Appendix A.9

Agency Correspondence

AECOM
300 Water Street
Whitby, ON, Canada L1N 9J2
www.aecom.com

905 668 9363 tel
905 668 0221 fax

April 14, 2015

Amanda Graham
Environmental Resource Planner and Environmental Assessment Coordinator
Central Region, Technical Support Section
Ministry of the Environment and Climate Change
5775 Yonge Street, 9th Floor
North York ON M2M 4J1

Dear Ms. Graham:

Regarding: Trafalgar Road (Regional Road 3) Widening Class EA
MOECC Comments on the Draft Environmental Study Report and Notice of Study Completion
AECOM Project No. 60119993

Thank you for providing your comments on the draft Environmental Study Report (ESR) for the above referenced project, which were received by email on January 20, 2015. Responses to your comments along with the updates included in the ESR, are provided in the attached table which has also been included in Appendix A9 of the ESR. Where no specific action was required, additional clarification has been provided in the response table.

Please find enclosed a copy of the final ESR for your reference. The ESR is being placed on the public record from April 16, 2015 to May 19, 2015. A copy of the Notice of Completion is attached for your reference.

Thank you again for taking the time to review the draft ESR and provide comments. If you have any questions regarding the final ESR, please contact the undersigned at 905-668-9363, ext. 2350.

Sincerely,
AECOM Canada Ltd.

Sheri Harmsworth, P.Eng.
Senior Project Manager
sheri.harmsworth@aecom.com

SH:sh
Encl.
cc: Matt Krusto, Halton Region
Melissa Green Battiston, Halton Region
Nick Zervos, Halton Region
Brenda Jamieson, AECOM

MOECC Comment and Response Table – January 30, 2015 Comments from MOECC on Draft ESR

Ministry of Environment and Climate Change **Amanda.Graham@ontario.ca**	**Study Team Responses**
We have received the draft Environmental Study Report (ESR) for the above noted environmental assessment. Our understanding is that the preferred alternative is to widen the road to a six lane cross-section with four general purpose lanes and two curbside lanes for HOV/Transit use. We provide the following comments below for your consideration.	Yes, you are correct. The preferred alternative is to widen Trafalgar Road to a six-lane cross-section with four general purpose lanes and provisions for two curbside HOV / BRT lanes. This six-lane cross section begins north of Leighland Avenue and continues to south of Highway 407, with an urban cross-section planned throughout. A 6-lane cross-section currently exists south of White Oaks Boulevard.
General Comments	
1. In addition to the summary statements provided on page 40, please include a table showing how each factor/criteria listed in Exhibit 4.3 was applied to each alternative to reach the conclusion that widening Trafalgar Road and TSM/TDM would be carried forward for further development. It is also ideal to have a summary table depicting how criteria were analyzed to determine the preferred alternative design concept.	The summary table showing how each factor/criteria listed in Exhibit 4.3 was applied to each alternative was provided in Appendix I as part of the Draft ESR. This information has been moved into the Main ESR, and is Exhibit 4.5. The summary table for the selection of the preferred alternative design concept is provided in Exhibit 5.3.
2. As it was mentioned in Exhibit 4.4, the “do nothing” alternative should also be listed and explained on page 37 of the ESR under Section 4.1 “Identifying a Range of Reasonable Alternative Solutions”. It should also be included in the tables mentioned above.	A description of the Do Nothing alternative was added to the text. The Do Nothing alternative is included in the assessment of alternatives summary table in Appendix I. This information has been moved into the Main ESR, and is Exhibit 4.5. As the Do Nothing alternative was not the selected alternative, it is not included in Exhibit 5.3.
3. In the Agency Mailing List, please change the MOECC contact information from Dorothy Moszynski to Amanda Graham.	The contact information has been updated.
Surface Water Comments	
1. While it is understood that the majority of stormwater management design is conducted in the design phase, financial cost, land acquisition needs, structural requirements and general feasibility should be part of the preliminary analysis as this information is necessary to select the preferred alternatives for both interim and ultimate conditions. These details should be provided as part of the EA planning stage and not detail design.	A Stormwater Management (SWM) Report was prepared in support of the EA to examine existing drainage conditions, evaluate the impact of the preferred roadway improvements on stormwater quality, quantity and flooding, as well as recommend measures to mitigate impacts associated with the preferred road design alternative. An overview of the report findings is provided in the main body of the ESR while the complete SWM Report is provided in Appendix G of the ESR. The recommended stormwater management plan for the Preferred Design is documented in Section 7 of the ESR. The Combination Option which directs East Morrison Creek to the west side of Trafalgar Road is the preferred option and has been clearly documented as such in the ESR. A brief overview of the recommended stormwater management plan is provided below. Further details are provided in Section 7.1.7 of the ESR. Throughout the study corridor, runoff generated from the Trafalgar Road ROW will be collected in a curb and gutter system and catchbasins within the proposed urban cross section and conveyed in a storm sewer system within the Trafalgar Road ROW. The quantity and quality of runoff will be controlled in accordance with applicable design criteria and will ultimately outlet to the creek systems in the Study Area, consistent with existing conditions at existing outlet locations.

MOECC Comment and Response Table – January 30, 2015 Comments from MOECC on Draft ESR

Ministry of Environment and Climate Change **Amanda.Graham@ontario.ca**	**Study Team Responses**
2. For the combined stormwater management strategy option that directs Trafalgar Road runoff towards SWM ponds on residential development: a) An analysis should be conducted to evaluate the ability of the proposed SWM ponds slated for the residential development to meet the water quality treatment and peak flow control as proposed in Section 1.3.1 of the draft ESR. b) Details should also be provided on the feasibility of using the residential SWM ponds for this project, including ownership and land availability to expand the SWM ponds as necessary to accommodate the road runoff. c) For those SWM ponds currently under construction, information should be provided confirming the SWM ponds are being built with the additional storage needed to capture and treat the runoff from Trafalgar Road ROW catchments.	Multiple reports and assessments by other parties, and a series of potential options were reviewed during the preparation of this study to identify opportunities to proceed with and without integration and/or coordination of the management of runoff with adjacent development as documented in Section 7.1.7 of the ESR. Opportunities included the SWM ponds proposed in the East and Main Branch EIR/FSS reports (prepared by the adjacent developments) which were evaluated to identify surplus storage and the feasibility of using it to control runoff from the ROW. The feasibility of these options is discussed in the SWM Report in Appendix G. As documented in Section 7.1.7, a combined stormwater management strategy is proposed to manage the roadway runoff and the runoff for the adjacent development lands. The strategy was developed in consultation with the Town of Oakville, Conservation Halton and the adjacent developers. From Highway 407 southerly to Dundas Street, runoff collection for the Trafalgar Road ROW will be integrated into the design of future SWM ponds for adjacent developments, where possible, with super pipe storage to control peak flows with oil grit separator (OGS) units for water quality treatment provided elsewhere. Pre-treatment of flows controlled by super pipes is recommended to prevent sediment accumulation within the super pipes. From Dundas Street southerly to the Morrison-Wedgewood Diversion Channel, OGS units in conjunction with super pipes are recommended to manage runoff from the Trafalgar Road ROW due to limited space within the proposed ROW. Pre-treatment of flows controlled by super pipes is recommended to prevent sediment accumulation within the super pipes. Consideration should be given during detailed design to a treatment train approach to provide for 80% TSS removal in the event that OGS are found to be insufficient and only able to provide 50% TSS removal. No widening of the roadway platform is proposed south of the Diversion Channel. The proposed SWM measures will control peak flows from the ROW under proposed conditions to existing levels and provide an enhanced level of water quality treatment in accordance with applicable design criteria, including *North Oakville Creeks Subwatershed Study* (NOCSS) (August, 2006), NOCSS Addendum (September, 2007), MOE guidelines and the MTO *Highway Drainage Design Standards.*
3. For areas proposed to be treated by dry ponds or super pipes and OGS:	
a) Additional pre-treatment measures are needed. Super pipes have no water quality treatment abilities and unless part of a treatment train approach, MOE does not support the view that OGS alone can meet the water quality treatment criteria described in section 1.3.1 of the draft ESR or 'Enhanced Water Quality Protection' as per the 2003 MOE Stormwater Management Planning and Design Manual.	A preliminary stormwater management strategy has been developed as part of the preferred design. A treatment train approach with infiltration/retention elements installed before an OGS unit in conjunction with super pipes will be implemented to manage runoff from Trafalgar Road where appropriate to achieve water quality targets. Types of possible treatment train approaches are discussed in the SWM Report. A detailed stormwater management plan will be developed during detailed design in consultation with Conservation Halton and the applicable developers.
b) An evaluation of land availability (for temporary SWM dry ponds) and cost evaluation, particularly for super pipes (which have a high capital cost associated with them, making them a less viable option for temporary SWM facilities) should be done at the EA planning stage and not detail design.	As documented in Section 7.1.7, a combined stormwater management strategy is proposed to manage the roadway runoff and the runoff for the adjacent development lands. The strategy was developed in consultation with the Town of Oakville, Conservation Halton and the adjacent

MOECC Comment and Response Table – January 30, 2015 Comments from MOECC on Draft ESR

Ministry of Environment and Climate Change **Amanda.Graham@ontario.ca**	**Study Team Responses**
	developers. From Highway 407 southerly to Dundas Street, runoff collection for the Trafalgar Road ROW will be integrated into the design of future SWM ponds for adjacent developments, where possible, with super pipe storage to control peak flows with oil grit separator (OGS) units for water quality treatment provided if required. Pre-treatment of flows controlled by super pipes is recommended to prevent sediment accumulation within the super pipes. Temporary SWM ponds and temporary super pipes are no longer proposed. Super pipe requirements for the ultimate condition will be assessed during detailed design once the sizing of stormwater management ponds on adjacent lands is confirmed. Super pipes will be accommodated within the proposed ROW and have generally been accounted for in the project cost.
4. The Stormwater Management Strategy should include details supporting how the proposed stormwater management facilities are designed to meet the stormwater management water quality treatment criteria and water quantity control criteria for both the ultimate and the interim condition based on the NOCSS criteria (as proposed in Section 1.3.1. of Appendix A) and Enhanced Level Protection as per the MOECC's Stormwater Management Planning and Design Manual, 2003. Enhanced level protection should always be the minimum treatment criteria for water quality treatment of total suspended solids for all areas unless the proponent can justify a lower level. The local Conservation Authority may put forth additional limits regarding stormwater quality treatment or quantity control, but the minimum requirements for TSS are put forth in MOECC's Stormwater Management Planning and Design Manual, 2003.	The Combination Option, described above, is the preferred option and has been more clearly documented as such in the ESR. The proposed SWM measures will control peak flows from the ROW under proposed conditions to existing levels and provide an enhanced level of water quality treatment in accordance with applicable design criteria, including North Oakville Creeks Subwatershed Study (NOCSS) (August, 2006), NOCSS Addendum (September, 2007), MOE guidelines and the MTO Highway Drainage Design Standards as documented in the SWM Report. A treatment train approach to provide for 80% TSS removal is proposed which complies with the requirements of the NOCSS.
5. The ESR should use the most up to date information to determine if the option of using SWM ponds located on adjacent proposed residential development is feasible. The majority of the proposed adjacent residential developments named in section 3.1.2 of the draft ESR have Permit To Take Water (PTTW) Applications submitted to the MOECC or have had PTTWs issued for the construction dewatering of the sites over the last year. The construction dewatering PTTWs are for the installation of services and the construction of stormwater management ponds. Therefore, the information to determine if East Morrison Creek is to be realigned and if the residential SWM ponds are sized to capture and treat the Trafalgar Road runoff is available.	As documented in Section 7.1.7, a combined stormwater management strategy is proposed to manage the roadway runoff and the runoff for the adjacent development lands which includes realignment of East Morrison Creek to the west side of Trafalgar Road north of Dundas Street. The strategy was developed in consultation with the Town of Oakville, Conservation Halton and the adjacent developers. From Highway 407 southerly to Dundas Street, runoff collection for the Trafalgar Road ROW will be integrated into the design of future SWM ponds for adjacent developments, where possible, with super pipe storage to control peak flows with oil grit separator (OGS) units for water quality treatment provided if required. Pre-treatment of flows controlled by super pipes is recommended to prevent sediment accumulation within the super pipes. Both HEC-RAS modeling and associated floodplain mapping is being refined, detailed and updated as part of the adjacent development applications. Hydraulic modeling for the Trafalgar Road widening project will be updated at the Detailed Design stage, taking into consideration the updated and more detailed modelling, with a detailed stormwater management plan developed in consultation with Conservation Halton and the applicable developers. This commitment has been added to the Mitigation Measures and Detailed Design Commitments table (Exhibit 8.1) in the ESR..

MOECC Comment and Response Table – January 30, 2015 Comments from MOECC on Draft ESR

Ministry of Environment and Climate Change **Amanda.Graham@ontario.ca**	**Study Team Responses**
6. Please confirm that the expansion of the roadway north of the diversion channel will not result in drainage being directed to areas south of diversion channel. If there is additional drainage to this area, then SWM improvements should be extended to treat and control runoff south of the diversion channel.	The widening of Trafalgar Road to a six-lane cross-section begins north of White Oaks Boulevard (i.e. north of the diversion channel). A 6-lane cross-section currently exists south of White Oaks Boulevard. The preferred design will not result in additional drainage being directed to areas south of the diversion channel.
7. Hydraulic analysis and proposals for the sizing of stream culverts and bridge crossings are not reviewed here and should be sent to the local conservation authority for review by their engineering staff. Please ensure the local Conservation Authority is consulted and any comments incorporated into the final ESR.	The local Conservation Authority has been consulted throughout the study process, and their comments have been incorporated into the final ESR.
8. Please justify why Appendix A – Table 4 describes mitigation for impacts to the natural environment from possible construction effects but not long term operational effects.	Appendix A is the Natural Environment Appendix; Appendix F is the SWM Appendix. Surface water impacts are addressed in Appendix F.
Air Quality Review Comments	
• Guidelines, Standards and Emission Inventory	
1. Section 1.2 of the AQA Report, which summarizes the relevant guidelines applied to this project, did not include the proposed *Canadian Ambient Air Quality Standards* (CAAQs) for PM2.5. Since this project involves future build scenarios to 2031 and the CAAQs will come into effect in 2015 and 2020, the proponent should consider assessing how the proposed undertaking will compare to the proposed 2020 24-hour standard of 27 µg/m3 and the annual standard of 8.8 µg/m3 for PM2.5.	The new CAAQS for PM2.5 were established under the Environmental Protection Act 1999, in May 2013 and therefore were not available when the Air quality assessment report for this project prepared. The tables and report have been updated to include the new CAAQ's for PM2.5.
• Existing Ambient Air Quality	
1. The use of the Hamilton Downtown station for background ambient air concentrations of benzene, CO, and 1, 3-butadiene is not acceptable as this data captures industrial sources not present in the study area. NAPS stations found throughout the GTA would be more representative of the study area than the Hamilton Downtown station. Background CO, benzene and 1, 3 butadiene concentrations for this study area should be revised and the Hamilton Downtown station should not be used.	Existing ambient air quality levels have been updated for CO, Benzene and 1, 3-Butadiene in the Final ESR report. The background measurements for these contaminants have been extracted from nearby monitoring stations in the GTA, specifically the MOECC's Mississauga monitoring station for ambient background CO concentrations and the Toronto Etobicoke monitoring station for ambient background Benzene and 1,3-Butadiene concentrations.
2. Please clarify what is meant by the term "average value" stated in the first bullet point on page 9 of the AQA Report. If only the 90th percentile for 1 and 24 hour measurements for the Oakville station were applied as an estimate of the background, it is not clear why the average value was noted.	The "average value" term has been removed from the updated AQA report.
3. There is a discrepancy in Section 1.4 of the AQA Report where it states that the Hamilton Downtown monitoring station was selected for ambient background SO_2 concentrations while Section 1.4 states that ambient data for SO_2 is represented by historical data from the Oakville Station (2002 – 2006). This should be clarified in the AQA Report for the Final ESR.	Background SO_2 was extracted from the Oakville AQ Monitoring Station. The AQA report has been updated to reflect this.
• Emission Inventory	
1. Section 4.0 "Emission Inventory" of the AQA Report primarily focused on the vehicle exhaust emissions, evaporative losses, and tire wear, which are estimated from MOBILE6.2. In addition to the MOBILE6.2 emission factors, the re-suspension of road dust on a paved road should also be considered when estimating particulate impacts. Typically, fugitive particulate emissions from roads are estimated by applying emission factors for different particle sizes, which can be obtained from the US EPA AP42 Chapter 13.2.1.	The air quality assessment has been updated to include re-suspension of road dust on paved roads using the equations in the U.S EPA AP 42 Chapter 13.2.1.

MOECC Comment and Response Table – January 30, 2015 Comments from MOECC on Draft ESR

Ministry of Environment and Climate Change **Amanda.Graham@ontario.ca**	**Study Team Responses**
As total suspended particulate (TSP) and PM10 emissions from re-suspension of road dust were not addressed as per the ministry's practices, the particulate emissions reported in the AQA Report and the total potential particulate impacts at the sensitive receptors are underestimated. The proponent must address the particulate emissions contribution from re-suspension of road dust in order to property estimate the total particulate impacts at the most impacted receptors.	
• Assessment of Maximum Impacts	
1. The dispersion modelling in the AQA report considered 500 m in each direction of the Trafalgar Road corridor in order to capture the dispersion of air contaminants from the proposed undertaking's mobile sources. Please clarify what grid spacing was used in estimating the local impacts within 500m of Trafalgar Road.	A grid was not used to assess the maximum impacts in the AQ study. The study was based on the consideration of sensitive receptors within 500 m of the study area as clarified in page 12 of the report.
2. For particulate impacts, the settling velocities for PM2.5 and PM10 were summarized on page 18 of the AQA Report under Section 5.1.4 "Modelling Details". However, this section does not provide the deposition velocity for the different particle sizes, nor does it specify the values used for both the deposition and settling velocity of TSP. Please include these details in Section 5.1.4 of the AQA Report.	The AQA Report has been updated to include details on the settling and deposition velocities used in the modelling.
3. In Section 5.2 Tier 1 Modelling, please clarify why Tier 2 Modelling was not done for parameters such as benzene, which exceed the ambient air quality criteria at the most impacted receptors. Please also address the fact that the background data used for benzene is not representative of this area as there are no industrial sources.	A Tier 2 analysis would still show benzene to exceed its ambient air quality criteria. In addition, benzene concentration already exceeds ambient air quality criteria for the current scenario and the model results show 15% to 17% reduction in benzene concentration for the build cases relative to the current scenario. Furthermore, the background concentration for benzene makes up a large percentage of total concentration; specifically, the 24 hour average background value for benzene is 82% of the associated ambient air quality criteria while the annual background value is 200% of the associated Air Quality threshold.
• Additional Air Comments	
1. Please note that neither the electronic CD nor the hard copy of the Draft ESR included Appendix A "Air Quality Monitoring Data", Appendix E "Emission Factors and MOBILE6.2 Input / Output" or Appendix F "CALQHCR Input/Output". Please provide an electronic copy of these appendices for the ministry's review.	Complete. These items were provided to the Ministry on February 4th, 2015, by email (link to zip file included in email).
2. We recommend adding additional detail in Section 1.3 "Study Area" to clarify if the proposed undertaking assessed the queuing from traffic entering and exiting the Go Parking Lot stations in the vicinity of the study area.	The queuing from traffic entering and exiting the GO Parking lot stations was not specifically assessed in this study. However, background concentration levels were included in the assessment. The background concentration levels would sufficiently capture emissions from traffic at the GO parking lot stations.
3. Since the proposed undertaking will be constructed in three phases, please clarify the following: a. The area closest to the lake around Cornwall Road and Trafalgar Road may be impacted by lake shore breeze effects resulting in local meteorological differences compared to the Pearson Meteorological data set used. How will this impact the results? b. The dispersion modelling assessed impacts when the full project has been constructed. How will the different construction phases impact traffic congestion in the study area?	a) The dispersion models were run using the Central Region – Toronto, York-Durham, Halton-Peel Pre-processed meteorological data obtained from the Ministry of Environment and Climate Change (MOECC). Further, local meteorological data was not readily available. b) Construction phases were not specifically assessed as part of the traffic component; however, it is anticipated that with adequate signage to alternate routes, congestion will be minimized within the study area during construction.

