A6. Other Correspondence

AECOM
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Minutes of Meeting

Date of Meeting: October 6, 2009

Project Number: 110372 Start Time: 10:00 am

Project Name: Dixie Road Schedule C Class EA from Queen to Mayfield

Location: Black Creek Boardroom, Black Creek Foundation Offices

Regarding: TRCA Review and Comments on Project

Attendees: Lori Cook, TRCA
Laurian Farrell, TRCA
Ben Krul, TRCA
Sharon Lingertat, TRCA
Hitesh Topiwala, Region of Peel
Steve Hollingsworth, AECOM
Rob Shamess, TRCA

Distribution:

PLEASE NOTE: If this report does not agree with your records of the meeting, or if there are any omissions, please advise, otherwise we will assume the contents to be correct.

- The purpose of the meeting was to present the preliminary preferred design to the TRCA along with Stormwater Management/Storm Sewer Designs for preliminary comments and identification of additional issues.

- Rob Shamess and Steve Hollingsworth reviewed the proposed design for the project starting and Mayfield Road and working south to Queen Street. Pertinent constraints to the road design and stormwater management design were identified through the review of the design.

- The TRCA identified a concern with regards to the flood levels at the existing culvert crossing north of Queen Street and the spill of flood flows into the adjacent downstream property. TRCA

advised that this is an existing issue and they are working with the Region of Peel to develop solutions. AECOM advised that at the proposed design while not improving the issue is not making the problem worse. It was agreed that as part of the EA this area would be identified along with a recommendation that the TRCA and the Region work together during detailed design to develop a solution or means of minimizing the existing impacts.

- The TRCA noted that for the area south of the existing SWM Pond, AECOM are proposing the use of OGS units to deal with water quality. They requested that the report identify the extent of additional pavement and the number of OGS units proposed. TRCA advised that while they are not opposed to the use of OGS units they would like AECOM and the Region to explore other options. They would also like to ensure that as part of the EA maintenance of the OGS issues is identified as an ongoing commitment. They would also like to ensure that the Region are committed to the ongoing maintenance of the OGS units.

- With regards to the existing SWM pond the TRCA requested confirmation that the pond has been appropriately sized to include the future widened Dixie Road. It was pointed out that the pond is under the jurisdiction of the City of Brampton and may require an agreement between the City and the Region to clarify responsibility and maintenance issues.

- TRCA advised that they may, as part of future developments adjacent to Dixie Road, request modifications to existing watercourses to ensure their functionality. They will review the Secondary Plans for the area to ensure they are able to request this.

- The TRCA requested that a statement be added to the EA document to clarify that the Region and TRCA will work together as the adjacent lands develop.

- The TRCA also requested that wooded areas in regulated areas removed as part of construction would be replaced as per their planting requirments.

- The TRCA advised that they were in receipt of the AECOM SWM and Natural Environment reports and will be forwarding additional comments.

- The TRCA requested that they be circulated on the PIC #2 boards and the draft ESR prior to filing so that they could provide comments.

Meeting Adjourned At: 11:30 am Notes Taken By: Rob Shamess

Date Minutes Prepared: October 28, 2009

AECOM
300 – 300 Town Centre Boulevard
Markham, ON, Canada L3R 5Z6
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905 477 8400 tel
905 477 1456 fax

Minutes of Meeting

Date of Meeting	10-20-2010	Start Time	9:30am	Project Number	60118562
Project Name	Dixie Road EA				
Location	TRCA Head Offices				
Regarding	Project Status Report and SWM Update				
Attendees	Travis Brown (AECOM), Ralph Ehlers (AECOM), Steve Hollingworth (AECOM), Kathy Cater (Region of Peel), Sally Rook (Region of Peel), Hitesh Topiwala (Region of Peel), Jairo Morelli (TRCA), Laurian M. Farrell (TRCA), Maggie Liu (TRCA)				
Distribution	All Participants				
Minutes Prepared By	Travis Brown				

PLEASE NOTE: **If this report does not agree with your records of the meeting, or if there are any omissions, please advise, otherwise we will assume the contents to be correct.**

	Action
• Project Introduction and Introduction of attendees, Kathy gave a brief overview of the project highlights to date. Ralph Ehlers explained the extended study area limits reviewing the roll plan and the Prologis site layout. AECOM indicated that the direction to date was that the Prologis SWM ponds are not to be used for the road drainage and we are to produce an independent solution.	Info
• Steve H AECOM discussed the current flow patterns indicating that it is divided into 3 drainage areas. Each area was then discussed individually	info
• **Summary of Drainage Areas** • 1st section drains to the Etobicoke creek. • 2nd draining to non-regulated tributary Humber (H2) • 3rd Regulated Humber River crossing through existing large box culvert. • AECOM indicated that there are constraints in implementing a standard SWM pond for each drainage areas. TRCA acknowledged the constraints and indicated that they will accept a combination of OGS and swales as the treatment method in this case as the increase in the impervious area is not significant compared to the entire drainage area. However, the Region should look at partnering with developers in the future, if possible, to achieve the highest level of treatment.	Info
• **1st Section** – Close to the intersection of Mayfield Road, this area drains into the Etobicoke Creek. Steve noted that a possible solution using OGS control to be piped at a later date as part of the ultimate condition if possible. • TRCA to provide information on the SWM pond capacity for Countryside	Info TRCA

Villages. • The Region of Peel asked AECOM to review if the sewers in this section are required to be oversized – controlled flows to pre-development flows into the development swale using the road drainage as a separate system. • Region of Peel to confirm if culvert under Mayfield was sized for ultimate under previous work.	 AECOM Region of Peel
• **2nd Section** – Steve indicated that this area is less than 2 hectares (proposed road drainage) • Storm sewer could be draining to an OGS unit and out falling into an enhanced swale prior to discharging into the creek. • TRCA indicated that the contributing area into the existing culvert is approximately 41 hectares; TRCA asked that we show that the flow increase will not be detrimental. • TRCA indicated that they have discussed this ex. Culvert location with Prologis along with replacement options. This culvert is undersized and the proposed size needs to be confirmed. • AECOM to look at flows at this culvert location 100yr and Regional flows for overtopping and analysis purposes. • TRCA agreed to provide AECOM/Region of Peel flow information for this culvert. • TRCA also indicated that there are ecological issues at this location, TRCA to confirm issues with there ecology group and forward information to AECOM/Region of Peel. • TRCA indicated that they have issues with OGS units being used as a stand alone solution, requested that we maximize swales • EA to recommend that Region to look for opportunities to direct run-off to SWM ponds if possible when future development takes place.	Info AECOM/Region of Peel AECOM AECOM TRCA TRCA AECOM AECOM
• **3rd Section** – This section also has approximately 2 hectares of proposed road drainage area. • Region of Peel to confirm if road widening is required north of 4th Prologis entrance. If widening is adjusted then drainage area will be reduced and there will be only minor road impacts. • Treatment options for this section similar to section #2 • TRCA indicated that there is a 3rd culvert between culverts 1 & 2 which AECOM indicated they have assumed to be a cross-culvert for removal or extension. TRCA indicated that likely extension at this time is the best option, AECOM to confirm and include in preferred design plans.	AECOM Region of Peel AECOM AECOM

TORONTO AND REGION Conservation
for The Living City

April 21, 2011 CFN: 40388

BY MAIL AND EMAIL (Travis.Brown@aecom.com)

Mr. Travis Brown
AECOM
300-300 Town Centre Blvd
Markham, ON L3R 5Z6

Dear Mr. Brown:

Re: Response to Stormwater Management Report Addendum and Natural Environment Report
Dixie Road Improvements (Queen Street to 2 km North of Mayfield Road)
Municipal Class Environmental Assessment (EA) - Schedule C
Etobicoke Creek and Humber River Watersheds; City of Brampton and Town of Caledon;
Regional Municipality of Peel

Toronto and Region Conservation Authority (TRCA) staff received the Stormwater Management Report Addendum: North of Mayfield Road dated November 2010 on March 11, 2011, and the Natural Environment Report for Dixie Road (Regional Road 4) from Mayfield Road northerly for 2.1 km dated January 2011 on March 16, 2011. As noted in previous correspondence, it is our understanding that the Region of Peel has decided to extend the study limits approximately 2 km north of Mayfield Road in order to allow for the review and evaluation of impacts to the proposed industrial development in the Town of Caledon.

