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Protecting the Natural Environment from Lake to Escarpment

July 16, 2018

Milton Logistics Hub Project Review Panel (MiltonHubPanel@ceaa.gc.ca)
c/o Canadian Environmental Assessment Agency
160 Elgin Street
Ottawa, ON K1A 0H3

Attention: Ms. Leslie Griffiths, Panel Chair

Dear Ms. Griffiths,

Re: Environmental Assessment - Milton Logistics Hub Project
Conservation Halton Response to Panel Sufficiency Request
CEAA Reference No. 80100
CH File No.: MPR 208

The purpose of the following submission is to respond to the opportunity provided by the Milton Logistics Hub Project Review Panel (the Panel) to provide comments on responses to Information Request packages (IR) 1, 2 and 3, which were prepared by the Canadian National Railway Company (CN).

Conservation Halton (CH) staff has reviewed the requests and the responses and provide comments on those matters related its regulatory role, knowledge and expertise. These comments are provided in Appendix A to C of this letter. The comments outline additional information that should be provided to support the Panels review of this application in order to sufficiently determine any impacts to the valued components (VCs) as a result of proposed CN Milton Logistics Hub Project (the Project).

CH would be pleased to respond to any follow-up questions or information needs that the Panel has regarding the attached CH comments. If CH can be of any assistance, please contact me.

On behalf of Conservation Halton, thank you for the opportunity to provide input to the Panel on these matters. We look forward to providing additional comments consistent with our agency role, knowledge and expertise as the assessment process progresses.

Yours truly,
<Original signed by>

Jonathan Pounder
Coordinator, Environmental Planning
Planning & Regulations

Encl: Appendix A through C: CH comments on CN Responses to IRs 1 through 3

cc: William McMurray, Review Panel Member (c/o Review Panel secretariat)
Isobel Heathcote, Review Panel Member (c/o Review Panel secretariat)
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Appendix A: Conservation Halton Comments
CN Response to Information Request Package 1: Additional Field Work

IR1.1 - HDF Assessment work to comply with HDFA protocol (spring/freshet assessment)

> **Panel Request**: *Provide information on whether water is normally present in the eight headwater feature locations in April, May, and June. If water is present during those months, indicate the habitat quality and indicate whether fish are present. If this information is not available, conduct additional field investigations.*

Sufficiency of CN Response: While the response provide by CN indicates the presence of water without the presence of a CRA fishery, the assessment completed did not adequately characterize the function and ecological contributions that these features provide. This information is required to demonstrate potential effects. An assessment of all headwater features using the Evaluation, Classification and Management of Headwater Drainage Features Guidelines (TRCA, 2014) is standard practice when evaluating headwater drainage features within this area. Specifically the CN assessment did not consider flow and sediment transport that would contribute to the form and function of downstream Tributary A and Indian Creek. Given that the project as proposed would remove headwater features that may be significant, it is imperative that these standard study requirements be addressed.

Additional Information Required: An assessment should be carried out of all headwater drainage features utilizing the Evaluation, Classification and Management of Headwater Drainage Features Guidelines (TRCA, 2014) or an updated assessment that includes classifications of each feature based on the following characteristics (hydrology, fish habitat, riparian, terrestrial habitat). This should be accompanied by an appropriate management recommendation.

IR1.2 – update surface water monitoring baseline for three season study

> **Panel Request:**
> *1. Provide flow measurements and continuous water level / calculated flow for a period of three consecutive seasons (e.g., spring, summer and fall in a given year, including freshet if possible) for Indian Creek and Tributary A. Flow measurements should include high flow values (e.g. > 1.0 m_3/s for Indian Creek). If this information is not available, collect it.*
>
> *2. Refine the rating curves and hydrographs for monitoring stations IC2, IC3, and Trib A using the additional flow measurements including measurements obtained at high flow levels and measurements obtained during freshet, if possible.*
>
> *3. Provide justification for the use of HYDAT station 02HB004, Sixteen Mile Creek, for estimating flows in Indian Creek. Confirm the appropriateness of 02HB004 using measured flow characteristics and hydrograph from Indian Creek and comparison of these to the HYDAT station flows.*

Sufficiency of CN Response: Confirmation is required from CN that flow monitoring of site tributaries will be extended beyond the three season request, as weather fluctuates seasonally and annually. Comparable studies within the area have utilized flow data based on at least 2 years, incorporating

multiple high flow events. It has been demonstrated that this additional information is vital in properly calibrating predictive models required to assess impacts.

Additional Information Required: Additional surface flow data for multiple high flow events.

IR1.3 – Additional Chorus Frog assessment

> **Panel Request**: *Provide additional survey information on the number of Western Chorus Frogs that may be present in the project area. If this information is not currently available, conduct targeted surveys for Western Chorus Frog. These surveys should take place in the spring in the project development area and nearby areas, including the wetland-woodland complex at the southern edge of the local assessment area. It is recommended that survey methodologies and count locations be identified and developed in consultation with Environment and Climate Change Canada. If Western Chorus Frog are identified within the project development area, update the assessment based on the results.*

Sufficiency of CN Response: The focus solely on diurnal (daytime) surveys alone is not a viable method to determine the presence of Chorus Frogs within the study area. Nocturnal surveys are the standard for amphibian breeding habitat assessments. Furthermore, robust surveys typically incorporate the recording of egg masses and tadpoles within breeding pools. Lastly, these studies are typically conducted over multiple years and not just for a single-season. There is a federal Recovery Strategy as well as the COSEWIC report, which are typically followed when developing methodologies to assess potential habitat for this species.

Based on the above, the conclusion put forward by CN, that the species is absent from the study area, may not reflect the actual site conditions and cannot be relied upon.

Additional Information Required: Nocturnal amphibian surveys that incorporate multi-season studies and the inspection of breeding pools for the presence of egg masses and tadpoles should be carried out and provided.

