Table B: Consolidated Information Requests

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Table B: Consolidated Information Requests

INFORMATION REQUESTS: RON GLENN (HALTON REGION), *HALTON REGION PLANNING REPORT ON SUFFICIENCY* (13 MARCH 2017) (P)

URBAN WATER QUALITY AND QUANTITY

P.1 Full details of proposed private water servicing

References:
i) EIS Guidelines, Part 2, 1.4, 3.1, 3.2.2, 6.1.10, and 6.3.5
ii) Halton Brief, Table D.3, (ROP reference 89(4).
iii) Halton Brief, App. B, Part A.3.3
iv) Halton Brief, App. A, fig 26: Agricultural Area and Urban Area

Rationale: To permit development in the Urban Area on private wells and/or private sewage disposal systems only on an interim basis until urban service is available.

Request: A full description of the proposal, with details of water use, maximum water use, ranges of daily use, range of annual use, and wastewater generated.

URBAN WATER QUALITY AND QUANTITY

P.2 Private Servicing - Compliance with Region Requirements

References:
i) EIS Guidelines, Part 2, 1.4, 3.1, 3.2.2, 6.1.10, and 6.3.5
ii) Halton Brief, Table D.3, (ROP reference 89(4).
iii) Halton Brief, App. B, Part A.3.3
iv) Halton Brief, App. A, fig 26: Agricultural Area and Urban Area

Rationale: To permit *development* in the Urban Area on private wells and/or private sewage disposal systems only on an interim basis until *urban service* is available.

Request: A statement on whether and how the proposal complies with ROP 89(3), 89(4) and the Region's *Urban Services Guidelines.* As well, section 3.1.1 of the Region's *Urban Services Guidelines* contains criteria to assess whether proposals can proceed on private services.

GROUNDWATER QUALITY

P.3 Private Servicing - Compliance with Region Requirements

References:
i) EIS Guidelines, Part 2, 1.4, 3.1, 3.2.2, 6.1.4, 6.1.10 and 6.2.2
ii) Halton Brief, App. B, Part A.3.3
iii) Halton Brief, Table D.3
iv) ROP, 147(18)

Rationale: To consider approval of *development*[1] proposals only when the site complies with Provincial guidelines, Regional standards and other requirements regarding groundwater quality.

Request: A statement of whether and how the proposal complies with the Region's *Hydrogeological Studies & Best Management Practices for Groundwater Protection Guidelines* in respect of groundwater quality is required. Other Provincial requirements that relate to Groundwater quality should also be reviewed and referenced. For example, MOE documents titled, "Technical Guideline for Individual On-Site Sewage Systems: Water Quality Impact Risk Assessment (Procedure D-5-4)" and "Technical Guideline for Private Wells: Water Supply Assessment (Procedure D-5-5)." Other legislation, such as the Ontario Water Resources Act (OWRA), the Safe Drinking Water Act (SDWA), the Clean Water Act (CWA) as well as Provincial documents such as the Ontario Building Code (OBC).

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[1] See footnote 1

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***Halton Region Planning Report on Sufficiency* (13 March 2017) (P)**

WATERCOURSES

P.4 Regional Policies and EIA Guidelines

References:
i) EIS Guidelines, Part 2, 1.4, 6.1.4, 6.1.5, and 6.2.2
ii) ROP Reference 115.3, 101(1.9))
iii) Halton Brief, Table D.3
iv) Halton Brief, App. B, Part A.3.4
v) Halton Brief, App. A., fig. 9: Sensitive Surface Water Features; fig. 10: Study Areas for Sensitive Surface Water Features; fig. 11: Water features: lakes & streams; fig. 12: Water Features: Wetlands; fig. 17: Key Features & Components; fig. 18: Woodlands

Rationale: To ensure that *enhancements to Key Features*, which include *watercourses* that are within a *Conservation Authority* Regulation Limit or that provide a *linkage* to a *wetland* or a *significant woodland*, are protected

Request: The EIS should use the Regional policies and Region's *Environmental Impact Assessment Guidelines* to assess whether the Project conforms with the Regional Official Plan policy to provide permanent protection of certain landscapes.

COMPONENTS OF THE REGIONAL NATURAL HERITAGE SYSTEM

P.5 Regional Policies and EIA Guidelines

References:
i) EIS Guidelines, Part 2, 1.4, 6.1.4, 6.1.5, 6.1.6, 6.1.7, 6.2, 6.3.1, 6.3.2, and 6.3.3
ii) ROP Reference 118(2))Halton Brief, Table D.4s
iii) Halton Brief, App. A, fig. 11: Water Features: Lakes and Streams; fig. 12: Water Features: Wetlands; fig. 15: Natural Heritage System; fig. 16: Natural Heritage System Study Area; fig. 17: Natural Heritage System: Key Features & Components; fig. 18: Woodlands fig. 19: Species at Risk and Suitable Habitat; fig. 20: Bobolink/Eastern Meadowlark Breeding Habitat; fig. 21: Barn Swallow and Suitable Habitat; fig. 22: Snapping Turtle & Suitable Habitat
iv) Halton Brief, App. B, parts A.3.4, B.1, B.2, B.3.1

Rationale: To apply a systems-based approach to implementing the Regional Natural Heritage System by not permitting the alteration of any components of the Regional Natural Heritage System unless it has been demonstrated that there will be no negative impacts on the natural heritage features and areas or their ecological functions.

Request: Please use the Regional policies and Region's Environmental Impact Assessment Guidelines for permanent protection of certain landscapes as one of the tests for impacts.

COMPONENTS OF THE REGIONAL NATURAL HERITAGE SYSTEM

P.6 ANSI mapping and buffers

References:
i) EIS Guidelines, Part 2, 1.4, 6.1.4, 6.1.5, 6.1.6, 6.1.7, 6.2, 6.3.1, 6.3.2, and 6.3.3
ii) ROP Reference 118(2))Halton Brief, Table D.4s
iii) Halton Brief, App. A, fig. 11: Water Features: Lakes and Streams; fig. 12: Water Features: Wetlands; fig. 15: Natural Heritage System; fig. 16: Natural Heritage System Study Area; fig. 17: Natural Heritage System: Key Features & Components; fig. 18: Woodlands fig. 19: Species at Risk and Suitable Habitat; fig. 20: Bobolink/Eastern Meadowlark Breeding Habitat; fig. 21: Barn Swallow and Suitable Habitat; fig. 22: Snapping Turtle & Suitable Habitat
iv) Halton Brief, App. B, parts A.3.4, B.1, B.2, B.3.1

Rationale: To apply a systems-based approach to implementing the Regional *Natural Heritage System* by not

permitting the alteration of any components of the Regional Natural Heritage System unless it has been demonstrated that there will be no *negative impacts* on the *natural heritage features and areas* or their *ecological functions*.

Request: A mapping of the Trafalgar Moraine Provincially Significant Earth Science Area of Natural and Scientific Interest (ANSI) in the study area is needed, showing any features of the proposed project that will be built in proximity to this ANSI, and any proposed buffer zone around this ANSI.

AGRICULTURE

P.7 Addressing the Provincial Policy Statement in Respect of Non-Farm Uses

References:
i) EIS Guidelines, Part 2, 1.4, 6.1.10, and 6.3.5
ii) ROP Reference 101(1.6)) Halton Brief, Table D.6
iii) Halton Brief, App. B, Part D.3.1
iv) Halton Brief, App. A, fig 26: Agricultural Area and Urban Area; fig 27: Prime Agricultural Area; fig 28: Prime Agricultural Area: Project Detail; fig 29: Prime Agricultural Area Soils; fig 30: Soils; fig 31: Greenbelt Plan Area: Protected Countryside

Rationale: To recognize and protect lands within the *agricultural*[2] system and direct non-farm uses to the urban area unless specifically permitted by this plan

Request: Information and analysis is required to outline how the proposed project satisfies Policy 2.3.6.1 of the Provincial Policy Statement. This policy states:

> *"Planning authorities may only permit non-agricultural uses in prime agricultural areas for: ...limited nonresidential uses, provided that all of the following are demonstrated:*
>
> *1. the land does not comprise a specialty crop area;*
>
> *2. the proposed use complies with the minimum distance separation formulae;*
>
> *3. there is an identified need within the planning horizon provided for in policy 1.1.2 for additional land to be designated to accommodate the proposed use; and*
>
> *4. alternative locations have been evaluated, and i. there are no reasonable alternative locations which avoid prime agricultural areas; and ii. there are no reasonable alternative locations in prime agricultural areas with lower priority agricultural lands"*

AGRICULTURAL LANDS

P.8 Agricultural Impact Assessment

References:
i) EIS Guidelines, Part 2, 1.4, 6.1.10, and 6.3.5
ii) ROP Reference 101(2)) Halton Brief, Table D.6
iii) Halton Brief, App. B, Part D.3.2
iv) Halton Brief, App. A, fig 27: Prime Agricultural Area; fig 28: Prime Agricultural Area: Project Detail

Rationale: To recognize, encourage and protect agriculture as the primary long- term activity and land use throughout the agricultural system, and preserve the agricultural land base by protecting prime agricultural lands

[2] **Agricultural (ROP):** The growth of crops, including nursery and horticultural crops (but not horticultural trade use); raising of livestock; raising of other animals for food, fur or fibre, including poultry and fish; aquaculture; apiaries; agro-forestry; maple syrup production; and associated on-farm buildings and structures, including accommodation for full-time farm labour when the size and nature of the operation requires additional employment.

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Request: An Agricultural Impact Assessment (AIA) should be prepared by a qualified professional in accordance with the Region's Agricultural Impact Assessment Guidelines. This is required where development is proposed and is located in or in close proximity to designations permitting agricultural uses in the Regional Official Plan. As a guide, the use of a 1 kilometre zone of influence is suggested for any analysis.

The scope of the AIA should be confirmed through discussions with Regional staff, and would normally include:

1) Identification of possible adverse impacts on agriculture;
2) Identification of additional restrictions that may impact abutting agricultural operations as a result of the development (e.g. changes in Minimum Distance Separation that would restrict expansion of an abutting agricultural operation);
3) Identification and evaluation of locational options for the proposed development and demonstrate that the proposed location is the preferred option in terms of minimizing the impact on agriculture;
4) Identification of methods of removing or reducing any adverse impacts resulting from the development; and,
5) Addressing whether or not it is appropriate to provide "warning clauses" for the development, noting the presence of surrounding agricultural operations and if so, to make recommendations in that regard.

PURPOSE OF THE PROJECT

P.9 Capacity of Brampton Facility

References:
v) EIS Guidelines, Part 2, Section 2.1
vi) OPS 2015

Rationale: Technical information deficiency. CN States BIT is approaching capacity, but has not provided sufficient information with respect to how it came to this conclusion. This information is required in order to understand the Purpose of MIT.

Request: Please provide the factors considered by CN in its assessment of the future capacity of the Brampton facility, including technologies to increase capacity.

P.10 Capacity of Milton Facility

References:
vii) EIS Guidelines, Part 2, Section 2.1
viii) OPS 2015

Rationale: Technical information deficiency. CN States BIT is approaching capacity, but has not provided sufficient information with respect to how it came to this conclusion. This information is required in order to understand the Purpose of MIT.

Request: Please provide the factors considered by CN in its assessment of the initial and ultimate capacity proposed for the Milton facility, including technologies that affect these capacities.

P.11 Technologies to improve capacity at BIT or MIT

References:
ix) EIS Guidelines, Part 2, Section 2.1
x) OPS 2015

Rationale: Technical information deficiency. CN States BIT is approaching capacity, but has not provided sufficient information with respect to the technologies it considered in coming to this conclusion.

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Information requests: Ron Glenn (Halton Region),
***Halton Region Planning Report on Sufficiency* (13 March 2017) (P)**

This information is required in order to understand the Purpose of MIT.

Request: Please provide the reasons, if any, for CN rejection of current technologies that could improve intermodal capacity at either facility.

Table B: Consolidated Information Requests

INFORMATION REQUESTS: JOHN VICKERMAN (VICKERMAN & ASSOCIATES, LLC), *INTERMODAL TRANSPORT* (10 MARCH 2017) (IT)

PURPOSE: MARKET DEMAND FOR AN INTERMODAL TERMINAL

IT.1 Market Demand Information Project Justification, Alternatives, and Feasibility

References: i) EIS Guidelines, Part 2, Section 2.1
ii) OPS 2015

Source: i) CN EIS, Section 2.1 & Table 1 Documents

Rationale: Technical information deficiency. Further, It is not clear what market demand MIT will serve. This information is required in order to understand the Purpose of MIT.

Request: Please provide any reports, analyses, data, studies or assessments to support the CN EIS statements, in the form of current and future container volume market cargo forecasts that quantify the "growing demand" for intermodal services, provide justification for additional intermodal capacity and support the conclusion that "additional capacity is required to enable CN to continue to support the growing demand for intermodal services in the GTHA"

IT.2 Missing Referenced Document

References: i) EIS Guidelines, Part 2, Section 2.1
ii) OPS 2015

Source: i) CN EIS, Section 2.1 & Table 1 Documents

Rationale: Technical information deficiency. Further, CN references this report to explain the purpose and rationale for MIT, but does not provide it as part of the CN EIS Documents. This information is required in order to understand the Purpose of MIT.

Request: Please provide the following document: *Strategic Projections Inc 2013: The Need for an Intermodal Facility on CN's Lands in Milton*. Prepared for the Canadian National Railway Company, September 2013

IT.3 Missing Referenced Document

References: i) EIS Guidelines, Part 2, Section 2.1
ii) OPS 2015

Source: i) CN EIS, Section 2.1 & Table 1 Documents

Rationale: Technical information deficiency. Further, CN references this report to explain the needs of growing customer base at BIT, that the potential for future growth around BIT is limited and to explain the site selection process. However, CN does not provide the report as part of the CN EIS Documents. This information is required in order to understand the purpose of MIT.

Request: Please provide the following document: Cushman & Wakefield, *Valuation & Advisory*, *June 2015. Land Availability Review for Satellite Intermodal Terminal Facility*. Prepared for the Canadian National Railway Company

PURPOSE: BIT CAPACITY AND EXPANSION LIMITATIONS

IT.4 BIT Capacity and Expansion Limitations Information

References: i) EIS Guidelines, Part 2, Section 2.1
ii) OPS 2015

Source: i) CN EIS, Section 2.1 & Table 2 Documents

Rationale: Technical information deficiency. Further, CN states that BIT is approaching capacity, but has not

provided sufficient information with respect to how it came to this conclusion. This information is required in order to understand the Purpose of MIT.

Request: Please provide any reports, analyses, data, studies or assessments to support the CN EIS conclusion that the BIT is "approaching capacity with limited opportunities for significant expansion".

IT.5 Particulars of Expansion Project

References: i) EIS Guidelines, Part 2, Section 2.1
ii) OPS 2015

Source: i) CN EIS, Section 2.1 & Table 2 Documents

Rationale: Technical information deficiency. Further, CN states that BIT is approaching capacity, but has not provided sufficient information with respect to the options CN has explored in order to prevent BIT from reaching capacity and defer the need for a satellite intermodal. This information is required in order to understand the Purpose of MIT.

Request: Please provide Particulars of the "expansion projects", "productivity initiatives" and the $50 million investment at BIT which had deferred the immediate need for the development of MIT.

PURPOSE: MEANING OF A SATELLITE TERMINAL FOR THIS PROJECT

IT.6 Information re MIT as Satellite Terminal

References: i) EIS Guidelines, Part 2, Section 2.1
ii) OPS 2015

Source: iii) CN EIS, Sections 2.1 & 3.1 & Table 3 Documents

Rationale: Please provide a description of the intended functions and operations of MIT in its role as a satellite terminal to BIT, including whether MIT will serve a larger market or the same market that BIT serves.

Request: CN states that MIT is intended to function as a satellite terminal to BIT. However, CN has not provided sufficient information regarding what a satellite terminal is in terms of its function and operations for this Project. This information is required in order to understand the Purpose of MIT.

IT.7 Criteria for Satellite Terminal

References: i) EIS Guidelines, Part 2, Section 2.1
ii) OPS 2015

Source: i) CN EIS CN Site Selection Study (App. F), Sections 3.1 & 3.4

Rationale: CN states that the site location must act as a satellite terminal to BIT. However, CN has not provided sufficient information regarding what criteria were used to inform an independent reviewer what a satellite terminal is in terms of its relationship to BIT. This information is required in order to understand the Purpose of MIT.

Request: With respect to Principle 1 of the Site Selection Principles in the Site Selection Study, please provide the criteria used to consider how a location could act as and be suitable to host a satellite intermodal terminal.

Table B: Consolidated Information Requests

Information requests: John Vickerman (Vickerman & Associates, LLC), *Intermodal Transport* (10 March 2017) (IT)

ALTERNATIVE MEANS: SITE SELECTION

IT.8 Site Selection Documents

References: i) EIS Guidelines, Part 2, Section 2.2
ii) OPS 2015

Source: i) CN EIS, Section 2.1
ii) CN EIS Site Selection Study (App. F)

Rationale: Technical deficiency of information. CN does not provide sufficient information regarding how it arrived at its site selection locations. This information is required in order to determine the sufficiency of the alternative means analysis for carrying out the Project.

Request: Please provide any additional reports, analyses or studies on potential sites and site selection criteria, including under Phase 1 of the Site Selection Study.

IT.9 Information on Site Selection Criteria

References: i) EIS Guidelines, Part 2, Section 2.2
ii) OPS 2015

Source: i) CN EIS, Section 2.2
ii) CN EIS Site Selection Study (App. F)

Rationale: CN does not provide sufficient information regarding whether increasing capacity at BIT through sophisticated technology and equipment was considered. This information is required in order to understand the sufficiency of the alternative means analysis for carrying out the Project.

Request: Please provide further information on the selection and implementation of criteria used in Phase 1 of the Site Selection Study to assess site locations against each other and whether the approach taken to assess alternative site locations against the criteria, considered using more sophisticated technology and equipment at BIT than what currently exists at BIT to increase capacity. If so, please also provide this background information.

ALTERNATIVE MEANS: ECONOMIC AND FINANCIAL IMPACT

IT.10 Missing Referenced Document

References: i) EIS Guidelines, Part 2, Section 2.2
ii) OPS 2015

Source: i) CN EIS, Section 2.2
ii) CN PJR, page 3

Rationale: Technical information deficiency. Further, CN references this report to explain the site selection process, but does not provide it. This information is required in order to understand the alternative means proposed.

Request: Please provide the following document: Cushman & Wakefield 2015 – *Economic and Financial Impact of an Intermodal Terminal in Milton*. Prepared for Canadian National Railway Company.

ALTERNATIVE MEANS: TRUCK TRAFFIC

IT.11 Missing Referenced Document

References: i) EIS Guidelines, Part 2, Section 2.2
ii) OPS 2015

Table B: Consolidated Information Requests

Information requests: John Vickerman (Vickerman & Associates, LLC), *Intermodal Transport* (10 March 2017) (IT)

Source: i) CN EIS, Section 2.2.2

ii) CN PJR, Section 4.4

Rationale: Technical deficiency of information. Further, CN does not provide sufficient information regarding traffic data and assumptions. This information is required in order to determine the sufficiency of the alternative transportation corridors and the sufficiency of the description of truck operations.

Request: BA Group October 2015 study referenced in the CN PJR.

ALTERNATIVE MEANS: TRUCK ROUTES

IT.12 BA Group Background Information

References: i) EIS Guidelines, Part 2, Section 2.2

ii) OPS 2015

Source: i) CN EIS, Section 2.2.2

ii) CN EIS BA Group Study 2015 & BA Group September 30, 2016, Traffic Volume Forecasts (2021 and 2031) (App E.17)

Rationale: Technical deficiency of information. Further**,** CN does not provide sufficient information regarding how the traffic data was collected and where the traffic data and assumptions provided to CN were derived. Where CN relies on BIT traffic data, it does not explain how or where these assumptions are made. This information is required in order to determine the sufficiency of the alternative transportation corridors and the foundation and applicability of this information to MIT truck operations.

Request: Please provide the origin of all truck traffic data provided by CN to the BA Group including all reports, studies and investigations. Where traffic data is based on BIT, please explain why the assumptions were made and whether there are limitations on the inferences and conclusions that can be drawn.

IT.13 2021 and 2031 Traffic Volume Forecasts

References: i) EIS Guidelines, Part 2, Section 2.2

ii) OPS 2015

Source: i) CN EIS, Section 2.2.2

ii) CN EIS BA Group Study 2015 and BA Group September 30, 2016, Traffic Volume Forecasts (2021 and 2031) (App E.17)

Rationale: Technical deficiency of information. CN should incorporate the newly generated traffic data reported in the September 30, 2016 Traffic Volume Forecasts into the traffic analysis provided in Section 2.2.2 of the EIS in order to take into account traffic growth in Milton as of these future forecast dates.

Request: Please provide further information in relation to whether and how the September 30, 2016 Traffic Volume Forecasts have been incorporated into the transportation corridors analysis of the EIS (Section 2.2.2).

IT.14 Seasonal Traffic Data

References: i) EIS Guidelines, Part 2, Section 2.2

ii) OPS 2015

Source: i) CN EIS, Section 2.2.2

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ii) CN EIS BA Group Study 2015 and BA Group September 30, 2016, Traffic Volume Forecasts (2021 and 2031) (App E.17)

Rationale: Technical deficiency of information. There is always a seasonable variability i.e. peaks in October/November timeframe before Christmas, and therefore maximum values are required to properly assess peak flows in the traffic and volume analysis for MIT.

Request: Please provide detailed information regarding the number of trucks entering and leaving MIT by season and whether the "800 trucks per weekday entering and exiting the hub which will include up to 650 inbound and 650 outbound trucks at the beginning and up to 800 trucks each way by 2020" represents an average value or a maximum value.

IT.15 Missing Referenced Documents

References:
i) EIS Guidelines, Part 2, Section 2.2
ii) OPS 2015

Source:
i) CN EIS, Section 2.2.2
ii) CN EIS BA Group Study 2015 & BA Group September 30, 2016, Traffic Volume Forecasts (2021 and 2031) at page 6 (App E.17)

Rationale: Technical deficiency of information. Further**,** CN does not provide sufficient information regarding traffic data and assumptions. This information is required to understand the reliability of the description of truck operations in order to determine the sufficiency of the alternative transportation corridors prescribed.

Request:
a) Please provide MTO Comprehensive Commercial Vehicle Survey undertaken by MTO at BIT.
b) Please provide 2006 Ontario Commercial Vehicle Survey, published on April 30, 2015.

IT.16 Directional Distribution of Traffic Data

References:
i) EIS Guidelines, Part 2, Section 2.2
ii) OPS 2015

Source:
i) CN EIS, Section 2.2.2
ii) CN EIS BA Group Study 2015 & MTO Commercial Vehicle Study (App E.17)

Rationale: Technical deficiency of information. Further, CN does not provide sufficient information on the applicability of the BIT traffic data from the MTO Commercial Vehicle Study to the MIT traffic data, including origin and destination data.

This information is required in order to understand the reliability of the traffic analysis in order to determine the sufficiency of the alternative transportation corridors presented.

Request: Please provide further information in relation to how BIT traffic data from the MTO Commercial Vehicle Study can be correlated to MIT traffic data, including origin and destination data, and whether there are any limitations on the inferences or conclusions that can be drawn from this Study.

IT.17 Missing Referenced Document

References:
i) EIS Guidelines, Part 2, Section 2.2
ii) OPS 2015

Source:
i) CN EIS, Section 2.2.2

Table B: Consolidated Information Requests

Information requests: John Vickerman (Vickerman & Associates, LLC), *Intermodal Transport* (10 March 2017) (IT)

Rationale: Technical deficiency of information. During the May 27, 2015 presentation to Halton Regional Council, CN referenced this report to explain the needs of growing customer base at BIT and the potential effects of MIT on truck traffic, but CN does not provide the report. This information is required in order to understand the truck traffic demands at MIT.

Request: Milton Intermodal Truck Traffic Investigation prepared by AECOM and relied upon by Marie-Therese Houde (former CN Director of Corporate Development).

