: Mississauga Bus Rapid Transit Project - Draft Environmental Assessment Addendum

Willy,

**Mississauga Bus Rapid Transit Project
Summary of Draft EA Addendum Government Review Comments**

The following Table summarizes comments received from reviewing agencies on the draft EA Addendum, dated September 2008. Agencies responding included:

- Toronto Region Conservation Authority (letter Nov. 27, 2008)
- Credit Valley Conservation (meeting Jan. 9, 2009)
- Ministry of Transportation of Ontario (e-mail Nov. 3, 2008)
- Ontario Ministry of the Environment (letter Dec. 3, 2008)
- Ontario Realty Corporation (letter, Oct. 6, 2008)

Hydro One was circulated, but did not comment on the draft Addendum.

The draft EA Addendum upon which these comments were based is on file with the Mississauga BRT Project Office and with MOE.

| COMMENT | RESPONSE | Reference Section |
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| Toronto Region Conservation Authority (TRCA), Sharon Lingertat, Nov. 27, 2008 (letter) | | |
| 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 an opportunity to review the design briefs, prior to detailed design. | City of Mississauga will circulate the BRT East Preliminary Design Report to TRCA prior to Detail Design. | Sec. 2.1 |
| 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. | Sec. 4.1.1.5 |
| 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. | Sec. 4.1.1.6 |
| 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. | Sec. 4.1.1.6 |
| 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. | Sec. 5.5.2.4 |
| 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. | 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 |

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| | 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. | |
| 7. Section 5.5.2.4 refers 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. | Sec. 5.5.2.4 |
| 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 protection of the residential areas to the south. Portions of the existing berms are located within 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 updated to 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. | Sec. 7.2 |
| 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. | Sec. 7.5.2.4 |
| 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 <i>changes</i> 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 |

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| | <p>as part of the Detail Design process. Please note that a specific EIS is not a typical requirement for projects being reviewed under the <i>Environmental Assessment Act</i>.</p> <p>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 there is no important breeding function associated with these pockets.</p> | |
| <p>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.</p> | <p>Any further study is subject to discussions between TRCA and 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.</p> | n/a |
| <p>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.</p> | <p>The EA Addendum will be updated per the response to #10 above.</p> | Sec. 4.1.2 |
| <p>13. Table 14c 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 highlighted in previous comments and meetings. While several of the</p> | <p>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</p> | Sec. 7.5.2.2 |

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| <p>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.</p> | <p>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. Other opportunities such as acquisition of existing forest areas will also be explored. Related consultation with TRCA and CVC will continue during Detail Design.</p> | |
| <p>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.</p> | <p>Proposed SWM ponds will be reviewed with TRCA in the Detail Design stage and the necessary permits and approvals will be obtained.</p> | <p>See BRT East PDR</p> |
| <p>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.</p> | <p>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.</p> | |
| <p>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. 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</p> | <p>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.</p> | <p>See BRT East PDR</p> |

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| <p>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. 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.</p> | <p>The City will implement its typical vegetation replacement 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.</p> | |
| <p>17. It should be noted that the digger crayfish found in and near the alignment are considered fish under the Federal <i>Fisheries Act</i>. 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 <i>Fisheries Act</i> review.</p> | <p>Follow-up discussions have occurred since this comment was provided. DFO (Dave Gibson – the DFO contact for this project) has indicated to Ecoplans (Anne MacMillan) 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</p> | <p>See BRT East PDR</p> |

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| | <p>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 agreed that the wet pockets within the hydro corridor that support digger crayfish would definitely <u>not</u> be considered fish habitat since those wet pockets do not connect to a watercourse</p> | |
| <p>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 <i>Fisheries Act</i> review.</p> | <p>Please see the response to Comment #11.</p> | <p>n/a</p> |
| <p>19. At detailed design, MNR should be contacted to determine wildlife collection/rescue requirements for any features to be altered or removed.</p> | <p>Comment noted. MNR will be contacted as appropriate.</p> | <p>See detailed design.</p> |
| <p>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.</p> | <p>Please see the response to Comment #11 re: EIS.</p> <p>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.</p> <p>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.</p> <p>The BRT project does not involve any work below deck</p> | <p>n/a</p> |

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| | 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. | |
| 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 located 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. | Sec. 7 |
| 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. | |
| 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. | n/a |
| 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. | n/a |
| 25. Please ensure that the Regulation Limits are included on your detailed design submissions. | Regulation limits will be marked on the Detail Design plans. | n/a |
| 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) | Appendix B |
| Credit Valley Conservation, Liam Marray, January 12, 2009 (meeting) | | |
| The Addendum and PDR should note that all wetlands are regulated (they weren't at the time of the 1992 EA). The CVC requires a compensation, mitigation, and/or replication of function plan for the loss of any regulated wetlands. MRC should identify if any rare or endangered species are located in the area of the changed alignment. | The changes to the BRT plan proposed in the EA Addendum do not trigger any additional loss of regulated wetlands compared to the previously approved plan; this | BRT West and BRT East PDRs |

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| | comment is therefore related to the Preliminary Design process. | |
| The Addendum should include enough information from the Preliminary Design Report to allow the reader to determine if stormwater management can be achieved. | CVC provided with a copy of the draft PDR for review, to complement the EA Addendum material. | |
| At Cooksville Creek, MRC should perform the hydraulic analysis of the midculvert reduction on the basis of a continuous pipe with a restricted opening size. MRC should quantify the spillover across Rathburn Road and determine the spill pathway, noting if it is any different from the existing situation. The hydraulic analysis and conclusions should be confirmed by a Professional Engineer rather than a Technician (CET) | Hydraulic analysis results confirmed with CVC. | |
| MRC is requested to provide a digital model of the hydraulic analysis. | Digital model provided to CVC for review. | |
| On the basis of the proposed plan at the Cooksville Creek crossing (noting that there would be no exposure of the creek to the construction work; water would be diverted into the cell that is not being reconstructed) and on the review of the project, CVC's preliminary position was that there was no HADD involved. This position would be reviewed in the course of the detailed design. | Noted. | |
| Ministry of Transportation of Ontario, Aimee-Rose Tupaz, Nov. 3, 2008 (e-mail) <i>(note –MTO has provided numerous additional comments regarding the draft Preliminary Design reports; those comments are not relevant to the specific items discussed in the EA Addendum and are not included here. They have been responded to separately, in a letter dated Dec. 10, 2008. The Ministry's comments below are largely general to the project; only the Winston Churchill and Hurontario Addendum sites actually fall within the sphere of MTO interest).</i> | | |
| <p>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.</p> <p>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 measures are provided for both ramps to address this concern.</p> | <p>Addressed in BRT PDR and in MTO P&R Lot PDR.</p> <p>At their closest, the two ramps are separated (e/p to e/p) by 4.2 m, which requires that they be barrier separated. The gap provides for a 1.0 m outer shoulder on the S-W ramp, 0.8 m for a standard OPSD concrete tallwall barrier on the loop ramp, and a 2.4 m paved inner shoulder on the E-N/S ramp. All dimensions meet or exceed MTO GDSOH standards.</p> | |