IR1.4 – Additional turtle surveys

> **Panel Request**: *Provide additional information on the number of turtles that are present in the project area in April and early May. If this information is not available, conduct at least five additional basking turtle surveys in April and May. Update the assessment for turtles based on the results, as necessary.*

Sufficiency of CN Response: The supplemental surveys conducted by CN provided partial information regarding overwintering habitat for Snapping Turtles. Insufficient information and analysis is provided for Painted Turtle habitat and no information was provided regarding any assessment of Turtle Nesting Habitat. It is important that Painted Turtle habitat be assessed as it considered Significant Wildlife Habitat by the Province of Ontario.

Additional Information Required: Additional supplemental survey's targeting potential Painted Turtle Habitat and Snapping Turtle Overwintering Habitat should be carried out and provided.

IR1.5 – Confirmation/additional Bat Surveys

> **Panel Request**: *Confirm the timing of the area search conducted to identify candidate maternity roost habitat and whether this search included the entire local assessment area. If the search did not include the entire local assessment area, or was conducted when the trees were in leaf, conduct additional surveys when the trees are not in leaf to identify candidate maternity roost habitat. Update the assessment of bats based on the results, as necessary.*

Sufficiency of CN Response: In addition to leaf off surveys, habitat assessments of existing anthropogenic structures in the LAA are required, since Little Brown Myotis is known to make use of many human structures.

Additional Information Required: Additional bat surveys of anthropogenic structures within the LAA should be carried out and provided.

IR 1.6 – Confirmation/additional snake surveys

> **Panel Request**:
> *1. Provide further details and rationale for the timing and methodology used by CN when conducting area searches for specialized snake habitat features and individuals of Eastern Milksnake.*
>
> *2. Provide additional information on the number of Eastern Milksnake that may be present in the project area. If this information is not available, conduct additional snake surveys during the spring and fall using an appropriate methodology that addresses Environment and Climate Change Canada's concerns. Update the assessment for Eastern Milksnake based on the results, as necessary.*

Sufficiency of CN Response: Given the documented presence of a Milksnake, the presence of other snakes (breeding adults and brood-siblings at the very least) is likely. CH generally support the approach of using combined VES (Visual Encounter Surveys) and ACO (Artificial Cover Objects), but have concerns about the methodology and information provided in this study. The Artificial Cover Object ("ACO") surveys were conducted only on a short term basis and with some deficiencies in protocol. ACO surveys are ineffective unless conducted over a much longer time frame. Further, additional non Artificial Cover Object surveys are required to ensure the proper mapping and identification of potential Significant Wildlife Habitat (SWH). Ontario MNRF Survey Protocol for Species at Risk Snakes (SPSARS) guidelines and the SWH Ecoregion Criteria Schedule (SWHECS) criteria should be applied with respect to these Surveys. Surveys using this methodology would identify and map Overwintering (Hibernacula), Hunting/Foraging Range and Basking Habitats. The above described additional information is required for an adequate assessment of impacts and development of appropriate mitigation measures for the proposed project.

Additional Information Required: The completion of additional reptile surveys are required to ensure that habitat is documented in accordance with the SWH Ecoregion Criteria. It is recommended that

surveys follow the Ontario MNRF Survey Protocol for Species at Risk Snakes (SPSARS) guidelines and the SWH Ecoregion Criteria Schedule (SWHECS) criteria. Furthermore, it is recommended that a minimum of 20 surveys be completed given the hidden nature of reptiles.

Appendix B: Conservation Halton Comments

CN Response to Information Request Package 2: Regulatory Framework

IR 2.1/2.2 – Consideration of non-federal laws/Consideration of additional policies, guidance or resources

> **Panel Request**: **IR.2.1** - *Provide a table summarizing all federal, provincial and municipal (regional and town) laws and by-laws that CN has taken into consideration in the planning for the Milton Logistics Hub Project (the Project) and development of its EIS and explain what is meant by "taken into consideration" and "to ensure completeness". The table must include a description of which laws apply to the Project and which have been "considered to ensure completeness". Specify how these have been considered in the environmental assessment; for example, whether the laws informed project design, selected mitigation measures, the criteria used to determine the significance of the Project's effects, methodological approaches used by CN or other relevant matters.*
>
> **Panel Request: IR.2.2** - *Provide a table summarizing all federal, provincial and municipal (regional and town) plans and guidelines that CN has taken into consideration in the planning for the Project and development of its EIS. Specify how these have been considered in the environmental assessment; for example, whether the laws informed Project design, selected mitigation measures, the criteria CN used to analyze the significance of the Project's effects, methodological approaches used by CN or other relevant matters.*

Sufficiency of CN Response: CH considered CN's responses to these two sets of Information requests together. Overall, both responses are flawed as they assume that provincial legislation, policies and guidelines are not applicable to the Project. This assumption appears to have served as justification for failing to identify and adequately address a number of legislative, regulatory and policy requirements/directions for matters within the regulatory jurisdiction of CH.

More specifically, the following deficiencies have been identified in the CN response as it pertains to CH's regulatory jurisdiction, mandate and role. While the summary table includes the Conservation Authorities Act, it does not include the specific regulation (Ontario Regulation 162/06) that identifies regulated natural hazards and features, as well as establishes allowances around these features. Furthermore, while the response references the Provincial Policy Statement (2014), a review of the Planning Justification Report (EIS Appendix B.11) notes that Section 3.1 – Natural Hazards of the PPS was not considered within the report. Furthermore, there are numerous guidelines, identified in the specific request below that support these regulations/policies that should be consulted, and to the extent possible followed, when characterizing and defining the limits of natural hazards and features in this area. It does not appear that these have been considered. They have not been referenced in any CN material and no explanation or rationale has been provided for not applying these guidelines. The applicable policy and guidance documents are identified in the table below together with the reason why these should be considered.