ALTERNATIVE MEANS: METROLINX FREIGHT CORRIDOR

IT.18 Information re Brampton-Milton Freight Corridor

References: i) EIS Guidelines, Part 2, Section 2.2
ii) OPS 2015

Source: i) CN EIS, Section 2.2.2

Rationale: CN does not provide sufficient information on how the new Brampton-Milton freight corridor will affect truck traffic patterns, including whether there will be a shift of rail freight presently destined to Brampton for distribution or whether distribution will move onto the Milton corridor for distribution from there. This information is required in order to understand the freight demands at MIT.

Request: Please provide information on the anticipated function of the Brampton-Milton Rail Corridor with respect to the movement of freight to and from the MIT.

ALTERNATIVE MEANS: KEY PROJECT COMPONENTS

IT.19 Alternative Means Analysis for Key Project Components

References: i) EIS Guidelines, Part 2, Section 2.2

Source: i) CN EIS, Sections 1.2.1 & 2.2.3

Rationale: CN has not satisfied the technical requirements of the EIS Guidelines.

Request: Please provide an alternative means analysis with respect to location and design of all of the key project components identified in Section 1.2.1 of the CN EIS.

IT.20 Other Key Project Components Not Considered

References: i) EIS Guidelines, Part 2, Section 2.2

Source: i) CN EIS, Section 2.2.3.2

Rationale: CN has not identified all key project components. The EIS guidelines requires CN to consider alternative means for the location and design of key project components.

Request: Further, please provide an alternative means analysis for location and design for other key project components not identified in the CN EIS including dominant equipment operating type and general arrangement of the Project site including yard and container layout as well as loading track geometry.

ALTERNATIVE MEANS: KEY PROJECT COMPONENT—TRUCK ENTRANCE LOCATION

IT.21 Alternative Truck Entrance Locations

References: i) EIS Guidelines, Part 2, Section 2.2

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Source: i) CN EIS, Section 2.2.3.1 & Table 2.1

Rationale: CN has not satisfied the 4-Step Analysis required by OPS 2015 as incorporated into the CN EIS.

Request:
a) Please provide information related to the approach taken to assess the alternative truck locations against the selected criteria and how Britannia Road was considered as the preferred location. This request includes information of why alternative locations failed under the criteria selected and information related to the "additional upgrades, approvals or engineering design considerations" of the other truck locations which were not chosen.
b) Additionally, please provide information of whether the preferred location will cause significant adverse environmental effects.

ALTERNATIVE MEANS: KEY PROJECT COMPONENT – GATE LOCATION

IT.22 Alternative Gate Locations

References: i) EIS Guidelines, Part 2, Section 2.2

Source: i) CN EIS, Section 2.2.3.2 & Table 2.1

Rationale: CN has not satisfied the 4-Step Analysis required by OPS 2015 as incorporated into the EIS Guidelines.

Request: Please provide information required under the 4-Step Analysis, including: whether CN selected more than one alternative for the alternative gate location i.e. inbound and outbound gate locations, the selection of criteria required to determine the technical and economic feasibility of the alternative gate locations and whether the preferred option of being setback from the Britannia Road entrance/being adjacent to the work pad will cause significant adverse environmental effects.

DESIGN: ADDITIONAL PROJECT COMPONENTS

IT.23 MIT Design and Layout Information

References: i) EIS Guidelines, Part 2, Section 3.1

Source: i) CN EIS Sections 3.1 to 3.3 & Figures 1 to 3 (App B)
ii) CTA Application: CN Plans

Rationale: A description of all of the project components, associated and ancillary works, and other characteristics is required in order to assist in understanding whether there are any associated environmental effects.

Request:
a) Please provide further information with respect to the MIT detailed design and layout of the following project components that have not been specifically described or labelled in the CN Plans, including:
    1) Terminal entrance and exit gate area layouts/plans including container inspection facilities, inbound and outbound truck canopies, Equipment Interchange Report booths and drive assistance buildings (roadway station);
    2) Terminal Administration Building description, floor plans and all building elevations;
    3) Terminal refrigerated container operating areas;
    4) Maintenance and repair building/facility floor plans, elevations; and
    5) Terminal equipment fueling system

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Information requests: John Vickerman (Vickerman & Associates, LLC), *Intermodal Transport* (10 March 2017) (IT)

DESIGN: ENGINEERING DRAWINGS

IT.24 Missing Documents

References: i) EIS Guidelines, Part 2, Section 3.1

Source: i) CN EIS, Sections 3.1 to 3.3

ii) CTA Application: CN Plans

Rationale: The engineering drawings are required in order to understand the full design of MIT and to thus understand whether there are any associated environmental effects.

Request: Full hardcopy blueprint copies of CN Plans in Project Number 60332275 (and any associated projects related to MIT)

DESIGN: UPDATED DESIGN OF PROJECT COMPONENTS

IT.25 Design of Project Components

References: i) EIS Guidelines, Part 2, Section 3.1

Source: i) CN EIS Sections 3.1 to 3.3 & Figures 1 to 3 (App B)

Rationale: CN has stated that only a preliminary design has been provided and that project components will be further refined as engineering studies progress and consultation continues. An updated design is required in understanding the true picture of environmental effects.

Request: Please provide updated information and design of Project components and associated and ancillary works

CONSTRUCTION

IT.26 Detailed Description of Construction Activities

References: i) EIS Guidelines, Part 2, Section 3.2

Source: i) CN EIS, Section 3.4.1

ii) CN EIS Technical Data Report Noise Effects Assessment (App. E.10)

Rationale: Further information is needed in relation to construction activities in order to assess is taking steps to minimize and avoid potential environmental effects

Request: a) Please provide a detailed description of construction activities that were left incomplete in the CN EIS Documents, including:

1) An erosion and sediment control plan to be used during construction
2) duration and volume of disruption to train activities on the mainline
3) method and timing for laying of new track and realignment of existing track
4) final method and materials to be used for the construction of the work pads and likely materials to be used
5) the location of temporary construction offices
6) Method and timing for construction of third party infrastructure including utility crossings
7) location and footprint of construction laydown areas
8) details regarding number of employees and transportation of employees during the construction phase
9) location and footprint for construction of administrative buildings, garages and other ancillary facilities

Table B: Consolidated Information Requests

Information requests: John Vickerman (Vickerman & Associates, LLC), *Intermodal Transport* (10 March 2017) (IT)

IT.27 Detailed Construction Schedule

References: i) EIS Guidelines, Part 2, Section 3.2

Source: i) CN EIS, Section 3.4.1

ii) CN EIS Technical Data Report Noise Effects Assessment (App. E.10)

Rationale: Further information is needed in relation to construction activities in order to determine whether there is sufficient information to assess whether CN is taking steps to minimize and avoid potential environmental effects

Request: Please provide a detailed construction schedule that includes all components of major construction activities in the Three Phases outlined in Table 4.6 of CN EIS Technical Data Report Noise Assessment (App. E.10).

TRUCK OPERATIONS

IT.28 Truck Operations Information

References: i) EIS Guidelines, Part 2, Section 3.2

Source: i) CN EIS, Section 3.4.2.1

Rationale: Technical information specifically required by EIS Guidelines

Request: a) Please provide the following information:

1) on-site logistics and traffic plan (on and off-loading rates, site capacity for trucks, anticipated daily volumes);
2) anticipated daily, monthly and seasonal schedules for rail transport; and
3) anticipated quantities of transported materials by type.

IT.29 SpeedGate System and Truck Reservation System

References: i) EIS Guidelines, Part 2, Section 3.2

Source: i) CN EIS, Section 3.4.2.1

Rationale: This information is needed in order to determine whether sufficient information in relation to truck idle times and truck operations has been included, in order to predict environmental effects.

Request: Please provide descriptive information regarding the CN SpeedGate™ system and the Terminal Reservation system both proposed for MIT and currently at BIT is requested.

TRUCK MOVEMENTS

IT.30 Truck Movement Information

References: i) EIS Guidelines, Part 2, Section 3.2

Source: i) CN EIS, Section 3.4.2.1

Rationale: This information is needed in order to determine whether sufficient information in relation to truck operations has been included to predict environmental effects.

Request: Please provide information related to specific types of container types including varied container lengths, anticipated number of container types, anticipated number of types of truck movements in relation to the variety of container types and how the variability of container lengths will be accommodated into the design and operations of the Terminal.

Table B: Consolidated Information Requests

Information requests: John Vickerman (Vickerman & Associates, LLC), *Intermodal Transport* (10 March 2017) (IT)

RAIL OPERATIONS

IT.31 Added Train Operations Information

References: i) EIS Guidelines, Part 2, Section 3.2
ii) s. 98(2) of CTA

Source: i) CN EIS, Section 3.4.2.2
ii) CTA Application, page 13

Rationale: This information is necessary in order to determine whether sufficient information in relation to rail operations has been included in order to predict environmental effects.

Request: Please provide background information regarding the relationship between adding two new trains to volume forecasts at MIT and how the four trains will operate together to serve the market demand at MIT.

REQUIREMENTS FOR RAILWAY OPERATIONS AND SERVICES

IT.32 Effect of Additional Freight Traffic on Passenger Services

References: i) EIS Guidelines, Part 2, Section 3.2
ii) s. 98(2) of CTA

Source: i) CN EIS, Section 3.4.2.2

Rationale: This is an important consideration that will have an impact on railway operations and ultimately, related environmental effects.

Request: Please provide the anticipated effect of additional freight train traffic in and out of the Milton Hub on the frequency and scheduling of passenger train and commuter rail services for the GTHA, including any reports, analyses, studies, projections or assessments of this issue.

IT.33 Agreement-in-Principle Between Ontario and Metrolinx

References: i) EIS Guidelines, Part 2, Section 3.2
ii) s. 98(2) of CTA

Source: i) CN EIS, Section 3.4.2.2

Rationale: It is important to be monitoring the effect of the AIP on the Project's design and operations.

Request: Please provide the Agreement-in-Principle ("AIP") and information updates to the AIP between the Province of Ontario and Metrolinx with CN to build a new, 30km rail corridor between Brampton and Milton ("Brampton - Milton Rail Corridor").

IT.34 Anticipated Function of Brampton-Milton Corridor

References: i) EIS Guidelines, Part 2, Section 3.2
ii) s. 98(2) of CTA

Source: i) CN EIS, Section 3.4.2.2

Rationale: It is important to understand how the Brampton-Milton Corridor will operate in conjunction with MIT in the movement of freight, as it will have an impact on railway operations and ultimately, related environmental effects.

Request: Please provide the anticipated function of the Brampton – Milton Corridor with respect to the movement of freight to and from the MIT.

Table B: Consolidated Information Requests

Information requests: John Vickerman (Vickerman & Associates, LLC), *Intermodal Transport* (10 March 2017) (IT)

GENERAL OPERATIONS OF INTERMODAL TERMINAL

IT.35 General Intermodal Terminal Operations

References: i) EIS Guidelines, Part 2, Section 3.2

Source: i) CN EIS, Section 3.4.2

Rationale: Technical information specifically required by EIS Guidelines

Request: a) Please provide the following information:

1) infrastructure maintenance; and
2) temporary or permanent storage of hazardous materials, including source, volume and storage.

IT.36 Container Volume Projections

References: i) EIS Guidelines, Part 2, Section 3.2

Source: i) CN EIS, Section 3.4.2

Rationale: Technical information deficiency. Further, this information is required in order to understand MIT's operation requirements.

Request: Please provide any reports, analyses, data or studies to support the statement: The Project will be designed to allow efficient transfer of containerized cargo between trains and the Terminal. Once completed, the Terminal will operate 24 hours a day, 7 days a week and is projected to handle approximately 350,000 containers annually at the start of operation and is designed for approximately 450,000 containers annually at full operation.

IT.37 Volume Projection of Special Containers

References: i) EIS Guidelines, Part 2, Section 3.2

Source: i) CN EIS, Section 3.4.2

Rationale: This information is required in order to understand MIT's operation requirements.

Request: Please provide a projection of volume of special container types at the Terminal, including those that require temperature control and those that contain hazardous goods.

IT.38 Handling and Storage of Hazardous Goods

References: i) EIS Guidelines, Part 2, Section 3.2

Source: i) CN EIS, Section 3.4.2

Rationale: This information is required in order to understand MIT's operation requirements.

Request: Please provide information on how hazardous goods will be stored, where they will be stored and how CN will control the movement of bulk hazardous goods not entering the Terminal.

IT.39 Terminal Emergency Response Operational Procedures

References: i) EIS Guidelines, Part 2, Section 3.2

Source: i) CN EIS, Section 3.4.2

Rationale: This information is required in order to understand the full picture of MIT's operational

requirements and whether these considerations were taken into account when developing on-site logistics and design.

Request: Please provide CN's information regarding emergency response operational procedures in the case of i.e. fire, accident, hazardous spills, deleterious environmental spills and containment.

LIFT OPERATIONS

IT.40 Number of Each Type of Equipment

References: i) EIS Guidelines, Part 2, Section 3.2

Source: i) CN EIS, Sections 3.4.2.3 & 3.4.2.4

Rationale: This information is required in order to determine in order to determine whether an adequate amount of each type of equipment has been selected to ensure efficiency of operations at MIT.

Request: Please provide further background information of how the forecasted number of each type of equipment correlates to volume projections at MIT.

IT.41 Equipment Selection

References: i) EIS Guidelines, Part 2, Section 3.2

Source: i) CN EIS, Section 3.4.2.3

Rationale: This information is required to determine whether CN has considered using efficient lift equipment at MIT or is planning to implement more advanced technology in the future at MIT

Request: Please provide a brief description from CN of its future terminal planning criteria for deploying terminal equipment automation at MIT and BIT, including CN's plans and commitments for future deployment of higher capacity terminal yard crane equipment, such as a rubber tired gantry crane (RTG), automated bridge cranes or rail mount gantry cranes (RMCs).

IT.42 MIT Operating System

References: i) EIS Guidelines, Part 2, Section 3.2

Source: i) CN EIS, Section 3.4.2.3

Rationale: This information is requested in order to understand the full picture of MIT's operating system.

Request: Please provide a more detailed description of the intended MIT Operating System (TOS) to be deployed at the Terminal and how it compares to the BIT operating system.

OPERATIONS: EQUIPMENT MAINTENANCE

IT.43 Information on Equipment Maintenance Program at MIT

References: i) EIS Guidelines, Part 2, Section 3.2

Source: i) CN EIS, Section 3.4.2.4

Rationale: This information is required in order to completely understand all of the operations at MIT and how it may impact environmental effects.

Request: Further information in relation to how CN plans to deploy its rigorous maintenance program at MIT, including an annual schedule of the maintenance program.

Table B: Consolidated Information Requests

Information requests: John Vickerman (Vickerman & Associates, LLC), *Intermodal Transport* (10 March 2017) (IT)

OPERATIONS INFORMATION: SATELLITE TERMINAL

IT.44 Description of MIT as Satellite to BIT

References: i) EIS Guidelines, Part 2, Section 3.2

Source: i) CN EIS, Section 3.4.2

Rationale: This information is required in order to determine the reasonableness of the MIT as a satellite hub operating in concert with BIT operations.

Request: Please provide a description of the intended functions and operations of the MIT in its role as a satellite to BIT is required.

IT.45 Description of Freight Movements Between BIT and MIT

References: i) EIS Guidelines, Part 2, Section 3.2

Source: i) CN EIS, Section 3.4.2

Rationale: This information is required in order to determine the reasonableness of the MIT as a satellite hub operating in concert with BIT operations.

Request: Please provide a description of the anticipated volumes of freight movements between BIT and MIT, by what mode or modes of transport, on what transportation routes.

Table B: Consolidated Information Requests

INFORMATION REQUESTS: FRANK BERCHA (BERCHA GROUP), *RISK ANALYSIS* (9 MARCH 2017) (RA)

RAILWAY NETWORKS AND CROSSINGS (RISK)

RA.1 Train Volume and Station Activities

References: i) EIS Guidelines Part 2, section 6.6.1
ii) Halton Brief, Table D.5, Transportation

Source: i) CN EIS s. 6.6.2

Rationale: This information is necessary for assessing risk by conduction a Quantitative Risk Assessment.

Request: Please provide the numbers of trains entering and exiting daily, estimated speeds of ingress and egress, time spent at station, movements, and track locations for loading, unloading, and idling.

RA.2 Train Specifications

References: i) EIS Guidelines Part 2, section 6.6.1
ii) Halton Brief, Table D.5, Transportation

Source: i) CN EIS s. 6.6.2

Rationale: This information is necessary for assessing risk by conduction a Quantitative Risk Assessment.

Request: For each type of train that will be using the facility, please provide the relevant certification levels, technical specifications, and numbers of cars per train.

RA.3 Transfer Operations

References: i) EIS Guidelines Part 2, section 6.6.1
ii) Halton Brief, Table D.5, Transportation

Source: i) CN EIS s. 6.6.2

Rationale: This information must be considered for the modeling of risk from daily DG operations.

Request: Please provide a full description of the intermodal transfer operations, including the site location where transfers occurred, and the equipment used to affect transfers of containers. An analysis of the daily expected DG transfer operations in terms of type, quantity, number of transfers, and transfer timing is also needed.

RA.4 Intermodal Equipment Lifespan

References: i) EIS Guidelines Part 2, section 6.6.1
ii) Halton Brief, Table D.5, Transportation

Source: i) CN EIS s. 6.6.2

Rationale: This information is relevant for the modeling of risk from daily operations. This information is also required by the EIS Guidelines, which request that the proponent take "into account the lifespan of different project components".

Request: Regarding the equipment used for transferring containers between trains and trucks, please list the equipment and provide information for each on its technical useful life span. As well, please advise of CN's intended refurbishment and replacement programs in respect of all equipment to be used at the site in the transfer operations.

Table B: Consolidated Information Requests

Information requests: Frank Bercha (Bercha Group),
***Risk Analysis* (9 March 2017) (RA)**

RA.5 Truck Specifications

References: i) EIS Guidelines Part 2, section 6.6.1
ii) Halton Brief, Table D.5, Transportation

Source: i) CN EIS s. 6.6.2

Rationale: This information must be considered for the modeling of risk from daily operations.

Request: For trucks carrying DG that will be permitted entry to the facility, please provide full technical specifications and characteristics, including tonnage limitations and permitted types of cargo.

RA.6 Truck Driver Certifications and Permits

References: i) EIS Guidelines Part 2, section 6.6.1
ii) Halton Brief, Table D.5, Transportation

Source: i) CN EIS s. 6.6.2

Rationale: This information is relevant to the modeling of risk from daily operations.

Request: For drivers of trucks carrying DG that will be permitted entry to the facility, please provide details of driver certifications and licenses, and permits required for each truck type.

RA.7 Truck Routes

References: i) EIS Guidelines Part 2, section 6.6.1
ii) Halton Brief, Table D.5, Transportation

Source: i) CN EIS s. 6.6.2

Rationale: This information is relevant to the modeling of risk from daily operations.

Request: Please provide details and mapping showing daily expected DG truck movements and routes. Information is needed on road types they will travel on, speed limits, and Average Annual Daily Traffic projections, both within the terminal and within 10 km of the terminal.

RA.8 Human Exposure

References: i) EIS Guidelines Part 2, section 6.6.1
ii) Halton Brief, Table D.5, Transportation

Source: i) CN EIS App. E7

Rationale: The density of the human population in the vicinity of the site, and the approved uses of land in the vicinity, are both important factors to consider in assessing risk from the operations of the terminal. Public exposure numbers and locations as well as an understanding of indoor and outdoor exposure are particularly important for assessing individual specific and collective risk.

Request: Please provide public population distributions within 10 km of the site, and associated land use types, both current and future. For example, if land is zoned for commercial, residential, industrial, or recreational use, it needs to be factored into the risk analysis.

RA.9 Details of DG

References: i) EIS Guidelines Part 2, section 6.6.1
ii) Halton Brief, Table D.5, Transportation

Table B: Consolidated Information Requests

Information requests: Frank Bercha (Bercha Group),
***Risk Analysis* (9 March 2017) (RA)**

Source: i) CN EIS s. 6.6.2

Rationale: This information must be considered for the modeling of risk from daily DG operations.

Request: Please provide detail on the types of DG anticipated to be pass through the intermodal terminal. Details should be provided on quantities, form (liquid, solid, gas), containment characteristics (pressure, temperature, container type), and potential release parameters.

RA.10 DG Annual Variation

References: i) EIS Guidelines Part 2, section 6.6.1
ii) Halton Brief, Table D.5, Transportation

Source: i) CN EIS s. 6.6.2

Rationale: The quantities and timing of movement of DG are relevant to the modeling of risk from operations.

Request: Please explain the annual variations in types of DGs shipped. For example, certain goods such as fertilizer will tend to be shipped in larger volumes in the spring.

RA.11 DG Projected Changes

References: i) EIS Guidelines Part 2, section 6.6.1
ii) Halton Brief, Table D.5, Transportation

Source: i) CN EIS s. 6.6.2

Rationale: The future quantities and timing of movement of DG must be considered for the modeling of risk from operations.

Request: Over the planned lifespan of the facility, please advise of any foreseeable changes in the quantities and types of DG that will be shipped through the facility over its lifespan.

RA.12 Emergency Response Plans

References: i) EIS Guidelines Part 2, section 6.6.1
ii) Halton Brief, Table D.5, Transportation

Source: i) CN EIS s. 6.6.2

Rationale: The plans are relevant to considering operational risk from the facility, and the extent to which any risk has been mitigated. As well, the EIS Guidelines require that such plans be provided: "The EIS will describe the **safeguards** that have been established to protect against such occurrences and the **contingency and emergency response procedures** in place if such events do occur."

Request: Please provide copies of any emergency response plans, with both strategic (preventive) and tactical (responsive) measures considered. As well, the plans should comply with any local municipal requirements so this should be confirmed.

RA.13 Worst Case Scenarios

References: i) EIS Guidelines Part 2, section 6.6.1
ii) Halton Brief, Table D.5, Transportation

Source: i) CN EIS s. 6.6.2

Rationale: Details of the extent of possible impacts from an accident or malfunction are required as they need

Table B: Consolidated Information Requests

Information requests: Frank Bercha (Bercha Group),
***Risk Analysis* (9 March 2017) (RA)**

	to be considered in the course of performing risk analysis. As well, the EIS Guidelines required this information: "the proponent will identify…the plausible worst case scenarios and the effects of these scenarios."
Request:	Please provide a discussion of plausible worst case scenarios associated with operation of the terminal.

Table B: Consolidated Information Requests

MEHDI MOSTAKHDEMI, DAN DIMITRIU (AMEC FOSTER WHEELER), *GEOTECHNICAL* (10 MARCH 2017) (GT)

GEOTECHNICAL

GT.1 Seismic Activities

References: i) EIS Guideline Part 2 Section 6.1.2.

ii) Halton Brief, Table D.3, sensitive surface and groundwater features

Source: i) CN EIS App E.5

Rationale: This information is required by the EIS Guidelines. As well, it is standard practice to consider the seismic history of the area and to determine the site seismic hazard and site seismic classification for design purposes based on geotechnical findings.

Request: Please provide a discussion of the history of seismic activities in the area of the proposed site. As well, please provide the seismic classification of the site area.

GT.2 Grade Separation at Lower Baseline Road

References: i) EIS Guideline Part 2 Section 6.1.2.

ii) Halton Brief, Table D.3, sensitive surface and groundwater features

Source: i) CN EIS App E.5

Rationale: Prior to implementing a grade separation, it is necessary to consider the existing subsurface conditions. Based on those existing conditions, geotechnical design recommendations can be made to support the geotechnical, structural and drainage design of important aspects such as the bridge foundation, earth retaining structures, drainage and subdrainage.

Request: Please review the subsurface conditions in the vicinity of the proposed grade separation at lower baseline road. Based on those conditions, please provide a proposal in terms of the geotechnical design recommendations and the design of the foundation.

GT.3 Installation of Culverts

References: i) EIS Guideline Part 2 Section 6.1.2.

ii) Halton Brief, Table D.3, sensitive surface and groundwater features

Source: i) CN EIS App E.5

Rationale: The use of culverts to bridge over portions of the existing watercourses will require measures to prevent scour and erosion consistent with the geotechnical conditions at the particular locations. As required by the EIS Guidelines, CN should address the potential for such effects including risks for stream bank erosion and the potential instability.

Geotechnical recommendations for compacted backfill against retaining structures should address the effects of compaction effort, and sloping ground.