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| | <p>Due to the proximity of existing hydro towers to both the E-N/S and S-W ramps, the ramps cannot be realigned without compromising minimum geometric design requirements, and the loop ramp cannot stay on its current alignment without creating a substandard grade on the busway. Relocation of one or both of the hydro towers is costly, not preferred by Hydro One, and not necessary in light of the proposed ramp layout meeting MTO standards. Furthermore, the E-N/S ramp exit terminal cannot be shifted due to the undesirability of reducing the upstream weave length on Highway 403, while the intersection with Winston Churchill Boulevard is similarly constrained by the presence of stormwater management ponds immediately to the north (the option of relocating the intersection northward was previously reviewed and rejected by MTO).</p> | |
| <p>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.</p> | <p>On the north part of the crossing, the 5 cm gap between the existing Winston Churchill / 403 structures will need to be covered and the median modified to allow detouring to extend onto the northern end of the structures. This will allow four lanes of traffic to be shifted among the six lanes available on the structures, and will not require overbuilding the existing structure(s).</p> <p>The mechanics of removing the north part of the median, covering the gap with a temporary plate, adjusting the driving surface, and restoring the median after completion have been reviewed with our</p> | |

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| | experienced structural engineers and they are satisfied that this is a reasonable and feasible approach. The details will be developed and presented to MTO for approval during the detail design stage. | |
| 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. | All ramp grades, radii, and other proposed design features are within Ministry standards. (<i>summary table documenting proposed ramp geometry and MTO standards was attached to original response letter</i>) | Summary table provided in letter to MTO Dec. 10, 2008 |
| The ministry has concerns with the proposed design of a direct taper versus the existing dedicated parallel lane for the S-W ramp from Winston Churchill Boulevard to Highway 403. The preliminary design shows the addition of a third through lane in the northbound direction for Winston Churchill. Do the existing traffic volumes on Winston Churchill warrant an additional through lane? Has there been any traffic modelling done at the intersection to assess the queuing for the S-W ramp with this new lane on Winston Churchill with this proposed design? If an additional through lane is warranted for Winston Churchill, the ministry would like the dedicated parallel lane for the S-W ramp to be reinstated. | Preliminary Design issue; not relevant to EA Addendum. | See BRT West PDR |
| 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. | Grading plan has been complete and included in the draft Preliminary Design Reports. Landscaping plan is conceptual and will be reviewed and confirmed / modified as necessary during detailed design phase of study. These are not significant EA Addendum issues. | See BRT West and BRT East PDRs |
| 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 addendum, should it not be included as part of this EA addendum? | The original Transitway EA states: "Their (stations) 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 | |

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| | <p>measures, does not require a change to the approved plan.” Also, “Design shifts within the identified property envelope of the Transitway do not require changes to the EA approval.”</p> <p>Since it was agreed by the Project Team (and by Jeffrey Dea at MOE) that the shift at Cawthra Road did not result in a more severe environmental impact than the approved plan, and the design shift did not involve any property impact, it was not included in the EA Addendum. This position was based on the fact that the ramp is shifted farther away from noise sensitive receivers, the ramp is relatively distant from noise sensitive receivers, ramp traffic volume does not change, the busway remains at or below grade, the busway alignment does not change significantly, and there is no change in visual impact (since the new ramp is immediately adjacent to an existing ramp and the busway remains below the existing berm). The potential to increase the size of the existing berm is noted in the Preliminary Design.</p> <p>The change to the Cawthra ramp is added to list in Section 2.1, page 2-1</p> | |
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MOE, Environmental Assessment Project Coordination Section, EA Assessment Branch, Jeffrey Dea, Dec. 3, 2008 (letter)

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| <p>List of Studies and Reports In accordance with Section 4,3.2 of the EA Code of Practice, the EA Addendum should include:</p> <ul style="list-style-type: none"> • A list of studies and reports which are under the control of the proponent and which were done in connection with the undertaking or matters related to the undertaking: • A list of studies and reports done in connection with the undertaking or matters related to the undertaking which the proponent is aware and that are not under the control of the proponent. | <p>List of related projects added to the report in new Section 3.6.</p> | <p>Sec. 3.6</p> |
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| <p>While it is acknowledged that many of the studies and reports are listed in the original EA approvals and the 2004 Addendum, the draft Addendum should include a comprehensive list of all studies that have been completed in support of the Project, along with an indication of the corresponding submission it was made in support of and location where these materials can be found. A note should be added indicating, which studies pertain to the existing approvals, those that have been updated or which have been recently completed in support of the 2008 Addendum Report.</p> | | |
| <p>Canadian Environmental Assessment Act Requirements The draft Addendum makes a number of references to a screening report being completed under the Canadian Environmental Assessment (CEA) Act. A separate section, outlining the requirements of the CEA Act should be included. Additionally, the reader should be advised of the location in which the CEA Act documentation can be viewed.</p> | <p>Added as new Section 3.7.</p> | |
| <p>Project Website As indicated in Section 3.3 of the draft Report, information on the EA Addendum can be found at www.mississauga.ca/brt. The information provided on the Project website does not appear to be current and should be regularly maintained and kept up to date. Both the CEAA screening report and EA Addendum report, as well as appendices for both, should be made available on the project website. In addition, it would be helpful if the 1991 EA and 2004 EA Addendum were also made available.</p> | <p>Project web site updated to include all referenced documents.</p> | |
| <p>Notice of Approval Given the importance of the original EA approvals to the Project planning process, the July 6, 1993 Notice of Approval should be appended to the Addendum Report.</p> | <p>Notice of approval added as Appendix A.</p> | <p>App. A.</p> |
| <p>In addition, a discussion of the Notice of Approval, the applicability of the conditions, any changes made to the conditions in the approval of the 2004 EA Addendum and any changes to conditions that are now proposed, should be discussed in the Report.</p> | <p>The only proposed change to the Conditions of Approval is addressed in Section 10 of the EA Addendum. All other previously approved conditions continue to apply to the project.</p> | <p>Sec. 10</p> |
| <p>Commitments and Monitoring As part of a compliance strategy, the Addendum Report should include a monitoring framework that will be implemented and carried out if changes to the undertaking are approved by the Minister. For additional details as to how this framework applies to your Project, please refer to Section 4.3.5 of the EA Code of Practice.</p> | <p>This EA Addendum focuses on identifying changes to the approved EA plan and assessing the impacts of those changes. The commitments to monitoring the project as a whole as described and approved in the original Transitway IEA remain in effect. There are no additions or revisions to the monitoring framework that are triggered as a result of the specific design changes</p> | |