Additional Information Required: An updated summary table should be provided that demonstrates how the following polices and guidelines are considered in the planning for the Project:

Document/Policy/Regulation	Reason for consideration
Ontario Regulation 162/06	Ontario Regulation 162/06 outlines the limits of Conservation Halton's jurisdiction under the regulation. Any development, interference with wetlands or alteration of watercourses in these areas requires permission from the Conservation Authority. It does not appear that CN intends to submit the required applications for permitting to CH. This means that the significant technical issues related to matters within CH's jurisdiction will be not be addressed through the permitting process.
The Policies and Guidelines for the Administration of Regulation 162/6 and Land Use Planning Policy Document (amended 2015)	The policies and guidelines outline the policy requirements for Conservation Halton approvals of development, interference with wetlands and alteration of watercourses. These policies relate to the five tests described in the regulation under which decisions should be made, including the control of flooding, erosion, pollution, conservation of land, and dynamic beaches. It has not been demonstrated that these critical tests can be met and no reference or explanation as to how they will be addressed has been provided.
PPS, 2014 – Section 3.1 – Natural Hazards	Outlines the policy context for planning approvals where natural hazards exist on the site and where they may be aggravated or increased by proposed development. The materials presented by CN have not referenced this policy or demonstrated how it is addressed if the Proposed Project proceeds.
Natural Channel Systems: Adaptive Management of Stream Corridors in Ontario, including Natural Hazards Technical Guides for River and Stream Systems: Flooding Hazard Limit, Erosion Hazard Limit and Hazardous Sites Technical Guides" (MNR, 2002)	This technical guideline is used to define the limits of natural hazards and in guiding decisions about planning approvals within valley and stream systems and supports Section 3.1 of the PPS. It has not so far been referenced or addressed in the CN materials.
Natural Heritage Reference Manual for Natural Heritage Policies of the Provincial Policy Statement, 2005 (MNRF, 2010)	This technical guideline is used to define the limits of natural hazards and in guiding decisions about planning approvals within valley and stream

	systems and supports Section 3.1 of the PPS. It has not so far been referenced or addressed in the CN materials.
Evaluation, Classification and Management of Headwater Drainage Features (2014).	This guideline replaces the referenced 2009 document and includes updated assessment protocols and management recommendations. It has not so far been referenced or addressed in the CN materials.

IR 2.3 – Core activities of CN and non-federal laws

Panel Request:

1. Describe what CN considers to be an encroachment of provincial or local legislation on its core activities and provide a rationale.

2. Provide information on what CN considers to be its core activities and a rationale to support the information. Specifically, differentiate between components and activities of the Project, as described in the EIS, that are core activities to which provincial or local legislation would not apply and those to which provincial or local legislation may apply. Provide a table that summarizes this information.

3. Specify which provincial or local legislation CN considers to be inconsistent with federal legislation governing its activities and the nature of the inconsistency.

Sufficiency of CN Response: CN's response to this information request fails to identify specific laws encroaching on specific core areas of CN activity, as the Panel directed, and instead offers a blanket answer based on a general constitutional argument. Specifically, in its response, CN has proffered a position, and summarized a legal interpretation, with respect to the application of two constitutional principles or "doctrines": interjurisdictional immunity and paramountcy. On the basis of its position and legal interpretation of the doctrine of interjurisdictional immunity, CN has asserted the following:

> *It is CN's view that all aspects of the construction and operation of an interprovincial railway (which includes any terminal integrated with that railway) fall within the exclusive power of the federal government and, as such, any valid provincial (or municipal) law that might otherwise apply to the Milton Logistics Hub project is rendered constitutionally inapplicable under the doctrine of interjurisdictional immunity.*

Similarly, on the basis of its position and legal interpretation of the doctrine of paramountcy, CN has asserted the following:

> *Even if there was no exclusivity protection – no law of interjurisdictional immunity – the same basic result would follow from a paramountcy analysis under the conflict of purpose branch of that doctrine…. Any attempt by the Province (or a local authority acting under the delegated authority of the Province) to exercise approval authority over whether the Project can proceed at all, or on what terms it may be constructed or operated, would be inconsistent with the express federal intent to do just that under the Canada Transportation Act.*

> If correct, the effect of this position and legal interpretation by CN would be to effectively exempt the Proposed Project from the legislative, regulatory and policy and framework and approval/permitting process in Ontario established under the *Planning Act* and *Conservation Authorities Act* for the protection of wetlands, watercourse and floodplains, and for the control of flooding and natural hazard protection.

CH fundamentally disagrees with the position and legal interpretation of CN with respect to both the doctrine of interjurisdictional immunity and paramountcy. On this subject, CH's position is identical to that of the Region of Halton, Towns of Milton and Oakville, and City of Burlington (the "Halton Municipalities"). After receipt of the CN Response to Information Request 2.3, the Halton Municipalities and CH jointly initiated a Court Application to the Ontario Superior Court of Justice seeking a series of declarations from the Court that would ensure that the planning and approval of the Proposed Project complies with all applicable provincial and municipal laws.

Additional Information Required: CN should respond directly to the Hearing Panel request and conduct a detailed analysis of areas that CN considers to be encroachment of provincial or local legislation on its core areas together with its rationale related to each area of potential encroachment. This response should also include an identification of the areas in which there is no equivalent federal legislation, and in which provincial or local laws should apply.

CN should respond directly to the Panel request and conduct a detailed analysis of areas that CN considers to be encroachment of provincial or local legislation on its core areas together with its rationale related to each area of potential encroachment. This response should also include an identification of the areas in which there is no equivalent federal legislation, and in which provincial or local laws should apply.

In addition, CH continues to seek confirmation from CN that it will ensure that the Proposed Project complies with and follows the legislative, regulatory and policy and framework and approval/permitting process in Ontario established under the *Planning Act* and *Conservation Authorities Act* for the protection of wetlands, watercourse and floodplains, and for the control of flooding and natural hazard protection.

