PUBLIC PARTICIPATION

- Your comments are important
- Please complete a comment sheet
- Sign in at the registration table to ensure that you are added to the Project mailing list.
- If you require further information or wish to provide additional comments, contact the BRT Project Office at:

Telephone:	905-615-4636
Fax:	905-615-3218
E-mail:	transit.info@mississauga.ca
Website:	www.mississauga.ca/brt

Canada Ontario Transit MISSISSAUGA Leading today for tomorrow

SPRING & FALL 2008 NEWSLETTERS

How will it work?

The busway will have 12 stations at all major road crossings and in the Mississauga City Centre.

- Winston Churchill
- Erin Mills
- City Centre
- Central Parkway
- Cawthra
- Tomken
- Dixie
- Tahoe
- Etobicoke Creek
- Spectrum
- Orbitor
- Renforth

At these stations you can:

- transfer from regular transit routes using Mississauga Transit and GO Transit at major stations
- walk or cycle to and from your home
- walk or cycle to and from your workplace
- park & ride at Winston Churchill, Erin Mills, Cawthra, Dixie and Renforth stations.

What is BRT?

Bus Rapid Transit (BRT) is about moving you where you need to go in a faster and more convenient way. This new "busway" is a two-lane bus-only roadway for both Mississauga and GO Transit buses that will run along the Highway 403, Eastgate Parkway, and Eglinton Avenue corridors. It will serve thousands of riders each day, making it faster and easier for you to travel through Mississauga and the GTA (Greater Toronto Area). This new service is in addition to Mississauga's normal transit service offering you a more direct way to travel.

"The City of Mississauga's Bus Rapid Transit project will help people move through Mississauga quickly, efficiently and safely using dedicated roads and buses to go to major stops. This newsletter from the Mississauga BRT office explains the new service that is in addition to our normal transit service and will change the way people move through Mississauga, reduce gridlock and improve our environment."

Mayor Hazel McCallion, C.M.
City of Mississauga

What will it cost?

The fee for the BRT has not been set. The BRT office is working to make the fee comparable to other transit services in the GTA.

Will there be an express service?

Yes, there will be buses that stop at each station and others that operate as an express service to selected major stations. There will also be buses that pick you up in your community, travel to a station, then go directly on to the busway and into the City Centre.

When will the BRT be ready?

Phase one of the Bus Rapid Transit (BRT) project is expected to be completed by 2012 and is being developed in partnership by the City of Mississauga, the Province of Ontario, GO Transit and the federal government.

To begin the first phase, and to best meet the current and projected ridership demands, funding partners will work together and construct the busway in two segments: between Winston Churchill Boulevard and Erin Mills Parkway on the North side of Highway 403, and between Hurontario Street (Mississauga City Centre) and Renforth Drive (south of the airport) alongside Eastgate Parkway and Eglinton Avenue.

To connect these segments, buses will continue to use Highway 403 and Centre View Drive.

Will it make travel faster and more convenient for transit users?

The new busway will allow Mississauga and GO buses to operate on their own roadway with:

- no other traffic
- no signals
- no stop signs

You will enjoy a smooth, fast and reliable trip through a landscaped corridor. High-quality stations will welcome you with elevators, protected walkways, an open and secure environment, and provide up-to-date travel information. Wherever possible, the stations will be close to office buildings and communities. Parking areas will be well lit and pathways leading to stations will be convenient and accessible.

RAPID

FALL 2008 | VOL 2 | MISSISSAUGA BUS RAPID TRANSIT NEWS

IN THIS ISSUE

What is the BRT Project?
Design Update
Project Schedule
Next Steps

MISSISSAUGA
Leading today for tomorrow

Ottawa BRT

Project Schedule:

Following the preliminary design process, the BRT Project will move into detailed design. The detailed design phase will begin in late fall of 2008 to refine the preliminary design and station concepts. Construction is expected to begin in late 2009 with the busway being built in two segments: between Winston Churchill Boulevard and Erin Mills Parkway on the north side of Highway 403; and between Hurontario Street (Mississauga City Centre) and Renforth Drive alongside Eastgate Parkway and Eglinton Avenue. To connect these segments, buses will continue to use Highway 403 and Centre View Drive. Construction is expected to be complete by the late fall of 2012.

Mississauga BRT Project Schedule

2007 | 2008 | 2009 | 2010 | 2011 | 2012

Preliminary Design 2007–2008

Detailed Design 2008–2010

Construction 2009–2012

Full BRT Service Operational – 2012

Next Steps

Public information centres (PICs) will be held in the fall of 2008 to display the preliminary design of the busway and stations and to receive public comment. The comments the BRT Project office received from the spring 2008 PICs assisted in the preliminary design stage and helped to ensure the BRT is as attractive as possible for users.

Please visit the BRT website at: www.mississauga.ca/brt regularly to learn when these PICs are planned or watch your local newspaper for a published notice.

How do I get more information?

☎ 905-615-4636
www.mississauga.ca/brt
transit.info@mississauga.ca

MISSISSAUGA
Leading today for tomorrow

Canada

Ontario

Transit

BRT Station Views
(1)
(2)
(3)
The following pictures will give you an idea of what a typical BRT station will look like. The first one (1) shows the on-street plaza where you enter the BRT station. From there, you can take an elevator or stairs down to the busway platform. The second picture (2) shows the busway platform area where you board or disembark buses. The last picture (3) shows an aerial view of the typical BRT station.
Design Update
In the past year, the BRT Project has been in the preliminary design stage. By the fall of 2008, this stage will be nearing completion. The work to date has included the:
• preliminary design of the busway alignment
• creation of station design concepts
• design of a service plan concept and route map to integrate new BRT routes with existing Mississauga Transit Services
• beginning of a public consultation process
• refinement of estimated project costs
• creation of a project schedule for construction implementation
• hiring of branding consultants to develop a marketing and promotional plan for the BRT
Station design concepts have been developed for the busway. High quality stations will welcome users with elevators, protected walkways, an open secure environment, clear and up-to-date travel information, and attractive architecture. Parking areas will be well lit and sidewalks and multi-use pathways leading to stations will be convenient and inviting.
What is the Mississauga BRT Project?
The City of Mississauga, in partnership with GO Transit, is constructing a new busway across the city (a two-lane, bus-only roadway) for Mississauga and GO Transit buses. This new busway will run along the Highway 403, Eastgate Parkway and Eglinton Avenue corridors, serving thousands of riders each day, making it faster and easier for you to travel through Mississauga and the Greater Toronto Area (GTA).
The BRT (Bus Rapid Transit) is about moving you where you need to go in a faster and more convenient way. This new service is in addition to Mississauga's normal transit service. The busway will have 12 stations at major road crossings and in the Mississauga City Centre as indicated on the corridor map above.
LEGEND
BRT Corridor
BRT Station
Key Connections
403 Bus Bypass Shoulders
Pearson International Airport
Hwy. 427
TTC Eglinton Ave.
Kipling Subway Terminal
Renforth
Orbitor
Etobicoke Creek
Spectrum
Tahoe
Dixie
Tomken
Eastgate Pkwy.
Hwy. 401
Tomken Rd.
Dixie Rd.
City of Toronto
Bloor St.
Cawthra
Central Parkway
Cawthra Rd.
Centre Pkwy.
Queensway
Dundas St.
City Centre
Hurontario St.
Burnhamthorpe Rd.
City of Mississauga
Eglinton Ave. W.
Mavis Rd.
Hwy. 403
Credit River
Creditview Rd.
Erin Mills Mississauga Rd.
Winston Churchill
Erin Mills Pkwy.
Winston Churchill Blvd.
Tenth Line West
Town of Oakville
Hwy 407
Hwy 403
Q.E.W.

PUBLIC CONSULTATION TABLE

Issues Raised and Responses Provided BRT Preliminary Design		
Public Consultation: October 28th & 29th, 2008		
Inquiry From	Summary of Concerns	Summary of Response
Resident	Concern regarding traffic problems in and out of station parking lots, especially for Winston Churchill and Erin Mills. Some of the access roads to stations such as Dixie seem to be complicated unless there are restrictions I am not aware of. Disappointed that the City Centre study is not being done.	The traffic issues are addressed in the EA Addendum document. Regarding City Centre, the BRT Project is from Winston Churchill Boulevard to Erin Mills Parkway, and Hurontario Street to Renforth. The City Centre will be considered in a future phase.
Resident	Would like to see information regarding integration of BRT and existing transit systems as well as information on anticipated peak volumes. What is the impact on the current road traffic on Eglinton, Dixie or Dundas, particularly at peak times? What security and safety measures will be considered given that an increase in riders is expected especially in the Square One area?	The traffic issues are addressed in the EA Addendum document. Safety and security are being addressed as part of the Preliminary and Detailed Design.
Resident	Why is there no BRT station planned at Mavis Road?	It is planned that all Mississauga Transit routes on Mavis Road will route to the City Centre Transit Terminal to provide efficient and direct routing for communities along the Mavis corridor to the City Centre hub. A transfer point or station with the BRT at Mavis and Highway 403 is redundant.

GOVERNMENT REVIEW TEAM SEPT, OCT, 2008

TABLE OF CONTENTS

Government Review Team Circulation Table					
No	**Agency**	**Project**	**Name**	**Date**	**Date Responded to City of Mississauga**
1	Ministry of the Environment	Mississauga BRT Project Draft Environmental Assessment Addendum dated September 2008	Jeffrey Dea	Sept 16 - 08	No response provided MOE to confirm
2	Ministy of the Envionment Water and Wastewater Unit	Mississauga BRT Project Draft Environmental Assessment Addendum dated September 2008	Mohammed Nizamuddin	Sept 26 - 08	No response provided MOE to confirm
3	Ministry of the Environment Air and noise Unit	Mississauga BRT Project Draft Environmental Assessment Addendum dated September 2008	Victor Low	Sept 26 - 08	No response provided MOE to confirm
4	Ministry of Environment Central Region – Technical Support	Mississauga BRT Project Draft Environmental Assessment Addendum dated September 2008	Dorothy Moszynski	Sept 26 - 08	No response provided MOE to confirm
5	Ministry of Environment Water Resource Unit	Mississauga BRT Project Draft Environmental Assessment Addendum dated September 2008	Ellen Schmarje	Sept 26 - 08	No response provided MOE to confirm
6	Ministry of Environment EA Project Coordination Section	Mississauga BRT Project Draft Environmental Assessment Addendum dated September 2008	Jeffrey Dea	Sept 26 - 08	No response provided MOE to confirm
7	Credit Valley Conservation Authority	Mississauga BRT Project Draft Environmental Assessment Addendum dated September 2008	Liam Marray	Oct 07 - 08	See Final Correspondence: Minutes of Meeting Dated January 12, 2009
8	Toronto and Region Conservation Authority	Mississauga BRT Project Draft Environmental Assessment Addendum dated September 2008	Sharon Lingertat	Oct 07 – 08	TRCA responded with a letter Dated November 27, 2008

Government Review Team Circulation Table					
No	**Agency**	**Project**	**Name**	**Date**	**Date Responded to City of Mississauga**
9	Ontario Realty Corporation	Mississauga BRT Project Draft Environmental Assessment Addendum dated September 2008	Anil Wijessooriya/ Lisa Myslicki	Oct 07 – 08	ORC responded to Mississauga's e-mail of September 26, 2008 with an e-mail dated October 6, 2008. Final E-mail correspondence received Dated March 11, 2009
10	Ministry of Transportation	Mississauga BRT Project Draft Environmental Assessment Addendum dated September 2008 BRT Project	Lou Politano	Oct 07 – 08	MTO Comments provided on November 3, 2008
11	Hydro One	Mississauga BRT Project Draft Environmental Assessment Addendum dated September 2008	Dave Ellis	Oct 07 – 08	No response Provided to GRT circulation

McCORMICK
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Fax: (905) 823-8503
E-mail: mrc@mrc.ca
Website: www.mrc.ca

TO: Ministry of the Environment **DATE:** Sept16-08

ATTENTION: Jeffrey Dea **OUR FILE NO:** 6964

RE: Mississauga BRT

TRANSMITTAL

We are enclosing herewith:

Qty	Drawing No.	Rev.	Title
1			DRAFT Environmental Assessment Addendum (September 2008)

	For your information/action		
X	For your approval and/or comments		Reviewed
	For use with Notice of Change/Record of Revision		Reviewed as noted
	As requested		Revise and resubmit

Remarks:

McCormick Rankin Corporation
Per: Andrew Shea

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

TO: Ministry of the Environment
Water and Wastewater Unit

DATE: September 26th, 2008

ATTENTION: Mohammed Nizamuddin

OUR FILE NO: 6964

TRANSMITTAL

RE: Mississauga Bus Rapid Transit
Environmental Assessment Addendum

W:\6k\6964 Mississauga BRT Preliminary Design\6964.700 Preliminary Design Guideway\6964.702 Functional Planning\6964.702 - EA Addendum\6964as - Trans to XXXXX re EA Addendum review - Sept26-08rev.doc

We are enclosing herewith:

Qty	Drawing No.	Rev.	Title
			DRAFT Mississauga Bus Rapid Transit Project - Environmental Assessment Addendum (September 2008)

	For your information/action		
X	**For your review and comment**		**Reviewed**
	For use with Notice of Change/Record of Revision		**Reviewed as noted**
	As requested		**Revise and resubmit**

Remarks:

Please find enclosed a DRAFT copy of an Environmental Assessment Addendum (EA Addendum) documenting proposed revisions to the design approved as part of the Mississauga Transitway Environmental Assessment Report (1992). Please note that a final EA Addendum report will be circulated at a later date. It is our understanding that you have been contacted by Mr. Jeffrey Dea, Project Officer, Environmental Assessment Project Coordination Section, and have been requested to review the Draft EA Addendum and provide any comments that you may have directly to him.

It is important to note that the enclosed EA Addendum focuses on an alternatives evaluation 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.

If you have any questions, please contact the undersigned or Mr. Jeffrey Dea at 416-314-7213.

McCormick Rankin Corporation
Per: Andrew Shea

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

TO: Ministry of the Environment
Air and Noise Unit

DATE: September 26th, 2008

ATTENTION: Victor Low

OUR FILE NO: 6964

TRANSMITTAL

RE: Mississauga Bus Rapid Transit
Environmental Assessment Addendum

W:\6k\6964 Mississauga BRT Preliminary Design\6964.700 Preliminary Design Guideway\6964.702 Functional Planning\6964.702 - EA Addendum\6964as - Trans to MOE Noise re EA Addendum review - Sept26-08rev.doc

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Per: Andrew Shea

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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

TO: Ministry of the Environment
Central Region - Technical Support

DATE: September 26th, 2008

ATTENTION: Dorothy Moszynski

OUR FILE NO: 6964

TRANSMITTAL

RE: Mississauga Bus Rapid Transit
Environmental Assessment Addendum

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	As requested		Revise and resubmit

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McCormick Rankin Corporation
Per: Andrew Shea

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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

TO: Ministry of the Environment
Water Resource Unit

DATE: September 26th, 2008

ATTENTION: Ellen Schmarje

OUR FILE NO: 6964

TRANSMITTAL

RE: Mississauga Bus Rapid Transit
Environmental Assessment Addendum

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McCormick Rankin Corporation
Per: Andrew Shea

McCORMICK
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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

TO: Ministry of the Environment
EA Project Coordination Section

DATE: September 26th, 2008

ATTENTION: Jeffrey Dea

OUR FILE NO: 6964

TRANSMITTAL

RE: Mississauga Bus Rapid Transit
Environmental Assessment Addendum

W:\6k\6964 Mississauga BRT Preliminary Design\6964.700 Preliminary Design Guideway\6964.702 Functional Planning\6964.702 - EA Addendum\6964as - Trans to J Dea re EA Addendum review - Sept26-08rev.doc

We are enclosing herewith:

Qty	Drawing No.	Rev.	Title
3			DRAFT Mississauga Bus Rapid Transit Project - Environmental Assessment Addendum (September 2008)

	For your information/action		
X	For your review and comment		Reviewed
	For use with Notice of Change/Record of Revision		Reviewed as noted
	As requested		Revise and resubmit

Remarks:

Please find enclosed a DRAFT copy of an Environmental Assessment Addendum (EA Addendum) documenting proposed revisions to the design approved as part of the Mississauga Transitway Environmental Assessment Report (1992). Please note that a final EA Addendum report will be circulated at a later date. In order to expedite the final review process and address comments as early as possible, we are requesting your comments regarding the draft EA Addendum. Please provide any comments by the end of October 2008.

It is important to note that the enclosed EA Addendum focuses on an alternatives evaluation 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.

If you have any questions, please contact the undersigned.

McCormick Rankin Corporation
Per: Andrew Shea

McCORMICK
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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

TO: Credit Valley Conservation Authority **DATE:** October 7th, 2008

ATTENTION: Liam Marray **OUR FILE NO:** 6964

RE: Mississauga BRT Project

TRANSMITTAL

We are enclosing herewith:

Qty	Drawing No.	Rev.	Title
1			Hard copies of the Draft EA Addendum Report (dated September, 2008)

	For your information/action		
X	For your approval and/or comments		Reviewed
	For use with Notice of Change/Record of Revision		Reviewed as noted
	As requested		Revise and resubmit

Remarks:

McCormick Rankin Corporation
Per: Andrew Shea

McCORMICK
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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

TO: Toronto and Region Conservation Authority

DATE: October 7th, 2008

ATTENTION: Sharon Lingertat

OUR FILE NO: 6964

RE: Mississauga BRT Project

TRANSMITTAL

We are enclosing herewith:

Qty	Drawing No.	Rev.	Title
4			Hard copies of the Draft EA Addendum Report (dated September, 2008)

	For your information/action		
	For your approval and/or comments		**Reviewed**
	For use with Notice of Change/Record of Revision		**Reviewed as noted**
X	**As requested**		**Revise and resubmit**

Remarks:

McCormick Rankin Corporation
Per: Andrew Shea

File: C:\Documents and Settings\ing\Local Settings\Temporary Internet Files\Content.Outlook\A5ORO3ER\6964as - Trans to TRCA Oct07-08.doc

McCORMICK
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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

TO: Ontario Realty Corporation **DATE:** October 7th, 2008

ATTENTION: Anil Wijesooriya **OUR FILE NO:** 6964

RE: Mississauga BRT Project

TRANSMITTAL

We are enclosing herewith:

Qty	Drawing No.	Rev.	Title
2			Hard copies of the Draft EA Addendum Report (dated September, 2008)

	For your information/action		
	For your approval and/or comments		Reviewed
	For use with Notice of Change/Record of Revision		Reviewed as noted
X	As requested		Revise and resubmit

Remarks:

Please distribute 1 copy of the Draft EA Addendum Report for the Mississauga BRT project to Geoff Woods for his review.

McCormick Rankin Corporation
Per: Andrew Shea

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

TO: Ministry of Transportation **DATE:** October 7th, 2008

ATTENTION: Lou Politano **OUR FILE NO:** 6964

RE: Mississauga BRT Project

TRANSMITTAL

We are enclosing herewith:

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Remarks:

McCormick Rankin Corporation
Per: Andrew Shea

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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

TO: Hydro One **DATE:** October 8th, 2008

ATTENTION: Dave Ellis **OUR FILE NO:** 6964

RE: Mississauga BRT Project

TRANSMITTAL

We are enclosing herewith:

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1			Hard copy of the Draft EA Addendum Report (dated September, 2008)

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X	**For your approval and/or comments**		**Reviewed**
	For use with Notice of Change/Record of Revision		**Reviewed as noted**
	As requested		**Revise and resubmit**

Remarks:

Further to your discussions with Willy Ing of the City of Mississauga, please find attached a draft copy of the Mississauga BRT EA Addendum for your review/comment.

McCormick Rankin Corporation
Per: Andrew Shea

File: C:\Documents and Settings\ing\Local Settings\Temporary Internet Files\Content.Outlook\A5ORO3ER\6964as - Trans to Hydro One D Ellis Oct08-08.doc

C V C

Willy Ing

From: Schijns, Steve [SSchijns@mrc.ca]
Sent: 2008/11/25 2:56 PM
To: Marray, Liam; Murphy, Gary; Ul Haq, Rizwan
Cc: Scott W Anderson; Andrew Shea; Geoff Wright; Bright, Katie; Willy Ing; Kauppinen, Andrea
Subject: RE: Mississauga Bus Rapid Transit Project - Draft Environmental Assessment Addendum
Attachments: S6964-307-001GA.PDF; 6964jgs-Cooksville Creek Hydraulics Technical Memo-Oct 22 2008.pdf

Liam – we are anxious to finalize the CEAA report, EA Addendum, and BRT Preliminary Design Report and would be pleased to meet with you at your convenience. CVC is the sole remaining stakeholder with CEAA comments outstanding. Please advise when we can meet.

Attached for your information is a drawing of the proposed lowering of the Cooksville Creek culvert obvert east of Hurontario Street, as well as a summary of the investigation into the hydraulic impact of the proposal.

Thank you

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: Marray, Liam [mailto:LMarray@creditvalleycons.com]
Sent: November 3, 2008 7:14 PM
To: Willy Ing; Murphy, Gary; Ul Haq, Rizwan
Cc: Scott W Anderson; Andrew Shea; Geoff Wright; Schijns, Steve
Subject: RE: Mississauga Bus Rapid Transit Project - Draft Environmental Assessment Addendum

Willy

I apologize for the delay in responding. CVC would like to set-up a meeting with you and your consultants to discuss.

Liam Marray

From: Willy Ing [Willy.Ing@mississauga.ca]
Sent: November 3, 2008 4:38 PM
To: Marray, Liam
Cc: Scott W Anderson; Andrew Shea; Geoff Wright; Schijns, Steve
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Sent: 2008/10/02 1:26 PM
To: Marray, Liam; Willy Ing
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Please provide a response to this e-mail in 5 working days to the City of Mississauga.