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| | identified in this Addendum. | |
| <p>Section 1 - Introduction Fourth paragraph, second sentence — suggest adding ‘changes to the’ between ‘these’ and ‘plan.’</p> | Change made. | Sec. 1 |
| <p>Section 1.2- Purpose of the Environmental Assessment Addendum The second sentence of this section refers to the EA Act, however, the preceding sentence makes mention of both the Ontario Environmental Assessment Act and the Canadian Environmental Assessment Act. Is information being provided about both Acts being made available or just one? In addition, reference to Ontario or Canada should precede EAA since there are two ongoing EA processes.</p> | Text revised to specify provincial or federal environmental assessment acts. | Sec. 1.2 |
| <p>Section 2 - Update of Project Scope In general, the presentation of the project-specific changes seems overly technical. This section could benefit from additional narrative and greater use of plain-language. In addition, there are a number of acronyms that have not been defined and/or are difficult to reference. For example, reference to specific Highway 403 on and off-ramps through the use of vehicle approaches /destinations (i.e. E-N/S) should be defined when first used. Further, it would be beneficial for the reader to be directed to the specific figures in the Addendum Report which show the approved alignments and proposed changes. Additional specific comments on this section also include:</p> | Text in Section 2 revised to use “plain-language”. | Sec. 2 |
| <p>Section 2.1 - Revised Project Scope Second paragraph, first sentence — suggest replacing ‘were subject to with ‘are the subject of.’</p> | Text revised to reflect comment. | |
| <p>Reference in this section is made to proposed changes to the previously approved plan that did not warrant the preparation of an EA Addendum on their own. These changes include modifications to the layout of the Winston Churchill, Erin Mills and Cawthra Road Stations and alignment of the Little Etobicoke Creek and Etobicoke Creek crossings. As discussed in previous meetings, confirmation from the appropriate Conservation Authorities that there were no concerns with the changes to the crossings in question should be provided in the Addendum Report. Please include such confirmation in the formal submission or alternatively, ensure that the appropriate Conservation Authorities provide responses in their reviews of the formal submission.</p> | Text revised to specify stakeholders affected by proposed changes not requiring EA approval, and that their input/approval is addressed in their respective Preliminary Design Reports. | Section 2.1, para. 5 |
| <p>The last sentence of Section 2.1 refers to design changes being documented in Preliminary Design Reports. It is not clear what is being referred to or where the Preliminary Design Reports are located. Please clarify.</p> | Reference clarified. | Sec. 2.1 |
| <p>Section 2.1.1 - Winston Churchill Boulevard Interchange • Page 2-2, first paragraph, last sentence — suggest adding ‘traffic’ before detours and appending ‘which are both logistically problematic and costly’ to the end of the sentence,</p> | Text revised. | Section 2.1.1, para 2 |

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| <ul style="list-style-type: none"> • Page 2-2. second paragraph — the last two sentences are confusing and should be rewritten. | Text revised to clarify. (See Section 2.1.2, paragraph 6) | |
| <p>Section 2.1.2 - Hurontario Crossing</p> <ul style="list-style-type: none"> • First paragraph, last sentence — the discussion regarding approval of an ultimate plan needs to be better explained. Section 6 does not include a discussion about this and indicates that the below-grade crossing of Hurontario is no longer recommended at this time. Please clarify the meaning of this sentence. | Text revised to clarify. | Section 2.1.2, para. 3 |
| <p>Section 2.1.3 - Tomken Grade Crossing</p> <ul style="list-style-type: none"> • Second paragraph. third sentence — suggest replacing ‘need’ with ‘desire.’ | Text revised. | Section 2.1.3 |
| <ul style="list-style-type: none"> • Suggesting starting a new paragraph at ‘Also, the busway at Tomken would...’ | | |
| <ul style="list-style-type: none"> • Second paragraph, last sentence — suggest replacing ‘be an’ with ‘represent’ and modifying the end of the sentence to include ‘additional costs and disruption to traffic.’ | | |
| <p>Section 2.1.4</p> <ul style="list-style-type: none"> • First paragraph, first sentence — this sentence is vague. Suggest replacing this sentence with ‘In the plan approved under the 2004 EA Addendum, the busway would pass under Dixie Road to provide access to a proposed station on the east side (is this right?) of the road.’ | Text revised. | 2.1.4 |
| <p>Section 2.1.5 - Eastgate Parkway / Fieldgate Drive</p> <p>Page 2-5, first paragraph, last sentence — suggest adding the rationale (i.e. improved bus speeds through this segment) for this improvement to the end of the sentence.</p> | Text revised, reference to the proposed design removed. | Section 2.1.5 |
| <p>Figure 2-1</p> <p>Under the legend, yellow circles are identified as Addendum Study Areas, While the appropriate Addendum Study Area locations are shown, two additional circles around the Kipling and Islington TTC Terminals are also shown. This Figure should be amended accordingly.</p> | Circles removed at Kipling and Islington terminals on Figure 2-1 | Fig. 2-1 |
| <p>Section 3.2 - Consultation with External Departments and Agencies</p> <ul style="list-style-type: none"> • Third paragraph, last sentence — focused is misspelled. | Corrected. | Sec. 3.2 |
| <p>Section 3.4 - Community and Aboriginal Knowledge</p> <p>This section should be updated to reflect the October 20, 2008 discussion with the Six Nations of the Grand River. Also, please note that the First Nations identified should not just be contacted if remains are found, but rather if artifacts or other findings of archaeological significance are discovered.</p> | Text revised. | Sec. 3.4 |
| <ul style="list-style-type: none"> • First paragraph: third sentence — reference is made to 50 m, whereas 50 km should be referred to. | Text revised. | Sec. 3.4 |
| <ul style="list-style-type: none"> • First paragraph, fifth sentence — suggest deleting ‘As such’ and beginning a new paragraph at this point. | Text revised. | Sec. 3.4 |
| <ul style="list-style-type: none"> • Reference to First Nations in this section and through the draft Addendum should be used consistently. In some instances, reference is made to First Nation, First Nations and First Nations Groups. | Text revised. | Sec. 3.4 |
| <ul style="list-style-type: none"> • Page 3-5, first paragraph, first sentence — notification is repeated twice in error. | Text revised. | Sec. 3.4 |
| <ul style="list-style-type: none"> • Page 3-6, first paragraph, second sentence — suggest | Text revised. | Sec. 3.4 |