IR2.5 – Characterization of the Project in municipal plans

> **Panel Request**: *Specify which regional or municipal plans anticipate the development of the Project, and how each of those plans anticipated, considered and characterized the development.*

Sufficiency of CN Response: While the EIS considers several of the priorities identified in the Bronte Creek Watershed Study (2002), it does not consider the regeneration opportunities associated with the increase and enhancements of linkages and corridors. Specifically, the proposed alignment and treatment of Tributary A may result in the fragmentation of the natural system by confining the watercourse corridor and limiting ecological form and function. Significant enhancements are being undertaken upstream of Tributary A through the development of the Boyne Survey that would potentially be severally impacted if the Project proceeded as proposed. This section of Tributary A is the sole linkage connecting these enhancements areas to the downstream natural system The EIS does not assess these potential impacts. In addition, the EIS does not consider habitat enhancements, an

important consideration, which would typically be required for projects subject to the municipal planning process. Additional regeneration activities prescribed in the Bronte Creek Watershed Study (2002) and their applicability to the Project as proposed can be found in CH comment on IR 3.19.

The CN response with respect to the Provincial Policy Statement does not include an assessment of the policies under section 3.1 – Natural Hazards. Please refer to IR 2.1/2.2 for more detail.

Additional Information Required: The following additional information is required:

- A description of how the following specific regeneration activities from the Bronte Creek Watershed Study are being addressed:
    - Increase existing riparian habitat to improve water quality and thermal regime
    - Enhance and protect forest habitat to increase corridors and linkages
    - Improve fish habitat through re-establishment of riparian buffers
    - Ensure no impact on flood plain storage or conveyance
- A description of how the Natural Hazard policies (Section 3.1) of the Provincial Policy Statement are being met.

IR2.12 – Species At Risk (based on presence of habitat)

Panel Request:
1. For each alternative site that is retained for consideration in phase 2 of the site selection study, provide a consolidated and complete list of potential species at risk, including those whose habitats are present on each site.

2. Using the methodology of the site selection study, briefly compare the potential environmental effects on all of these potential species at risk at alternative sites retained for consideration in phase 2 of the selection study.

3. Clarify whether the conclusion that the sensitivity of the redside dace to Project effects is of higher concern than the number of species at risk identified at the South Milton site, including consideration of the additional 12 potential species at risk at the South Milton site as reported in Appendix E.16 of the EIS. Provide an updated conclusion as to which site is preferred given the potential species at risk on the site and indicate whether any conclusions of the site selection study change as a result.

4. In developing the response to this information request, consider any changes to the sites selected for phase 2 arising from responses to other information requests, including 2.10.

Sufficiency of CN Response: As identified in CH's responses to other IRs (specifically IR 1.3 through 1.6 and 3.46), CH has identified that the surveys completed to date have not adequately determined the presence or absence of Species at Risk within the study area. A comparison of impacts between sites would be deficient until it can be better determined which Species at Risk are present within the study area. Given that there is insufficient information, the cumulative environmental effects on Species at Risk has not been fully assessed.

Additional Information Required: An updated comparison of impacts should be carried out following the completion of additional surveys determining the potential presence for Species at Risk as outlined in more detail in CH's comments on the CN Responses to IR 1 and 3. A comprehensive assessment of cumulative effects is required once the additional required information and analysis has been provided.

IR 2.16 – Project components considered in the alternatives assessment

> **Panel Request**: *Provide a rationale for the choice of key project components for which alternative means of undertaking the Project were considered, and why other components were not selected.*

Sufficiency of CN Response: The following comments focus on aspects of this Panel Request that is within the mandate and expertise of CH.

CH is in agreement that the existing erosion of the Indian Creek bank in close proximity to the existing rail line and proposed terminal needs to be addressed. However, the rational to support the decision to address this issue through the re-alignment of a portion of the creek has not been provided. As detailed in our March 13, 2017 letter, the relocation of features such as this are usually not supported and when they are it must be demonstrated that they do not result in the loss of aquatic habitat, increase flood risk and that they can mitigate the original erosion issue. This additional technical information is required in order to rationalize the decision to re-align a portion of Indian Creek.

A portion, but not all, of the Tributary A re-alignment proposed by CN is required to facilitate the decommissioning of an existing on-line pond as prescribed in the Bronte Creek Watershed Study. Through the Boyne Survey developments, considerable enhancements are being undertaken upstream of the CN site. Tributary A is the sole linkage connecting these enhancements areas to the downstream natural system. It is therefore integral to the overall function of this existing natural system that the re-aligned Tributary A through the Project Development Area (PDA) maintains a robust ecological linkage that is designed to ensures the long term viability of the upstream terrestrial and aquatic features. The EIS fails to demonstrate this.

Additional Information Required: Further technical analysis is required in order to support/rationalize the proposed realignment of Indian Creek and Tributary A including:

- a slope stability analysis that details the existing conditions of the Indian Creek Valley slope;
- an evaluation of flooding impacts, including the regional storm event, between existing and proposed conditions;
- an analysis of the impacts to aquatic habitat associated with the loss of over 500m of channel with appropriate mitigation/compensation that replicates the loss of habitat; and
- A consideration of alternatives to the site layout that avoids impact to the creek and ensures adequate terrestrial and aquatic passage through the PDA.

IR 2.18 & IR.2.20 – Alternative layout for project components/alternative entrance gate locations

> **Panel Request**: *Describe any technically and economically feasible alternative means of carrying out the Project specific to potential locations and configurations of project components within CN's 400 hectare property. This should include possibilities of different positions, locations and*

lengths of the yard tracks. This could include a perpendicular configuration if applicable arising from responses to other information requests in this package, including 2.9 and 2.10. For each alternative means identified, describe the potential effects of each on the valued components, including the potential to avoid watercourses and designated prime agricultural lands on the site. Compare these effects to those of the proposed project, and provide a rationale for why the Project components specified in the EIS were selected.

Provide a revised version of Table 2.2 to show how CN considered the alternative of locating the gate directly off Britannia Road, and provide information in the remaining columns to describe the technical feasibility, economic feasibility, biophysical and socio-economic effects of this option.

Sufficiency of CN Response: While the CN Response provides a discussion regarding alternative layout of the site, no figures have been provided to visually show what alternatives were identified and discounted. There is no way to visually see what the environmental impacts would be related to those alternatives and there is no fulsome discussion on the impacts.