MOECC Comment and Response Table – January 30, 2015 Comments from MOECC on Draft ESR

Ministry of Environment and Climate Change **Amanda.Graham@ontario.ca**	**Study Team Responses**
4. Please clarify why in Table 6.1 the PM10 maximum predicted concentrations for a 24 hour average period are found at Receptor 34 while in Table 6.2 the PM10 the PM10 maximum predicted concentrations for a 24 hour average period are found at Receptor 11. Similarly, please clarify why in Table 6.1 the PM2.5 maximum predicted concentrations for a 24 hour average period are found at Receptor 11 while in Table 6.2 the PM2.5 maximum predicted concentrations for a 24 hour average period are found at Receptor 34. It seems this discrepancy may be a typo. Please also clarify why Tables 6.1 and 6.2 do not include a receptor for maximum predicted concentrations.	This is a typo. PM10 and PM2.5 maximum predicted concentration for a 24 hour average period are found at Receptor 11. The tables have been revised. Tables 6.1 and 6.2 do include receptors where maximum predicted concentrations occurred. For example, Table 6.1 shows NOx 1 hour maximum concentration occurred at Receptor 11.
5. During construction, please apply best management practices to mitigate any air quality impacts caused by construction dust. Please note that the ministry recommends that non-chloride dust suppressants be applied. For a comprehensive list of fugitive dust prevention and control measures, please refer to *Cheminfo Services Inc. Best Practices for the Reduction of Air Emissions from Construction and Demolition Activities.* Report prepared for Environment Canada. March 2005. http://www.bieapfremp.org/Toolbox%20pdfs/EC%20-%20Final%20Code%20of%20Practice%20-%20Construction%20%20Demolition.pdf	Recommendations for the preparation of mitigation measures during construction activities are included in Section 7 of the AQA Report. Section 7 of the report has been revised to include reference to Best Management practices for the reduction of air emissions from construction and demolition activities (Cheminfo Services Inc., March 2005).
6. The proposed widening will bring the road closer to certain residential developments and other sensitive receptors. In Exhibit 8.1 “Mitigation Measures and Commitments to Future Work” of the ESR, please include a commitment to planting coniferous vegetation adjacent to the sensitive receptors to act as a year round barrier.	The Air Quality report recommends that the areas most impacted by particulate levels be vegetated to reduce the cumulative particulate impacts. These areas include sensitive receptor 11, an apartment building at the end of Marlborough Court, and sensitive receptor 12, the Sunrise Senior Living building near the Cross Avenue and Trafalgar Road intersection. Planting coniferous trees should be considered in these areas. The ESR has been revised to include a commitment to plant vegetation in these areas adjacent to the sensitive receptors.
Contaminated Soil Comments	
1. If soil removed during construction is determined to be contaminated, please ensure that the disposal of contaminated soil is consistent with Part XV.1 of the Environmental Protection Act and Ontario Regulation 153/04, Records of Site Condition, which detail the new requirements related to site assessment and clean up.	This commitment is included in the ESR and will be addressed in the detailed design phase.
Groundwater Review Comments	
1. As there is at least one closed landfill site located at southern end of the project area, the report should include a section on the closed landfill sites, underground storage tanks, and any other potential contaminated sites that intercept or are located in the vicinity of this project alignment and could interfere with the implementation of this project. This section should also provide a monitoring and mitigation plan for these sites.	There are no landfill sites (active or closed) within the project limits. Additional information regarding potentially contaminated sites has been added to the ESR.
2. A mechanism should be included in the project design of subsurface services installations to prevent any preferential pathways for potential contaminant migration in this area (i.e. there should be a series of trench barriers to be installed in the length of these services).	This will be addressed during detailed design.
3. Part of this project is in the vicinity of agricultural lands. Since there is the potential for intercepting tile drains during construction work, a survey should be completed to identify such a possibility, as well as the possibility that an application for a Permit to Take Water to the MOECC may be needed if the construction dewatering is calculated more than 50,000 L/day. Please ensure that you consult with the MOE Central Region Permit to Take Water (PTTW) Coordinator prior to detailed design to	Text was added to the ESR to note the requirement for surveys as part of the detailed design to identify tile drains, and the requirement for a Permit To Take Water (PTTW) needs to be confirmed during detailed design, in consultation with the MOE Central Region PTTW Coordinator.

MOECC Comment and Response Table – January 30, 2015 Comments from MOECC on Draft ESR

Ministry of Environment and Climate Change **Amanda.Graham@ontario.ca**	**Study Team Responses**
confirm any approval requirements for water takings during construction or operation. This includes groundwater or surface water extraction, and the active diversion of surface water flows by pumping in exceedance of 50,000 LPD.	
4. If any dewatering is required then interferences of this project with any private water wells nearby should be evaluated. If any wells are discovered to be used domestically, please ensure that any affected well owners will continue to have water supplies of appropriate quality and in adequate quantities during construction. Please also ensure that any work done on affected wells or any replacement wells is done pursuant to O. Reg. 903, Wells (pursuant to the Ontario Water Resources Act). In addition, a geotechnical evaluation should be conducted on the potential structural damage due to settlement from groundwater taking. A monitoring and mitigation plan should also be included.	These requirements are noted in the ESR as a commitment to be completed as part of the detailed design phase. Based on information provided in the Assessment Report for the Halton Region Source Protection Area (January 2012), approximately 6% of Halton Region's population relies on private drinking water sources. It should be noted that the study area will be fully serviced by municipal water mains/sewers once ultimate conditions/planned development in the area has been completed. In addition, no significant changes to the roadway profile (i.e. cuts) are required to accommodate the proposed modifications. It should be further noted that stormwater management measures are being planned in compliance with design criteria defined by the Town of Oakville, Conservation Halton and the MTO. As such, no significant impacts to groundwater are anticipated in association with this project.
5. The report should also include a graphical presentation of the project (depth and width) along with the subsurface hydrostratigraphy of the area in a cross-sectional format.	No significant changes to the roadway profile (i.e. cuts) are required to accommodate the proposed widening. Further, the study area will be fully serviced by municipal water mains/sewers once ultimate conditions/planned development in the area has been completed. As such, a graphical presentation of the project (depth and width) along with the subsurface hydrostratigraphy of the area in a cross-sectional format was not prepared as part of the EA. This could be prepared during detailed design to reflect base conditions at that time, if appropriate.

AECOM
300 Water Street
Whitby, ON, Canada L1N 9J2
www.aecom.com

905 668 9363 tel
905 668 0221 fax

April 13, 2015

Brittany Ferguson
Fish and Wildlife Technical Specialist
Ministry of Natural Resources and Forestry
50 Bloomington Road
Aurora ON L4G 0L8

Dear Ms. Ferguson:

Regarding: Trafalgar Road (Regional Road 3) Widening Class EA
MNRF Comments on Draft Environmental Study Report (ESR)
AECOM Project No. 60119993

This letter has been prepared in response to your email received on March 2, 2015 regarding your review of the draft ESR for the above noted study and requesting further clarification/confirmation on selected items related to building impacts, bird Species at Risk and associated habitat, and agricultural operations. The additional information you requested is provided below.

- **Please confirm whether any building demolitions/removals will be required as part of the proposed project.**

  No building demolitions / removals are required as part of this project.

- **Please confirm the extent of the area of agricultural habitat that will be impacted (both temporarily and permanently) by the proposed works (in hectares).**

  Agricultural lands currently exist adjacent to the Trafalgar Road corridor north of Dundas Street. The lands adjacent to Trafalgar Road are zoned Urban Core Area. Future land uses adjacent to the corridor will be primarily residential and business/commercial north of Dundas Street which will remove the existing agricultural lands adjacent to the Trafalgar Road corridor. Development of the adjacent lands is expected to precede the implementation of the roadway improvements.

  Approximately 4 hectares of existing agricultural land will be required to accommodate the proposed widened right-of-way. A strip of land typically ranging in width from 2 to 7m, with additional width required at intersection locations, is required along both sides of Trafalgar Road north of Dundas Street for the widened right-of-way, resulting in edge effects to the existing agricultural lands.

- **Please confirm the type of vegetation located within the agricultural areas that will be impacted by the proposed project (i.e. hay, fallow field, cultural meadow, etc.). If the agricultural areas are being used to support crops, please confirm their use over the past 3 years.**

  The vegetation located within the impacted areas fronting onto Trafalgar Road varies. The ditch running along both the east and west sides of Trafalgar Road from north of Dundas Street to Highway 407 is choked with common reed grass and cattail as noted in Section 3.3.3.1. Beyond the grass and cattails, the relatively narrow strips of land to be acquired which abut the Trafalgar Road corridor consist primarily of cultural meadows with some crop production (e.g. corn fields). As the agricultural properties abutting the corridor continue to be acquired by developers, the extent of cultural meadows is expected to increase until the lands are redeveloped. Field surveys will be conducted during detailed design to confirm the vegetation types directly impacted by the widened right-of-way so edge effects can be minimized.

- **Have any breeding bird surveys been conducted within the study area for the proposed road widening? If so, what observations were made from your field investigations?**

  The Atlas of Breeding Birds of Ontario was used to identify breeding bird species within the study area. Breeding bird surveys were not conducted during the Class EA. The ESR includes a commitment to conduct breeding bird surveys during detailed design to ensure that the most recent data is available.

Thank you again for taking the time to review the Draft ESR and provide comments.

The final ESR will be available for public review from April 16, 2015 to May 19, 2015. A copy of the final ESR is attached for your reference. If you have any questions, please contact the undersigned at 905-668-9363, ext. 2350.

Sincerely,
AECOM Canada Ltd.

Sheri Harmsworth, P.Eng.
Senior Project Manager
sheri.harmsworth@aecom.com

SH:sh

cc: Matt Krusto, Halton Region
Melissa Green-Battiston, Halton Region
Nick Zervos, Halton Region
Brenda Jamieson, AECOM

AECOM
300 Water Street
Whitby, ON, Canada L1N 9J2
www.aecom.com

905 668 9363 tel
905 668 0221 fax

April 13, 2015

Cameron Bevers
Project Manager
Ministry of Transportation
Highway Engineering
1201 Wilson Avenue
4th Floor, Building D
Toronto ON M2M 1J8

Dear Mr. Bevers:

Regarding: Trafalgar Road (Regional Road 3) Widening Class EA
MTO Comments on the Draft Environmental Study Report
AECOM Project No. 60119993

Thank you for providing comments on the Draft Trafalgar Road Class EA Environmental Study Report (ESR), which were received by email on January 23, 2015. Responses to your comments are provided below, along with the updates included in the ESR. Where no specific action was required, additional clarification has been provided in the response below.

MTO Comment #1: Recommended Plan, Drawings #2 & #3 – It appears that "ladder" type pedestrian crosswalks are shown across all of the ramps at the QEW interchange. Please note that the Ministry does not want to have any pedestrian crosswalks painted on "free-flow" interchange ramps, as these are not controlled pedestrian crosswalk locations under the Highway Traffic Act. Also, please note that at controlled intersection locations (the two signalized QEW off-ramps), the ministry would need to get approval of PHM-125 legal signal drawings from our Traffic Signals Engineer before ladder crosswalks could be considered at these two locations.

AECOM Response #1: The ladder-type pedestrian crosswalks have been removed from the plans at the location of each free-flow ramp.

ESR Section 7.1.4 Pedestrian and Cyclist Facilities has been updated to include the following text: *"Ladder-type pedestrian crosswalks are planned at the controlled intersections that are under Halton Region's jurisdiction, as shown in Plates 1 to 22 (Section 7). At the two signalized QEW off-ramp terminal intersections, the provision of ladder-type pedestrian crosswalks will be subject to MTO review and approval during Detail Design."*

ESR Section 8.3 Permits and Approvals has been updated to include the following text: *"At the QEW ramp terminal intersections, MTO-approved PHM-125 signal drawings are required prior to implementation of ladder-type pedestrian crosswalks."*

MTO Comment #2: Recommended Plan, Drawing #4 – Has any Vissim traffic modeling or Synchro analysis been done on this intersection to demonstrate the effects of the proposed southbound Transit Priority Phase? The Ministry has concerns that dedicating part of the cycle length to transit vehicles only may have a detrimental impact on the entire intersection, and may result in northbound queuing which extends back to the QEW ramp terminal.

AECOM Response #2: Paramics traffic modelling was undertaken as part of the Class EA to assess traffic operations for various lane arrangement configurations. Trafalgar Road will initially be widened to a 6-lane cross-section, consisting of six general purpose lanes with provisions for the potential future conversion of the curbside lanes to HOV / transit lanes. The initiation point for the HOV / transit lane north of Leighland Avenue / Iroquois Shore Road will be determined and confirmed prior to implementation in consultation with the Town of Oakville and the Ministry of Transportation, and subject to additional traffic analysis to confirm acceptable traffic operations on Trafalgar Road.

It should be noted that transit priority at Leighland Avenue / Iroquois Shore Road is recommended as an interim condition to provide an opportunity for transit vehicles to queue jump on Trafalgar Road as discussed in Section 5.4.3 of the ESR. Signal phasing and timing requirements will be determined prior to implementation in consultation with the Town of Oakville and the Ministry of Transportation to ensure acceptable operations are maintained on Trafalgar Road.

Additional text has been added to ESR Section 5.4.3 Transit Priority Southbound from Leighland Avenue to the Oakville GO Station: *"Signal phasing and timing requirements will be determined during Detail Design in consultation with the Town of Oakville and the Ministry of Transportation to ensure acceptable operations are maintained on Trafalgar Road, particularly for the northbound travel lanes, where queues would have the potential to impact the QEW ramp terminals."*

It should be noted that the Midtown Oakville Class EA Study overlaps with the Trafalgar Road Class EA Study Area. There was significant coordination between the two studies as discussed within this ESR. Of greatest significance to the Trafalgar Road Study is that north/south capacity improvements for the area south of Iroquois Shore Road/Leighland Avenue were addressed through the Midtown Oakville Class EA Study recommendations. A summary of the recommendations from the Midtown Oakville Class EA Study are provided in Section 2.4.3.5 of the ESR. According to the Midtown Oakville Class EA, BRT will be routed to an alternate North-South crossing of the QEW east of Trafalgar Road and as such, any future transit priority would be considered an interim condition.

MTO Comment #3: Recommended Plan, Drawings #4 & #5 – Has the effect of the northbound HOV & Transit Priority Lane been modeled in Vissim? The Ministry has concerns that the conversion of the existing northbound curb lane (Lane #3) from a General Purpose Lane (GPL) to an HOV/Transit Lane may result in an undesirable weaving condition and queuing upstream of the HOV/Transit Lane's beginning. It would be the Ministry's preference to see the start of this lane shifted to the north of Lynnwood Drive, in order to reduce the risk of these weaving/queuing conditions occurring within the area of the Trafalgar Road Interchange.

AECOM Response #3: Trafalgar Road as previously noted will initially be widened to a 6-lane cross-section, consisting of six general purpose lanes with provisions for the potential future conversion of the curbside lanes to HOV / transit lanes. The initiation point for the HOV / transit lane will be determined and confirmed prior to implementation in consultation with the Town of Oakville and the Ministry of Transportation, and subject to additional traffic analysis to confirm acceptable traffic operations on Trafalgar Road.

Plate 4 has been revised to include the following note: *"The limit of the future HOV / Transit lanes north of Leighland Avenue / Iroquois Shore Road wil be confirmed with the Town of Oakville and MTO".*

Thank you again for taking the time to review the Draft ESR and provide comments.

The final ESR will be available for public review from April 16, 2015 to May 19, 2015. A copy of the final ESR is attached for your reference. If you have any questions, please contact the undersigned at 905-668-9363, ext. 2350.

Sincerely,
AECOM Canada Ltd.

Sheri Harmsworth, P.Eng.
Senior Project Manager
sheri.harmsworth@aecom.com

SH:sh
Encl.
cc: Matt Krusto, Halton Region
Melissa Green-Battiston, Halton Region
Nick Zervos, Halton Region
Brenda Jamieson, AECOM

AECOM
300 Water Street
Whitby, ON, Canada L1N 9J2
www.aecom.com

905 668 9363 tel
905 668 0221 fax

April 14, 2015

Paul Bond
Environmental Planner
Conservation Halton
2596 Britannia Road West
Burlington ON L7P 0G3

Dear Mr. Bond:

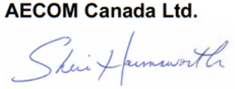
Regarding: Trafalgar Road (Regional Road 3) Widening Class EA
Conservation Halton Comments on the Draft Environmental Study Report and Notice of Study Completion
AECOM Project No. 60119993

Thank you for providing comments on the draft Environmental Study Report (ESR) and the associated draft specialist studies for the above referenced project. Responses to your comments along with the updates included in the ESR, are provided in the attached table which has also been included in Appendix A9 of the ESR. Where no specific action was required, additional clarification has been provided in the response table.

Please find enclosed a copy of the final ESR for your reference. The ESR is being placed on the public record from April 16, 2015 to May 19, 2015. A copy of the Notice of Completion is attached for your reference.

Thank you again for taking the time to review the draft ESR and provide comments. If you have any questions regarding the final ESR, please contact the undersigned at 905-668-9363, ext. 2350.

Sincerely,
AECOM Canada Ltd.



Sheri Harmsworth, P.Eng.
Senior Project Manager
sheri.harmsworth@aecom.com

SH:sh
Encl.
cc: Matt Krusto, Halton Region
Melissa Green Battiston, Halton Region
Nick Zervos, Halton Region
Brenda Jamieson, AECOM

Conservation Halton Comment and Response Table – February 13, 2015 and April 10, 2015 Comments from Conservation Halton

Conservation Halton (CH) Comments – February 13, 2015	Study Team Responses
The following comments pertain to our review of the "draft" versions of the following ESR document submission package: - *Response Table (undated) to CH October 31, 2014 comments on Draft Studies* - *Draft ESR dated January 2015 prepared by AECOM* - *Draft ESR Appendices – Volume I dated January 2015, prepared by AECOM* - *Draft ESR Appendices – Volume II dated January 2015, prepared by AECOM*	As a number of items in the CH comment letter note confirmation of items that have been addressed, our response confirms that the items have been "Completed". Other items are marked as "Noted", where no specific response is required and/or the comment is for information only. Several items require text edits and additional clarification that will be incorporated into the final ESR as requested. Three main areas were identified for resolution as follows and are addressed within this response table: 1. CH requested that the Region add several comments/ commitments, including: • Bring an expert in fish passage on to the study team • Hire a full-time environmental supervisor • Revise the TSS removal efficiently targets to 90% removal efficiency instead of the current 80% removal rate. • Include photos and identification features of SAR in a pamphlet form and on posters for contractors. 2. CH requested that the measurements for the bankfull width associated with Culverts C4 to C7 be field verified in the Spring. **3.** CH expressed concern with the proposed design and analysis for the Solo Option for East Morrison Creek relative to the preferred Combination Option (i.e., realignment to the west as proposed by Minto).

Conservation Halton Comment and Response Table – February 13, 2015 and April 10, 2015 Comments from Conservation Halton

Report: Natural Environment Existing Conditions Report (Draft for Discussion), AECOM, August 2014

Conservation Halton (CH) Comments	Study Team Responses
Section 4.0 – Field Investigations:	
1) Partially Addressed. The Draft ESR includes a commitment in Exhibit 8.1 Mitigation Measures and Commitments to Future Work #10 (Section 8.2 Mitigation Measures and Detail Design Requirements, Page 103) "Species at Risk (SAR) identified as potentially occurring within the study area shall be surveyed for during detailed design by a qualified ecologist/biologist or ecologist. Should any of the species be observed within the construction area, a Transplant and Relocation Plan shall be prepared and implemented prior to construction." While staff support the commitment to undertaking SAR surveys at the Detail Design stage, our previous comment identified that field investigations were insufficient in scope of work and appropriate timing to properly characterize the bird and wildlife community utilizing the study area. Our comment required that specific breeding bird and wildlife surveys be undertaken at the Detail Design stage as well. Neither Exhibit 8.1 nor the Natural Environment Report (Appendix A, Appendices Volume I) mention the requirement to conduct breeding bird and wildlife surveys. Please revise Exhibit 8.1 and include a commitment to conducting breeding bird and wildlife surveys, in addition to the previously specified SAR surveys at the Detailed Design stage, in the appropriate time of year. In addition, while staff can support surveying for SAR prior to construction we do not support the intention to transplant or relocate species without consultation with the MNRF. If a SAR is encountered the project Ecologist/Biologist and MNRF should be contacted immediately for direction of next steps. Please revise Commitment #10.	Noted The Mitigation Measures and Detailed Design Commitments table (Exhibit 8.1) and the Natural Environment Report (Appendix A, Appendices Volume 1) have been updated to include a commitment to conduct breeding bird and wildlife surveys, in addition to the previously specified SAR surveys, at the Detailed Design stage, in the appropriate time of year. The relevant commitment in the Mitigation Measures and Detailed Design Commitments table (Exhibit 8.1) has been revised to note that if a SAR is encountered the project Ecologist/Biologist and MNRF will be contacted immediately for direction of next steps.
2) Partially Addressed. Staff appreciate that Section 4.2 (Terrestrial) now includes text on the Morrison Valley Trail North (identified in the North Oakville Creeks Subwatershed Study as a Linkage area), and that impacts to this feature are not anticipated as part of the Trafalgar Road Widening. Figure 3 illustrates the Core Areas as identified in NOCSS (Figure 6.3.3) (April 2007) however, the Linkage Areas were not illustrated. Please revise Figure 3 and ensure that the Linkage Area is illustrated for ease of future reference.	Figure 3 has been revised to illustrate the linkage areas.
Section 4.2.3.2 – Barn Swallow Survey	
1) Addressed. Weather conditions and more information on Barn Swallow surveys was added to this section.	Completed
2) Addressed. The term "Unsuitable" has been revised to "Less Preferred".	Completed
3) Addressed. Text has been revised to include comment regarding Barn Swallows collecting mud from adjacent areas to build their nests if none is available immediately next to the nesting location.	Completed
Section 4.3 – Species at Risk Habitat Screening	
1) Partially Addressed. Please see Section 4.0 Field Investigations Comment 1 above.	The Mitigation Measures and Detailed Design Commitments table (Exhibit 8.1) and the Natural Environment Report (Appendix A, Appendices Volume 1) have been updated to include a commitment to conduct breeding bird and wildlife surveys, in addition to the previously specified SAR surveys, at the Detailed Design stage, in the appropriate time of year.