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| deleting 'relevant' and inserting 'who may have an interest in this project' following First Nations. | | |
| • Page 3-6, second paragraph, second sentence — suggest starting a new paragraph after this sentence. | Text revised. | Sec. 3.4 |
| Section 4 - Update of Study Area Conditions • First paragraph — readers are referred to sections 3.1, 3.2 and 3.3, whereas 4.1, 4.2 and 4.3 should be referenced. | References updated. | Sec. 4 |
| Section 4.1.1.3 - Utilities Within / Crossing Corridor • Third paragraph, third sentence (below bullet points) — comma following Tomken Road should be deleted. | Comma removed. | Sec. 4.1.1.3 |
| Section 4.1.1.4 - Adjacent Land Uses In the last paragraph of this section, reference is made to future Parkway Belt uses within a 30 metre wide strip of land, south of the berm. Are the future uses of the Parkway Belt known at this time? What are they designated for? Please include a brief (sentence or two) explanation. Depending on the sensitivity of the use, additional explanatory notes may also need to be provided. | The 30 m Parkway Belt strip is 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. | Sec. 4.1.1.4 |
| Section 4.1.1.6 - Drainage and Surface Water Reference in the first paragraph of this section is again made to 'Preliminary Design Report.' Is the ensuing discussion the Design Report? Clarification is needed. | Reference deleted. | Sec. 4.1.1.6 |
| In the last paragraph, reference is made that at the time of the report, the capacity of the ditch inlets and downstream municipal sewer were unknown. As a result, assumptions as to the available capacity are made and a commitment to confirming same at the time of the final design stage. It is unclear what happens in the event that there is insufficient capacity to accommodate the additional flow? This should be clarified, or alternatively, the capacity of the ditch inlets and downstream municipal sewer confirmed prior to final submission of the Addendum report. | The BRT project will not necessarily generate additional flow to Outlet 7, particularly with the revised busway profile proposed at that point. The flow capacity will be defined in the detailed design stage and the BRT drainage system designed to reflect available capacity. | Sec. 4.1.1.6 |
| Section 4.1.2 - Natural Environment • First paragraph, last sentence — the appropriate section in which measures to mitigate and/or compensate for potential negative effects should be identified. | Reference updated. | Sec. 4.1.2 |
| • Figures 3-1 and 3-4, referred to in the last sentence of this section appear to be incorrect and should be amended to | Reference updated. | Sec. 4.1.2 |

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| reference Figures 4-6 and 4-9. | | |
| Section 4.1.2.1 - Designated Natural Areas and Policy Areas | | |
| • First paragraph, second sentence — ‘an’ should be replaced with ‘a’ Natural Heritage Information Centre. | “n” removed from “an” | Sec. 4.1.2.1 |
| • PSW (provincially significant wetlands) should be defined in the appropriate location. | Reference revised. | Sec. 4.1.2.1 |
| • First paragraph, second sentence — insert ‘Authority’ following Toronto and Region Conservation. | Text corrected. | Sec. 4.1.2.1 |
| • Second paragraph, third sentence — updated is misspelled. Please append ‘These features within the project limits are discussed in the following sections’ to the end of the second paragraph. | “t” added to “updaed” | Sec. 4.1.2.1 |
| Section 4.1.2.2 - Fish and Fish Habitat There are a number of references through the Addendum to man made’ structures or features. Suggest replacing this term with ‘engineered’ structures or features, or as the case may be. The subsection discussing the existing conditions of Little Etobicoke Creek includes a number of terms that the average reader will not be familiar with. These include, riprap, gabions, jersey barrier, wing walls, weir. gabion weir and extirpated. Suggest adding a short explanation of each term in brackets. | Terms described / modified as appropriate. | Sec. 4.1.2.2 |
| Section 4.1.2.3 - Vegetation and Wetlands | | |
| • Add semicolons and periods to bullet points as appropriate. | Done. | Sec. 4.1.2.3 |
| • Pages 4-11 and 4-12 — please include a brief explanation in brackets of the terms surficial and hummocky. | These are standard terms used in ecological science to describe landscape features. Surficial: surface-level feature Hummocky: <i>adv.</i> a small hill or rounded mound It is assumed that reviewers of the technical component of the description of the natural environmental features will be familiar with these terms. | Sec. 4.1.2.3 |
| • Page 4-13, second paragraph, first sentence — replace ‘the’ Eastgate Parkway with ‘of.’ | Revised. | Sec. 4.1.2.3 |
| • Page 4-13 — first bullet point — there is an extra space between ‘Narrow-’ and ‘leaved Cattail’ | In order to avoid confusion and misinterpretation among the Government Review Team, the extra space inadvertently provided in the draft version of the EA Addendum report has been removed in the final version. | Sec. 4.1.2.3 |
| • Page 4-14, last paragraph, second sentence — please define ELC. | Definition added. | Sec. 4.1.2.3 |
| Section 4.1.2.5 - Species of Conservation Concern and Species at Risk | | |
| • Appendix ‘D’ of the CEAA submission is referred to in the fifth paragraph. Please identify where this submission can be viewed. | Reference deleted, since it does not related to the specific areas under discussion in the EA Addendum | |
| Section 4.2.1.1 - Archaeology | | |

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| <p>This section outlines the archaeological assessment work that has been carried out to date and indicates that certain portions of the BRT corridor will require a Stage 2 Archaeological Assessment. This section should provide an explanation of what a Stage 2 Archaeological Assessment entails, at what stage in the planning process it occurs, what steps will be taken should archaeological findings be discovered, and what other stages of assessment, if any follow. Reference should again be made to the actions that will be taken to notify First Nations and Aboriginals should findings be discovered.</p> | <p>All four stages of the archaeological investigation process are detailed.</p> | <p>Sec. 4.2.1.1</p> |
| <p>Section 4.2.1.3 - Noise The Noise Assessment section does not indicate whether the noise impacts associated with the new above-grade BRT crossings have been assessed. This point should be clarified and readers pointed to the more detailed analyses in Section 5.5.3.4 and supporting documentation in the appropriate appendix.</p> | <p>Section replaced by expanded Section 4.2.2 and the full Noise Analysis is included as Appendix C.</p> | <p>Sec. 4.2.2</p> |
| <p>Section 5.3 - Evaluation / Analysis The cost analysis in Table 5-1 for the Busway Over Existing Ramps alternative includes a question mark following the estimated costs for utility relocations. A more appropriate way of estimating the cost should be used, possibly including a range of costs (2,3 —4.3 million) and/or through the use of an asterisk.</p> | <p>Question mark removed.</p> | <p>Table 5-1</p> |
| <p>Under the Community Impact Factor of the same table, reference is made in the Busway Over — Relocated Ramps option to a landscaping plan. The location of the plan (Figure 5-6) should also be referenced.</p> | <p>Reference made.</p> | <p>Table 5-1</p> |
| <p>Section 5.5.1.1 - Roads • Second paragraph, last sentence — suggest replacing ‘will’ reduce with ‘should’ reduce. The public has not yet been consulted on these mitigation measures and as a result, it is not known at this time that the measures will or will not be acceptable.</p> | <p>Text revised.</p> | <p>Sec. 5.5.1.1</p> |
| <p>• Page 5-4, first paragraph, first sentence — reference is made to the addition of a fourth leg to the E-N/S ramp terminal. Should this be lane and not leg?</p> | <p>There are currently three legs of the intersection (N, S, E); this project adds the fourth (W) leg. Reference clarified in text.</p> | <p>Sec. 5.5.1.1</p> |
| <p>Third paragraph, page 5-4 states that construction will not impinge on or affect traffic operations on the adjacent or nearby roads. If the City has a practise of requiring dirt and mud to be removed prior to leaving construction sites, it may be helpful to add a commitment of this kind in this and other appropriate sections.</p> | <p>Reference made to standard contract measures regarding dust and mud.</p> | <p>Sec. 5.5.1.1</p> |
| <p>Section 5.5.1.2 - Utilities Within / Crossing Corridor In the paragraph following the bullet points, this section states that the design of the crossing requires pipeline owner agreement, but no NEB permits. Please clarify when agreement with the pipeline owners will be obtained. Further, if NEB has not been previously defined, it should be defined at his point.</p> | <p>Points clarified.</p> | <p>Sec. 5.5.1.2</p> |