In particular, the CN response did not consider layout alternatives within the current configuration. Specifically, the relocation of SWM Pond 1, the truck gate and kiosks would reduce the amount of channel proposed for re-alignment of Tributary A and the adjacent wetlands. These alternatives were not adequately assessed.

CH Additional Information Recommended: An evaluation of alternative site layouts should be carried out within the current configuration, including relocation of SWM Pond 1, the truck gate and kiosks, in order to reduce impacts to natural heritage features.

IR2.22 – Alternatives for stormwater management and culvert design

Panel Request:
1. Provide additional rationale, substantiated using data, modelling or academic literature, to discuss alternative approaches to managing the conveyance, storage and treatment of stormwater. Identify which of these (if any) could be considered "low-impact development" technologies.
2. Describe any technically and economically feasible alternatives means of designing the components of the stormwater conveyance and management system. Specifically, discuss alternative designs for culverts including single cell options and alternative configurations, as well as alternative structures or enclosures for stream crossings.
3. Briefly describe the potential effects of each of the various alternatives on valued components, and compare these effects with those of the currently proposed stormwater conveyance and management system.

Sufficiency of CN Response: The additional material provided by CN in support of the SWM and culvert design alternatives was useful in better understanding the intended function of the proposed facilities; however, it appears that a portion of the Tributary A re-alignment is being completed mainly to accommodate the location of SWM pond 1. The relocation of features such as watercourses is usually not supported for this purpose in most development applications, as alternatives are typically available to avoid watercourse relocation. A full rationale should be presented in order to justify the proposed location of the SWM facility.

In addition, the preliminary culvert dimensions and proposed twining result in a configuration that appears likely to hinder the natural form and function of this watercourse from a fluvial geomorphologic perspective (e.g. the loss of a defined low flow channel). This in turn would adversely impact adequate fish and terrestrial passage, as well as proper sediment transport that would result in the fragmentation of the enhanced upstream areas of Tributary A from the natural system.

Additional Information Required: The following additional information is required:

- A full analysis and rationale for the location of SWM pond 1 in an area that necessitates the relocation of a portion of Tributary A; and
- Additional detail as to how the form and function of Tributary A will be maintained through the PDA, ensuring ecological passage.

IR2.23 – Alternatives to Indian Creek infilling and realignment

> **Panel Request**:
> *1. Describe worker safety concerns relating to the retaining wall alternative.*
> *2. Describe any other alternative means to achieve a larger work pad area that are technically and economically feasible and would not involve infilling and realigning Indian Creek. If so, describe the potential environmental effects of such an approach on valued components, and compare these effects with those of the currently proposed Indian Creek realignment.*

Sufficiency of CN Response: CH is in agreement that the existing erosion of the Indian Creek bank in close proximity to the existing rail line and proposed terminal needs to be addressed. However, insufficient information and analysis has been provided to demonstrate that the re-alignment of a portion of the creek is required to address this issue. As detailed in our March 13, 2017 letter, the relocation of features such as this are not supported in the CH permitting process, in most cases, and are only considered where it can be demonstrated that the relocation does not result in the loss of aquatic habitat or, an increase in flood risk and that the relocation can mitigate the original erosion issue, while maintaining proper channel form and function. In this case, CH has identified a significant likelihood that the extent of re-alignment, shifting the creek over 250m from its original location, will result in significant loss to aquatic and riparian habitat, potentially increase flood risk on adjacent lands and increase downstream erosion.

Additional Information Required: See CH Comments on CN Response to IR 2.16 above - further technical analysis is required to support/rationalize the proposed realignment of Indian Creek including:

- a slope stability analysis that details the existing conditions of the Indian Creek Valley slope;
- a fluvial geomorphic assessment;
- an evaluation of flooding impacts between existing and proposed conditions; and
- an analysis of the impacts to aquatic habitat associated with the loss of over 500m of channel with appropriate mitigation/compensation that replicates the loss of habitat.

IR2.39 – Channel re-alignment timing/duration

> **Panel Request**: *Describe the predicted length of the time for the construction of the realignment, and between construction and the introduction of flows to the realigned channel.*

Sufficiency of CN Response: The additional information provided by CN is in line with the standard practices carried out for similar projects within this area. It is however noted that, prior to flows being introduced to a new section of channel that the banks should be stabilized, preferably with vegetation, to the satisfaction of approval authorities, including Conservation Halton.

Additional Information Required: CN should confirm that steps will be taken to ensure that all newly constructed channel reaches are appropriately stabilized to prevent channel erosion to the satisfaction of approval authorities, including Conservation Halton.

Appendix C: Conservation Halton Comments

CN Response to Information Request Package 3:
Air/Water Quality/Quantity & Terrestrial Issue

IR3.19 –Bronte Creek Watershed Study Goals

Panel Request: *Describe how the study goals proposed by Conservation Halton in the Bronte Creek Watershed Study (2002) have been or would be met by CN in its proposed design and modifications to Indian Creek and tributaries to Indian Creek for the Project.*

Sufficiency of CN Response: While the EIS discusses the study goals identified in the Bronte Creek Watershed Study (2002), the discussion is incomplete and insufficient to demonstrate that these goals can be met through the development of the Project.

In particular, the Bronte Creek Watershed Study establishes a number of regeneration actions that should be undertaken in concert with development within the watershed. Below is a summary of CH's response to each of these, as it relates to the Project, and specific deficiencies identified by CH with respect to these responses.

Bronte Creek Watershed Study Goals: Potential Regeneration Actions	CN Discussion	Outstanding Issues
Increase existing riparian habitat to improve water quality and thermal regime	• Riparian buffers will be established. • Shading from riparian vegetation will Increase oxygen concentrations and decrease temperatures. • Realignments and enhancements to Tributary A and Indian Creek have been designed to improve existing aquatic habitat.	Riparian planting is only proposed for areas of channel where re-alignment is proposed. The re-alignments result in the loss of over 500m of channel. The described additional plantings do not achieve the goal of increasing riparian habitat.
Enhance and protect forest habitat to increase corridors and linkages	• The design of the terminal avoids forested areas and will not remove woodland habitat. • Increasing corridors and linkages directly is not feasible on site.	The re-alignment and channelization of Tributary A directly fragments an adjacent forest from the rest of the natural system. In addition, the planned enhancement of the upstream portions of Tributary A to be completed through the development of the Boyne area will be fragmented by the Project, which is contrary to the study goal.