Conservation Halton Comment and Response Table – February 13, 2015 and April 10, 2015 Comments from Conservation Halton

Report: Natural Environment Existing Conditions Report (Draft for Discussion), AECOM, August 2014

Conservation Halton (CH) Comments	Study Team Responses
2) Partially Addressed. Staff appreciate that in Exhibit 8.1 Mitigation Measures and Commitments to Future Work #12 (Section 8.2 Mitigation Measures and Detail Design Requirements, Page 103) text has been added which states "works will completed in accordance with the Migratory Birds Convention Act and other applicable legislation". Staff would like to emphasize that all tree or vegetation removal should be completed in compliance with the Migratory Birds Convention Act. Tree and vegetation removal should be completed outside of the bird breeding season (i.e. Avoid May 01 – July 31). However, staff would like to emphasize that many species of birds precede and exceed the breeding bird window (e.g. early April, mid-August to early September), and that nesting surveys prior to removals do not reliably identify all nests in the vicinity of the proposed works. If removals are to take place within the breeding bird window, consultation with the Canadian Wildlife Service (CWS) should take place. It is the proponent's responsibility to avoid contravention of the MBCA. Staff have not seen the email from MNRF dated December 30, 2013 as it was not included in the agency correspondence (Attachment A of the Natural Environment Report) which apparently indicated the requirement to do Barn Swallow surveys and that no comment was made in regard to Eastern Meadowlark or Bobolink at that time. We note that this response indicates that it is the proponents understanding that Eastern Meadowlark and Bobolink surveys are not required; however, Exhibit 8.1 Commitment #10 states a commitment to conduct SAR surveys during Detailed Design. Please clarify if the proposed SAR surveys will include Bobolink/Eastern Meadowlark surveys or not. And, if no Bobolink or Eastern Meadowlark specific surveys are being proposed at this time, staff will assume that presence/absence of these species within the study area will be determined through the breeding bird surveys required at the Detailed Design stage, and if they are observed the MNRF will be contacted to determine the next course of action.	Noted. Text in Exhibit 8.1 and Commitments to Future Work has been expanded to note that if removals are to take place within the breeding bird window, consultation with the Canadian Wildlife Service (CWS) will take place. The email from MNRF dated December 30, 2013 has been added to the agency correspondence, Attachment A of the Natural Environment Report. The proposed SAR surveys conducted at the Detailed Design stage will include Bobolink and Eastern Meadowlark surveys. The relevant Commitment in the Mitigation Measures and Detailed Design Commitments table (Exhibit 8.1) has been revised to note that if a SAR is encountered the project Ecologist/Biologist and MNRF will be contacted immediately for direction of next steps.
3) Addressed. Staff continues to defer approval of future SAR surveys to the MNRF and continue to request that we remain in the discussions as they pertain to the SAR due to our MOU requirements with the Region of Halton.	Completed
Section 6 – Impact Assessment	
1) Partially Addressed. Staff appreciate the commitment in Table 4: Net Effects Table that "A Tree Preservation Plan shall be prepared during detail design to determine the compensational planting required, as per the Regional Policy for Tree Removal. In addition a permit from CH will be obtained for any tree removal activities within the CH regulatory limits". Please revise Exhibit 8.1 and include this commitment in the commitments for future work.	Exhibit 8.1 has been revised to include the commitment that a permit, as required, will be obtained for any tree removal activities within CH's regulatory limit.
2) Addressed. Please ensure that the recommendation regarding revegetation activities be moved forward into the Tree Preservation Plan and any associated drawings.	Text has been added to Exhibit 8.1 from the Natural Environment Report, Section 6, Table 4 in an effort to ensure the recommendation is moved forward into the Tree Preservation Plan and any associated drawings.
3) Addressed. Please ensure that the recommendation regarding monitoring of planted vegetation be moved forward into the Tree Preservation Plan and any associated drawings.	Text has been added to Exhibit 8.1 from the Natural Environment Report, Section 6, Table 4 in an effort to ensure that the recommendation is moved forward into the Tree Preservation Plan and any associated drawings.

Conservation Halton Comment and Response Table – February 13, 2015 and April 10, 2015 Comments from Conservation Halton

Report: Natural Environment Existing Conditions Report (Draft for Discussion), AECOM, August 2014

Conservation Halton (CH) Comments	Study Team Responses
Section 7 – Mitigation Measures	
1) Addressed. Staff note that Table 4: Net Effects includes a stipulation to restrict construction activities to periods before and after the breeding bird period (generally May 1 to July 31).	Completed
2) Partially Addressed. As per Comment 2 in Section 4.3 Species at Risk Habitat Screening, we continue to emphasize that if vegetation clearing (e.g. grass, crops, and trees) is to be undertaken during the breeding bird period that consultation with Canadian Wildlife Service is required. A reminder as well, that many species of bird both precede and exceed the breeding bird period, and that nesting is not restricted to trees (e.g. Bobolink nest on the ground).	Text in Exhibit 8.1 and Commitments to Future Work has been revised to note that if vegetation clearing is to be undertaken during the breeding bird period that consultation with the Canadian Wildlife Service (CWS) is required.
General	
1) Addressed. Staff note that Figure 1 and Figure 3 within the Natural Environment Report identify the areas of constraint as identified in NOCSS.	Completed
2) Addressed. Staff note that Figure 1 and Figure 3 within the Natural Environment Report identify the areas of constraint as identified in NOCSS.	Completed
3) Addressed. Bank Swallow is now correctly identified as a Threatened species by COSEWIC.	Completed

Conservation Halton Comment and Response Table – February 13, 2015 and April 10, 2015 Comments from Conservation Halton

Report: Fluvial Geomorphology Assessment, AECOM, July 31, 2015

Conservation Halton (CH) Comments	Study Team Responses
General:	
1) Table 3.3: Please update the title of column 4 in this table to "bankfull channel width", if this is what the information in this column is referring to, so the information is not mistaken for other types of channel widths such as a wetted width or a low flow channel width. The descriptions of the locations of the sub-reaches appear to be out of date (it appears that the location of the Oak Park Pet Hospital has changed) and the descriptions are generally insufficient in describing locations being referred to. Please update these sub-reach location descriptions using more comprehensive description of the sub-reaches. It is suggested that the chainage numbering used in the hydrology/SWM report be utilized.	The heading for Column 4 has been changed to "Bankfull Channel Width". The description of the reach breaks has been updated with UTM coordinates as the chainage numbering in the SWM Report applies to locations along Trafalgar Road and not the channel. Chainage is used to identify culvert crossings in the report, similar to the hydrology/SWM report.
Table 3-7: Results from Field Survey (See Figure 3.5): Please change the location description for the column entitled "reach 5" as the Oak Park Pet Hospital appears to have changed locations.	The Oak Park Pet Hospital property has been purchased by Minto with plans that it would be redeveloped as part of the creek realignment; this change occurred since the Fluvial Geomorphology assessment was undertaken. The location description for Reach 5 has been updated to "Former Oak Park Pet Hospital property" within the report.
Table 3-7: The table indicating the bankfull channel widths for crossings C4, C5, C6 and C7 in the response table are noted. Thank you for providing these. The fact that the most upstream channel cross section at culvert C4 has the largest bankfull channel width and the fact that the bankfull channel width at culvert crossing C7 is the smallest is concerning since the drainage area for C7 is considerably larger than it is for C4. The validity of these bankfull channel cross sections is questioned and staff suggest that it would be beneficial if all bankfull channel width measurements be re-measured after the spring freshet to confirm whether these numbers are accurate. As well, it is noted that culvert sizes should take into consideration the *expected* bankfull channel widths of the watercourses once they have been realigned and once any adjustments occur in the watercourse once the entire drainage area has been urbanized. In examining the table below prepared by Conservation Halton staff, it is noted that the proposed culvert sizes are not close to accommodating 3X bankfull channel width of the existing watercourses and it is highly unlikely that they would be capable of accommodating 3X the bankfull channel width of the watercourse once it has been realigned and designed to accommodate additional surface water runoff anticipated in association with hardening of the remainder of the drainage area of the watercourse. CH Staff have prepared the following table from information contained in the Dec. 15 response table, the ESR (Exhibit 3.3 and Exhibit 7.6) and Appendix G.	In general, it is true that bankfull width increases in drainage area in natural fluvial systems. However, due to anthropogenic change to the channel itself (realignment, straightening) and throughout the East Morrison Creek Watershed, the channel is no longer a natural fluvial system. As such, bankfull dimensions do not follow typical predictable patterns as you move downstream in this situation. Reach 5 is a low gradient, vegetation choked channel, and the channel has a wide but very shallow cross-section. The downstream reaches have a steeper gradient leading to more prominent channel incision. As such, they are narrower and deeper than Reach 5. Further, East Morrison Creek passes through an existing 900 mm CSP culvert in Reach 4 (downstream of Culvert C4) and an existing 4270 x 2000 mm concrete box culvert at Dundas Street west of Trafalgar Road (located upstream of C7). A new figure, Exhibit 3.6, has been prepared and is included in the Fluvial Geomorphology report to assist with clarification on reach extents, existing culvert sizing, and bankfull width. The Combination Option as developed by Minto is the preferred option, directing East Morrison Creek to the west side of Trafalgar Road via Culvert C4, eliminating the need for Culvert C5 and precluding the watercourse from passing through Culvert C6. The ESR has been updated to clearly document his preferred option. For the preferred option, the preliminary culvert sizing for Culvert C4 will be 7320 x 1250 mm, as proposed by Minto and approved by Conservation Halton, and Culvert C7 will be increased to accommodate 3X bankfull channel width.

Culvert Number	Chainage	Bankfull Channel Width	Proposed Culvert
C4	5 + 820	5.6 m	2400 X 1200 mm box
C5	5 + 665	2.7 m	3600 X 1200 mm box
C6	5 + 500	2.7 m	5000 X 1800 mm box
C7	5 + 225	2.3m	6000 X 2430 mm box

There is serious concern that none of these culverts will be wide enough to accommodate reasonable fish passage given the long lengths of the culverts. There is concern over the narrow proposed culvert widths with respect to fluvial geomorphological	The culverts will be designed to accommodate fluvial geomorphology requirements and fish

Conservation Halton Comment and Response Table – February 13, 2015 and April 10, 2015 Comments from Conservation Halton

Report: Fluvial Geomorphology Assessment, AECOM, July 31, 2015

	Conservation Halton (CH) Comments	Study Team Responses
	functioning of the watercourse as well. There is also concern that oversized substrates will be proposed within the culverts so that substrates will stay in place under high flow scenarios because the proposed culverts are too narrow and very long. This is very undesirable from a fish habitat and a fish passage perspective. It is requested that these culverts are designed to be much wider to accommodate fish passage, fish habitat and fluvial geomorphological functions of the watercourse.	passage.
2)	Comment addressed.	Completed

Conservation Halton Comment and Response Table – February 13, 2015 and April 10, 2015 Comments from Conservation Halton

Draft ESR - Main Report:

Conservation Halton (CH) Comments	Study Team Responses
Section 3, Existing and Future Conditions	
Section 3.1, Existing Conditions Map, Exhibit 3.1 1) Staff request that the term "Floodplain Regulation Limits" in the legend be replaced with "CH Approximate Regulation Limits".	The term "Floodplain Regulation Limits" has been revised to "CH Approximate Regulation Limits".
Section 3.6, Stormwater Management 1) Staff request that this Section be retitled as "Flooding Hazards & Stormwater Management" in order to more accurately describe the content of this section.	Section 3.6 has been retitled to Flooding Hazards & Stormwater Management.
Section 3.6.2, Potential Drainage Impacts	
1) Staff suggest that since the road widening has not yet been proposed by this point in the document, that the wording of this section be rephrased so that it reads that in the event that Trafalgar Road is widened as opposed to that alternative already being selected.	The wording of this section has been rephrased as suggested.
2) Further to the first paragraph, widening of the roadway platform could potentially require culvert replacements and watercourse relocations in addition to culvert extensions.	The wording of the first paragraph has been updated to include potential for culvert replacements and watercourse relocations, in addition to culvert extensions.
3) Improvements to the area's drainage system, including to its culverts and watercourses, may also be required to eliminate existing natural hazards in light of the anticipated increased usage of the roadway. We note that this would be applicable whether the road is widened or not.	An additional sentence has been added to acknowledge that in some areas drainage improvements may reduce existing natural hazards, regardless of the future road cross-section.
Section 3.6.3, Stormwater Management Criteria	
1) Under the Fluvial Geomorphology section, it is recommended that it be clarified that while NOCSS did establish some preliminary erosion threshold flow rates, the erosion threshold flow rates are to be established at the EIR/FSS stage for all subcatchments.	In the Fluvial Geomorphology section of the report, it has been clarified that erosion threshold flow rates will be established for all subcatchments at the Detailed Design stage, utilizing the more updated and detailed modeling for the area. This commitment has been added to the Mitigation Measures and Detailed Design Commitments table (Exhibit 8.1) in the ESR.
Section 3.6.3.1, Hydraulic Criteria	
1) Under Freeboard – This section should be updated in keeping with the revised wording provided in the response table for Section 1.3.2 of the SWM Report.	The wording previously proposed has been incorporated in the Final ESR and Appendices – i.e. "Conservation Halton's Policies, Procedures…(April 2006) does not specifically require that Regional roads be flood free under Regional storm conditions. However, this is the current standard recommended by Conservation Halton for all major roads within Conservation Halton jurisdiction that may serve an emergency route purpose and has become a standard requirement for all roadways that will be experiencing an increase in use due to development."

Conservation Halton Comment and Response Table – February 13, 2015 and April 10, 2015 Comments from Conservation Halton

Draft ESR - Main Report:

Conservation Halton (CH) Comments	Study Team Responses
Section 3.7, Fluvial Geomorphology	
2) Staff request that this Section be retitled as "Fluvial Geomorphology & Erosion Hazards" in order to more fully describe the content of this section.	The Section 3.7 Heading has been revised to Fluvial Geomorphology and Erosion Hazards.
Section 3.7.1.4, Existing Conditions	
1) Under East Morrison Creek – East Tributary (Crossings 3, 4, 5 and 6) – The correction regarding the location of the start/end of MOC-6 downstream of Crossing C that was made to Section 3.3.1 in Appendix F should be made to this section in the main document.	The location of the start/end of MOC-6 downstream of Crossing C has been corrected in this section, to reflect the information in Section 3.3.1 of Appendix H – Fluvial Geomorphology Report.
Section 3.7.2, Meander Belt Assessment	
1) The text should be updated to reflect that the NOCSS report indicates a preliminary meander belt including factor of safety of 26 metres for MOC-2 and 42 metres for MOC-6.	The text has been updated.
Exhibit 3.7 Overview of Sub-Reach Characteristics	
1) Please provide a map that identifies the location and extent of the reaches.	Figure 3.5 in Appendix H – Fluvial Geomorphology Report, identifies the location and extent of the reaches. A copy of this Figure has been included in Section 3.7.1 of the ESR for ease of reference.
Section 4 - Alternative Solutions	
Exhibit 4.3 Evaluation Criteria	
1) Impacts to surface and groundwater quality need to be evaluated. Please include this in the natural environment section of the table.	Criteria have been added to address impacts to surface water and groundwater quality in the natural environment section.
Section 7 - Project Description	
Section 7.1.7, Drainage and Stormwater Management Requirements	
1) Further to the first paragraph, widening of the roadway platform requires culvert replacements and watercourse relocations in addition to culvert extensions.	The wording of the first paragraph has been updated to include potential for culvert replacements and watercourse relocations, in addition to culvert extensions.
Section 7.1.7.2, Timing of Adjacent Development and Potential Options	
1) (*Eng. comment*) Conservation Halton staff support the Combination Option being carried forward to detailed design, subject to the developer finalizing the necessary landownership transfers and meeting their associated Draft Plan conditions.	Noted
2) (*Eng. comment*) Solo Option – Please see comments on Sections 7.1.7.4 and 7.1.7.5 below outlining why Conservation Halton staff are not supportive of the Solo Option proposed in the event that there are delays to the adjacent development or if the Combination Option cannot ultimately be implemented.	Please see responses to Sections 7.1.7.4 and 7.1.7.5, Item 3 below.

Conservation Halton Comment and Response Table – February 13, 2015 and April 10, 2015 Comments from Conservation Halton

Draft ESR - Main Report:

Conservation Halton (CH) Comments	Study Team Responses
3) *(Aquatic Ecology Comment)*: The solo option is discouraged from a fish habitat and fluvial geomorphological standpoint. The extra watercourse crossings under the 50-55m right of way include the following impacts to the watercourse: • Hardening of the banks and bed of the watercourse, • Disconnection of the watercourse from its floodplain, • Increased inputs of chloride, petroleum products and other pollutants related to automobile transportation to the creek, • Difficulty with long term maintenance of a low flow channel in the creek through road crossing structures due to an overly flat slope in the lengthened watercourse, • Reduction in 'dynamic stability' of watercourse – tendency for creek to become hardened within and around road crossing structures, • Concerns about the use of oversized rock in culverts that have negative effects on fish passage. It is the Conservation Authority's preference that the number of watercourse crossings under Trafalgar Road be reduced as much as possible while keeping a functional slope in the creek channel between 0.5 and 1.5 %.	Please see responses to Sections 7.1.7.4 and 7.1.7.5, Item 3 below.
Section 7.1.7.3, Quality and Quantity Control The following text from this section is noted: "Pre-treatment of flows controlled by super pipes is recommended to prevent sediment accumulation within super pipes. Consideration should be given during detailed design to a treatment train approach to provide for 80% TSS removal in the event that OGS are found to be insufficient and only able to provide 50% removal." These statements are supported by the Conservation Authority. The following statement from this section is also noted: "In accordance with NOCSS, detailed consideration of the feasibility of infiltration facilities, such as Low Impact Development (LID) measures (i.e. bioswales and other source controls), should be made during detailed design using site specific information, best-management practices from current guidance documents, and recognition that modifications to facilities may be required to account for local soil conditions. Application of these options may reduce the size of recommended SWM facilities required to adequately control runoff." Due to concerns about algal blooms on the waterfront in the Town of Oakville, and because of technological advancements observed in LID pilot projects, Conservation Halton recommends that targets for the removal of TSS be reconsidered. It is suggested that TSS removal efficiency targets be changed to 90% removal efficiency due to an improved technical feasibility in achieving such targets. The use of LID technology in clay/till soils has been shown to absorb the first 25 mm of runoff events, which can significantly reduce the volume of water entering conventional stormwater infrastructure and the receiving watercourse, which will significantly reduce the amount of TSS and nutrients like phosphorous and pollutants such as petroleum products from reaching watercourses. As such, low impact development technologies are encouraged for use primarily to benefit water quality on the Town of Oakville shoreline, with an anticipated additional benefit of reduced stormwater quantity.	As agreed with CH subsequent to receipt of this comment, the target will remain as 80%. The 80% TSS removal criteria complies with the requirements of the NOCSS.
Section 7.1.7.4, Mainline Crossing Culverts	
1) The culvert widths proposed for the Solo Option in Exhibit 7.6 do not meet the fluvial geomorphological requirements identified in Section 5.2 of Appendix G. While there is a note at the bottom of this table that states the culvert sizing needs to be "confirmed" at detailed design to accommodate the final fluvial geomorphological requirements, dependent on the outcome of the adjacent development approvals, it is our opinion that it would be more appropriate to recommend within the ESR the standard culvert sizes that meet both the required hydraulic and fluvial geomorphological requirements as they have been identified based on the information available to-date with a note indicating that the culvert sizes should be *reassessed* at the detailed design stage.	It has been documented in the ESR that the standard culvert sizes will be designed to meet both hydrologic and fluvial geomorphology requirements and that the culvert sizes should be reassessed at the detailed design stage. This commitment has been added to the Mitigation Measures and Detailed Design Commitments table (Exhibit 8.1) in the ESR.