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| <ul style="list-style-type: none"> • Page 5-5 — ‘is’ should be replaced with ‘in’ this section will affect... | Correction made. | Sec. 5.5.1.2 |
| <ul style="list-style-type: none"> • Last paragraph — please explain the term ‘aerial plant’ | Reference clarified. | Sec. 5.5.1.2 |
| <ul style="list-style-type: none"> • Page 5-6 — NEB is defined in the second paragraph, which is not necessary given its earlier use. | NEB reference removed | Sec. 5.5.1.2 |
| <p>Section 5.5.2.4 - Stormwater Management</p> <ul style="list-style-type: none"> • First paragraph under Potential Construction Effects — please define CVC. | Credit Valley Conservation (Authority) | Sec. 5.5.2.4 |
| <p>Last bullet point under Stormwater Management Criteria subheading refers to a 25 mm stormwater event, whereas the discussion leading up to this point refers to stormwater events in number of years. The report should be consistent in the use of these terms.</p> | TRCA requirement not relevant to the Winston Churchill site (which is under CVC jurisdiction); reference removed. | Sec. 5.5.2.4 |
| <ul style="list-style-type: none"> • Second paragraph, last sentence under Stormwater Management Plan subheading — there is a period missing from the end of the sentence. | Period added. | Sec. 5.5.2.4 |
| <p>Section 5.5.3.1 -Archaeology</p> <ul style="list-style-type: none"> • Page 5-10 first bullet point — will copies of the Stage 2 Archaeological Assessments be placed on the public record? Clarification should be provided. Additionally, supporting documentation of this kind should be made available on the project website. | Clarification provided. Ministry of Culture does not typically make the Stage 2 report available to the general public, in order to protect archaeological sites from disturbance. | Sec. 5.5.3.1 |
| <ul style="list-style-type: none"> • Page 5-10, third bullet point — suggest deleting ‘relevant’ and inserting ‘who may have an interest’ following First Nations. | Wording changed | Sec. 5.5.3.1 |
| <p>Section 5.6 - Consultation with Property Owners</p> <p>Table 5-4 outlines the mitigation measures that are proposed to address the visual impact concerns raised by an area resident who resides in proximity to the above-grade crossing of the Winston Churchill Boulevard / Highway 403 interchange ramps. Specifically, it is noted in the response that a landscaping concept will be implemented in order to mitigate the visual impacts of the busway berm.</p> <p>Upon review of the landscape concept (note: reference to the location of the plan should be included in the table), it would appear that the proposed landscaping works are limited to plants and shrubs and that no trees are proposed to be planted in this area. This approach to mitigating visual impact differs from that taken at the proposed above-grade crossing of Eastgate Drive, where a more comprehensive planting plan, including a variety of coniferous and deciduous trees that will provide year-round coverage, are proposed. Please outline the constraints to implementing a similar planting plan at the Winston Churchill Boulevard location, or alternatively, consider how such a plan could be introduced.</p> | Rationale for proposed visual impact mitigation expanded. | Table 5-4 |
| <p>Section 6.1.1 - Current BRT Plan</p> <ul style="list-style-type: none"> • First sentence — suggest replacing ‘connect’ with ‘connects.’ | ‘connect’ is grammatically correct term | Sec. 6.1.1 |

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| <p>Section 6.2 - Alternatives</p> <ul style="list-style-type: none"> • Second paragraph, first sentence — recommend replacing the sentence with: ‘Sub- options include the busway meeting Sherwoodtowne Boulevard at grade, which would require its closure at Hurontario Street, or passing beneath Sherwoodtowne Boulevard, thereby allowing its intersection with Hurontario Street to remain open.’ | Sentence rewritten | Sec. 6.2 |
| <p>Section 6.3 - Evaluation / Analysis</p> <ul style="list-style-type: none"> • Define ‘M.’ | In the context of a reference to \$7.9 M in the “cost” row of an analysis table, the use of M as a short form for “million” is assumed to be understood by the reviewers. | Table 6-1 |
| <ul style="list-style-type: none"> • Table 6-1 would benefit from providing a detailed breakdown of costs similar to the level of analysis provided in Table 5-1. | Cost breakdown provided. | Table 6.1 |
| <ul style="list-style-type: none"> • Page 6-4, third bullet point — please explain the meaning of a half signalized entrance. | Signalization reference revised. (note – a half signalized entrance would allow eastbound Rathburn Road traffic to flow at all times, while only westbound lanes would be stopped to allow eastbound buses to turn left into the busway) | Sec. 6.5.1.1 |
| <ul style="list-style-type: none"> • Page 6-4, fifth bullet point — it is anticipated that the westbound queue (95th percentile) extending from Centre View Drive may approach the proposed ERT access at Rathburn Road. Measures to mitigate this potential impact on the operations of the BRT access at Rathburn Road and on eastbound through operations should be identified. Notwithstanding, it is acknowledged that the 95th percentile measurement is indicative of a maximum peak hour queue thereby representing a conservative estimate. In this regard, it may be appropriate to consider referencing the 50th percentile measurement which is more representative of average peak hour queuing conditions. | Reserved Bus Lane is identified as mitigation measure. | Sec. 6.5.1.1 |
| <ul style="list-style-type: none"> • Page 6-4, tenth bullet point — reference to traffic operations switches between volume to capacity ratios and levels of service. References should be consistent or made to both indicators. | v/c ratios and LOS are complementary descriptive terms that deal with different aspects of traffic operations at intersections. Both are useful. | Sec. 6.5.1.1 |
| <ul style="list-style-type: none"> • Page 6-5, fifth paragraph, first sentence — this statement is inconsistent with the fifth bullet point on page 6-4. If the 95th percentile measurement continues to be referenced, the need for measures to mitigate the impacts of the westbound queuing activity on the Rathburn Road entrance should be discussed. | Mitigation measure described. | Sec. 6.5.1.1 |
| <p>Section 6.6 Consultation with Property Owners and Developers</p> <ul style="list-style-type: none"> • Table 6-2 is incomplete. | Table completed | Table 6-2 |
| <p>Section 7— Tomken Grade Separation</p> <ul style="list-style-type: none"> • There appears to be a number sequencing error as this | Numbering corrected. | Sec. 7 |