As well, in the case of pavement or other settlement sensitive areas exposed to seasonal freezing, there is risk of differential frost heave. This would affect the performance of the finished works. Frost tapers should be considered to reduce the impacts of frost heave.

Request: a) In light of the proposal to install culverts in the watercourses, please explain what mitigation measures will be used to prevent scour, bank erosion, and support the design of associated retaining structures.

b) Should the culverts cross underneath settlement sensitive areas, please also consider the need for frost tapers.

Table B: Consolidated Information Requests

Mehdi Mostakhdemi, Dan Dimitriu (Amec Foster Wheeler),
***Geotechnical* (10 March 2017) (GT)**

GT.4 Replacement Watercourses and Storm Management Ponds

References: i) EIS Guideline Part 2 Section 6.1.2.

ii) Halton Brief, Table D.3, sensitive surface and groundwater features

Source: i) CN EIS App E.5

Rationale: Given the subsurface condition at the site revealed by the geotechnical investigation, there is a risk of hitting pervious lenses or otherwise disrupting existing aquifers. The formation of pathways for the flow of pressurized groundwater could result in significant disruption and damage, and ultimately may lead to loss of solids, subsidence and erosion, and possibly contamination of the groundwater from surface contaminants as discussed in the EIS Guidelines. These factors should therefore be considered in advance.

Request: To relocate sections of watercourse and to create storm management ponds, permanent and relatively deep cuts into the terrain will be required. The risk of hitting pervious lenses or developing artesian conditions should be considered, along with proposed mitigation and prevention measures.

GT.5 Impact of Increased Traffic

References: i) EIS Guideline Part 2 Section 6.1.2.

ii) Halton Brief, Table D.3, sensitive surface and groundwater features

Source: i) CN EIS App E.5

Rationale: In addition to general environmental issues (traffic congestion, noise, dust, etc.) increased heavy truck traffic can accelerate the wear and deterioration of existing public roads. A road preconstruction condition survey would assist with a better understanding of the mechanical impacts of the added construction and operation traffic will have on the existing public roads.

Request: The increased amount of traffic from heavy trucks can have a significant impact on the subgrade and on the paved surfaces, as well on the surrounding environment. This should be factored into the geotechnical investigations and environmental assessments.

Table B: Consolidated Information Requests

RON SCHECKENBERGER (AMEC FOSTER WHEELER ENVIRONMENT & INFRASTRUCTURE) *ET AL.* *WATER AND NATURAL HERITAGE* (11 MARCH 2017) (WNH)

SURFACE WATER

WNH.1 Determination of watershed boundaries / Use of current data

References:
i) EIS Guideline Part 1 Section 4.2, Part 2 sections 6.1.4, 6.2.2
ii) Halton Brief, Table D.3, sensitive surface and groundwater features

Source:
i) CN EIS App E.15 Section 4.1 and 8.0

Rationale: In order to best predict impacts of the project on drainage and hydrology, it is necessary to build from accurate topographic mapping of the area, including current characterization. The Land Information Ontario Database contains less current information. The LiDAR topographical data and the recent EAs from the area contain the best and most current information from which to characterize the boundaries of the drainage area as well as the area's resources.

Request: Please reassess the watershed boundaries and characterization by using:

1) the LiDAR topographic mapping available from the Town of Milton and Conservation Halton;
2) the EAs for Tremaine Road and Britannia Road; and
3) the characterizations done for the neighbouring Sherwood Survey and Education Village development areas.

WNH.2 Conduct an Impact Assessment

References:
i) EIS Guideline Part 2, Sections 3.3.2, 6.4
ii) Halton Brief, Table D.3, sensitive surface and groundwater features

Source:
i) CN EIS App E.15 Section 6.1.1.1.1

Rationale: Prior to establishing the management plan and mitigation approaches, it would be preferable to determine which VCs can be left undisturbed. Mitigation should only be considered after it has been determined that it is not feasible to avoid disturbance of specific VCs. Instead, CN discusses mitigation at the outset, resulting in the need for diversions, long enclosures made of hard infrastructure, and significant reductions of channel length. This process, in the opinion of the W/NH Team has not been appropriately sequenced, for instance it may be that the proposed diversions, or the extent of the diversions planned, may not be necessary. This need would have been better understood had an Impact Assessment been conducted at the outset and the site planned accordingly. In any event, the results of an Impact Assessment are considered required in order to properly assess the mitigation measures that have been proposed.

Request: Prior to considering mitigation measures, an Impact Assessment which considers the VCs currently in the PDA should be conducted.

WNH.3 Drawdown times and sizing standard for stormwater management facilities

References:
i) EIS Guideline Part 2 Sections 6.1.4, 6.2.2, 6.6.2
ii) Halton Brief, Table D.3, sensitive surface and groundwater features

Source:
i) CN EIS App E.15 Section 5, and sections 6.1.1.1.1 and 6.1.1.1.2

Rationale: The Town of Milton requires a maximum three-day drawdown time for stormwater management facilities in order to avoid issues (odour, nuisance, plant die-off, etc.) associated with standing water and also to reduce the likelihood of remixing of the contaminants due to further storms over the resident period. Longer drawdown periods also mean that less water can be captured in the stormwater management facility should storms occur during the draw down period which can lead to exacerbated off-site impacts (flood erosion, water quality), and more maintenance.

Table B: Consolidated Information Requests

Ron Scheckenberger (Amec Foster Wheeler Environment & Infrastructure) *et al*.
***Water and Natural Heritage* (11 March 2017) (WNH)**

If CN's position is that a 12 day drawdown time is suitable, an explanation is needed.

The Province requires that the potential impacts resulting from proposed land use changes be assessed on the basis of 2 through 100 year storm events as well as the Regulatory (Hurricane Hazel) event. CN should consider potential impacts of its project on the off-site Regulatory event.

Request: Please explain the rationale for a 12 day drawdown time for the stormwater management facilities, and why the facilities were not designed to the Regulatory standard as per current provincial convention.

WNH.4 Containment of contaminated runoff

References:
i) EIS Guideline Part 2 Section 6.2.2, 6.4
ii) Halton Brief, Table D.3, sensitive surface and groundwater features

Source:
i) CN EIS App E.15 Section 6.2.1.1

Rationale: CN has proposed measures to address the loss of infiltration due to the Project, including the use of swales and permeable pavers. However, an intermodal facility is expected to have heavy vehicular traffic and offloading equipment, which cannot likely be structurally supported by permeable pavements. As well, trucks and associated vehicles tend to be coated in contaminants which, if washed off in an intermodal facility and drained to swales and permeable parameters have the potential to contaminate the groundwater. Further rationale for the use of these mitigation measures is required to understand whether significant adverse environmental effects are likely to result.

Request: Please explain how groundwater contamination will be addressed through the proposed use of swales and permeable pavers in an Intermodal facility, rather than having facilities to collect and treat contaminated runoff.

WNH.5 Stream flow measurements for consecutive seasons

References:
i) EIS Guideline Part 2 Section 6.1.4, 6.6.2
ii) Halton Brief, Table D.3, sensitive surface and groundwater features

Source:
i) CN EIS App E.15 Section 4.2.1.1

Rationale: A six week period of monitoring should not be used as a basis to estimate or characterize runoff responses and thereby establish criteria for managing impacts to flooding and erosion. The results are highly likely to be skewed by seasonal conditions.

A minimum monitoring period of three seasons is considered required in order to obtain data that can be validly used to predict runoff.

Request: The data collected for streamflow measurements, in terms of *in situ* water levels and velocity, only spanned six weeks. Please consider collecting data for a period of three consecutive seasons (eg. spring, summer and fall in a given year).

WNH.6 Use approved HSP-F continuous simulation program to predict seasonal runoff condition

References:
i) EIS Guideline Part 1 Section 4.3.3, Part 2 6.1.4
ii) Halton Brief, Table D.3, sensitive surface and groundwater features

Source:
i) CN EIS App E.15 Section 4.3.2 and 4.4.1 and App. B

Rationale: The existing approved HSP-F continuous simulation methodology has been prepared by the Town of Milton and has been in use since 1998. It can be used to more accurately predict runoff

characteristics.

Request: Please apply the approved HSP-F ("Hydrologic Simulation Program – Fortran") model and continuous simulation methodology, to provide predictions of runoff characteristics.

WNH.7 Use HSP-F continuous simulation program to establish water budget

References:
i) EIS Guideline Part 2 Section 6.1.4, 6.2.2
ii) Halton Brief, Table D.3, sensitive surface and groundwater features

Source:
i) CN EIS App E.15 Section 4.4.2 and 5.5.4

Rationale: The existing approved HSP-F continuous simulation methodology has been prepared by the Town of Milton and has been in use since 1998 on Indian Creek. It can be used to more accurately predict the area's water budget.

Request: Please apply the approved HSP-F model and the continuous simulation methodology to provide predictions of system water budget.

WNH.8 Analyze off-site neighbouring flood risk

References:
i) EIS Guideline Part 2 Section 6.4, 6.6.1
ii) Halton Brief, Table D.3, sensitive surface and groundwater features

Source:
i) CN EIS App E.15 Section 6.1.1.1.1

Rationale: There are potential at-risk properties downstream of the PDA, including areas that have or will be designated for residential use.

CN should review the risk of flooding. This can be readily done by using the HSP-F and HEC-RAS (Hydrologic Engineering Centre -River Analysis System) programs.

Request: Please analyze the flood risk on neighbouring properties.

WNH.9 Rationale for limited measurement of contaminants

References:
i) EIS Guideline Part 2 Section 6.1.4, 6.2.2
ii) Halton Brief, Table D.3, sensitive surface and groundwater features

Source:
i) CN EIS App E.15 Section 4.4.3 and 5.6.1
ii) CN Response to IR 16, 17

Rationale: Mass balance estimates would provide actual data that is important to assessing water quality, as opposed to subjective figures based on professional judgment. In order to assess the likelihood of the potential for a significant adverse effect on water quality, it is considered necessary to better understand the rationale for relying on measurements for some parameters and judgment for other, equally important parameters.

Request: Please explain the rationale for providing mass balance measurements for only two parameters, sediment and phosphorus, and not for other parameters important to assessing water quality, including: dissolved oxygen, metals, and bacterial levels.

WNH.10 Validation of Water Quality Baseline

References:
i) EIS Guideline Part 1 Section 4.3.3, Part 2 6.1.4, 6.2.2
ii) Halton Brief, Table D.3, sensitive surface and groundwater features

Table B: Consolidated Information Requests

Ron Scheckenberger (Amec Foster Wheeler Environment & Infrastructure) *et al*.
***Water and Natural Heritage* (11 March 2017) (WNH)**

Source: i) CN EIS App E.15 Section 4.4.3 and 5.6.1
ii) CN Response to IR 16, 17

Rationale: The Sherwood Survey development area is directly north of the PDA, and its runoff water quality has been under detailed study and monitoring for over five years. The water quality information from that study should be used to confirm the validity of the baseline measurements and estimates performed by CN, so that the baseline can be rationalized locally and better predictions made in relation to impact of the Project on runoff water quality.

Request: Please validate your water quality measurements and estimates by comparing these with water quality data obtained from the Phase 2 Sherwood Survey Monitoring study.

WNH.11 Distinguish between wet and dry weather conditions for water quality sample collection

References: i) EIS Guideline Part 2 Section 6.1.4, 6.2.2
ii) Halton Brief, Table D.3, sensitive surface and groundwater features

Source: i) CN EIS App E.15 Sections 4.2.2 and 4.3.4

Rationale: Weather conditions at the time of sample collection make a significant difference in contaminant levels as rain causes the mobilization of certain contaminants, which will influence the chemistry of the water sample collected.

Request: Please discretely collect data for both wet and dry periods.

WNH.12 Sediment data collection and use

References: i) EIS Guideline Part 2 Section 6.1.4
ii) Halton Brief, Table D.3, sensitive surface and groundwater features

Source: i) CN EIS App E.15 Section 4.2.2 and 4.3.5

Rationale: Little information on the manner of collecting the sediment quality data, and its intended use, has been provided. This information is necessary to assess the validity of the collection method, and how this information will be used in site impact management.

Request: Please explain how the sediment quality data were collected, and the intended use of these data in site impact management or in any other project aspect.

WNH.13 Application of climate change assessment

References: i) EIS Guideline Part 2 Section 6.1.4 and 6.2.2
ii) Halton Brief, Table D.3, sensitive surface and groundwater features

Source: i) CN EIS App E.15 Section 4.2.2 and 4.3.5

Rationale: Although a climate change assessment was performed, it is not clear if it was used to develop and /or assess the preferred mitigation strategy.

Request: Please explain how the climate change assessment was factored into the mitigation strategy for stormwater management.

GROUNDWATER

WNH.14 Consideration of potential for increased horizontal and vertical groundwater flow

References: i) EIS Guideline Part 1 section 4.3.3, Part 2 Section 6.1, 6.2.2

ii) Halton Brief, Table D.3, sensitive surface and groundwater features

Source: i) CN EIS App E.6 Sections 5.2, 5.4

Rationale: The PDA sits on terrain known as the Halton Till, which incorporates weathered portions and is thus prone to fracture in horizontal and vertical directions. Such fractures would create new pathways for groundwater. In order to understand the potential for adverse environmental effects, CN should take this additional factor into account in conducting its risk assessment.

Request: In considering the risk of groundwater contamination and change in groundwater flow velocity, please take into account the presence of weathered Halton till.

WNH.15 Anti-seepage collars to prevent contamination

References: i) EIS Guideline Part 2 Sections 3.1, 3.2.2

ii) Halton Brief, Table D.3, sensitive surface and groundwater features

Source: i) CN EIS App E.6 Sections 5.2, 5.4

Rationale: Please clarify whether anti-seepage collars will be used within the servicing trenches during construction and operation.

Request: Servicing trenches provide a potential conduit for enhanced subsurface flow within the natural clay deposits, and therefore increase the risk for groundwater contamination. Anti-seepage collars would reduce the risk of contamination. It is not clear from the EIS whether CN plans to use anti-seepage collars.

WNH.16 Groundwater monitoring program

References: i) EIS Guideline Part 2 Sections 6.1.4, 6.2.2, 8.2

ii) Halton Brief, Table D.3, sensitive surface and groundwater features

Source: i) CN EIS App E.6 Section 6.3

Rationale: A monitoring program is necessary both during the construction phase and afterwards in order to confirm that groundwater levels and quality are maintained, and to confirm the accuracy of CN's initial assessment.

An intermodal facility is likely to be exposed to contaminants, and involve storage of fuel and other potential contaminants on site. For such a facility, it is reasonable to conduct a baseline survey of groundwater quality and levels, and to continue monitoring these parameters during operations.

Request: Please explain whether CN would implement a construction and post construction groundwater monitoring program.

STREAM MORPHOLOGY

WNH.17 Reach Characterization for Indian Creek and Tributaries

References: i) EIS Guideline Part 1 Section 4.3.3, Guideline Part 2 Sections 6.1.4, 6.3.1

ii) Halton Brief, Table D.3, sensitive surface and groundwater features

Source: i) CN EIS Sections 6.1 to 6.8

ii) CN EIS App. E.2

Rationale: Because CN proposes to cause such significant alterations to these watercourses, in order to assess the design and potential impacts of those alterations it is necessary to have an adequate understanding of the original conditions and characteristics of these watercourses. This is essential

so that the newly designed portions can be configured to be as similar to the original as possible, and so that the risk of negative impacts such as excessive erosion downstream and altered flow rate are minimized.

In addition, CN had selected a sample reach on each of Indian Creek and Tributary A, and used these sample reaches for reference in the subsequent design work. Adjacent reaches should have been characterized so that the extent to which the selected reaches were representative of the remainder of the watercourses could be understood.

Further, while some mitigation measures have been discussed in terms of aquatic habitat, there has been insufficient work done to understand how the balance between flow and sediment will change in these watercourses. These parameters have significant impacts on erosion potential, and therefore it is crucial to have a good understanding of the original conditions when considering new designs.

Request: Please characterize all reaches of Indian Creek and Tributaries A, B, and C, in terms of dimensions, slope, sediment, sinuosity, flow, and geology. Please also provide RSAT (Rapid Stream Assessment Technique) data and RGA (Rapid Geomorphic Assessment) data for each watercourse.

WNH.18 Historical Information for Indian Creek

References:
i) EIS Guideline Part 1 Section 4.3.3, Guideline Part 2 Sections 6.1.4, 6.3.1
ii) Halton Brief, Table D.3, sensitive surface and groundwater features

Source:
i) CN EIS Sections 6.1-6.8
ii) CN EIS App. E.2

Rationale: Information on how Indian Creek responded to any past alterations, and the extent of natural migration in cm/year, is important in order to understand how sensitive Indian Creek is to alteration.

Request: Please describe any past historical channel alterations on Indian Creek, as well as showing the extent of migration of Indian Creek, over the same timeframe as done for the historical overview of the area already provided.

WNH.19 Characterization and erosion threshold for downstream region

References:
i) EIS Guideline Part 2 Section 6.2.2
ii) Halton Brief, Table D.3, sensitive surface and groundwater features

Source:
i) CN EIS Sections 4.3.3, 6.2.2

Rationale: Downstream sections of watercourses are the portions that are most affected by changes upstream. In terms of the channel alterations proposed by CN, the channels will become shorter, steeper, and will convey more energy downstream. These factors can be significant contributors to downstream erosion.

In order to understand the potential impacts, one must begin with a full characterization and description of downstream watercourses, including monitoring stations.

Request: Please characterize the downstream receiving watercourses (Indian Creek downstream of Tremaine, and Bronte Creek) and provide an erosion threshold for the downstream section of Indian Creek.

WNH.20 Evaluate impacts on channel stability for Indian Creek and Tributary A

References:
i) EIS Guideline Part 2 Sections 6.1.4, 6.2.2, 6.3.1

ii) Halton Brief, Table D.3, sensitive surface and groundwater features

Source: i) CN EIS Section 6.3.1

Rationale: The proposed design for Tributary A attempts to mimic the existing conditions in terms of planform, gradient, and cross-sectional dimensions. However, the newly designed channel is shorter and heavily altered in the upstream sections. There has been little discussion on any changes in flows in the downstream direction. The proposed design flow is 0.42m^3/s, which is much smaller than the 2-year return flow of 1.96 m^3/s. More evaluation of the implications of the design to this flow regime is needed.

Request: Please provide an explanation for the difference in the design flow (bankfull flow) and the 2 year return flow for Tributary A.

WNH.21 Hydraulics for design channel

References: i) EIS Guideline Part 2 Sections 6.1.4, 6.3.1

ii) Halton Brief, Table D.3, sensitive surface and groundwater features

Source: i) CN EIS Section 6.3.1

Rationale: For Indian Creek, the potential implications on the changes to flows and channel alterations are significant. There are two proposed stormwater management facilities and a loss of 505 m of channel length, resulting in a proposed channel that is twice as steep as the existing channel. The bankfull flow is reported as 3.54 m^3/s and the two-year return flow 16.9 m^3/s.

Request: Please provide hydraulics for the design channel, both in terms of design flow and two-year return flow.

WNH.22 Analysis of proposed crossings

References: i) EIS Guideline Part 2 Section 6.3.1

ii) Halton Brief, Table D.3, sensitive surface and groundwater features

Source: i) CN EIS Section 6.3.1

Rationale: The proposed channel design for Tributary A has cross-sectional widths varying from 3.4 m (riffle) to 4.1 m (pool). These dimensions closely match the measured existing conditions from the reference reach. However, the proposed crossings (enclosures) which are 125m and 75m long, consist of twin cell concrete box culverts which are 1.52 m wide, resulting in a design width of 3.04m. Using culverts of smaller width than the watercourse may result in problems including increased flow velocity and erosion potential. A more detailed analysis and rationalization of the proposed design is needed.

Request: Crossings of certain dimensions are proposed for Tributary A. Please provide the justification for the sizes proposed, including an analysis of channel dynamics, risk, hydraulics, water depth, and velocities at mean annual flow, and 2-year return flow.

WNH.23 Alternate crossing configurations

References: i) EIS Guideline Part 2 Sections 6.3.1

ii) Halton Brief, Table D.3, sensitive surface and groundwater features

Source: i) CN EIS Section 6.3.1

Rationale: Splitting flows into two culverts is not recommended based on channel function and maintenance. The width is actually less than the existing and proposed conditions, resulting in a construction

which is likely to negatively affect channel functions. Alternate designs that correspond more closely with existing watercourse features should be provided.

Request: Assess alternate designs for the crossing structures and enclosures, including single cell options and different configurations.

NATURAL HERITAGE: FISH AND FISH HABITAT

WNH.24 Fish in Tributary A

References: i) EIS Guidelines Part 2, Sections 6.1.5, 6.3.1
ii) Halton Brief, Table D.4, fish habitat

Source: i) CN EIS App. E4, Section 5.1.4, pdf pg. 42; Section 4.1.3, pdf pg. 21

Rationale: In respect of potential impact on Tributary A, CN prepared its analysis on the basis that no fish were captured between Bronte Road and Britannia Road in the AMEC 2013b study. However, as documented in the AMEC study, fish were captured in Tributary A just upstream from Britannia Road.

The presence or absence of fish in Tributary A is relevant to determining whether Tributary A should be considered to be part of, or support, a commercial fishery.

Request: Please use the complete data from the AMEC 2013b study regarding fish presence in Tributary A, including data collected upstream from Britannia Road, and reconsider the assessment that Tributary A is not part of, and does not support, a CRA fishery.

WNH.25 Fish habitat quality ranking

References: i) EIS Guidelines Part 2, Sections 6.1.5, 6.3.1
ii) Halton Brief, Table D.4, fish habitat

Source: i) CN EIS App. E4, section 4.1.2, pdf pg. 20

Rationale: CN states that watercourse rankings were "Based on guidance from Fisheries and Oceans Canada (DFO), MNRF, various Ontario Conservation Authorities and generally accepted practices and standards for assessing fish habitat in Ontario, including ratings from CH (2002 and 2009)".

However, the methods used in the two CH references (2002, 2009) do not appear to conform to those used by CN in Appendix E. In order to fully evaluate the watercourse rankings it is necessary to review the relevant portions of the guidance from the various agencies.

References to direct the reader to the guidance/standards referred to, are required to understand the rankings accorded by CN.

Request: Please provide references to support the approach used to rank the watercourses with respect to habitat quality.

WNH.26 Indian Creek habitat ranking

References: i) EIS Guidelines Part 2, Sections 6.1.5, 6.3.1
ii) Halton Brief, Table D.4, fish habitat

Source: i) CN EIS App. E4, section 5.1.2, pdf pg. 33
ii) CN EIS App. E4, pdf pg. 84

Rationale: The assessment of fish habitat quality by the field investigators appears to differ from the assessment elsewhere in the EIS documents. The field form for the fisheries assessment of Indian Creek indicates that the habitat quality is "good" for both large bodied and small bodied fish for

spawning, overwintering, rearing and migration.

However, the text of the results section states "Field investigations in 2015 indicate that the main channel of Indian Creek is a permanently flowing watercourse with **moderate** quality spawning, rearing, foraging, and overwintering habitat for large-bodied and small-bodied fish throughout the PDA."

The ranking should be clarified so that the analysis of the work based on the ranking can be better understood.

Request: Please clarify Indian Creek's fish habitat quality ranking. Among a choice of *good*, *moderate*, *poor*, or *not fish habitat*, Indian Creek has been described in the EIS as both *"good"* and "*moderate*".

WNH.27 Confirm whether realignment of Indian Creek was considered in earlier 2002 study

References:
i) EIS Guidelines Part 1, section 4.3.3 Part 2, Sections 6.1.5, 6.3.1
ii) Halton Brief, Table D.4, fish habitat

Source:
i) CN EIS App. E4, Section 2.0, pdf pg. 16

Rationale: The EIS implies that the Bronte Creek Watershed Study in 2002 considered the realignment of Indian Creek that is currently proposed. It is important to confirm this, as CN relies on the data and conclusions from this earlier study to support its current proposal. Knowing whether or not this realignment was included in the material provided to Conservation Halton at that time is important in order to understand the context for the cited study.

Request: Please confirm whether the expected effects on watercourses that were presented in the earlier CN proposal as discussed in the Bronte Creek Watershed Study done by Conservation Halton in 2002, took into account the realignment of Indian Creek as currently proposed.