Improve fish habitat through re-establishment of riparian buffers	• Riparian buffers will be established. • Shading from riparian vegetation will increase oxygen concentrations and decrease temperatures. • Realignments and enhancements to Tributary A and Indian Creek have been designed to improve existing aquatic habitat.	The response repeats previously stated mitigation measures; however it fails to demonstrate how the goal will be achieved. Existing EIS information indicates that the Project as proposed will have impacts contrary to this goal: the proposed re-alignments result in the net loss of over 500m of channel and associated fish habitat.
Ensure no impact on flood plain storage or conveyance	• No change in flood line elevations within Indian Creek or Tributary A discharges. • The proposed realignment will not cause any adverse impact on existing regulatory flood elevations for the future facility.	CN's conclusions as set out in column 2 cannot be assessed or verified because CH has not been provided the required flood plain modeling.

Additional Information Required: The following additional information is required to demonstrate how the following regeneration actions from the Bronte Creek Watershed Study are being met:

- Information and analysis which demonstrates that there will be a net increase in existing riparian habitat post-development to improve water quality and thermal regime
- Information and analysis which demonstrates how forest habitat will be enhanced and protected to achieve a post-development net increase in corridors and linkages
- Information and analysis to demonstrate that there will be a net-post development increase in fish habitat through re-establishment of riparian buffers
- Flood plain modelling to demonstrate that there will be no impact on flood plain storage or conveyance

IR.3.22 – Description of slope stability

CEAA Request: *Provide details of historic and existing slope stability of valley slopes within the Project Development Area and how these were considered in the design and selection of mitigation measures.*

Sufficiency of CN Response: While the CN response provides some details of the existing erosion issue along the Indian Creek Valley slope, it does not include a scientific assessment of the slope through the required slope stability analysis, a standard practice. An assessment using the MNRF technical guidelines needs to be conducted to determine the extent of the existing erosion hazard. The scope and magnitude of re-alignment proposed, (over 1km) is typically not supported for watercourses such as this. Alternative erosion protection opportunities that do not result in the loss of over 500m of watercourse channel should be explored.

Additional Information Required: A slope stability assessment is required in accordance with the MNRF technical guidelines to determine the extent of the existing erosion hazard. In addition, alternative erosion protection opportunities should be considered to reduce the loss, and associated impacts, of the present proposal to remove over 500 m of watercourse channel.

IR 3.24 –Quantification of riparian wetlands and riparian vegetation

Panel Request:

a) Summarize and consolidate the information in Appendix B of Appendix E.4 to describe and quantify the existing riparian vegetation for each existing watercourse. Provide an estimate of the amount of riparian vegetation lost versus the amount that would be re-introduced as part of the enhancements for the realignment.

b) Provide a comparison of existing and proposed riparian storage to demonstrate that riparian storage is maintained from pre- to post- development as well as during flood events.

c) Provide the correct figure reference for the placement of riparian vegetation and other habitat structures in Indian Creek and Tributary A from subsection 3.3.12 of the EIS.

d) Describe how the proposed new riparian wetlands would function as storage and conveyance systems during various flood levels (2 year to 100 year and Regional storm events). In the event that the capacity of these riparian areas to retain water is exceeded, describe what measures would be put in place to protect against bank erosion and mitigate flow volumes, and describe where the excess water would go.

e) Describe how CN plans to monitor the riparian vegetation and wetlands over the long term, and what ongoing maintenance, if any, would be required.

If applicable, in developing the response to this information request, consider responses to other information requests in package 2.

Sufficiency of CN Response: The estimation methods used by CN to determine removals of riparian vegetation are inconsistent with standard practice. Current standard practice requires that riparian vegetation be quantified through field surveys that identify the Ecological Land Classification (ELC) vegetation communities and functions that this vegetation provides to the aquatic habitat. This has not been done. Instead CN has based its assessment on a generalized assumption that all flood plain lands contribute to riparian vegetation. It has not been demonstrated how the reported net gain of 1.2ha is possible given the loss of over 500m of creek channel.

As indicated in CH's March 2017 submission, in carrying out its regulatory and permitting role, CH staff requires digital floodplain modelling (HEC-RAS model). This is required to adequately assess impacts based on pre-and predicted post-construction flow conditions and to ensure conformity to CH standards and procedures. To date this modeling has not been provided.

Additional Information Required: The following additional information should be provided:

- An evaluation of existing riparian vegetation using standard field evaluation protocols including identification of Ecological Land Classification vegetation communities and functions).
- Digital floodplain modeling to demonstrate the extent of pre- and predicted post- development floodplain conditions.

IR3.26 - Flow regime

Panel Request:
a) Clarify how the annual flow regime (i.e., typical hydrograph) for each stream within the Project area may be altered by the Project during construction and operation, and in particular by changes resulting from the creation of impervious surfaces. Based on the stream flow monitoring and the results of predictive models provided in Appendix E.15, provide detailed hydrographs to depict the estimated existing flow patterns and the predicted flows after Project construction.

b) Based on the pre- and post- construction flow scenarios, describe predicted changes in the shape of the hydrographs for Tributary A and Indian Creek following construction, in particular the potential for changes in the timing, duration and magnitude of peak flows and in total runoff volume, under extreme weather conditions. This information should allow the reader to discern the full range of variability of predicted daily flows, including absolute minima and maxima, over the entire water year.

If applicable, in developing the response to this information request, consider responses to other information requests in package 2, namely information request 2.39 (channel realignment flows and length of time for construction of realignment).