Conservation Halton Comment and Response Table – February 13, 2015 and April 10, 2015 Comments from Conservation Halton

Draft ESR - Main Report:

Conservation Halton (CH) Comments	Study Team Responses
Section 7.1.7.5, East Morrison Creek	
1) The second paragraph states that for the Solo Option the existing creek alignment can accommodate the widened road right-of-way. Drawing 14A indicates that the existing creek must be relocated in order to accommodate the additional lanes and bus bay. Drawing 15 also indicates that creek realignment works will be required to accommodate the longer culvert required. Since any necessary grading is not shown on the figure, even further disturbance to the watercourse may be required. As such, it is our opinion that the alternative presented is not feasible as currently described.	Please see response to Section 7.1.7.5, item 3 below
2) As discussed below in our comments on Appendix F, Stormwater Management Report, it has not been demonstrated to the satisfaction of Conservation Halton staff that the potential impacts of the Solo Option on flooding hazards have been fully and adequately assessed. As identified in our comments on Appendix G, Fluvial Geomorphology Report, the Solo Option would create increased risk to the roadway infrastructure and the public due to the closer proximity of the roadway to the creek. There is also increased risk to the public due to the anticipated increased use of the roadway within an erosion hazard. It is our opinion that the information provided to-date has not demonstrated that the form and function of this watercourse will be maintained in accordance with NOCSS for medium constraint stream corridors. It is also our opinion that the ESR has not fully evaluated the various alternatives to managing the natural hazards and heritage features within this subcatchment and justified why the Solo Option proposed should be the preferred design concept carried forward in the event that the Combination Option does not proceed. As a result, it has not been demonstrated to the satisfaction of Conservation Halton staff that the Region can reasonably expect to obtain all necessary approvals pursuant to Ontario Regulation 162/06 in order to implement the Solo Option proposed. In fact, we anticipate on the basis of the erosion hazard issues already presented staff would not be able to support issuance of approvals for the Solo Option.	Please see response to Section 7.1.7.5, item 3 below
3) In light of #1 and #2 above, Conservation Halton staff see 3 possible options to addressing our concerns in this regard: i. Remove any Solo Option from the ESR, recognizing that in the event that the Combination Option does not proceed the ESR will need to re-opened. ii. Propose a Solo Option that is more likely to be able to achieve Conservation Halton's regulatory requirements. Staff note that if an option is presented that clearly demonstrates that the roadway will be removed from the erosion hazard as we discuss further below, staff would likely be able to accept an ESR that includes this Solo Option without the hydraulic analysis requested as long as it includes a statement that the Region agrees to undertake the necessary hydraulic analysis as an update/addendum to the ESR in the event that the Combination Option does not proceed. The Region would also have to commit to re-opening the ESR entirely in the event that the hydraulic analysis completed at that time does not meet Conservation Halton's regulatory requirements. iii. Provide all outstanding analysis required by Conservation to demonstrate that the Solo Option presented is feasible and can meet all Conservation Halton regulatory requirements. Please note that based on the information provided to-date we do not anticipate that it will be possible to meet all of our requirements with the culvert extension, no creek enhancement option.	The Combination Option which directs East Morrison Creek to the west side of Trafalgar Road via Culvert C4, eliminating the need for Culvert C5 and precluding the watercourse from passing through Culvert C6, is the preferred option and has been clearly documented as such in the ESR. For the preferred option, the preliminary culvert sizing for Culvert C4 will be 7320 x 1250 mm, as proposed by Minto and approved by Conservation Halton, and Culvert C7 will be increased to accommodate 3X bankfull channel width. It is clarified in the text that while the culvert at Station 5+500 (ME-T1, Culvert C6) is not required to convey the East Morrison Creek Tributary, it will continue to be required to provide conveyance of the remnant portion of the East Morrison Creek Tributary and to serve as an outlet to the proposed stormwater management facility within the Minto (Dundas-Trafalgar) lands, and that at this time it is anticipated that this remnant reach, including crossing ME-T1 will remain regulated by Conservation Halton even after the proposed diversion occurs. In the unlikely event that development does not proceed, the Region would undertake the necessary hydraulic and fluvial geomorphology analysis to accommodate the East Morrison Creek and to minimize the crossings as required to meet Conservation Halton's regulatory requirements. Further, detailed hydraulic analysis would be undertaken in this event at detailed design to demonstrate the final design meets Conservation Halton's regulatory requirements.

Conservation Halton Comment and Response Table – February 13, 2015 and April 10, 2015 Comments from Conservation Halton

Draft ESR - Main Report:

Conservation Halton (CH) Comments	Study Team Responses
4) In the absence of development applications, it is requested that the existing creek alignment, which results in three crossings (5+500, 5+665, 5+820) immediately north of Dundas Street, be changed so that East Morrison Creek only crosses under Trafalgar Road once in the immediate north of Dundas Street. It is expected that reducing the three culverts to only one culvert would reduce impacts associated with fish passage, channel hardening and inputs of pollution to the creek associated with roads and automobiles.	The Solo Option has been identified in the ESR as a meandering creek form from upstream of existing Culvert C4 to upstream of Culvert C6, with Culverts C4 and C5 removed from the drainage system, resulting in only one culvert crossing north of Dundas Street. Further, the text has been revised to note that the realigned channel would be positioned to ensure the roadway is not located within the erosion and flooding hazard limits and associated regulated allowances.
Section 7.1.10, Property Requirements	
1) There is insufficient analysis provided within the ESR to demonstrate that in the absence of an approved adjacent development application (i.e. Line 1) that the property lines proposed on Drawing Nos. 14A and on Drawing No. 15 are sufficient to adequately address natural hazard and heritage requirements. Conservation Halton staff anticipate that if the Combination Option does not proceed, there will be significantly greater property requirements in the vicinity of East Morrison Creek to address the outstanding flooding and erosion hazard issues in order to obtain Conservation Halton's approvals.	See response to Section 7.1.7.5 item 4 above.
Section 7.1.11, Preliminary Cost Estimate	
1) Further to our Section 7.1.7.5 comments, we do not anticipate that the flooding and erosion hazards can be adequately addressed by the Solo Option currently being proposed. We anticipate that any acceptable Solo Option alternative would likely have appreciable impacts on the Preliminary Cost Estimate as they would include appropriately designed creek realignment	See response to Section 7.1.7.5 item 4 above.
2) Staff recognize that land acquisition was not included within the preliminary cost estimates provided. We would like to highlight however that if the Combination Option does not proceed there may be significantly greater property requirements then currently assumed once flooding and erosion hazards are adequately addressed under the Solo Option, which could have significant financial implications to the Region.	See response to Section 7.1.7.5 item 4 above.
Section 8 – Potential Environmental Effects, Mitigation Measures and Commitments to Future Work	
Section 8.1.1.3 Long Term Impacts:	
It is noted that the lengths of the culverts conveying East Morrison Creek are being significantly lengthened to accommodate the road widening. The increase in the length of the watercourse encased in concrete will have long term impacts on fluvial geomorphological functions, sediment transport functions, fish passage, fish habitat, water flow and wildlife passage. Please explain in detail how these impacts can be mitigated and where they cannot be mitigated, how can they be offset? The increased surface area of the roads will generate more surface water runoff and more chloride running off the road. Please explain how these impacts to the water quality and fish habitat can be mitigated. If they cannot be mitigated, please indicate how they can be offset. Please include these long-term impacts to section 8.1.1.3.	The Combination Option which directs East Morrison Creek to the west side of Trafalgar Road via Culvert C4, eliminating the need for Culvert C5 and precluding the watercourse from passing through Culvert C6, is the preferred option and has been clearly documented as such in the ESR. The Combination Option reduces the overall length of watercourse passing through culverts. Further, the realigned channel will maintain the form and function of the watercourse as required by NOCSS and will allow for improved aquatic habitat and channel morphology. Section 8.1.1.3 has been expanded to include additional detail regarding how impacts are being mitigated with the preferred design. The quantity and quality impacts due to increase in impervious area is not an increase in culvert length issue. The quality/quantity issues were addressed in the SWM section that include Low Impact Development (LID) measures and other quality and quantity criteria would

Conservation Halton Comment and Response Table – February 13, 2015 and April 10, 2015 Comments from Conservation Halton

Draft ESR - Main Report:

Conservation Halton (CH) Comments	Study Team Responses
	be addressed by storage/OGS/LID measures. Potential mitigation measures through the crossing include the inclusion of a wildlife bench, establishing a sinuous pool-riffle morphology, and sizing stone that enhance fluvial geomorphological function and aquatic habitat. Potential mitigation measures outside of the crossings include realigned meandering pool-riffle channel and riparian restoration plantings.
Section 8.1.1.5 Mitigation Measures: This section is incomplete as it has not addressed any of the short or long term impacts to in stream aquatic habitat, loss of fluvial geomorphological functioning, degradation to water quality and impacts to water flows in East Morrison Creek caused by the road widening. It is noted that there are many gabion baskets next to East Morrison Creek at the culvert located at 5+500. Please ensure these gabion structures are removed with the existing culvert replacement structure. An additional mitigation measure is requested with respect to fish and fish habitat. It is noted that the watercourse is predominantly lined with silt. It is requested that all replacement culvert crossing structures be sized wide enough to enable the bottom of the watercourse where it flows through each crossing structure to be lined with rock that is no larger than pea gravel as an effort to maintain the existing fish habitat characteristics of the watercourse.	The Combination Option which directs East Morrison Creek to the west side of Trafalgar Road via Culvert C4, eliminating the need for Culvert C5 and precluding the watercourse from passing through Culvert C6, is the preferred option and has been clearly documented as such in the ESR. The Combination Option reduces the overall length of watercourse passing through culverts. Further, the realigned channel will maintain the form and function of the watercourse as required by NOCSS and will allow for improved aquatic habitat and channel morphology. Additional text will be added to this section regarding mitigation measures proposed to address potential short and long term impacts to in stream aquatic habitat, fluvial geomorphological functioning, water quality and water flows in East Morrison Creek caused by the road widening. Mitigation measures have been updated to note that these gabion structures shall be removed when the existing culvert is replaced. The requested additional mitigation measure has been added. Culvert sizing will be confirmed during Detailed Design in consultation with Conservation Halton. This commitment has been added to the Mitigation Measures and Detailed Design Commitments table (Exhibit 8.1) in the ESR.
Exhibit 8.1 Mitigation Measures and Commitments to Future Work: The following items are suggested for addition to the Fisheries Section of this table: • An expert in fish passage needs to be brought on to the study team {e.g. Chris Katapodis, Alberta, (204) 983-5181} to ensure that a proper channel design is constructed through all creek crossing structures. This expert should ensure that fish passage for prolonged swimming speeds is made possible up to a 10 year return event through each structure. • It is requested that a strategy to minimize future applications of chlorides be developed for the long term management of the road in an effort to reduce the inputs of chlorides into East Morrison Creek.	Noted. Channel designs will be prepared by appropriate technical experts at the Detailed Design stage. This design will ensure that fish passage for prolonged swimming speeds is made possible up to a 10 year return event through each structure. This commitment has been added to the Mitigation Measures and Detailed Design Commitments table (Exhibit 8.1) in the ESR. Noted. The application of chlorides is addressed by Halton Region's Salt Management Plan for winter maintenance that has been developed in accordance with Provincial and Federal Guidelines.

Conservation Halton Comment and Response Table – February 13, 2015 and April 10, 2015 Comments from Conservation Halton

Draft ESR - Main Report:

Conservation Halton (CH) Comments	Study Team Responses
• Exhibit 8.1 Mitigation Measures and Commitments to Future Work, Stormwater – Item 2. Please include additional measures to address water quality control as OGS units on their own are not sufficient to meet water quality targets.	Exhibit 8.1 has been revised as requested. The treatment train approach with infiltration/retention elements installed before an OGS unit will achieve water quality targets.
• Exhibit 8.1 Mitigation Measures and Commitments to Future Work, Stormwater – Item 3: Please replace the word “made” to “determined”	Exhibit 8.1 has been revised as requested.
• An additional item is requested to be added to the table. It is requested that a full time environmental supervisor be hired to ensure that all mitigation measures related to vegetation, wildlife, fisheries and stormwater are properly implemented.	Noted. Environmental supervision of sediment and erosion control can be reviewed at the Detailed Design stage. This commitment has been added to the Mitigation Measures and Detailed Design Commitments table (Exhibit 8.1) in the ESR.

Conservation Halton Comment and Response Table – February 13, 2015 and April 10, 2015 Comments from Conservation Halton

Appendices (Vols. I and II)

Conservation Halton (CH) Comments	Study Team Responses
Appendix A, Natural Environment Report	
Section 4.1.1, September 2009 Field Investigations, 2009 Aquatic Findings	
1) Engineering Comment: Addressed.	Completed
Section 7, Mitigation Measures – Wildlife Habitat Protection and Mitigation Measures	
1) Terrestrial Ecology Comment: Staff appreciate the intent to develop a more detailed wildlife observation / encounter protocol at the Detailed Design stage. It may be beneficial to include photos and identification features of SAR in a pamphlet form for contractors to carry in their vehicles for ease of reference. In addition, posters in a central location (e.g. main trailer) of these species may also be beneficial to informing contractor staff of species they may encounter. Staff request to review this protocol when it is available.	Noted. Development of a more detailed wildlife observation / encounter protocol can be reviewed at the detailed design stage.
2) Terrestrial Ecology Comment: In relation to the above comment Bullet #3 states "Ecologist/Biologist will notify the District MNRF Biologist within 48 hours of any observation of Endangered and Threatened species and/or immediately for any species going to a wildlife custodian". Staff can support the 48 timeframe if the species observed is a bird (e.g. Bobolink) and is flying around the general study area, however, if what is observed has limited or no mobility (e.g. plant, Bobolink nest, Blanding's Turtle), then MNRF should be contacted immediately for direction of next steps regarding the observation. Generally, if wildlife is observed within the active construction zone, construction should cease, and they should be allowed move on at their own pace. Please revise the protocol to include consideration of the above.	The protocol has been revised as requested.
3) Terrestrial Ecology Comment: Staff can support surveying for SAR prior to construction however, we do not support the intention to transplant or relocate species without consultation with the MNRF. If a SAR is encountered the Ecologist/Biologist and MNRF should be contacted immediately for direction of next steps. Please revise this section.	This section has been revised so that if SAR is encountered the Ecologist/Biologist and MNRF are to be contacted immediately for direction of next steps.
Appendix F, SWM Report	
Aquatic Ecology general comment: Bioretention planter boxes (Elm Drive) and bioswales and permeable paving (Lakeview Neighborhood) infrastructure projects were installed and monitored in the City of Mississauga in clay/till soils by Credit Valley Conservation Authority. These LID approaches have been shown to absorb the first 25 mm and 21 mm of rainfall runoff (respectively) with no outflows observed from the underdrains. These techniques are observed to perform water quality, water quantity, erosion control as well as thermal mitigation and infiltration functions in tight/cohesive soils. As such, further consideration for the use of bioretention planter boxes and bioswales is requested with respect to the widening of Trafalgar Road.	The use of bioretention planter boxes and bioswales will be given further consideration with respect to feasibility during the Detailed Design stage.
Section 1.3.1, Stormwater Management Criteria – Fluvial Geomorphology	
1) Engineering Comments: Addressed.	Completed

Conservation Halton Comment and Response Table – February 13, 2015 and April 10, 2015 Comments from Conservation Halton

Appendices (Vols. I and II)

Conservation Halton (CH) Comments	Study Team Responses
2) Terrestrial Ecology Comments: Staff note that the SWM Report (Appendix F, Appendices Volume I) indicates that 5 structures within the Sustainable Halton Natural Heritage System (NHS) (5+225, 5+500 ME-T1, 5+665 ME-T2, 5+820 ME-T3, 6+725 ME-T5) will be replaced with concrete box structures with open footings to allow for fish passage (Refer to Section 5, Page 80). Dundas Trafalgar Inc. (Minto) is proposing a crossing for the stream realignment which may make these existing culverts and their proposed replacement redundant. It is staff's understanding that discussions between the Region and Dundas Trafalgar Inc. are on-going in determining which project/development will advance first.	Discussions between the Region and the developer are ongoing. With the implementation of the preferred Combination Option, Culvert C5 will be eliminated.
Regardless of how these projects advance, enhanced wildlife crossing opportunities should be considered at the Detailed Design phase. Factors to incorporate into the design may include wingwalls to funnel wildlife towards the opening, a 0.5m dry bench on either side of the culvert to provide a dry path for wildlife movement, and exclusionary fencing. Enhanced culverts will function to provide wildlife passage across Trafalgar Road, possibly reducing the anticipated increase in wildlife/vehicle collisions and facilitating local wildlife movement through the Regional Natural Heritage System and ultimately the broader landscape.	Noted. Enhanced wildlife crossing opportunities will be considered at the Detailed Design stage. This commitment has been added to the Mitigation Measures and Detailed Design Commitments table (Exhibit 8.1) in the ESR. This has also been noted in Section 7, Mitigation Measures, subsection Wildlife Habitat Protection and Mitigation Measures, of the Natural Environment Report.
Section 1.3.2, Hydraulic Criteria	
1) Under Freeboard – Staff support the revised wording proposed within the Response Table. We note that currently this wording is not included within the Draft ESR.	The wording previously proposed will be incorporated in the Final ESR and Appendices – i.e. "Conservation Halton's Policies, Procedures…(April 2006) does not specifically require that Regional roads be flood free under Regional storm conditions. However, this is the current standard recommended by Conservation Halton for all major roads within Conservation Halton jurisdiction that may serve an emergency route purpose and has become a standard requirement for all roadways that will be experiencing an increase in use due to development."
2) Addressed.	Completed
Section 1.3.3, Target Unit Area Peak Flows	
• Addressed.	Completed
Section 2.4.2, Hydraulic Analyses	
1) Addressed.	Completed
2) N/A	N/A
Section 3.2, Proposed Conditions – Combination Option • Technically, the document should read with respect to the storm sewer from SWM Pond 29, that it "will need to be determined during detailed design if the proposed storm sewer by ***Star Oaks*** is intended to accommodate…..".	Text has been revised as requested.