WNH.28 Characterization of riparian buffers

References:
i) EIS Guidelines Part 2, Sections 6.1.5, 6.3.1
ii) Halton Brief, Table D.4, fish habitat

Source:
i) CN EIS Section 1.2.1 pg. 5; section 6.5.1.9.2, pg. 176; section 7.0, Table 7.1, pg. 311; Section 8.2.2, pg. 324.
ii) CN EIS App. E2, section 1.0, pdf pg. 1; section 1.1, pdf pg. 2, section 1.2, pdf pg. 2; section 6.2.1.1, pdf pg. 35; section 6.3, pdf pg. 48.
iii) CN EIS App. E4, fig. 3.2, pdf pg. 59

Rationale: The EIS mentions the inadequacy of riparian buffers in several places, but does not provide a quantitative characterization of the riparian buffers and the type of vegetation that they contain. It is necessary to understand the features of the existing riparian buffers and what species they contain in order to understand what would be lost in association with the reduction of creek length.

In particular, because the EIS indicates that enhancement of riparian habitat is a component of mitigation for the elimination of 1075 m of Indian Creek and its replacement with 571 m of constructed channel, it is necessary to have a comprehensive understanding of the existing riparian habitat in order to assess the ability to mitigate the elimination of 1075 m of Indian Creek and its riparian zone.

Request: Please characterize and quantify the existing riparian buffers and their vegetation communities, as well as the proposed future riparian buffers, and consider how the changes will affect fish productivity.

Table B: Consolidated Information Requests

Ron Scheckenberger (Amec Foster Wheeler Environment & Infrastructure) *et al*.
***Water and Natural Heritage* (11 March 2017) (WNH)**

WNH.29 Conduct spring studies for headwater drainage

References: i) EIS Guidelines Part 2, Sections 6.1.5, 6.3.1
ii) Halton Brief, Table D.4, fish habitat

Source: i) CN EIS App. E4, section 5.1.2, pdf pg. 39 and 40

Rationale: Technical Appendix E4 indicates that headwater drainage feature investigations were undertaken in July and August, 2013, and that these features were classified as "simple contributing" systems to downstream fish habitat, with intermittent or ephemeral flow, referencing the document Evaluation, Classification and Management of Headwater Drainage Features: Interim Guidelines (CVC and TRCA, 2009). That document indicates that field investigations should be undertaken during three assessment periods to assess flow in headwater drainage features and that fish sampling should occur if water is present in April/May/June.

Request: Please conduct field investigations of the headwater drainage features in the spring season (April, May and June).

WNH.30 2016 Fish Sampling Data

References: i) EIS Guidelines Part 2, Sections 6.1.5, 6.3.1
ii) Halton Brief, Table D.4, fish habitat

Source: i) CN EIS App. E4, section 5.1.2, pdf pg. 32

Rationale: CN advised in the EIS, which was dated in 2015 that additional fish collections from Tributary A would occur in 2016. This supplemental information should be provided, as it is needed to assess the current significance of Tributary A as a fish habitat.

Request: Please provide fish sampling data from Tributary A collected in 2016.

WNH.31 Clarify relevance of conductivity

References: i) EIS Guidelines Part 2, sections 6.1.5, 6.3.1
ii) Halton Brief, Table D.4, fish habitat

Source: i) CN EIS App. E4, section 5.1.2, pdf pg. 38

Rationale: CN appears to imply that the conductivity of Indian Creek is indicative of impaired fish habitat. A citation is provided to a US EPA document that is apparently intended for laypersons and that provides no scientific references to support a statement which it contains regarding conductivity. The CCME guidelines do not contain a guideline for conductivity. The rationale for CN's rationale for referencing this EPA document should be clarified.

Request: It is requested that CN explain the relevance of the 1997 EPA document to the current study.

NATURAL HERITAGE: TERRESTRIAL SPECIES AND HABITAT

WNH.32 Identify and map natural heritage system features within and adjacent to the study area

References: i) EIS Guidelines Part 1, section 3.3.2, 4.2, Part 2, section 6.2.3
ii) Halton Brief, Section B.3.1, referring to ROP sections 118(2) and 25-30
iii) ROP: policies that protect the Regional Natural Heritage System: s. 27(3), 118.2, 260.2

Source: i) CN EIS Section 6.2, 6.2.3
ii) Letter from CEAA to CN July 14, 2016 re additional information required from CN for the Milton Logistics Hub Project EA

iii) CEAA IR13, IR16, IR18 and IR25, March 15, 2016 and CN Responses

Rationale: The EIS must assess the potential environmental effects of the project on VCs and to do this the NHS and its components must first be properly and fully identified. The EIS Guidelines note that the value of a component must include its role in the ecosystem and the value placed on it. In Halton, several components are identified as being within the RHNS. This represents one scale (the Regional scale) in which these components operate. Thus the evaluation of VCs identified as within the RNHS, or which if impacted could affect the RNHS, must include 1) an evaluation of their role in the Regional Natural Heritage System, and 2) by extension, the potential environmental effects on the RNHS.

This information gap has also been identified in the CEAA requests for additional information (see CEAA IR18), however, the CN responses to date do not reflect consideration of the terrestrial landscape in an ecosystem context as required by the EIS Guidelines and as articulated in the ROP. Thus the CN evaluation of disturbance excludes any synergistic relationship among landscape elements (which is a key characteristic of taking an ecosystem approach), and treats vegetation units as discrete, isolated entities.

Request: Please identify natural heritage features within and adjacent to the study area that are components in the Regional Natural Heritage System (RNHS). This should include a figure mapping the RNHS in and adjacent to the study area as well as a description of the features and the interrelationships among them, including ecological linkages.

WNH.33 Evaluate the impacts to components of the natural heritage system in a systems context

References:
i) EIS Guidelines Part 1, Section 3.3.2, Part 2 section 6.2.3
ii) Halton Brief Section D.4;
iii) ROP sections 25-29

Source:
i) CN EIS Section 6.2, 6.2.3
ii) Letter from CEAA to CN July 14, 2016 re additional information required from CN for the Milton Logistics Hub Project EA
iii) CEAA IR13, IR16, IR18 and IR25, March 15, 2016 and CN Responses

Rationale: The ROP uses the terms “landscapes” and “landscape permanence” (s. 26 and 27) in articulating Halton’s Planning Vision. The landscapes that are to be preserved permanently include (but are not limited to) the components of the RNHS as articulated in s.115 of the ROP. Description of landscape disturbance per the EIS Guidelines should include all components of the Region’s Natural Heritage System, and they should be evaluated in an ecosystem context per the EIS Guidelines. This information has also been requested by CEAA, however, the CN responses do not reflect consideration of the terrestrial landscape in an ecosystem context as required by the EIS Guidelines and as articulated in the ROP. Thus the CN evaluation excludes any synergistic relationship among landscape elements and treats them as discrete entities.

Request: Please evaluate the potential for impacts to the features and ecological functions of the RNHS both individually and in the context of the overall system. Please use the Regional policies and Region’s EIA Guidelines for permanent protection of certain landscapes as one of the tests for impacts, as well as the federal guidance document (How Much Habitat is Enough, 3rd ed.)

WNH.34 Apply a precautionary approach

References:
i) EIS Guidelines, Part 1, Section 2.4
ii) Halton Brief, Section D4,
iii) ROP s. 114, and the policies in the ROP that protect the natural heritage system: s. 118.2,

260.2

Source: iv) CN EIS App E16, section 1.2

Rationale: A Precautionary Approach involves the assumption of negative impacts (i.e. a worst case scenario) when the outcome of an action is not understood. The EIS has not identified or evaluated natural heritage features and functions in an ecosystem context, nor has there been an assessment of potential effects of the proposal on the Regional Natural Heritage System. In the absence of this description and analysis a Precautionary Approach should be applied with respect to any conclusions regarding the appropriateness of the project. This is especially relevant given the high priority the Region places on protecting landscapes as a fundamental component of the Region's Vision, and the goal of increasing the certainty that natural heritage will be protected.

Request: Please evaluate the potential effects of the project on the features and functions of components of the natural heritage system within and adjacent to the study area, both individually and in the context of the overall system, using the Precautionary Approach and the Region's commitment to "increase the certainty that the biological diversity and ecological functions within Halton will be preserved and enhanced for future generations".

WNH.35 Expand VCs considered in consultation with Regional and local agencies

References:
i) EIS Guidelines, Part 1 sections 3.3.2, 3.3.3, Part 2, sections 6.1.6, 6.1.7, 6.3.2, 6.3.3
ii) Halton Brief, Table D4
iii) How Much Habitat is Enough, 3d. ed.

Source: i) CN EIS, App E.16 section 2.0, 3.0

Rationale: Halton Region, Conservation Halton, and the member municipalities have in-depth knowledge of the study area and can assist in the identification of a more complete list of VCs that reflect biodiversity at multiple scales.

Request:
a) Please specifically consult with 1) Halton Region, 2) local municipalities and 3) Conservation Halton to complete the identification of VCs and identify those that are considered most valuable in the study area. CN should then provide a table showing all VCs, and either incorporate these in its analysis, or rationalize why a particular VC was not considered relevant to the EIS.
b) Make reference to and ensure that the VCs addressed in the EIS are consistent with the principles and guidance contained within the following relevant Environment Canada documents: How Much Habitat is Enough, 3rd Edition (2013), the Canadian Biodiversity Strategy (1995) and the Canada-Ontario Agreement on Species at Risk.

WNH.36 Evaluate VCs using study standards meeting Regional and local agency requirements

References:
i) EIS Guidelines, Part 2, sections 1.4, 6.1.6, 6.1.7, 6.3.2, 6.3.3
ii) Halton Brief, Appendix B.3.1, and natural heritage policies as defined in ROPA 38
iii) The Sub-watershed study approach defined in ROPA 38 and Town of Milton OP, in concert with regional and provincial policies, specifies Sub-watershed Impact Studies (SIS) for the detailed planning, design and monitoring of major new development.

Source: i) CN EIS App E.16, sections 2.0, 3.0

Rationale: The Terrestrial TDR and EIS do not uniformly and transparently reference, define, and apply specific federal, provincial or local study guidelines and standards.

The narrow scope of VCs considered does not assess other features or functions specifically protected under provincial and regional policies and legislation. Gaps in data coverage (discussed

under other issues) also suggest inadequate clarity on scope and standards.

In terms of assessment of effects, only very specific VCs are addressed, and the EIS does not account for the full range of ecosystem effects that are of concern to the Province, Region and local municipalities.

Request: Please revise the EIS, supporting Terrestrial TDR, and the VCs to include the Halton Region's standards, and the Town of Milton's SIS (Subwatershed Impact Studies) framework. Local MNRF protocols for SAR (Species at Risk) inventory should be adopted where they are the most current approaches for specific biota. The TDR should summarize the policy and/or science basis for each standard that is followed or applied. The EIS should predict effects on a full range of ecological VCs, and address their mitigation in conformity with provincial and regional standards.

WNH.37 Consideration of Relevant Local Subwatershed and Monitoring Studies

References:
i) EIS Guidelines, Part 1, section 4.3.3, Part 2, section 1.4
ii) The Region of Halton, Environmental Impact Assessment Guidelines, required by ROP Section 141.3 and 192(5)
iii) Canadian Biodiversity Strategy (1995)
iv) How Much Habitat is Enough, 3rd Ed. (2013)

Source:
i) CN EIS App E.16, sections 2.0, 3.0

Rationale: A number of relevant, site-specific subwatershed studies and monitoring documents were not considered by CN, and the documents that were assessed were either too general in geographic coverage or focused only on Species at Risk.

The lack of adequate review and integration of available background information sources is problematic since it likely results in the underestimation of the presence and extent of significant species (from local to national scale), overall biodiversity and the ecosystem functions on which they rely.

Request: Please consult with (1) Halton Region, (2) local municipalities, and (3) Conservation Halton to ensure all local and site-specific sources of information and studies, including guidelines for assessing impacts, are considered in the background review.

WNH.38 Use the sub-watershed framework to define the study scale

References:
i) EIS Guidelines, Part 1, sections 3.3.3
ii) Appendix B Part A of the Halton Municipalities Brief
iii) Provincial Policy Statement Section 2.2
iv) Town of Milton Official Plan Sect. 4.8.1.6
v) How Much Habitat is Enough, 3rd Ed. (2013)

Source:
i) CN EIS App E.16, sections 2.0, 3.0

Rationale: The EIS and Terrestrial TDR define the PDA, LAA and RAA in rudimentary terms that do not adequately reflect scales of potential negative effects on the ecosystem within and beyond the PDA. Sub-watersheds contain topography and surface water system definition that provide critical linkages for ecosystems.

Request: Please revise the EIS and supporting TDRs to reflect an integrated, interdisciplinary sub-watershed-focused approach to refine study scales, supported by approaches based on provincial, Regional and Town standards, for baseline characterization, impact assessment, and system enhancement where the project site and operations intersect with environmental features and systems.

Table B: Consolidated Information Requests

Ron Scheckenberger (Amec Foster Wheeler Environment & Infrastructure) *et al*.
***Water and Natural Heritage* (11 March 2017) (WNH)**

WNH.39 Identify Significant Wildlife Habitat and other concentrations of biodiversity and function

References:
i) EIS Guidelines, Part 2, sections 1.3,6.1.7, 6.3.2, 6.3.3
ii) Natural Heritage Reference Manual (2010)
iii) Halton Municipalities Brief Section D4, referring to Regional Official Plan 115.3 (2) identifies Key Features that include enhancements to the Key Features including Centres for Biodiversity

Source: i) CN EIS App E.16, sections 2.0, 3.0

Rationale: Areas of concentrated biodiversity are critical for maintenance of local and regional biodiversity and by extension, other scales up to and including global biodiversity. If populations are not maintained in local and regional areas of habitat, extirpation of the species can eventually occur over larger areas. Information needs to be provided on the significance and function of local populations and landscape (Regional and watershed) scales.

Request: Please indicate where concentrations of biodiversity are located, focusing on areas that meet the qualifications for Significant Wildlife Habitat as defined by the "Significant Wildlife Technical Guide", (2000) published by the Ontario Ministry of Natural Resources, and supporting Ecoregion Schedules. This should include identifying habitat where there are concentrations of provincially or regionally rare species, as these may also meet the criteria for SWH.

WNH.40 Identify effects of Construction on Wildlife

References:
i) EIS Guidelines, Part 2, sections 6.1.7, 6.3.2, 6.3.3
ii) Town of Milton OP Policy 5.4.3.2, requires Subwatershed Impact Studies, with current guidelines requiring consideration of construction timing and phasing on natural heritage system attributes and functions.

Source: i) CN EIS Section 3.4, p. 53: Construction timing and phasing effects on biota

Rationale: There is no information on how construction and operations will impede or prevent species movements and utilization of habitats for critical life processes. Critical habitats need to be adequately documented to prevent negative effects.

Request: Please provide a summary of how construction and operations will correlate with key activity periods of significant biota.

WNH.41 Explain sensitivity of bird species

References:
i) EIS Guidelines, Part 2, sections 6.1.7, 6.3.2, 6.3.3
ii) Halton Municipalities Brief Section D4, Halton ROP 118 (3), Halton Region Environmental Impact Assessment Guidelines (2009)

Source: i) CN EIS p. 193, Table 6.20

Rationale: It is not clear how sensitive migratory bird species were defined and which species qualify, whether it is based on "area sensitivity", use of specialized habitats, sensitivity to development and disturbance, species that are experiencing population declines, or any other factor. Sensitivity needs to be defined in order to verify the conclusions that residual effects will not be significant.

Request: Table 6.20 of the EIS refers to the likelihood of disturbance or displacement of "sensitive" species of migratory birds. Please explain how bird species were classified as "sensitive".

CORRECTED MARCH 14, 2017

Table B: Consolidated Information Requests

Ron Scheckenberger (Amec Foster Wheeler Environment & Infrastructure) *et al*.
***Water and Natural Heritage* (11 March 2017) (WNH)**

WNH.42 Clarify the mitigation proposal to enhance wetlands and compensate for grassland loss

References:
i) EIS Guidelines, Part 2, sections 6.1.6, 6.2.3, 6.3.2, 6.4
ii) Halton Brief Appendix B, Section B.3.1

Source:
i) CN EIS Section 6.5.2.9.1, and p 193, Table 6.20

Rationale: This information is necessary in order to understand whether the proposed mitigation measure will be effective. Moreover, the appropriateness of the mitigation needs to be determined with reference to the Regional Natural Heritage System.

Request: Please provide more detail on how wetlands will be enhanced to improve breeding opportunities for wetland birds.

WNH.43 Consider locally listed Species at Risk, as well as local, regional and provincial species of conservation concern.

References:
i) EIS Guidelines, ~~Part 1, section 1.4;~~ Part 2, sections 1.4, 6.1.6, 6.1.7, 6.3.3
ii) Halton Municipalities Brief Appendix B Section B.3, referring to ROP Section 101 (1.9) and ROP 115 (3)
iii) Article 7 of Canadian Biodiversity Strategy
iv) Canada-Ontario Agreement on Species at Risk Articles 2.4, 2.6 and 2.7

Source:
i) CN EIS App E.16, sections 2.0, 3.0

Rationale: The EIS omits consideration of all scales of significance other than federal; however, there is federal direction that biodiversity should be considered at multiple scales. The Canadian Biodiversity Strategy and Canada-Ontario Agreement on Species at Risk support the consideration of status at a subnational level in preventing species from becoming at risk.

The Region and the province both incorporate protection of regional and provincial biodiversity into natural heritage planning, acknowledging the importance of protecting biodiversity at multiple scales (federal, provincial, regional and local) in order to protect biodiversity at a global scale.

Request: Please consult local authorities and review the provincial, regional, local status of species. An analysis of significance of habitat is needed based on status of species at all levels of significance.

WNH.44 Consult lists of significant species in the area to screen for other Species at Risk

References:
i) EIS Guidelines, Part 1, section 4.2 ~~4.3.3~~; Part 2, sections 6.1.7, 6.3.3
ii) Halton Environmental Impact Assessment Guidelines Appendix E (endorsed by ROP Section 141 (3)
iii) Natural Heritage Reference Manual (Section 5.3)

Source:
i) CN EIS App E16

Rationale: The Terrestrial TDR notes that "consultation with MNRF regarding SAR records in the RAA is ongoing", but there is no record of results of this screening being used in preparation of the report. A table of surveys and generic targets was provided but there is no inclusion of Species at Risk that are known to occur in the area based on records compiled by MNRF's Natural Heritage Information Centre (NHIC). This means that groups of species for which specialized surveys are required were likely missed, such as for hawthorns, and cryptic wetland bird species such as Least Bitterns.

Request: Please prepare a complete list of significant species and features that have been noted in the larger study area (the RAA), and preferably within the watershed. At a minimum, the list should include all significant species and features in the Regional Natural Heritage System on and adjacent

to the site.

CORRECTED MARCH 14, 2017

WNH.45 Jefferson Salamander—justify lack of trapping

References: i) EIS Guidelines, ~~Part1 sections 1.0, 1.4~~; Part 2, sections 1.4, 6.1.6, 6.1.7, 6.3.3

ii) Halton's Regional Natural Heritage System policies, as defined in ROPA 38, supported by the Region's EIA Guidelines (2009) which are endorsed in Section 141 (3)

Source: i) CN EIS App E.16, section 4.4

Rationale: According to the Ministry of Natural Resources and Forestry protocols, trapping surveys should be conducted to detect the presence/absence of Jefferson Salamander (designated nationally and provincially Endangered), instead of area searches, as was conducted as part of the CN study.

Request: Conduct trapping for Jefferson Salamanders or provide a clear explanation why trapping was not undertaken. Acknowledge any potential gaps or deficiencies in survey coverage.

WNH.46 Jefferson Salamander—review adequacy of study timing

References: i) EIS Guidelines, ~~Part 1, section 1.0, 1.4;~~ Part 2, sections 1.4, 6.1.6,6.1.7, 6.3.3

ii) Halton's Regional Natural Heritage System policies, as defined in ROPA 38, supported by the Region's EIA Guidelines (2009) which are endorsed in Section 141 (3)

Source: i) CN EIS App E.16, section 4.4

Rationale: Egg masses are very difficult to detect, are often concealed in dense vegetation, and are only visible for a short period in the early spring until the eggs hatch. The dates of the egg mass surveys were April 30 and May 14, 2014, which were likely too late. In 2014 amphibian movement to breeding ponds was on April 2-3 in the Milton area; eggs hatch in 3-14 weeks so they may have hatched before surveys were conducted. The CN conclusion that Jefferson Salamanders are not found in the study area is not supportable if the searches for egg masses were conducted too late.

Request: CN's study to detect egg masses was done on April 30 and May 14. Please utilize accepted protocols for this species and provide any rationale and assumptions behind the choice of these dates in the context of the approved protocols.

WNH.47 Jefferson Salamander—clarify field study approach

References: ii) EIS Guidelines, ~~Part 1, section 1.0, 1.4;~~ Part 2, sections 1.4, 6.1.6,6.1.7, 6.3.3

iii) Halton's Regional Natural Heritage System policies, as defined in ROPA 38, supported by the Region's EIA Guidelines (2009) which are endorsed in Section 141 (3)

Source: i) CN EIS App E.16, section 4.4

Rationale: Field study details were not provided. They are necessary so that the thoroughness of the study and validity of its conclusions can be assessed.

Request: Please advise if the established search protocols were used. For example,

1) How long was spent surveying habitat?
2) How were bodies of water searched?
3) Were polarized sunglasses used?
4) Were individual twigs submerged in the water closely inspected by hand?

CORRECTED MARCH 14, 2017

Table B: Consolidated Information Requests

Ron Scheckenberger (Amec Foster Wheeler Environment & Infrastructure) *et al*.
***Water and Natural Heritage* (11 March 2017) (WNH)**

WNH.48 Repeat Western Chorus Frog Surveys

References:
i) EIS Guidelines, Part 1, section ~~1.0, 1.4~~ 4.2; Part 2, sections 6.1.6, 6.1.7, 6.3.3
ii) Halton's Regional Natural Heritage System policies, as defined in ROPA 38, supported by the Region's EIA Guidelines (2009) which are endorsed in Section 141 (3)

Source:
i) CN EIS App E.16, section 4.4

Rationale: Western Chorus Frog is a Species at Risk and is designated Threatened in Canada. Potentially suitable habitat at the south end of the LAA was not surveyed at the appropriate time of year to detect the species calling.

The point count station associated with the south end of the LAA was not actually located next to either of the most likely breeding habitats. Existing data on file with the Town and Conservation Halton from local subwatershed and long term monitoring studies were not consulted.

Request: Please conduct early spring surveys that include areas of flooded fields and thickets to ensure appropriate detection of the species. Also conduct nocturnal amphibian call surveys adjacent to the most likely breeding habitats.

WNH.49 Turtles—Identify Nesting Habitat

References:
i) EIS Guidelines, Part 1, section ~~1.0, 1.4~~ 4.2; Part 2, sections 6.1.6, 6.1.7, 6.3.3
ii) Halton's Regional Natural Heritage System policies, as defined in ROPA 38, supported by the Region's EIA Guidelines (2009) which are endorsed in Section 141 (3)
iii) Halton Region Environmental Impact Assessment Guidelines, 2009: endorsed by ROP Section 141 (3)
iv) Various guidelines for surveys of Species at Risk

Source:
i) CN EIS App E.16, section 4.4

Rationale: Snapping Turtles are highly dependent for their life cycle on specialized habitat for their oviposition and overwintering needs. It is therefore not sufficient to count basking specimens; it is equally important to document the full extent of the habitats required for their survival. However, this was not done.

As well, searches for turtle nesting activity were deficient because they were limited to sand/gravel outcrops and roadsides. Turtles utilize additional substrates and/or habitats in which to nest, some of which are likely present within the study area.

Request: Please conduct additional turtle nesting activity surveys and ensure all potentially suitable nesting areas are searched in the appropriate season, time of day and under acceptable weather conditions, using the detailed guidelines specific to studies of turtles in Ontario.