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| section begins at page 7-3, not 7-1. | | |
| Section 7.2 — Alternatives The discussion in the second paragraph highlights the need to consider the provision of visual barriers at the proposed changes to the Winston Churchill interchange. | Visual impact issues at Winston Churchill are fully discussed in Table 5-4 | Table 5-4 |
| Table 7-1 • A more detailed breakdown of the cost analysis factor should be provided | Cost breakdown provided. | Table 7-1 |
| • Under the Impact to Utilities Analysis Factor, the description provided for the base case scenario is not clear. Please rework the wording. | Wording revised | Table 7-1 |
| Under the Visual Impact Analysis Factor, the description provided for the 'Busway Over Tomken Road' scenario refers to a visual barrier treatment, as shown, Please identify the location of the figure showing the proposed treatment. | Wording modified. Enhanced berm shown on Figure 7-2. | Fig. 7-2 |
| Section 7.5.1.1 — Roads • The first two sentences of this section are not clear and seem to belong to a different section. | Paragraph deleted | 7.5.1.1 |
| • Second paragraph, fifth sentence — reference is made to Sherwoodtowne Boulevard, which should instead be Tomken Road. | Wording corrected | 7.5.1.1 |
| Section 7.5.2.4 — Stormwater Management • Fifth paragraph — please provide a brief indication of how enhanced water quality control will be provided for all new development. Is this to be identified through the detailed design? | Reference removed, as it is not relevant to the EA Addendum (water quality approach for the BRT project is consistent no matter which alternative is selected, therefore it has no bearing on the proposal to revise the busway profile at Tomken Road). | Sec. 7.5.2.4 |
| Section 7.6 — Consultation with Property Owners and Developers • The section ends on page 7-9 with page 7-10 being left blank. Is there material missing? | Blank page noted. | Sec. 7.6 |
| Section 8— Dixie Station Park and Ride Lot Access • Sections 8.1 and 8.2 were not included in all copies of the draft submission. | All sections now provided. | Sec. 8.1, 8.2 |
| Section 8.1.2 - Outstanding Issues • Suggest replacing the last sentence in this section with 'This could be problematic and might result in unsafe U-turns on Dixie Road.' | Wording revised | Sec. 8.1.2 |
| Section 8.3 — Evaluation / Analysis • First paragraph, first sentence — this sentence needs context. 'These would be low-cost, functional improvements that would not affect the EA status...' What is being referred to? | Wording revised. | Sec. 8.3 |
| Section 8.4 — Conclusions / Recommendations • Section 6.3 is referred to in the first sentence, which would seem to be inaccurate. Please confirm the reference. | Reference corrected. | Sec. 8.4 |
| Section 8.5.2.4 — Stormwater Management • Fifth paragraph — please provide a brief indication of how 'enhanced water quality control will be provided for all new | Consistent description of Stormwater Management approach is found in Sec. | Sec. 8.5.2.4 |

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| developments.' | 5.5.2.4. Wording in Sec. 8.5.2.4 revised to reflect the fact that, for Addendum purposes, there is no change or additional impact on drainage when comparing the proposed plan to the previously approved plan. | |
| <p>Section 8.6 — Consultation with Property Owners and Developers</p> <ul style="list-style-type: none"> • First sentence¹ Response to Traffic comment - the response states that Park and Ride lot activity is typically limited to off-peak hours (i.e. before the AM Peak and after the PM peak) for background traffic- This statement seems inaccurate as Park and Ride lot traffic activity is predominately associated with peak hour travel. Furthermore, it is unclear what is meant by 'limited to off-peak hours for background traffic.' Please clarify. | Description of traffic impact expanded. | Table 8-2 |
| <p>Section 9 — Eastgate Parkway / Fieldgate Drive</p> <ul style="list-style-type: none"> • There appears to be a page numbering sequencing error as this section begins at page 9-5. | Numbering corrected. | Sec. 9 |
| <p>Section 9.5.1.1 — Roads</p> <ul style="list-style-type: none"> • First paragraph, second sentence — reference is made to the construction of the structure being disruptive to traffic operations. This is not consistent with Section 9.2, which would seem to suggest otherwise when it is stated that, 'the elevated option avoids all utility impact, and can use a girder structure to avoid the need to detour Eastgate Parkway during construction of the crossing.' Please confirm the impact of construction on traffic operations at this location. | In Section 9.5.1.1, the reference is to the ability to maintain two lanes of traffic in operation at all times with short localized detours and/or brief periods of girder placement. In Section 9.2 the impact is related to the lengthy and extensive detour construction and staging required to excavate a full-depth structural crossing and multiple major utility relocations over the full width (and at a severe skew) of Eastgate Parkway. | Sec. 9.5.1.1 |
| <p>Section 9.5.3.3 — Noise</p> <ul style="list-style-type: none"> • Last sentence in the Section — reference is made to the Tomken Station site. Please refer to the Eastgate Parkway crossing and confirm findings in Table 9-2, as may be appropriate. | Reference revised. | Sec. 9.5.3.3 |
| <p>Section 9.6 — Consultation with Property Owners and Developers</p> <ul style="list-style-type: none"> • This Section ends on page 9-13, whereas page 9-14 is blank. Please confirm whether material is missing. | Blank page noted. | Sec. 9.6 |
| <p>Figure 9-1 — Base Case (EA Addendum) Plan — Eastgate Parkway Crossing</p> <ul style="list-style-type: none"> • This Figure is missing. | Figure 9.1 now included. | Fig. 9.1 |
| <p>Appendix B — Public Consultation Material</p> <ul style="list-style-type: none"> • August 15, 2008 letter response to 12:38 PM, Juno 26, 2008 e-mail from resident. The recipient's name on the second page of the City's response has not been blacked out. | Name blacked out. | Appendix B |