Two watercourses have been identified north of Mayfield Road, within the study area. Crossing 1 (the northerly crossing) is an existing 4.9 m by 3 m concrete box culvert. Crossing 2 (closer to Mayfield Road) consists of two 1200 mm diameter CSP culverts. Water is proposed to be treated by oil-grit separators and enhanced vegetated swales.

Staff has reviewed the above-noted reports and comments are provided in Appendix A. 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 Senior Planner, Environmental Assessment Planning
Planning and Development

SL/

BY EMAIL
cc: Peel: Hitesh Topiwala (Hitesh.Topiwala@peelregion.ca)
TRCA: Beth Williston, Manager, Environmental Assessment Planning
Quentin Hanchard, Manager, Development, Planning and Regulation
Chandra Sharma, Etobicoke/Mimico Watershed Specialist
Gary Wilkins, Humber River Watershed Specialist

F:\Letters for Mailing\40388 – SWM Report and Natural Env Report

APPENDIX A

Stormwater Management Report Addendum

1. As indicated on Page 4 of the report, the existing 900 mm diameter pipe located between Crossings 1 and 2 is excluded from the study due the small and temporary drainage.

   Currently, a total area of approximately 20 ha is draining to this culvert. Previous recommendations diverted a portion of the 20 ha to a proposed stormwater management (SWM) pond (Pond H21) which would then discharge to Crossing 2 once areas west of Dixie Road are developed (ProLogis development). However, further analysis of the development shows that the proposed diversion will increase the Regional flow at Crossing 2 and therefore may increase flooding risks on properties downstream of Dixie Road. In order to mitigate the potential flooding risk, the 900 mm diameter culvert will be maintained and it will continue to convey the Regional flow at the existing level.

   The proponent for the ProLogis development has recently submitted peak flow calculations for the development. It is expected that post development flows from the ProLogis development can be finalized in the next few months. Prior to the detailed design of the road improvement, please provide an analysis for the culvert between Crossings 1 and 2 to include post development flows from the ProLogis site. Please demonstrate that the proposed road work will not create or increase flood risks on properties adjacent to the site.

2. As indicated on Page 5 of the report, Crossing 2 was evaluated using the CulvertMaster program. Please note that as part of the ProLogis development, a Hec-Ras model was established for this crossing using a starting cross section at Dixie Road. The model was recently submitted to TRCA for approval. It is expected that the model will be finalized in the next few months. Prior to the detailed design of the road improvement, please extend the Hec-Ras model for the ProLogis development for the proposed road improvement, and show that the proposed work will not have adverse impacts on properties adjacent to the site.

3. Page 14 of the report states that the increase in impervious area discharging to Crossing 2 represents less than 2% of the total drainage area. Therefore, quantity control will not be provided for drainage areas discharging to this crossing.

   Please note that the total drainage area to this crossing will increase after the ProLogis development as a portion of the external drainage will be diverted to this crossing. As a result, further increase in imperviousness may aggravate flooding and erosion risks to the downstream watercourse. If possible, please explore any opportunities to reduce peak flows at the crossing location.

4. Section 3.1 states that Crossing 1 will not likely be extended as part of the road widening. However, Section 4 states that extensions are required to both Crossings 1 and 2. Please clarify.

5. At the detailed design stage, please refine the SWM report to reflect the proposed improvement.

Natural Environment Report

6. The flow to and from several of the culverts discussed in this report will be altered through adjacent development. Studies for Mayfield West Phase 1 and Countryside Villages have determined significant flow changes under full build-out. The context of future development should be incorporated into the design considerations for each crossing. Please contact the City of Brampton and Town of Caledon for the relevant information.

7. Bobolink is not included in Table 1. Please contact the Ministry of Natural Resources (MNR) to screen for bobolink as current records exist nearby.

8. Different fisheries timing windows apply for works in areas draining to the Etobicoke Creek watershed versus works in the Humber River watershed. Please revise the timing windows in the report as follows: July 1 to September 15 (Humber River watershed) and July 1 to March 31 (Etobicoke Creek watershed).

9. Section 4.0 should include reference to the application of the *Erosion and Sediment Control Guideline for Urban Construction (December 2006).*

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Markham, ON, Canada L3R 5Z6
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905 477 8400 tel
905 477 1456 fax

Memorandum

June 23, 2011

Project No.: 60118562

Sharon Lingertat
Acting Senior Planner
Environmental Assessment and Planning

Toronto and Region Conservation Authority
5 Shoreham Drive
Downsview, Ontario
M3N 1S4

Subject:

TRCA Stormwater Management Report and Natural Environment Report comments and responses – Dixie Road Environmental Assessment Study from Just north of Queen Street to 2km north of Mayfield Road

Dear Mrs. Lingertat

Further to your letter dated April 21, 2011 the following outlines responses to all comments received:

Item	TRCA Staff Comments	Consultants Response to TRCA Staff Comments
1.	As indicated on Page 4 of the report, the existing 900mm diameter pipe located between Crossings 1 and 2 is excluded from the study due to the small and temporary drainage. Currently, a total area of approximately 20ha is draining to this culvert. Previous recommendations diverted a portion of the 20ha to a proposed (SWM) pond (Pond H21) which would then discharge to Crossing 2 once areas west of Dixie Road are developed (ProLogis development). However, further analysis of the development shows that the proposed diversion will increase Regional flow at Crossing 2 and therefore may increase flooding risks on properties downstream of Dixie Road. In order to mitigate the potential flooding risk, the 900mm diameter culvert will be maintained and it will continue to convey the Regional flow at the existing level. The proponent for the ProLogis development has	At the detailed design stage, the hydrology and hydraulics for the culvert crossings will be reviewed to confirm the proposed work will not create or increase flood risks on properties adjacent to the site.

	recently submitted peak flow calculations for the development. It is expected that the post development flows from the ProLogis development can be finalized in the next few months. Prior to the detailed design of the road improvement, please provide an analysis for the culvert between Crossings 1 and 2 to include post development flows from the ProLogis site. Please demonstrate that the proposed road work will not create or increase flood risks on properties adjacent to the site.	
2.	As indicated on page 5 of the report, Crossing 2 was evaluated using the CulvertMaster program. Please note that as part of the Prologis development, a Hec-Ras model was established for this crossing using standard cross-section at Dixie Road. The model was recently submitted to TRCA for approval. It is expected that the model will be finalized in the next few months. Prior to the detailed design of the road improvement, please extend the Hec-Ras model for the Prologis development for the proposed road improvement, and show that the proposed work will not have adverse impacts on properties adjacent to the site.	At the detailed design stage, the hydrology and hydraulics for the culvert crossings will be reviewed to confirm the proposed work will not have adverse impacts on properties adjacent to the site.
3.	Page 14 of the report states that the increase in impervious area discharging to Crossing 2 represents less than 2% of the total drainage area. Therefore, quantity control will not be provided for drainage areas discharging to this crossing. Please note that the total drainage area to this crossing will increase after the ProLogis development as a portion of the external drainage will be diverted to this crossing. As a result, further increase in imperviousness may aggravate flooding and erosion risks to the downstream watercourse. If possible, please explore any opportunities to reduce peak flows at the crossing location.	This is tied to the future development on the west side. To be addressed through a commitment to look at the cumulative impact of the road widening and any diversions for the development to the west on flooding and erosion in the tributary (preferably done by the developers). If more runoff is directed to this tributary, the additional pavement area represents an even smaller fraction of the total drainage area to the crossing, and therefore would have an even less significant impact on flooding and erosion.
4.	Section 3.1 states that Crossing 1 will not likely be extended as part of the road widening. However Section 4 states that the extensions are required at both Crossings 1 and 2 please clarify.	Typo in report corrected.
5.	At the detailed design stage, please refine the SWM report to reflect the proposed improvement.	At the detailed design stage, the Stormwater Management Report will be refined as appropriate to reflect the proposed work.

6.	The flow to and from several of the culverts discussed in this report will be altered through adjacent development. Studies for Mayfield West Phase 1 and Countryside Villages have determined significant flow changes under full build-out. The context of future development should be incorporated into the design considerations for each crossing. Please contact the City of Brampton and Town of Caledon for the relevant information.	Noted: Addressed within the above noted SWM Report.
7.	Boblink in not included in table 1. Please contact the Ministry of Natural Resources (MNR) to screen for Boblink as current records exist nearby.	MNR has been contacted for the Bobolink Screening. The results will be included in the final report.
8.	Different fisheries timing windows apply for works in areas draining to the Etobicoke Creek watershed versus works in the Humber River watershed. Please revise the timing windows in the report as follows: July 1st to September 15th (Humber River Watershed) and July 1st to March 31st (Etobicoke Creek watershed).	Report has been updated to include revised timing windows.
9.	Section 4.0 should include reference to the application of the *Erosion and Sediment Control Guideline for Urban Construction.*	Report has been updated to include reference to noted document.