WNH.50 Turtles—Conduct Additional Basking Surveys

References:
i) EIS Guidelines, Part 1, section ~~1.0, 1.4~~ 4.2; Part 2, sections 6.1.6, 6.1.7, 6.3.3
ii) Halton Region Environmental Impact Assessment Guidelines Appendix E; endorsed by Section 141 (3) of the ROP
iii) Natural Heritage Reference Manual Section 5.3.1

Source:
i) CN EIS App E.16, section 4.4

Rationale: Turtle basking surveys were conducted in May, but it is most effective to survey for basking turtles immediately after they emerge from hibernation, as this provides important information on overwintering sites. Basking turtle surveys should have been conducted in April and early May when basking activity is highest. Five surveys in ideal conditions are needed in order to provide

reliable results, but only three were conducted.

Request: Conduct additional basking turtle surveys in April and early May when basking activity is greatest.

CORRECTED MARCH 14, 2017

WNH.51 Bats—Conduct Additional Acoustic Surveys

References:
i) EIS Guidelines, Part 1 sections ~~1.0,~~ 4.2; Part 2, sections 1.4, 6.1.7, 6.3.3
ii) Halton's Regional Natural Heritage System policies, as defined in ROPA 38, supported by the Region's EIA Guidelines (2009) which are endorsed in Section 141 (3)

Source: i) CN EIS App E.16 section 4.7

Rationale: Acoustic monitoring of bats was deficient because the amount of time spent surveying was too limited, resulting in inconclusive documentation. Analook software, used to identify bat calls, is inferior technology and unreliable. The significance of the timing of the calls detected appeared to have been misinterpreted and unsubstantiated, rendering the conclusion that there is 'no critical habitat' (i.e. maternity roosts) present within the acoustically studied area, unfounded.

Request: To confirm absence of Species at Risk, conduct passive monitoring over at least ten nights, in all potentially suitable locations and under acceptable weather conditions using "SonoBat" or "Kaleidoscope" bat call analysis software and vet calls manually. Unless conclusive evidence is available, apply a more conservative interpretation to the monitoring data.

WNH.52 Bats—Conduct Additional Visual Habitat Surveys

References:
i) EIS Guidelines, Part 1 sections ~~1.0,~~ 4.2; Part 2, sections 1.4, 6.1.7, 6.3.3
ii) Halton Region Environmental Impact Assessment Guidelines Appendix E; endorsed by Section 141 (3) of the ROP
iii) Natural Heritage Reference Manual Section 5.3.1

Source: i) CN EIS App E.16, section 4.4

Rationale: Maternity roosts in trees are very difficult to detect if the visual inspections are done when the trees are in leaf.

Also, not all potentially suitable bat roost habitat with the study area was surveyed, thereby rendering the results inconclusive.

Request: Surveys for candidate maternity roosts should be conducted in the spring when the leaves are not yet out on the trees. As well, please conduct surveys of habitat that may contain bats, especially the treed communities bordering and in close proximity to Indian Creek (e.g. the deciduous thicket community located just north of the intersection of Lower Base Line Road and Tremaine Road) and the cultural woodland along the main branch of Indian Creek.

WNH.53 Snakes—Redo Studies with Proper Timing and Methods

References:
i) EIS Guidelines, Part 1 sections ~~1.0,~~ 4.2; Part 2, sections 1.4, 6.1.7, 6.3.3
ii) Halton's Regional Natural Heritage System policies, as defined in ROPA 38, supported by the Region's EIA Guidelines (2009) which are endorsed in Section 141 (3)

Source: i) CN EIS App E.16, section 4.7

Rationale: Snake surveys were generally conducted too late in the season to detect Eastern Milksnake. None of the snake surveys took place in spring or fall, the appropriate times to detect the presence of snake hibernacula according to accepted protocols.

Request: Please re-do the snake surveys at the appropriate times of the year (spring and fall) as set out in

the guideline documents. Please conduct active hand searches as also specified in the guideline documents.

CORRECTED MARCH 14, 2017

WNH.54 Breeding Birds—Extend Geographical Survey Coverage

References: i) EIS Guidelines, Part 1, section ~~1.0~~ 4.2; Part 2, sections 1.4, 6.1.6, 6.3.2

ii) Halton's Regional Natural Heritage System policies, as defined in ROPA 38, supported by the Region's EIA Guidelines (2009) which are endorsed in Section 141 (3)

Source: i) CN EIS App E.16, section 4.7

Rationale: Breeding bird surveys conducted in 2014 and 2015 focused almost entirely on the southern half of the study area. As well, roadside monitoring would result in under-detection of many species due to increased background noise.

Request: Please undertake breeding bird surveys in the northern half of the study area, and ensure that coverage is not biased to roadsides.

WNH.55 Natural Heritage: Terrestrial Species and Habitat

References: i) EIS Guidelines, Part 1 ~~1,0~~ 4.2; Part 2, sections 6.1.7, 6.1.6, 6.3.2

ii) Halton Region Environmental Assessment Guidelines, endorsed by Regional Official Plan 141 (3).

iii) Significant Wildlife Habitat Technical Guide (MNR 2000) and supporting Ecoregion schedules for Ecoregion 7E

Source: i) CN EIS App E.16 section 4.5

Rationale: The Grasshopper Sparrow is a Species at Risk. It was detected in the study area within the last 5 years, in 2013. This means that this species could potentially be breeding in the area but could have been overlooked. This species also has a very high pitched song that doesn't carry very far, making it difficult to discern, especially from a closely related, but much more common species. Specific searching is needed to detect the Grasshopper Sparrow.

Request: Please conduct surveys in all areas of potentially suitable habitat within the study area to determine the presence/absence of the Grasshopper Sparrow. Note that owing to the nature of the species' call, road-side surveys are inadequate to detect it.

WNH.56 Wetland Bird Survey

References: i) EIS Guidelines, Part 1, section 4.2; Part 2, sections 6.1.6, 6.3.2

ii) Halton's Regional Natural Heritage System policies, as defined in ROPA 38, supported by the Region's EIA Guidelines (2009) which are endorsed in Section 141 (3)

iii) Significant Wildlife Habitat Technical Guide (MNR 2000) and supporting Ecoregion schedules for Ecoregion 7E

Source: i) CN EIS App E.16

Rationale: Habitat for Least Bittern (a nationally and provincially Threatened species) and other wetland species of conservation concern occurs in wetlands within the study area. Wetland species are difficult to detect and require additional surveys using playback techniques.

Request: Please conduct specific surveys of wetland birds.

Table B: Consolidated Information Requests

Ron Scheckenberger (Amec Foster Wheeler Environment & Infrastructure) *et al*.
***Water and Natural Heritage* (11 March 2017) (WNH)**

WNH.57 Monarch Survey

References:
i) EIS Guidelines, Part 1, section 4.2; Part 2, sections 6.1.7, 6.3.3
ii) Halton Region Environmental Assessment Guidelines, endorsed by Regional Official Plan 141 (3).
iii) Natural Heritage Reference Manual (2010)

Source:
iv) CN EIS App E.16, sections 4.1, 4.2

Rationale: The Monarch was designated Endangered in Canada by COSEWIC in November 2016; it has yet to be upgraded from Special Concern to Endangered on the Federal Species at Risk Act. It is known to occur in the study area so its presence should be investigated, as well as the extent of its habitat on the site.

Request: Please conduct surveys in all potentially suitable habitat within the study area.

Table B: Consolidated Information Requests

HART SOLOMON, ALI HADAYEGHI (CIMA+), *ROAD SAFETY AND TRAFFIC FLOW* (10 MARCH 2017) (T)

PLANNING HORIZON

T.1 Horizon year

References: i) EIS Guidelines Part 2 s. 2.2, 3.2.2, 6.1.10, 6.3.5 and 6.6.1
ii) Halton Brief Table D.5
iii) CTA s. 98(2)

Source: i) CN EIS, App E.17

Rationale: Appendix E.17 states that the flows of 800 trucks in and 800 trucks out will be reached by 2020, and this is considered "full operation." The impact of the proposed development may be significantly greater based on a time a number of years into the future, given background traffic growth, and the possibility of growth within the facility beyond opening day.

Request: Prepare and provide all calculations and conclusions based on a horizon year.

TRAFFIC FLOW

T.2 Seasonal Variations in goods movement

References: i) EIS Guidelines Part 2 s. 2.2, 3.2.2, 6.1.10 and 6.3.5
ii) Halton Brief Table D.5
iii) CTA s. 98(2)

Source: i) CN EIS, App E.17

Rationale: The EIS and Appendix E.17 both state that the expected daily truck volumes will be 800 in and 800 out. Freight flows are seasonal and vary considerably with consumer demand, peaking in time for the December holiday season. The 800/800 volume does not appear to account for seasonal peaking.

Request: Provide a projection of seasonal variations in truck flow in and out of the intermodal facility, including data in support.

YARD CAPACITY

T.3 Brampton Intermodal Terminal information and data

References: i) EIS Guidelines Part 2 s. 4.3.3, Part 2, s. 2.2, 3.2.2, 6.1.10, 6.3.5
ii) Halton Brief Table D.5
iii) CTA s. 98(2)

Source: i) CN EIS, App E. 17, sections 1.0

Rationale: Existing information and data regarding the Brampton Intermodal Terminal is used as the basis for the assumptions regarding truck and train volume and the use/capacity of the proposed Milton Intermodal Hub. CN should provide the information and data it is relying on as required by Section 4.3.3 of the EIS Guidelines.

Request: Please provide all data and information regarding the Brampton Intermodal Terminal in support of the assumptions regarding truck and train volumes and the capacity of the proposed Milton Intermodal. Include the size of the Brampton yard, the number of truck trips generated by that facility, and data and information forming the basis of the transfer of traffic from the Brampton Intermodal to the Milton facility.

Table B: Consolidated Information Requests

Hart Solomon, Ali Hadayeghi (CIMA+),
***Road Safety and Traffic Flow* (10 March 2017) (T)**

T.4 Yard capacity projections of truck and train trips

References:
i) EIS Guidelines Part 2, s. 2.2, 3.2.2, 6.1.10 and 6.3.5
ii) Halton Brief Table D.5
iii) CTA s. 98(2)

Source:
i) CN EIS, App E. 17, sections 1.0, 6.1

Rationale: It is important to understand the true capacity of the facility, and expected flows at the design horizon date so that mitigation can be determined in advance.

Request: Please provide yard ultimate capacity, in terms of trains and containers, and when capacity may be achieved, so an understanding of the absolute traffic can be projected along with a projection of the actual proposed truck and other user vehicular and train flows for the design horizon.

HEAVY TRUCK TRAFFIC TIME OF DAY FLOW DISTRIBUTION

T.5 Hourly flow of trucks

References:
i) EIS Guidelines Part 2, s. 2.2, 3.2.2, 6.1.10, 6.3.5, and 4.3.3
ii) Halton Brief Table D.5
iii) CTA s. 98(2)

Source:
i) CN EIS, App E. 17, sections 1.0, 6.1

Rationale: CN does not provide any foundation for its assumption that the time of arrival/departure of trucks will be the same as for the Brampton Intermodal Terminal. Using the Brampton Intermodal provides potentially misleading results if that yard is in fact near capacity.

Request:
a) Please provide the BIT hourly flow rates and provide the foundation for the assumption that the pattern of hourly truck movements at BIT is an accurate projection of the hourly flow rates of trucks in and out of the Milton facility.
b) Please provide an in-depth and accurate projection for the hourly flow rates of trucks in and out of the Milton Intermodal facility, for start-up and for the horizon year, including seasonal variations.

GEOGRAPHIC DISTRIBUTION OF HEAVY TRUCK TRIPS

T.6 Origin/destination of truck trips

References:
i) EIS Guidelines Part 2, s. 2.2, 3.2.2, 6.1.10, 6.3.5, and 4.3.3
ii) Halton Brief Table D.5
iii) CTA s. 98(2)

Source:
i) CN EIS, App E. 17, sections 3.0 to 5.0

Rationale: The foundation for the BA Group's assumptions regarding travel patterns to and from the Milton Yard is not provided.

CN should provide the information and data it is relying on as required by Section 4.3.3 of the EIS Guidelines.

Request:
a) Please provide the comprehensive Commercial Vehicle Survey undertaken by MTO at the existing BIT, including all data and results.
b) Please provide additional information on the way the origin/destination of truck trips for the proposed facility was calculated. Are those the same as the Brampton Yard, or have they been customized, taking into the account the location of the proposed Milton site relative to its customers?

Table B: Consolidated Information Requests

Hart Solomon, Ali Hadayeghi (CIMA+),
***Road Safety and Traffic Flow* (10 March 2017) (T)**

ROAD SAFETY—ADJACENT INTERSECTIONS AND ADJACENT ROADWAYS

T.7 Collision prediction for two adjacent intersections and two adjacent roadways

References:
i) EIS Guidelines part 1, s. 3.2, Part 2, s. 2.2, 6.1.10, 6.3.5, 6.4 and 6.6.1
ii) Halton Brief Table D.5
iii) CTA s. 98(2)

Source:
i) CN EIS, p. iv., sections 6.6.2.6, 10.1.2, Tables 6.5.1, 10.1 and 10.2
ii) CN EIS, App E. 17, sections 1.0 and 5.0

Rationale: Stated as being "not significant", but not quantified or compared to any standard.

Request:
a) Please provide a collision prediction for the two new proposed intersections based on detailed intersection information. Please assess the effects of the additional truck and service traffic on Tremaine and Britannia Roads.
b) Please provide data and analysis in support of the mitigation measures proposed. Please provide any additional proposed mitigation for collisions based on the expected performance of the two adjacent intersections and roadways, compared to typical intersections/roadways carrying the same flows.

ROAD SAFETY—REGION-WIDE

T.8 Expected vehicular collision occurrence overall across the Region

References:
i) EIS Guidelines part 1, s. 3.2, Part 2, s. 2.2, 6.1.10, 6.3.5, 6.4 and 6.6.1
ii) Halton Brief Table D.5
iii) CTA s. 98(2)

Source:
i) Not addressed in the CN EIS

Rationale: On a broader base, the collision effects are much smaller at individual intersections but may add up to a significant amount in total.

Request: Please provide an analysis of the collision effects across the Region as a result of traffic generated by the yard, and proposed mitigation, for the horizon year.

ROAD SAFETY—VULNERABLE ROAD USERS

T.9 Expected safety impact on cycling and walking on roads bordering the proposed facility

References:
i) EIS Guidelines part 1, s. 3.2, Part 2, s. 2.2, 6.1.10, 6.3.5, and 6.6.1
ii) Halton Brief Table D.5
iii) CTA s. 98(2)

Source:
i) Not addressed in the CN EIS

Rationale: The EIS Guidelines at section 6.3.5 require an assessment of the safety impacts on cycling and walking at the two entrance points of the facility. Given the Region's plan to upgrade facilities in the area to provide bicycle lanes and multi-use paths, safety around the west and north sides of the property for cyclists and pedestrians should be assessed.

Request: Please provide an analysis of cyclist and pedestrian safety on Tremaine Road and Britannia Road adjacent to the facility, with emphasis on the entrance intersections, accounting for the proposed Regional cycling and trail facilities.

Table B: Consolidated Information Requests

Hart Solomon, Ali Hadayeghi (CIMA+),
***Road Safety and Traffic Flow* (10 March 2017) (T)**

ROAD SAFETY—RAIL CROSSINGS

T.10 At-grade rail crossing review

References: i) EIS Guidelines part 1, s. 3.2, Part 2, s. 2.2, 3.1, 6.1.10, 6.3.5, and 6.6.1
ii) Halton Brief Table D.5
iii) CTA s. 98(2)

Source: i) Not addressed in the CN EIS

Rationale: The requirement for grade separation (underpass or overpass) for the rail crossings at Lower Base Line and Britannia Road are recognized and discussed.

However, the additional train and road traffic may raise the risk levels at other at-grade level crossings in the Region.

Request: Please provide analysis of all at-grade rail crossings impacted by the increased rail and/or truck flows, based in the horizon year.

ROAD SAFETY—HAZARDOUS GOODS

T.11 Hazardous goods movement

References: i) EIS Guidelines part 1, s. 3.2, Part 2, s. 2.2, 6.1.10, 6.3.5, 6.4 and 6.6.1
ii) Halton Brief Table D.5
iii) CTA s. 98(2)

Source: i) CN EIS, ss. 3.4.2, 6.6.2, 6.6.2.4, 6.6.2.5, 6.6.2.7

Rationale: No indication of the potential increase in risk associated with these goods is defined, nor is any mitigation discussed.

Request: Please provide an assessment of the Region-wide risk of incidents involving hazardous goods, and propose mitigation measures.

ROAD OPERATIONS—TRUCK VOLUMES

T.12 Increase in truck traffic

References: i) EIS Guidelines Part 2, s. 3.2.2, 6.1.10 and 6.3.5
ii) Halton Brief Table D.5
iii) CTA s. 98(2)

Source: i) CN EIS, App E. 17, Tables 2 through 9

Rationale: Tables 2 through 9 in Appendix E. 17 are misleading as they do not correctly show the change in volumes of heavy vehicles, nor are they based on the horizon year.

Request: Please provide calculations regarding the increase in truck traffic as a result of the Milton Facility, considering horizon year and appropriate (stated) truck equivalency factors.

ROAD OPERATIONS—CONGESTION, ADJACENT ROADS

T.13 Expected congestion increases (adjacent roads and intersections)

References: i) EIS Guidelines Part 2, s. 3.2.2, 6.1.10,6.3.5 and 6.4
ii) Halton Brief Table D.5
iii) CTA s. 98(2)

Table B: Consolidated Information Requests

Hart Solomon, Ali Hadayeghi (CIMA+),
***Road Safety and Traffic Flow* (10 March 2017) (T)**

Source: i) CN EIS, p. 28

ii) CN EIS, App E. 17, sections 6.2, 6.3, and 7.0

Rationale: An assessment of the new intersections to be built adjacent to the site as well as the boundary roadways should be conducted for the horizon year. Mitigation actions may follow from this assessment.

Request: a) Please provide an analysis of the two new intersections and the two adjacent roadways in terms of their level of service, based on the horizon year, to determine level of service and delay, and whether there are any flow or queuing effects beyond the intersections. Use passenger car equivalents for truck volumes. Capacity and sight-distance calculations should be performed for the adjacent signalized and stop-controlled intersections.

b) Please provide a clear statement of the mitigation measures expected to be required for the horizon year, along with details, data and analysis regarding their predicted effectiveness in addressing congestion.

ROAD OPERATIONS—REGION-WIDE INTERSECTIONS

T.14 Expected congestion increases (area-wide roads and intersections)

References: i) EIS Guidelines Part 2, s. 3.2.2, 6.1.10, 6.3.5 and 6.4

ii) Halton Brief Table D.5

iii) CTA s. 98(2)

Source: i) CN EIS, p. 28

ii) App E. 17, sections 6.2, 6.3, and 7.0

Rationale: No assessment of the socio-economic impacts of the additional truck traffic generated by the proposed facility is provided.

Request: Please provide an analysis of major Regional intersections in terms of their level of service, based on horizon year, and using truck volumes expanded to passenger car equivalents. Please provide proposed mitigation measures.

ROAD OPERATIONS—REDUCED LOAD ROADWAYS

T.15 Reduced load roadway requirements

References: i) EIS Guidelines Part 2, s. 3.2.2, 6.1.10 and 6.3.5

ii) Halton Brief Table D.5

iii) CTA s. 98(2)

Source: i) CN EIS, App E. 17

Rationale: Contingency and construction plans.

Request: Please provide an assessment in the event that all roads in the area have not been reconstructed and that load restrictions are in place during spring thaw. Please provide contingency plans and assessment of construction traffic management during reduced load periods.

Table B: Consolidated Information Requests

ALVARO ALMUINA (ELLSO CONSULTING INC.), *TRANSPORTATION & MUNICIPAL FINANCE* (10 MARCH 2017) (ET)

TRANSPORTATION AND MUNICIPAL FINANCE

ET.1 Details about Transportation Infrastructure to support the project

References:
i) EIS Guidelines Part 1 s. 3.2, Part 2, s. 3.2.2, 6.1.10, 6.3.5 and 6.4
ii) Halton Brief Table D.5
iii) Halton Brief Table D.8
iv) ROP sections 77(12) and 210(7)(d)

Source:
i) CN EIS section 2.2.3.3 and Table 4.2
ii) CN EIS App E. 17

Rationale: In accordance with the Region's Traffic Impact Study Guidelines, an analysis of the required road infrastructure to support a proposed development is to be analysed and associated costing to be identified. This was not undertaken by CN.

Request: Please provide detailed information about the transportation infrastructure required to support CN's development, the cost to implement this infrastructure and the funding source, based on the undertaking of a transportation impact study in accordance with the Region's guidelines.

ET.2 Significance and Mitigation Effects on Municipal Finance

References:
i) EIS Guidelines Part 1 s. 3.2, Part 2, s. 3.2.2, 6.1.10, 6.3.5 and 6.4
ii) Halton Brief Table D.5
iii) Halton Brief Table D.8
iv) ROP sections 77(12) and 210(7)(d)

Source:
i) CN EIS section 2.2.3.3 and Table 4.2
ii) CN EIS App E. 17

Rationale: To assess the financial impact on the required infrastructure, the costs of this infrastructure is to be compared against the existing financial plan per the Region's Roads Capital Plan.

Request: Please provide an assessment of the significance and mitigation effects on Municipal Finance the CN development will have based on the undertaking of a transportation impact study in accordance with the Region's guidelines, considering Halton's Roads Capital Plan Budget and Development Charges By-Law.

TRAFFIC ASSESSMENT

ET.3 Complete Traffic Assessment

References:
i) EIS Guidelines Part 2, s. 3.2, 3.2.2, 6.1.10, and 6.3.5
ii) Halton Brief Table D.5
iii) (ROP Sections 173(1.1) and 173(22))

Source:
i) CN EIS App E. 17

Rationale: Professional judgement was used in lieu of available guidelines.

The EIS did not follow the Region's Guidelines for the undertaking of a Traffic Impact Study and there was insufficient analysis conducted to conclude whether there are significant impacts.

A traffic impact study needs to be undertaken in accordance with the Region's Traffic Impact Study Guidelines to define the traffic impacts of the proposed development.

Request: Please complete the following:

1) undertake a traffic assessment, for the proposed development, in accordance with

Halton Region's Transportation Impact Study Guidelines (2).

2) address the following in its methodology:
3) Non-CN Truck operations. How are Non-CN trucks going to be controlled to follow the operations plan and routing requirements established by CN for its trucks
4) Traffic control and traffic improvements in specific terms
5) Preliminary design to present the proposed measures required to support the proposed development

ET.4 Provide a Schedule for all project activities

References: i) Final EIS Guidelines

ii) 3.2 Project Activities, pg. 15, para. 5

Source: i) Not included in CN EIS

Rationale: The EIS Guidelines state that the EIS will include a schedule including time of year, frequency, and duration for all project activities.

This information is fundamental to the undertaking of a traffic impact study. The material reviewed did not have schedules for key traffic impact study data, essential for analysis including:

1) anticipated daily, monthly and seasonal schedules for rail transport;
2) anticipated quantities of transported materials by type;
3) number of employees, transportation of employees, work schedule, lodging requirement on site and off site; and
4) number of employees and transportation.

Request: Please provide, per the EIS Guidelines:

1) Number of employees and transportation of employees
2) On site logistics and traffic plan (on and off loading rates, site capacity for trucks, anticipated daily volumes)
3) Anticipated daily, monthly and seasonal schedules for rail transport
4) Anticipated quantifies of transported materials by type
5) Number of employees, transportation of employees, work schedule, lodging requirement on site and off site

Table B: Consolidated Information Requests

DONALD R. DAVIS, CHRISTIAN B. LUGINBUHL (DARK SKY PARTNERS, LLC), *LIGHT IMPACTS* (9 MARCH 2017) (RL)

SELECTION OF ASSESSMENT AREA: LAA AND RAA BOUNDARIES

RL.1 Re-evaluate LAA and RAA Boundaries

References: i) EIS Guidelines, s. 6.1.1, 6.2.1

ii) Halton Brief, Table D.7, Night-Time Light on Residential Receptors

Source: i) CN EIS, App E.8, Section 3.2

Rationale: Definition of LAA and RAA at 1 km beyond PDA is arbitrary and not based on lighting impacts. An assessment of quantitative lighting impacts (such as line-of-sight light fixture visibility or predicted glare level or sky glow impact, or all three) should underlie the determination of the LAA and RAA.