Sufficiency of CN Response: The CN response has provided some additional useful information; however, as noted in CH's response with respect to IR 24 above and in CH's March 2017 submission to the Panel, in carrying out its regulatory and permitting role, CH staff requires hydrologic modelling. This is required to adequately assess impacts based on pre-and predicted post-construction flow conditions and to achieve conformity with current CH standards and procedures. To date this modeling has not been provided.

Additional Information Required: CN should present the digital hydrologic modeling used to demonstrate the extent of pre- and predicted post- development floodplain conditions.

IR3.34 – Additional culverts

CEAA Request:
a) *Clarify the proposed locations of Culvert 1 and Culvert 5.*

b) Describe the stream characteristics of Tributary A at the area proposed for the doubling of the mainline near Louis St. Laurent Avenue as well as stream characteristics at all other culverts within the Project Development Area (including Culvert #40.69). This information should include details on channel morphology, flows, and proposed or existing crossing designs.

c) Describe how CN would determine if changes to existing culverts are required, and how it would determine the design of these features, such as the parameters to determine the diameter of each culvert. Describe the potential effects of the Project at each culvert location, and provide information about mitigation measures or monitoring proposed for these structures.

d) Describe how the mitigation measures proposed in the response to c) would prevent scour, bank erosion or slumping. The response should include information on design features of the culverts and associated retaining structures for the construction and operation phases of the project, as well as considerations related to seasonal ground freezing, material compaction and risk of frost heave.

If applicable, in developing the response to this information request, consider responses to other information requests in package 2 namely information request 2.38 (maintenance and inspection of culverts).

Sufficiency of CN Response: The proposed design standards for culverts do not meet Conservation Halton standards or the design standards established for the Boyne Survey area (the area immediately north of the PDA). Specifically, the watercourse crossing design standards (including culverts) established for the Boyne area includes the need to: convey the regional storm (and not 25 year storm as indicated within CN response); convey the low flow channel through crossing; and, have a minimum span opening of 3 times the proposed bankfull width. These criteria ensure proper conveyance of flood water and allow adequate aquatic and terrestrial passage. These criteria have not been met in the case of the proposed culverts presented in the CN Response.

In addition, the proposed twin culverts to convey Tributary A through the PDA do not provide adequate geomorphic and ecological function. This will result in the fragmentation of the upstream portion of this feature from the natural system. CH typically requires open bottom culverts to sustain natural stream processes and to maximize interaction of groundwater into the channel.

Additional Information Required: An updated culvert design should be provided by CN which demonstrates that all proposed culverts provide adequate terrestrial and aquatic passage, as well as sufficient capacity for conveyance of flood flows.

IR3.36 – Hydrology and flood modeling

> **CEAA Request:**
> *a) Identify which hydraulic models were used for each site (Regional, Tributary A, Indian Creek) and for which flow characteristic (flood flow, mean annual flow, low flow and environmental flow), and explain why each model was selected. Provide a rationale for the selection of different models for various watercourses and clarify whether the use of different models affects the comparability of flow results between these watercourses.*
>
> *b) For each selected model, provide an overview of model structure (e.g., steady-state, continuous, dynamic, spreadsheet, dimensionality, etc.) and discuss how each model incorporated climate change projections (e.g., a range of alternative temperature and precipitation regimes, including altered frequency of extreme events) into the analysis.*
>
> *c) For each model used to compute flow, provide estimates of model predictive error and uncertainty. Provide the range of possible flow outcomes based on data uncertainty, climate change scenarios and model uncertainty. Describe any model validation or sensitivity analysis of the models conducted for the proposed Project site.*
>
> *d) Provide a list of input values used for the Hydrologic Engineering Center – River Analysis System hydraulic model and a rationale for their selection.*

Sufficiency of CN Response: As noted in CH's response with respect to IR 24 and IR 26 above and in CH's March 2017 submission to the Panel, in carrying out its regulatory and permitting role, CH staff requires digital floodplain modelling (HEC-RAS model), as well as hydrology modeling. This tool is required to adequately assess impacts based on pre-and predicted post-construction flow conditions and to achieve conformity with current CH standards and procedures.

Additional Information Required: As noted in CH Comments above with respect to IR 24 and IR 26, CN should present the digital hydrologic and flood plain modeling used to demonstrate the extent of pre- and predicted post- development floodplain conditions.

IR3.37 – Effluent predictions for stormwater management ponds

Panel Request:

a) Predict discharge concentrations and volumes for all contaminants from the stormwater management ponds to the receiving environment:

- *Itemize all points of discharge from the Project site to the receiving environment and the quality of effluent from each discharge location, including nitrogen, chloride, metals, bacteria, de-icing chemicals, fuels and solvents as well as pesticides/herbicides/fertilizers.*
- *As part of the calculation, estimate removal rates of all predicted contaminants mitigated through the stormwater management ponds. Include, at minimum, total and soluble reactive phosphorus, pesticides, metals, hydrocarbons, salinity, nitrogen forms, and herbicides in this assessment. Explain the role of biological uptake in this process, and the associated maintenance activities described in the response to the Review Panel's information request IR2.38.*
- *Provide the expected range of contaminant discharge concentrations from the stormwater management ponds and a measure of the uncertainty in the predicted values.*
- *Describe and summarize how the Project may affect downstream water quality for Indian Creek and Bronte Creek, and the times of year when any such effects might occur. Discuss whether there are any other potential effects the stormwater management discharge may have on the receiving environment.*

b) Indicate whether effluent from stormwater management ponds 1 and 2 would be monitored to assess the concentration of chloride, phosphorus, nitrogen forms, metals or other contaminants of concern discharged by the ponds into the receiving environment. Describe the monitoring frequency and the location of monitoring stations and any mitigation measures that would be implemented in order to protect against water quality deterioration. Include the stormwater management pond effluent in the water quality monitoring program and list the parameters that would be monitored in the effluent.

c) Provide additional information about the how the facility reported in Attachment IR16-2 is similar to the Milton Logistics Hub Project, for instance whether it has a similar 3-part stormwater management system (oil grit separators, grassed swales and wet ponds) as described in subsection 5.2.2 of Appendix B of Appendix E.15, area of drained surfaces, and a similar locational context.

d) If available, provide results from the monitoring program reported in Attachment B to IR16-2 (September 30, 2016) for salinity concentrations across all seasons in the stormwater effluent of the similar facility.