Conservation Halton Comment and Response Table – February 13, 2015 and April 10, 2015 Comments from Conservation Halton

Appendices (Vols. I and II)

Conservation Halton (CH) Comments	Study Team Responses
Section 3.4.2, Alternative Mitigation Measures	
1) N/A.	N/A
2) Addressed.	Completed
Section 3.4.3, Proposed Stormwater Management Plan	
1) Eng. comment Addressed.	Completed
2) Aquatic Ecology comment: Despite the low infiltration rates of soils in the study area, bioretention units will still function with an underdrain to capture any additional water that does not infiltrate into the surrounding soils. As such, it is recommended that this type of LID infrastructure be carried forward for consideration at the detailed design stage.	This section has been modified to note that despite the low infiltration rates of soils in the study area, bioretention units can still function with an underdrain to capture any additional water that does not infiltrate into the surrounding soils. As such, this type of LID infrastructure will be carried forward for consideration with respect to potential feasibility at the Detailed Design stage. This commitment has been added to the Mitigation Measures and Detailed Design Commitments table (Exhibit 8.1) in the ESR.
Sections 3.4.3.1 & 3.4.3.2, Proposed Stormwater Management Plan – Highway 407 to Dundas Street	
1) Interim Conditions - While the treatment train approach to water quality treatment was added to Section 3.4.3.1 (Highway 407 to Joshua's Creek and East Morrison Creek Watershed Divide) it was not added to Section 3.4.3.2 (Joshua's Creek and East Morrison Creek Watershed Divide to Dundas Street).	Section 3.4.3.2 will be updated to include the treatment train approach to water quality treatment.
2) Addressed.	Completed
Section 3.5.1, Hydraulic Analysis (Proposed Conditions)	
1) Addressed	Completed
2) To 5) Without the requested information for the Solo Option, the full extent of the watercourse and floodplain alterations that would be necessary to meet Conservation Halton's regulatory requirements are unknown and therefore we cannot determine if it is likely that we would be able to issue approvals for the subject works. There could also be significant impacts on the land acquisition requirements in order to meet our flooding hazard requirements. As such, this type of analysis cannot be deferred to the detailed design stage. See our Main Section 7.1.7.5 comments above, for possible options in this regard.	Please see response to 7.1.7.5, Item 3 above.
6) Staff continue to be of the opinion that additional cross-sections are required between River Stations RS 20 and 21 and between RS 22 and 23. These additional cross-sections are required to ensure that there is no instability in the model but will also be crucial as part of the riparian flood storage analysis. Please also note further to the comment immediately above that Conservation Halton staff cannot complete our review of the model without the supporting flood plain mapping.	It is our understanding that both HEC-RAS modeling and associated floodplain mapping is being refined, detailed and updated as part of the adjacent development applications. Hydraulic modeling for the Trafalgar Road widening project will be updated at the Detailed Design stage, taking into consideration the updated and more detailed modelling. This commitment has been added to the Mitigation Measures and Detailed Design Commitments

Conservation Halton Comment and Response Table – February 13, 2015 and April 10, 2015 Comments from Conservation Halton

Appendices (Vols. I and II)

Conservation Halton (CH) Comments	Study Team Responses
	table (Exhibit 8.1) in the ESR.
7) N/A	N/A
8) N/A	N/A
9) **New Comment** – The North hydraulic model indicates that Trafalgar Road would be overtopped under Regional Storm conditions at RS 24.5 CulvU (ME-T3). The modeling indicates the flooding would not occur right at the culvert but to the south at a low point in Trafalgar Road. This flooding must be eliminated.	In the unlikely event the Combination Option is not implemented prior to the widening of Trafalgar Road or for the ultimate condition, detailed hydraulic analysis will be undertaken for the revised Solo Option which realigns East Morrison Creek along the east side of Trafalgar Road north of Dundas Street (see response to Section 7.1.7.5) to demonstrate the final design meets Conservation Halton's regulatory requirements. With the revised option to align East Morrison Creek to the east (in the absence of the preferred option put forth by Minto), ME-T3 is removed from the drainage system and the overtopping of Trafalgar Road is eliminated. There is potential to investigate raising he profile, if required, in detailed design. Please see response to 7.1.7.5, Item 3 above.
10) **New Comment** – The location of the ineffective flow areas relative to the proposed culvert at Trafalgar Road (RS 5290.15 Culv) should be revisited as they would appear to be set too far from the edge of the culvert.	This will not have a major effect on hydraulics and will be reviewed and modified, if necessary, during modelling undertaken at the Detailed Design stage. This commitment has been added to the Mitigation Measures and Detailed Design Commitments table (Exhibit 8.1) in the ESR.
Appendix C, Section 2.1, South Hydraulic Model – Background on EMCSS Hydraulic Analysis	
1) N/A	N/A
2) Addressed.	Completed
Appendix C, Section 3, North Hydraulic Model 1) & 2) Staff note that similar to our comments on Section 3.5.1, the requested information with respect to the existing conditions model is required by Conservation Halton to properly assess the Solo Option. See our Main Section 7.1.7.5 comments above for possible options in this regard. 3) Addressed. We note however that the location of the ineffective flow areas relative the culvert openings would now be incorrect. Please revisit and update accordingly.	Please see response to 7.1.7.5, Item 3 above. This will not have a major effect on hydraulics and will be reviewed and modified, if necessary, during modelling undertaken at the Detailed Design stage. This commitment has been added to the Mitigation Measures and Detailed Design Commitments table (Exhibit 8.1) in the ESR.

Conservation Halton Comment and Response Table – February 13, 2015 and April 10, 2015 Comments from Conservation Halton

Appendices (Vols. I and II)

Conservation Halton (CH) Comments	Study Team Responses
Appendix G, Fluvial Geomorphology Report	
General	
1) Please see comments provided under Section 5.2 below.	See responses to Section 5.2 comments below.
Section 3.3.1, East Morrison Creek – East Tributary (Crossings 3, 4, 5 and 6)	
1) Addressed.	Completed
2) Table 3.2, Focus of Fluvial Geomorphological Assessment – Under Justification for Crossing 3, we note that it would be more correct to state that NOCSS and the Secondary Plan do not designate the area as a stream or hydrologic feature since within NOCSS MOC-6 does not extend up to Crossing 3.	The text under the Justification heading for Crossing 3 has been revised as follows: "Although Reach MOC-6 is identified as a high constraint reach in the NOCSS, both NOCSS and the Secondary Plan do not designate the area as a stream or hydrological feature since within NOCSS MOC-6 does not extend up to Crossing 3".
Section 3.3.3, Channel Conditions at Culvert/Bridge Crossings	
• Addressed.	Completed
Section 4, Meander Belt Assessment	
• The text has not been updated to reflect that the NOCSS report indicates a preliminary meander belt including factor of safety of 26 metres for MOC-2 and 42 metres for MOC-6.	The text has been updated.
Section 5.1.1, Existing Recommendations from Background Review	
1) Addressed.	Completed
2) Table 5.1, Management strategies for reaches MOC-2 and MOC-6 - NOCSS – The value listed under "Meander Belt Width" remains incorrect for MOC-2. The preliminary meander belt including factor of safety based on Table 6.3.4a of NOCSS is 26 metres.	The text has been updated.
Section 5.2, Recommendations from Current Assessment	
1) **New Comment** – Thank-you the new discussion and Table 5.2. While 3 times bankfull width is frequently an acceptable culvert width, it has been our experience that in some situations it is insufficient to ensure that appropriately sized substrate for the system can be utilized. This is particularly true if terrestrial benches are also necessary within a crossing. As such either preliminary substrate sizing should be provided to confirm the culvert size, or a note should be added to the discussion that indicates that the culvert size will be re-assessed at the detailed design stage and the size modified if necessary to ensure that substrate appropriate for the subject system (i.e. similar to the upstream and downstream watercourse) can be utilized.	The following note has been added "The culvert size will be reassessed at the detailed design stage to ensure that substrate appropriate to the upstream and downstream reaches can be utilized. Furthermore, the culvert size will take into account aquatic habitat requirements and channel hydraulics." This commitment has been added to the Mitigation Measures and Detailed Design Commitments table (Exhibit 8.1) in the ESR.

Conservation Halton Comment and Response Table – February 13, 2015 and April 10, 2015 Comments from Conservation Halton

Appendices (Vols. I and II)

Conservation Halton (CH) Comments	Study Team Responses
2) **New Comment** – Staff have concerns about the proposed 6.9 metre wide culvert at Crossing C7 which is located on the Main Branch of East Morrison Creek south of Dundas Street. The proposed width is 1.2 metres less than the upstream crossing located on a tributary of East Morrison Creek, even though the drainage area at this point is more than double and the anticipated peak flows will be substantially more. As the recommendations for this crossing will not be impacted by the analysis being undertaken in conjunction with the upstream developments, staff require additional justification for the proposed width at this location at this time.	In general, bankfull width increases in drainage area in natural fluvial systems. However, due to anthropogenic change to the channel itself (realignment, straightening) and throughout the East Morrison Creek Watershed, the channel is no longer a natural fluvial system. As such, bankfull dimensions do not always change in predictable patterns as one moves downstream. East Morrison Creek passes through a 4270mm x 2000mm culvert at Dundas Street approximately 200 m upstream of Culvert 7. Culvert 7 has been sized to meet both hydraulic and fluvial geomorphological requirements. Culvert dimensions and bankfull channel dimensions will be confirmed during the Detailed Design Stage. This commitment has been added to the Mitigation Measures and Detailed Design Commitments table (Exhibit 8.1) in the ESR.
Section 5.3.1, Alternative Identification	
1) Addressed.	Completed
2) See Section 5.2 comments above.	See responses to Section 5.2 comments above.
3) Staff appreciated the addition of the note that for Alternatives 2 to 4 that the realigned channel would be positioned to ensure that the road is not located within the erosion hazard limit. We note that in order to be outside of the erosion hazard the road must be located outside of the meander belt if the system is unconfined and outside of the stable top of bank if the system becomes confined. Please confirm that the road will be located outside of the erosion hazard as defined by Conservation Halton and Provincial Regulations and Guidelines.	The road will be located outside of the erosion hazard as defined by Conservation Halton and Provincial Regulations and Guidelines; the text has been updated to clarify this.
4) **New Comment** – Now that Recommended Plan Drawings have been provided, we note that Alternative 1 is not feasible as Drawings14A and 15 indicate that creek realignments must occur in conjunction with the road widening. As such, this alternative should be removed, identified as being infeasible or modified to reflect a feasible alternative.	Alternative 1 is identified as not feasible within the report.
Section 5.3.2, Alternative Evaluation	
1) Addressed.	Completed
2) Table 5.3, Mitigation options and evaluation – Alternative 1	This reference should be to Table 5.2, not Table 5.3.
a) Addressed.	Completed
b) Addressed.	Completed
c) Addressed.	Completed

Conservation Halton Comment and Response Table – February 13, 2015 and April 10, 2015 Comments from Conservation Halton

Appendices (Vols. I and II)

Conservation Halton (CH) Comments	Study Team Responses
d) Partially addressed. The added note acknowledges the additional risk to the roadway infrastructure and the public due to the closer proximity of the roadway to the creek, however, it does not acknowledge the increased risk to the public due to the anticipated increased use of a roadway located within the erosion hazard.	As noted in the response to the Section 5.3.1 item 4, New Comment above, Alternative 1 has been identified as not feasible within the report as creek realignments must occur in conjunction with the road widening, and this is supported by the increased risk to the public due to closer proximity of the roadway to the creek, and anticipated increased use of the roadway located within the erosion hazard.
e) **New Comment** – Now that Recommended Plan Drawings have been provided, we note that Alternative 1 is not feasible as Drawings14A and 15 indicate that creek realignments must occur in conjunction with the road widening. As such, this alternative should be removed, identified as being infeasible or modified to reflect a feasible alternative.	See above response to Section 5.3.1 item 4, New Comment.
3) Table 5.3, Mitigation options and evaluation – Alternative 2	
a) Addressed	Completed
b) Under Natural hazards, if the realigned channel is positioned to ensure that the road is not located within the erosion hazard limit, as indicated in Section 5.3.1, the natural hazard risk to the road and to the public will decrease under this Alternative. If the road is not actually located outside of the erosion hazard, even if the design of the relocated channel ensures there is no increased erosion potential, then there could still be an increased risk to the public due the anticipated increased use of the future road (i.e. more people will be travelling through an erosion hazard area).	Noted.
c) **New Comment** –If the channel is relocated so that the roadway is located outside of the erosion hazard as indicated in Section 5.3.1, the channel length would have to increase, which would result in a decrease in the channel's slope. This reduced gradient could potentially have a negative impact on the channel's form and function. Discussion should be provided in this regard.	Agreed. This has been clarified in the text.
4) Table 5.3, Mitigation options and evaluation – Alternative 3	
a) Addressed.	Completed
b) As the ESR indicates that the creek realignment would ensure that the roadway would be located outside of the erosion hazard, which requires the roadway to be located outside of the meander belt, we are unclear why a meandering channel would not be considered in order to mitigate the reduction in channel length. NOCSS requires that channel lengths be maintained in order to ensure that stream densities are maintained.	Please see response to 7.1.7.5, Item 3 and Item 4 above. A meandering channel would be considered for the realigned channel as a means of mitigating channel length loss as well as improving aquatic habitat and channel morphology.
c) Under Natural hazards, if the realigned channel is positioned to ensure that the road is not located within the erosion hazard limit, as indicated in Section 5.3.1, the natural hazard risk to the road and to the public will decrease under this Alternative. If the road is not actually located outside of the erosion hazard, even if the design of the relocated channel ensures there is no increased erosion potential, then there could still be an increased risk to the public due the anticipated increased use of the future road.	Noted.

Conservation Halton Comment and Response Table – February 13, 2015 and April 10, 2015 Comments from Conservation Halton

Appendices (Vols. I and II)

Conservation Halton (CH) Comments	Study Team Responses
5) Table 5.3, Mitigation options and evaluation – Alternative 4	
a) Addressed.	Completed
b) As the ESR indicates that the creek realignment would ensure that the roadway would be located outside of the erosion hazard, which requires the roadway to be located outside of the meander belt, we are unclear why a meandering channel would not be considered in order to mitigate the reduction in channel length. In fact, NOCSS requires that channel lengths be maintained in order to ensure that stream densities are maintained.	Please see response to 7.1.7.5, Item 3 and Item 4 above. A meandering channel would be considered for the realigned channel as a means of mitigating channel length loss as well as improving aquatic habitat and channel morphology.
c) Under Natural hazards, if the realigned channel is positioned to ensure that the road is not located within the erosion hazard limit, as indicated in Section 5.3.1, the natural hazard risk to the road and to the public will decrease under this Alternative. If the road is not actually located outside of the erosion hazard, even if the design of the relocated channel ensures there is no increased erosion potential, then there could still be an increased risk to the public due the anticipated increased use of the future road.	The realigned channel will be positioned to ensure the road is not located within the erosion hazard limit.
6) Table 5.4, Quantitative evaluation of mitigation options	
a) Addressed.	Completed
b) As noted above, we continue to recommend that a meandering channel be utilized in order to maintain channel length, in keeping with the requirements of NOCSS.	Please see response to 7.1.7.5, Item 3 and Item 4 above. A meandering channel would be considered for the realigned channel as a means of mitigating channel length loss as well as improving aquatic habitat and channel morphology.
c) **New Comment** - Staff were unclear why the "Current Enclosed Length" was listed different under Alternatives 3 and 4 from what is listed under Alternatives 1 and 2.	The table has been updated to be consistent.
d) **New Comment** – The Oak Park Pet Hospital culvert is assumed to remain in place in this option. The possibility of this occurring while also ensuring that the roadway is located outside of the erosion hazard should be demonstrated.	The Preferred Option directs East Morrison Creek to the west side of Trafalgar Road and will no longer pass along the frontage of the former Oak Park Pet Hospital site.
e) **New Comment** – Staff note that once the above issues are addressed, the preference from a fluvial geomorphological perspective needs to be revisited. At this time, we anticipate that Alternative 3 should be at least "moderately" preferred.	Alternative 3 has been updated to moderately preferred.
Section 5.3, Missing Discussion – Crossing C7 • See Section 5.2 comments above.	See Section 5.2 responses above.

Conservation Halton Comment and Response Table – February 13, 2015 and April 10, 2015 Comments from Conservation Halton

	Conservation Halton (CH) Comments – April 10, 2015	Study Team Responses
	Comments received by email from Paul Bond, dated April 10, 2015 on revised ESR Section 7.1.7	
1)	Further to the second bullet point it is requested that it be clarified that while the culvert at Station 5+500 (ME-T1) is not required to convey the East Morrison Creek Tributary, it will continue to be required to provide conveyance of the remnant portion of the East Morrison Creek tributary and to serve as an outlet to the proposed stormwater management facility within the Minto (Dundas-Trafalgar) lands. At this time, it is anticipated that this remnant reach, including crossing ME-T1, will remain regulated by Conservation Halton even after the proposed diversion occurs.	Text revised as requested.
2)	Further to the last paragraph on Page 10, we request that the first sentence read "The **preliminary** culvert sizing for the culvert at Station 5+820 (ME-T3) by Minto and approved by Conservation Halton consists of a 7.32m crossing span….". While the culvert size analysis was completed to a fairly high level of analysis, the sizing is still subject to minor changes at the detailed design stage, if necessary.	Text revised as requested.
3)	Further to the second paragraph on Page 11, we request that the third sentence be revised to read "Further, the realigned channel would be positioned to ensure the roadway is not located within the erosion **and flooding hazard limits and associated regulated allowances**."	Text revised as requested.

AECOM
300 Water Street
Whitby, ON, Canada L1N 9J2
www.aecom.com

905 668 9363 tel
905 668 0221 fax

April 14, 2015

Jill Stephen
Senior Manager, Transportation
Engineering and Construction
Town of Oakville
1225 Trafalgar Road
Oakville ON L6H 0H3

Dear Ms. Stephen:

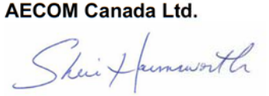
Regarding: Trafalgar Road (Regional Road 3) Widening Class EA
Town of Oakville Comments on the Draft Environmental Study Report and Notice of Study Completion
AECOM Project No. 60119993

Thank you for the comments the Town provided on the draft Environmental Study Report (ESR) for the above referenced project. Responses to your comments along with the updates included in the ESR, are provided in the attached table which has also been included in Appendix A9 of the ESR. Where no specific action was required, additional clarification has been provided in the response table.

Please find enclosed a copy of the final ESR for your reference. The ESR is being placed on the public record from April 16, 2015 to May 19, 2015. A copy of the Notice of Completion is attached for your reference.

Thank you again for taking the time to review the draft ESR and provide comments. If you have any questions regarding the final ESR, please contact the undersigned at 905-668-9363, ext. 2350.

Sincerely,
AECOM Canada Ltd.



Sheri Harmsworth, P.Eng.
Senior Project Manager
sheri.harmsworth@aecom.com

SH:sh
Encl.
cc: Matt Krusto, Halton Region
Melissa Green Battiston, Halton Region
Nick Zervos, Halton Region
Brenda Jamieson, AECOM

Town of Oakville Comment and Response Table – March 11, 2015 and March 25, 2015 Comments from Town of Oakville on Draft ESR

Town of Oakville Comments, March 11, 2015	Study Team Responses
General Comments	
• This EA needs to clearly state that it is not providing north/south capacity improvements south of White Oaks, and that the provision of these improvements was specifically deferred to the Midtown EA study recommendations.	The text was amended to clearly state that north/south capacity improvements south of Iroquois Shore Road/Leighland Avenue were addressed through the Midtown EA study recommendations.
• The town would like to receive the detailed traffic analysis and data referenced in section 2.4.4.3.	The reference to detailed traffic analysis being available upon request has been deleted. The detailed traffic assessment information was incorporated in the main body of the ESR, rather than in an appendix in a separate report.
• The personal information that has been blacked out in the appendices can still be read if the pages are held up to the light.	This will be addressed so the information is not visible.
• "Liveable" spelling throughout document should be corrected to Livable.	Text was corrected.
• The Regional TMP indicates a 50m right-of-way for Trafalgar Road (north of Dundas) with centre BRT. Is this what the Regional DC is based on as well?	The Trafalgar Road right-of-way width will typically be 50m per the TMP and consistent with the Dundas Street corridor. The Halton Region "2012 Transportation Development Charges Technical Report" (GHD 2011) indicates that a Transitway (4 lanes for general traffic + Transitway in centre of roadway) will have 50m right of way.
• The Regional TMP suggested improvements on local roads to address Regional network deficiencies – local road improvements require further discussion as this is an item left out of all DC's.	Noted. This task is not part of the Trafalgar Road EA scope of work.
• Midtown is an important growth centre and is highlighted as such in the Regional TMP. Supporting Midtown development through Trafalgar Road and/or road network improvements is critical. The draft ESR clearly identifies issues on Trafalgar Road within Midtown, yet does not include an improvement plan for transportation issues in this area.	The ESR notes that provision for improvements within Midtown are specifically addressed through the Midtown EA study recommendations.
• The Regional TMP does not identify any works on Trafalgar Road south of Iroquois Shore Road. Did the modelling for the Regional TMP include any of the 1999 Midtown improvements?	The Regional TMP model 2031 network includes the extension of Iroquois Shore Road to Royal Windsor Drive with a full interchange at the QEW, which was identified as a preferred network alternative in the 1999 Midtown Class EA.
• Phasing for Trafalgar Road (north of Dundas) suggests keeping it rural and letting development urbanize this section. Please clarify how this will work. Will the Region be responsible for urbanization costs?	The Recommended Plan includes a 6 lane urban cross-section for Trafalgar Road north of Dundas Street, with multi-use trails, transit facilities and transit priority measures. Halton Region will be responsible for the costs associated with implementation of the Recommended Plan.
• The existing conditions map (section 3) is out of date and doesn't reflect the latest Livable Oakville Schedules resulting from OPA 5, which implemented the recommendations of the Trafalgar Road Corridor Planning Study (i.e. map 2 of 4, p37).	This by-law came into effect December 16, 2014, and was noted in the Dec. 10, 2014 Office consolidation document; this was not included in the existing conditions maps due to timing of report preparation for circulation/review. The existing conditions mapping has been updated to reflect this new information.
• Numerous graphics show a landscaped median along the road (some in raised planters); given the preferred alternative for the 6-lane cross-section, maintenance of these medians is going to be very difficult. Please ensure that the Town (and Parks) will	Text has been added to Section 8 – Detailed Design commitments to provide the Town (and Parks) the opportunity to comment during detailed design.