Sincerely,
AECOM Canada Ltd.

Travis Brown, PMP
Manager, Transportation

cc. Hitesh Topiwala

Ministry of the Environment

Central Region
Technical Support Section

5775 Yonge Street, 8th Floor
North York, Ontario M2M 4J1

Tel.: (416) 326-6700
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Ministère de l'Environnment

Région du Centre
Section d'appui technique

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North York, Ontario M2M 4J1

Tél. : (416) 326-6700
Téléc. : (416) 325-6347

Ontario

June 24, 2011

File:EA02-03-05

Hitesh Topiwala
Project Manager
The Regional Municipality of Peel
11 Indell Lane, 2nd Floor
Brampton, ON L6T 3Y3

RE: Dixie Road Improvements from Queen Street to 2 km north of Mayfield Road
Draft Environmental Study Report
Municipal Class Environmental Assessment Study
Regional Municipality of Peel

Dear Mr. Topiwala,

The Draft Environmental Study Report (ESR) for the above-stated project has been reviewed. This response acknowledges that the study is following the approved environmental planning process for a Schedule C project under the *Municipal Engineers Association Municipal Class Environmental Assessment.*

We offer the following comments to assist your project team at this time:

Surface Water

- The proponent should consult with the Ministry of the Environment's Environmental Assessment and Approvals Branch for Certificate of Approval Requirements. The Ministry of the Environment should also be included in 'Section H – Remaining Approvals' of the Executive Summary.

- The draft ESR proposes to use an existing on-line stormwater management (SWM) pond to treat runoff from 5.3 ha of increased impervious area. The report concludes that this pond will treat increased runoff quality and quantity. However, no information was provided regarding the level of treatment that this pond can provide and whether it will meet the Ministry of the Environment's 'Enhanced Water Quality Protection' Level 1 standards. The Regional Municipality of Peel (Region) should determine whether this pond has the capacity to receive and treat additional SWM runoff quality and quantity and whether the Ministry of the Environment's 'Enhanced Water Quality Protection' Level 1 standards can be achieved, especially considering

the statement that it cannot be determined whether the pond was designed for this configuration of Dixie Road. The Region should also confirm whether there is a Certificate of Approval for this SWM pond, who the owner of the pond is, permission requirements for use of the pond and whether the pond is maintained. Alternative treatment measures should be proposed if this level of treatment cannot be achieved through use of the on-line SWM pond.

- Downstream of the online pond (2.4 ha), oil-grit separators are proposed for water quality treatment, as space is too limited to accommodate SWM ponds and/or vegetated swales. The Region should confirm how the Ministry of the Environment's 'Enhanced Water Quality Protection' Level 1 standards will be achieved through the use of oil-grit separators. The Region should also consider the physical constraints for oil-grit separators (<2 ha) outlined in the Ministry's SWM Planning and Design Manual (2003) and describe how adequate treatment will be provided if the impervious areas exceed the physical constraints of oil-grit separators.

- Permit to Take Water (PTTW) approvals, potential impacts and proposed mitigation measures from dewatering activities should be identified and described in Table 16 under 'Impacts to Fisheries and Aquatic Habitat' in the draft ESR.

- The proponent should be advised that should a PTTW application be required, a report to be prepared in support of the water taking application should include details on the management of the discharge of the water, including targets for pollutant concentrations in the discharge water (typically total suspended solids); how these targets will be achieved; quantity controls; and monitoring requirements.

- The proponent should refer to the MOE's Guideline B-6 – Guidelines for Evaluating Construction Activities Impacting on Water Resources when developing erosion and sediment control plans.

Ground Water

The proponent should assess whether the project may cause an increased risk of road salt impacts to water quality in nearby wells. Any work on affected or replacement wells should be done pursuant to Ontario Regulation 903, *Wells*, under the *Ontario Water Resources Act*.

Air Quality

- Dust mitigation measures should be discussed in the final ESR to address dust concerns at nearby sensitive receptors. It is recommended that non-chloride dust suppressants be used during construction.

- The final ESR should include a statement that construction equipment will be properly maintained to manage any potential air quality impacts.

- To minimize particulate off-site impacts, it is recommended that trees be planted in areas where sensitive receptors may be impacted by the undertaking. Tree species to be planted should include coniferous species, as they are more

effective barriers for particulates than deciduous species.

- The draft Air Quality Report (AQA) assessed air quality impacts at 26 sensitive receptors in the vicinity of the project area. A cursory review of the area indicated the presence of multiple sensitive receptors situated along Dixie Road that potentially can be impacted. The following list highlights some of the sensitive receptors in the study area, but not limited to:

    1. Bramalea Baptist Church;
    2. Precious Jewels Daycare Centre;
    3. Hanover Public School;
    4. Carpe Diem Foster Homes;
    5. St. Marguerite d'Youville Secondary School; and
    6. Springdale Medical Centre.

Please clarify if the above-noted receptors were included in the 26 receptors selected for the AQA. If not, please justify why these receptors were not included. A table listing the 26 receptors and a description for each receptor should be provided.

- In Section 2 of the AQA, please explain why there was no grid set from the road to assess the maximum impacts.

- In Section 3, please add an explanation in Section 3 as to why there is a significant difference in percentage of heavy duty vehicles (HDV) for the southbound traffic when compared to the northbound traffic.

- It is recommended that the proponent assess the selected Volatile Organic Compounds (VOCs) (benzene, 1,3 butadiene, acrolein, acetaldehyde and formaldehyde) impacts at the sensitive receptors. VOC impacts without conducting dispersion modeling can be assessed by using emission ratios assuming the same fleet distribution.

- The acrolein air quality threshold criterion in Table 5.2 of the AQA should be changed to the 24-hour AAQC of 0.4 ug/m^3 to be consistent with all other parameters.

- Ambient air quality monitoring data obtained from the Ministry of the Environment's Air Quality Index (AQI) Brampton (Station No. 46089) and Toronto West (Station No. 35125) stations were used in the AQA. A reason should be provided in Section 6 and 7.4 of the AQA to explain why the average of the 90^{th} percentiles for each year (2003-2007) was selected for the background levels instead of the maximum 90^{th} percentile. Typically, maximum background levels are based on the maximum 90^{th} percentile and not the average 90^{th} percentile.

- Meteorological data was obtained from Buffalo Airport and Toronto Pearson International Airport for the year of 2007. The AQA indicated that a three year meteorological (met) data set was used for the dispersion modeling assessment. It is not clear which years were assessed in the screening level analysis and this clarification should be added to Section 7.2.

- Typically, a 5-year met data set is used for the screening level analysis. An explanation as to why a 5-year met data set was not used should be provided. .

- Please note that if the maximum 90th percentile (41 ug/m^3) was selected as the background level for PM_{10} instead of the average, then the conclusions of this study would be different than those presented in Section 8.1 of the AQA.

- Please ensure that a comparison of existing conditions (base case scenario) with the future build (2031) scenario is included in the AQA.

- Table A4 should include a description of the different scenarios used (48 scenarios) in this study.

- Dispersion modeling input and output files should be included in the AQA.

Thank you for the opportunity to comment on the draft ESR for this undertaking. Please feel free to contact me directly at (416) 325-3577, or via email at nisha.shirali@ontario.ca, if you have any questions about these comments.

Yours sincerely,

Nisha Shirali
Environmental Resource Planner and EA Coordinator
Air, Pesticides and Environmental Planning

c. Tina Dufresne, Halton Peel District Office, MOE
Central Region EA File
A & P File

TORONTO AND REGION Conservation
for The Living City

August 11, 2011 CFN 40388

BY MAIL AND EMAIL (Travis.Brown@aecom.com)

Mr. Travis Brown
AECOM
300-300 Town Centre Blvd
Markham, ON L3R 5Z6

Dear Mr. Brown:

Re: Response to Draft Environmental Study Report (ESR)
Dixie Road Improvements (Queen Street to 2 km North of Mayfield Road)
Municipal Class Environmental Assessment (EA) - Schedule C
Etobicoke Creek and Humber River Watersheds; City of Brampton and Town of Caledon;
Regional Municipality of Peel

Toronto and Region Conservation Authority (TRCA) staff received the Draft Environmental Study Report (ESR) dated June 2011 for the above-noted file on June 13, 2011. The following documents were received for review and comment on June 27, 2011.