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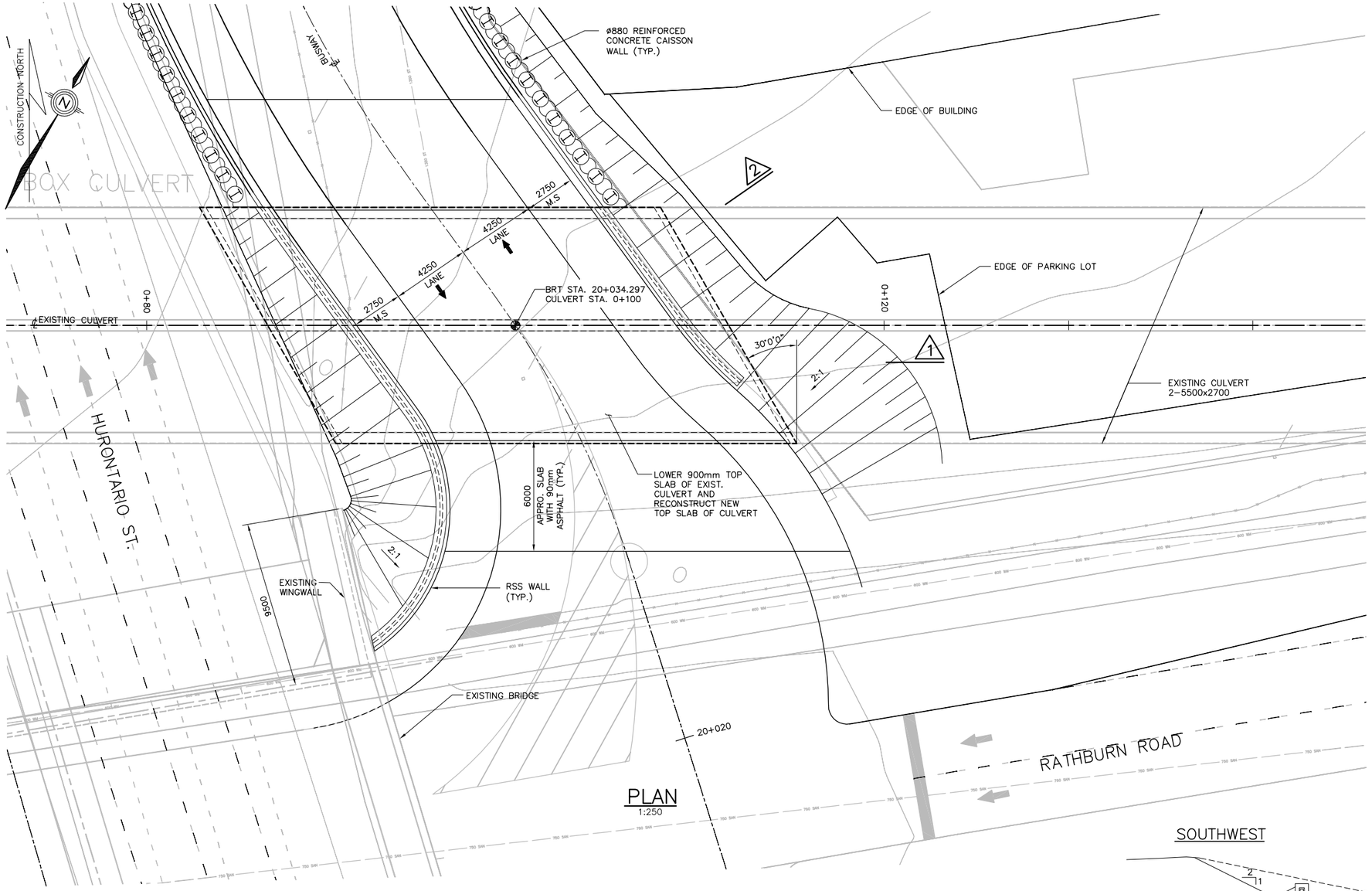
Suite 800
Mississauga, Ontario
L5B 2T4.
Phone: 905-615-3200 Ext. 5791
Fax: 905-896-5504
e-mail: willy.ing@mississauga.ca



PLAN
1:250

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BOTTOM	50±10
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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

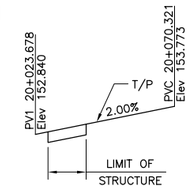
THE CONTRACTOR SHALL VERIFY ALL EXISTING ELEVATIONS AND DIMENSIONS AND REPORT ANY DISCREPANCIES TO THE CONTRACT ADMINISTRATOR PRIOR TO COMMENCING CONSTRUCTION.

ALL ELEVATIONS ARE TO GEODETIC DATUM.

ABBREVIATIONS

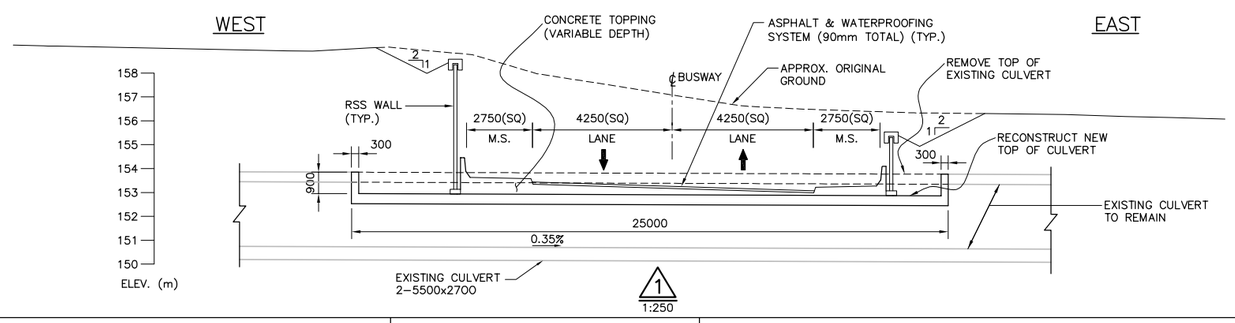
T/P	DENOTES TOP OF PAVEMENT
M.S.	DENOTES MAINTANANCE STRIP

SOUTH NORTH



PROFILE OF BUSWAY
N.T.S.

WEST EAST



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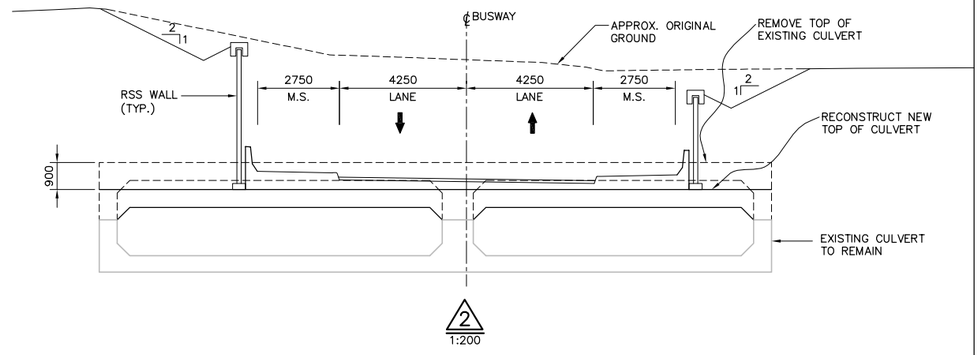
SOUTHWEST NORTHEAST



2
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McCORMICK RANKIN CORPORATION

MISSISSAUGA
Leading today for tomorrow

MISSISSAUGA BUS RAPID TRANSIT PRELIMINARY DESIGN

BRT At Cooksville Creek
Preliminary General Arrangement

Date: NOVEMBER 2008

Scale: AS SHOWN

FIGURE NO. ---

FILE LOCATION=S:\6964\7-BRT AT COOKSVILLE CREEK\
DRAWING NAME: S6964-307-001GA.DWG
DRAWN BY: AMY ZHANG
MODIFIED: 08/11/19 08:50:38
DATE PLOTTED: 08/11/19 08:50:38

TECHNICAL MEMORANDUM

To: Sunil Jain
McCormick Rankin Corporation
File: 6964/3

From: Jeff Schroeder
Date: Oct. 22, 2008

RE: Mississauga BRT Preliminary Design
Cooksville Creek Hydraulic Assessment

1.0 INTRODUCTION

1.1 Study Purpose

Hydraulic assessments were completed for the BRT crossing of Cooksville Creek as part of the Mississauga BRT Preliminary Design.

This Technical Memo details the development of the hydraulic models and the evaluation of the hydraulic impact of the Cooksville Creek crossing.

1.2 Proposed Structure

The proposed BRT alignment crosses over the 209.7 metre long twin 5500x2700mm culverts underneath Hurontario Street and Rathburn Road (See Exhibit 1). Due to grading issues, the profile of the BRT would cut into the top of the twin culverts (See Exhibit 2). The alignment centreline of the proposed BRT would cut into the top of the existing culverts by 0.5 metres approximately 125 metres upstream of the Rathburn Road outlet.

1.3 Study Scope

This Technical Memo includes the following:

- Identification of design flows during 2-year, 5-year, 10-year, 25-year, 50-year, 100-year and Regional rainfall events;
- Development of hydraulic models for calculating water surface elevations;
- Impact assessment results and recommendations.

2.0 DESIGN FLOWS

2.1 Design Storms

Peak flows for the 2-year, 5-year, 10-year, 25-year, 50-year, 100-year and Regional rainfall events were provided by the Credit Valley Conservation (CVC) in the HEC-2 model Cook.hec. Table 1 summarizes the peak flows at each crossing.

Table 1 - Summary of Peak Flows (m^3/s)

2-Year	5-Year	10-Year	25-Year	50-Year	100-Year	Regional
55.0	65.0	70.0	90.0	105.0	115.0	145.0

3.0 HYDRAULIC MODELLING

3.1 Model Setup

The CVC provided an original HEC-2 model for Cooksville Creek. For the analysis the original model was converted into the river analysis program HEC-RAS and the converted model was used as a base and comparison model for the proposed BRT model.

HEC-RAS is a well established backwater model developed by the U.S. Army Corps of Engineers and widely used to estimate water surface elevations in river systems. The HEC-RAS model is particularly well suited for assessing the impacts of culverts and bridges on water surface elevations. It is the *de facto* standard for water surface elevation calculations and flood risk mapping in Ontario and many other North American jurisdictions. However, HEC-RAS was not designed to easily handle a situation where the height of a culvert is reduced part way through its length and then expanded again.

The approach used was to split the twin culverts into three separate structures with a small space in between instead of one long structure. The first structure underneath Rathburn Road covers a length of 115 metres, the second structure underneath the proposed BRT location covers a length of 15 metres and the third structure underneath Hurontario Street is 79.7 metres long.

Two existing conditions models were created for the analysis. One model simulates the twin culverts as one long structure (conventional method) and the second model simulates the twin culverts as three separate structures as mentioned above. The reason for creating two existing models is the need to compare the differences in results between the conventional modelling method and the alternative modelling approach. The results from the future conditions model (using the alternative modelling approach) were then compared to the results from the alternative existing conditions model. The only difference between the alternative existing conditions model and the future conditions model is that the middle twin culvert section only has a height of 2.2 metres instead of 2.7 metres.

As a further comparison and check, the hydraulic program XP-STORM was used and models were setup similarly to the conventional and alternative methods mentioned above.

3.2 Modelling Results

Table 2 compares the conventional modelling method with the alternative modelling method for existing conditions using HEC-RAS.

Table 2 – Flood Elevation Comparison-Conventional Method (Ex1) vs. Alternative Method (Ex2) (HEC-RAS) (m)

Section Number	Chainage (m)	2-Year Storm			25-Year Storm			100-Year Storm			Regional Storm		
		Ex1	Ex2	Diff.	Ex1	Ex2	Diff.	Ex1	Ex2	Diff.	Ex1	Ex2	Diff.
8.473	0	151.17	151.17	0.00	152.02	152.02	0.00	152.72	152.72	0.00	153.19	153.19	0.00
8.52	40	150.98	150.98	0.00	151.86	151.86	0.00	152.57	152.57	0.00	153.06	153.06	0.00
8.549	70	151.58	151.58	0.00	152.34	152.34	0.00	152.92	152.92	0.00	153.40	153.40	0.00
8.55	71	151.43	151.43	0.00	152.22	152.22	0.00	152.82	152.82	0.00	153.30	153.30	0.00
8.555	75	151.40	151.40	0.00	152.15	152.15	0.00	152.73	152.73	0.00	153.16	153.16	0.00
8.65	Structure												
8.745	284.7	151.36	151.36	0.00	151.64	154.48	2.84	151.83	156.02	4.19	155.59	156.03	0.44
8.76	299.7	154.85	154.85	0.00	155.22	155.22	0.00	155.47	155.47	0.00	155.74	155.74	0.00

Table 3 compares existing conditions with future conditions using HECRAS for the alternative modelling method.

Table 3 – Flood Elevation Comparison-Existing vs. Future Conditions (HEC-RAS) (m)

Section Number	Chainage (m)	2-Year Storm			25-Year Storm			100-Year Storm			Regional Storm		
		Ex2	Fut	Diff.	Ex2	Fut	Diff.	Ex2	Fut	Diff.	Ex2	Fut	Diff.
8.473	0	151.17	151.17	0.00	152.02	152.02	0.00	152.72	152.72	0.00	153.19	153.19	0.00
8.52	40	150.98	150.98	0.00	151.86	151.86	0.00	152.57	152.57	0.00	153.06	153.06	0.00
8.549	70	151.58	151.58	0.00	152.34	152.34	0.00	152.92	152.92	0.00	153.40	153.40	0.00
8.55	71	151.43	151.43	0.00	152.22	152.22	0.00	152.82	152.82	0.00	153.30	153.30	0.00
8.555	75	151.40	151.40	0.00	152.15	152.15	0.00	152.73	152.73	0.00	153.16	153.16	0.00
8.65	Structure												
8.745	284.7	151.36	151.36	0.00	154.48	154.97	0.49	156.02	156.03	0.01	156.03	156.03	0.00
8.76	299.7	154.85	154.85	0.00	155.22	155.22	0.00	155.47	155.47	0.00	155.74	155.74	0.00

The results indicate that there is a significant difference in results between the conventional and alternative method models for existing conditions at the structure inlet upstream of Hurontario Street. The results for the conventional method more accurately reflect actual conditions but the results for the alternative method model are needed to assess the impact of the BRT crossing. It should be noted that the flood elevations do not differ 15 metres upstream of the structure inlet. The results in Table 3 indicate that there is little impact from lowering the top of the twin culverts by 0.5 metres at the proposed BRT crossing except for the 25-year storm. However the increases in flood levels would not cause an increase in flood risk. Flows do not overtop Hurontario Street or spill onto Rathburn Road during any storm including the Regional Storm.

Table 4 compares the conventional modelling method with the alternative modelling method for existing conditions using XP-STORM.

Table 4 – Flood Elevation Comparison-Conventional Method (Ex1) vs. Alternative Method (Ex2) (XP-STORM) (m)

Section Number	Chainage (m)	2-Year Storm			25-Year Storm			100-Year Storm			Regional Storm		
		Ex1	Ex2	Diff.	Ex1	Ex2	Diff.	Ex1	Ex2	Diff.	Ex1	Ex2	Diff.
8.555	0	151.40	151.40	0.00	152.15	152.15	0.00	152.73	152.73	0.00	153.16	153.16	0.00
8.65	Structure												
8.745	284.7	152.14	152.65	0.51	152.78	154.00	1.22	153.53	154.85	1.32	154.45	156.50	2.05

Table 5 compares existing conditions with future conditions using XP-STORM for the alternative modelling method.

Table 5 – Flood Elevation Comparison-Existing vs. Future Conditions (HEC-RAS) (XP-STORM) (m)

Section Number	Chainage (m)	2-Year Storm			25-Year Storm			100-Year Storm			Regional Storm		
		Ex1	Ex2	Diff.	Ex1	Ex2	Diff.	Ex1	Ex2	Diff.	Ex1	Ex2	Diff.
8.555	0	151.40	151.40	0.00	152.15	152.15	0.00	152.73	152.73	0.00	153.16	153.16	0.00
8.65	Structure												
8.745	284.7	152.65	152.65	0.00	154.00	154.05	0.05	154.85	154.85	0.00	156.50	156.60	0.10

Although XP-STORM produces different results from HEC-RAS, the flood elevation differences between existing and future conditions are comparable.

4.0 SUMMARY OF FINDINGS

Key findings are as follows:

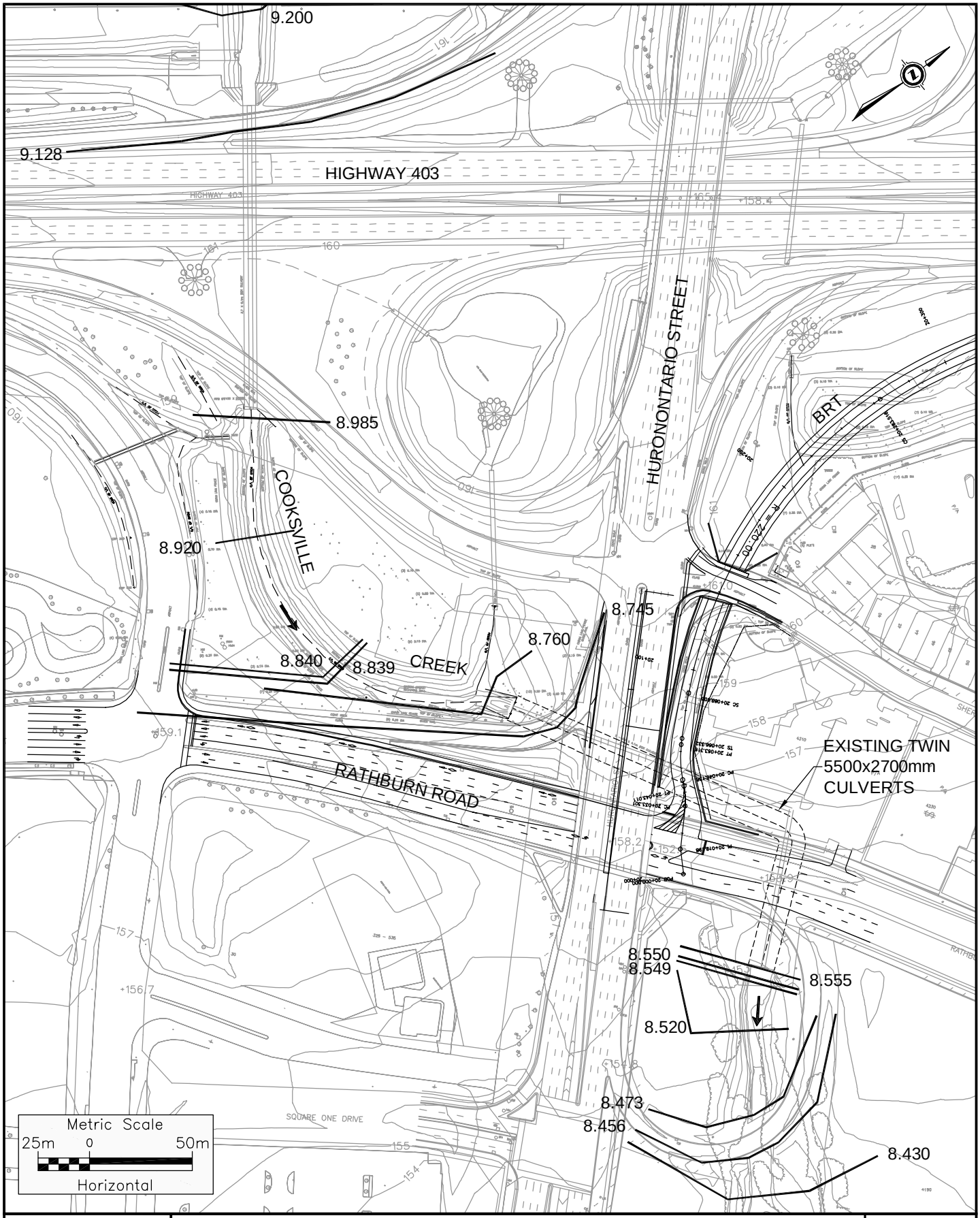
i) The HEC-RAS results indicate that there is a significant difference in results between the conventional and alternative modelling methods for existing conditions at the structure inlet. However the flood elevations did not differ 15 metres upstream of the structure inlet. The results also indicate that there is little impact from lowering the top of the culvert by 0.5 metres at the proposed BRT crossing.

ii) Although XP-STORM produces different results from HEC-RAS, the flood elevation differences between existing and future conditions are comparable.

iii) It is recommended that a smooth transition be made between the existing twin culverts and the impacted section to minimize hydraulic losses and to ensure that any debris does not get trapped by an abrupt change in cross-section.

All of which is respectfully submitted,
McCormick Rankin Corporation

Jeff Schroeder, C.E.T.



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DRAWING NAME: K:\DRAWINGS\6900-6999\6964 - MISSISSAUGA BRT\DRAINAGE\HEC-RAS SECTIONS\K6964-BRT COOKSVILLE HECRAS SECTION LOCATIONS.DWG

MRC

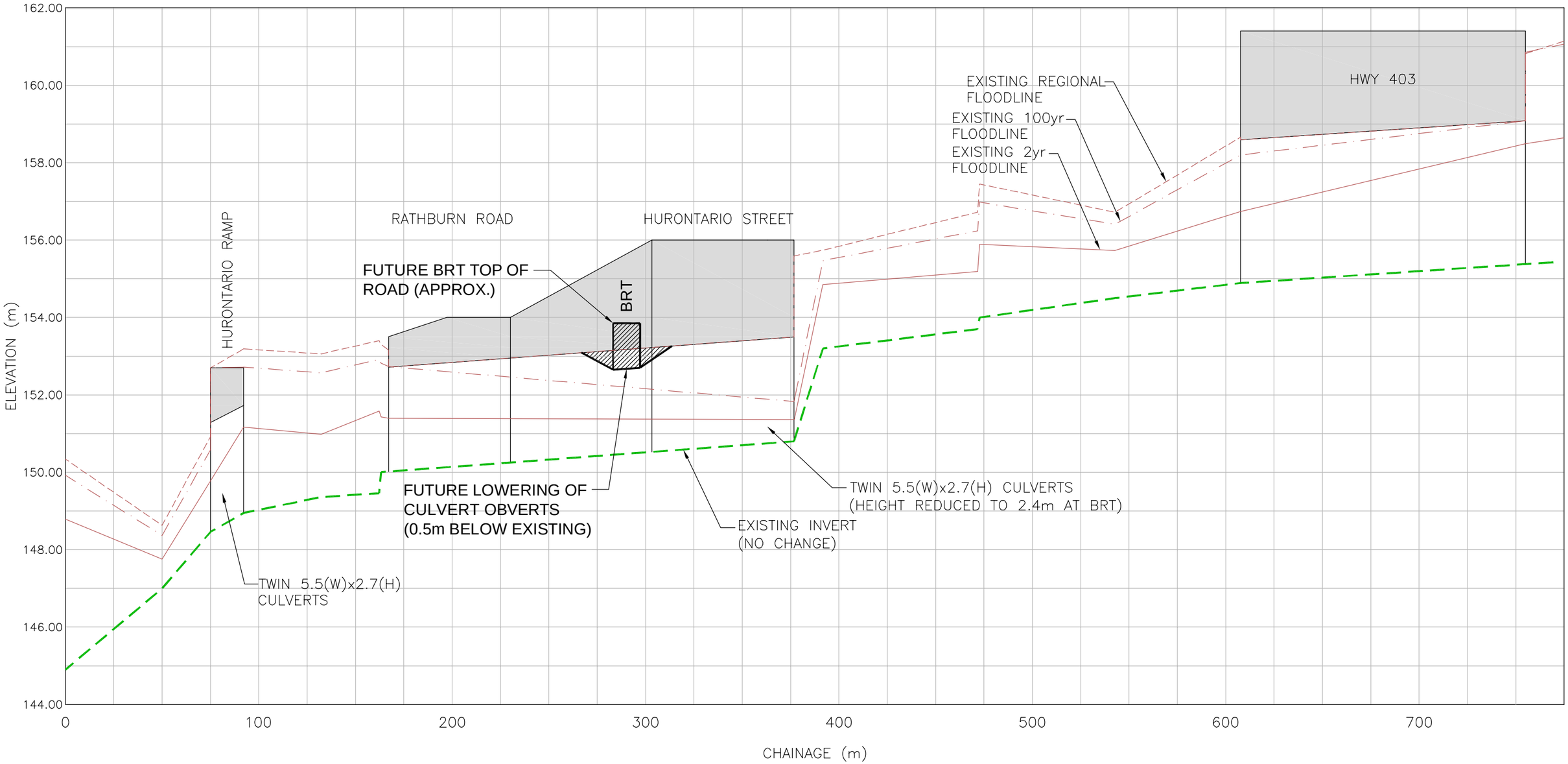
HEC-RAS SECTION LOCATIONS

BRT AT COOKSVILLE CREEK

EXHIBIT

1

MODIFIED: Oct. 23, 2008 1:08 PM



Metric Scale
1m 0 2m
Vertical

Metric Scale
25m 0 50m
Horizontal

MRC	COOKSVILLE CREEK PROFILES BRT AT COOKSVILLE CREEK	EXHIBIT 2

DRAWING NAME: K:\DRAWINGS\6900-6999\6964 - MISSISSAUGA BRT\DRAINAGE\K6964-COOKSVILLE CREEK PROFILE.DWG

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Subject: RE: Mississauga Bus Rapid Transit Project - Draft Environmental Assessment Addendum
Attachments: S6964-307-001GA.PDF

For your information, the structural General Arrangement drawing accompanying yesterday's e-mail regarding Cooksville Creek was outdated and inconsistent with the design memo; attached is the correct GA (please replace).