Town of Oakville Comment and Response Table – March 11, 2015 and March 25, 2015 Comments from Town of Oakville on Draft ESR

Town of Oakville Comments, March 11, 2015	Study Team Responses
have opportunity to comment during detailed design; our preference will be minimal plantings, and only sod and trees where feasible.	
• Consistent terminology should be used when referring to the Oakville GO Station. The report includes both "Oakville GO Station" and "GO Train Station" to refer to the same location.	The report was updated to reference only the Oakville GO Station, not the GO Train Station.
• It appears that Leighland Park will be impacted due to the widening. While the park is mentioned in the ESR, please provide details about the degree to which the park will be impacted. Parks and Open Space has a horticultural bed on the northwest corner. Will that be eliminated through the widening and right turn lane?	No widening was proposed in this area, so it is anticipated that the horticulture bed and posted sign will not be impacted; however, note that both of these items are currently within the Regional right-of-way.
• On the east side of Trafalgar north of Glenashton Blvd the Town has 2 major trails on utility gas corridors that abut Trafalgar Road. One is part of the Town's Heritage Trail system. Please include some comments that these trails exist and that any widening or grading of the new road will take into account these trails and connectivity to the widened road.	Section 2.4.4.3 was updated to address both trails.
• There is no reference to evaluating the potential for pedestrian grade separations along Trafalgar Road as indicated within the town's ATMP and TMP.	The following note was added to the preliminary design plans where the Town is considering the potential for pedestrian grade separations: "Potential pedestrian overpass subject to future review and confirmation by Town of Oakville and availability of property".
• Any replanting of any trees along the east side of Trafalgar north of UMR, if planted in proximity to a relocated Oakville Hydro overhead infrastructure, the trees must be species and cultivars that do not interfere with overhead wires.	Text in Section 8 – Mitigation Measures was updated to note that trees planted in proximity to relocated Oakville Hydro overhead infrastructure north of Upper Middle Road, must be species and cultivars that do not interfere with overhead wires.
Executive Summary – Problem Being Addressed, and Existing and Future Conditions	
• Both of these sections should reference the intensification areas that are along and serviced by this corridor (including Midtown intensification area).	Sections were updated.
• Please remove the word "collector" from the first sentence.	Text was revised as requested.
• Sheridan College should be included in the 4th bullet point.	Bullet four was updated as follows: "Promote pedestrian and cyclist travel and enhance safety at intersections through the introduction of pedestrian facilities, and by filling in gaps and improving the sidewalk/multi-use trail system"
Executive Summary – Alternative Solutions	
• Alternative 2 – include text here to describe that it was through the Midtown EA that alternatives that included upgrades to new roadways were examined.	The section of the Executive Summary describing Alternatives was revised; therefore text to address this comment was included at the end of Section 4.1.3 Alternative 2 – Upgrade Other Roadways: "through the Midtown EA, alternatives that included upgrades to new roadways were examined."

Town of Oakville Comment and Response Table – March 11, 2015 and March 25, 2015 Comments from Town of Oakville on Draft ESR

Town of Oakville Comments, March 11, 2015	Study Team Responses
Executive Summary – Alternative Design Concepts	
• Do the intersection improvements at Trafalgar/Cornwall include increased walk time?	The permitted walk time is sufficient to cross the roadway in all directions, however this will be confirmed at detail design.
Executive Summary – Project Description	
• Need to clarify that the widening (first bullet) does not apply south of White Oaks. Clarify that south of White Oaks it is status quo.	The text was updated to clarify that the widening does not apply south of White Oaks as a 6-lane cross-section already exists.
• Please clarify whether or not each section will be built as four GPLs and two HOV lanes, or if they will be built as 6 GPLs initially then transition to 4 GPLs and 2 HOV lanes only after the first two sections are built.	Each of the three phases will initially be built as a 6-lane urban cross-section with multi-use trails, transit facilities and transit priority measures. Upon completion of the widening of Trafalgar Road to 6 lanes throughout the project limits (i.e., all three segments), there is opportunity to consider the introduction of High Occupancy Vehicle (HOV) curb lanes allowing a mix of transit and private vehicles with two or more occupants. As transit ridership builds, there is the opportunity to convert the HOV lanes into dedicated bus lanes in the future. The limits or extent of operations for HOV/transit would need to be confirmed in consultation with the Town of Oakville and Oakville Transit. The ESR was updated to reflect this approach.
• Transit priority locations should also include Oak Walk and Sheridan College.	Transit priority will be included for Sheridan College as intended.
• Is the permission of U-turns an interim condition or a permanent condition? How will pedestrians be accommodated at these locations?	The use of U-turns will be a permanent condition. A U-turn would only be performed from a left-turn lane if the driver is facing a green ball or green arrow. U-turns are not permitted on an amber or all-red phase. In this case, there would be no pedestrians impacted by the U-turn movement. The text was updated to clarify this operation.
• Clarify that no works are proposed south of Leighland.	Works are proposed south of Leighland at Trafalgar Road and Cross Avenue.
• Does the 5th bullet exclude the potential for transit priority south of Leighland?	No
• More details are required regarding the constrained areas north of Dundas. Can the right-of-way be shifted or squeezed to allow for active transportation facilities? Does the heritage value outweigh the benefits of active transportation facilities?	The Recommended Plan does include Active Transportation facilities on both the west and east sides of Trafalgar Road north of Dundas Street. Where the property is constrained on the west side due to the heritage properties, a sidewalk has been provided to maintain the active transportation linkage. The boulevards and travel lanes have been revised to the extent possible through this constrained area. Further revisions are not feasible. Should the heritage properties be redeveloped in the future, the potential to acquire additional land to accommodate a multi-use trail on the west side of Trafalgar Road will be explored at that time.

Town of Oakville Comment and Response Table – March 11, 2015 and March 25, 2015 Comments from Town of Oakville on Draft ESR

Town of Oakville Comments, March 11, 2015	Study Team Responses
• Clarify who will be monitoring the performance of the HOV lanes and of transit ridership, especially the roles (if any) of agencies other than the Region.	Each of the three phases will initially be built as a 6-lane urban cross-section with multi-use trails, transit facilities and transit priority measures. Upon completion of the widening of Trafalgar Road to 6 lanes throughout the project limits (i.e., all three segments), there is opportunity to consider the introduction of High Occupancy Vehicle (HOV) curb lanes allowing a mix of transit and private vehicles with two or more occupants. As transit ridership builds, there is the opportunity to convert the HOV lanes into dedicated bus lanes in the future. The limits or extent of operations for HOV/transit would need to be confirmed in consultation with the Town of Oakville and Oakville Transit. The ESR was updated to reflect this approach.
• Confirm that the statement that "the transition from HOV/Transit lanes to BRT lanes would not require reconstruction of the roadway" means that centre BRT lanes are no longer proposed.	The text was revised to note that transition from curbside HOV / Transit lanes to curbside BRT lanes would not require reconstruction of the roadway.
• Additional details regarding the transition from a rural cross-section to an urban cross-section (north of Dundas) should be added. Active transportation facilities in this section of roadway could be highlighted.	The summary bullets were revised to clarify these items.
• Please also provide details in this section about other planned improvements, such as the improvements at Cornwall Road, the interim improvements at Cross Avenue, coordination with Midtown and addressing the intersection constraints at Dundas Street and Trafalgar Road.	Additional text was added to address these items.
• Do the comments in the 7th bullet regarding the cross-sections north of Dundas continue to apply regardless of location of Go Station/bus terminal in future?	It is recognized that the exact locations of some intersections north of Dundas Street may be further revised in conjunction with development applications from that shown in Plates 15, 16, 17, and 18. Notes on these plates identify: "Proposed future intersection location to be approved by Town / Halton Region".
• In the paragraph that begins "By initially implementing HOV lanes", change "grow to a threshold" to "grows to a threshold". Is this threshold defined or intended to be defined?	Text was corrected as noted. A threshold has not been defined.
• Should they want to mention GO/Metrolinx be specifically mentioned in the group of stakeholders in the last paragraph of this section?	Metrolinx/GO Transit was added to the paragraph.
• Please clarify how a multi-use trail will transition to a sidewalk in constrained areas. This will not be a legal maneuver via bicycle under the municipal by-law.	Cyclists will be required to dismount and walk their bicycles through the constrained section, with this requirement identified on site via posted signs.
• Concerns of the urban cross-section being driven by development. This will not encourage active transportation as the corridor is developed. This is similar to how Dundas Street is being built along the north side. All facilities should be in place as the corridor is widened, similar to William Halton Parkway.	The recommended active transportation facilities will be constructed as the corridor is widened.

Town of Oakville Comment and Response Table – March 11, 2015 and March 25, 2015 Comments from Town of Oakville on Draft ESR

Town of Oakville Comments, March 11, 2015	Study Team Responses
Executive Summary – Potential Environmental Effects, Mitigation Measures and Commitments to Future Work	
• Please provide more details about the potential opportunity to "enable enhancement of the natural channel form and function of the East Morrison Creek watercourse". Is this north of Dundas Street? Does this include reducing the culvert sizes?	Additional detail has been incorporated into the main body of the ESR regarding the potential opportunity to enable enhancement of the natural channel form and function of the East Morrison Creek watercourse north of Dundas Street with the Combination stormwater management option. The Combination Option which directs East Morrison Creek to the west side of Trafalgar Road via Culvert C4, eliminating the need for Culvert C5 and precluding the watercourse from passing through Culvert C6, is the preferred option as documented in the ESR. For the preferred option, the width of Culvert C4 will be 7320 x 1250 mm, as proposed by Minto, and Culvert C7 will be increased to accommodate 3X bankfull channel width.
• Regarding access to private and commercial driveways, will U-turns at intersections be provided as an interim measure or as a permanent measure?	The use of U-turns will be a permanent condition. A U-turn would only be performed from a left-turn lane if the driver is facing a green ball or green arrow. U-turns are not permitted on an amber or all-red phase. In this case, there would be no pedestrians impacted by the U-turn movement. The text was updated to clarify this operation.
Executive Summary – Exhibits ES-2 and ES-3	
• The 50m wide right-of-way (ROW) was predicated on the provision of centre BRT lanes. Without the centre BRT, a 50m wide row is no longer needed. Please explain the justification for the proposed 50m ROW width.	The Trafalgar Road right-of-way width will typically be 50m per the TMP and consistent with the Dundas Street corridor. The 50 m right-of-way width is required to accommodate the proposed road widening, active transportation facilities, transit infrastructure and other considerations such as the potential for on-street parking. Further, while curb side BRT has been carried forward as the preferred option, centre BRT has not been precluded if identified as required in the long term (i.e., beyond the current planning horizon) if demand warrants.
• Does the design in ES-2 preclude moving to centre BRT in the future?	No
• The multi-use paths and sidewalks should be dimensioned and the other parts of the cross-sections that are identified as "varying" are the ones we should look to change first if there are space constraints.	Standard sidewalk and multi-use path widths have been provided throughout the majority of the corridor except in a few constrained locations, with some modifications to other components of the boulevard area made to accommodate this. The multi-use path and sidewalk dimensions are identified in Exhibit 7-2. Plates 1 to 22 have been updated to include sidewalk dimensions in several locations.
• Exhibit ES-3 should be renamed "Typical Intersection Cross-Section with Right Turn and Left Turn Lanes" and indicate that left turns are only permitted at intersections. Comments should be provided in the EA about the effectiveness of curbside BRT and the impacts to right and left turns.	The title for Exhibit ES-3 has been updated as noted, and text added to confirm left-turns are only provided at intersections, with additional information added in Section 5.2.3 regarding the effectiveness of curbside BRT and the impacts to right and left turns.
• The above comments also apply to Exhibits 7.3 and 7.4.	All above noted revisions for Exhibit ES-2 and Exhibit ES-3 were equally applied to Exhibit 7-3 and Exhibit 7-4.

Town of Oakville Comment and Response Table – March 11, 2015 and March 25, 2015 Comments from Town of Oakville on Draft ESR

Town of Oakville Comments, March 11, 2015	Study Team Responses
Section 1.1 – Introduction and Study Background	
• Coordination with the town on Midtown should be included in this section. The part of Trafalgar Road that is in Midtown could also be highlighted on Exhibit 1.1.	Coordination with the Town on Midtown has been included in this section, and the Midtown study area is identified in Exhibit 1-1. Similarly, this is also updated in the Executive Summary.
Section 1.3.1 – Filing of Environmental Study Report	
• The postal code at Town Hall is L6H 0H3.	The postal code has been corrected.
Section 2.2.2 – Growth Plan for the Greater Golden Horseshoe (2006)	
• The last paragraph (and accompanying bullets) in this section should be expanded to focus on the employment and population projections for Midtown, and to highlight the immediate development pressures being felt now in Uptown and north along Trafalgar Road.	Additional details are included on employment and population projections for Midtown.
Section 2.3.1 – Regional Municipality of Halton	
• As part of supporting a form of development that is compact and transit-supportive, AT facilities should be included and additional solutions should be sought to avoid squeezing or omitting AT facilities when there are space constraints.	The Recommended Plan does include Active Transportation facilities on both the west and east sides of Trafalgar Road through the corridor. Where the property is constrained on the west side due to the heritage properties, a sidewalk has been provided to maintain the active transportation linkage. The boulevards and travel lanes have been revised to the extent possible through this constrained area. Further revisions are not feasible. Should the heritage properties be redeveloped in the future, the potential to acquire additional land to accommodate a multi-use trail on the west side of Trafalgar Road should be explored at that time.
Section 2.3.2 – Town of Oakville	
• It would be helpful to include a map (or series of maps) showing the land uses along the Trafalgar Road corridor.	The existing conditions mapping does include the requested information.
• In the first full sentence in the second column on Page 3, “planned for” should be replaced with “planned along”.	Text revised as requested.
• “Road” should be removed from “Trafalgar Road Urban Core Area” (2 references on Page 3).	Text revised as requested.
• The Trafalgar Road Corridor Planning Study should be referenced in this section as well. The last section identifies a land use along the west side of Trafalgar Rd as Village Square. This should be changed to Urban Square as the town has no Village Squares planned for along the Trafalgar Road corridor.	The section was updated as requested.
Section 2.4.2.2 – Halton Region Transportation Master Plan (to 2031) – The Road to Change	
• Further explanation of the proposed 50m ROW and its justification is required.	The Trafalgar Road right-of-way width will typically be 50m per the TMP and consistent with the Dundas Street corridor. The 50 m right-of-way width is required to accommodate the proposed road widening, active transportation facilities, transit infrastructure and other considerations such as

Town of Oakville Comment and Response Table – March 11, 2015 and March 25, 2015 Comments from Town of Oakville on Draft ESR

Town of Oakville Comments, March 11, 2015	Study Team Responses
	the potential for on-street parking. Further, while curb side BRT has been carried forward as the preferred option, centre BRT has not been precluded.
Section 2.4.3.1 – Livable Oakville (Oakville Official Plan, 2009)	
• Should intensification be mentioned here as well, similar to the above Growth Plan comment? Midtown and Uptown Core are designated as primary Growth Areas which are intended to accommodate the highest level of intensification (people and jobs)	The section was revised as noted.
• Midtown identified as a major transit station area	Noted
Section 2.4.3.2 – Town of Oakville Transportation Master Plan – Switching Gears (2012)	
• Please clarify if/how the plans for curbside BRT match with the centre BRT proposed for Dundas.	Curbside BRT is proposed along Dundas Street, not a centre BRT configuration. Curbside and median BRT were evaluated as part of the Dundas Street EA, and through this process, curbside BRT was identified as the preferred solution.
Section 2.4.3.3 – North Oakville East Secondary Plan (2008)	
• This plan identifies the maximum ROW width for Trafalgar Road as 50m and includes centre BRT. Please clarify why these recommendations were not included in the Trafalgar Road EA.	Curbside and median BRT were evaluated and through this process, curbside BRT was identified as the preferred solution as documented in the ESR. The Trafalgar Road right-of-way width will typically be 50m per the TMP, with a larger right-of-way width required at intersection locations.
• More justification is required for the 50m proposed corridor width.	The Trafalgar Road right-of-way width will typically be 50m per the TMP, with a larger right-of-way width required at intersection locations. The 50 m right-of-way width is required to accommodate the proposed road widening, active transportation facilities, transit infrastructure and other considerations such as the potential for on-street parking. Further, while curb side BRT has been carried forward as the preferred option, centre BRT has not been precluded.
• Additional details should be included regarding the “general design guidelines”.	The document reference was updated to “The Town of Oakville’s North Oakville Urban Design and Open Space Guidelines (November 23, 2009).
• “City of Oakville” should be replaced with “Town of Oakville”.	Text was updated.
• Similar to our comments regarding the Growth Plan, population and employment targets could be mentioned here as well.	Text was updated.
Section 2.4.3.4 – Trafalgar Road Corridor Study Vision 2057 (2014)	
• The “Trafalgar Road Corridor Study Vision 2057 (2014)” is referenced, but it should be Trafalgar Road Corridor Planning Study.	Text was updated.
• Please include some discussion on the outcome of the Study and the resulting OPA 5	Text was updated.

Town of Oakville Comment and Response Table – March 11, 2015 and March 25, 2015 Comments from Town of Oakville on Draft ESR

Town of Oakville Comments, March 11, 2015	Study Team Responses
Section 2.4.3.5 – Midtown Oakville Class EA Study (2014)	
• The revised text provided on February 26, 2015 will help clarify what was included in the Midtown EA. However, this section should still be expanded to discuss the coordination between the Trafalgar Road EA and the Midtown EA.	A discussion on coordination was included.
Exhibit 2.1 – Trafalgar Road Corridor Existing Road Conditions	
• This exhibit does not show the new multi-story GO parking lot. There is also no mention of the proposed GO/Metrolinx facility currently being proposed adjacent to this garage.	Proposed facilities are not included on the Existing Conditions map; however, the existing parking lot has been added to the figure. The proposed facility has been added to section 2.4.3.6 Metrolinx Midtown Oakville Mobility Hub Study (2012)
• This drawing should be labeled Oakville Go Station, not just "Oakville" or "Go Train Station" as depicted in the text on the previous page.	Text was updated.
Exhibit 2.3 – Trafalgar Road Corridor Existing Road Conditions	
• This exhibit does not show the new GO station on the west side of Trafalgar, immediately south of the 407.	The existing facility has been added to the map.
• Bus stops are not shown at Eighth Line on the exhibit photo.	Existing bus stops have been added to the exhibit.
Section 2.4.4.1 – Transit Services	This section is now 2.4.4.2 – Transit Services
• "Part of GO Transit route" sounds awkward. What does that mean exactly?	The sentence was edited; GO Transit has a bus route along Trafalgar Road.
• There are multiple GO bus stops on Trafalgar, not just the one at Upper Middle.	Text was updated.
• Route 6 was already on Upper Middle in 2009, therefore it is not a new addition.	Text was updated.
Section 2.4.4.2 – Active Transportation	This section is now 2.4.4.3 – Active Transportation
• "Collector" should be removed from the first sentence of this section.	Text was updated.
• Note that rehabilitation work on the bridge over the QEW is to begin this summer.	Rehabilitation work has been noted under future conditions.
• A multi-use trail exists along sections of Trafalgar Road between Sheridan College and Glenashton Drive on the west side. There are also existing sections at Trafalgar Road/Oak Park Boulevard, and Trafalgar Road/Hays Boulevard.	The section was updated as noted.
• This section could also note, as one of the observations about pedestrians, that north of Dundas, there are areas where pedestrians stand on the shoulder to wait for transit.	This Town observation has been included in the text.
• Is there any need to define whether the sidewalks are "accessible" (i.e. meet minimum accessibility requirements)?	The current status of existing sidewalks with respect to AODA requirements has been added. Sidewalks implemented as part of the Recommended Design will comply with AODA requirements.

Town of Oakville Comment and Response Table – March 11, 2015 and March 25, 2015 Comments from Town of Oakville on Draft ESR

Town of Oakville Comments, March 11, 2015	Study Team Responses
• There is a description of Major trails that should be amended as follows: o Major trails are off-road, soft surface pathways primarily for pedestrian and recreational use. Major trails are for pedestrians and cyclists.	Text was amended as noted.
Section 2.4.4.3 – Existing Transportation Conditions	This section is now 2.4.4.4 – Existing Transportation Conditions
• Exhibit 2.5 shows the segments of Trafalgar Road between White Oaks Blvd (S) and Iroquois Shore and between Iroquois Shore and the QEW WB off-ramp as having 3 lanes, but their v/c ratios are calculated based on 4 lanes (3,600 vph capacity).	The section between White Oaks Blvd (S) and Iroquois Shore is calculated correctly. A correction was required for the section from Iroquois Shore to the QEW WB Off-Ramp (i.e. noted as 3 lanes, however the capacity value used in the calculation was 3,600 vph instead of 2700 vph (900 vphpl x 3) so the v/c values shown are lower than they should be. Currently values shown are 0.8 v/c for SB and 0.73 for NB. The corrected values are 1.06 for SB and 0.97 for NB (note: Exhibit 2.5 is now Exhibit 2.7).
• No appreciable improvements for segments of Trafalgar Road from Iroquois Shore Road southerly, although Exhibit 2.5 shows there are issues with existing operating conditions.	The text was amended to clearly state that north/south capacity improvements south of Iroquois Shore Road/Leighland Avenue were addressed through the Midtown EA study recommendations.
• No appreciable improvements for intersections with Trafalgar Road from Iroquois Shore Road southerly, although Exhibit 2.6 shows there are issues with existing operating conditions. The areas where the intersections are failing should be more specifically highlighted.	The text was amended to clearly state that north/south capacity improvements south of Iroquois Shore Road/Leighland Avenue were addressed through the Midtown EA study recommendations. The areas where intersections are failing will be discussed in the text.
• The intersection data used are from 2009-2012 and the link data are from 2007. Are these data still applicable?	While the data used for existing conditions is dated and reflects when the analysis was completed, the need and justification for improvements is primarily based on future travel demands for the corridor which are dependent on the 2031 population and employment projections.
Section 2.4.5.1 – Key Issues	
• This section references Trafalgar Road as a goods movement corridor but does not reference the goods movement study that Halton is currently working on.	Noted.
• Uptown is still experiencing growth; it could be added to the first bullet point.	The first bullet was updated
• The Trafalgar Road Corridor Planning Study should also be referenced in this section. There will continue to be growth occurring along the corridor.	The study has been referenced.
Section 2.4.5.2 – Do Nothing Scenario – Year 2031 Future Traffic Conditions	
• Were the Midtown improvements included in the model?	The model network includes the extension of Iroquois Shore Road to Royal Windsor Drive with a full interchange at the QEW, which was identified as a preferred network alternative in the 1999 Midtown Class EA. The 2031 “Do Nothing” model used for this assessment does not include Midtown improvements outlined in the “Midtown Oakville Transportation and Stormwater Municipal Class EA Final Report (June 2014)”, as this work was completed subsequent to the Halton Region TMP. Improvements south of Leighland were identified in the Midtown Class EA.