- A letter of response to our previous concerns
- Page substitutions for the ESR
- Stormwater Management Report Addendum; dated June 2011
- Preliminary Geotechnical Investigation report; dated June 15, 2011
- Natural Environment Review report; dated June 2011

It is our understanding that the preferred design involves widening Dixie Road from 4 to 6 lanes between Queen Street and Countryside Drive, and from 2 to 4 lanes between Countryside Drive and approximately 2 km north of Mayfield Road, with a provision for future widening of this road section to 6 lanes. Works will involve construction of dedicated turn lanes, new intersections, a centre median and a 1.5 m sidewalk on both sides of the road from Queen Street to Countryside Drive. North of Countryside Drive a 1.5 m sidewalk is proposed on the east side of Dixie Road with a 3.0 multi-use trail proposed on the west side.

In reviewing the ESR it is difficult to determine which watercourses and associated infrastructure (bridges, culverts) will be impacted. A summary of all existing culverts/bridges, a location map, existing sizes and proposed works at each location (replace, extend) should be included to ensure a clear understanding of future works and possible permitting requirements. In addition, the hydrology and hydraulics for these crossings has been deferred to the detailed design stage, as a result of the proposed ProLogis development on the west side of Dixie Road and potential cumulative impacts. Once post development flows for this site have been finalized (next few months) final calculations for the entire study area will be possible to determine any potential increases to flood risk. The ESR should document, in a separate section, all further studies to be completed at the detailed design stage including, but not limited to, those discussed in this letter. Detailed comments are provided in Appendix A.

Please ensure that the TRCA receives a copy of the Notice of Study Completion and two (2) hard copies and one (1) digital copy, in pdf form, of the final ESR. The final ESR should be accompanied by a covering letter which uses the numbering scheme provided in this letter and identifies how these comments have been addressed and where they have been addressed in the ESR.

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 Senior Planner, Environmental Assessment Planning
Planning and Development

BY EMAIL

cc: Peel: Hitesh Topiwala (Hitesh.Topiwala@peelregion.ca)
TRCA: Carolyn Woodland, Director, Planning and Development
Beth Williston, Senior Manager, Environmental Assessment Planning
Quentin Hanchard, Senior Manager, Development, Planning and Regulation
Chandra Sharma, Etobicoke/Mimico Watershed Specialist
Gary Wilkins, Humber River Watershed Specialist

F:\Letters for Mailing\40388 – Draft ESR

APPENDIX A

ITEM	TRCA COMMENTS (April 21, 2011)	AECOM RESPONSE	TRCA COMMENTS (August 11, 2011)
Stormwater Management			
1.	As indicated on Page 4 of the report, the existing 900 mm diameter pipe located between Crossings 1 and 2 is excluded from the study due the small and temporary drainage. Currently, a total area of approximately 20 ha is draining to this culvert. Previous recommendations diverted a portion of the 20 ha to a proposed stormwater management (SWM) pond (Pond H21) which would then discharge to Crossing 2 once areas west of Dixie Road are developed (ProLogis development). However, further analysis of the development shows that the proposed diversion will increase the Regional flow at Crossing 2 and therefore may increase flooding risks on properties downstream of Dixie Road. In order to mitigate the potential flooding risk, the 900 mm diameter culvert will be maintained and it will continue to convey the Regional flow at the existing level. The proponent for the ProLogis development has recently submitted peak flow calculations for the development. It is expected that post development flows from the ProLogis development can be finalized in the next few months. Prior to the detailed design of the road improvement, please provide an analysis for the culvert between Crossings 1 and 2 to include post development flows from the ProLogis site. Please demonstrate that the proposed road work will not create or increase flood risks on properties adjacent to the site.	At the detailed design stage, the hydrology and hydraulics for the culvert crossings will be reviewed to confirm the proposed work will not create or increase flood risks on properties adjacent to the site.	To be addressed at the detailed design stage.
2.	As indicated on Page 5 of the report, Crossing 2 was evaluated using the CulvertMaster program. Please note that as part of the ProLogis development, a Hec-Ras model was established for this crossing using a starting cross section at Dixie Road. The model was recently submitted to TRCA for approval. It is expected that the model will be finalized in the next few months. Prior to the	At the detailed design stage, the hydrology and hydraulics for the culvert crossings will be reviewed to confirm the proposed work will not create or increase flood risks on properties adjacent to the site.	To be addressed at the detailed design stage.

ITEM	TRCA COMMENTS (April 21, 2011)	AECOM RESPONSE	TRCA COMMENTS (August 11, 2011)
	detailed design of the road improvement, please extend the Hec-Ras model for the ProLogis development for the proposed road improvement, and show that the proposed work will not have adverse impacts on properties adjacent to the site.		
3.	Page 14 of the report states that the increase in impervious area discharging to Crossing 2 represents less than 2% of the total drainage area. Therefore, quantity control will not be provided for drainage areas discharging to this crossing. Please note that the total drainage area to this crossing will increase after the ProLogis development as a portion of the external drainage will be diverted to this crossing. As a result, further increase in imperviousness may aggravate flooding and erosion risks to the downstream watercourse. If possible, please explore any opportunities to reduce peak flows at the crossing location.	This is tied to the future development on the west side. To be addressed through a commitment to look at the cumulative impact of the road widening and any diversions for the development to the west on flooding and erosion in the tributary (preferably done by the developers). If more runoff is directed to this tributary, the additional pavement area represents an even smaller fraction of the total drainage area to the crossing, and therefore would have an even less significant impact on flooding and erosion.	As indicated, additional drainage areas may be directed to Crossing 2 after the ProLogis site (west of Dixie Road) is developed. Therefore, a further increase in peak flows at this crossing should be avoided as it may aggravate flooding and erosion risks to the downstream watercourse. At the detailed design stage, please provide a comparison of peak flows (e.g. 2 to 100 year and the Regional storms) between the existing condition and proposed condition (with ProLogis development and Dixie Road improvements). Please reassess the proposed SWM plan for this crossing and determine if additional measures are required to mitigate the potential risk.
4.	Section 3.1 states that Crossing 1 will not likely be extended as part of the road widening. However, Section 4 states that extensions are required to both Crossings 1 and 2. Please clarify.	Typo in report corrected.	Addressed.
5.	At the detailed design stage, please refine the SWM report to reflect the proposed improvement.	At the detailed design stage, the Stormwater Management Report will be refined as appropriate to reflect the proposed work.	To be addressed at the detailed design stage.
6.	-	-	There are several watercourse crossings within the study area, but only the crossings at Dixie Road/Bovaird Drive and north of Queen Street are discussed in detail in the report. Please clarify if the rest of the crossings convey only local drainage and were therefore not included in the further analysis.

ITEM	TRCA COMMENTS (April 21, 2011)	AECOM RESPONSE	TRCA COMMENTS (August 11, 2011)
7.	-	-	As indicated in the report, the crossing under the Dixie/Bovaird intersection will not be extended, so further hydraulic analysis will not be conducted. Please clarify if the proposed road alignment north of Bovaird Drive will encroach into the on-line Dixie/Bovaird pond, and if so, whether the encroachment will compromise the available storage of the pond.
8.	-	-	Please note that TRCA staff is undertaking a floodplain mapping update for the watercourse running along the west side of Dixie and will be completed by the end of 2011. Prior to the detailed design stage, please contact TRCA staff to obtain the latest hydraulic and floodplain data for the watercourse.
9.	-	-	As stated on Page 15 of the SWM report, a portion of the road drainage will be directed to the existing Dixie/Bovaird pond for quality treatment. Please note that the pond was designed to provide a normal level (Level 2) of water quality treatment. At the detailed design stage, please revise the SWM report to state the actual level of the treatment for areas contributing to the on-line pond.
10.	-	-	At the detailed design stage, please submit digital copies of hydrologic and hydraulic modeling files for all crossings
Natural Environment			
11.	The flow to and from several of the culverts discussed in this report will be altered through adjacent development. Studies for Mayfield West Phase 1 and Countryside Villages have determined significant flow changes under full build-out. The context of future development should be incorporated into the design considerations for each crossing. Please contact the City of Brampton and Town of Caledon for the relevant information.	Noted: Addressed within the above noted SWM Report.	Refer to comment #3 above.
12.	Bobolink is not included in Table 1. Please contact the Ministry of Natural Resources (MNR) to screen for	MNR has been contacted for the Bobolink Screening. The results	To be addressed.