Request: Please provide a re-evaluation of LAA and RAA boundaries based on estimations of the geographical extent of significant lighting impacts. We suggest a quantitative estimation of total all-sky or zenith sky glow increase of 10% above current (measured) conditions, arising from Project lighting, be used to set the LAA, and that the RAA be extended to all areas from which the proposed Project lighting fixtures could be directly visible.

ASSESSMENT OF LIGHT TRESPASS AND GLARE

RL.2 Characterization of Project Area

References: i) EIS Guidelines, s. 6.1.1, 6.2.1

ii) Halton Brief, Table D.7, Night-Time Light on Residential Receptors

Source: i) CN EIS, App E.8, Section 4.1

Rationale: Though the region is affected by significant sky glow arising primarily from distant light sources in the Toronto region, the local environment near the Project is much darker than would be indicated by the "suburban" "medium district brightness" classification, and if continued to be developed for residential uses can be expected to stay so. The Project area may more appropriately be characterized as "rural" and "low district brightness," or CIE E2.

Request: Please expand rationale and assessment to include assessment of impacts relative to CIE E2, in addition to E3 assessment already performed.

SKY GLOW LEVELS

RL.3 Assessment of Baseline Sky Glow over Entire Sky

References: i) EIS Guidelines, s. 6.1.1, 6.2.1

ii) Halton Brief, Table D.7, Night-Time Light on Residential Receptors

Source: i) CN EIS, App E.8, Section 4.2.1

Rationale: The Unihedron Sky Quality Meter with lens ("SQM-L") is not adequate for total sky assessment. An evaluation of the entire night sky is needed to determine current sky glow levels, not just measurements in a limited portion of the sky.

Request: Please execute measures documenting sky brightness of the whole sky, from zenith to horizon.

GLARE SOURCES

RL.4 Measure Current Glare Conditions

References: i) EIS Guidelines, s. 6.1.1, 6.2.1

ii) Halton Brief, Table D.7, Night-Time Light on Residential Receptors

Source: i) CN EIS, s. 4.2.1

Table B: Consolidated Information Requests

Donald R. Davis, Christian B. Luginbuhl (Dark Sky Partners, LLC),
***Light Impacts* (9 March 2017) (RL)**

Rationale: Though photographs are qualitatively useful to document baseline, specific exposure/sensitivity information must be recorded, as well as potentially High Dynamic Range (HDR) techniques employed to quantify glare.

Request: Please document pertinent camera exposure/sensitivity information for photographs; employ High Dynamic Range (HDR) techniques to quantify current glare conditions.

LIGHT TRESPASS (ILLUMINANCE)

RL.5 Use All-Sky Brightness Measures To Evaluate Baseline Light Trespass

References: i) EIS Guidelines, s. 6.1.1, 6.2.1
ii) Halton Brief, Table D.7, Night-Time Light on Residential Receptors

Source: i) CN EIS, s. 5.1.1

Rationale: Measurement of 0.00 lux is not the same as "no incident light is shining within the area." The meter employed is insufficiently sensitive to measure the impacts, having been designed for use in different circumstances.

Request: Please measure horizontal illuminance (light trespass) through all-sky sky brightness measurements. The measurements requested under IR.6 will provide these data.

DESIGN CRITERIA AND LIGHTING PLANS

RL.6 Design Criteria and Lighting Plans

References: i) EIS Guidelines, s. 6.1.1, 6.2.1
ii) Halton Brief, Table D.7, Night-Time Light on Residential Receptors

Source: i) CN EIS, App E.8, Section 4.4 Predictive Modeling

Rationale: This information is needed to assess the impact of the project lighting on future light trespass, glare and sky glow, and the potential to mitigate these impacts through changes in the lighting design.

Request: Please provide design criteria and lighting plan details including position coordinates of each individual fixture, lamp type, and manufacturer cut sheets, needed to evaluate the proposed lighting from the perspective of environmental protection. Vehicular movement patterns must be evaluated to assess potential off-site impacts of headlights.

ROADWAY LIGHTING

RL.7 Design Criteria for Roadway Lighting

References: i) EIS Guidelines
ii) Halton Brief, Table D.7, Night-Time Light on Residential Receptors

Source: i) CN EIS, App E.8, Section 3.2 Local Assessment Area

Rationale: This information is needed to assess the impact of the Project lighting on future sky glow, and potential changes to the reference (background) condition.

Request: Please provide design criteria for roadway lighting in the Region Official Plan and the locations of planned future lighting.

Table B: Consolidated Information Requests

Donald R. Davis, Christian B. Luginbuhl (Dark Sky Partners, LLC),
***Light Impacts* (9 March 2017) (RL)**

SKY GLOW

RL.8 Future Sky Glow Assessment

References: i) EIS Guidelines, s. 6.1.1, 6.2.1
ii) Halton Brief, Table D.7, Night-Time Light on Residential Receptors

Source: i) CN EIS, s. 5.2.2

Rationale: Assessment is missing. Assessment should include at a minimum: change to sky glow over entire sky from Project lighting.

Request: Please include at a minimum: change to sky glow over entire sky from Project lighting. This assessment should include ground reflection (both summer and winter conditions) together with the berm mitigation.

GLARE

RL.9 Future Glare Assessment

References: i) EIS Guidelines, s. 6.1.1, 6.2.1
ii) Halton Brief, Table D.7, Night-Time Light on Residential Receptors

Source: i) CN EIS, s. 4.1.4.1

Rationale: A glare assessment is a required in order to understand potential impacts.

Request: Please provide an assessment of the predicted future glare resulting from Project lighting. This assessment should include number and brightness of directly visible light sources due to Project lighting, ground reflectance (both summer and winter conditions) together with the berm mitigation.

PREDICTED TRESPASS (ILLUMINANCE)

RL.10 Predicted Light Trespass

References: i) EIS Guidelines, s. 6.1.1, 6.2.1
ii) Halton Brief, Table D.7, Night-Time Light on Residential Receptors

Source: i) CN EIS, s. 5.2.1

Rationale: Predicted light trespass is compared only to CIE maximum recommended limits.

Request: Please compare predicted illuminance to existing condition as well as CIE maximum. This assessment should include ground reflectance (both summer and winter conditions) together with the berm mitigation.

SKY GLOW

RL.11 Spectral Impacts on Sky Glow

References: i) EIS Guidelines, s. 6.1.1, 6.2.1
ii) Halton Brief, Table D.7, Night-Time Light on Residential Receptors

Source: i) CN EIS, s. 4.1.4.1

Rationale: Low levels of illumination and sky glow indicate an assessment of human scotopic impacts should be assessed. All measures/predictions in the current analysis have used only standard luminance/illuminance (i.e. photopic) responses.

Request: Please assess sky glow brightness arising from proposed Project lighting using both photopic and

scotopic metrics.

MITIGATION

RL.12 Mitigation Strategies

References: i) EIS Guidelines, s.6.4

ii) Halton Brief, Table D.7, Night-Time Light on Residential Receptors

Source: i) CN EIS, s.6.4

Rationale: Mitigation strategies are not quantitatively assessed. The proposed Project lighting plan should be reviewed to minimize environmental impact consistent with the lighting design criteria. The effectiveness of berms should be explicitly evaluated.

Request: Please provide quantitatively assessed mitigation strategies for the Project lighting plan.

Table B: Consolidated Information Requests

SCOTT PENTON, MARCUS LI (NOVUS ENVIRONMENTAL INC.), *NOISE AND VIBRATION* (10 MARCH 2017) (RNV)

HEALTHY COMMUNITIES, AND NOISE ON RESIDENTIAL SENSITIVE LAND USES

RNV.1 Municipal and Regional Land Use Planning

References: i) EIS Guidelines 6.2.1, 6.3.4 and 6.3.5
ii) Halton Brief, table D.7

Source: i) CN EIS 6.4.1

Rationale: The EIS indicates that land use planning north of Britannia Road was done with knowledge of the rail related employment uses. This has not been properly supported. Further information is needed to understand this statement.

Request: An assessment of the effects of the CN Logistics Hub on the existing municipal and regional land use planning is required.

RNV.2 Monitoring Locations

References: i) EIS Guidelines 6.2.1, 6.3.4 and 6.3.5
ii) Halton Brief, table D.7

Source: i) CN EIS 6.4.1

Rationale: The 10 monitoring locations are not considered to be representative of the distances covered by the receptor groupings. This is based on the different sound environments and varying distances from the ambient noise sources (i.e. roadways and railways). If the ambient measurement approach will be used instead of the preferred approach of road and rail traffic noise modelling, measurements at additional representative receptors should be taken.

Request: In order to provide adequate data on the spatial variation of noise over the study area, measurements should be conducted at new locations, in addition to the previous 10 locations considered. Alternatively, or in conjunction with additional measurements, road and rail traffic noise modelling should be used.

BACKGROUND AMBIENT NOISE LEVELS

RNV.3 Seasonal Effects

References: i) EIS Guidelines Section 6.1.1, 6.2.1, 6.3.4, 6.3.5
ii) Halton Brief, table D.7

Source: i) CN EIS App E.9

Rationale: The sounds of nature during the summer months (e.g. insects, birds, etc.) are likely to affect the measurements and result in higher than normal ambient sound levels. This would result in overestimation of background sound levels, and in turn a potential underestimation of the potential impact of the proposed facility.

Request: Additional ambient baseline noise measurements are required during the spring and/or fall seasons, with minimal noise from birds/insects.

RNV.4 Weather Effects

References: i) EIS Guidelines Section 6.1.1, 6.2.1, 6.3.4, 6.3.5
ii) Halton Brief, table D.7

Source: i) CN EIS App E.9

Rationale: Validation of long-term noise measurements requires additional meteorological data. Wind data

alone is insufficient, as the inclusion of adverse weather conditions would result in artificially high ambient levels. This would result in an underestimation of facility impacts.

Request: Local meteorological weather data is required to properly validate the ambient noise measurements completed. In the absence of existing local weather data, additional ambient baseline noise measurements are required with a local meteorological station.

RNV.5 Distance Effects for Roadways and Railways

References: i) EIS Guidelines Section 6.1.1, 6.2.1, 6.3.4, 6.3.5
ii) Halton Brief, table D.7

Source: i) CN EIS App E.9

Rationale: The varying distance of the receptors from the roadways and railways should be accounted for in determining ambient sound levels. Otherwise there is the significant potential for over- or under-estimation of background sound levels.

Request: Background sound levels need to be adjusted at the points of reception to account for the change in distance from the roadways and railways.

RNV.6 Effects of Self Screening

References: i) EIS Guidelines Section 6.1.1, 6.2.1, 6.3.4, 6.3.5
ii) Halton Brief, table D.7

Source: i) CN EIS App E.9

Rationale: In the absence of self-screening from the receptor building, ambient levels are potentially higher than what is actually experienced. This would ultimately result in an under- prediction of noise impacts.

Request: Background ambient sound levels should be adjusted to account for the screening from the receptor building itself.

OPERATIONAL NOISE IMPACTS

RNV.7 Noise Assessment Criteria

References: i) EIS Guidelines Section 6.2.1, 6.3.4, 6.3.5
ii) Halton Brief, table D.7

Source: i) CN EIS App E.9

Rationale: The HC Draft guidelines employed by CN require an adjustment of ambient sound levels recorded in rural areas by adding 10 decibels. This is required to prevent the underprediction of facility impacts.

Request: In accordance with the HC Draft guidelines, please adjust all ambient sound levels by adding 10 decibels.

RNV.8 Points of Reception—Residences on CN Lands

References: i) EIS Guidelines Section 6.2.1, 6.3.4, 6.3.5
ii) Halton Brief, table D.7

Source: i) CN EIS App E.9

Rationale: Residences on CN lands are located closer to the noise sources at issue. By excluding these as points of reception, the resulting predicted noise impacts will not represent potential worst case impacts from the proposed facility.

These additional PORs at residences in CN lands are also important for the operational vibration measurements.

As well, for the construction vibration assessments, there are two proposed grade separations which will involve extended period of construction and therefore vibration. It will be particularly important to study existing residences located close to those grade separations.

Request: Please include additional PORs at existing residences located on CN-owned lands in the analysis.

RNV.9 Points of Reception—Vacant Lots

References: i) EIS Guidelines Section 6.2.1, 6.3.4, 6.3.5

ii) Halton Brief, table D.7

Source: i) CN EIS App E.9

Rationale: The residentially-zoned vacant lots are potential sites for future residences. These should therefore be considered in the analysis as PORs.

Request: Please include additional PORs at residentially-zoned vacant lots in the analysis.

RNV.10 Points of Reception—Group 2 and 3

References: i) EIS Guidelines Section 6.2.1, 6.3.4, 6.3.5

ii) Halton Brief, table D.7

Source: i) CN EIS App E.9

Rationale: A designation of only nine PORS for the large area in consideration is representative of the entire area. Further PORs should therefore be considered, particularly within 300 m of the facility, which is the minimum required setback for such a facility according to MOECC Guideline D-6.

Request: Additional receptors should be included for the approved Town of Milton Boyne Secondary Plan area, particularly within 300 m of the proposed facility.

RNV.11 Heights of PORs

References: i) EIS Guidelines Section 6.2.1, 6.3.4, 6.3.5

ii) Halton Brief, table D.7

Source: i) CN EIS App E.9

Rationale: The receptor heights for PORs must reflect residential heights approved for the relevant areas. Noise reception is highly dependent on receptor height, particularly when mitigation measures are proposed.

Request: Receptor heights used in the analysis should be included for all PORs. For existing residences (group 1), worst case second storey (4.5 m) or third-storey (7.5 m) bedroom window heights need to be assessed, as applicable.

For zoned-for-future-use receptors in Major Node areas in the Town of Milton Boyne Secondary Plan (groups 2 and 3), a minimum receptor height of three storeys (7.5 m) should be examined.

Table B: Consolidated Information Requests

Scott Penton, Marcus Li (Novus Environmental Inc.),
***Noise and Vibration* (10 March 2017) (RNV)**

RNV.12 Separation of Transportation and Stationary Noise

References: i) EIS Guidelines Section 6.2.1, 6.3.4, 6.3.5
ii) Halton Brief, table D.7

Source: i) CN EIS App E.9

Rationale: Transportation and Stationary assessments are typically separated and assessed against different criteria. The Transportation noise (i.e., twinning of the railway track/increase of railway traffic volume) needs to be assessed separately from the Facility's Stationary noise.

Request: The assessment of operational noise impacts needs to be separated into two components: an assessment of the twinning of the main line/increase in railway traffic and truck traffic on the haul routes; and an assessment of the intermodal facility. The assessment of the main line twinning can be performed against HC and FTA noise guidelines, as well as considering change from existing conditions, in a manner similar to that conducted in EIS Volume E.10. An assessment of changes in Leq Day and Leq Night sound levels must also be provided.

RNV.13 Noise Assessment Guidelines for Stationary Noise

References: i) EIS Guidelines Section 6.2.1, 6.3.4, 6.3.5
ii) Halton Brief, table D.7

Source: i) CN EIS App E.9

Rationale: The FTA and HC guidelines adopted in the assessment do not meet the requirements of the Canadian Transportation Agency (CTA) and appear to under-predict the potential for noise impacts. In addition, it appears that the NPC300 guidelines, Town of Milton Noise By-law and RAC/FCM Proximity Guidelines are applicable and therefore should have been considered in the assessment.

Request:

a) An update to the EIS should include a consideration of:
   1) CTA requirements for Intermodal Facilities,
   2) NPC-300 for stationary sources,
   3) the Town of Milton Noise By-law, and
   4) the RAC/FCM Proximity Guidelines

b) The updated EIS should include:
   1) Predictions of hourly sound levels from stationary noise sources (Leq (1 hr))
   2) The worst-case hourly Leq sound levels from stationary noise sources (Continuous Noise)
   3) An assessment of the tonality of noise sources
   4) An assessment of Impulsive sound levels, using Logarithmic Mean Impulse Sound Level for the analysis
   5) Comparison of predicted sound levels versus guidelines based on prevailing ambient background sound levels

RNV.14 Impulsive Noise

References: i) EIS Guidelines Section 6.2.1, 6.3.4, 6.3.5
ii) Halton Brief, table D.7

Source: i) CN EIS App E.9

Rationale: The CTA and ISO 1996-1 guidelines require an adjustment of projected sound levels for rail noises

to be adjusted by adding 12 decibels. This is required to prevent the under-prediction of facility impacts.

Request: Please adjust all projected impulsive sound levels for railway noises by adding 12 decibels.

RNV.15 Noise from Compressors

References: i) EIS Guidelines Section 6.2.1, 6.3.4, 6.3.5
ii) Halton Brief, table D.7

Source: i) CN EIS App E.9

Rationale: Additional information on sound power noise emission levels used in the analysis must be provided to confirm noise modelling was completed appropriately.

Request: Please include noise from compressors in the analysis of operational noise. If CN is taking the position that compressor noise will not be significant, please provide the rationale.

RNV.16 Train Shunting

References: i) EIS Guidelines Section 6.2.1, 6.3.4, 6.3.5
ii) Halton Brief, table D.7

Source: i) CN EIS App E.9

Rationale: Additional information on sound power noise emission levels used in the analysis must be provided to confirm noise modelling was completed appropriately.

Request: Please explain why lower-than typical noise emissions levels were used in the analysis for train shunting (103 dB instead of 111 dB).

RNV.17 Back Up Beepers

References: i) EIS Guidelines Section 6.2.1, 6.3.4, 6.3.5
ii) Halton Brief, table D.7

Source: i) CN EIS App E.9

Rationale: Additional information on sound power noise emission levels used in the analysis must be provided to confirm noise modelling was completed appropriately.

Request: Please provide a discussion on the effect of backup beepers and their effect on potential noise disturbance.

RNV.18 Wheel Squeal

References: i) EIS Guidelines Section 6.2.1, 6.3.4, 6.3.5
ii) Halton Brief, table D.7

Source: i) CN EIS App E.9

Rationale: Additional information on sound power noise emission levels used in the analysis must be provided to confirm noise modelling was completed appropriately.

Request: Please provide additional information on how wheel squeal was included in the analysis (i.e. what does “moderate wheel squeal” mean?) and identify whether the appropriate tonal penalty of +5 dB was also included.

Table B: Consolidated Information Requests

Scott Penton, Marcus Li (Novus Environmental Inc.),
***Noise and Vibration* (10 March 2017) (RNV)**

RNV.19 Idling Locomotives

References: i) EIS Guidelines Section 6.2.1, 6.3.4, 6.3.5
ii) Halton Brief, table D.7

Source: i) CN EIS App E.10

Rationale: Additional information on sound power noise emission levels used in the analysis must be provided to confirm noise modelling was completed appropriately.

Request: a) Please explain why lower-than typical sound power noise emission levels were used in the analysis for several significant sources, such as idling locomotives.

b) As well, please explain why the number and location of idling locomotives used in the analysis does not appear to be consistent with a predictable worst-case impact assessment. For example, in the information provided for land-use planning assessments, CN typically specifies that trains contain 4 locomotives rather than 3.

RNV.20 Trucks and Reefers

References: i) EIS Guidelines Section 6.2.1, 6.3.4, 6.3.5
ii) Halton Brief, table D.7

Source: i) CN EIS App E.10

Rationale: Additional information on sound power noise emission levels used in the analysis must be provided to confirm noise modelling was completed appropriately.

Request: The EIS is unclear on how the numbers of idling trucks and refrigeration units were modelled. Please provide additional information.

RNV.21 Engine Brakes

References: i) EIS Guidelines Section 6.2.1, 6.3.4, 6.3.5
ii) Halton Brief, table D.7

Source: i) CN EIS App E.10

Rationale: Additional information on sound power noise emission levels used in the analysis must be provided to confirm noise modelling was completed appropriately.

Request: Please provide a discussion on the effect of engine brakes and their effect on potential noise disturbance, as well as proposing mitigation measures to reduce their impact.

RNV.22 Modelling parameters

References: i) EIS Guidelines Section 6.2.1, 6.3.4, 6.3.5
ii) Halton Brief, table D.7

Source: i) CN EIS App E.10

Rationale: This information is needed so that the noise modelling can be assessed.

Request: Please provide specific modelling information and parameters that have not been provided in the EIS: terrain effects, ground absorption, reflections, meteorological conditions (temperature and relative humidity), and noise barrier settings.

Table B: Consolidated Information Requests

Scott Penton, Marcus Li (Novus Environmental Inc.),
***Noise and Vibration* (10 March 2017) (RNV)**

RNV.23 Further information and documentation on noise modelling

References: i) EIS Guidelines Section 6.2.1, 6.3.4, 6.3.5
ii) Halton Brief, table D.7

Source: i) CN EIS App E.10

Rationale: Additional information on sound power noise emission levels used in the analysis must be provided to confirm noise modelling was completed appropriately

Request: Please provide information on the "model calibration" which is referenced in EIS Appendix E.10. Explain how were the modelling predictions were adjusted, as well as providing the documentation set out below.

1) Please provide the resulting updated Cadna/A computer noise models used in the assessments
2) Please provide the overall and 1/1-octave sound power data used in the analysis for each of the modelled source locations shown in EIS Appendix E.10.
3) Please provide copies of the calibration certificates for all measurement equipment used for ambient background noise and vibration measurements.
4) For the measurements of equipment which were conducted at the Montreal Hub, please provide copies of the raw measurement data, calibration certificates, and all sound pressure/intensity to sound power calculations.

RNV.24 Noise Sources Deemed Insignificant

References: i) EIS Guidelines Section 6.2.1, 6.3.4, 6.3.5
ii) Halton Brief, table D.7

Source: i) CN EIS App E.10

Rationale: This is needed so that the sufficiency of the noise modelling can be considered.

Request: A list of insignificant sources should be included.

RNV.25 Haul Route Noise Assessment

References: i) EIS Guidelines Section 6.2.1, 6.3.4, 6.3.5
ii) Halton Brief, table D.7

Source: i) CN EIS App E.10

Rationale: Addition of the 800 facility trucks daily has the potential to increase noise levels along the off-site haul routes for the Facility. An assessment of environmental change is required.

Request: An assessment of potential impacts from off-site haul routes should be undertaken. The MOECC Noise Guidelines for Landfill Sites, which deal with off-site haul routes, may be used as being representative of what is generally considered to be acceptable.

OPERATIONAL VIBRATION IMPACTS

RNV.26 Operational Vibration Criteria

References: i) EIS Guidelines Section 6.3.1, 6.3.5
ii) Halton Brief, table D.7

Source: i) CN EIS App E.18

Table B: Consolidated Information Requests

Scott Penton, Marcus Li (Novus Environmental Inc.),
***Noise and Vibration* (10 March 2017) (RNV)**

Rationale: In assessing operational vibration impacts, the EIS Appendix E.18 has adopted U.S. Federal Transit Administration (FTA) and ISO 2631-2 guidelines. CN's own guidelines for vibration impacts on new residential and commercial developments should also be discussed.

Request: Include reference to CN's guidelines for new residential and commercial developments adjacent to railway operations.

RNV.27 Operational Vibration Impact Assessment

References: i) EIS Guidelines Section 6.3.1, 6.3.5
ii) Halton Brief, table D.7

Source: i) CN EIS App E.18

Rationale: Vibration propagation through soil is highly dependent on the type of soil. Given the size of the site, the four different measurement locations are not expected to be representative of the entire site.

Request: Conduct additional vibration measurements to establish existing conditions along the railway corridor. The focus should be receptors at the north end of the project near existing residences, and within the Boyne Subdivision area.

OPERATIONAL NOISE IMPACTS

RNV.28 Operational Noise Mitigation Measures

References: i) EIS Guidelines Section 6.2.1, 6.3.4, 6.3.5
ii) Halton Brief, table D.7

Source: i) CN EIS App E.10

Rationale: As the operational noise impact assessment was considered to have numerous insufficiencies, the effectiveness of the noise mitigation measures could not be determined.

Request: A re-assessment of noise mitigation measures is required, following a re-analysis of the operational noise.