Town of Oakville Comment and Response Table – March 11, 2015 and March 25, 2015 Comments from Town of Oakville on Draft ESR

Town of Oakville Comments, March 11, 2015	Study Team Responses
• What is the timing for the inclusion of HOV lanes in the Dundas Street cross-section? Will it be as construction of each section is completed, or when all phases have been built?	Each of the three phases will initially be built as a 6-lane urban cross-section with multi-use trails, transit facilities and transit priority measures. Upon completion of the widening of Trafalgar Road to 6 lanes throughout the project limits (i.e., all three segments), there is opportunity to consider the introduction of High Occupancy Vehicle (HOV) curb lanes allowing a mix of transit and private vehicles with two or more occupants. As transit ridership builds, there is the opportunity to convert the HOV lanes into dedicated bus lanes in the future. The limits or extent of operations for HOV/transit would need to be confirmed in consultation with the Town of Oakville and Oakville Transit. The ESR was updated to reflect this approach.
• (Page 14) Widening of Dundas Street ……. and one HOV lane……..wasn't it HOV to BRT?	The scenario considered was HOV.
Section 2.4.5.3 – Intersection Operations	
• Exhibit 2.7 shows that there will be intersections south of the QEW that fail under the Do Nothing Scenario. The text should be clearer about the intersections that fail. How will these intersections be addressed?	The text was amended to clearly state that north/south capacity improvements south of Iroquois Shore Road/Leighland Avenue were addressed through the Midtown EA study recommendations. The areas where intersections are failing will be discussed in the text.
2.4.5.4 – Traffic Safety Review	
• Expand the section on PSI to explain that term.	Text was updated.
Section 2.5 – Problems and Opportunities	
• The first bullet point should be revised to say "several sections of Trafalgar Road operate near, at or above capacity".	Text was revised.
• Add "and over the QEW" to the statement about promoting pedestrian and cyclist travel. This places referenced in this statement should match the locations mentioned on page 1.	This bullet was revised to read: "Promote pedestrian and cyclist travel and enhance safety at intersections through the introduction of pedestrian facilities, and by filling in gaps and improving the sidewalk/multi-use trail system
• Safety enhancements for pedestrians should not be limited to intersections. For example, there are transit stops without pedestrian facilities, and there are gaps in the sidewalk network. These also present opportunities to improve safety for AT users.	As noted above, this section was revised.
Section 3.4.1 – Existing Land Uses	
• Pipeline crossings should also be identified and discussed in this section.	Pipeline crossings are discussed under Section 3.8 Utilities
Section 3 – Existing and Future Conditions - Drawing 1 of 4	
• This drawing still references Ontario Courts and Halton Police at Town Hall. Please revise.	Drawing has been updated.

Town of Oakville Comment and Response Table – March 11, 2015 and March 25, 2015 Comments from Town of Oakville on Draft ESR

Town of Oakville Comments, March 11, 2015	Study Team Responses
Section 3 – Existing and Future Conditions - Drawing 2 of 4	
• This drawing references a wooded area (west of Trafalgar, between River Oaks and Glenashton) that is now mostly residential subdivisions (Kilbarry and Dunpar).	The drawing has been updated
• Pipeline crossings should be shown on this drawing.	Pipeline crossings were added to the drawings
• The land use designations are out of date, and do not reflect the changes that resulted from OPA 5	The information has been updated to reflect OPA 5.
Section 3 – Existing and Future Conditions - Drawing 3 of 4	
• We call it the “Uptown Core Transit Terminal” not the “Uptown Core Transit Hub”.	Text was updated.
Section 3 – Existing and Future Conditions - Drawing 4 of 4	
• This drawing should include GO station previously noted above.	The GO Transit parking lot has been identified on the map.
Section 3.4.1 – Existing Land Uses (Cornwall Road to QEW, QEW to Lynnwood Drive, Lynnwood Drive to Dundas Street)	
• Mobility and access issues for residents (seniors) in the Cornwall and Trafalgar (access to Midtown) and the Queen’s Avenue (access to Oakville Place, via Trafalgar) should be discussed here.	Mobility issues have been discussed in Section 2.4.4.3 – Active Transportation.
• Why not refer to the parking garage (first paragraph) as a GO Transit parking garage? Otherwise it sounds like it is someone else’s facility.	The text was revised.
• The Oakville Transit bus platforms should also be included (list following 3rd paragraph). Note that these platforms are over capacity.	The section was revised, as requested.
• Confirm that the 2,724 parking spaces includes those in the parking garage (3rd paragraph).	This value was taken from the GO Transit website. The 2,724 spaces are comprised of 1,854 in the north lot, 458 in the south lot, 32 in a leased north lot behind the McDonalds restaurant opposite to the GO Station, 275 at 222/224 Cross Avenue, and 105 at 530 Lyons Lane.
• Oakville Place is served by Route 13. Route 27 was removed in 2009	Text was updated.
• Sheridan College – Trafalgar campus – transit. Routes #13, #29 and #190 were in place pre-2009. The college is also served by Oakville Transit Routes 1 and 24 (on College), and GO Transit provides bus service directly on campus	Text was updated.
Section 3.4.2 – Proposed Development	
• The two Dunpar developments listed (Ward 5) are the same development. This development has been approved. There are 119 freehold townhouses in this development.	Text has been updated.

Town of Oakville Comment and Response Table – March 11, 2015 and March 25, 2015 Comments from Town of Oakville on Draft ESR

Town of Oakville Comments, March 11, 2015	Study Team Responses
• The site plan application at Oak Park and Taunton (listed as Oak Park in the draft ESR) is approved and under construction. The description could also be revised to say "Four storey building with ground floor commercial and three stories of residential units, and 212 maisonette units".	Text has been revised.
• The Hood Development Corporation and Trafalgar Heights Inc. proposals are site plans.	Text notes that these are site plans
• Other developments to be listed here include Minto (on Trafalgar, north of McCraney), Green Ginger, Petgor, Sixth Line Corporation, Emgo, and Shieldbay.	Reference to other applicable developments adjacent to the corridor was added where appropriate.
Section 3.4.6 - Sources of Potential Contamination	
• There is also a gas station on Trafalgar just north of Cross Avenue.	The gas station has been added.
Section 3.6.3 – Stormwater Management Criteria	
• Please define "EMCSS".	The full name has been provided.
• Please clarify why the town's Development Engineering Procedures Guidelines Manual (October 2009) is cited. Is the Region adopting the town's standards?	Provided for reference only.
• Please review the last sentence regarding upstream Regional flood levels.	The sentence has been revised as follows: The manual states that, as a minimum requirement, arterial road crossings of watercourses shall be designed to provide capacity for 100-year to Regional flood frequencies, with allowance for overtopping of roads and road crossings, and shall not result in an increase in upstream Regional flood levels.
APPENDIX F – Stormwater Management Report	
<u>General Comments:</u>	
• The ESR should reference the January 2011 Development Engineering Procedures and Guidelines Manual. The current reference to the October 2009 document should be revised globally throughout the document and/or added where the reference to the date was missing (Section 1.3.1)	The report reference has been updated throughout.
• Should EMCSS be expanded to East Morrison Creek Subwatershed Study? There are currently two documents that inform the study area including the EM1 EIR/FSS (January 2013) and the EM4 EIR/FSS (Draft April 2014). Please clarify.	EMCSS has been defined in the report as East Morrison Creek Subwatershed Study. Both documents will be referenced.
• All references to NNOTC should be revised to William Halton Parkway.	All references have been revised.

Town of Oakville Comment and Response Table – March 11, 2015 and March 25, 2015 Comments from Town of Oakville on Draft ESR

Town of Oakville Comments, March 11, 2015	Study Team Responses
<u>Section 1.3.1 – Criteria (North Corridor)</u>	
• Under the heading "Water Quality" – Criteria given by Bullet 6 is a duplicate of bullet 3	The duplicate bullet has been deleted.
• Under the heading "Peak Flow Controls" – this section should note that Table 7.4.1 yields target peak flow rates at Dundas Street.	This section has been updated.
• Under the heading "Fluvial Geomorphology" o continuous simulation modelling is required and the reference to "generally" should be removed. o Erosion thresholds/flows – note that the erosion threshold flows published in NOCSS are preliminary and must be verified at detailed design. Surrounding development verified the erosion threshold locations and carried out the associated modelling for development (including Trafalgar Road) North of Dundas Street only. The assumptions for Trafalgar Road (made by others) may need to be confirmed and/or updated by the Region at detailed design.	The reference to "generally" has been removed. The notes concerning verification and confirmation/updates required at detailed design, by the Region, have been included.
• Criteria (South of Dundas Street) – o The paragraph describing the SWM Criteria south of Dundas Street does not include erosion criteria. At detailed design, the Region may be required to expand the study to identify erosion potential and assesses the associated impacts of the road widening downstream of Dundas Street. The criteria and method of assessment for detailed design should be specified. o Peak Flow Controls may be required up to and including the Regional Design Storm Event. The Town seeks to ensure that development does not negatively impact the level of service of any Town lands, infrastructure or crossings.	Noted. This will be addressed in the ESR.
<u>Section 1.3.3 Target Unit Area Peak Flows –</u>	
• A copy of the correspondence with Janette Brenner on July 29, 2013 should be added to the appendix. We feel this section would be made more clear by referencing the NOCSS Table 7.4.1 (Targets at Dundas Street) used for sizing SWM controls and NOCSS Table 5.4.1 (Existing flows at upstream culverts) used for floodplain mapping.	Requested references added.
• Page 6, 1st Paragraph – change units to 0.020 m3/s/ha	Text has been revised. Units were also updated for 0.016 m3/s/ha in the third sentence in this same paragraph.
• Table 1.2 – we suggest editing the headings "Low Target" and "High Target" to the application of the target "At Dundas Street" and "At Upstream Culverts" perhaps.	Text has been revised.
<u>Proposed Conditions, Section 3.0</u>	
• The "Combined Option" should not rely entirely on Pond 32 to over-control peak flows at Dundas Street to allow for uncontrolled peak flows from Trafalgar Road. To leave the Region flexibility at detailed design, there must be recognition that some controls within the ROW may be required.	Some controls within the ROW may be required, and this has been acknowledged in the report.
• The changes to the existing road profiles of either William Halton Parkway, Old Burnhamthorpe Road or both may preclude the feasibility of Trafalgar Road to maintain existing road drainage conditions. Similarly, detailed design of the Trafalgar Road storm	Further analysis will be conducted at the detailed design stage.

Town of Oakville Comment and Response Table – March 11, 2015 and March 25, 2015 Comments from Town of Oakville on Draft ESR

Town of Oakville Comments, March 11, 2015	Study Team Responses
sewer north of Pond 29 may consider a diversion of drainage between Joshua's Creek and East Morrison Creek (keep in mind the Joshua Creek storm outlet may be too shallow and cannot be lowered, making EMC a more viable alternative). The ESR must recognize that any diversion in drainage between JC and EMC would trigger further analysis and assessment of the impacts on the creeks.	
• Section 3.2, Combined Option – note that the storm sewer from future Pond 29 to ME-T3 would be constructed by Star Oak Developments, not Dundas-Trafalgar Inc. (Minto). We agree that spare capacity to convey Trafalgar Road drainage has not been confirmed.	The text has been revised to Star Oak Developments.
• Section 3.4.3 Proposed SWM Plan - The reliance of Pond 30 "surplus capacity" appears to be premised on old information contained in the EM1 EIR/FSS January 2013. Current design information suggests that the pond storage volume is constrained due to the relocation of the east tributary of the East Morrison Creek (by Minto). Under either the Combined or Solo Option, the reliance on Pond 30 for over-control of Trafalgar Road drainage needs to be confirmed through detailed design. To leave the Region flexibility at detailed design, there must be recognition that SWM controls within the ROW may be required.	The reliance on Pond 30 for over-control of Trafalgar Road drainage will be confirmed through detailed design, and it has been noted that SWM controls within the ROW may be required.
• Tables 3.7 (Storage of Pond 30) and 3.8 (Storage of Pond 32) are based on older information and need to be updated.	Information presented in Tables 3.7 and 3.8 was based on current information available at the time the analysis was conducted. The tables will be updated during detailed design.
New Section – Section 3.6.5A – Description of Existing Sewer System and Outlet Ponds	
• A section describing the other elements of the storm drainage system (storm sewers and outlet ponds) should also be included in this report.	Additional information, included in the Appendix G SWM Report, has been incorporated into a new section 3.6.6 Existing Sewer System and Outlet Ponds.
Section 3.9 – Transportation	
• Elements of the transportation system that have not been discussed but should be added include the private underpass to Oakville Place and the CN Rail Crossing.	These components have been referenced.
Section 4.1.2 – Alternative 2 – Upgrade Other Area Roadways	
• What improvements is the last paragraph in this section referring to? This paragraph, and others throughout the document, suggest that other network improvements as suggested in the Region and Town TMP are required as part of the overall strategy to address capacity limitations on Trafalgar Road.	The paragraph is referring to upgrades to parallel roads. This alternative was not carried forward as improvements to other roads has been identified in the Region and Town's TMP and will be subject to separate studies.
Section 4.1.3 – Alternatives 3 to 7 – Widen Trafalgar Road	
• The second last paragraph in this section (and the Executive Summary) should provide more details on the Midtown EA (Midtown Oakville Class EA Study, not Midtown Class EA Study) and how the recommendations of that study work to address the issues on Trafalgar Road.	The ESR has been amended to clearly state that north/south capacity improvements south of Iroquois Shore Road/Leighland Avenue were addressed through the Midtown EA study recommendations. Additional details will be included on how the Midtown EA Study addressed capacity requirements for Midtown Oakville.

Town of Oakville Comment and Response Table – March 11, 2015 and March 25, 2015 Comments from Town of Oakville on Draft ESR

Town of Oakville Comments, March 11, 2015	Study Team Responses
• The same paragraph could reference the planned rehabilitation work on the bridge over the QEW.	This paragraph currently mentions widening the existing bridge over the QEW; planned rehabilitation is noted in Section 7.1.4.
Section 4.2 – Identification of Assessment Criteria for Alternative Solutions	
• For "Accommodation of Pedestrians/Cyclists" in Exhibit 4.3, other measures for evaluating the ability for each alternative to meet this criterion should include filling in gaps, connecting pedestrians to transit facilities and other uses along the corridor, and addressing mobility concerns of residents along, and near, the corridor (i.e. seniors).	These measures were considered in the assessment under the Accommodation of Pedestrians / Cyclist criterion.
Section 4.3 – Assessment of the Short List of Alternative Solutions	
• Alternatives 3 to 7 – this section should expand on the opportunities for pedestrians and cyclists and include the ability to address mobility concerns (seniors) and the need for improved pedestrian and transit facilities.	Additional text has been added to discuss pedestrian and cyclist need and opportunities available through implementing these alternatives.
• Page 40 first paragraph "An overvide" should read "An overview".	Text was corrected.
Section 4.5 – The Recommended Alternative Solution	
• This section should specify the recommended right-of-way width.	This section has been revised.
Section 5.1 – Approach to Developing Alternative Design Concepts	
• Please provide more details about the interim condition. How long will this last? Will the HOV lanes be in service as the different sections of Trafalgar are widened, or will they only become HOV lanes once Phases 1 and 2 of the construction are complete?	Each of the three phases will initially be built as a 6-lane urban cross-section with multi-use trails, transit facilities and transit priority measures. Upon completion of the widening of Trafalgar Road to 6 lanes throughout the project limits (i.e., all three segments), there is opportunity to consider the introduction of High Occupancy Vehicle (HOV) curb lanes allowing a mix of transit and private vehicles with two or more occupants. As transit ridership builds, there is the opportunity to convert the HOV lanes into dedicated bus lanes in the future. The limits or extent of operations for HOV/transit would need to be confirmed in consultation with the Town of Oakville and Oakville Transit. The ESR was updated to reflect this approach.
Section 5.1.1 – Right-of-Way and Cross-Sections	
• The first paragraph of this section states that no widening is proposed because there is already a 6-lane cross-section. However, there is also an observed and measured capacity issue, under current and future conditions. More discussion is required to explain why this EA did not recommend changes to this section of Trafalgar to address the capacity issues and how the recommendations of the Midtown EA will help with future capacity issues on Trafalgar.	The text was amended to clearly state that north/south capacity improvements south of Iroquois Shore Road/Leighland Avenue were addressed through the Midtown EA study recommendations, and additional text will be included to describe how the recommendations of the Midtown EA will help with future capacity issues on Trafalgar Road.

Town of Oakville Comment and Response Table – March 11, 2015 and March 25, 2015 Comments from Town of Oakville on Draft ESR

Town of Oakville Comments, March 11, 2015	Study Team Responses
• As noted earlier, more rationalization for the 50m ROW width is required	The Trafalgar Road right-of-way width will typically be 50m per the TMP, with a larger right-of-way width required at intersection locations. The 50 m right-of-way width is required to accommodate the proposed road widening, active transportation facilities, transit infrastructure and other considerations such as the potential for on-street parking.
Section 5.1.2 – Elements of Bus Rapid Transit (BRT)	
• BRT services typically have more frequent headways than 10-15 minutes (10-15 minutes is not very frequent for BRT).	The information provided in this section of the BRT report is consistent with the details included in the Dundas Street ESR.
• The high level of service provided by BRT actually negates the need for coordinated times because the service is so frequent.	Agreed, this is a benefit of BRT service. A general comment related to this point has been included in the text.
Section 5.1.3 – Transit Travel Time Improvement Strategies	
• Regional costs for the hardware required to realize transit travel time improvements should be included in the DC by-law.	Noted.
• TSP will be required in shorter term, not just as part of the long term strategy.	Coordination of the TSP implementation will be completed at the detailed design phase. It is also noted in the ESR as part of detailed design that the Region will be considering an adaptive “real-time” traffic control system.
• We have PRESTO therefore delays associated with fare box are not a concern.	The information provided is consistent with the details included in the Dundas Street ESR; however, this specific item has been deleted from the text.
Exhibit 5.1 – Curbside Bus Lanes	
• This figure should show where bus shelters will be located and should clarify that on-street parking cannot be accommodated within this cross-section.	This exhibit depicts the typical cross section.
• Please also see the comments for Exhibits ES-2 and ES-3.	Refer to responses for Exhibits ES-2 and ES-3.
Exhibit 5.2 – Median Bus Lanes	
• This figure does not illustrate a centre BRT design and should be revised to do so. In addition, landing space for passengers, shelter space, the potential for off-peak parking, and the benefit of additional shared space for cyclists in the curb lane should also be shown in this figure.	A revised exhibit has been provided.
• The VIVA (Markham) example that was shared earlier in the EA process included separated median lanes.	Noted.
• Please provide more details about the median width. Why will it vary?	The median width varies with the introduction of left-turn lanes at intersections. As you approach an intersection, the median narrows to accommodate the left-turn lane.