ITEM	TRCA COMMENTS (April 21, 2011)	AECOM RESPONSE	TRCA COMMENTS (August 11, 2011)
	bobolink as current records exist nearby.	will be included in the final report.	
13.	Different fisheries timing windows apply for works in areas draining to the Etobicoke Creek watershed versus works in the Humber River watershed. Please revise the timing windows in the report as follows: July 1 to September 15 (Humber River watershed) and July 1 to March 31 (Etobicoke Creek watershed).	Report has been updated to include revised timing windows.	Addressed.
14.	Section 4.0 should include reference to the application of the *Erosion and Sediment Control Guideline for Urban Construction (December 2006)*.	Report has been updated to include reference to noted document.	Addressed.
15.	-	-	It is difficult to determine based on the draft ESR which culverts will need to be replaced and which will need to be extended. Please provide a table in the ESR with the location of all water crossings, the type of culvert or bridge, the size of the existing culvert/bridge, the length of the required extension and in which directions, and the new dimensions for any replacement structures. The general anticipated ecological impacts in terms of fish habitat and riparian vegetation should also be included. This will provide TRCA staff with a better understanding of the scope of the works and site specific impacts. Please note however, that the above is not intended to exclude a detailed report discussing the terrestrial and aquatic impacts of the project. At detailed design a site visit will be required to re-confirm these locations for permitting purposes.
16.	-	-	TRCA staff will require at detailed design an impacts assessment report detailing the impacts at each water crossing along the entire length of the road widening within our regulated area. This should also include a tree inventory for all woody vegetation to be lost or damaged due to the entire length of the road widening. Please also submit a detailed restoration plan

ITEM	TRCA COMMENTS (April 21, 2011)	AECOM RESPONSE	TRCA COMMENTS (August 11, 2011)
			for roadside and water crossing work as appropriate.
17.	-	-	Please note on page 1 of the Natural Environment Review Report that, for the most part, TRCA staff considers these smaller headwater tributaries to be indirect fish habitat.
18.	-	-	Given that the presence of Species at Risk have the potential to completely alter the proposed project, please be more definitive prior to detailed design that no such species (of the terrestrial version) are within or directly adjacent to the work area. It is a bit concerning that the wording on page 6 of the Natural Environment Report reads as follows: "none of the listed species were observed during any site visit although there is some likelihood that one or more of the species identified below may be present in the type of habitat offered within the green space limits of the study area." If further studies are required to ensure a more precise sweep, they should be conducted as soon as possible rather than waiting for detailed design.
19.	-	-	Table 15 is missing the Natural Environment Section. Please revise accordingly.
General			
20.	-	-	Please ensure that all agency correspondence is included in the final ESR as we have sent out several comment letters since commencement of this study.

AECOM
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Markham, ON, Canada L3R 5Z6
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August 19, 2011

Project No. 60118562

Sharon Lingertat
Acting Senior Planner
Environmental Assessment Planning
Toronto and Region Conservation Authority
5 Shoreham Drive
Downsview, Ontario
M3N 1S4

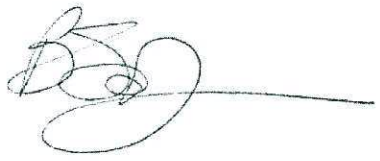
Dear Mrs. Lingertat,

Subject: **TRCA Comments on Draft Environmental Study Report**
Dixie Road Improvements (Queen Street to 2 km North of Mayfield Road)
Municipal Class Environmental Assessment – Schedule C

Thank you for your letter of August 11, 2011. We appreciate the comments and feedback you have provided on the Draft Environmental Study Report. The attached table provides responses to the comments raised in your letter.

Should you have any additional questions or concerns, please do not hesitate to contact me.

Sincerely,
AECOM Canada Ltd.



Brenda Jamieson, P.Eng.
Associate Vice President, Transportation

Encl.

cc: Hitesh Topiwala, Region of Peel
Travis Brown, AECOM

Item	TRCA Comments (April 21, 2011)	Study Team Response	TRCA Comments (August 11, 2011)	Study Team Response
Stormwater Management				
1.	As indicated on Page 4 of the report, the existing 900mm diameter pipe located between Crossings 1 and 2 is excluded from the study due to the small and temporary drainage. Currently, a total area of approximately 20ha is draining to this culvert. Previous recommendations diverted a portion of the 20ha to a proposed (SWM) pond (Pond H21) which would then discharge to Crossing 2 once areas west of Dixie Road are developed (ProLogis development). However, further analysis of the development shows that the proposed diversion will increase Regional flow at Crossing 2 and therefore may increase flooding risks on properties downstream of Dixie Road. In order to mitigate the potential flooding risk, the 900mm diameter culvert will be maintained and it will continue to convey the Regional flow at the existing level. The proponent for the ProLogis development has recently submitted peak flow calculations for the development. It is expected that the post development flows from the ProLogis development can be finalized in the next few months. Prior to the detailed design of the road improvement, please provide an analysis for the culvert between Crossings 1 and 2 to include post development flows from the ProLogis site. Please demonstrate that the proposed road work will not create or increase flood risks on properties adjacent to the site.	At the detailed design stage, the hydrology and hydraulics for the culvert crossings will be reviewed to confirm the proposed work will not create or increase flood risks on properties adjacent to the site.	To be addressed at the detailed design stage.	Agreed

Item	TRCA Comments (April 21, 2011)	Study Team Response	TRCA Comments (August 11, 2011)	Study Team Response
2.	As indicated on page 5 of the report, Crossing 2 was evaluated using the CulvertMaster program. Please note that as part of the Prologis development, a Hec-Ras model was established for this crossing using standard cross-section at Dixie Road. The model was recently submitted to TRCA for approval. It is expected that the model will be finalized in the next few months. Prior to the detailed design of the road improvement, please extend the Hec-Ras model for the Prologis development for the proposed road improvement, and show that the proposed work will not have adverse impacts on properties adjacent to the site.	At the detailed design stage, the hydrology and hydraulics for the culvert crossings will be reviewed to confirm the proposed work will not create or increase flood risks on properties adjacent to the site.	To be addressed at the detailed design stage.	Agreed.
3.	Page 14 of the report states that the increase in impervious area discharging to Crossing 2 represents less than 2% of the total drainage area. Therefore, quantity control will not be provided for drainage areas discharging to this crossing. Please note that the total drainage area to this crossing will increase after the ProLogis development as a portion of the external drainage will be diverted to this crossing. As a result, further increase in imperviousness may aggravate flooding and erosion risks to the downstream watercourse. If possible, please explore any opportunities to reduce peak flows at the crossing location.	This is tied to the future development on the west side. To be addressed through a commitment to look at the cumulative impact of the road widening and any diversions for the development to the west on flooding and erosion in the tributary (preferably done by the developers). If more runoff is directed to this tributary, the additional pavement area represents an even smaller fraction of the total drainage area to	As indicated, additional drainage areas may be directed to Crossing 2 after the ProLogis site (west of Dixie Road) is developed. Therefore, a further increase in peak flows at this crossing should be avoided as it may aggravate flooding and erosion risks to the downstream watercourse. At the detailed design stage, please provide a comparison of peak flows (e.g. 2 to 100 year and the Regional storms) between the existing condition and proposed condition (with ProLogis development and Dixie Road improvements). Please reassess the proposed SWM plan for this	A comparison of peak flows will be provided at the detailed design to confirm the proposed stormwater management plan for this crossing is appropriate.