Sufficiency of CN Response: The CN response does not include an analysis of expected salt/salinity influent or effluent concentrations. Salinity values will be higher under proposed conditions as de-icing activities will be required for the proposed operations.

Additional Information Required: An analysis of the expected salt/salinity concentrations and how impacts to the receiving watercourses will be mitigated should be presented.

IR3.39 – Stormwater Management ponds effectiveness - Phosphorous

Panel Request:

a) Clarify whether the 70% Total Phosphorus reduction through the stormwater management system is a performance target CN anticipates the Project would achieve. Also provide a clear indication as to whether CN commits to a 0.55 mg/L concentration target of phosphorus within

discharged water from the stormwater management ponds. Provide a rationale to support the assumption that this target could be achieved across all phases of the Project.

b) Describe what steps CN would take to ensure effluent from stormwater management ponds 1 and 2 can achieve the targeted phosphorus discharge concentration. Assuming the 0.55 mg/L value is a discharge concentration target, describe what specific actions would be taken to improve performance if that target concentration is not met.

Sufficiency of CN Response: In the CN response, there is no stated commitment to meet the Stormwater Management (SWM) target to remove 70% total phosphorus; however, it appears that the design is intended to reach this target. CH standards require that SWM facilities are designed to achieve a target an 80% total suspended solids (TSS) removal, which would include phosphorus. The CN Response does not address this target or demonstrate that it can be achieved.

Additional Information Required: CN should provide confirmation as to as to the total phosphorus target that the Proposed Project's SWM facility will be designed to achieve and confirmation that this target is sufficient to allow the SWM facility to meet an overall 80% TSS removal standard.

IR3.45 –Lower Base Line crossing grade separation

Panel Request:
a) Provide additional details on the geotechnical design recommendation and the design of the foundation for the underpass.

b) Describe how the changes to the environment associated with the construction of the Lower Base Line crossing grade separation including noise, light, dust, air quality and water, including to Tributary C, were incorporated into the EIS. If these changes were not considered, provide a specific description of the changes to the environment that would result from this Project component.

If applicable, in developing the response to this information request, consider responses to other information requests in package 2.

Sufficiency of CN Response: The CN response provided additional details of the proposed alteration to Tributary C, including its re-alignment; however, as detailed in CH's March 2017 letter, the existing ecological, hydrological and hydraulic conditions of Tributary C was not sufficiently studied and as such, it is not known what potential impacts there may be as a result of the re-alignment. This was not addressed in the CN Response. As a consequence, the EIS, including the information in the CN Response, does not adequately assess the changes to the environment that would result from the construction of the Lower Base Line crossing grade separation.

Additional Information Required: An evaluation of the existing ecological, hydrological and hydraulic conditions of Tributary C is required to determine the potential impacts of the Lower Base Line crossing grade separation, and the mitigation measures that would be required to address these impacts.

IR3.46 – Jefferson Salamander

Panel Request:
a) Provide a rationale for conducting area searches for egg masses and discuss any potential deficiencies with this approach compared to other methods such as trapping.

b) Describe any known instances of Jefferson Salamander within the Local Assessment Area based on other surveys or research that may be available.

c) If CN determines that Jefferson Salamander have been previously identified in the Local Assessment Area, provide an assessment of Project effects on Jefferson Salamander.

Sufficiency of CN Response: The CN response has the following deficiencies:

- It arrives at a finding of the lack of potential habitat on the basis of lack of observation records in MNRF and Ontario Nature Reptile and Amphibian Atlas database recognized to be useful but incomplete and not sufficient to conclude species absence in lieu of comprehensive field studies;
- CN's response states that habitat is restricted to the Niagara Escarpment, 2 km away; however, available information confirms Jefferson Salamander habitat exists further east from the Niagara Escarpment approximately 6km from the PDA;
- While the CN response discusses critical habitat it does not properly assess whether suitable Jefferson habitat is present;
- Included Natural Heritage mapping does not appear to capture all wetlands present on site, including those within woodland units. Potential breeding pools may be missed without comprehensive field studies;
- Egg mass surveys conducted between Apr 30 and May 14 are likely to have been conducted too late in the season to be effective;
- Given that lack of validity associated with egg mass surveys additional species specific surveys (e.g. trapping) are warranted. Specifically, the woodlot immediately east of the mainline, where Tributary A enters the site, should be surveyed.

Additional Information Required: An additional species-specific survey to determine suitability for the presence of Jefferson Salamanders habitat is required. This survey should be carried out by a surveyor with the appropriate specialized expertise, since this is highly relevant to Salamander egg mass surveys and should include nocturnal sampling, trapping and DNA sampling in order to determine the exact species-complex and therefore the appropriate regulatory approach. In a location where Spotted Salamander has been confirmed, greater effort should be made to verify presence or absence of Jefferson, as the two species have overlapping habitat requirements.

IR3.49 –Bird Species in the Project Areas

Panel Request:
a) Provide a table that identifies which of the birds identified in Table 5.6 of Appendix E.16 are considered to be migratory under the Migratory Birds Convention Act and/or protected under Ontario legislation.

b) Discuss what protection may be available to the bird species listed under Ontario legislation, such as the Fish and Wildlife Conservation Act, and the Endangered Species Act.

c) Provide additional information on migratory and non-migratory bird use of the area throughout the year and in the northern half of the study area based on existing information.

Sufficiency of CN Response: The CN response omitted Successional Breeding Bird Habitat and Grassland Breeding Bird Habitat from its discussion of habitats assessed under Ontario's Significant Wildlife Habitat (SWH) criteria. These should be included in their bird habitat surveys and assessments.

Additional Information Required: An assessment of Successional Breeding Bird Habitat and Grassland Breeding Bird Habitat should be included as part of the bird habitat surveys and assessments.