Regards,

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Sent: November 25, 2008 2:56 PM
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Subject: RE: Mississauga Bus Rapid Transit Project - Draft Environmental Assessment Addendum

Liam – we are anxious to finalize the CEAA report, EA Addendum, and BRT Preliminary Design Report and would be pleased to meet with you at your convenience. CVC is the sole remaining stakeholder with CEAA comments outstanding. Please advise when we can meet.

Attached for your information is a drawing of the proposed lowering of the Cooksville Creek culvert obvert east of Hurontario Street, as well as a summary of the investigation into the hydraulic impact of the proposal.

Thank you

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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, or you may contact me directly, my information is noted below.

Willy Ing
Project Leader, Bus Rapid Transit (BRT)
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Transportation and Works Department
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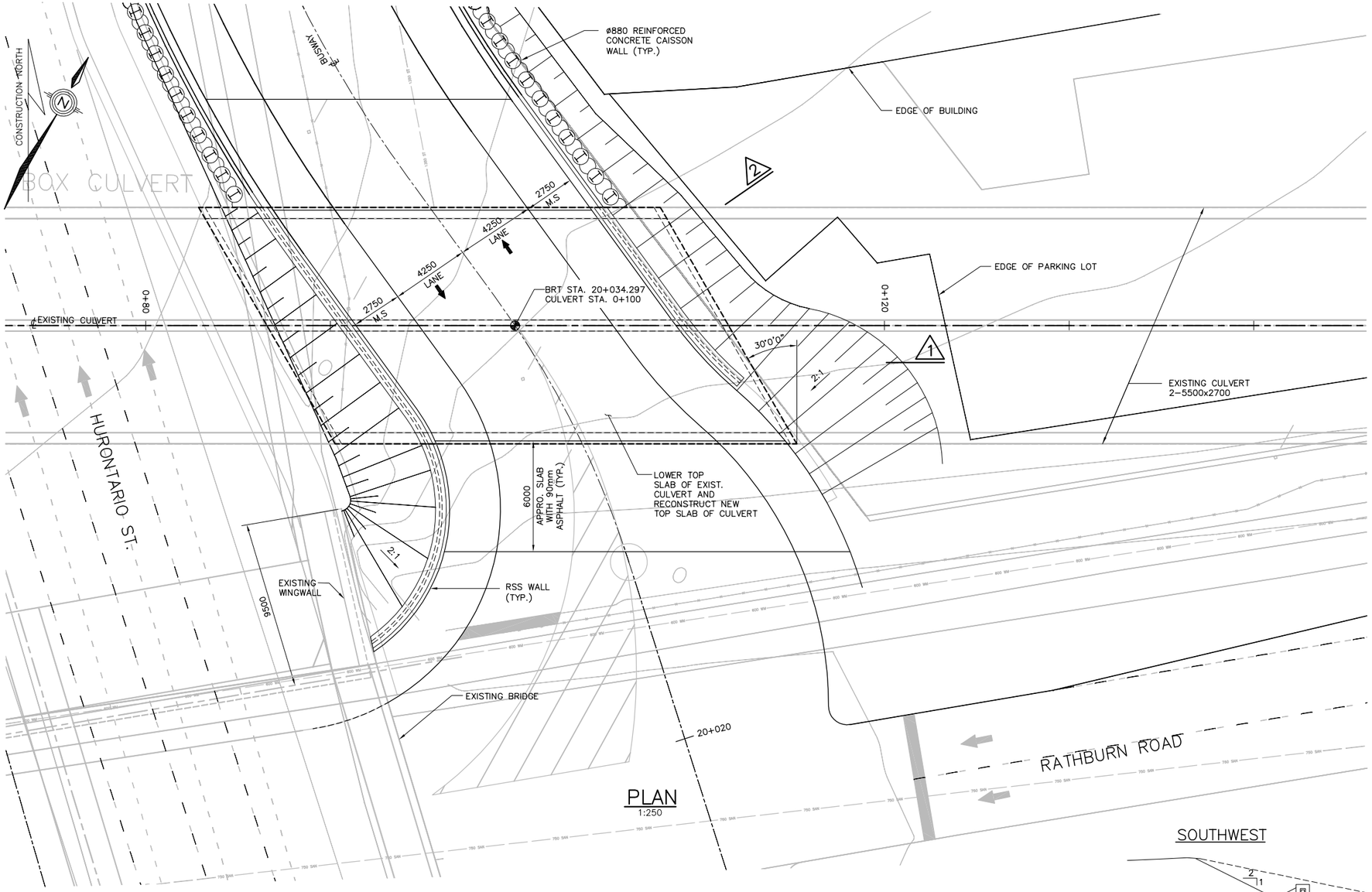
Mississauga, Ontario
L5B 2T4.
Phone: 905-615-3200 Ext. 5791
Fax: 905-896-5504
e-mail: willy.ing@mississauga.ca



PLAN
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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

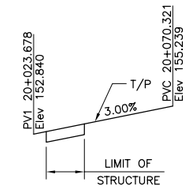
THE CONTRACTOR SHALL VERIFY ALL EXISTING ELEVATIONS AND DIMENSIONS AND REPORT ANY DISCREPANCIES TO THE CONTRACT ADMINISTRATOR PRIOR TO COMMENCING CONSTRUCTION.

ALL ELEVATIONS ARE TO GEODETIC DATUM.

ABBREVIATIONS

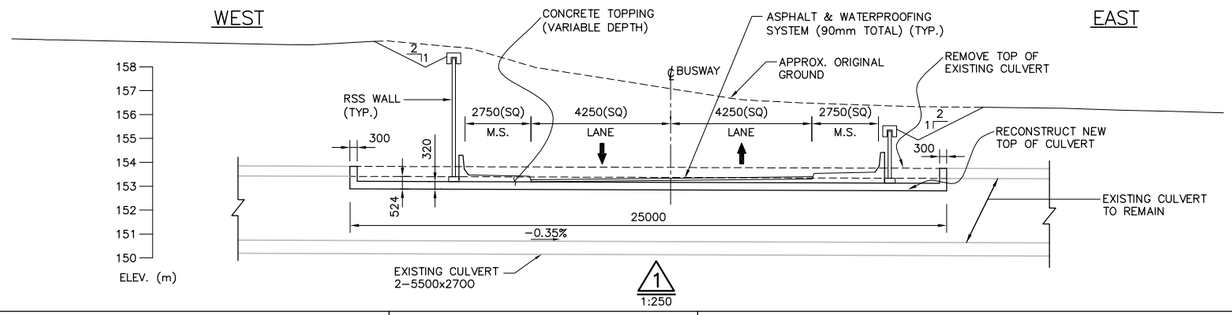
T/P	DENOTES TOP OF PAVEMENT
M.S.	DENOTES MAINTANANCE STRIP

SOUTH NORTH

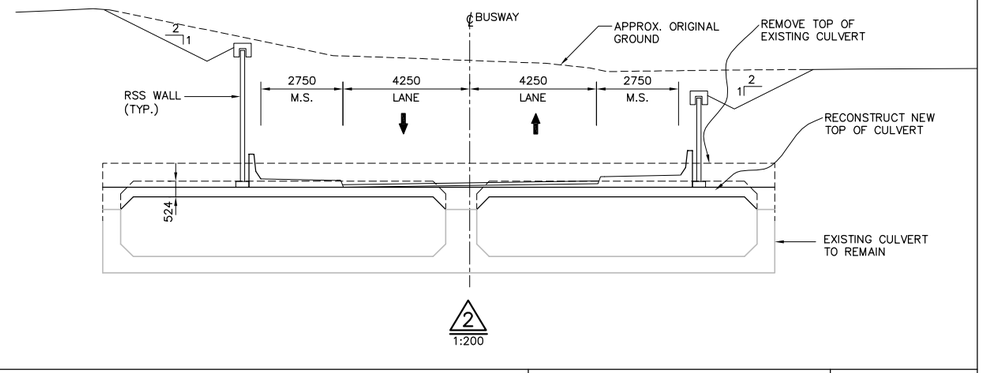


PROFILE OF BUSWAY
N.T.S.

WEST EAST



SOUTHWEST NORTHEAST



FILE LOCATION=S:\6964\7-BRT AT COOKSVILLE CREEK\
DRAWING NAME: S6964-307-001GALDWG
DRAWN BY: AMY ZHANG
MODIFIED: 08/11/26 16:16:57
DATE PLOTTED: 08/11/26 16:16:57

McCORMICK RANKIN CORPORATION

MISSISSAUGA
Leading today for tomorrow

MISSISSAUGA BUS RAPID TRANSIT PRELIMINARY DESIGN

BRT At Cooksville Creek
Preliminary General Arrangement

Date: NOVEMBER 2008

Scale: AS SHOWN

FIGURE NO. ---

Willy Ing

From: Schijns, Steve [SSchijns@mrc.ca]
Sent: 2009/01/12 2:28 PM
To: Bricks, Mike
Cc: Turvey, Dale; Bright, Katie; Shea, Andrew; Willy Ing; Geoff Wright; Scott W Anderson; stephanie.davies@gotransit.com; Kauppinen, Andrea
Subject: RE: Mississauga BRT and Cooksville Creek

Mike – as you know, I met with Liam Marray and Rizwan Haq of CVC this afternoon, to get their input on the BRT EA Addendum. Their key points are
- some minor text update at Winston Churchill
- correlate drainage comments in Addendum with PDR SWM plan
- MRC hydraulic engineer to discuss Cooksville Creek analysis with R Haq
- preliminary determination by CVC is that the Cooksville Creek culvert alteration is not a HADD, as long as the two-stage construction process as proposed is followed
- due to staff turnover at CVC, it would be useful to hold a briefing meeting for them within the first month of the detail design assignment(s)

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

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Website: www.mrc.ca

MINUTES OF MEETING

PROJECT:	Mississauga BRT
FILE NO.:	6964
DATE:	January 12, 2009 **TIME:** 1 pm
PLACE:	Credit Valley Conservation offices, Mississauga
PRESENT:	Liam Marray, CVC (Senior Planner / Ecologist) Rizwan Haq, CVC (Supervisor – Engineering Plan Review) Stephen Schijns, MRC
PURPOSE:	CVC comments on draft BRT EA Addendum (distributed October 2008)

PROCEEDINGS: **ACTION BY**:

1.1 Winston Churchill Boulevard

L. Murray noted that the Addendum and PDR should note that all wetlands are regulated (they weren't at the time of the 1992 EA), and that the CVC requires a compensation, mitigation, and/or replication of function plan for the loss of any regulated wetlands. — MRC

L. Murray requested that MRC identify if any rare or endangered species are located in the area of the changed alignment. — Ecoplans

R. Haq requested that the Addendum include enough information from the Preliminary Design Report to allow the reader to determine if storm water management can be achieved. — MRC

S. Schijns will provide CVC with a copy of the draft PDR for review, to complement the EA Addendum material. — MRC

1.2 Cooksville Creek

R. Haq requested that MRC perform the hydraulic analysis of the mid-culvert reduction on the basis of a continuous pipe with a restricted opening size. — MRC
MRC should quantify the spillover across Rathburn Road and determine the spill pathway, noting if it is any different from the existing situation. — MRC
He requested that the hydraulic analysis and conclusions be confirmed by a Professional Engineer rather than a Technician (CET). — MRC

He requested MRC provide a digital model of the hydraulic analysis. S. Schijns advised that the MRC drainage engineer will contact Mr. Haq by phone (1-800-668-5557) to review and confirm his requirements and comments.	MRC MRC
S. Schijns described the culvert reconstruction process at Cooksville Creek, 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). L. Marray advised that, on that basis 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 detail design.	Ecoplans CVC

1.3 Design

S. Schijns went through the project status and timing. L. Marray suggested that the detail design team(s) hold a CVC briefing within the first month of their assignment(s). This would ensure that CVC's new staff are up to date on the project.	Detail Design

The foregoing represents the writer's understanding of the major items of discussion and the decisions reached and/or future actions required. If the above does not accurately represent the understanding of all parties attending, please notify the undersigned within 48 hours of receiving these minutes at 905-823-8500.

Minutes prepared by,

McCormick Rankin Corporation

Stephen Schijns, P. Eng.

cc: Attendees
M. Bricks, K. Bright – Ecoplans
D. Turvey, A. Shea, K. Rodger, A. Kauppinen - MRC
G. Wright, S. Anderson, W. Ing – City of Mississauga (BRT)
S. Davies, M. Adebayo – GO Transit

T R C A

Willy Ing

From: Sharon Lingertat [SLingertat@trca.on.ca]
Sent: 2008/11/27 1:55 PM
To: mbricks@ecoplans.com
Cc: Geoff Wright; Willy Ing; Beth Williston; Carolyn Woodland; Quentin Hanchard; Chandra Sharma
Subject: CFN 39971 - Mississauga Bus Rapid Transit Comments
Attachments: KSS100_20081127_18423375.pdf

Mike,

Please find attached our comments on the draft Addendum.

Thanks,
Sharon Lingertat
Planner II, Environmental Assessment Planning
Toronto and Region Conservation Authority
Tel: (416) 661-6600 ext. 5717
Fax: (416) 661-6898
Email: slingertat@trca.on.ca
www.trca.on.ca

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.

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

Yours truly,

Sharon Lingertat

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

F:\EA\Letters for Mailing\39971 – draft Addendum

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 with the Regional Floodplain. Please clarify the extent of the proposed berm modifications. Where modifications are proposed within the Regional Floodplain, please undertake a hydraulic assessment to confirm that there are no adverse impacts to flood levels. Table 7-1 should also be 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.

O R C

Willy Ing

From: ORC [Lisa.Myslicki@ontariorealty.ca]
Sent: 2008/10/06 3:12 PM
To: Willy Ing
Cc: MacKenzie, John (ORC); Derry, Mike (ORC); Grace, Patrick (ORC); Rusin, Peter (ORC)
Subject: RE: Mississauga Bus Rapid Transit Project - Draft EnvironmentalAssessment Addendum
Attachments: Mississauga Draft EA addendum response.pdf

Good afternoon,

Please find the attached for your information. Guidelines regarding ORC's Class EA can be found at:

http://www.ontariorealty.ca/Assets/MEI+Class+EA+Document+(amended)_11Sep2008.pdf

I recommend you review the document in order to determine the EA class, related to your specific undertaking and associated requirements.

Please note that amendments to ORC's Class EA are currently underway.

Furthermore, the following information may be useful in completing the Mississauga EA. Please note that the MOE has indicated ORC may not be able to defer to the MEA, at this moment.

However, that being said, 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.

The 7-point analysis criteria for a Category B: Consultation and Documentation Report include:
Describe the Undertaking
Description of Environmental Effects, Mitigation and Monitoring
Consult directly with affected agencies and public
Reporting
Confirmation of Category B
Notice of Completion and 30 day review
Category Elevation and Part II Order if requested by any

Please note that a Category B is the EA class that the majority of the undertakings will fall under but, again, please read the Class EA to identify what class your specific undertaking will be associated with.

I must stress again that we are currently in the process of undergoing amendments to the Class EA and the MOE has indicated that ORC may not be able to defer to the MEA. The process of deferring our EA is currently under review and as such, although the MEA may have articulated the above, ORC may not be able to defer. However, it would be highly recommended for the proponent to provide the MEA to ORC (with the appendices). The ORC can utilize the MEA to complete the Class EA. During the consultation portion of the EA, the individuals related to each specific stakeholder can be reconsulted (i.e the same person at the Conservation Authority will be contacted and will have any mitigation measures already planned).

Apologies for not being able to provide a more definite route and I hope this information will be satisfactory.

Regards,

Lisa Myslicki
Environmental Coordinator
Ontario Realty Corp.
☎ **Direct: 416 212 3768**
🖷 (416) 212-1131
✉ **Lisa.Myslicki@ontariorealty.ca**
please consider the environment before printing this e-mail.

From: Willy Ing [mailto:Willy.Ing@mississauga.ca]
Sent: Monday, October 06, 2008 11:42 AM
To: MacKenzie, John (ORC)
Cc: Geoff Wright; Grace, Patrick (ORC); Rusin, Peter (ORC)
Subject: Mississauga Bus Rapid Transit Project - Draft EnvironmentalAssessment Addendum

Dear Mr. MacKenzie:
This e-mail is a follow up to our message of September 26, 2008 noted below.

In our e-mail, the City of Mississauga and GO Transit requested a response from the Ontario Realty Corporation (ORC) within 5 working days regarding the possibility of the ORC participating in a review of our Draft Mississauga Bus Rapid Transit Environmental Assessment Document. As no response has been received from the ORC, we will assume that the ORC is not interested in participating.

However, if there is still interest, please advise our office very soon.

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

Dear Mr. MacKenzie:

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 Ontario Realty Corporation (ORC) to determine if the ORC would be interested in participating in this draft EA Addendum review process, and if possible, that any comments from the ORC 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, the City of Mississauga has been working with Patrick Grace and Peter Rusin regarding the property matters to support the BRT through Mississauga.

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, 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

Ontario Realty Corporation
Société immobilière de l'Ontario

1 Dundas Street West,
Suite 2000, Toronto, Ontario
M5G 2L5

October 6, 2008

To Whom It May Concern,

RE: ORC Initial Comments on Environmental Screening – Mississauga Bus Rapid Transit Project – Draft EA addendum

Thank you for circulating Ontario Realty Corporation (ORC) on your Draft EA addendum. The ORC is the strategic manager of the government's real property with a mandate of maintaining and optimizing value of the portfolio, while ensuring real estate decisions reflect public policy objectives of the government.

Our preliminary review of your notice and supporting information indicates that ORC-managed property is directly in the study area. As a result, your proposal may have the potential to impact this property and/or the activities of tenants present on ORC-managed lands.

Potential Negative Impacts to ORC Tenants and Lands

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 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 of this undertaking, you should contact the undersigned to discuss these issues at the earliest possible stage of your study.

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.

Cultural Heritage Issues
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.

Potential Triggers Related to ORC's Class EA

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.

The purchase of ORC lands or disposal of rights and responsibilities (e.g. easement) for ORC lands triggers the ORC's Class EA. If any of these are being proposed as part of any alternative, please contact the Sales and Marketing Group through ORC's main line (Phone: 416-327-3937, Toll Free: 1-877-863-9672) at your earliest convenience to discuss next steps.

The undertaking of physical work on ORC lands also triggers the ORC Class EA. If any work is proposed on ORC lands, please contact the undersigned at your earliest convenience to discuss next steps.

Specific Comments

Please note that ORC lands maybe in the study area; however, at the moment a map is not easily accessible at the moment. Please correspond with Patrick Grace and Peter Rusin with regards to the above matter.

Concluding Comments

Thank you for the opportunity to provide initial comments on this undertaking. If you have any questions on the above I can be reached at the contacts below.

Sincerely,

Lisa Myslicki
Environmental Coordinator
Ontario Realty Corporation - Professional Services
1 Dundas Street West,
Suite 2000, Toronto, Ontario
M5G 2L5
(416) 212-3768
lisa.myslicki@ontariorealty.ca

Willy Ing

From: Myslicki, Lisa (ORC) [Lisa.Myslicki@ontariorealty.ca]
Sent: 2008/12/04 3:47 PM
To: Willy Ing
Subject: RE: Mississauga BRT EA Addendum

Good afternoon Willy,

Thank you for your prompt reply. In order for ORC to be able to defer to another EA, the EA must follow the below criteria, we can defer to it. Even if there is a point or two missing, we may just need that gap filled in before we can sign off on the deferral (i.e missing archaeology or Phase I ESA). Once ORC has reviewed the MEA, and approved the deferral, the proponent/client will be required to fill out a deferral form.

Generally, the sale of land and easement on Parkway Belt lands, is considered a Category B EA. As such, it would need to meet the 7 point analysis criteria and granted approval by the regulatory agencies

The 7-point analysis criteria in the MEI (for ORC) Class EA for non-energy projects (Sept 2008) steps for a Category B: Consultation and Documentation Report are the following:

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

6. Notice of Completion and 30 day review

7. Category Elevation and Part II Order if requested by any

I highly recommend you review the Class EA in order to determine what Class your undertaking will fall under. The above is a general guideline to the 7 point Analysis for Class B **only**.

Below is the link to ORC's Class EA.

http://www.ontariorealty.ca/What_We_Do/Environment___Heritage.htm

If the MEA follows the 7 point analysis, there are some specific things that I can point out to you to watch for.

1. The EA needs to make reference to the need for land acquisition/easements. This is imperative because otherwise technically the EA does not cover ORC's undertaking.
2. Appropriate archaeological work has been done or committed to. A statement that archaeological Stage 2/3 work will be done later (usually once a final alignment is confirmed at the detailed design stage) is acceptable.
3. A Phase I ESA is done for our lands. This may not be in the EA but can been done separately as a due diligence tool.
4. The EA has to include **ORC's** typical consultations. Importantly, the MNR must be consulted or a strong attempt to do so must be made. However, from experience, usually MNR is not involved in MEA projects and a form letter that they ignored will not suffice for ORC.
5. The EA has to be to a reasonable level of detail. Some MEA projects don not require a great deal of assessment and as such, do not provide the level of detail ORC can be comfortable with. This means that if the 7 point analysis criteria was completed but not documented or detailed to the level, that ORC would require, we cannot defer.

Thank you for identifying Point 1 form me in the MEA. I am assuming then, that there will be no property acquisition? I look forward to seeing the circulation to the MNR and TRCA.

I hope this helps and thanks you for your patience. Have a good day,

Lisa Myslicki
Environmental Coordinator
Ontario Realty Corp.
☎ **Direct: 416 212 3768**
(416) 212-1131
Lisa.Myslicki@ontariorealty.ca
please consider the environment before printing this e-mail.

From: Willy Ing [mailto:Willy.Ing@mississauga.ca]
Sent: Thursday, December 04, 2008 3:27 PM
To: Myslicki, Lisa (ORC)
Subject: Mississauga BRT EA Addendum

Hi Lisa,

Attached is Vol 1 Section 5.2.10 excerpt on the bottom of page 279 indicating that "…it is assumed that the City would enter into a long-term lease or easement arrangement with the property owner which would protect both parties' interest." To date there has been no change to the assumption.