Item	TRCA Comments (April 21, 2011)	Study Team Response	TRCA Comments (August 11, 2011)	Study Team Response
		the crossing, and therefore would have an even less significant impact on flooding and erosion.	crossing and determine if additional measures are required to mitigate the potential risk.	
4.	Section 3.1 states that Crossing 1 will not likely be extended as part of the road widening. However Section 4 states that the extensions are required at both Crossings 1 and 2. Please clarify.	Typo in report corrected.	Addressed.	Agreed.
5.	At the detailed design stage, please refine the SWM report to reflect the proposed improvement.	At the detailed design stage, the Stormwater Management Report will be refined as appropriate to reflect the proposed work.	To be addressed at the detailed design stage.	Agreed.
6.	-	-	There are several watercourse crossings within the study area, but only the crossings at Dixie Road/Bovaird Drive and north of Queen Street are discussed in detail in the report. Please clarify if the rest of the crossings convey only local drainage and were therefore not included in the further analysis.	The remaining crossings only convey local drainage and hence were not included in further analysis.
7.	-	-	As indicated in the report, the crossing under the Dixie/Bovaird intersection will not be extended, so further hydraulic analysis will not be conducted. Please clarify if	The proposed road alignment north of Bovaird Drive will not encroach into the

Item	TRCA Comments (April 21, 2011)	Study Team Response	TRCA Comments (August 11, 2011)	Study Team Response
			the proposed road alignment north of Bovaird Drive will encroach into the on-line Dixie/Bovaird Drive pond, and if so, whether the encroachment will compromise the available storage of the pond.	on-line Dixie/Bovaird Drive pond.
8.	-	-	Please note that TRCA staff is undertaking a floodplain mapping update for the watercourse running along the west side of Dixie and will be completed by the end of 2011. Prior to the detailed design stage, please contact TRCA staff to obtain the latest hydraulic and floodplain data for the watercourse.	At the detailed design stage, the Region will contact TRCA staff to obtain the latest hydraulic and floodplain data for the watercourse.
9.	-	-	As stated on Page 15 of the SWM report, a portion of the road drainage will be directed to the existing Dixie/Bovaird pond for quality treatment. Please note that the pond was designed to provide a normal level (Level 2) of water quality treatment. At the detailed design stage, please revise the SWM report to state the actual level of treatment for areas contributing to the on-line pond.	At the detailed design stage, the Stormwater Management Plan will be updated to include the actual level of treatment for areas contributing to the on-line pond.
10.	-	-	At the detailed design stage, please submit digital copies of	At the detailed design stage, the

Item	TRCA Comments (April 21, 2011)	Study Team Response	TRCA Comments (August 11, 2011)	Study Team Response
			hydrologic and hydraulic modeling files for all crossings.	digital copies of the modeling files for all crossings will be submitted to TRCA.
Natural Environment				
11.	The flow to and from several of the culverts discussed in this report will be altered through adjacent development. Studies for Mayfield West Phase 1 and Countryside Villages have determined significant flow changes under full build-out. The context of future development should be incorporated into the design considerations for each crossing. Please contact the City of Brampton and Town of Caledon for the relevant information.	Noted: Addressed within the above noted SWM Report.	Refer to comment #3 above.	A comparison of peak flows will be provided at the detailed design stage to confirm the proposed stormwater management plan for this crossing is appropriate.
12.	Boblink in not included in table 1. Please contact the Ministry of Natural Resources (MNR) to screen for Boblink as current records exist nearby.	MNR has been contacted for the Bobolink Screening. The results will be included in the final report.	To be addressed.	Agreed.
13.	Different fisheries timing windows apply for works in areas draining to the Etobicoke Creek watershed versus works in the Humber River watershed. Please revise the timing windows in the report as follows: July 1st to September 15th (Humber River Watershed) and July 1st to March 31st (Etobicoke Creek watershed).	Report has been updated to include revised timing windows.	Addressed.	Agreed.

Item	TRCA Comments (April 21, 2011)	Study Team Response	TRCA Comments (August 11, 2011)	Study Team Response
14.	Section 4.0 should include reference to the application of the *Erosion and Sediment Control Guideline for Urban Construction*.	Report has been updated to include reference to noted document.	Addressed.	Agreed.
15.	-	-	It is difficult to determine based on the draft ESR which culverts will need to be replaced and which will need to be extended. Please provide a table in the ESR with the location of all water crossings, the type of culvert or bridge, the size of the existing culvert/bridge, the length of the required extension and in which direction, and the new dimensions for any replacement structures. The general anticipated ecological impacts in terms of fish habitat and riparian vegetation should also be included. This will provide TRCA staff with a better understanding of the scope of the works and site specific impacts. Please note however, that the above is not intended to exclude a detailed report discussing the terrestrial and aquatic impacts of the project. At the detailed design a site visit will be required to re-confirm these locations for permitting purposes.	A table will be added to the ESR to clarify the existing and proposed conditions at all water crossings. At the detailed design stage, a site visit will be conducted to re-confirm site conditions for permitting purposes.

Item	TRCA Comments (April 21, 2011)	Study Team Response	TRCA Comments (August 11, 2011)	Study Team Response
16.	-	-	TRCA staff will require at detailed design an impacts assessment report detailing the impacts at each water crossing along the entire length of the road widening within our regulated area. This should also include a tree inventory for all woody vegetation to be lost or damaged due to the entire length of the road widening. Please also submit a detailed restoration plan for roadside and water crossing work as appropriate.	The Natural Environment Report will be updated to document the potential impacts at each water crossing. At the detailed design stage, a tree inventory study will be conducted and a detailed restoration plan will be prepared and submitted to TRCA.
17.	-	-	Please note on page 1 of the Natural Environment Review Report that, for the most part, TRCA staff considers these smaller headwater tributaries to be indirect fish habitat.	The report will be revised to note that "for the most part, TRCA staff considers these smaller headwater tributaries to be indirect fish habitat".
18.	-	-	Given that the presence of Species at Risk have the potential to completely alter the proposed project, please be more definitive	The wording in the Natural Environment Report will be

Item	TRCA Comments (April 21, 2011)	Study Team Response	TRCA Comments (August 11, 2011)	Study Team Response
			prior to detailed design that no such species (of the terrestrial version) are within or directly adjacent to the work area. It is a bit concerning that the wording on page 6 of the Natural Environment Report reads as follows: "none of the listed species were observed during any site visit although there is some likelihood that one or more of the species identified below may be present in the type of habitat offered within the green space limits of the study area." If further studies are required to ensure a more precise sweep, they should be conducted as soon as possible rather than waiting for detailed design.	revised to be more definite with respect to Species at Risk.
19.	-	-	Table 15 is missing the Natural Environment Section. Please revise accordingly.	The Natural Environment Section will be added to Table 15 of the ESR.
General				
20.	-	-	Please ensure that all agency correspondence is included in the final ESR as we have sent out several comment letters since commencement of this study.	All agency correspondence will be included in the Final ESR.

Item	TRCA Comments (April 21, 2011)	Study Team Response	TRCA Comments (August 11, 2011)	Study Team Response
21.	-	-	The ESR should document, in a separate section, all further studies to be completed at the detailed design stage including, but not limited to, those noted in TRCA's August 11, 2011 letter.	A separate section will be added to the ESR to document further studies to be completed at the detailed design stage.

Ministry of Tourism and Culture

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Facsimile: 416-314-7175
Email: Andrea.Williams@ontario.ca

Ministère du Tourisme et de la Culture

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Direction des programmes et des services
Division de culture
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Email: Andrea.Williams@ontario.ca

Ontario

August 8, 2011

Mr. Arthur Figura
Timmins Martelle Heritage Consultants
584 Oxford Street East
London, ON
N5Y 3J1

RE: Review and Acceptance into the Provincial Register of Reports: Archaeological Assessment Report Entitled, *" Addendum Stage 1 Archaeological Assessment Class EA, Dixie Road (Regional Road 4), Queen Street to North of Mayfield Road, City of Brampton/Town of Caledon, Region of Peel,"* Report Dated May 2010, Report Received September 27, 2010, MCL Project Information Form Number P083-018-2010, MCL RIMS Number 21EA043

Dear Dr. Martelle:

This office has reviewed the above-mentioned report, which has been submitted to this Ministry as a condition of licensing in accordance with Part VI of the Ontario Heritage Act, R.S.O. 1990, c 0.18. This review is to ensure that the licensed professional consultant archaeologist has met the terms and conditions of their archaeological licence, that archaeological sites have been identified and documented according to the 1993 technical guidelines set by the Ministry and that the archaeological fieldwork and report recommendations ensure the conservation, protection and preservation of the cultural heritage of Ontario.*

This report was subjected to a review that focused specifically on concerns for archaeological resources and/or sites in relation to the outcomes and recommendations of the report. This focused review does not alter or affect your obligation as the licensee to

ensure that all reports submitted meet the Ministry technical guidelines and terms and conditions of licence.

As the result of our review, this Ministry accepts the above titled report into the Provincial register of archaeological reports. The report indicates that portions of the study area have archaeological potential and, consequently, should be subject to a Stage 2 archaeological assessment. This Ministry concurs with this recommendation. Due to the potential for unmarked burials, it is recommended that all construction work within and adjacent to the west half of Lot 20, Concession 4 be monitored by a licensed archaeologist. It is also recommended that all construction work in the vicinity of the Mayfield United Church Cemetery be subject to archaeological monitoring. Additionally, due to the potential for unmarked burials, all construction work within and adjacent to the northwest corner of Lot 20, Concession 3 is to be monitored by a licensed archaeologist. This Ministry concurs with these recommendations.