Town of Oakville Comment and Response Table – March 11, 2015 and March 25, 2015 Comments from Town of Oakville on Draft ESR

Town of Oakville Comments, March 11, 2015	Study Team Responses
• Please also see the comments for Exhibits ES-2 and ES-3.	See responses for Exhibits ES-2 and ES-3.
Sections 5.2.3 and 5.2.3.1	
• The town appreciates the additional text that is to be added to the end of Section 5.2.3. However, more details are required about under what circumstances the conversion to median BRT might happen, how the decisions would be made about median BRT vs. curbside BRT, when this could happen, impacts on design and construction of this part of the corridor, impacts to land acquisition and right-of-way definition, and costs. The town would prefer to see a decision on BRT location rather than leaving it open ended.	Curbside BRT was identified as the preferred solution as part of the Trafalgar Road EA. However, at the request of the Town, it was noted that a median BRT has not been precluded if identified as required in the long term (i.e., beyond the current planning horizon) if demand warrants.
Exhibit 5.3 – Curbside BRT vs. Median BRT	
• Perceived passenger waiting comfort can be addressed through design and is not necessarily worse with median (centre) BRT.	Noted.
• Roadside Safety – Proximity of Station Structure to Traffic – concerns for curbside BRT can be mitigated with 8” curbs.	Noted.
• The Dundas BRT referenced in this table should be “Proposed Dundas BRT” since the service does not exist right now.	The text has been updated.
Section 5.3.1 – Elements of High Occupancy Vehicle (HOV) Lanes	
• Since vehicles with a green license plate will no longer be able to use the HOV lanes without at least 2 people as of July 1, 2015, do they need to be specifically referenced in this section?	This had been included as an example, and has now been removed.
Section 5.4 – Network Improvement Strategies	
• Transit priority for Taunton and Oak Walk should also be included here.	Transit priority outside of the Trafalgar Road and Dundas Street corridors will need to be addressed by the Town.
Section 5.4.2 – Transit Priority at Oak Park and Dundas Street	
• Exhibit 5.7 should illustrate the location of the transit station and show explicitly how buses will get there. The red line on the drawing does not show access to the station.	This section has been revised.
• Oak Walk and Taunton should also be shown on Exhibit 5.7. Need to include transit routing using Oak Walk and Taunton Road.	This section has been revised.
• Please clarify – will there be no delay for buses at the Trafalgar/Dundas intersection? How will this impact other traffic using this intersection?	This section has been revised.

Town of Oakville Comment and Response Table – March 11, 2015 and March 25, 2015 Comments from Town of Oakville on Draft ESR

Town of Oakville Comments, March 11, 2015	Study Team Responses
Section 5.4.3 – Transit Priority Southbound from Leighland Avenue to the GO Station	
• Please revise the first sentence of the last paragraph as follows: "According to the Midtown Oakville EA, BRT will be routed to an alternate North-South crossing of the QEW, connect to an extension of Cross Avenue, and then proceed to the GO station on the east side of Trafalgar Road".	This sentence has been revised.
• Does transit priority work only with existing intersection at Cross or is there intended to be transit priority with new realigned intersection?	The transit priority was assessed with the existing Cross intersection, but can be provided to function with the new realigned intersection.
Section 5.4.4 – Intersection Improvements (Trafalgar Road/Cornwall Road)	
• Removal of the right-turn channelization (see last paragraph) will increase delay and walk time. This should be referenced here as well.	An assessment of this intersection shows that the removal of the channelized right turn increased the average delay by approximately 1 sec during AM peak and 4 sec during PM peak with LOS slightly affected as well. The eastbound double left movement may experience longer but acceptable delays than in the existing scenario. The increase in delay is discussed in this section in the 3rd paragraph and Exhibit 5.8.
• These improvements do not address capacity issues in future.	These improvements were identified primarily to address specific pedestrian crossing concerns identified as part of the EA process.
Exhibit 5.11 – Year 2021 Traffic Operations	This is now Exhibit 5.10 – Year 2021 Traffic Operations
• Please provide additional clarification regarding: o 2021 HOV (assuming HOV lanes open to general traffic) – does this mean that the HOV lanes operate like regular traffic lanes? If so, how is it different from the 2021 Do-Nothing scenario? o 2021 HOV (assuming HOV lanes take no traffic) – why is this scenario preferred when it performs worse than 2021 with HOV lanes open to traffic?	Due to the limitations of the modelling software (Paramics), two extreme conditions were modelled to assess HOV operations: 1) the HOV lane accommodates general purpose traffic and 2) the HOV lane does not accommodate any traffic. The actual operation with HOV lanes is assumed to fall in between these scenarios. The traffic assessment work demonstrated that the 2021 HOV scenario would operate better in comparison with the 2021 Do Nothing Scenario. The HOV scenario included intersection improvements (dual EBL and 2 NBT and 1 NBR compared with the Do Nothing scenario having a single EBL and 1 NBT, 1 shared NBTR). The text has been revised.
Exhibit 5.12 – Year 2031 Traffic Operations	This is now Exhibit 5.11 – Year 2031 Traffic Operations
• The 2031 BRT scenario operates better than the Do-Nothing scenario, but it still has a v/c ratio of 0.97. Is this v/c ratio acceptable to the Region? Does this mean that a v/c ratio greater than 0.9 will be acceptable for future development applications along the Trafalgar Road corridor and other Regional Roads?	As the existing conditions are operating over-capacity, improvements have been made to the intersection operations resulting in an improved v/c ratio. Developer applications will continue to be reviewed on a case-by-case basis, recognizing existing conditions assessments and impacts of the future development in comparison with the existing conditions scenario. It is possible that a v/c ratio greater than 0.9 may be acceptable in certain cases, but is not a standard that would be identified as being acceptable in future applications.

Town of Oakville Comment and Response Table – March 11, 2015 and March 25, 2015 Comments from Town of Oakville on Draft ESR

Town of Oakville Comments, March 11, 2015	Study Team Responses
Section 5.5 – Parking Adjacent to HOV/BRT Lane North of Dundas Street	Section 5.5 is now titled On-Street Parking North of Dundas Street
• Halton's TMP includes centre BRT and on-street parking for Trafalgar Road, as indicated in the first paragraph of this section. However, although it is noted in the second paragraph that both the Region and the town want on-street parking lanes protected, curbside BRT is now proposed which precludes on-street parking. Please provide the rationalization for this change. More details are required regarding the review of on-street parking opportunities outlined in the correspondence of February 26. 2015.	On-street parking is not precluded by curbside BRT. Further assessment would be required during detailed design to determine how the parking areas would be accommodated based on preferred parking locations identified by the Town.
Section 5.6 – The Recommended Alternative Design Concept	
• Please clarify why transit priority measures for Oak Walk and Taunton are not included.	Transit priority outside of the Trafalgar Road and Dundas Street corridors will need to be addressed by the Town.
Section 6.3.1 – Agency Contact List	
• Please update the contact list to replace "Transit Services" (under municipal) with "Oakville Transit" (official name).	Text has been updated.
Section 6.3.9 – Project Co-ordination Meetings with the Town of Oakville, Oakville Transit, Ministry of Transportation and Metrolinx	
• This section would be a good place to reference the co-ordination of this EA with Midtown.	The reference to the co-ordination with the Midtown EA has been added.
Section 6.3.12 – Sheridan College	
• What was the final conclusion re: service on campus (BRT stays on Trafalgar)	The BRT corridor was planned to stay on the Trafalgar Road corridor; however, the future Sheridan College Master Plan study may identify additional options to bring transit into the Sheridan College campus.
Section 7 – Project Description	
• Please change Cornwall Avenue to Cornwall Road.	Text has been updated.
• Transit priority measures at Dundas and at Leighland would be at the Region's cost.	Costs associated with TSP will be confirmed at detail design.
• Details are required about the transition from a rural cross-section to an urban cross-section and how that is costed in the DC. Who will install the storm sewers, and when?	The Region will construct the Recommended Plan, including a 6-lane urban cross-section with multi-use trails, transit facilities and transit priority measures; this includes storm sewers, at the time the road is widened.
• Permissive left turns should be reviewed. The town would not suggest permissive lefts be included on a six-lane road with curbside bus lanes.	Permissive lefts will be reviewed again at detailed design, when the final timing plans are prepared for each intersection. Off-peak periods may still benefit from a permissive left-turn phase, although it is likely that peak periods should not include a permissive left-turn phase. The statement, as is, allows for permissive lefts to be accommodated where appropriate.

Town of Oakville Comment and Response Table – March 11, 2015 and March 25, 2015 Comments from Town of Oakville on Draft ESR

Town of Oakville Comments, March 11, 2015	Study Team Responses
• Please clarify when/how long U-turns will be permitted (interim condition, or always permitted)? What accommodation will be provided for pedestrians at these locations?	The use of U-turns will be a permanent condition. A U-turn would only be performed from a left-turn lane if the driver was facing a green ball or green arrow. U-turns are not permitted on an amber or all-red phase. In this case, there would be no pedestrians impacted by the U-turn movement.
• Please refer to comments provided earlier in this document when reviewing this section. Many of those comments will also apply here.	This section will be updated to address previous comments.
Section 7.1.3 – Alignment and Grade	
• Is the "New North Oakville Transit Corridor" the "William Halton Parkway", or is it a transit route?	These roadways are the same; the ESR main report has been updated to replace reference to NNOTC with William Halton Parkway.
Section 7.1.4 – Pedestrian and Cyclist Facilities	
• There is no mention here of the pedestrian grade separations as recommended in the Midtown EA (east and west options) as alternatives to the Trafalgar Road/QEW interchange for pedestrians and cyclists.	The section has been updated.
• If new sidewalks will be built to 1.8m as per AODA standards, why can't 0.6m (at a minimum) be found to accommodate a 2.4m wide MUT within the constrained areas?	The Recommended Plan does include Active Transportation facilities on both the west and east sides of Trafalgar Road north of Dundas Street. Where the property is constrained on the west side due to the heritage properties, a sidewalk has been provided to maintain the active transportation linkage. The boulevards and travel lanes have been revised to the extent possible through this constrained area. Further revisions are not feasible. Should the heritage properties be redeveloped in the future, the potential to acquire additional land to accommodate a multi-use trail on the west side of Trafalgar Road should be explored at that time. From Glenashton southerly to White Oaks Boulevard South, it is not feasible to provide a continuous multi-use trail on the east side of Trafalgar Road due to property constraints in a number of locations. Through discussions with the Town during the course of the study, a decision was made to provide a multi-use trail on the west side of Trafalgar Road and a sidewalk on the east side of Trafalgar Road through this area.
• The transit facility is at the 407 interchange; why are pedestrian and cycling facilities not recommended along the west side between the south entrance and the 407, but then shown on the east side?	Trafalgar Road under Highway 407 does not provide for a separate off-road pedestrian or cycling facility, so in completing the preliminary design plans it was determined to end the pedestrian facilities at the GO station south of the 407 on the west side. As it was not clear what development would come forward in future years on the east side, the pedestrian pathway was carried further north; however, Plate 21 (and 22) has been revised to end the pathway on the east at the GO station parking lot access/intersection to match with the west side pathway.
Exhibit 7.2 – Trafalgar Road Corridor Pedestrian and Off-Road Cyclist Facilities	
• The pedestrian grade separations identified in the Midtown Oakville EA should be included in this table.	The locations have been added to this section.

Town of Oakville Comment and Response Table – March 11, 2015 and March 25, 2015 Comments from Town of Oakville on Draft ESR

Town of Oakville Comments, March 11, 2015	Study Team Responses
Exhibit 7.5 – Existing and Future Signalized Intersections	
• Oak Walk should be included in this table.	Oak Walk does not intersect with Trafalgar Road so it will not be added to the table.
• Replace New North Oakville Transportation Corridor (here and throughout the report, including on Drawing 21) with William Halton Parkway.	The text has been updated in the ESR document, as well as Plate 21
Section 7.1.7 – Drainage and Stormwater Management Requirements	
• The urban storm network south of Dundas, including the outfall points, should be documented and mapped in this section. The focus of this section seems to be the area north of Dundas.	Additional information, included in the Appendix G SWM Report, has been incorporated into the main body of the ESR.
Section 7.1.7.1 – Proposed Adjacent Developments	
• Please see comments for Section 3.4.2.	Please see responses for Section 3.4.2
Section 7.1.7.3 – Quality and Quantity Control	
• Peak flows are to be controlled to NOCSS limits.	Peak flow control will comply with NOCSS for the portion of the corridor north of Dundas Street.
• More details are required regarding the plan to integrate road runoff into the design of future SWM pond on adjacent developments. Who will pay for the required oversizing and additional treatment and maintenance requirements associated with the road runoff?	If there is a need to upsize ponds due to road runoff, a cost-sharing arrangement between the Region and the developer would need to be considered for construction of the infrastructure (i.e. incremental difference).
Section 7.1.7.4 – Mainline Crossing Culverts	
• More details are required regarding the request to relax criteria related to no increase in flooding. How relaxed are the criteria to be, and for how long? How much flooding would be acceptable if the criteria are relaxed? Who would be responsible for any flood-related impacts if the criteria are relaxed?	As stated in the SWM report, relaxed criteria could be established to address the 20mm to 60mm increase in flood levels for the Regional Storm event due to the extensions of crossings at stations 6+200, 7+750 and 8+080 as an interim condition (i.e., if the roadway improvements proceed development of the adjacent lands).
Section 7.1.11 – Preliminary Cost Estimates (and associated Exhibits)	
• This section should outline any costs that the Region expects will be borne by others.	The Preliminary Cost Estimate tables outline Regional costs only associated with implementation of the Recommended Design.
Section 7.2 – Transit Major Features	
• Please clarify why a channelized right turn on Dundas at Trafalgar is proposed, when other channelized rights (Trafalgar and Cornwall) are being removed.	Channelized right-turns were assessed to determine whether they would provide any benefit to transit operations by moving right-turns to a separate lane; however, channelized rights turns did not show any significant benefit so they were not recommended for implementation at Trafalgar Road and Dundas Street or other intersections, as discussed in the ESR. The channelized right-

Town of Oakville Comment and Response Table – March 11, 2015 and March 25, 2015 Comments from Town of Oakville on Draft ESR

Town of Oakville Comments, March 11, 2015	Study Team Responses
	turn on the southwest corner of Cornwall and Trafalgar Road was recommended for removal; however, the channelized right on the north-east corner was recommended to remain, as the skew angle of the intersection presents difficulties for larger vehicles (trucks and transit) to negotiate the corner without the island in place as this would result in a small corner radii that is too tight for larger vehicles to negotiate.
• The new channelized right should reference the need to provide a pedestrian grade separation on Dundas Street.	As noted in the response immediately above, channelized right-turns were not recommended, as such the recommended reference for grade separated pedestrian facilities is not applicable.
• Plan does not show accommodation for the connection of Oak Walk Drive – This was to be an essential transit connection	Oak Walk does not interest with Trafalgar Road so it will not be added.
Section 7.3.2 – Implementation Approach	
• Please provide more details and rationale about how the transition from HOV lanes to BRT lanes will occur, and regarding the plan to wait until after Phase 2 of construction to activate the HOV/transit lanes.	Each of the three phases will initially be built as a 6-lane urban cross-section with multi-use trails, transit facilities and transit priority measures. Upon completion of the widening of Trafalgar Road to 6 lanes throughout the project limits (i.e., all three segments), there is opportunity to consider the introduction of High Occupancy Vehicle (HOV) curb lanes allowing a mix of transit and private vehicles with two or more occupants. As transit ridership builds, there is the opportunity to convert the HOV lanes into dedicated bus lanes in the future. The limits or extent of operations for HOV/transit would need to be confirmed in consultation with the Town of Oakville and Oakville Transit. The ESR was updated to reflect this approach.
Section 7.3.1.4 – Transit Priority at Signalized Intersections	
• Transit priority for buses accessing Sheridan College at Ceremonial Drive has not been discussed earlier in this report. Who will be responsible for the costs associated with signal priority here? Are they included in the Regional DC?	Costs associated with signal priority will be confirmed at detail design.
Drawing 1	
• Drawing 1 includes a statement that “Trafalgar Road improvements, from Cornwall Road to McCraney Street, to be reviewed as part of the Oakville GO Station Operation Strategy by GO Transit/Metrolinx”. This should also be discussed in the text of the report.	This reference has been deleted.
Drawing 21	
• There are no pedestrian facilities on the northwest corner of Trafalgar Road and GO lot, however there are crosswalks indicated through the intersection on the north leg. The region may want to engage GO during the detailed design stage to investigate opportunities for pedestrian connectivity within their property, as has been done in previous instances/EA’s (i.e. Dundas Street at Northhampton Boulevard)	Trafalgar Road under Highway 407 does not provide for a separate off-road pedestrian or cycling facility, so in completing the preliminary design plans it was determined to end the pedestrian facilities at the GO station south of the 407 on the west side. As it was not clear what development would come forward in future years on the east side, the pedestrian pathway was carried further north. Plate 21 (and 22) has been revised to end the pathway on the east at the GO station parking

Town of Oakville Comment and Response Table – March 11, 2015 and March 25, 2015 Comments from Town of Oakville on Draft ESR

Town of Oakville Comments, March 11, 2015	Study Team Responses
	lot access/intersection to match with the west side pathway Metrolinx can be engaged during detailed design to confirm pedestrian facilities parallel or incorporated within their site.
Comments consolidated by Jill Stephen, on behalf of Town of Oakville staff from Engineering & Construction, Planning, Parks & Open Space, Development Engineering, and Oakville Transit.	

Town of Oakville Comments, March 25, 2015	Study Team Responses
• The 50m right of way: The proposed wording by AECOM is: "As shown by the evaluation completed and summarized in Exhibit 5.3, both curbside and median options are similar, with each alternative having some advantages and some disadvantages. Overall, the BRT operation in a dedicated curb lane along Trafalgar Road is preferred and was identified as the Technically Preferred Alternative. However, it is important to note that the planned Trafalgar Road corridor could accommodate median transit operations in lieu of curbside transit operations, although additional right-of-way may be required in some locations, should conversion of the curbside BRT operation be appropriate at a future point in time." Suggested revision: "As shown by the evaluation completed and summarized in Exhibit 5.3, both curbside and median options are similar, with each alternative having some advantages and some disadvantages. Overall, the BRT operation in a dedicated curb lane along Trafalgar Road is preferred and was identified as the Technically Preferred Alternative. However, it is important to note that the **recommended (Technically Preferred)** Trafalgar Road corridor **width of 50m protects for centre** median transit operations in lieu of curbside transit operations, (additional right-of-way may be required in some locations), should conversion of the curbside BRT operation be **proposed** at a future point in time." Request as we move forward… Moving forward from here, the Town would like to be involved in the Detailed Design stage to ensure the protection of a future centre median BRT is considered during the design phase so that future costs/staging can be mitigated if/when centre BRT moves forward. For your consideration I've attached a mock up the difference between the Regional EA Technically Preferred and the Town future Vision of centre BRT and how perhaps a hybrid cross-section could be contemplated at the design stage. This cross-section delivers the same intention as that proposed in your EA (6 lanes) however in includes a wider than normal centre median protecting for a future centre BRT that can then be more readily implemented with centre works only. Such a cross-section would also provide a suitable space for LID treatment (as you discussed) should this be an option at the design stage. We would like to explore such alternate cross-sections at the design stage.	Text has been revised and expanded to note that if centre BRT is proposed, it would be based on future study with the Town of Oakville and Halton Region. Halton Region is supportive of the Town's request to review the cross-section at detail design to ensure flexibility in the corridor. This will not warrant any changes to the cross-section as part of the ESR, and the Town's proposal can be reviewed at detail design. It should be noted that during this review at detailed design, the Town's proposal would be subject to corridor constraints.

Town of Oakville Comment and Response Table – March 11, 2015 and March 25, 2015 Comments from Town of Oakville on Draft ESR

Town of Oakville Comments, March 25, 2015	Study Team Responses
• On-Street Parking North of Dundas Street The proposed wording by AECOM is: The North Oakville East Secondary Plan identifies on-street parking north of Dundas Street. As noted in Section 5.5 of the Draft ESR, Halton Region has committed to protect right-of-way for the provision of on street parking adjacent to the HOV/BRT lane north of Dundas Street, if required, subject to further review as part of development applications and opportunities to provide additional parking on adjacent streets and/or off-street parking. Suggested revision: The North Oakville East Secondary Plan identifies on-street parking **in compliment with centre median BRT** north of Dundas Street. As noted in Section 5.5 of the Draft ESR, Halton Region has committed to protect right-of-way for the provision of on street parking **and centre median BRT** north of Dundas Street. **O**pportunities to provide parking on adjacent streets and/or off-street parking will be explored as part of the planning review process for all land development proposals.	Text revised, noting that should sometime in the distant future, on-street parking be proposed as development proceeds, this would be considered where appropriate and ultimately subject to the Region's review and approval.
• Comments on U-Turns As opposed to indicating that *"U-turns are being permitted"*, I would suggest stating **"U-turns are not planned to be prohibited at intersections."** I am of the opinion that this statement is less committal and more of a common statement that would normally apply to most intersections. Stating that is to be permitted leaves it open as this is your remedy to addressing access issues and therefore one might argue you may need to undertake steps to preserve the permission when in some cases you may need to take it away for safety and/or operational benefit.	Text revised.