Please advise if there is further clarification required on this matter.

I will get back to you on the TRCA and MNR correspondence.

Willy

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

Transportation and Works Department

City of Mississauga
201 City Centre Drive, Suite 800
MISSISSAUGA ON L5B 2T4

www.mississauga.ca

Leading today for tomorrow

November 7, 2008

BY COURIER

Ms. Lisa Myslicki
Environmental Coordinator
Ontario Realty Corporation
Professional Services
1 Dundas Street West, Suite 2000
Toronto, ON M5G 2L5

RE: Mississauga Bus Rapid Transit Project

Dear Ms. Myslicki:

Further to your letter and email of October 6, 2008, we thank you for providing ORC's comments regarding the draft Environmental Assessment (EA) Addendum. As you have noted, portions of the Mississauga BRT will be located on lands managed by the ORC. The City of Mississauga continues to consult with ORC staff regarding the necessary agreements for use of ORC managed lands for this undertaking.

We understand that ORC does have a requirement to fulfill the ORC Class EA when disposing of or leasing land; however, we feel that since the 'ORC project' is ancillary to the EA approved BRT project, ORC's EA requirements have been addressed in a coordinated manner by the Minister of the Environment's approval of the Individal Environmental Assessment (IEA). We feel that this is in keeping with Section 9.7.1 of the ORC Class EA, and we would like to take this opportunity to provide information regarding the environmental assessment process to date and how the work addresses the requirements of the ORC Class EA.

The Mississauga Bus Rapid Transit facility (also known as the Mississauga Transitway) is also the Mississauga segment of the Greater Toronto Transit Authority's (GO Transit's) Inter-Regional Bus Rapid Transit. This Bus Rapid Transit (BRT) facility was planned and approved under the Ontario *Environmental Assessment Act* (approved on July 6, 1993), and an EA Addendum for an updated plan was approved on March 4, 2005. The project is now getting underway courtesy of funding from the federal, provincial, and municipal governments. As part of the current work, an additional EA Addendum will be filed. The Preliminary Design of the facility is currently being undertaken and construction is scheduled to be completed by 2013.

We are confident that the environmental assessment work completed for this project does and will continue to address ORC's seven-point analysis criteria for a Category B Consultation and Documentation Report. The following provides an overview of how the IEA Report addressed each of the seven requirements.

1. **Describe the Undertaking**
   - The IEA Report clearly documents the need for provincially-owned property which is ancillary to the transit project (refer to Section 5.2.10).

2. **Description of Environmental Effects, Mitigation and Monitoring**
   - The IEA Report documents the potential environmental effects of the project, the associated mitigation measures, and commitments to future work (refer to Section 5.3). Each factor included in ORC's seven-point, site-specific analysis (per Section 4.2 of ORC's Class EA) has been addressed. Monitoring commitments are identified in Section 6.3 of the IEA Report.

3. **Consult Directly with Affected Agencies and the Public**
   - The IEA Report documents consultation directly with effected parties, including but not limited to agencies and the general public (refer to Section 2.5). Stakeholder involvement was a key component throughout the planning process.

4. **Reporting**
   - The IEA Report documents all the issues typically discussed in a Category B Consultation and Documentation Report.

5. **Confirmation of Category B**
   - The IEA Report clearly identifies the need to acquire provincially-owned property. The property requirements have some potential for adverse environmental effects; however, the effects are well understood from a technical perspective and are minor in nature. This is in keeping with a Category B undertaking.

6. **Notice of Completion and 30 Day Calendar Review**
   - The IEA Report was made available for public and agency review in accordance with the Ontario *Environmental Assessment Act*. The IEA formal government review and approval process is more rigorous than the ORC's Notice of Completion requirements.

7. **Part II Order Requests (if any)**
   - The IEA formal government review and approval process is more rigorous than the Part II Order Process. As noted in Section 9.3.3 of ORC's Class EA, Part II Order Requests do not apply to undertakings which have been approved under an Individual Environmental Assessment.

It is worth noting that the EA Addenda document design revisions since the approval of the IEA and that the information requirements of the seven-point analysis criteria are also addressed within the EA Addenda. For ease of reference, enclosed is a hard copy as well as a CD containing a copy of both the IEA Report and the first EA Addendum. ORC has recently received a draft copy of the second EA Addendum.

We would appreciate confirmation that ORC is in agreement that the work completed to date does address the requirements under the ORC Class EA.

Should you have any further questions regarding this project or require additional information, please do no hesitate to contact Willy Ing, BRT Project Leader, at 905-615-3200 extension 5791 or by email: willy.ing@mississauga.ca

Sincerely,

Geoff Wright, P.Eng., MBA
Director, BRT Project Office
905-615-3200, ext. 4940

c: Patrick Grace, ORC
Peter Rusin, ORC
Anil Wijesooriya, ORC
Geoff Woods, ORC
Dale Turvey, MRC
Steve Schijns, MRC
Mike Bricks, Ecoplans

Encl. CD
Mississauga Transitway Environmental Assessment Report (January 1992) Volume One
Mississauga Transitway Environmental Assessment Report (January 1992) Volume Two Appendices A-M
Mississauga Transitway Environmental Assessment Report (January 1992) Volume Three Appendices N-V
Mississauga Transitway Highway 403 Eglinton Avenue Corridor Environmental Assessment Addendum (October 2004)

Willy Ing

From: Myslicki, Lisa (ORC) [Lisa.Myslicki@ontariorealty.ca]
Sent: 2008/12/04 3:47 PM
To: Willy Ing
Subject: RE: Mississauga BRT EA Addendum

Good afternoon Willy,

Thank you for your prompt reply. In order for ORC to be able to defer to another EA, the EA must follow the below criteria, we can defer to it. Even if there is a point or two missing, we may just need that gap filled in before we can sign off on the deferral (i.e missing archaeology or Phase I ESA). Once ORC has reviewed the MEA, and approved the deferral, the proponent/client will be required to fill out a deferral form.

Generally, the sale of land and easement on Parkway Belt lands, is considered a Category B EA. As such, it would need to meet the 7 point analysis criteria and granted approval by the regulatory agencies

The 7-point analysis criteria in the MEI (for ORC) Class EA for non-energy projects (Sept 2008) steps for a Category B: Consultation and Documentation Report are the following:

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

6. Notice of Completion and 30 day review

7. Category Elevation and Part II Order if requested by any

I highly recommend you review the Class EA in order to determine what Class your undertaking will fall under. The above is a general guideline to the 7 point Analysis for Class B **only**.

Below is the link to ORC's Class EA.

http://www.ontariorealty.ca/What_We_Do/Environment___Heritage.htm

If the MEA follows the 7 point analysis, there are some specific things that I can point out to you to watch for.

1. The EA needs to make reference to the need for land acquisition/easements. This is imperative because otherwise technically the EA does not cover ORC's undertaking.
2. Appropriate archaeological work has been done or committed to. A statement that archaeological Stage 2/3 work will be done later (usually once a final alignment is confirmed at the detailed design stage) is acceptable.
3. A Phase I ESA is done for our lands. This may not be in the EA but can been done separately as a due diligence tool.
4. The EA has to include **ORC's** typical consultations. Importantly, the MNR must be consulted or a strong attempt to do so must be made. However, from experience, usually MNR is not involved in MEA projects and a form letter that they ignored will not suffice for ORC.
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Thank you for identifying Point 1 form me in the MEA. I am assuming then, that there will be no property acquisition? I look forward to seeing the circulation to the MNR and TRCA.

I hope this helps and thanks you for your patience. Have a good day,

Lisa Myslicki
Environmental Coordinator
Ontario Realty Corp.
☎ **Direct: 416 212 3768**
(416) 212-1131
Lisa.Myslicki@ontariorealty.ca
please consider the environment before printing this e-mail.

From: Willy Ing [mailto:Willy.Ing@mississauga.ca]
Sent: Thursday, December 04, 2008 3:27 PM
To: Myslicki, Lisa (ORC)
Subject: Mississauga BRT EA Addendum

Hi Lisa,

Attached is Vol 1 Section 5.2.10 excerpt on the bottom of page 279 indicating that "…it is assumed that the City would enter into a long-term lease or easement arrangement with the property owner which would protect both parties' interest." To date there has been no change to the assumption.

Please advise if there is further clarification required on this matter.

I will get back to you on the TRCA and MNR correspondence.

Willy

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

Willy Ing

From: Geoff Wright
Sent: 2009/01/19 9:40 AM
To: Myslicki, Lisa (ORC)
Cc: Willy Ing; mbricks@ecoplans.com; Bright, Katie
Subject: RE: Mississauga BRT Project

Hi Lisa:

I believe you were provided the information that was circulated to MNR in October.

As far as additional comments that we can offer, MNR was provided the opportunities to review and comment on the potential impacts of the BRT Project as part of the IEA process. This included using lands owned by ORC that would either have to be bought, leased or deeded in easement to the City ('your project'). I believe you already have a copy of the IEA Report which shows the BRT property requirements. This is the same document the MOE provided MNR as part of the formal Government Review they undertook to approve the project.

MNR was further asked as part of the current Preliminary Design Study whether they had an interest in the study and declined to participate and indicated that the environmental issues are local and best dealt with through the Conservation Authorities.

Given that MOE formally approved this project under the Ontario Environmental Assessment Act and MNR declined to participate in the current study as they were of the opinion that the environmental issues were local and best dealt with through the Conservation Authorities, it can be concluded that MNR does not have a concern with the BRT Project or the ancillary 'ORC Project'.

Perhaps we could arrange a phone conversation if you still have questions or require additional information.

Regards,

Geoff Wright, P.Eng., MBA
Director, Transportation Project Office
City of Mississauga
201 City Centre Drive
Mississauga, ON L5B 2T4

tel: 905-615-3200 ext. 4940
fax: 905-896-5504
web: www.mississauga.ca/brt

From: Myslicki, Lisa (ORC) [mailto:Lisa.Myslicki@ontariorealty.ca]
Sent: January 16, 2009 11:30 AM
To: Geoff Wright
Subject: RE: Mississauga BRT Project

Yes,

But my concern is that they were circulated on your undertaking not ours. Our undertaking is impact of sale or easement not Sites that would best suit the Mississauga BRT.
By evaluating the documentation they were provided with, I can ascertain if the information they were given also identifies our undertaking.

I hope this provides clarification.

Regards,

Lisa Myslicki
Environmental Coordinator
Ontario Realty Corp.
☎ **Direct: 416 212 3768**
(416) 212-1131
✉ **Lisa.Myslicki@ontariorealty.ca**
please consider the environment before printing this e-mail.

From: Geoff Wright [mailto:Geoff.Wright@mississauga.ca]
Sent: Friday, January 16, 2009 11:17 AM
To: Myslicki, Lisa (ORC)
Cc: Willy Ing; mbricks@ecoplans.com; Scott W Anderson
Subject: RE: Mississauga BRT Project

Hi Lisa,

As part of the formal government review conducted by MOE on the Individual Environmental Assessment (IEA) Report, MNR was provided with a copy of the full IEA Report. As part of the current Preliminary Design Study, no formal documentation has been provided to MNR as they have indicated that the environmental issues are local and best dealt with through the Conservation Authorities (see attached memo to file).

If you have additional questions, please give me a call at your convenience.

Geoff Wright, P.Eng., MBA
Director, Transportation Project Office
City of Mississauga
201 City Centre Drive
Mississauga, ON L5B 2T4

tel: 905-615-3200 ext. 4940
fax: 905-896-5504
web: www.mississauga.ca/brt

From: Myslicki, Lisa (ORC) [mailto:Lisa.Myslicki@ontariorealty.ca]
Sent: January 15, 2009 12:37 PM
To: Geoff Wright
Subject: RE: Mississauga BRT Project

Hi Geoff,

Thank you for your comments regarding MNR. What was circulated to them? What Site maps were provided to them?

Thank you,

Lisa Myslicki
Environmental Coordinator
Ontario Realty Corp.
☎ **Direct: 416 212 3768**
(416) 212-1131
✉ **Lisa.Myslicki@ontariorealty.ca**
please consider the environment before printing this e-mail.

From: Geoff Wright [mailto:Geoff.Wright@mississauga.ca]
Sent: Friday, December 12, 2008 4:32 PM
To: Myslicki, Lisa (ORC)
Cc: Willy Ing; Stephanie.Davies@gotransit.com; Schijns, Steve; Turvey, Dale; Wijesooriya, Anil (ORC); Rusin, Peter (ORC); Grace, Patrick (ORC); Woods, Geoff (ORC)
Subject: Mississauga BRT Project

Lisa,

Please see the attached letter and associated enclosures.

If you have any questions, please give me a call at your convenience.

Regards,

Geoff Wright, P.Eng., MBA
Director, BRT Project Office
City of Mississauga
201 City Centre Drive
Mississauga, ON L5B 2T4

tel: 905-615-3200 ext. 4940
fax: 905-896-5504
web: www.mississauga.ca/brt

Willy Ing

From: Willy Ing
Sent: 2009/03/03 10:04 AM
To: 'Myslicki, Lisa (ORC)'
Subject: RE: Mississauga BRT ORC

Lisa,
Some of our bus only roadways and parking lot driveways cross the ORC managed lands, but we will need ORC's help to clarify these areas. So it is both. I would suggest that I meet with you to go our latest BRT property plan. If possible, it may also be beneficial to have Patrick Grace attend too. Let me know.
Willy

From: Myslicki, Lisa (ORC) [mailto:Lisa.Myslicki@ontariorealty.ca]
Sent: 2009/03/03 9:48 AM
To: Willy Ing
Subject: RE: Mississauga BRT ORC

Willy,

Will this be impacting ORC managed Hydro corridor land or are there also other ORC lands in the study area?

Lisa Myslicki
Environmental Coordinator
Ontario Realty Corp.
☎ **Direct: 416 212 3768**
(416) 212-1131
Lisa.Myslicki@ontariorealty.ca
please consider the environment before printing this e-mail.

From: Willy Ing [mailto:Willy.Ing@mississauga.ca]
Sent: Tuesday, March 03, 2009 9:33 AM
To: Myslicki, Lisa (ORC)
Subject: RE: Mississauga BRT ORC

Thanks Lisa, much appreciated it. If it would help, middle of next week would be okay, as we won't be hearing back from Hydro One with there comments until then.

Willy

From: Myslicki, Lisa (ORC) [mailto:Lisa.Myslicki@ontariorealty.ca]
Sent: 2009/03/03 8:48 AM
To: Willy Ing
Subject: RE: Mississauga BRT ORC

I will need until Friday to figure this out.

Lisa Myslicki
Environmental Coordinator

Ontario Realty Corp.
☎ **Direct: 416 212 3768**
(416) 212-1131
Lisa.Myslicki@ontariorealty.ca
please consider the environment before printing this e-mail.

From: Willy Ing [mailto:Willy.Ing@mississauga.ca]
Sent: Monday, March 02, 2009 4:28 PM
To: Myslicki, Lisa (ORC)
Cc: Willy Ing; Grace, Patrick (ORC); Stephanie Davies; Geoff Wright; Scott W Anderson
Subject: Mississauga BRT ORC

Hi Lisa,

We (Mississauga, GO Transit, ORC, Hydro One, and MTO) convened a meeting this morning to discuss the mechanism for GO Transit and Mississauga to gain access to the ORC / Hydro One / MTO lands to support the BRT Project. Patrick Grace of the ORC had asked that we update you, and advise that GO Transit is leading the access negotiations.

To date we are working on outlining the land parcels under the ORC/Hydro One/MTO ownerships to support the BRT Project. GO Transit will organize and enter into agreement with ORC/Hydro One, and MTO for GO Transit and Mississauga to gain access to the required lands, but will need to be negotiated among the various provincial agencies through upcoming provincial polices and agreements. It is anticipated that all agreements should be in place by November/December 2009.

Patrick Grace suggested that I follow up with you to determine if there are any further ORC Environmental Assessment matters we need to address.

Willy

Willy Ing
Project Leader, Bus Rapid Transit (BRT)
Transportation Project Office
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

Willy Ing

From: Willy Ing
Sent: 2009/03/17 9:04 AM
To: 'Myslicki, Lisa (ORC)'
Cc: Erasmus, Jordan (ORC); Boudreau, Kelly (ORC); Geoff Wright; Stephanie Davies; Scott W Anderson
Subject: RE: Mississauga BRT

Hi Lisa,

Sorry for the late response. We are looking into the ORC's concerns.

I have the all the MNR correspondence on a CD for you. Will send it out today.

Will get back to you soon.

Willy

From: Myslicki, Lisa (ORC) [mailto:Lisa.Myslicki@ontariorealty.ca]
Sent: 2009/03/11 9:27 AM
To: Willy Ing
Cc: Erasmus, Jordan (ORC); Boudreau, Kelly (ORC)
Subject: Mississauga BRT

Good morning Willy,

I have completed reviewing the Mississauga BRT. There are a few minor issues that will need to be covered off.

1) I will need to have a Phase I ESA, completed within CSA standards and reliance extended to the ORC for any lands that will be affected by the BRT. If any further environmental work is required, this will also be needed.

2) I will need to have copies of all correspondence with the Conservation Authority and the MNR

3) I will need to have a deferral sheet signed off by the proponent once the above items have been determined.

Also, do you have any ideas as to what type of agreement the City is approaching ORC for? Let me know if you think we will still require a meeting with ORC.

Regards,

Lisa Myslicki

Environmental Coordinator

Ontario Realty Corp.

☎ **Direct: 416 212 3768**

(416) 212-1131

Lisa.Myslicki@ontariorealty.ca

<<Lisa Myslicki (ORC).vcf>>

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Website: www.mrc.ca

MINUTES OF MEETING

PROJECT:	Mississauga BRT
FILE NO.:	6964
DATE:	January 12, 2009 **TIME:** 1 pm
PLACE:	Credit Valley Conservation offices, Mississauga
PRESENT:	Liam Marray, CVC (Senior Planner / Ecologist) Rizwan Haq, CVC (Supervisor – Engineering Plan Review) Stephen Schijns, MRC
PURPOSE:	CVC comments on draft BRT EA Addendum (distributed October 2008)

PROCEEDINGS: **ACTION BY**:

1.1 Winston Churchill Boulevard

L. Murray noted that the Addendum and PDR should note that all wetlands are regulated (they weren't at the time of the 1992 EA), and that the CVC requires a compensation, mitigation, and/or replication of function plan for the loss of any regulated wetlands. — MRC

L. Murray requested that MRC identify if any rare or endangered species are located in the area of the changed alignment. — Ecoplans

R. Haq requested that the Addendum include enough information from the Preliminary Design Report to allow the reader to determine if storm water management can be achieved. — MRC

S. Schijns will provide CVC with a copy of the draft PDR for review, to complement the EA Addendum material. — MRC

1.2 Cooksville Creek

R. Haq requested that MRC perform the hydraulic analysis of the mid-culvert reduction on the basis of a continuous pipe with a restricted opening size. — MRC
MRC should quantify the spillover across Rathburn Road and determine the spill pathway, noting if it is any different from the existing situation. — MRC
He requested that the hydraulic analysis and conclusions be confirmed by a Professional Engineer rather than a Technician (CET). — MRC

He requested MRC provide a digital model of the hydraulic analysis. S. Schijns advised that the MRC drainage engineer will contact Mr. Haq by phone (1-800-668-5557) to review and confirm his requirements and comments.	MRC MRC
S. Schijns described the culvert reconstruction process at Cooksville Creek, 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). L. Marray advised that, on that basis 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 detail design.	Ecoplans CVC

1.3 Design

S. Schijns went through the project status and timing. L. Marray suggested that the detail design team(s) hold a CVC briefing within the first month of their assignment(s). This would ensure that CVC's new staff are up to date on the project.	Detail Design

The foregoing represents the writer's understanding of the major items of discussion and the decisions reached and/or future actions required. If the above does not accurately represent the understanding of all parties attending, please notify the undersigned within 48 hours of receiving these minutes at 905-823-8500.

Minutes prepared by,

McCormick Rankin Corporation

Stephen Schijns, P. Eng.

cc: Attendees
M. Bricks, K. Bright – Ecoplans
D. Turvey, A. Shea, K. Rodger, A. Kauppinen - MRC
G. Wright, S. Anderson, W. Ing – City of Mississauga (BRT)
S. Davies, M. Adebayo – GO Transit

Conservation Authorities and MNR

2655 North Sheridan Way
Mississauga, Ontario, L5K 2P8
Tel: (905) 823-4988
Fax: (905) 823-2669
E-mail: kbright@ecoplans.com
Website: www.ecoplans.com

MEMO TO FILE

RE:	Mississauga Bus Rapid Transit Project	
OUR FILE:	07-3272	
PREPARED BY:	Katie Bright	
CC:	Geoff Wright, City of Mississauga Willy Ing, City of Mississauga Mike Bricks, Ecoplans Anne MacMillan, Ecoplans	Clark Gunter, Ecoplans Dale Turvey, MRC Steve Schijns, MRC Andrew Shea, MRC
DATE:	October 5, 2007	
SUBJECT:	Telephone Conversation - Mark Heaton, Area Biologist, Ministry of Natural Resources (MNR) Aurora District	

I spoke with Mr. Mark Heaton to request confirmation regarding MNR's interest in the project and in particular MNR's interest in attending the October 24, 2007 agency meeting.

Mr. Heaton inquired as to what the main environmental features are within the study area. I provided a brief description of the project and explained that although there is some vegetation and terrestrial habitat the focus for the natural environment is primarily the watercrossings. Mr. Heaton requested a list of the watercourses potentially impacted by the project and I explained that the following watercourses are within the study area:
- Cooksville Creek;
- Etobicoke Creek;
- Little Etobicoke Creek;
- Renforth Creek; and
- Elmcrest Creek.

I noted that representatives from the Toronto and Region Conservation Authority and Credit Valley Conservation are involved with the project and that part of their involvement will be providing input regarding potential fish and fish habitat impacts. I also noted that DFO is involved from a CEAA perspective.

Mr. Heaton explained that since the natural environment interests are primarily focused on water crossings MNR is satisfied that involvement from TRCA, CVC and DFO will be sufficient to address any natural environment concerns. Mr. Heaton also noted that with MNR's reduced role in relation to the *Fisheries Act* and *Lakes and Rivers Improvement Act*, MNR is becoming less involved with works related to fish, fish habitat and watercourses.

I confirm that we will make note that MNR does not wish to be involved in the project and that they do not wish to receive any correspondence regarding the project.

From: Laura James [LJames@trca.on.ca]
Sent: Friday, October 05, 2007 1:54 PM
To: LeBrun, Kim
Subject: Re: Mississauga BRT

Kim,
There is not a vast amount of fisheries information available within the area you you have requested. It was once good fisheries habitat but now is degraded. The only sensitive aquatic/terrestrial species (watersnake) occurs near the lower end of the Little Etobicoke Creek, it is all warm water habitat currently.