I trust this information is of assistance. Should you require any further information regarding this matter, please feel free to contact me.

Sincerely,

Andrea K. Williams

Andrea Williams
A/ Archaeology Review Officer

cc. Archaeological Licensing Office

* In no way will the Ministry be liable for any harm, damages, costs, expenses, losses, claims or actions that may result: (a) if the Report(s) or its recommendations are discovered to be inaccurate, incomplete, misleading or fraudulent; or (b) from the issuance of this letter. Further measures may need to be taken in the event that additional artifacts or archaeological sites are identified or the Report(s) is otherwise found to be inaccurate, incomplete, misleading or fraudulent.

Ministry of Tourism and Culture

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Email: Andrea.Williams@ontario.ca

Ontario

August 8, 2011

Dr. Holly Martelle
Timmins Martelle Heritage Consultants
584 Oxford Street East
London, ON
N5Y 3J1

RE: Review and Acceptance into the Provincial Register of Reports: Archaeological Assessment Report Entitled, *"Stage 1 Archaeological Assessment Class EA, Dixie Road (R.R 4), Queen Street to Mayfield Road, City of Brampton, Town of Caledon, Region of Peel,"* Report Dated October 2008, Report Received November 3, 2009, Addendum Received August 5, 2011, MCL Project Information Form Number P064-203-2008, MCL RIMS Number 21EA043

Dear Dr. Martelle:

This office has reviewed the above-mentioned report and addendum, which has been submitted to this Ministry as a condition of licensing in accordance with Part VI of the Ontario Heritage Act, R.S.O. 1990, c 0.18. This review is to ensure that the licensed professional consultant archaeologist has met the terms and conditions of their archaeological licence, that archaeological sites have been identified and documented according to the 1993 technical guidelines set by the Ministry and that the archaeological fieldwork and report recommendations ensure the conservation, protection and preservation of the cultural heritage of Ontario.*

This report and addendum was subjected to a review that focused specifically on concerns for archaeological resources and/or sites in relation to the outcomes and recommendations of the report. This focused review does not alter or affect your

obligation as the licensee to ensure that all reports submitted meet the Ministry technical guidelines and terms and conditions of licence.

As the result of our review, this Ministry accepts the above titled report into the Provincial register of archaeological reports. The report indicates that portions of the ultimate right-of-way have archaeological potential and, consequently, should be subject to a Stage 2 archaeological assessment. This Ministry concurs with this recommendation. It is also recommended that the areas adjacent to the Mount Olivet Cemetery and Lundy Family burial ground be subject to archaeological monitoring. This Ministry concurs with this recommendation.

I trust this information is of assistance. Should you require any further information regarding this matter, please feel free to contact me.

Sincerely,

Andrea K. Williams

Andrea Williams
A/ Archaeology Review Officer

cc. Archaeological Licensing Office

* In no way will the Ministry be liable for any harm, damages, costs, expenses, losses, claims or actions that may result: (a) if the Report(s) or its recommendations are discovered to be inaccurate, incomplete, misleading or fraudulent; or (b) from the issuance of this letter. Further measures may need to be taken in the event that additional artifacts or archaeological sites are identified or the Report(s) is otherwise found to be inaccurate, incomplete, misleading or fraudulent.

Ministry of Tourism and Culture

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Ministère du Tourisme et de la Culture

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Ontario

August 9, 2011

Dr. Holly Martelle
Timmins Martelle Heritage Consultants
584 Oxford Street East
London, ON
N5Y 3J1

RE: Review and Acceptance into the Provincial Register of Reports: Archaeological Assessment Report Entitled, *"Stage 2 Archaeological Assessment Class EA, Dixie Road (Regional Road 4), Queen Street to Mayfield Road, City of Brampton/Town of Caledon, Regional of Peel,"* Report Dated October, 2009, Report Received September 27, 2010, MCL Project Information Form Number P064-203-2008, MCL RIMS Number 21EA043

Dear Dr. Martelle:

This office has reviewed the above-mentioned report, which has been submitted to this Ministry as a condition of licensing in accordance with Part VI of the Ontario Heritage Act, R.S.O. 1990, c 0.18. This review is to ensure that the licensed professional consultant archaeologist has met the terms and conditions of their archaeological licence, that archaeological sites have been identified and documented according to the 1993 technical guidelines set by the Ministry and that the archaeological fieldwork and report recommendations ensure the conservation, protection and preservation of the cultural heritage of Ontario.*

This report was subjected to a review that focused specifically on concerns for archaeological resources and/or sites in relation to the outcomes and recommendations of the report. This focused review does not alter or affect your obligation as the licensee to ensure that all reports submitted meet the Ministry technical guidelines and terms and conditions of licence.

As the result of our review, this Ministry accepts the above titled report into the Provincial register of archaeological reports. The report indicates that an archaeological site, Location 1, was found on the subject property and it is recommended that it be considered significant enough to warrant Stage 3 investigations. This Ministry concurs with this recommendation. The properties at 11575, 11623 and 11498 Dixie Road were not included in this Stage 2 assessment and it is recommended that these properties will therefore require Stage 2 archaeological assessment prior to any construction activities. This Ministry concurs with this recommendation. Additionally, it is recommended that any construction activity adjacent to the Mt. Olivet Cemetery and Lundy family burial ground should be monitored by a licensed archaeologist due to the potential for unmarked burials. This Ministry concurs with this recommendation.

I trust this information is of assistance. Should you require any further information regarding this matter, please feel free to contact me.

Sincerely,

Andrea K. Williams

Andrea Williams
A/ Archaeology Review Officer

cc. Archaeological Licensing Office

* In no way will the Ministry be liable for any harm, damages, costs, expenses, losses, claims or actions that may result: (a) if the Report(s) or its recommendations are discovered to be inaccurate, incomplete, misleading or fraudulent; or (b) from the issuance of this letter. Further measures may need to be taken in the event that additional artifacts or archaeological sites are identified or the Report(s) is otherwise found to be inaccurate, incomplete, misleading or fraudulent.

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August 26, 2011

Project No. 60118562

Nisha Shirali
Environmental Resource Planner and EA Coordinator
Air, Pesticides and Environmental Planning
Ministry of the Environment
Central Region
Technical Support Section
5775 Yonge Street, 8th Floor
North York, ON M2M 4J1

Dear Ms. Shirali,

Subject: MOE Comments on Draft Environmental Study Report
Dixie Road Improvements (Queen Street to 2 km North of Mayfield Road)
Municipal Class Environmental Assessment – Schedule C

Thank you for your letter of June 24, 2011. We appreciate the comments and feedback you have provided on the Draft Environmental Study Report. The attached table provides responses to the comments raised in your letter.

Should you have any additional questions or concerns, please do not hesitate to contact me.

Sincerely,
AECOM Canada Ltd.

Brenda Jamieson, P.Eng.
Associate Vice President, Transportation

Encl.

cc: Hitesh Topiwala, Region of Peel
Travis Brown, AECOM

Item	MOE Comments (June 24, 2011)	Study Team Response
Surface Water		
1.	The proponent should consult with the Ministry of the Environment's Environmental Assessment and Approvals Branch for Certificate of Approval Requirements. The Ministry of the Environment should also be included in 'Section H – Remaining Approvals' of the Executive Summary.	At the detailed design stage, the Region will consult with the Ministry of the Environment's Environmental Assessment and Approvals Branch for Certificate of Approval Requirements. Reference to the Ministry of the Environment has been added to the Executive Summary, Section H of the ESR.
2.	The draft ESR proposes to use an existing on-line stormwater management (SWM) pond to treat runoff from 5.3 ha of increased impervious area. The report concludes that this pond will treat increased runoff quality and quantity. However, no information was provided regarding the level of treatment that this pond can provide and whether it will meet the Ministry of the Environment's 'Enhanced Water Quality Protection' Level 1 standards. The Regional Municipality of Peel (Region) should determine whether this pond has the capacity to receive and treat additional SWM runoff quality and quantity and whether the Ministry of the Environment's 'Enhanced Water Quality Protection' Level 1 standards can be achieved, especially considering the statement that it cannot be determined whether the pond was designed for this configuration of Dixie Road. The Region should also confirm whether there is a Certificate of Approval for this SWM pond, who the owner of the pond is, permission requirements for use of the pond and whether the pond is maintained. Alternative treatment measures should be proposed if this level of treatment cannot be achieved through use of the on-line SWM pond.	The existing on-line stormwater management pond is under the jurisdiction of the City of Brampton. The City is supportive of the Region using the pond for the Dixie Road improvements. The pond provides water quality, flood and erosion control for the entire 1400 ha drainage area to the pond, which includes Dixie Road. The pond was designed to provide a normal level (Level 2) of water quality treatment. The existing pond can easily accommodate the small additional pavement area associated with the proposed roadway improvements. At the detailed design stage, the Region will discuss the need for an agreement between the City and the Region to clarify responsibility and maintenance issues for the pond.
3.	Downstream of the online pond (2.4 ha), oil-grit separators are proposed for water quality treatment, as space is too limited to accommodate SWM ponds and/or vegetated swales. The Region should confirm how the Ministry of the Environment's 'Enhanced Water Quality Protection' Level 1 standards will be achieved through the use of oil-grit separators. The Region should also consider the physical constraints for oil-grit separators (<2 ha) outlined in the Ministry's SWM Planning and Design Manual (2003) and describe how adequate treatment will be provided if the impervious areas exceed the physical constraints of oil-grit separators.	Oil-grit separators will be installed to treat water quality upstream of outfalls or connections. The increased quantity produced by the expanded pavement will be negligible. At the detailed design stage, the oil-grit separators will be sized to provide Level 1 protection treatment.