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| <ul style="list-style-type: none"> • June 25, 2008 letter from Scott Anderson to file No. PO.04.DES regarding BRT Meeting with Property Owner of 4310 Sherwoodtowne Boulevard — there are duplicate copies of this letter. | Duplication removed | Appendix B |
| <p>Appendix C — Agency Consultation</p> <ul style="list-style-type: none"> • Please update the MOE contact information provided in the BRT Stakeholders list with the contact information of the undersigned. | done | Appendix B |
| <p>Appendix E —Traffic Analysis Summary: Hurontario Site</p> <ul style="list-style-type: none"> • This appendix is marked ‘to be completed.’ Please ensure that this material is completed and included in the formal submission. | Completed and included as Appendix D. | Appendix D |
| <p>The foregoing comments, along with any feedback received by government review agencies, the public, and Aboriginals should be considered as you prepare your responses and revise the EA Addendum report. The City is responsible for identifying and resolving (or attempting to resolve) any issues raised before the final EA Addendum is submitted. As required, the draft Addendum must be revised before final submission to the ministry. The final consultation summary included in the final Addendum should reflect the results of the review of the draft Addendum, including those comments provided by the Government Review Team, the Ministry, the appropriate Hydro corporation (regarding the hydro tower relocation), and the appropriate Conservation Authorities (regarding the Little Etobicoke Creek and Etobicoke Creek.</p> <p>Please note that when the final EA Addendum is ready for formal submission and review, the ministry requires at least three weeks advance notice so that a formal submission date can be established, The undersigned should be contacted accordingly.</p> | <p>This table summarizes the modifications incorporated in the final EA Addendum to reflect external input.</p> <p>Note that the relocation of the hydro tower west of Winston Churchill Boulevard is not within the scope of the EA Addendum and is therefore not addressed here.</p> <p>Submission schedule will reflect MOE requirements.</p> | |
| <p>In addition, please note that the final EA Summary Form must also be submitted to the ministry in both hard and electronic copy at least two weeks before the formal submission date. Proponents are also expected to submit a Notice of Submission to the ministry for review at least two weeks prior to the formal submission date. Information on what is expected in the Notice of Submission can be found on page 30 of the EA Code of Practice.</p> | Submission schedule and procedure will reflect MOE requirements | |
| <p>Finally, the City must ensure that the members of the GRT and the public viewing locations as outlined in the Notice of Submission receive the EA Addendum before the start of the formal review period. Additional details regarding submission requirements can also be found in the EA Code of Practice.</p> | Distribution of the EA Addendum review copies will reflect MOE requirements. | |
| <p>MOE Air & Noise Comments</p> | | |
| <p>The critical noise issue is the increase of noise at sensitive receptors due to the busway. The busway noise figures provided in the report indicate all increases to be less than 3 dB and thus insignificant. Normally the noise review of a roadway project includes checking the numerical</p> | <p>The draft submission was incomplete. The final Addendum contains a complete Noise Analysis report (Appendix C).</p> | Appendix C |

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| <p>assumptions as to vehicle mix and traffic speed and volume used in noise calculation, in this case specifically of the buses on the busway. Such numbers were not supplied in this report; the Appendix E Traffic Analysis Study contained only the words "To Be Completed".</p> | | |
| <p>In order to roughly approximate in the review process the noise impact of the busway at the closest homes in the Eastgate /Fieldgate area, the STAMSON program was used, with 60 medium trucks (equivalent to diesel buses) per hour (as per Ministry approximations) as the traffic source, at a closest distance of 72m from the centreline of the busway. The indicated increase was greater than that in the report, but still less than 3 dB. Thus it appears plausible with the given information for the assessment of busway noise to be "insignificant". It is recommended, however, that the EA Addendum contain road traffic and busway traffic volumes, as well as some sample noise calculations. Additional comments may be provided at that time.</p> | | |
| <i>Stormwater Management Comments provided by MOE Water and Wastewater Unit staff:</i> | | |
| <p>Winston Churchill Highway 403 Intersection: 1. Section 5.5.2.4: page 5-7: Hydraulic Criteria. Paragraph shall be appended with the minimum culvert sizes shall be reevaluated for 100-year design flow from the respective catchment areas on the basis of final hardscape and morphology during the detailed design of the structures.'</p> | Text added. | Sec. 5.5.2.4 |
| <p>2. SWM Design Criteria: page 5-8, append paragraph 4 with: 'Provision for enhanced level of stormwater quality treatment shall be reevaluated with the use of SVVM BMP elements for all the existing/established and future catchment areas of the MBRT' during final stage of the detailed design as per the MOE requirements'.</p> | Text added. | Sec. 5.5.2.4 |
| <p>3. Page 5-9, paragraphs 3 and 4. The sentences with words 'close oversight' is irrelevant and superfluous and may be deleted.</p> | Irrelevant and superfluous text deleted. | Sec. 5.5.2.4 |
| <p>Hurontario Street Crossing. 4. Section 6.1.1: paragraph 2, the first sentence shall be appended with 'During the final design stage the Cooksville Creek crossing under the Hurontario Street will be further evaluated for quality and quantity / capacity consideration of at least 100 year peak flows to mitigate any future detrimental effects on the environment.</p> | Section 6.1.1 refers to the pre-existing approved plan, which is not the plan for which EA Addendum approval is being sought. The proposed plan does not affect Cooksville Creek and therefore there is no need to evaluate 100 year peak flows in association with the BRT works. Nevertheless, all 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. | Sec. 6.1.1 |
| <p>5. Section 6.5.2.4: page 6-8, paragraph 3 shall be appended with: All the existing storm sewer outlets shall be</p> | Text added. | Sec. 6.5.2.4 |

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| reevaluated during the detailed design stage for carrying capacity of the 100-year peak flood flows under the proposed development condition. | | |
| <p>Tomken Road Grade Separation:</p> <p>6. Section 7.5.2.1: Watercourse Crossing: please add this sentence: 'However, further capacity evaluation shall be undertaken for appropriate measures, if necessary, during detailed design stage in light of altered site geomorphology'.</p> | Text added. | Sec. 7.5.2.1 |
| <p>Dixie Road/Eastgate Parkway:</p> <p>7. Section 8.5.2.4: please append the section with: 'However, sensitivity of the water source in the Little Etobicoke Creek will be further investigated and evaluated for flow rates and quality considerations for the creek flora and fauna during final design. A monitoring station will be established with appropriate monitoring protocol in consultation with the Conservation Authority and the Ministry of the Environment.</p> | There is no significant difference between the approved and proposed alternatives at Dixie Road in terms of stormwater management requirements or impacts. There is therefore no trigger within the scope of the EA Addendum process to investigate Little Etobicoke Creek to any different level of detail than has already been committed to in the approved EA. | Sec. 8.5.2.4 |
| <p>Eastgate Parkway/Fieldgate Drive Intersection:</p> <p>8. Please append last paragraph of Section 9.5.2.4: page 9-10: 'However, further capacity evaluation shall be undertaken for appropriate measures, if necessary, during detailed design stage in light of altered site geomorphology'.</p> | Text added. | Sec. 9.5.2.4 |
| <p>Drawings and Figures In the Report</p> <p>a. Figs. 4-1, 4-2, 4-3, and 4-5 are at 1:4000 scale whereas, the Fig. 4-4 is at 1:3000 scale which are showing the existing Drainage and Stormwater Management for the catchment area of the MBRT. The Ministry would be pleased to have all the figures in same scale and preferably drawn at 1:3000, each with defined 'match-lines: keeping open provision of showing a conjugate Fig. labeled as 4 Existing Master Drainage and Stormwater Management Plan' drawn at 1:2000 or 1:3000 scale.</p> | All Drainage Figures are made consistent at 1:4000 scale in order to fit the necessary information in a single report-sized page. Match Lines are not used because each Figure refers to a specific EA Addendum site; there is not a continuous roll plan for the Drainage mapping. | |
| <p>b. All the abovementioned Figures shall be labeled with road names and size of the existing storm/sanitary/main waterlines and creeks.</p> | Done. | |
| <p>c. Figs. 5-5, 6-3, 7-3, and 9-3 are at 1:4000 scale, whereas, the Fig. 8-3 is at 1:3000 scale which are showing the proposed Drainage and Stormwater Management for the catchment area of the MBRT. The Ministry would be pleased to have all the figures in same scale and preferably drawn at 1:3000, each with defined 'match-lines'; keeping open provision of showing a conjugate Fig. labeled as 'Proposed Master Drainage and Stormwater Management Plan' drawn at 1: 2000 or 1:3000 scale.</p> | All Drainage Figures are made consistent at 1:4000 scale in order to fit the necessary information in a single report-sized page. Match Lines are not used because each Figure refers to a specific EA Addendum site; there is not a continuous roll plan for the Drainage mapping in the Addendum. | |