Sincerely,
Laura James
Planner II - Environmental Assessment Review
Planning and Development
Toronto and Region Conservation Authority
5 Shoreham Drive, Downsview, ON M3N 1S4
Tel: 416.661.6600 x 5723 Fax: 416.661.6898
ljames@trca.on.ca

From: Clayton, Jon [JClayton@creditvalleycons.com]
Sent: Friday, October 05, 2007 11:56 AM
To: LeBrun, Kim Cc: Marray, Liam; James, Phil
Subject: RE: Mississauga BRT Project

Kim:

There is not much information available for Cooksville Creek. We have a Fish Collection Record from July 6, 1995 in our database. The station was located at Rathburn Road and no fish were caught during electrofishing. The FCR doesn't say who did the sampling. The comments on the FCR are "Degraded urban stream. 3m concrete drop at Rathburn Rd. Heavy algae growth. Watercourse is enclosed downstream of Rathburn Rd.". Additional fish records are available further downstream but fish may be absent from the QEW upstream. As far as the records of redside dace from NHIC go, I didn't find any in our database and suspect they may be from the Credit. Regardless, they are all historic records and redside are not currently found in Cooksville Creek. CVC is currently in the process of developing a Cooksville Creek Subwatershed Study. Information from this study may be available once a draft has been completed. Phil James is co-ordinating this project and he may be able to provide more information on when the draft will be ready.
Please let me know if you have any further questions.

Jon Clayton, (B.Sc. Agr.) Aquatic Biologist
Credit Valley Conservation
1255 Old Derry Road Mississauga, Ontario L5N 6R4
Phone: (905) 670-1615 x241
Fax: (905) 670-2210
Web: www.creditvalleycons.com

2655 North Sheridan Way
Mississauga, Ontario, L5K 2P8
Tel: (905) 823-4988
Fax: (905) 823-2669
E-mail: kbright@ecoplans.com
Website: www.ecoplans.com

NOTES OF MEETING

PROJECT:	Mississauga Bus Rapid Transit (BRT) Facility		
FILE NO.:	07-3272		
DATE:	October 24, 2007	**TIME:**	9:30 a.m.
PLACE:	McCormick Rankin Corporation, Mississauga		
PRESENT:	Liam Marray	Credit Valley Conservation	
	Allan Newell	Credit Valley Conservation	
	Beth Williston	Toronto and Region Conservation Authority	
	Sharon Lingertat	Toronto and Region Conservation Authority	
	Willy Ing	City of Mississauga	
	Scott Anderson	City of Mississauga	
	Muyiwa Adebayo	GO Transit	
	Steve Schijns	McCormick Rankin Corporation	
	Darrell Wunder	McCormick Rankin Corporation	
	Anne MacMillan	Ecoplans Limited	
	Mike Bricks	Ecoplans Limited	
	Katie Bright	Ecoplans Limited	
PURPOSE:	Initial meeting to introduce the project, review potential impacts and discuss mitigation strategies.		

The following notes provide an overview of the meeting.

ITEM	PROCEEDINGS:	ACTION BY:
1.0	**Introductions**	
1.1	Roundtable introductions occurred. It was noted that Dave Gibson (Department of Fisheries and Oceans [DFO]) was invited to the meeting but due to scheduling conflicts he was unable to attend. DFO will be kept informed of the progress as it is anticipated that they will be required to provide input to Transport Canada as part of the CEAA Screening. It was noted that the Conservation Authorities will be responsible for making HADD determinations and discussing mitigation/compensation.	
2.0	**Project Overview and Status**	
2.1	M. Bricks provided an overview of the project including the completion of the original 1992 Environmental Assessment (EA) and the 2004 EA Addendum. The current project represents Phase I (approximately two-thirds by dollar value) of the capital works and includes BRT West (Winston Churchill Boulevard to Erin Mills Parkway) and BRT East (Centre View Drive to Renforth Station). The portion of the Mississauga BRT facility between BRT East and BRT West (i.e. along Highway 403) is currently operational.	

ITEM PROCEEDINGS: **ACTION BY:**

It was noted that GO Transit is responsible for the design and construction of the BRT West and the City of Mississauga is responsible for the design and construction of the BRT East; however, the City of Mississauga is coordinating the preliminary design of both sections.

M. Bricks explained that the previous EA work provided a conceptual design for BRT East and BRT West. A map showing the project limits and conceptual design is attached to these notes. The current Phase I project will bring the design for BRT East and BRT West to a preliminary design level of detail. In addition, the Project Team is pursuing a decision under the Canadian Environmental Assessment Act (CEAA). Transport Canada and Infrastructure Canada are triggered under CEAA as they are providing funding for Phase I of this project. Transport Canada is coordinating the CEAA Screening process. Other potential CEAA triggers include the Department of Fisheries and Oceans (potential Fisheries Act Authorization) and the National Energy Board (potential approval requirements for works near interprovincial pipelines).

S. Schijns provided a description of works included in the previous EA documents that will not be completed as part of the funded BRT East and BRT West works. Construction of Phase I of the project is to commence in 2009 with completion scheduled for 2012. As a result, CEAA approval and completion of preliminary design must be completed as soon as possible in 2008. Due to funding, the project schedule is not flexible.

3.0 Natural Environment Features, Potential Impacts and Mitigation Strategies

3.1 Natural environment features were reviewed with reference to the information tables distributed prior to the meeting as well as aerial photo mapping of the study area.

3.2 A. MacMillan provided a quick overview of the terrestrial features within the study area. In general, the study area is highly disturbed and effects will be limited to edge impacts to relatively minor vegetation units. It is anticipated that the terrestrial effects of the project will be fairly limited and that mitigation can be developed to address and minimize the effects.

3.3 <u>Cooksville Creek (CVC jurisdiction)</u>

A. MacMillan provided an overview of the creek features and noted that the Cooksville Creek does not directly support fish use, however it could be considered to support indirect fish habitat.

S. Schijns explained that a realignment of the Cooksville Creek will ultimately be required due to a bus layover area and other future works in the area (both the Mississauga BRT and any works resulting from the new Hurontario Transitway study). He noted that the Project Team was still sorting out what will be constructed as part of this project. M. Bricks noted that impact assessment will be based on what is proposed to be constructed as

ITEM	PROCEEDINGS:	ACTION BY:
	part of this project. If a realignment is not proposed at this time, that effect will be considered in the cumulative effects assessment. It is anticipated that the conceptual realignment of Cooksville Creek will be developed as part of the current study; however, the approach and timing for approval will need to be confirmed.	City/MRC/ Ecoplans
	The potential for the harmful alteration, disruption or destruction of fisheries habitat (HADD) was discussed. L. Marray suggested that it is likely that the realignment of Cooksville Creek would be a HADD and explained that, as with any other watercrossing, Fisheries Act Authorization could not be obtained until the realignment is designed. A. MacMillan noted that recent DFO direction regarding channel realignment is that realignment is not automatically considered HADD. Given the low sensitivity of the habitat and residual scale of negative effect, particularly if the realigned channel is the same as the original channel length, the realignment might not require authorization.	
	D. Wunder noted that it is possible that the watercourse may need to be enclosed in a culvert given the elevation of the BRT relative to the channel. W. Ing inquired if the enclosure would be considered a HADD. L. Marray explained that enclosure would be a HADD; however, A. MacMillan indicated that DFO has provided direction that enclosures may not always result in a HADD, depending again on the sensitivity of the habitat and scale of the effects.	
	It was acknowledged that it is difficult to make a preliminary HADD determination without design details. It was also noted that when considering the impacts of works in the area of watercrossings stormwater management (e.g. capacity, treatment) will also need to be addressed. It was agreed that MRC would develop addition design details to be reviewed at the next meeting. Once reviewed, formal HADD determinations could be made.	MRC
	A. MacMillan inquired about compensation opportunities along Cooksville Creek if it is determined that compensation is required. L. Marray explained that compensation would likely be focused on Cooksville Creek north of Dundas Street, where there is a barrier to fish movement. It was agreed a conceptual compensation strategy would be developed during preliminary design if it is determined that compensation is required. L. Marray explained that CVC is currently undertaking a subwatershed study for Cooksville Creek. It is anticipated that findings from the subwatershed study could assist with the development of the compensation strategy. L. Marray also explained that modelling is available for the Cooksville Creek and that the modelling will be provided to D. Wunder. A. MacMillan noted that compensation that far off-site on private property was not desirable; however, L. Marray noted the city owned lots of property along the creek.	CVC

ITEM	PROCEEDINGS:	ACTION BY:
3.4	Eastern Tributary of Cooksville Creek (CVC jurisdiction) A. MacMillan explained that only a short section of the eastern tributary of Cooksville Creek upstream of the highway is open channel; the balance of the channel further upstream, as well as through and downstream of the right-of-way is piped. S. Schijns explained that the open section of the channel will not be directly impacted during construction since the right-of-way will be extended to the south (downstream) where the channel is already enclosed. As a result, it is anticipated that standard mitigation measures (e.g. erosion and sediment control, temporary flow passage) will employed to mitigate any potential indirect impacts to the watercourse.	
3.5	Little Etobicoke Creek (TRCA jurisdiction) A. MacMillan provided an overview of the creek features and noted that the Little Etobicoke Creek provides warmwater habitat. It is anticipated that the creek can be fully spanned with a new bridge. S. Schijns explained that the new structure will most likely be at the same elevation as the existing Eastgate Parkway structure.	
	B. Williston explained that the TRCA has identified the area along the north side of Eastgate Parkway as wetland. The wetland has not been evaluated. S. Lingertat inquired if Ecoplans has received current data from TRCA. A. MacMillan explained that requests have been made but all data (including regulatory limits mapping) has not been received. S. Lingertat will ensure that Ecoplans receives all current data and mapping for the watercrossings within the study area.	TRCA
	B. Williston noted that TRCA in partnership with a local stewardship group does have plans for remedial work within the vicinity of Little Etobicoke Creek and the identified wetland. The status and progress of the remedial plans will be review by TRCA and details provided to Ecoplans.	TRCA
	B. Williston confirmed that it is likely that if the new structure fully spans the creek (including the edge of valley) the proposed works should not result in HADD; however, TRCA will need to review the proposed structure design prior to making a preliminary HADD determination. It was agreed that MRC would develop addition design details to be reviewed at the next meeting. Once reviewed, formal HADD determinations could be made. A. MacMillan noted that provided the structure spans the bankfull channel, DFO's Operational Statement for Clear-span Bridges should apply.	MRC
	S. Lingertat inquired if fluvial geomorphology reporting is available for the watercrossing. D. Wunder explained that a fluvial geomorphologist will complete an assessment as part of the current study. TRCA would like to review any reporting completed as part of the assessment. When the reporting is available, D. Wunder will provide a copy of the fluvial geomorphologist's input to S. Lingertat.	MRC

ITEM	PROCEEDINGS:	ACTION BY:
3.6	Etobicoke Creek (TRCA jurisdiction) A. MacMillan provided an overview of the creek features and noted that Etobicoke Creek provides warmwater fish habitat. S. Schijns explained that the busway will be in close proximity to the existing Eglington Avenue structure and that it is anticipated that the new structure crossing the Etobicoke Creek will be at a similar elevation as the existing structure. S. Lingertat noted that TRCA's mapping indicates that the regional floodline overtops Eglington Avenue at the existing structure. TRCA noted concerns regarding the floodline in the vicinity of the new structure. B. Williston confirmed that it is likely that if the new structure fully spans the creek (including the edge of valley) the proposed works should not result in a HADD; however, TRCA will need to review the proposed structure design prior to making a preliminary HADD determination. It was agreed that MRC would develop addition design details to be reviewed at the next meeting. Once reviewed, formal HADD determinations could be made.	MRC
3.7	Elmcrest Creek (TRCA jurisdiction) A. MacMillan provided an overview of the creek features and noted that Elmcrest Creek appears to only support indirect fish habitat, and it is quite disturbed. The proposed works at Elmcrest Creek are anticipated to require realignment of the 'creek', since it parallels the north side of the highway where works are proposed. It is also possible that the creek may have to be enclosed as part of the works rather than realigned. B. Williston explained that although TRCA regulates Elmcrest Creek, a field visit is required to confirm its character and status of the watercourse since it may just be a swale or highway ditch. B. Williston noted that determinations made based on field visit findings regarding the watercourse supersede any existing data; however, because the area is Regulated a permit will still be required under Ontario Regulation 166/06.	
3.8	Renforth Creek (TRCA jurisdiction) A. MacMillan provided an overview of the creek features and noted that Renforth Creek also appears to be a fairly minor and disturbed feature. B. Williston indicated that Renforth Creek is not mapped as being regulated within the study area; however, a field visit will be required to confirm the status.	
3.9	It was recognized that prior to the next meeting conceptual watercourse crossing designs will be required along with additional details regarding the realignment of Cooksville Creek (e.g. timing for approval).	City/MRC
	Ecoplans will update the information tables based on input from this meeting and additional details and mapping from the Conservation Authorities. The updated tables and conceptual watercrossing designs will be distributed in advance of the next agency meeting.	City/MRC/ Ecoplans

ITEM	PROCEEDINGS:	ACTION BY:
4.0	**Stormwater Management**	
4.1	D. Wunder explained that the study approach to stormwater management will be to attain an enhanced protection level. It is anticipated that bioswales (ditches) will be employed and opportunities to tie-into existing stormwater management ponds will be reviewed. D. Wunder noted that use of stormceptors will be considered where bioswales/outletting to existing stormwater management ponds will not be possible. A. Newell explained that CVC discourages the use of stormceptors. In addition, CVC requested that when stormwater management plans are developed consideration should be given to incorporate opportunities to treat areas that are currently untreated.	
5.0	**Next Steps**	
5.1	D. Wunder noted that the site visit to review stormwater management aspects should occur in the next few weeks. It was agreed that this would be a good opportunity for TRCA to complete a field visit along with members of the Project Team. S. Lingertat will provide D. Wunder a list of dates when TRCA staff can attend a field visit. D. Wunder will schedule the field visit as soon as possible. CVC requested to be informed of the field visit date and explained that CVC staff will attend if available.	TRCA MRC
5.2	It was agreed that any additional study area information to be provided by CVC and TRCA should be directed to K. Bright for distribution to the project team.	
5.3	It was suggested that opportunities to develop 'showcase' natural environment rehabilitation/enhancement projects within the study area should be reviewed as a spin-off opportunity to having key players at the same table. It was agreed that Eugene Furgiuele (City of Mississauga) should attend future agency meetings as he has invaluable knowledge and experience with the various rehabilitation/enhancement projects that the City of Mississauga has been a partner to.	
5.4	As previously noted, the updated information tables and watercrossing design details will be distributed for review in advance of the next agency meeting (date to be determined). S. Anderson explained that the Mississauga BRT is a priority project for the City and requested that all parties work towards completing this project as efficiently as possible. In particular, it would be appreciated if all attendees would review the updated information tables and watercrossing design details in advance of the next meeting.	City/MRC/ Ecoplans

The forgoing represents the writer's understanding of the major items of discussion and the decisions reached and/or future actions required. If the above does not accurately represent the understanding of all parties attending, please notify the undersigned immediately upon receiving these minutes (905-823-4988).

Minutes Prepared by:

Ecoplans Limited

Katie Bright

cc: Attendees
Dave Gibson, Department of Fisheries and Oceans
Sarah O'Keefe, Transport Canada
Geoff Wright, City of Mississauga
Dale Turvey, McCormick Rankin Corporation
Kim LeBrun, Ecoplans Limited

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TORONTO AND REGION Conservation
for The Living City

November 30, 2007

CFN: 39971
X REF CFN: 23800

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 Vegetation and Wildlife Summary Table and Fish and Fish Habitat Summary Table
Mississauga Bus Rapid Transit (Eastgate Parkway at Highway 403 to Eglinton Avenue at Renforth Drive)
Etobicoke Creek; City of Mississauga; Regional Municipality of Peel

Toronto and Region Conservation Authority (TRCA) staff received the Vegetation and Wildlife Summary Table along with the Fish and Fish Habitat Summary Table for the above-noted project on October 19, 2007. A site visit was also conducted on November 19, 2007 with staff of TRCA (Brad Stephens, Scott Smith, Sharon Lingertat), Ecoplans (Katie Bright) and McCormick Rankin (Darrell Wunder), to examine the Regulated Areas and watercourse features within the study area.

Details of submission requirements are provided below. Additional comments pertaining to the tables and site visit are provided in Appendix A. The Requirements for Submissions under Ontario Regulation 166/06 are provided in Appendix B along with a copy of the draft Watercourse Crossing Chart, attached for your reference as the study progresses. Staff has also undertaken a review of our data in relation to this project, and will be providing this information to you in digital form under separate cover.

Submission Requirements

1. There are 5 Regulated Areas located within the project limits. In accordance with Ontario Regulation 166/06, a permit is required from TRCA for each of these areas, as follows:

   a) Permit 1 (Regulated Areas 1 and 2) – Eglinton Avenue at Explorer Drive and Eglinton Avenue at Centennial Park Boulevard
   b) Permit 2 (Regulated Area 3) – Eglinton Avenue (west of Rakely Court), Etobicoke Creek
   c) Permit 3 (Regulated Area 4) – Eastgate Parkway (Tomken Road to Dixie Road)
   d) Permit 4 (Regulated Area 5) – Eastgate Parkway (east of Cawthra Road)

2. There are 3 crossings in the project area that may impact fish or fish habitat. In accordance with the TRCA Level 3 Agreement with Fisheries and Oceans Canada (DFO), approval pursuant to Section 35 (2) of the *Fisheries Act* is required. For works which are considered a mitigable HADD, concerns with respect to Section 35 (2) of the *Fisheries Act* will be addressed through TRCA review of the permit application, on behalf of DFO. For works which are considered a HADD, *Fisheries Act* Authorization is required from Fisheries and Oceans Canada. TRCA staff undertakes the initial review of all *Fisheries Act* Applications.

3. Please note that there may be additional approval requirements for this project. Common environmental approvals other than those listed above include *Navigable Waterways Act*, *Lakes and Rivers Improvement Act*, *Public Lands Act*, *Drainage Act*, *Environmental Protection Act* and the *Ontario Water Resources Act*, as well zoning bylaws made under the *Municipal Act* and the *Planning Act*.

4. For each permit application, the following will need to be submitted to TRCA:
   a) four (4) INDIVIDUALLY folded copies of the plans
   b) four (4) copies of supporting reports or documentation
   c) signed permit application form(s)
   d) review fee(s) ($2,000, for each permit application)

Please ensure that all required information is included with your submission(s). Should you have any questions please contact me at extension 5717 or by email at slingertat@trca.on.ca.

Yours truly,

Sharon Lingertat

Sharon Lingertat
Acting Planner II, Environmental Assessments
Planning and Development

SL/

Encl. Appendix A: Preliminary Review Comments
Appendix B: Requirements for Submissions under Ontario Regulation 166/06
Draft Watercourse Crossing Chart
TRCA Post Construction Restoration Guidelines
TRCA Native Flora List
TRCA Guideline for Watercourse Crossings

BY EMAIL

cc: Willy Ing, City of Mississauga (willy.ing@mississauga.ca)
Scott Anderson, City of Mississauga (scott.anderson@mississauga.ca)
Darrell Wunder, McCormick Rankin (dwunder@mrc.ca)
Katie Bright, Ecoplans (kbright@ecoplans.com)
Carolyn Woodland, TRCA, Director, Planning and Development
Quentin Hanchard, TRCA, Manager, Development Planning and Regulations
Chandra Sharma, TRCA, Etobicoke/Mimico Watershed Specialist

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APPENDIX A

1. Digger crayfish (*Fallicambarus fodiens*) are present in the hydro corridor immediately upstream of Eastgate Parkway on Little Etobicoke Creek. Please ensure that the proposed alignment considers the fish habitat and wetland assessment so that there will be minimal impacts to the crayfish habitat.

2. Please explore all opportunities to restore fish passage at the existing Little Etobicoke Creek culverts under Eastgate Parkway, including the removal of the existing jersey barriers and weir.

3. Please review the attached TRCA Guideline for Watercourse Crossings to ensure that all information requirements (i.e. fluvial geomorphic assessment, hydraulic assessment, etc.) and design considerations are addressed. Given that the EA and Addendum provide little detail with respect to design considerations for the proposed crossings, this information will need to be included with the detailed design submission.

4. At the Little Etobicoke Creek crossing it is noted that the transitway crossing will be an extension to the existing crossing at this location. As per the above noted crossing guidelines, please ensure that the appropriate studies were conducted as part of the detailed design for the existing structure and that copies are included as part of the detailed design submission for review. If the existing structure was not sized appropriately, please consider a replacement structure that adequately addresses the appropriate range of design considerations.

5. It is noted that there is evidence of existing active erosion at the Little Etobicoke Creek Crossing. Please ensure that measures are included in the design to address this issue.

6. TRCA has records of Etobicoke Twinleaf (*Jeffersonia diphylla*) near the crossings of Etobicoke Creek at Eglinton Avenue. Please ensure the alignment of the structure at Etobicoke Creek avoids the area where Twinleaf is present.

7. Please ensure that a net ecological gain is provided for all disturbed areas. Staff has targeted Eastgate Parkway for a Habitat Implementation Plan (HIP) where a natural corridor running east-west may be established between Etobicoke Creek and the Credit Valley watershed. Please explore these opportunities at the detailed design stage.

8. Reference is made in the Fish and Fish Habitat Summary Table to the CVC/MNR Sediment Control Guidelines. Please also use the guideline recently produced for the Greater Golden Horseshoe Area Conservation Authorities (Erosion and Sediment Control Guideline for Urban Construction (2006)). This document can be downloaded at www.sustainabletechnologies.ca.

9. The tables indicate that a comprehensive stormwater management (SWM) plan will be prepared as part of the detailed design. The following TRCA SWM criteria applies to this project.

   - **Water Quality Control**: Level 1 Enhanced
   - **Water Quantity Control**: 2 to 100 year control required for Little Etobicoke Creek Watershed, quantity control not required for other areas
   - **Erosion Control**: 25 mm detention for 48 hours (or for maximum duration feasible)

   Please also note that there is an existing SWM pond on the Bell Mobility site, located just west of the proposed Etobicoke Creek crossing. There may be potential to retrofit this facility to accommodate local drainage from the transitway project.

10. a) The Vegetation and Wildlife Summary Table, EA Commitments to Future Work, states that there will be compensation for wetland loss per CVCA practice. As this area is located within TRCA's jurisdiction please revise to read, "...per TRCA practice."

    b) TRCA staff recommends reviewing the alignment such that impacts to the existing natural environment are minimized to the extent possible.

11. For direction during detailed design please reference the attached TRCA Post Construction Restoration Guidelines and the TRCA Native Flora List.