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4.	Permit to Take Water (PTTW) approvals, potential impacts and proposed mitigation measures from dewatering activities should be identified and described in Table 16 under 'Impacts to Fisheries and Aquatic Habitat' in the draft ESR.	Permit to Take Water requirements have been identified and described in Table 16 of the Final ESR.
5.	The proponent should be advised that should a PTTW application be required, a report to be prepared in support of the water taking application should include details on the management of the discharge of the water, including targets for pollutant concentrations in the discharge water (typically total suspended solids); how these targets will be achieved; quantity controls; and monitoring requirements.	A report will be prepared to support the water taking application at the detailed design stage.
6.	The proponent should refer to the MOE's Guideline B-6 – Guidelines for Evaluating Construction Activities Impacting on Water Resources when developing erosion and sediment control plans.	Agreed. The erosion and sediment control plan will be prepared at the detailed design stage.
Groundwater		
1.	The proponent should assess whether the project may cause an increased risk of road salt impacts to water quality in nearby wells. Any work on affected or replacement wells should be done pursuant to Ontario Regulation 903, *Wells*, under the *Ontario Water Resources Act*.	This project will not cause an increased risk of road salt impacts to water quality in nearby wells. The majority of the study corridor is or will be serviced by watermains. The Region of Peel has a salt management plan in place to ensure responsible salt usage. Furthermore, the Region is continually evaluating and employing techniques to minimize salt usage to maintain a safe bare pavement policy.
Air Quality		
1.	Dust mitigation measures should be discussed in the final ESR to address dust concerns at nearby sensitive receptors. It is recommended that non-chloride dust suppressants be used during construction.	Dust mitigation measures will be discussed in the Final ESR.
2.	The final ESR should include a statement that construction equipment will be properly maintained to manage any potential air quality impacts.	The Final ESR will include a statement regarding the maintenance of construction equipment.
3.	To minimize particulate off-site impacts, it is recommended that trees be planted in areas where sensitive receptors may be impacted by the undertaking. Tree species to be planted should	At the detailed design stage, a tree inventory study will be conducted and a detailed restoration plan will be prepared.

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	include coniferous species, as they are more effective barriers for particulates than deciduous species.	
4.	The draft Air Quality Report (AQA) assessed air quality impacts at 26 sensitive receptors in the vicinity of the project area. A cursory review of the area indicated the presence of multiple sensitive receptors situated along Dixie Road that potentially can be impacted. The following list highlights some of the sensitive receptors in the study area, but not limited to: 1. Bramalea Baptist Church; 2. Precious Jewels Daycare Centre; 3. Hanover Public School; 4. Carpe Diem Foster Homes; 5. St. Marguerite d'Youville Secondary School; and 6. Springdale Medical Centre. Please clarify if the above-noted receptors were included in the 26 receptors selected for the AQA. If not, please justify why these receptors were not included. A table listing the 26 receptors and a description for each receptor should be provided.	Representative receptors were selected along the study corridor for the air quality assessment as illustrated on Figures 1 to 3. While the noted receptors were not specifically included, they are represented by the selected receptors. The selected receptors were chosen to represent worst case impacts at sensitive locations surrounding the project area.
5.	In Section 2 of the AQA, please explain why there was no grid set from the road to assess the maximum impacts.	The selected receptors represent worst case impacts at sensitive locations surrounding the project area. This is noted in Section 2 of the report.
6.	In Section 3, please add an explanation in Section 3 as to why there is a significant difference in percentage of heavy duty vehicles (HDV) for the southbound traffic when compared to the northbound traffic.	A note will be added to Section 3 to explain the significant difference in the northbound and southbound heavy duty vehicle percentages.
7.	It is recommended that the proponent assess the selected Volatile Organic Compounds (VOCs) (benzene, 1,3 butadiene, acrolein, acetaldehyde and formaldehyde) impacts at the sensitive receptors. VOC impacts without conducting dispersion modeling can be assessed by using emission ratios assuming the same fleet distribution.	NO_2, particulate matter ($PM_{2.5}$ and PM_{10}) and CO were carried forward to represent all Chemical Compounds of Concern for the dispersion modelling since they have the highest emission rates relative to the criterion and thresholds which have been formally adopted.
8.	The acrolein air quality threshold criterion in Table 5.2 of the AQA should be changed to the 24-hour AAQC of 0.4 ug/m3 to be consistent with all other parameters.	The acrolein threshold criterion in Table 5.2 will be changed to the 24-hour AAQC.

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9.	Ambient air quality monitoring data obtained from the Ministry of the Environment's Air Quality Index (AQI) Brampton (Station No. 46089) and Toronto West (Station No. 35125) stations were used in the AQA. A reason should be provided in Section 6 and 7.4 of the AQA to explain why the average of the 90th percentiles for each year (2003-2007) was selected for the background levels instead of the maximum 90th percentile. Typically, maximum background levels are based on the maximum 90th percentile and not the average 90th percentile.	The average of the 90th percentile values was selected as it better represents credible worst case conditions since the measured values are typically decreasing year after year.
10.	Meteorological data was obtained from Buffalo Airport and Toronto Pearson International Airport for the year of 2007. The AQA indicated that a three year meteorological (met) data set was used for the dispersion modeling assessment. It is not clear which years were assessed in the screening level analysis and this clarification should be added to Section 7.2.	One year was used in the dispersion modelling assessment as part of the AQA. This modelling year was the year 2007. As part of an initial screening level analysis, dispersion modelling for the years 2003, 2005 and 2007 was performed (independently). As the results of this screening level assessment demonstrated the year 2007 to result in somewhat elevated results over the three years, it was therefore adopted as worst-case for use with the dispersion modelling study of the AQA. A note will be added to the report to clarify this.
11.	Typically, a 5-year met data set is used for the screening level analysis. An explanation as to why a 5-year met data set was not used should be provided.	Screening level analysis was performed using the available met data (2003, 2005, and 2007). A similar approach was considered for another roadway assessment done at the time by RWDI (i.e., Kingston Road EA). The screening level analysis using three years of met data indicated that year-to-year variations in met conditions and the associated effects on dispersion were relatively small. Additionally, since undertaking the Dixie Road EA, RWDI has completed screening level analysis for other roadways in the GTA (i.e., Highway 401 - Leslie to Warden) using five years of met data. These analyses have also shown year-to-year variations to be relatively small. Therefore, it is our understanding that the current study based on three years of met data would sufficiently represent the local air quality condition at the study area.

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12.	Please note that if the maximum 90th percentile (41 ug/m3) was selected as the background level for PM10 instead of the average, then the conclusions of this study would be different than those presented in Section 8.1 of the AQA.	Noted.
13.	Please ensure that a comparison of existing conditions (base case scenario) with the future build (2031) scenario is included in the AQA.	The air quality assessment was only undertaken for the future build (2031) scenario.
14.	Table A4 should include a description of the different scenarios used (48 scenarios) in this study.	The scenarios varied on the basis of the ADT Category and the Heavy Duty Vehicle percentage as described in columns 3 and 7 which are highlighted in blue.
15.	Dispersion modeling input and output files should be included in the AQA.	The dispersion modeling input and output files will be provided to MOE under separate cover.