CONSTRUCTION NOISE IMPACTS

RNV.29 Application of L_{dn} metrics in Construction Noise Assessment

References: i) EIS Guidelines Section 6.2.1, 6.3.4, 6.3.5
ii) Halton Brief, table D.7

Source: i) CN EIS App E.10

Rationale: CN applies the FTA criteria for facilities and transitways, as well as the HC Draft Guidelines to assess construction noise using L_{dn} sound levels. Assessment of construction noise impacts using the L_{dn} criteria is considered inappropriate, given the construction activities are typically during daytime hours only. This would result in an under-estimation of actual impacts.

Request: An update to the assessment is should be provided, based on separate daytime and night-time impacts (L_{eq} Day and L_{eq} Night values).

RNV.30 Town of Milton Noise By-law

References: i) EIS Guidelines Section 6.2.1, 6.3.4, 6.3.5

ii) Halton Brief, table D.7

Source: i) CN EIS App E.10

Rationale: The Town of Milton Noise By-Law appears applicable, as the proposed project is located within this jurisdiction.

Request: A discussion of any restrictions on construction activities due to the Town of Milton Noise By-law, should be completed.

RNV.31 MOECC NPC-115 Noise Guidelines

References: i) EIS Guidelines Section 6.2.1, 6.3.4, 6.3.5

ii) Halton Brief, table D.7

Source: i) CN EIS App E.10

Rationale: The MOECC NPC-115 guideline appears to be applicable to the proposed project, and should be considered in the assessment.

Request: A discussion of whether the planned construction equipment meets the standards set out in NPC-115 should be included, as well as a commitment to measure construction equipment noise emission levels should noise complaints occur.

RNV.32 Adjustments for Impulsive noises during construction

References: i) EIS Guidelines Section 6.2.1, 6.3.4, 6.3.5

ii) Halton Brief, table D.7

Source: i) CN EIS App E.10

Rationale: Adjustments in the modelling for impulsive events help to reduce the likelihood that potential noise effects will be underestimated.

Request: The application of adjustments for impulsive noises during construction should be performed. In particular, high energy impulsive noises such as tailgate slams should be included in the modelling. Per ISO 1996-1, appropriate adjustments for high energy impulsive noise impacts should be included (+12 dB).

RNV.33 Construction Noise Modelling Noise Emissions

References: i) EIS Guidelines Section 6.2.1, 6.3.4, 6.3.5

ii) Halton Brief, table D.7

Source: i) CN EIS App E.10

Rationale: Additional information on sound power noise emission levels used in the analysis must be provided to confirm noise modelling was completed appropriately.

Request: The sound power noise emission level of several noise sources were identified as being lower than those typically used. This includes, but are not limited to Rock Trucks, Pneumatic Delivery of Cement Powder, and HDD operations. The Construction Noise Assessment should be updated with more typical sound levels for these sources.

RNV.34 Construction Noise Modelling—Noise Source Locations

References: i) EIS Guidelines Section 6.2.1, 6.3.4, 6.3.5

ii) Halton Brief, table D.7

Source: i) CN EIS App E.10

Rationale: It is not appropriate to treat construction noise as evenly spread out over the entire site. It is unlikely that any equipment during construction will be active over the entire site on any given day. Instead, construction work tends to be focused on particular locations on the site. Therefore, adjustments should be done for the modelling to reflect this. Spreading out the noise over a large surface area will underestimate the impact.

Request:
a) For the majority of sources, the construction noise assessment appears to be model the sources as a single large area source spread over the entire site, with the Cement Plant as a the only fixed point source.
b) The construction noise impacts should be updated with localized concentrations of noise sources to reflect the progression of major construction activities, and to provide a predictable worst-case assessment at off-site receptors.

RNV.35 Construction Noise Modelling—Fixed Construction Sites

References: i) EIS Guidelines Section 6.2.1, 6.3.4, 6.3.5
ii) Halton Brief, table D.7

Source: i) CN EIS App E.10

Rationale: Such activities should be treated as distinct noise sources from the general construction activities, as they are focused on a particular spot in the site for extended periods of time.

Request: Construction activities considered to be fixed for extended periods of time should be assessed as a distinct set of noise sources. This includes the two (2) grade separations, and the pipeline relocation.

RNV.36 Construction Noise Modelling—Tailgate Slams

References: i) EIS Guidelines Section 6.2.1, 6.3.4, 6.3.5
ii) Halton Brief, table D.7

Source: i) CN EIS App E.10

Rationale: Tailgate slams have a high sound power level, frequent occurrence, and will occur over the majority of the site during construction.

Request: Tailgate slams are anticipated impulsive noise sources during gravel deliveries, and any other on-site activities with truck unloading. The Construction assessment is required to include tailgate slams, since continuous activity from trucks is anticipated during all phases of construction.

CONSTRUCTION VIBRATION IMPACTS

RNV.37 Construction Vibration Criteria

References: i) EIS Guidelines Section 6.2.1, 6.3.1, 6.3.4, 6.3.5
ii) Halton Brief, table D.7

Source: i) CN EIS App E.18

Rationale: In assessing operational vibration impacts, the EIS Appendix E.18 has adopted U.S. Federal Transit Administration (FTA) guidelines for annoyance at residential receptors. Additional guidelines and assessments for structural damage should be included, as well as damage to fish and fish habitat.

Request:
a) The construction vibration assessment should be extended to also consider the potential for damage to structures, including structures other than residences, and fish and fish habitat.
b) Ontario OPSS 120 or other damage-based criteria should be considered.
c) In addition, the Department of Fisheries and Oceans (DFO) Guidelines for the Use of Explosives In Or Near Canadian Fisheries Waters could be considered.

RNV.38 Construction Vibration Impact Assessment

References:
i) EIS Guidelines Section 6.2.1, 6.3.1, 6.3.4, 6.3.5
ii) Halton Brief, table D.7

Source:
i) CN EIS App E.18

Rationale: In assessing operational vibration impacts, the EIS Appendix E.18 has adopted U.S. Federal Transit Administration (FTA) guidelines for annoyance at residential receptors. Additional guidelines and assessments for structural damage should be included, as well as damage to fish and fish habitat.

Request: Provide an updated assessment of the potential construction vibration impacts of the proposed intermodal facility. In conducting the re-assessment, the following issues must be addressed:

1) The construction vibration study should be extended to consider potential vibration impacts on all existing residences, including those located on CN-owned property. This is especially a concern for residences located near the two proposed grade separations, where construction will be located nearby for extended periods of time.
2) The construction vibration assessment should be extended to also consider the potential for damage to structures, including structures other than residences such as pipelines and other utilities.
3) The potential for vibration impacts on fish habitat should also be considered.

CONSTRUCTION NOISE IMPACTS

RNV.39 Construction Mitigation

References:
i) EIS Guidelines Section 6.2.1, 6.3.1, 6.3.4, 6.3.5
ii) Halton Brief, table D.7

Source:
i) CN EIS App E.10

Rationale: A review of the construction noise mitigation could not be completed, given insufficient information was provided.

Request: Re-assess the construction noise mitigation, following a reassessment of the construction noise modelling.

HEALTHY COMMUNITITES AND NOISE ON RESIDENTIAL SENSITIVE LAND USES

RNV.40 Noise as a VC in Human Health Assessment

References:
i) EIS Guidelines 6.3.4 and 6.3.5
ii) Halton Brief, table D.7

Source:
i) CN EIS section 6.4.1

Rationale: The EIS Guidelines require that any Human Health Risk Assessments consider the impact of noise exposure as an exposure pathway. However, it appears that only air quality has been considered as relevant to human health. The relevant rationale should be provided.

Table B: Consolidated Information Requests

Scott Penton, Marcus Li (Novus Environmental Inc.),
***Noise and Vibration* (10 March 2017) (RNV)**

Request: Provide an explanation as to why noise has been excluded as an exposure pathway in terms of health effects. Alternatively, update the human health risk assessment to incorporate noise exposure.

Table B: Consolidated Information Requests

FRANCO DIGIOVANNI (AIRZONE ONE LIMITED), *AIR QUALITY* (10 MARCH 2017) (AQ)

AIR QUALITY

AQ.1 Paved roads for off-site project related trucks and on-site non-road vehicles

References:
i) EIS Guidelines 6.2.1
ii) Halton Brief, Table D.7 Healthy Communities – Air Quality

Source:
i) CN EIS App. E1, Sub-App C2 pdf pg 176A
ii) CN IR Response September 30, 2017 pdf pg 51-94
iii) CN EIS App E1 pg 54 section 6.5

Rationale: The AQ assessment of paved road dust emissions was not conducted for off-site project-related trucks or non-road mobile equipment on-site.

A paved road dust emissions assessment was completed for project-related truck movements within the property line (App. E1, Sub-App C2 pdf pg 176) but did not appear to be completed for off-site project-related and non-project related vehicles (CN response Sept 30 pdf pg 51-94, App. E1 pg 54 Sect. 6.5). Also, only tailpipe emissions were determined for non-road mobile equipment on-site and not paved road dust emissions on-site.

These are sources of dust emissions that are related to the project that were not considered. The project will add extra vehicles to the public roads and the quantity of road dust emitted from that source should be determined. Also, if on-site truck road dust was assessed, then road dust from non-road mobile equipment on-site should also be assessed.

All sources from all relevant activities need to be included in the AQ assessment in order to arrive at valid predictions regarding AQ.

Request: Include an AQ assessment of paved road dust emissions on public roads that will incorporate project-related traffic off-site and on-site non-road vehicles.

AQ.2 Locomotive travel off-site

References:
i) EIS Guidelines section 6.2.1
ii) Halton Brief, Table D.7 Healthy Communities – Air Quality

Source:
i) CN EIS App. E1 pg 48 Section 6.2.1
ii) CN IR Response September 30, 2017 pg 51–94

Rationale: Locomotive travel off-site was not assessed.

The Air Emissions Sources and Emissions Inventory (App. E1 pg 48 Sect. 6.2.1) states "*emissions from locomotive travel off-site are not the subject of this study*".

It is unclear why locomotive travel off-site was not included in the AQ assessment given that Hub-related off-site truck emissions were assessed (in CN response Sept 30 pdf pg 51-94).

All sources from all relevant activities need to be included in the AQ assessment in order to arrive at valid predictions regarding AQ.

Request: Include locomotive travel off-site in the AQ assessment or provide quantitative justification for how off-site travel was determined to be negligible.

AQ.3 Locomotive refuelling and refuelling facilities

References:
i) EIS Guidelines 6.2.1
ii) Halton Brief, Table D.7 Healthy Communities – Air Quality

Source:
i) CN EIS pg 5-6 Section 1.2.2
ii) CN EIS App. E1

Table B: Consolidated Information Requests

Franco DiGiovanni (Airzone One Limited),
***Air Quality* (10 March 2017) (AQ)**

Rationale: Locomotive refuelling and refuelling facilities were not assessed. This is an example of a project activity described (Main EIS pg 5-6 Sect. 1.2.2) whose air emissions are not described in the App. E1.

There is no mention in the App. E1 of locomotive refuelling operations and associated potential emissions. Likewise, no emissions from fuel storage tanks appear to be assessed.

All sources from all relevant activities need to be included in the AQ assessment in order to arrive at valid predictions regarding AQ.

Request: Include locomotive refuelling operations and fuel storage tank emissions in the AQ assessment or provide quantitative justification for how these sources were determined to be negligible.

AQ.4 Diesel Particulate Matter (DPM) not assessed

References:
i) EIS Guidelines pg 19 Section 6.1.1
ii) EIS Guidelines 6.2.1
iii) Halton Brief, Table D.7 Healthy Communities – Air Quality

Source:
i) Health Canada Conformity Review of CN Milton Logistics Hub, February 15, 2017, pdf pg 3
ii) CN EIS App. E1 pdf pg 165-166
iii) CN EIS App E1, Sub-App. C1, pdf pg 169-175; Sub-App. C2, pdf pg 177-182;Sub-App. C2, pdf pg 185-200; Sub-App. C3

Rationale: DPM is a crucial contaminant to quantify. As articulated by Health Canada in its Conformity Review of the Milton Logistics Hub Environmental Impact Statement dated February 15, 2017, "*DPM are typically fine to ultra-fine in particle size, and thus considered a highly respirable toxic air contaminant associated with cancer and adverse health problems such as respiratory illnesses and increased risk of heart disease*."

The EIS Guidelines also identified DPM as a Chemical of Potential Concern that should be considered. However, this was not done in any of the work described by CN relating to diesel sources.

Request: A quantitative AQ assessment of airborne DPM levels is required for all diesel exhausts.

AQ.5 Ozone and ammonia not assessed

References:
i) EIS Guidelines pg 19 Section 6.1.1
ii) EIS Guidelines 6.2.1
iii) Halton Brief, Table D.7 Healthy Communities – Air Quality

Source:
i) CN EIS App. E1 pg ii Executive Summary
ii) CN EIS App. E1 pg 15 section 3.4

Rationale: CN did not provide a quantitative AQ assessment of O_3 or NH_3. These contaminants were specifically requested in the EIS Guidelines and therefore should be part of the AQ assessment.

Request: Please provide quantitative justification for not including O_3 (ozone) and NH_3 (ammonia) in the AQ assessment, including evidence of negligibility.

AQ.6 Secondary particulate matter not assessed

References:
i) EIS Guidelines pg 23 Section 6.1.10
ii) EIS Guidelines 6.2.1

Table B: Consolidated Information Requests

Franco DiGiovanni (Airzone One Limited),
***Air Quality* (10 March 2017) (AQ)**

iii) Halton Brief, Table D.7 Healthy Communities – Air Quality

Source: i) EIS Guidelines pg 23 Section 6.1.10

ii) CN EIS App. E1

Rationale: The EIS Guidelines Human Environment section (EIS Guidelines pg 23 Sect. 6.1.10) describes "Health" and footnotes the following: "*The proponent should refer to Health Canada's Useful Information for Environmental Assessment in order to include the appropriate basic information relevant to human health.*" (HC 2010). An excerpt from that document (pg 5) is as follows:

> "*1. Air Quality Effects*
>
> *In an assessment of potential changes in air quality, it is advisable to consider local, regional, and where appropriate, long-range impacts on air quality during all phases of the project. It is advisable to also consider the following:*
>
> *An inventory of all potential contaminants and emissions from the proposed project (including)…<u>secondary particulate matter [secondary PM])</u>…*" (my underlining).

The underlined part was not addressed in the App. E1. There was also no consideration of secondary PM that can be formed as a result of a series of chemical/physical reactions involving precursor organic or inorganic gases (the project emits precursors VOCs, NO_x and SO_x).

Secondary particulate matter contributes to the PM2.5 concentrations and thus a complete AQ assessment will need to include this particulate matter formation pathway.

Request: Please provide an AQ assessment of secondary PM that could form from gaseous precursors emitted from the project.

AQ.7 Polycyclic aromatic hydrocarbons (PAHs) other than Benzo(a)pyrene not addressed

References: i) EIS Guidelines pg 19 Section 6.1.1

ii) EIS Guidelines 6.2.1

iii) Halton Brief, Table D.7 Healthy Communities – Air Quality

Source: i) CN EIS App. E1 pdf pg 165-166

ii) CN EIS Sub-App. C1, pdf pg 169-175; Sub-App. C2, pdf pg 177-182; Sub-App. C2, pdf pg 185-200; Sub-App. C3

iii) CN EIS App. E1 pg 14 Section 3.4

Rationale: Polycyclic aromatic hydrocarbons (PAHs) are a group of more than 100 different chemicals that are released from burning coal, oil, gasoline, trash, tobacco, wood, or other organic substances such as charcoal-broiled meat. Internal combustion engines fuelled by diesel release numerous types of PAHs.

In terms of PAHs, only B(a)P was assessed from diesel exhaust emissions from the Hub. This is far fewer than the typical number of PAHs that are considered necessary for assessment in an environmental review. For example, the US EPA AP-42 Chap. 3.3 provides emission factors for 16 PAH species.

The Chemicals of Potential Concern Section (App. E1 pg 14 Sect. 3.4) refers to MOECC guidance (MOECC 2012), which states that while it is suitable for B(a)P to be used as a surrogate, if an individual PAH has a standard, it must be assessed separately. The EIS Guidelines (Sect. 6.1.1) further references the CEPA list of toxic substances through its connection to HC 2010. That list includes PAHs in general, and not just B(a)P.

It should also be noted that the EIS Guidelines do not specify that only B(a)P should be measured. Rather, it lists "*polycyclic aromatic hydrocarbons (PAHs)*". All possible contaminants from the sources of the project should therefore be assessed, including PAHs other than B(a)P.

Table B: Consolidated Information Requests

Franco DiGiovanni (Airzone One Limited),
***Air Quality* (10 March 2017) (AQ)**

Request: Please provide an AQ assessment of all PAHs emitted from the site.

AQ.8 Volatile Organic Compounds and other hydrocarbons not addressed

References:
i) EIS Guidelines pg 19 Section 6.1.1
ii) EIS Guidelines 6.2.1
iii) Halton Brief, Table D.7 Healthy Communities – Air Quality

Source:
i) CN EIS App. E1 pdf pg 165-166
ii) CN EIS App E1, Sub-App. C1, pdf pg 169-175; Sub-App. C2, pdf pg 177-182; Sub-App. C2, pdf pg 185-200; Sub-App. C3

Rationale: Volatile Organic Compounds (VOCs) are a sub-set of hydrocarbons that participate in atmospheric photochemical reactions. Hydrocarbons are a more general class of compounds that do not necessarily participate in atmospheric photochemical reactions; they can, however, cause human inhalation concerns. There are numerous different types of hydrocarbons and VOCs emitted from engine exhausts.

For mobile equipment, App. E1 only mentioned a limited number of VOCs for diesel-fired sources. However, toluene, xylenes and propylene are also emitted from all of the diesel engines assessed but were excluded from the assessment.

The On-Road Vehicle Emissions in Future Facility section in the Appendix (App. E1 pdf pg 175 App. C2) outlines the contaminants considered for project operations for on-road vehicles driving within the property line. CN used a modelling tool provided by the US EPA called the MOVES model, to determine vehicular emissions. The MOVES model provides output for many organic species that may be emitted from vehicles, but only a few of those were selected by CN. See Figure 1 (in Appendix C of this report) for a list of those contaminants.

Also, line-haul locomotives emit more hydrocarbon contaminants than what was accounted for. In the Rail Locomotive Emissions in Future Facility section in the Appendix (App. E1 pdf pg 171-172 App. C2), the sum total of emissions from the six selected VOCs is only approximately 10% of the Tier 2 hydrocarbon total emissions for line-haul locomotives (US EPA 2016), therefore 90% of these emissions remain unaccounted for.

The CEPA list of toxic substances, referenced in the EIS Guidelines through HC 2010 as explained previously, includes any VOCs participating in photochemical reactions, as well as hydrocarbons. The EIS Guidelines also states that study is required for "*volatile organic compounds (VOCs)*" generally. This suggests that all possible contaminants in this category should be assessed. The information should also be made available to the HHRA.

Request: Please provide an AQ assessment of toluene, xylene and propylene, as well as any other VOCs and hydrocarbons that could be emitted from the project.

AQ.9 Composition of vehicle-related road dust

References:
i) EIS Guidelines pg 19 Section 6.1.1
ii) EIS Guidelines 6.2.1
iii) Halton Brief, Table D.7 Healthy Communities – Air Quality

Source:
i) CN EIS App. E1, Sub-App pdf pg 176

Rationale: There was no consideration of the composition of the vehicle-related road dust.

Fugitive road dusts vary by composition as well as by size fraction. If the road surface material contains quartz (a form of crystalline silica common in rocks and soils), then the dust raised from that road may contribute an additional inhalation hazard, since crystalline silica has known health

effects if inhaled. A comprehensive AQ assessment should include consideration of all species of fugitive dusts.

The Traffic Emissions from the Paved Road in Future Facility section in the Appendix (App. E1 pdf pg 176 App. C2) shows that only the size fractions PM, PM10 and PM2.5 were assessed. There is no mention of speciated road dust, and no justification provided about why this was not done. Speciated road dust should be considered as there may be health effects.

Request: Please provide a full AQ assessment including speciation of road dust.

AQ.10 Truck idling and travel

References:
i) EIS Guidelines section 6.2.1
ii) Halton Brief, Table D.7 Healthy Communities – Air Quality

Source:
i) CN EIS App. E1 pg 67 Table 7.2
ii) CN EIS App. E1, Sub-App C2 pdf pg 175
iii) CN EIS pg 4 Section 1.2.1
iv) CN EIS pg 61 Section 3.4.2.1

Rationale: The number of trucks allowed to queue on-site (140) is higher than the number of trucks assumed to idle in the AQ assessment (20), and therefore the idling assumption does not appear conservative.

It is also unclear which emission sources account for idling and which emission sources account for truck travel.

Assessing the required worst-case scenario ensures that the actual AQ impacts will not be underestimated by the predictions.

Request: Please provide evidence and justification that 20 trucks idling will be the maximum amount given that the site can accommodate a queue of 140 trucks. Also, please describe and rationalize the assumptions made for categorizing certain emission sources as attributable to truck idling, versus those attributable to truck travel (App. E1 pg 67 Table 7.2 for sources labelled OR1 through OR4).

AQ.11 Daily truck traffic

References:
i) EIS Guidelines section 6.2.1
ii) Halton Brief, Table D.7 Healthy Communities – Air Quality

Source:
i) CN EIS App. E1, Sub-App pdf pg 161
ii) CN EIS App. E1, Sub-App C2 pdf pg 176
iii) CN response IR Response, September 30, 2016 pdf pg 52 Att. IR13-2
iv) CN EIS pdf pg 15

Rationale: Appendix C (App. E1 pdf pg 161 App. C) describes the "*maximum number of trucks per day for shipping containers in or out of the facility*" as 1233. However, the on-site vehicular emissions calculations assume a maximum of 800 trucks per day (App. E1 pdf pg 176 App. C2). This number is repeated in CN's later response to CEAA IR13-2, dated Sept 30, 2016.

It is not clear why the maximum value of 1233 trucks/day was not used and instead 800 trucks/day was assumed. This is important because assessing the worst-case scenario ensures that the actual AQ impacts will not be underestimated by the predictions.

Request: Please explain the rationale behind the maximum number of trucks per day being set at 800, rather than 1233. If 1233 is the correct maximum, please provide a revised AQ assessment in respect of this parameter.

Table B: Consolidated Information Requests

Franco DiGiovanni (Airzone One Limited),
***Air Quality* (10 March 2017) (AQ)**

AQ.12 Daily locomotive traffic

References:
i) EIS Guidelines section 6.2.1
ii) Halton Brief, Table D.7 Healthy Communities – Air Quality

Source:
i) CN EIS App. E1 pg 8, Section 2.4
ii) CN EIS App. E1, Sub-App C pdf pg 161
iii) Greenhouse Gases report pg 7 Section 2.4

Rationale: The Operation Activities section (App. E1 pg 8, Sect.2.4) describes that the average rail traffic consists of 26 freight trains, and this figure is used in the emissions calculations. However, the daily upper limit of train traffic, which appears to be 30 trains per day, should be used in calculations in order to take the required conservative approach.

Also, it is not clear if the above discussions of train traffic include deadhead runs, which are non-revenue-generating train trips. Deadhead runs will also generate emissions and should also be considered in the analysis.

Request: Please advise what the daily maximum number of trains will be in the Hub, including deadhead runs, and use this figure for modelling purposes in the emissions analysis.

AQ.13 Particulate matter size fraction assumptions

References:
i) EIS Guidelines section 6.2.1
ii) Halton Brief, Table D.7 Healthy Communities – Air Quality

Source:
i) CN EIS App pg 78 Section 7.4.1.4
ii) CN EIS App. E1, Sub-App pdf pg 173
iii) CN EIS App. E1, Sub-App C2 pdf pg 177
iv) CN EIS App. E1, Sub-App C2 pdf pg 169 and 171

Rationale: In the Non-road mobile equipment calculation assumptions, (App. E1 pdf pg 173 App. C2) a footnote to the Table with the title "*Emission Calculations – Criteria Contaminants*" states "*For PM emissions from the tailpipe of the equipment, based on US EPA AP-42 Appendix B.2 Generalized Particle Size Distributions for gasoline and diesel fuel combustion engines, PM10 = 96% PM; PM2.5 = 90% PM*."