APPENDIX B
REQUIREMENTS FOR SUBMISSIONS UNDER ONTARIO REGULATION 166/06

The proponent shall submit the Ontario Regulation 166/06 permit application(s) to the TRCA Project Manager. The application shall include:

Plans and Drawings
ALL plans should be signed and stamped by a professional and should have the following information:

Construction Details
- a key map that shows the drawing numbers, chainage and watercourse crossings
- a numbering system for drawings (if possible) (i.e., Drawing 1R=Removals 1LP=Landscape Plans, 1NC=New Construction etc.) for the same chainage rather than a consecutive series of drawing numbers from 1-100. Keep the drawing numbers consistent throughout the project. If revisions are required, utilize a system like 1LPa, or 1LPb for example rather than changing the numbers
- identify chainage
- identify crossings by chainage (as opposed to numbers)
- identify site access on all lands and provide a typical cross-section

Regulatory Lines and Boundaries
- identify the extent of the construction limits (east, west, north, south)
- identify the municipal property boundary
- identify the property boundaries of lands outside the ownership of the municipality where works will be conducted and will require Land Owner Authorization
- identify TRCA lands on the plans, as required
- identify Regulation Limits and Regional Storm Floodlines

Standard Notes
- All disturbed areas will be stabilized and restored with native/non-invasive species upon completion of the work
- Should an unexpected storm arise, the contractor will remove all unfixed items from the Regional Storm Floodplain that would have the potential to cause a spill/ pollution (i.e. fuel tanks, porta-potties, machinery) or an obstruction to flow (i.e. equipment).
- If applicable, have extra pumps on site in case of failure of the main pump or a need for extra capacity.
- Sediment and erosion control measures will be implemented prior to, and maintained during the construction phases to prevent entry of sediment into the water.
- All activities, including maintenance procedures, will be controlled to prevent the entry of petroleum products, debris, rubble, concrete or other deleterious substances into the water. Vehicular refueling and maintenance will be conducted 30 m from the water.
- The contractor shall monitor the weather several days in advance of starting the project to ensure favourable weather conditions. Should a storm event occur, the contractor shall follow the contingency plan as noted on the engineering drawing.

Fisheries Act Review

For each project area identified as a Harmful, Alteration, Disruption or Destruction (HADD) of a watercourse, the proponent shall submit the following to information as part of the Ontario Regulation 166/06 permit application:

- two completed DFO Applications (see DFO website at www.dfo-mpo.gc.ca/)
- two Letters of Intent that are signed by the owner, that follow the LOI Guidelines also available of the DFO website

* Please note that at the outset of review, staff cannot always confirm if the project will be a HADD. This determination may be made through the staff review of resubmissions. As such, requirements for the above-noted DFO Applications may be confirmed as the project review proceeds.

Conservation
TORONTO AND REGION

POST-CONSTRUCTION RESTORATION GUIDELINES

JULY 2004

Restoration is required when disturbance in a natural area is unavoidable and requires clearing of vegetation. Every effort should be made to avoid these impacts, however the following guidelines should be followed in instances where this is not possible. It is critical to the success of the restoration planting that the range of site conditions be assessed as some level of site preparation will likely be required prior to planting. Site preparation is paramount as soil compaction, grading, altered hydrology, herbivory, and inadequate topsoil depths can seriously inhibit planting success of even the hardiest species and can limit the process of regeneration. There are also a suite of urban stresses that can hinder the growth of plantings including salt spray, pollution, pests, and altered micro-climate. These issues need to be dealt with on a site-by-site basis, but should be considered when developing restoration plans.

1. The proponent is responsible for ensuring that all plantings are native species and are suitable given the soil, moisture, and light conditions of the site, as well as any specific stresses. Cultivars of native species are generally not acceptable. While invasive species are not permitted, non-invasive exotic species may be used in some limited areas. Plantings should also be compatible and complementary to the existing vegetation communities.

2. Early successional species should be used alone or in concert with shade tolerant (i.e. late-seral species) to allow natural succession to ensue. Shade tolerant species can be used if conditions are favourable and in areas where a source of late-seral seed does not exist in order to promote succession.

3. In general, woody plantings should follow the standard densities of 1 metre on centre for shrubs and 5 metres on centre for trees. However, higher densities may be required depending on the situation (e.g. live staking, use of stock 100 cm or smaller, edge management, sensitive areas, or other site-specific situations).

4. Indicate that site stabilization will occur during or immediately following construction to avoid unacceptable levels of erosion. Depending on their suitability, various techniques may be employed including hydroseeding, or installing straw mulch or jute mats, etc. Although sod is acceptable as an interim measure, it will not be permitted as a permanent groundcover in natural areas and associated buffers.

5. Seeding mixtures should consist of quick-growing, non-invasive species. Manufacturers offer an assortment of mixtures that are suited to various conditions, including a slope stabilization mix, meadow mix, and wetland mix. In particularly sensitive areas, a seed mix consisting entirely of native species should be used to avoid the invasion of aggressive vegetation. Please refer to the *TRCA Seed Mix Guidelines* for further details. In areas where invasive species are a particular problem, eradication of these species may become a component of the restoration initiative.

6. Ensure that riparian planting coverage for a stream extends from the watercourse edge to a

minimum of 10 metres on either side. For a valley, coverage should include plantings within the entire feature plus an additional 10 metres. Generally, we only require restoration in areas being disturbed.

7. Riparian plantings should be installed after the spring freshet to avoid being uprooted during high flows if planted the previous autumn. Mulch application may not be appropriate in riparian zones as this material can be easily washed away during high water periods. Alternative methods of dealing with competitive vegetation should be considered, however herbicide application is not desirable.

8. The objective is to establish at least 50% woody coverage through restoration in areas where the desired vegetation community is forest.

9. When selecting vegetation for plantings, try to achieve a degree of structural and species diversity.

10. If the area is very grassy, mulch and rodent guards may be needed to protect young tree stems. Larger planting stock may be required in these areas to due to competing herbaceous vegetation. Maintenance plans should include watering during summer dry spells for the first 2-3 years after planting.

11. Other than in sites with competing herbaceous vegetation, we generally have no size requirements for vegetation to be planted. Typically, we prefer greater numbers of smaller-sized vegetation over fewer numbers of larger-sized vegetation. Planting large vegetation may cause more disturbance to the site.

12. Plans should indicate timing of the restoration works, as well as phasing if applicable.

13. Indicate how existing vegetation to be retained will be protected. Please refer to the *TRCA Edge Management Guidelines* for further detail.

14. Drawings should include a plan view showing planting locations, species and numbers, a detail showing the installation, and a note listing the species, size, and condition (i.e. bareroot, balled and burlapped, potted). The latter will ultimately dictate the season when works can be done. Bareroot stock should only be installed while dormant in spring or after leaf fall in autumn. Planting of balled and burlapped and container-grown stock can be installed at any time during the growing season if adequate water is supplied.

NB: This document is dated **July 2004** and is consistent with current policies adopted by the TRCA at this time. These guidelines are not meant to be exhaustive but present the typical requirements of the TRCA and are subject to change.

TRCA NATIVE FLORA & RANKS (11 April 2003)[1]				
SCIENTIFIC NAME	COMMON NAME	TRCA RANK (2003)[2]	PROVINCIAL RANK (S1-S5)[3]	GLOBAL RANK (G1-G5)[3]
Abies balsamea	balsam fir	L3	S5 (2000-03-31)	G5 (1983-11-03)
Acalypha virginica var. rhomboidea	three-seeded mercury	L5	S5 (2000-03-31)	G5 (1988-05-02)
Acer rubrum	red maple	L4	S5 (2000-03-31)	G5 (1984-02-09)
Acer saccharinum	silver maple	L4	S5 (2000-03-31)	G5 (1984-02-09)
Acer saccharum ssp. nigrum	black maple	L4	S4? (2000-03-31)	G5T5 (1984-02-09)
Acer saccharum ssp. saccharum	sugar maple	L5	S5 (2000-03-31)	G5T5 (1999-09-16)
Acer spicatum	mountain maple	L4	S5 (2000-03-31)	G5 (1984-02-09)
Achillea millefolium ssp. lanulosum	woolly yarrow	L5	S5	G5T?
Acorus americanus (A. calamus misapplied)	sweet flag	L3	S4 (2000-03-31	G5 (1984-01-19)
Actaea pachypoda	white baneberry	L4	S5 (2000-03-31)	G5 (1984-02-09)
Actaea rubra	red baneberry	L5	S5 (2000-03-31)	G5 (1984-02-09)
Adiantum pedatum	northern maidenhair fern	L3	S5 (2000-03-31)	G5 (1983-11-03)
Adlumia fungosa	climbing fumitory	LX	S4 (2000-03-31)	G4 (1984-03-02)
Agalinis paupercula (Gerardia purpurea v. parviflora)	small-flowered gerardia	L1	S4S5 (2000-03-31)	G5 (1984-02-09)
Agalinis purpurea	purple gerardia	LX	S1 (2000-03-31)	G5 (1984-02-09)
Agalinis tenuifolia	slender gerardia	L2	S4S5 (2000-03-31)	G5 (1984-02-09)
Agastache nepetoides	catnip or yellow giant hyssop	LX	S4 (2000-03-31)	G5 (1988-05-02)
Agrimonia gryposepala	agrimony	L5	S5 (2000-03-31)	G5 (1984-02-09)
Agrimonia pubescens	hairy or soft agrimony	L3	S4 (2000-03-31)	G5 (1988-05-02)
Agrostis perennans	upland or autumn bent grass	L3	S5 (2000-03-31)	G5 (1988-02-24)
Agrostis scabra	ticklegrass	L3	S5 (2000-03-31)	G5 (1987-10-01)
Alisma gramineum	grass-like water-plantain	L3	S3S4 (2000-03-31)	G5 (1985-04-05)
Alisma plantago-aquatica (A. triviale)	water-plantain	L4	S5?	G5
Allium tricoccum	wild leek or ramps	L3	S5 (2000-03-31)	G5 (1984-02-09)
Alnus incana ssp. rugosa (A. rugosa)	speckled or tag alder	L3	S5 (2000-03-31)	G5 (1983-11-03)
Alopecurus aequalis	short-awned foxtail	L3	S4S5 (2000-03-31)	G5 (1984-02-09)
Ambrosia artemisiifolia	common ragweed	L5	S5 (2000-03-31)	G5 (1989-06-02)
Ambrosia trifida	giant ragweed	L5	S5 (2000-03-31)	G5 (1984-02-09)
Amelanchier amabilis (A. sanguinea var. grandiflora)	large-flowered serviceberry	L3	S2S3 (200-03-31)	G?Q
Amelanchier arborea (A. canadensis misapplied)	downy serviceberry or Juneberry	L4	S5 (2000-03-31)	G5 (1983-11-20)
Amelanchier laevis	smooth serviceberry	L4	S5 (2000-03-31)	G4G5Q (1988-05-02)
Amelanchier sanguinea var. sanguinea	round-leaved serviceberry	L4	S5?	G5T5 (1999-05-21)
Amelanchier spicata	low or dwarf serviceberry	L3	S5?	G?
Amelanchier stolonifera (A. spicata var. stolonifera	running serviceberry	L2	S4? (2000-03-31)	G5 (1984-02-09)
Ammophila breviligulata	marram or beach grass	L3	S3 (2000-03-31)	G5 (1983-11-03)
Amphicarpaea bracteata	hog-peanut	L5	S5 (2000-03-31)	G5 (1984-02-09)
Anaphalis margaritacea	pearly everlasting	L3	S5 (2000-03-31)	G5 (1984-02-09)
Andromeda polifolia ssp. glaucophylla	bog rosemary	L1	S5 (2000-03-31)	G5T5 (1994-04-28)
Andropogon gerardii	big bluestem	L3	S4 (2000-03-31)	G5 (1984-02-09)
Androsace septentrionalis	pygmy-flower or northern androsace	L3	S4? (2000-03-31)	G5 (1988-02-24)
Anemone acutiloba (Hepatica acutiloba)	sharp-lobed hepatica	L3	S5 (2000-03-31)	G5 (1991-05-09)
Anemone americana (Hepatica americana)	round-lobed hepatica	L2	S5 (2000-03-31)	G5 (
Anemone canadensis	Canada anemone	L5	S5 (2000-03-31)	G5 (1984-02-09)
Anemone cylindrica	long-fruited thimbleweed	L3	S4 (2000-03-31)	G5 (1984-02-09)
Anemone multifida	red anemone	L2	S5 (2000-03-31)	G5 (1984-02-09)

TRCA NATIVE FLORA & RANKS (11 April 2003)[1]				
SCIENTIFIC NAME	COMMON NAME	TRCA RANK (2003)[2]	PROVINCIAL RANK (S1-S5)[3]	GLOBAL RANK (G1-G5)[3]
Aster oolentangiensis (A. azureus)	sky-blue or azure aster	L3	S4 (2000-03-31)	G5 (1992-04-08)
Aster pilosus var. pilosus	hairy aster	L3	S5 (2000-03-31)	G5T? (1991-04-04)
Aster pilosus var. pringle.	Pringle's or spray aster	L2	S4 (2000-03-31)	G5T5 (2000-03-24)
Aster puniceus var. puniceus	swamp or purple-stemmed aster	L5	S5 (2000-03-31	G5T? (1992-04-10)
Aster schreberi	Schreber's aster	LX	S1 (2000-03-31)	G4 (1984-02-09)
Aster umbellatus var. umbellatus	flat-topped aster	L4	S5 (2000-03-31)	G5T? (1993-03-16)
Aster urophyllus (A. sagittifolius)	arrow-leaved aster	L3	S4 (2000-03-31)	G4 (1994-08-17)
Astragalus canadensis	Canada milk-vetch	L2	S4 (2000-03-31)	G5 (1984-08-09)
Athyrium filix-femina var. angustum	northeastern lady fern	L5	S5 (2000-03-31)	G5 T5 (1991-03-18)
Aureolaria flava var. flava	yellow false foxglove	LX	S3 (2000-03-31)	G5 (1984-02-09)
Aureolaria flava var. macrantha	large-flowered yellow false foxglove	LX	S3 (2000-03-31)	G5TQ?
Aureolaria pedicularia	fern-leaved false floxglove	LX	S3 (2000-03-31)	G5 (1984-02-09)
Beckmannia syzigachne	slough grass	L3	S4 (2000-03-31)	G5 (1984-02-14)
Betula allegheniensis (B. lutea)	yellow or curly birch	L4	S5 (2000-03-31)	G5 (1984-02-14)
Betula papyrifera	paper or white birch	L4	S5 (2000-03-31)	G5 (1983-09-19)
Betula pumila (B. glandulifera)	dwarf or swamp birch	L1	S5 (2000-03-31)	G5 (1984-02-14)
Bidens cernuus	nodding bur-marigold	L5	S5 (2000-03-31)	G5 (1984-02-14)
Bidens discoideus	small beggar's-ticks	L3	S4 (2000-03-31)	G5 (1984-02-14)
Bidens frondosus	common or devil's beggarticks	L5	S5 (2000-03-31)	G5 (1984-02-14)
Bidens tripartitus (inc. B. connatus, B. comosus	three-parted beggar's ticks	L5	S5 (2000-03-31)	G5 (1994-08-17)
Bidens vulgatus	tall beggar's-ticks	L3	S5 (2000-03-31)	G5 (1987-09-29)
Boehmeria cylindrica	false nettle	L4	S5 (2000-03-31)	G5 (1984-02-14)
Botrychium dissectum	cut-leaved grape fern or moonwort	L2	S5 (2000-03-31)	G5 (1984-02-16)
Botrychium lanceolatum ssp. angustisegmentum	triangle grape fern	LX	S3 (2000-03-31)	G5 (1984-01-19)
Botrychium matricariifolium	daisy-leaved grape fern	L1	S4S5 (2000-03-31)	G5 (1991-01-31)
Botrychium multifidum	leathery grape fern	L1	S5 (2000-03-31)	G5 (1984-01-19)
Botrychium oneidense	blunt-lobed grape fern	LX	S3 (2000-03-31)	G4Q (1996-07-29)
Botrychium simplex	least grape fern or moonwort	LX	S4? (2000-03-31)	G5 (1984-07-16)
Botrychium virginianum	rattlesnake fern	L2	S5 (2000-03-31)	G5 (1984-01-19)
Brachyeletrum erectum	bearded shorthusk	L2	S4? (2000-03-31)	G5T? (1993-03-16)
Brasenia schreberi	water-shield	L1	S5 (2000-03-31)	G5 (1984-02-16)
Bromus ciliatus (B. canadensis)	fringed brome grass	L3	S5 (2000-03-31)	G5 (1984-02-16)
Bromus kalmii	Kalm's brome	LX	S4 (2000-03-31)	G5 (1986-02-19)
Bromus latiglumis	eared or tall brome	L4	S4 (2000-03-31)	G5 (1988-02-25)
Bromus pubescens	Canada brome	L2	S4 (2000-03-31)	G5 (1999-05-25)
Cakile edentula	sea-rocket	L2	S4 (2000-03-31)	G5 (1983-11-20)
Calamagrostis canadensis	Canada blue joint	L4	S5 (2000-03-31)	G5 (1984-02-16)
Calamagrostis stricta ssp. inexpansa (C. inexpansa	northern reed grass	L2	S5 (2000-03-31)	G5T5 (1994-05-24)
Calla palustris	water arum	L2	S5 (2000-03-31)	G5 (1984-02-16)
Callitriche palustris (C. verna)	water star-wort	L3		
Calopogon tuberosus (C. pulchellus)	grass pink	L1	S4S5 (2000-03-31)	G5 (1990-09-18)
Caltha palustris	marsh marigold	L4	S5 (2000-03-31)	G5 (1984-02-16)
Calypso bulbosa	calypso	LX	S4S5 (2000-03-31)	G5 (1990-06-22)
Calystegia sepium (incl. ssp. americanum, angulat	hedge bindweed	L4	S5 (2000-03-31)	G5 (1997-03-10)
Calystegia spithamaea ssp. spithamaea	low bindwind	L2	S4S5 (2000-03-31)	G4G5TQ?

TRCA NATIVE FLORA & RANKS (11 April 2003)[1]				
SCIENTIFIC NAME	COMMON NAME	TRCA RANK (2003)[2]	PROVINCIAL RANK (S1-S5)[3]	GLOBAL RANK (G1-G5)[3]
Carex gracillima	graceful sedge	L4	S5 (2000-03-31)	G5 (1984-02-29)
Carex granularis	meadow sedge	L5	S5 (2000-03-31)	G5 (1984-02-29)
Carex grayi	Gray's sedge	L2	S4 (2000-03-31)	G4 (1988-02-11)
Carex hirtifolia	pubescent or hairy-leaved sedge	L3	S5 (2000-03-31)	G5 (1984-02-29)
Carex hitchcockiana	Hitchcock's sedge	L3	S5 (2000-03-31)	G5 (1985-04-05)
Carex hystericina (C. hystricina,	porcupine sedge	L4	S5 (2000-03-31)	G5 (1984-02-29)
Carex interior	inland or prairie star sedge	L3	S5 (2000-03-31)	G5 (1984-02-29)
Carex intumescens	bladder sedge	L4	S5 (2000-03-31)	G5 (1984-02-29)
Carex lacustris	lake-bank sedge	L4	S5 (2000-03-31)	G5 (1984-02-29)
Carex laevivaginata	smooth-sheathed sedge	L3	S4 (2000-03-31)	G5 (1984-04-05)
Carex lasiocarpa (C. filiformis)	slender woolly sedge	L2	S5 (2000-03-31)	G5 (1984-02-29)
Carex laxiculmis var. laxiculmis	spreading or weak wood sedge	L3	S4 (2000-03-31)	G5T? (1993-03-16)
Carex laxiflora	loose-flowered sedge	L4	S5 (2000-03-31)	G5 (1985-04-05)
Carex leptalea ssp. leptalea	bristle-stalked sedge	L3	S5 (2000-03-31)	G5TQ?
Carex leptonervia (C. laxiflora var. leptonervia	few- or fine-nerved wood sedge	L3	S5 (2000-03-31)	G5 (1988-02-11)
Carex limosa	mud sedge	L3	S5 (2000-03-31)	G5 (1984-02-29)
Carex lupulina	hop sedge	L3	S5 (2000-03-31)	G5 (1984-02-29)
Carex lurida	sallow sedge	L3	S5 (2000-03-31)	G5 (1984-02-29)
Carex magellanica ssp. irrigua (C. paupercula	stunted or bog sedge	L2	S5 (2000-03-31)	G5T? (1989-12-14)
Carex molesta	troublesome sedge	L3	S4? (2000-03-31)	G4 (1988-02-11)
Carex muhlenbergii var. muhlenbergi	Muhlenberg's sedge	L3	S4S5 (2000-03-31)	G5T5 (1996-11-17)
Carex normalis	tall straw sedge	L3	S4 (2000-03-31)	G5 (1984-02-29)
Carex pallescens	pale sedge	L3	S5 (2000-03-31)	G5 (1984-02-29)
Carex pauciflora	few-flowered sedge	LX	S5 (2000-03-31)	G5 (1984-02-29)
Carex peckii (C. nigromarginata var. elliptica	Peck's sedge	L4	S5 (2000-03-31)	G4G5 (1984-10-02)
Carex pedunculata	early-flowering sedge	L4	S5 (2000-03-31)	G5 (1984-10-02)
Carex pellita (C. lanuginosa; C. filiformis var. lanugi	woolly sedge	L4	S5 (2000-03-31)	G5 (1984-04-05)
Carex pensylvanica	Pennsylvania sedge	L4	S5 (2000-03-31)	G5 (1984-02-29)
Carex plantaginea	plantain-leaved sedge	L3	S5 (2000-03-31)	G5 (1984-02-29)
Carex platyphylla	broad-leaved sedge	L3	S5 (2000-03-31)	G5 (1984-02-29)
Carex prairea	prairie or fen panicled sedge	L3	S5 (2000-03-31)	G5? (1984-02-29)
Carex prasina	drooping sedge	L2	S4 (2000-03-31)	G4 (1990-09-18)
Carex projecta	necklace or loose-headed oval sedge	L4	S5 (2000-03-31)	G5 (1984-02-29)
Carex pseudo-cyperus	pseudocyperus sedge	L4	S5 (2000-03-31)	G5 (1984-02-29)
Carex radiata (formerly C. rosea,	stellate or straight-styled sedge	L5	S5 (2000-03-31)	G4 (1988-02-11)
Carex retrorsa	retrorse sedge	L4	S5 (2000-03-31)	G5 (1984-02-29)
Carex rosea (formerly convoluta)	curly-styled sedge	L5	S5 (2000-03-31)	G5 (1984-02-29)
Carex scabrata	rough sedge	L3	S5 (2000-03-31)	G5 (1984-02-29)
Carex schweinitzii	Schweinitz' sedge	L2	S3 (2000-03-31)	G3 (1986-10-15)
Carex scoparia	pointed broom sedge	L3	S5 (2000-03-31)	G5 (1984-02-29)
Carex siccata (C. foenea)	sand-bank, hillside, or hay sedge	L3	S5 (2000-03-31)	G5T5 (1998-05-05)
Carex sparganioides	bur-reed sedge	L4	S5 (2000-03-31)	G5 (1984-02-29)
Carex sprengelii	long-beaked sedge	L4	S5 (2000-03-31)	G5? (1984-10-02)
Carex stipata	awl-fruited sedge	L5	S5 (2000-03-31)	G5 (1984-02-29)
Carex stricta	tussock sedge	L4	S5 (2000-03-31)	G5 (1984-02-29)