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| | The overall drainage plans and report are contained within the respective Preliminary Design Reports. | |
| Ontario Ministry of the Environment, Dorothy Moszynski – Environmental Resource Planner and EA Coordinator, Air, Pesticides, and Environmental Planning, October 24, 2008 (letter to J. Dea, MOE EAAB) | | |
| The Addendum report does not assess any road salt impacts to the receiving water bodies and does not include any commitment of road salt management | The Addendum refers to site-specific revisions to the previously approved EA plan. Road salt management is project-wide, not a site-specific, issue. The Addendum does not seek any changes to the previously-approved road maintenance program. | Missis-sauga Transitway Individual EA Report, 1992, Section 5.3 |
| The Addendum report does not comment on any potential impacts to groundwater. It is recommended that the proponent comment on whether any groundwater impacts may occur | Groundwater impacts have been specifically discussed in a new subsection for each area. In all cases the proposed busway grade is higher or more elevated than the previously approved plan, and hence results in a reduced impact on groundwater. | Sections 5.5.2.5, 6.5.2.5, 7.5.2.5, 8.5.2.5, 9.5.2.5 |
| If any temporary groundwater dewatering is required during the construction phase and is greater than 50,000 L/day then a Permit to Take Water (PTTW) will be required. | Contractor will follow standard procedures to obtain a PTTW | |
| Please ensure that this information is added as an appendix to the Environmental Assessment Addendum and is mailed to our office and available for public viewing when completed. | This table included in Appendix B | Appendix B |
| Ontario Realty Corporation, Lisa Myslicki, Environmental Coordinator, Oct. 6, 2008 (letter) (note that this was a general response and did not contain any site- or report-specific comments) | | |
| General Impacts Negative environmental impacts associated with the project design and construction, such as the potential for dewatering, dust, noise and vibration impacts, and impacts to natural heritage features/habitat and functions, should be avoided and/or appropriately mitigated in accordance with applicable regulations best practices and MNR and MOE standards. Avoidance and mitigation options that characterize baseline conditions and quantify the potential impacts should be present as part of the EA project file. Details of appropriate mitigation, contingency plans and triggers for implementing contingency plans should also be present. | Impacts and mitigation measures documented in (approved) EA and subsequent Addenda. | Missis-sauga Transitway Individual EA Report, 1992 |
| Impacts to Land holdings Negative impacts to land holdings, such as the taking of developable parcels of ORC managed land or fragmentation of utility or transportation corridors, should be avoided. If the potential for such impacts is present as part | Portions of the BRT project will be located on lands managed by ORC. The City of Mississauga continues to | |

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| <p>of this undertaking, you should contact the undersigned to discuss these issues at the earliest possible stage of your study.</p> <p>If takings are suggested as part of any alternative these should be appropriately mapped and quantified within EA report documentation. In addition, details of appropriate mitigation and or next steps related to compensation for any required takings should be present. ORC requests circulation of the draft EA report prior to finalization if potential impacts to ORC managed lands are present as part of this study.</p> | <p>consult with ORC staff regarding the necessary agreements for use of ORC managed lands for this undertaking.</p> | |
| <p>Cultural Heritage Issues</p> <p>If proposed alternatives may impact cultural heritage features on ORC managed lands, we would request that the examination of cultural heritage features be enhanced to include issues such as cultural landscapes, archaeology and places of sacred and secular value.</p> | <p>Cultural Heritage issues and impacts are documented in the approved (1993) Transitway EA as well as in subsequent EA Addenda and Preliminary Design reports. The current EA Addendum addresses this issue at the specific affected sites.</p> | <p>Sec. 5.5.3, 6.5.3, 7.5.3, 8.5.3, and 9.5.3.</p> |
| <p>Potential Triggers Associated with ORC's Class EA</p> <p>The ORC Class Environmental Assessment (ORC Class EA) applies to a range of realty and planning activities including leasing or letting, planning approvals, selling, demolition and property maintenance/repair. For details on the ORC Class EA please visit the Environment and Heritage page of our website found at http://www.orc.on.ca/Page133.aspx. If the ORC Class EA is triggered, consideration should be given to explicitly referring to the ORC's undertaking in your EA study.</p> | <p>The ORC "project" to potentially lease land for the implementation of the Mississauga BRT project is ancillary to the EA approved BRT project, which has addressed ORC's EA requirements in a coordinated manner. This is in keeping with Section 9.7.1 of the ORC Class EA.</p> | |
| <p>...our current guidelines indicate that the MEA can be deferred to, if the ORC EA requirements are integrated into the Municipal Class EA process. The MEA must specifically articulate the undertaking i.e "granting of easement on provincially owned lands managed by ORC" or "Sale of provincially owned lands, managed by Hydro One, on behalf of ORC". The statement must make specific reference to the fact that the land is provincially owned and managed by ORC. Also, it must meet the 7 point analysis criteria in the ORC Class EA.</p> <p>The 7-point analysis criteria for a Category B: Consultation and Documentation Report include:</p> <ol style="list-style-type: none"> 1) Describe the Undertaking 2) Description of Environmental Effects, Mitigation and Monitoring 3) Consult directly with affected agencies and public 4) Reporting 5) Confirmation of Category B | <p>ORC's Class EA requirements have been met by the Individual EA for the Mississauga Transitway (approved on July 6, 1993), which meets all the analysis criteria described.</p> | <p>Mississauga Transitway Individual EA Report, 1992</p> |

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| 6) Notice of Completion and 30 day review 7) Category Elevation and Part II Order if requested by any | | |
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