TRCA NATIVE FLORA & RANKS (11 April 2003)[1]				
SCIENTIFIC NAME	COMMON NAME	TRCA RANK (2003)[2]	PROVINCIAL RANK (S1-S5)[3]	GLOBAL RANK (G1-G5)[3]
Clematis occidentalis var. occidentalis (C. verticilla	purple clematis	LX	S4S5 (2000-03-31)	G5TQ?
Clematis virginiana	virgin's bower	L5	S5 (2000-03-31)	G5 (1984-02-29)
Clinopodium vulgare (Satureja vulgaris,	dogmint or wild basil	L5	S5 (2000-03-31)	G5 (1999-11-29)
Clintonia borealis	yellow clintonia or bluebead lily	L3	S5 (2000-03-31)	G5 (1984-02-29)
Coeloglossum viride var. virescens (Habenaria virid	bracted green orchid	LX	S4 (2000-03-31)	G5T5 (1988-02-11)
Collinsonia canadensis	horsebalm or richweed	L2	S4 (2000-03-31)	G5 (1984-02-29)
Comandra umbellata	comandra or bastard toadflax	L2	S5 (2000-03-31)	G5 (1984-02-29)
Comptonia peregrina	sweet-fern	L1	S5 (2000-03-31)	G5 (1983-10-11)
Conopholis americana	squaw-root	L1	S4? (2000-03-31)	G5 (1984-02-29)
Conyza canadensis (Erigeron canadensis,	horse-weed	L5	S5 (2000-03-31)	G5 (1984-12-07)
Coptis trifolia (C. groenlandica,	goldthread	L2	S5 (2000-03-31)	G5 (1984-02-29)
Corallorhiza maculata	spotted coral-root	L1	S5 (2000-03-31)	G5 (1984-02-29)
Corallorhiza striata	striped coral-root	LX	S4 (2000-03-31)	G5 (1984-02-29)
Corallorhiza trifida	early coral-root	L1	S5 (2000-03-31)	G5 (1984-02-29)
Cornus alternifolia	alternate-leaved dogwood	L5	S5 (2000-03-31)	G5 (1983-09-08)
Cornus amomum ssp. obliqua	silky dogwood	L4	S5 (2000-03-31)	G5TQ?
Cornus canadensis	bunchberry	L2	S5 (2000-03-31)	G5 (1983-09-06)
Cornus foemina ssp. racemosa (C. racemosa,	grey dogwood	L4	S5 (2000-03-31)	G5TQ?
Cornus rugosa	round-leaved dogwood	L3	S5 (2000-03-31)	G5 (1984-02-29)
Cornus stolonifera	red osier dogwood	L5	S5 (2000-03-31)	G5 (1988-01-15)
Corydalis aurea ssp. aurea	golden corydalis	L3	S5 (2000-03-31)	G5TQ?
Corydalis sempervirens	pink or pale corydalis	LX	S5 (2000-03-31)	G4G5 (1983-10-11)
Corylus cornuta (C. rostrata)	beaked hazel	L4	S5 (2000-03-31)	G5 (1984-02-29)
Crataegus apiomorpha	pear-shaped hawthorn	LX	S1S2 (2000-03-31)	G3G4Q (1997-01-29)
Crataegus calpodendror.	urn-fruited hawthorn	LX	S4S5 (2000-03-31)	G5 (1984-02-29)
Crataegus chrysocarpa var. aboriginum	round-leaved or fire-berry hawthorn	L3	S4? (2000-03-31)	G5T? (1996-05-24)
Crataegus compta	adorned hawthorn	LX	S2? (2000-03-31)	G5?Q (1996-02-29)
Crataegus conspecta	conspecta hawthorn	LX	S1 (2000-03-31)	G3G4Q (1990-05-22)
Crataegus corusca	gleaming hawthorn	L3	S2S3 (2000-03-31)	G3G5 (1994-11-08)
Crataegus dodgei (inc. vars. dodgei & flavida	Dodge's hawthorn	LX	S4 (2000-03-31)	G4 (1196-02-29)
Crataegus flabellata	fan-leaved or Bosc's hawthorn	L3	S4? (2000-03-31)	G4 (1995-12-06)
Crataegus holmesiana	thin-leaved or Holmes' hawthorn	L4	S4S5 (2000-03-31)	G5 (1984-02-29)
Crataegus intricata	Lang's or thicket hawthorn	LX	S?	G5
Crataegus macracantha (C. succulenta var. macrac	long-spined hawthorn	L4	S5 (2000-03-31)	G? (1996-07-02)
Crataegus macrosperma	variable hawthorn	L3	S5 (2000-03-31)	G5 (1984-02-29)
Crataegus pedicellata	scarlet or pedicelled hawthorn	L5	S4 (2000-03-31)	G5 (1984-02-29)
Crataegus pringlei	Pringle's hawthorn	L3	S5 (2000-03-31)	G5 (1984-02-29)
Crataegus pruinosa	waxy hawthorn	L3	S4? (2000-03-31)	G5 (1984-02-29)
Crataegus punctata	dotted hawthorn	L5	S5 (2000-03-31)	G5 (1984-02-29)
Crataegus schuettei (C. scabrida; C. basilica	rough or Schuette's hawthorn	L3	S4 (2000-03-31)	G5? (1996-11-17)
Crataegus submollis	Emerson's hawthorn	L3	S4S5 (2000-03-31)	G5 (1984-02-29)
Crataegus succulenta	long-spined or succulent hawthorn	L3	S4S5 (2000-03-31)	G5 (1984-02-29)
Cryptotaenia canadensis	honewort	L5	S5 (2000-03-31)	G5 (1984-02-29)
Cuscuta campestris	prairie dodder	L3	S2 (2000-03-31)	G5 (1984-02-29)
Cuscuta gronovii	swamp dodder	L4	S5 (2000-03-31)	G5 (1984-02-29)

TRCA NATIVE FLORA & RANKS (11 April 2003)[1]				
SCIENTIFIC NAME	COMMON NAME	TRCA RANK (2003)[2]	PROVINCIAL RANK (S1-S5)[3]	GLOBAL RANK (G1-G5)[3]
Eleocharis acicularis	needle or least spike-rush	L3	S5 (2000-03-31)	G5 (1984-04-24)
Eleocharis elliptica (E. tenuis var. borealis	elliptic spike-rush	L3	S5 (2000-03-31)	G5 (1984-04-24)
Eleocharis erythropoda (E. calva; E. palustris v. cal	creeping or red-stemmed spike-rush	L5	S5 (2000-03-31)	G5 (1988-02-11)
Eleocharis intermedia	matted or intermediate spike-rush	L3	S4 (2000-03-31)	G5 (1984-04-24)
Eleocharis obtusa	blunt spike-rush	L4	S5 (2000-03-31)	G5 (1984-04-24)
Eleocharis olivacea	olive-fruited spike-rush	LX	S4 (2000-03-31)	G5 (1984-04-24)
Eleocharis pauciflora	few-flowered spike-rush	L2	S5 (2000-03-31)	G5 (1994-07-19)
Eleocharis smallii (E. palustris,	Small's or creeping spike-rush	L3	S5 (2000-03-31)	G5? (1984-04-24)
Elodea canadensis (Anacharis canadensis,	common elodea or water-weed	L3	S5 (2000-03-31)	G5 (1984-04-24)
Elodea nuttallii	Nuttall's water-weed	L3	S4 (2000-03-31)	G5 (1984-04-24)
Elymus canadensis	Canada wild rye	L3	S4S5 (2000-03-31)	G5 (1984-04-24)
Elymus hystrix (Hystrix patula)	bottle-brush grass	L4	S5 (2000-03-31)	G5 (1992-12-23)
Elymus riparius	riverbank wild rye	L4	S4? (2000-03-31)	G5 (1984-04-24)
Elymus trachycaulus (Agropyron trachycaulum,	slender wheat grass	L2	S5? (2000-03-31)	G5 (1988-02-25)
Elymus villosus	hairy wild rye	L2	S4 (2000-03-31)	G5 (1984-04-24)
Elymus virginicus var. virginicus	Virginia wild rye	L5	S5 (2000-03-31)	G5T? (1990-09-10)
Elymus wiegandii	Wiegand's wild rye	L3	S4 (2000-03-31)	G? (1989-12-13)
Epifagus virginiana	beech-drops	L4	S5 (2000-03-31)	G5 (1984-04-24)
Epigaea repens	trailing arbutus	L1	S5 (2000-03-31)	G5 (1983-09-08)
Epilobium angustifolium	fire-weed	L3	S5 (2000-03-31)	G5 (1984-04-24)
Epilobium ciliatum ssp. ciliatum	sticky willow-herb	L5	S5 (2000-03-31)	G5T? (1984-04-24)
Epilobium coloratum	purple-leaved willow-herb	L4	S5 (2000-03-31)	G5 (1984-04-24)
Epilobium leptophyllum	narrow-leaved willow-herb	L3	S5 (2000-03-31)	G5 (1984-04-24)
Epilobium strictum	downy willow-herb	L2	S5 (2000-03-31)	G5? (1984-04-24)
Equisetum arvense	field or common horsetail	L5	S5 (2000-03-31)	G5 (1984-04-24)
Equisetum fluviatile	water horsetail	L3	S5 (2000-03-31)	G5 (1984-04-24)
Equisetum hyemale ssp. affine	scouring rush	L5	S5 (2000-03-31)	G5T5 (1991-03-18)
Equisetum palustre	marsh horsetail	L1	S5 (2000-03-31)	G5 (1985-04-05)
Equisetum pratense	meadow or thicket horsetail	L3	S5 (2000-03-31)	G5 (1990-06-22)
Equisetum scirpoides	dwarf scouring rush	L3	S5 (2000-03-31)	G5 (1990-06-04)
Equisetum sylvaticum	woodland horsetail	L3	S5 (2000-03-31)	G5 (1984-04-24)
Equisetum variegatum ssp. variegatum	variegated scouring-rush	L4	S5 (2000-03-31)	G5 (1984-04-24)
Equisetum x nelsonii (E. laevigatum x variegatum,	Nelson's horsetail	L3	S2? (2000-03-31)	HYB (1984-10-30)
Eragrostis frankii (E. erythrogona,	sandbar or Frank's love grass	L3	S4 (2000-03-31)	G5 (1984-04-24)
Eragrostis hypnoides	smooth creeping or tall love grass	L3	S4 (2000-03-31)	G5 (1984-04-24)
Erechtites hieracifolia	burnweed	L3	S5 (2000-03-31)	G5 (1992-04-08)
Erigenia bulbosa	harbinger-of-spring	LX	S3 (2000-03-31)	G5 (1985-04-05)
Erigeron annuus	annual or daisy fleabane	L5	S5 (2000-03-31)	G5 (1984-04-24)
Erigeron philadelphicus ssp. philadelphicus	Philadelphia fleabane	L5	S5 (2000-03-31)	G5T? (1993-03-16)
Erigeron pulchellus	Robin's plantain	L1	S5 (2000-03-31)	G5 (1984-04-24)
Erigeron strigosus (E. annuus ssp. strigosus	rough fleabane	L5	S5 (2000-03-31)	G5 (1984-04-24)
Eriophorum gracile	slender cotton-grass	LX	S5 (2000-03-31)	G5 (1984-04-24)
Eriophorum tenellum	rough cotton-grass	L1	S5 (2000-03-31)	G5 (1984-04-24)
Eriophorum vaginatum ssp. spissum	dense cotton-grass	L1	S5 (2000-03-31)	G5T5 (1984-04-16)
Eriophorum virginicum	tawny cotton-grass	L1	S5 (2000-03-31)	G5 (1984-04-24)

TRCA NATIVE FLORA & RANKS (11 April 2003)[1]				
SCIENTIFIC NAME	COMMON NAME	TRCA RANK (2003)[2]	PROVINCIAL RANK (S1-S5)[3]	GLOBAL RANK (G1-G5)[3]
Glyceria canadensis	rattlesnake grass	L2	S4S5 (2000-03-31)	G5 (1984-05-16)
Glyceria grandis	tall manna grass	L4	S4S5 (2000-03-31)	G5 (1984-05-16)
Glyceria septentrionalis	eastern manna grass	L3	S4 (2000-03-31)	G5 (1988-04-30)
Glyceria striata (incl. vars. striata & stricta	fowl manna grass	L5	S4S5 (2000-03-31)	G5
Gnaphalium macounii	viscid cudweed	L2	S5 (2000-03-31)	G5 (1994-03-19)
Gnaphalium obtusifolium	fragrant cudweed	L2	S5 (2000-03-31)	G5 (1984-05-16)
Goodyera pubescens	downy rattlesnake-plantain	L1	S4 (2000-03-31)	G5 (1984-04-09)
Goodyera repens var. ophioides	dwarf rattlesnake-plantain	LX	S5 (2000-03-31)	G5TQ?
Gratiola neglecta	clammy hedge-hyssop	LX	S4 (2000-03-31)	G5 (1984-05-16)
Gymnocarpium dryopteris	oak fern	L3	S5 (2000-03-31)	G5 (1986-05-23)
Hackelia deflexa (H. americana,	nodding stickseed	L4	S5 (2000-03-31)	G5 (1984-05-16)
Hackelia virginiana	Virginia stickseed	L5	S5 (2000-03-31)	G5 (1984-05-16)
Hamamelis virginiana	witch-hazel	L3	S5 (2000-03-31)	G5 (1983-10-11)
Hedeoma hispidum	rough pennyroyal	L2	S4 (2000-03-31)	G5 (1985-04-05)
Hedeoma pulegioides	American pennyroyal	L3	S4 (2000-03-31)	G5 (1984-05-16)
Hedyotis caerulea (Houstonia caerulea,	bluets	LX	SH (2000-03-31)	G5 (1990-03-12)
Hedyotis longifolia (Houstonia longifolia)	long-leaved bluets or Venus' pride	L2	S4? (2000-03-31)	G4G5 (1993-02-15)
Helianthemum bicknellii	Bicknell's frostweed	L1	S4 (2000-03-31)	G5 (1984-05-16)
Helianthemum canadense	frostweed	L1	S4 (2000-03-31)	G5 (1984-05-16)
Helianthus decapetalus	thin-leaved sunflower	L3	S5 (2000-03-31)	G5 (1988-02-09)
Helianthus divaricatus	woodland sunflower	L3	S5 (2000-03-31)	G5 (1984-12-10)
Helianthus giganteus	tall sunflower	LX	S5 (2000-03-31)	G5 (1988-04-30)
Helianthus strumosus	pale-leaved sunflower	L4	S5 (2000-03-31)	G5 (1988-02-09)
Helianthus tuberosus	Jerusalem artichoke	L5	SE5 (2000-03-31)	G5 (1984-05-16)
Heliopsis helianthoides	ox-eye	L2	S5 (2000-03-31)	G5 (1988-05-16)
Heracleum lanatum (H. maximum)	cow-parsnip	L4	S5 (2000-03-31)	G5 (1992-10-28)
Heteranthera dubia	water star-grass	L2	S5 (2000-03-31)	G5 (1984-05-16)
Hieracium kalmii (H. canadense)	Canada hawkweed	L2	SU (2000-03-31)	G5 (1993-02-14)
Hieracium scabrum	rough hawkweed	L2	S4 (2000-03-31)	G5 (1984-03-15)
Hieracium venosum var. nudicaule	rattlesnake-weed	LX	S2 (2000-03-31)	G5T4
Hierochloe odorata	sweet grass	LX	S4 (2000-03-31)	G5 (1984-04-26)
Hippuris vulgaris	mare's tail	LX	S5 (2000-03-31)	G5 (1984-05-16)
Huperzia lucidula (Lycopodium lucidulum)	shining club-moss	L2	S5 (2000-03-31)	G5 (1990-03-12)
Hydrocotyle americana	marsh pennywort	L3	S5 (2000-03-31)	G5 (1984-03-15)
Hydrophyllum canadense	Canada waterleaf	L4	S4 (2000-03-31)	G5 (1985-05-11)
Hydrophyllum virginianum	Virginia waterleaf	L5	S5 (2000-03-31)	G5 (1984-03-15)
Hypericum ascyron	great St.Johnswort	L3	S4 (2000-03-31)	G4 (1990-06-22)
Hypericum majus	larger Canada St. Johnswort	LX	S5 (2000-03-31)	G5 (1984-05-16)
Hypericum prolificum	shrubby St. Johnswort	LX	S2 (2000-03-31)	G5 (1984-06-06)
Hypericum punctatum	spotted St.Johnswort	L3	S5 (2000-03-31)	G5 (1984-06-06)
Hypoxis hirsuta	yellow star-grass	LX	S3 (2000-03-31)	G5 (1984-01-19)
Ilex verticillata	winterberry	L3	S5 (2000-03-31)	G5 (1984-10-30)
Impatiens capensis (I. biflora,	orange touch-me-not (spotted jewelweed)	L5	S5 (2000-03-31)	G5 (1988-05-02)
Impatiens pallida	yellow touch-me-not (pale jewelweed)	L4	S5 (2000-03-31)	G5 (1984-04-09)
Iris versicolor	blue flag	L3	S5 (2000-03-31)	G5 (1984-06-06)

TRCA NATIVE FLORA & RANKS (11 April 2003)[1]				
SCIENTIFIC NAME	COMMON NAME	TRCA RANK (2003)[2]	PROVINCIAL RANK (S1-S5)[3]	GLOBAL RANK (G1-G5)[3]
Liparis loeselii	fen or Loesel's twayblade	L3	S4S5 (2000-03-31)	G5 (1984-04-16)
Listera cordata	heart-leaved twayblade	L2	S5? (2000-03-31)	G5 (1984-06-07)
Lithospermum latifolium	American gromwell	LX	S3 (2000-03-31)	G4 (1996-07-22)
Lobelia cardinalis	cardinal flower	L1	S5 (2000-03-31)	G5 (1984-06-07)
Lobelia inflata	Indian tobacco	L3	S5 (2000-03-31)	G5 (1984-06-07)
Lobelia kalmii	Kalm's or brook lobelia	L1	S5 (2000-03-31)	G5 (1984-06-07)
Lobelia siphilitica	great blue lobelia	L3	S5 (2000-03-31)	G5 (1984-06-07)
Lonicera canadensis	fly honeysuckle	L3	S5 (2000-03-31)	G5 (1984-04-16)
Lonicera dioica	wild or glaucous honeysuckle	L3	S5 (2000-03-31)	G5 (1984-06-07)
Lonicera hirsuta	hairy honeysuckle	L3	S5 (2000-03-31)	G4G5 (1988-02-09)
Lonicera oblongifolia	swamp fly honeysuckle	LX	S5 (2000-03-31)	G4 (1984-06-07)
Ludwigia palustris	water purslane	L3	S5 (2000-03-31)	G5 (1984-06-07)
Lupinus perennis ssp. perennis	wild lupine	L2	S3 (2000-03-31)	G5T?
Luzula acuminata	hairy wood rush	L3	S5 (2000-03-31)	G5 (1986-04-08)
Luzula multiflora ssp. multiflora (L. campestris var.	wood rush	L3	S5 (2000-03-31)	G5T5 (1996-03-27)
Lycopodium annotinum	stiff club-moss	L1	S5 (2000-03-31)	G5 (1985-08-30)
Lycopodium clavatum	running club-moss	L2	S5 (2000-03-31)	G5 (1984-06-07)
Lycopodium dendroidium (L. obscurum v. dendroi	round-branched ground-pine	L2	S5 (2000-03-31)	G5 (1986-11-18)
Lycopodium hickeyi (L. obscurum var. isophyllum,	Hickey's ground-pine	L1	S4 (2000-03-31)	G5 (1993-05-31)
Lycopodium obscurum	ground-pine	L1	S4 (2000-03-31)	G5 (1984-04-16)
Lycopus americanus	American or cut-leaved water-horehound	L4	S5 (2000-03-31)	G5 (1986-04-08)
Lycopus uniflorus	northern water-horehound or bugleweed	L4	S5 (2000-03-31)	G5 (1984-06-07)
Lysimachia ciliata	fringed loosestrife	L5	S5 (2000-03-31)	G5 (1984-06-07)
Lysimachia quadrifolia	whorled loosestrife	L3	S4 (2000-03-31)	G5 (1985-04-10)
Lysimachia terrestris	swamp candles	L2	S5 (2000-03-31)	G5 (1984-06-07)
Lysimachia thyrsiflora	tufted loosestrife	L3	S5 (2000-03-31)	G5 (1984-06-07)
Maianthemum canadense	Canada mayflower	L4	S5 (2000-03-31)	G5 (1984-06-07)
Maianthemum racemosum ssp. racemosum (Smila	false Solomon's seal	L5	S5 (2000-03-31)	G5TQ?
Maianthemum stellatum (Smilacina stellata,	starry false Solomon's seal	L5	S5 (2000-03-31)	G5 (1984-03-16)
Maianthemum trifolium (Smilacina trifolia)	three-leaved false Solomon's seal	L2	S5 (2000-03-31)	G5 (1984-09-06)
Malaxis monophyllos ssp. brachypoda	white adder's mouth	L1	S4 (2000-03-31)	G5TQ? (1994-05-04)
Malus coronaria	wild crab-apple	LX	S4 (2000-03-31)	G5 (1986-04-08)
Matteuccia struthiopteris var. pensylvanica	ostrich fern	L5	S5	G5TQ? (1984-06-08)
Medeola virginiana	Indian cucumber-root	L2	S5 (2000-03-31)	G5 (1984-06-08)
Megalodonta beckii (Bidens beckii,	water-marigold	L1	S5 (2000-03-31)	G4G5 (1984-06-08)
Melampyrum lineare	cow-wheat	L1	S4S5 (2000-03-31)	G5 (1995-06-26)
Menispermum canadense	moonseed	L3	S4 (2000-03-31)	G5 (1983-10-11)
Mentha arvensis ssp. borealis	wild mint	L5	S5 (2000-03-31)	G5TQ?
Menyanthes trifoliata	bog buckbean	L1	S5 (2000-03-31)	G5 (1983-09-07)
Milium effusum	wood millet	L2	S4S5 (2000-03-31)	G5 (1984-04-16)
Mimulus glabratus var. jamesi	smooth monkey-flower	LX	SH (2000-03-31)	G5TQ? (1984-12-10)
Mimulus moschatus	musk-flower	LX	S2? (2000-03-31)	G4G5 (1984-06-08)
Mimulus ringens	square-stemmed monkey-flower	L3	S5 (2000-03-31)	G5 (1984-06-08)
Mitchella repens	partridgeberry	L3	S5 (2000-03-31)	G5 (1983-10-11)
Mitella diphylla	mitrewort	L4	S5 (2000-03-31)	G5 (1984-06-08)

TRCA NATIVE FLORA & RANKS (11 April 2003)[1]				
SCIENTIFIC NAME	COMMON NAME	TRCA RANK (2003)[2]	PROVINCIAL RANK (S1-S5)[3]	GLOBAL RANK (G1-G5)[3]
Panicum columbianum var. siccanum	Columbia panic grass	L3	S4 (2000-03-31)	G5T5 (1997-02-10)
Panicum flexile	wiry panic grass	L3	S4 (2000-03-31)	G5 (1997-10-06)
Panicum latifolium	broad-leaved panic grass	L1	S4 (2000-03-31)	G5 (1984-04-24)
Panicum linearifolium	narrow-leaved panic grass	L2	S4S5 (2000-03-31)	G5 (1984-04-24)
Panicum oligosanthes (Dichanthelium oligosanthes	few-flowered panic grass	L2		
Panicum villosissimum (P. praecocius)	hairy or woolly panic grass	LX	S3 (2000-03-31)	G5 (1988-08-04)
Panicum virgatum	switch grass	L3	S4 (2000-03-31)	G5 (1984-06-18)
Panicum xanthophysum	yellow or slender panic grass	L2	S4 (2000-03-31)	G5 (1984-04-24)
Parietaria pensylvanica	Pennsylvania pellitory or false nettle	L3	S4 (2000-03-31)	G5 (1984-06-18)
Parnassia parviflora	small-flowered grass of Parnassus	L1	S4? (2000-03-31)	G4 (1991-01-24)
Parthenocissus inserta (P. vitacea)	thicket creeper	L5	S5 (2000-03-31)	G5 (2000-06-06)
Parthenocissus quinquefolia	Virginia creeper	L5	S4? (2000-03-31)	G5 (1984-03-30)
Pedicularis canadensis	wood-betony or lousewort	L1	S5 (2000-03-31)	G5 (1984-06-18)
Pedicularis lanceolata	swamp lousewort	LX	S4 (2000-03-31)	G5 (1984-08-13)
Peltandra virginica	tuckahoe or green arrow-arum	L3	S2 (2000-03-31)	G5 (1984-06-18)
Penstemon digitalis	foxglove beard-tongue	L4	S4S5 (2000-03-31)	G5 (1984-06-18)
Penstemon hirsutus	hairy beard-tongue	L3	S4 (2000-03-31)	G4 (1991-04-17)
Penthorum sedoides	ditch stonecrop	L4	S5 (2000-03-31)	G4 (1984-06-18)
Petasites frigidus (P. palmatus)	palmate-leaved sweet coltsfoot	L1	S5 (2000-03-31)	G5 (1984-06-18)
Phegopteris connectilis	northern or long beech fern	L3	S5 (2000-03-31)	G5 (1984-09-06)
Phegopteris hexagonoptera	southern or broad beech fern	LX	S3 (2000-03-31)	G5 (1990-03-12)
Phlox divaricata	wild blue phlox	L2	S4 (2000-03-31)	G5 (1984-06-18)
Phryma leptostachya	lopseed	L5	S4S5 (2000-03-31)	G5 (1984-06-18)
Physalis heterophylla	clammy ground-cherry	L4	S4 (2000-03-31)	G5 (1984-06-18)
Physalis subglabrata (P. longifolia var. subglabrata	smooth ground-cherry	LX	S4?	G?
Physalis virginiana (P. longifolia var. longifolia	smooth or Virginia ground-cherry	L3	S4 (2000-03-31)	G5 (1985-04-10)
Physocarpus opulifolius	ninebark	L3	S5 (2000-03-31)	G5 (1983-10-11)
Physostegia virginiana ssp. virginiana	false dragonhead or obedient plant	L3	S4 (2000-03-31)	G5TQ?
Picea glauca	white spruce	L3	S5 (2000-03-31)	G5 (1984-10-15)
Picea mariana	black spruce	L2	S5 (2000-03-31)	G5 (1984-06-18)
Pilea fontana	spring clearweed	L3	S4 (2000-03-31)	G5 (1986-02-19)
Pilea pumila	dwarf clearweed	L5	S5 (2000-03-31)	G5 (1988-05-02)
Pinus resinosa	red pine	L1	S5 (2000-03-31)	G5 (1983-09-19)
Pinus strobus	white pine	L4	S5 (2000-03-31)	G5 (1984-06-25)
Plantago rugelii	red-stemmed or Rugel's plantain	L5	S5 (2000-03-31)	G5 (1984-06-25)
Platanthera blephariglottis var. blephariglottis (Hab	white-fringed orchis	LX	S3S4 (2000-03-31)	G4G5T? (1987-07-23)
Platanthera clavellata (Habenaria clavellata	club-spur orchid	LX	S4S5 (2000-03-31)	G5 (1995-10-30)
Platanthera flava var. herbiola (Habenaria flava...	tubercled orchid	LX	S3 (2000-03-31)	G4T4Q (1994-03-13)
Platanthera hookeri (Habenaria hookeri)	Hooker's orchid	LX	S4S5 (2000-03-31)	G5 (1984-06-25)
Platanthera hyperborea (Habenaria hyperborea	northern or tall green orchis	L2	S5 (2000-03-31)	G5 (1984-06-25)
Platanthera lacera (Habenaria lacera)	ragged fringed orchis	L1	S4S5 (2000-03-31)	G5 (1984-06-25)
Platanthera obtusata (Habenaria obtusata)	small northern bog orchis	L1	S5 (2000-03-31)	G5 (1994-02-08)
Platanthera psycodes (Habenaria psycodes)	small purple-fringed orchis	L1	S5 (2000-03-31)	G5 (1984-03-16)
Platanus occidentalis	sycamore	L1	S4 (2000-03-31)	G5 (1984-01-25)
Poa alsodes	grove meadow grass or woodland poa	L3	S4 (2000-03-31)	G4G5 (1997-02-25)

TRCA NATIVE FLORA & RANKS (11 April 2003)[1]				
SCIENTIFIC NAME	COMMON NAME	TRCA RANK (2003)[2]	PROVINCIAL RANK (S1-S5)[3]	GLOBAL RANK (G1-G5)[3]
Potamogeton zosteriformis	eel-grass or flat-stemmed pondweed	L2	S5 (2000-03-31)	G5 (1984-06-25)
Potentilla anserina ssp. anserina	silverweed	L4	S5 (2000-03-31)	G5TQ?
Potentilla arguta var. argute	tall or prairie cinquefoil	L4	S4	G5
Potentilla palustris	marsh cinquefoil	L2	S5 (2000-03-31)	G5 (1984-06-25)
Potentilla paradoxa	bushy cinquefoil	L3	S3 (2000-03-31)	G5 (1985-04-10)
Potentilla simplex	common or old-field cinquefoil	L3	S5 (2000-03-31)	G5 (1984-06-25)
Prenanthes alba	white wood lettuce	L3	S5 (2000-03-31)	G5 (1984-06-25)
Prenanthes altissima	tall wood lettuce	L5	S5 (2000-03-31)	G5? (1984-03-29)
Proserpinaca palustris	mermaid-weed	LX	S4 (2000-03-31)	G5 (1984-06-25)
Prunus americana	wild plum	L3	S4 (2000-03-31)	G5 (1984-08-28)
Prunus nigra	Canada plum	L3	S4 (2000-03-31)	G4G5 (1988-01-15)
Prunus pensylvanica	pin cherry	L4	S5 (2000-03-31)	G5 (1984-04-16)
Prunus pumila var. susquehanae	sand cherry	LX	S4? (2000-03-31)	G5T4 (1993-05-31)
Prunus serotina	black cherry	L5	S5 (2000-03-31)	G5 (1984-08-28)
Prunus virginiana ssp. virginiana	choke cherry	L5	S5 (2000-03-31)	G5TQ?
Pteridium aquilinum var. latiusculum	eastern bracken	L4	S5 (2000-03-31)	G5 (1984-03-29)
Pterospora andromedea	pine-drops	LX	S2 (2000-03-31)	G5 (1984-08-29)
Pycnanthemum tenuifolium	narrow-leaved mountain-mint	L3	S3 (2000-03-31)	G5 (1984-08-29)
Pycnanthemum virginianum	Virginia mountain-mint	L3	S4 (2000-03-31)	G5 (1984-08-29)
Pyrola asarifolia	pink pyrola	L2	S5 (2000-03-31)	G5 (1984-04-16)
Pyrola chlorantha	green-flowered pyrola	L1	S4S5 (2000-03-31)	G5 (1984-08-29)
Pyrola elliptica	shinleaf	L3	S5 (2000-03-31)	G5 (1984-04-16)
Quercus alba	white oak	L2	S5 (2000-03-31)	G5 (1984-08-29)
Quercus macrocarpa	bur oak	L4	S5 (2000-03-31)	G5 (1983-09-06)
Quercus rubra	red oak	L4	S5 (2000-03-31)	G5 (1984-08-29)
Quercus velutina	black oak	L2	S4 (2000-03-31)	G5 (1984-08-29)
Ranunculus abortivus	small-flowered or kidneyleaf buttercup	L5	S5 (2000-03-31)	G5 (1984-08-29)
Ranunculus aquatilis var. longirostris (R. longirostri	white water crowfoot	L2	S4S5 (2000-03-31)	G5 (1984-03-16)
Ranunculus fascicularis	early buttercup	LX	S4 (2000-03-31)	G5 (1984-08-29)
Ranunculus flabellaris	yellow water crowfoot	L2	S4? (2000-03-31)	G5 (1984-03-16)
Ranunculus hispidus var. caricetorum (R. septentri	swamp buttercup	L4	S5 (2000-03-31)	G5T5 (1995-07-25)
Ranunculus hispidus var. hispidus (inc. var. marilar	hispid buttercup	LX	S5 (2000-03-31)	G5T5 (1991-05-09)
Ranunculus pensylvanicus	bristly buttercup	L3	S5 (2000-03-31)	G5 (1988-09-09)
Ranunculus recurvatus var. recurvatus	hooked buttercup	L5	S5 (2000-03-31)	G5TQ?
Ranunculus rhomboideus	prairie buttercup	LX	S3 (2000-03-31)	G4 (1992-02-07)
Ranunculus sceleratus	cursed crowfoot	L5	S5 (2000-03-31)	G5 (1984-08-29)
Rhamnus alnifolia	alder-leaved buckthorn	L3	S5 (2000-03-31)	G5 (1984-04-16)
Rhus radicans (R. radicans ssp. radicans; ssp. neg	poison ivy (vine form)	L4	S5 (2000-03-31)	G5 (1995-11-11)
Rhus rydbergii (R. radicans ssp. rydbergii	poison ivy (shrub form)	L5	S5 (2000-03-31)	G5 (1984-09-06)
Rhus typhina	staghorn sumach	L5	S5 (2000-03-31)	G5 (1984-02-28)
Rhus vernix	poison sumach	LX	S4 (2000-03-31)	G5 (1984-09-06)
Rhynchospora alba	white beak-rush	L1	S5 (2000-03-31)	G5 (1984-08-29)
Ribes americanum	wild black currant	L5	S5 (2000-03-31)	G5 (1984-02-24)
Ribes cynosbati	prickly gooseberry	L5	S5 (2000-03-31)	G5 (1983-10-11)
Ribes glandulosum	skunk currant	L3	S5 (2000-03-31)	G5 (1984-08-29)

TRCA NATIVE FLORA & RANKS (11 April 2003)[1]				
SCIENTIFIC NAME	COMMON NAME	TRCA RANK (2003)[2]	PROVINCIAL RANK (S1-S5)[3]	GLOBAL RANK (G1-G5)[3]
Sarracenia purpurea	pitcher-plant	L1	S5 (2000-03-31)	G5 (1984-09-06)
Sassafras albidum	sassafras	L4	S4 (2000-03-31)	G5 (1983-11-03)
Saxifraga virginiensis	early saxifrage	LX	S5 (2000-03-31)	G5 (1983-10-11)
Scheuchzeria palustris	bog arrow-grass	L1	S4S5 (2000-03-31)	G5 (1984-09-06)
Schizachne purpurascens ssp. purpurascens	purple or false melic grass	L3	S5 (2000-03-31)	G5T? (1988-02-04)
Schizachyrium scoparium (Andropogon scoparius)	little bluestem	L2	S4 (2000-03-31)	G5 (1984-04-09)
Scirpus acutus	hard-stemmed bulrush	L3	S5 (2000-03-31)	G5 (1984-09-06)
Scirpus atrovirens	black-fruited or dark green bulrush	L5	S5 (2000-03-31)	G5? (1984-03-29)
Scirpus cyperinus	woolly bulrush or wool-grass	L3	S5 (2000-03-31)	G5 (1984-09-06)
Scirpus fluviatilis	river bulrush	L3	S4S5 (2000-03-31)	G5 (1984-09-06)
Scirpus microcarpus (S. rubrotinctus)	barber-pole sedge or bulrush	L4	S5 (2000-03-31)	G5 (1987-10-01)
Scirpus pendulus	drooping, nodding, or red bulrush	L3	S5 (2000-03-31)	G5 (1984-09-06)
Scirpus pungens (S. americanus)	three-square or chairmaker's rush	L4	S5 (2000-03-31)	G5 (1988-04-30)
Scirpus smithii	Smith's club-rush	LX	S2? (2000-03-31)	G5? (1984-09-06)
Scirpus validus	soft-stemmed bulrush	L4	S5 (2000-03-31)	G? (1989-00-00)
Scirpus verecundus	shy bulrush or wood clubrush	L2	S1 (2000-03-31)	G4G5 (1998-06-19)
Scleria triglomerata	tall nut-rush	LX	S1 (2000-03-31)	G5 (1988-08-10)
Scleria verticillata	low nut-rush	L1	S3 (2000-03-31)	G5 (1993-05-31)
Scrophularia lanceolata	lance-leaved or hare figwort	L3	S4 (2000-03-31)	G5 (1984-09-06)
Scrophularia marilandica	carpenter's-square figwort	L3	S4 (2000-03-31)	G5 (1984-09-06)
Scutellaria galericulata (S. epilobiifolia)	common skullcap	L5	S5 (2000-03-31)	G5 (1984-09-06)
Scutellaria lateriflora	mad-dog skullcap	L5	S5 (2000-03-31)	G5 (1984-09-06)
Scutellaria parvula var. parvula	small skullcap	LX	S4 (2000-03-31)	G4T? (1992-01-21)
Selaginella eclipes	meadow spike-moss	L1	S4 (2000-03-31)	G4 (1986-11-18)
Senecio aureus	golden ragwort	L2	S5 (2000-03-31)	G5 (1984-09-06)
Shepherdia canadensis	buffalo-berry or soap-berry	L2	S5 (2000-03-31)	G5 (1984-09-06)
Sicyos angulatus	bur cucumber	L4	S5 (2000-03-31)	G5 (1988-02-10)
Silene antirrhina	sleepy catchfly	L3	S5 (2000-03-31)	G5 (1984-09-06)
Silphium perfoliatum	cup-plant	L4	S2 (2000-03-31)	G5 (1988-12-15)
Sisyrinchium montanum	blue-eyed grass	L3	S5 (2000-03-31)	G5 (1984-09-06)
Sium suave	water-parsnip	L4	S5 (2000-03-31)	G5 (1984-09-06)
Smilax herbacea	carrion-flower	L5	S4 (2000-03-31)	G5 (1984-03-29)
Smilax hispida (S. tamnoides var. hispida)	bristly greenbrier	L4	S4 (2000-03-31)	G5 (1986-04-08)
Solanum ptychanthum (S. nigrum var. americanum)	black nightshade	L5	S5 (2000-03-31)	G5 (1994-11-07)
Solidago altissima	tall goldenrod	L5	S5 (2000-03-31)	G5T5 (1994-03-04)
Solidago arguta var. arguta	sharp-leaved goldenrod	L3	S3 (2000-03-31)	G5T4
Solidago bicolor	silver-rod or white goldenrod	L2	S4? (2000-03-31)	G5 (1984-09-06)
Solidago caesia	blue-stemmed goldenrod	L5	S5 (2000-03-31)	G5 (1984-09-06)
Solidago canadensis var. canadensis	Canada goldenrod	L5	S5 (2000-03-31)	G5T? (1993-03-16)
Solidago flexicaulis	zig-zag goldenrod	L5	S5 (2000-03-31)	G5 (1984-09-06)
Solidago gigantea	late goldenrod	L5	S5 (2000-03-31)	G5 (1984-09-06)
Solidago hispida	hairy goldenrod	L2	S5 (2000-03-31)	G5 (1984-09-06)
Solidago juncea	early goldenrod	L4	S5 (2000-03-31)	G5 (1984-09-06)
Solidago nemoralis ssp. nemoralis	grey goldenrod	L5	S5 (2000-03-31)	G5T? (1989-08-01)
Solidago ohioensis	Ohio goldenrod	LX	S4 (2000-03-31)	G4 (1984-09-06)

TRCA NATIVE FLORA & RANKS (11 April 2003)[1]				
SCIENTIFIC NAME	COMMON NAME	TRCA RANK (2003)[2]	PROVINCIAL RANK (S1-S5)[3]	GLOBAL RANK (G1-G5)[3]
Trientalis borealis ssp. borealis	star-flower	L3	S5 (2000-03-31)	G5TQ? (1984-09-06)
Triglochin maritimum	seaside arrow-grass	L1	S5 (2000-03-31)	G5 (1984-09-06)
Triglochin palustre	marsh arrow-grass	L1	S5 (2000-03-31)	G5 (1984-09-06)
Trillium cernuum	nodding trillium	L1	S5 (2000-03-31)	G5 (1984-04-16)
Trillium erectum	red trillium or stinking Johnny	L3	S5 (2000-03-31)	G5 (1984-09-06)
Trillium grandiflorum	white trillium	L3	S5 (2000-03-31)	G5 (1984-09-06)
Trillium undulatum	painted trillium	L1	S5? (2000-03-31)	G5 (1984-09-06)
Triosteum aurantiacum	wild coffee	L2	S5 (2000-03-31)	G5 (1984-09-06)
Tsuga canadensis	eastern hemlock	L4	S5 (2000-03-31)	G5 (1994-07-20)
Typha latifolia	broad-leaved cattail	L4	S5 (2000-03-31)	G5 (1984-09-06)
Ulmus americana	white elm	L5	S5 (2000-03-31)	G5? (1983-09-12)
Ulmus rubra	slippery or red elm	L2	S5 (2000-03-31)	G5 (1983-11-03)
Ulmus thomasii	rock elm	L3	S4? (2000-03-31)	G5 (1986-04-08)
Urtica dioica ssp. gracilis (U. procera)	American stinging nettle	L5	S5 (2000-03-31)	G5T? (1993-03-16)
Utricularia intermedia	flat-leaved bladderwort	L1	S5 (2000-03-31)	G5 (1984-04-16)
Utricularia minor	small bladderwort	L1	S5 (2000-03-31)	G5 (1986-02-19)
Utricularia vulgaris	common bladderwort	L1	S5 (2000-03-31)	G5 (1984-09-06)
Uvularia grandiflora	large-flowered bellwort	L3	S5 (2000-03-31)	G5 (1984-09-06)
Vaccinium angustifolium	lowbush blueberry	L2	S5 (2000-03-31)	G5 (1984-09-06)
Vaccinium corymbosum	highbush blueberry	L1	S4 (2000-03-31)	G5 (1989-08-29)
Vaccinium macrocarpon	large cranberry	L1	S4S5 (2000-03-31)	G4 (1987-08-05)
Vaccinium myrtilloides	velvet-leaf blueberry	L2	S5 (2000-03-31)	G5 (1983-11-20)
Vaccinium oxycoccos	small cranberry	L1	S5 (2000-03-31)	G5 (1984-09-06)
Vaccinium pallidum	hillside or early sweet blueberry	L1	S4 (2000-03-31)	G5 (1984-09-06)
Valeriana sitchensis ssp. uliginosa (S. uliginosa	swamp valerian	L1	S2 (2000-03-31)	G4G5T4
Vallisneria americana	tape-grass or water celery	L1	S5 (2000-03-31)	G5 (1984-09-06)
Verbena hastata	blue vervain	L5	S5 (2000-03-31)	G5 (1984-09-06)
Verbena simplex	slender vervain	L2	S4	G5
Verbena stricta	hoary vervain	L2	S4 (2000-03-31)	G5 (1988-09-09)
Verbena urticifolia	white vervain	L5	S5 (2000-03-31)	G5 (1984-09-06)
Veronica americana	American speedwell or brooklime	L3	S5 (2000-03-31)	G5 (1984-09-06)
Veronica catenata (V. anagallis-aquatica ssp. ...	water speedwell (native)	L3	G5	S4
Veronica scutellata	marsh speedwell	L3	S5 (2000-03-31)	G5 (1984-03-16)
Viburnum acerifolium	maple-leaved viburnum	L3	S5 (2000-03-31)	G5 (1983-09-30)
Viburnum cassinoides	withe-rod or wild raisin	L2	S5 (2000-03-31)	G5 (1984-04-16)
Viburnum lantanoides (V. alnifolium,	hobblebush	L1	S5 (2000-03-31)	G5 (1983-11-20)
Viburnum lentago	nannyberry	L5	S5 (2000-03-31)	G5 (1984-02-14)
Viburnum rafinesquianum	downy arrow-wood	L3	S5 (2000-03-31)	G5 (1984-10-03)
Viburnum trilobum (V. opulus var. trilobum,	highbush cranberry	L2	S5 (2000-03-31)	G5 (1993-08-27)
Vicia americana	American vetch	L3	S5 (2000-03-31)	G5 (1987-10-01)
Viola adunca	hooked-spur or heath dog violet	L1	S4S5 (2000-03-31)	G5 (1984-10-03)
Viola affinis	Le Conte's violet	L3	S4? (2000-03-31)	G5 (1984-10-03)
Viola blanda (V. incognita,	sweet white violet	L3	S4S5 (2000-03-31)	G4G5 (1992-12-29)
Viola canadensis	Canada violet	L3	S5 (2000-03-31)	G5 (1984-10-03)
Viola conspersa	dog violet	L5	S5 (2000-03-31)	G5 (1984-10-03)

TORONTO AND REGION Conservation
for The Living City

Watercourse Crossing Design and Submission Requirements

(Including new and replacement structures and extensions)
September 2007

Prior to proceeding with construction of a watercourse crossing, a permit must be obtained from TRCA as these works constitute alteration to a watercourse and/or development in a regulated area. Where crossings are proposed as a component of land development or infrastructure projects, proponents should address TRCA objectives and policies with respect to crossings throughout the development process.

OBJECTIVES

1. Minimize the total number of crossings in valley and stream corridors.
2. Situate crossings, where required, at appropriate locations.
3. Improve existing watercourse crossings where possible.
4. Ensure no significant increase in upstream and downstream flooding.
5. Protect or enhance the physical and ecological function of the watercourse and valley corridor.
6. Protect all natural features to the extent possible and provide restoration where protection is not possible.
7. Implement adequate erosion and sediment control during and after construction.

SUBMISSION REQUIREMENTS

The following outlines the tasks that must be undertaken and the information that must be provided by crossing proponents, at various stages of the development process, for crossings associated with land development projects. Specific requirements for crossings not associated with land development are provided in subsequent sections.

It is recommended that proponents meet with TRCA staff prior to submission at each stage to identify pertinent issues and study requirements. The level of detail required for the submission may be adjusted at this point to reflect the project scale and degree of complexity. Meetings also provide an opportunity for TRCA staff to provide the proponent with available data for the study area.

1. Studies/reports submitted in support of secondary plan approval (i.e. OP and OPAs) and studies/reports submitted prior to draft plan approval (i.e. MESPs, FSSs, Block Plans)

i. Carry out preliminary air photo/map analysis and field reconnaissance to determine appropriate road crossing locations. Locations should be selected to avoid geomorphic constraints such as meander bends, actively eroding or unstable reaches and confluences, as well as wooded areas, wetlands, Areas of Natural and Scientific Interest and Environmentally Significant Areas. The total number of crossing should be minimized.

ii. Conduct a site walk with TRCA and municipal staff to confirm proposed crossing locations.

iii. Summarize preliminary analysis and document the crossing locations in the resulting document/report. Information to be provided includes:
- Key plan with orthophoto base illustrating location of subject lands, watercourses, natural features and proposed crossings.
- Summary of site walk observations and discussions.