However, these generalized particle size distributions are <u>average</u> values (and apply to Stationary Internal Combustion Engines running on Gasoline or Diesel Fuel, US EPA AP-42 Appendix B.2). Maximum values for PM10 and PM2.5 in that reference are equal to 99%. Therefore, it would be conservative to assume that 100% of PM consists of PM2.5.

The PM10/PM2.5 fractions used were based on averages rather than upper limits

a. Same comment for stationary equipment (App. E1 pdf pg 177 App. C2)
b. Same comment for locomotives (App. E1 pdf pg 169 and 171, App. C2)

The Air Quality Predictions and Discussion subsection (App. E1 pg 78 Sect. 7.4.1.4) with the title Particulate Matter (PM, PM10 and PM2.5) states: "*Note that it was conservatively assumed that the PM emissions from the fossil fuel combustions in the equipment engines are equal to PM10 and PM2.5*."

This would have been conservative but the calculations were not done in accordance with the above statement. In multiple places in the App. E1, CN provides the footnote to tables in Appendix C2 and C3, outlining that "*PM10 = 96% PM; PM2.5 = 90% PM*", as just described.

Note also that those size distributions apply to Stationary Internal Combustion Engines running on Gasoline or Diesel Fuel (US EPA AP-42 Appendix B.2) and not necessarily non-road mobile

equipment or locomotives (as was assumed in the App. E1). Therefore, it is unclear whether it is appropriate to use these size distribution assumptions for non-road mobile equipment and locomotives in this case.

Request:

a) Please provide a re-assessment with the conservative scenario, which was implied in Sect. 7.4.1.4, that 100% of Particulate Matter (PM) is PM2.5. Alternatively, provide PM2.5 test emissions data to justify the assumptions made.

b) If re-assessment is not completed, please provide justification that the emission factors for Stationary Internal Combustion Engines running on Gasoline or Diesel Fuel (US EPA AP-42 Appendix B.2) are applicable to non-road mobile equipment and locomotives.

AQ.14 Vehicular speed assumptions

References:

i) EIS Guidelines section 6.2.1

ii) Halton Brief, Table D.7 Healthy Communities – Air Quality

Source:

i) CN EIS App. E1, Sub-App C2 pdf pg 175

ii) CN EIS App. E1, Sub-App C pdf pg 162

Rationale: The On-site vehicular emissions calculation assumptions (App. E1 pdf pg 175 App. C2) state that the vehicle speed assumed was "10 mi/h" for on-site truck traffic. However, this appears to be an average speed, based on comments made in Appendix C (App. E1 pdf pg 162 App. C) that sets the average speed at 15 km/h, which converts to 9.32 mi/h.

Similarly, the speeds for other mobile sources in the speed consideration table in Appendix C (i.e. trains passing by, trains, hostlers and reach stackers) appear to be average speeds.

Vehicular speeds that cause maximum emissions should be used in the calculations, so that the actual AQ impacts will not be underestimated by the predictions.

Request: Please explain how the average speed assumption used in the calculations provides the maximal emissions of the various contaminants, compared to other possible speeds used on-site.

AQ.15 Operating load assumptions

References:

i) EIS Guidelines section 6.2.1

ii) Halton Brief, Table D.7 Healthy Communities – Air Quality

Source:

i) CN EIS App. E1, Sub-App C pdf pg 162

ii) Greenhouse Gases Report App. A pg 4

iii) Greenhouse Gases Report App. A pg 5-6

Rationale: For Non-road mobile equipment, Stationary Equipment, Locomotive and On-road Equipment calculations, CN used the "*Average Operating Load On-site*" (my underlining) (App. E1 pdf pg 162 App. C; GHG report App. A pg 4 GHG emissions from Direct Project Sources; GHG report App. A pg 5-6 GHG emissions from Direct Project Sources). Using an average means that the predictions may not consider the worst-case scenario.

Assumption of worst-case scenarios ensures that the actual AQ impacts will not be underestimated by the predictions.

Request: Please provide rationale that the assumptions made for operating load for all project equipment are maximal or conservative.

Table B: Consolidated Information Requests

Franco DiGiovanni (Airzone One Limited),
***Air Quality* (10 March 2017) (AQ)**

AQ.16 Manufacturer specifications, in particular fuel usage values, power rating and type of equipment

References:
i) EIS Guidelines 6.2.1
ii) Halton Brief, Table D.7 Healthy Communities – Air Quality

Source:
i) CN EIS App. E1 pg 89 Sect. 7.7
ii) CN EIS App. E1, Sub-App C pdf pg 161
iii) Greenhouse Gases Report App. A pg 5-6, and 10
iv) CN EIS App. E1, Sub-App C1; Sub-App C2 pdf pg 169 and 171

Rationale: The Uncertainties of Prediction section (App. E1 pg 89 Sect. 7.7) states "Equipment specifications, power rating, fuel usage rate and average loading percentage during their operation at the Terminal were not available for some on-road and non-road sources and these data were estimated or assumed based on similar types of equipment." However, no manufacturer specifications of any sort, whether for actual equipment to be used or "similar" types of equipment, were provided to confirm values used.

In particular, the table entitled "Non-road and stationary equipment" (App. E1 pdf pg 161 App. C) lists a number of different assumptions, but with no justification provided.

For instance, numbers are listed in the "fuel usage rate" column, and the only explanation are provided for them are in the "notes" column, which indicates the fuel usage data was "obtained from the equipment specs data, if data available; otherwise, fuel consumption data is estimated based on data from similar equipment", neither of which were provided and therefore, I cannot review these assumptions. Similarly, the fuel usage values provided in the GHG report (App. A pg 5-6 GHG emissions from direct project sources) are not backed up by manufacturer data or specifications. In addition, the numbers listed as "power rating" are not backed up by manufacturer data or specifications (App. E1 pdf pg 161 App. C, pdf pg 165 App. C1, pdf pg 169 App C2, pdf pg 171 App C2, and GHG Report App. A pg 10).

As well, in the column "type of equipment" (App. E1 pdf pg 161 App. C), the tier ratings for various pieces of equipment are listed. No manufacturer specifications are provided to verify the tier rating assumptions. The tier ratings are important as they are used in the emission calculations.

Without justification, there is no evidence of where the assumption originated. In order to assess whether the calculations take into account worst-case scenarios, justification is required, and explanations and documentation for assumptions are needed.

Request:
a) Please provide necessary documentation relating to manufacturer specifications of the actual equipment to be used, or similar equipment to be used, so that assumptions made throughout the emission estimate calculations can be verified.
b) Please provide manufacturer data or specifications, quantitative justification of the selected assumptions, and/or sample calculations, if needed, in respect of the values chosen for fuel usage, power rating and type of equipment with tier ratings.

AQ.17 Silt Loading assumption

References:
i) EIS Guidelines section 6.2.1
ii) Halton Brief, Table D.7 Healthy Communities – Air Quality

Source:
i) CN EIS App. E1, Sub-App C2 pdf pg 176

Rationale: A common method to predict dust emissions from paved roads is to use the emission factor from the US EPA AP-42 (Chap. 13.2.1). An important input variable for the emission factor calculation is the silt level of the future road. Silt is comprised of dust particles on the road surface that are less than 75 µm in diameter. Essentially, silt levels indicate the "dustiness" of the road. With higher silt levels, the equations predict higher dust emissions.

For CN, the silt loading assumption (App. E1 pdf pg 176 App. C2) in the On-site Paved Road dust emissions calculations included "*ubiquitous silt loading default values*" for the average daily traffic (ADT) category of 500-5000. However, the "*Ubiquitous silt loading*" assumptions from the US EPA AP-42 Chap. 13.2.1 (pg 8-9) are designed for public roads, not facility roads. Facility roads are usually dustier than public roads. Therefore, CN should use a silt loading assumption that corresponds to facility roads so that worst-case scenarios are used in the predictions.

Request: Please use an appropriate conservative silt loading value or provide justification for the ubiquitous silt loading assumption used to project the "dustiness" of the Hub roads.

AQ.18 Locomotive operation and idling

References:
i) EIS Guidelines section 6.2.1
ii) Halton Brief, Table D.7 Healthy Communities – Air Quality

Source:
i) CN EIS App. E1, Sub-App C, pdf pg 161
ii) CN EIS App. E1 pdf pg 171-172
iii) Greenhouse Gases Report App. A pg 4

Rationale: The Production and Equipment Data Input Tables (App. E1 pdf pg 161 App. C) list operational details for the locomotives, including train operational times and idling times. The duration of train stay on-site is said to be 10 hours, and the idling time is said to be 5 hours, but no explanation or rationale is provided for these durations. As well, only emissions while the locomotives are idling appear to be used in the AQ calculations (App. E1 pdf pg 171-172). However, emissions would also be released while the trains are moving, so this should be taken into account.

The same two issues are seen in the corresponding entries in the GHG emissions table (GHG report App. A pg 4).

Without justification for these figures and assumptions, there is no evidence of where they came from and whether they make sense for a worst-case scenario AQ assessment.

Request: Please provide evidence that the trains will idle for a maximum of 5 hours, and provide the basis for locomotive operational times on-site. Please also describe if there are emissions during the remaining 5 hours the trains are on-site. Outline how train movement is accounted for and if it was not considered, include consideration of train movement in the AQ assessment.

AQ.19 Locomotive speeds

References:
i) EIS Guidelines section 6.2.1
ii) Halton Brief, Table D.7 Healthy Communities – Air Quality

Source:
i) CN EIS App. E1, Sub-App C2 pdf pg 169-170; Sub-App C, pdf pg 162

Rationale: For the locomotive emissions (App. E1 pdf pg 169-170 App. C2 and pdf pg 162 App. C), CN has defined a project area and attempted to quantify air emissions from within that area, including emissions from locomotives moving through the area but not stopping at the hub ("bypass" locomotives).

To calculate diesel exhaust emissions from those bypass locomotives, while in the project area, CN has assumed a certain travel speed.

From that speed, given the length of track within the project area, CN calculates the residence time the locomotive remains in the project area and thus contributes to on-site project emissions. Therefore, the faster the locomotive moves, the less time it spends in the project area, and so the less time it emits air contaminants while within the area.

However, at the same time, the faster the locomotive travels the higher the emission rate of air

contaminants as the engine operates at a higher rate.

Therefore, there are two opposing factors to consider; the higher emission rate at higher speeds, but the decrease in residence time at higher speed. This analysis has not been done.

This analysis is required because there will be a worst-case speed that maximizes emissions. Assessment using this worst-case speed ensures that maximal air quality impacts are not underestimated from these calculations.

Request: Please advise which realizable speed results in maximal emissions while the bypass locomotives remain in the project area, and use these findings in the AQ assessment.

AQ.20 Diesel engine sulphur dioxide (SO_2) calculations

References: i) EIS Guidelines section 6.2.1

ii) Halton Brief, Table D.7 Healthy Communities – Air Quality

Source: i) CN EIS App. E1, Sub-App C1 pdf pg 165

Rationale: The emission calculations for locomotives (App. E1 pdf pg 165 App. C1) include an estimate of the emissions of SO_2. Calculation of the emissions of SO_2 includes an estimate of diesel engine efficiency. However, CN provides only a generic diesel engine efficiency without justification that this applies to locomotives relevant to this project.

Sample calculations for locomotive SO_2 emissions were also not provided.

This information is needed so that it can be determined whether a worst-case scenario was used for this aspect of the AQ assessment.

Request: Please provide specifications for specific diesel engines that will be used on-site, in particular in terms of "diesel engine efficiency". Also, please provide a sample calculation for SO_2 in terms of grams per brake-horsepower hour (g/bhp-h).

AQ.21 Moderate control assumption for diesel trucks

References: i) EIS Guidelines section 6.2.1

ii) Halton Brief, Table D.7 Healthy Communities – Air Quality

Source: i) Greenhouse Gases Report App. A pg 7 and pg 10

Rationale: The GHG report (GHG report App. A pg 7 GHG emissions from direct project sources; pg 10 GHG emissions from future operation with project) states emission factors for on-road diesel trucks were assumed to have "*moderate control*". No justification was provided for this assumption, nor was a definition provided for "*moderate control*".

Without justification, there is no evidence of where the assumption came from and whether it makes sense for a worst-case scenario AQ assessment.

Request: Please explain the meaning of the "moderate control" assumption for on-road diesel trucks used in the GHG assessment, and provide a rationale for why this equates to a worst-case scenario.

AQ.22 Compressed Natural Gas (CNG)-fired shunter and Powerpack genset assumptions

References: i) EIS Guidelines section section 6.2.1

ii) Halton Brief, Table D.7 Healthy Communities – Air Quality

Source: i) CN EIS App. E1, Sub-App C2 pdf pg 174 and 178

Table B: Consolidated Information Requests

Franco DiGiovanni (Airzone One Limited),
***Air Quality* (10 March 2017) (AQ)**

Rationale: There will be two kinds of Shunters that will be used at the facility, one of which is fuelled by compressed natural gas (CNG) (App. E1 pdf pg 174 App. C2) (as well as other non-road mobile equipment). Also, there will be a Powerpack Genset (App. E1 pdf pg 178 App. C2) used at the facility (as well as other stationary equipment). In calculating emissions from these machines, CN referred to emission factors set out in a standard reference, EPA AP-42 Chap. 33. However, this chapter provides factors for gasoline and diesel-powered engines. These may not be valid for CNG-powered engines, like the CNG-fired shunter. As well, there are discrepancies between the numbers used by CN in its calculations, and the actual published numbers in the EPA reference for both of the CNG-fired shunter and the powerpack genset, as well as the diesel-fired shunter.

As well, sample calculations of the VOC assessments were not provided in order to allow review of the work and whether it is premised on a worst-case scenario.

Request: Please provide a reference for the CNG-fired shunter emission factor value or justify the use of gasoline and diesel industrial engine emission factors for a CNG-fired source. Please also provide sample calculations for the emission rates for the CNG-fired shunter and the powerpack genset (Cummins QSB7) for a sample VOC.

AQ.23 Climate normal

References: i) EIS Guidelines section 6.2.1

ii) Halton Brief, Table D.7 Healthy Communities – Air Quality

Source: i) CN EIS App. E1, Sub-App C2 pdf pg 175

Rationale: "Climate Normals" are long-term averages of climatological variables such as temperature or precipitation. These were used in modelling on-site truck emissions.

However, in assessing AQ impacts, it is necessary to consider worst-case scenarios. CN may need to employ an alternate variable that leads to a worst-case emissions scenario.

Request: Please provide justification and explanation for the assumptions made about climate normals, including a description of what normals were used and how those assumptions lead to worst-case emissions.

AQ.24 Tier 2/3 emission standards for locomotives

References: i) EIS Guidelines section 6.2.1

ii) Halton Brief, Table D.7 Healthy Communities – Air Quality

Source: i) CN EIS App. E1 pg 48, Sect. 6.2.2

ii) CN App. E1, Sub-App C2 pdf pg 171

Rationale: In the Future Operation section for Locomotives servicing Milton Logistics Hub On-Site (App. E1 pg 48, Sect. 6.2.2), it states for locomotives that "*Tier 2/3 emission standards are used*." Tiered emission standards for locomotives are set by the US EPA, and go from a scale of 0-4.

The types of trains, the engine type, and the basis for the assumption that the locomotives will achieve at least Tier 2 or 3 emissions status is not described in App. E1.

Without justification, there is no evidence of where the assumption came from and whether it makes sense for a worst-case scenario AQ assessment.

Request: Please provide justification for the types of trains assumed and the engine type, and please explain the rationale for the assumption that all of the locomotives will achieve at least Tier 2 or 3 emissions status.

Table B: Consolidated Information Requests

Franco DiGiovanni (Airzone One Limited),
***Air Quality* (10 March 2017) (AQ)**

AQ.25 Operating time in GHG report

References: i) EIS Guidelines section 6.2.1
ii) Halton Brief, Table D.7 Healthy Communities – Air Quality

Source: i) Greenhouse Gases Report App. A pg 5
ii) CN EIS App. E1 pg 65-66 section 7.2.2

Rationale: In the assumptions for the GHG emissions from project sources (GHG report App. A pg 5), an operating time of 20 hours was assumed for all non-road equipment on-site. However, in the Project Operation section (App. E1 pg 65-66 Sect. 7.2.2), it states non-road equipment will operate 24 hours per day. No rationale or justification was provided for the 20 hour assumption. This is required so that it can be determined whether use of the assumption makes sense for a worst-case scenario AQ assessment.

Request: Please provide explanation and rationale for the operating time assumption of 20 hours per day for non-road equipment on-site.

AQ.26 Future projections of train traffic

References: i) EIS Guidelines section 6.2.1
ii) Halton Brief, Table D.7 Healthy Communities – Air Quality

Source: i) CN EIS App. E1 pg 8, Sect. 2.4
ii) Greenhouse Gases Report pg 7 Sect. 2.4

Rationale: The Operation Activities section (App. E1 pg 8, Sect. 2.4) assumes 26 trains travelling through the corridor daily, and an additional two trains being added due to project. This assumption is then incorporated in the emission calculations.

However, there is no indication that this will be a maximum upper limit in terms of train traffic for the foreseeable future. Future projections are necessary to assess the AQ emissions projected for the future and to help plan follow-up and monitoring for this project.

Request: Please provide future projections of the anticipated number of trains or provide rationale that 28 trains will be the maximum number of trains that will ever pass through the PDA. Please include discussion of whether these are design limitations or if future on-site expansions could allow for greater throughputs.

AQ.27 Future projections of truck traffic

References: i) EIS Guidelines section 6.2.1
ii) Halton Brief, Table D.7 Healthy Communities – Air Quality

Source: i) CN EIS App. E1, Sub-App C2 pdf pg 176
ii) CN EIS App. E1, Sub-App C pdf pg 161
iii) CN IR Response September 30, 2016 pdf pg 51
iv) Greenhouse Gases Report pg 2 Sect. 1.1.1

Rationale: The On-site vehicular emissions calculations (in App. E1 pdf pg 176 App. C2, and App. E1 pdf pg 161 App. C) state that the maximum daily traffic will be 800 trucks per day. This upper limit is also assumed when discussing future projections in 2021 and 2031, as set out in CN's further response dated September 30, 2016.

However, there is no indication that this is the actual maximum upper limit in terms of truck traffic for the foreseeable future. Future projections are necessary to assess the AQ emissions projected

for the future and to help plan follow-up and monitoring for this project.

Request: Please provide future projections of the anticipated number of trucks, or if 800 will be the maximum number that will ever pass through the PDA in the future, please provide a rationale. Please discuss if these are design limitations or if future on-site expansions could allow for greater throughputs.

AQ.28 GHG emissions – assumption for daily number of trains

References: i) EIS Guidelines section 6.2.1

ii) Halton Brief, Table D.7 Healthy Communities – Air Quality

Source: i) Greenhouse Gases Report pg 7 Sect. 2.4

Rationale: GHG emissions are estimated on an annual basis, and are based in part on emissions calculated from the predicted train traffic. CN predicted that a daily average of 28 trains would pass through the Hub, with 4 of those trains stopping. However, it is unclear if the daily assumptions are applicable for the calculations of the annual GHG emissions, and if a worst-case scenario would result. This should be clarified by showing the calculations and rationale that the daily assumption of 28 trains with 4 stopping at the Hub leads to maximum annual GHG emissions.

Request: Please provide justification that the daily assumption of 28 trains, with 4 of those stopping at the Hub, is applicable for use in the yearly GHG emissions calculations. If so, please explain why this is the maximum worst-case number of trains.

AQ.29 Model input/output files

References: i) EIS Guidelines section 6.2.1

ii) Halton Brief, Table D.7 Healthy Communities – Air Quality

Source: i) CN IR Response September 30, 2016 pdf pg 51-94

ii) CN EIS App. E1 pg 85-86 and pdf pg 227

iii) CN IR Response May 18, 2016 pdf pg 87-110

Rationale: In the revised AQ assessment submitted by CN in response to CEAA information requests (CN response Sept 30 pdf pg 51-94), very little information was provided about the assumptions considered.

Table 1 in the revised AQ assessment (CN response Sept 30 pdf pg 94) indicated maximum predicted ground-level air concentrations due to the CN project alone and CN traffic alone, but the numbers indicated do not match what was previously shown in the App. E1 (App. E1 pg 85-86 and pdf pg 227, respectively). Therefore, seemingly different assumptions were made in this Sept 30 AQ assessment; these different assumptions should be provided to allow independent review.

Without the input and output model files for all scenarios, I cannot confirm if the modelling was conducted appropriately. I need to be able to replicate the findings to confirm their validity. Additional details about assumptions and what was used as model inputs is important to ensure an appropriate review can be conducted.

Request: Please provide the following explanations and data:

a. Clarifications concerning whether the assumptions, data used and methods were the same in the CN response (Sept 30) as the original App. E1 report, or if there were differences.

c. A table of source characteristics used in the dispersion modelling, including rationale for source characteristics.

d. Details of the traffic data inputs to the MOVES model used for the latest iteration

(assuming MOVES was used, that was not indicated in CN response Sept 30, but MOVES was used in the App. E1).

e. Provide the MOVES model input and output files used in this, or an updated and consolidated AQ assessment.

f. The AERMOD model files used in the most recent, or an updated and consolidated, AQ assessment (i.e. Lakes GUI backup files).

As well, please consolidate all revised aspects of the App. E1 into an updated, single App. E1 (including the "participating receptors" assessment set out in CN response dated May 18, 2016, at pdf pg 87-110).

AQ.30 Locations of mobile sources

References: i) EIS Guidelines section 6.2.1

ii) Halton Brief, Table D.7 Healthy Communities – Air Quality

Source: i) CN EIS App. E1 pdf pg 131 Figure 5a

Rationale: Source characteristics (in this case, locations) assumed in the model for mobile source locations were not justified/explained.

Mobile sources such as on-site locomotives, reachers and stackers and on-road trucks can be located in many areas on the property including relatively close to the off-site sensitive receptors. As those sources get closer to off-site sensitive receptors, impacts on the AQ at those receptors can increase (App. E1 pdf pg 131 Figure 5a).

Information on the limit of all potential source locations is required so that it can be confirmed that the worst-case locations for mobile sources have been included in the modelling.

Request: Please provide mapping of the locational envelope of all possible locations where all on-site mobile sources can emit contaminants from.

AQ.31 On-site road traffic (source: OR4)

References: i) EIS Guidelines section 6.2.1

ii) Halton Brief, Table D.7 Healthy Communities – Air Quality

Source: i) CN EIS App. E1 pg 59 Table 6.2

ii) CN EIS App. E1 pdf pg 131 Figure 5a

Rationale: The Source Summary – Project Operation Table (App. E1 pg 59 Table 6.2) lists the source ID OR4 (on-site road traffic) as being a line source (called link 4).

However, the figure with the title "*Location of Terminal Sources – Operations*" (App. E1 pdf pg 131 Figure 5a) shows the source OR4 as a volume source. See Figure 2 (in Appendix C of this report) for this comparison.

In the model, CN assumed the location of entrance idling is a volume source in the model, not a line source. It is not clear whether it was supposed to be modelled as a line source as indicated in Table 6.2.

Without source characteristics clearly indicated, there is no evidence the assumptions are reasonable and whether they make sense for a worst-case scenario AQ assessment.

Request: a) Provide explanation of whether OR4 was intended to be a line or a volume source, as an error in the referencing appears to have occurred. Please ensure consistency between the table and figure.

b) Source characteristics should be provided, as well as revised tables/figures/modelling as

needed.

AQ.32 Modelled truck and locomotive idling and movements

References: i) EIS Guidelines section 6.2.1
ii) Halton Brief, Table D.7 Healthy Communities – Air Quality

Source: i) CN EIS pg 4 Sect. 1.2.1
ii) CN EIS App. E1 pg 66 Sect. 7.2.2

Rationale: The EIS Project Components section (EIS pg 4 Sect. 1.2.1) describes a 1.7 km private entrance road designated queuing area to accommodate up to 140 trucks within the Hub. However, the layout is not sufficiently described in App. E1 so that the location of idling trucks and moving trucks can be understood. Similarly, insufficient information is provided for locomotive idling and movements (App. E1 pg 66 Sect. 7.2.2).

A worst-case operating scenario for trucks and locomotives involves considering idling locations that are as close as possible to property boundaries and sensitive receptors.

Without the input and output model files for all scenarios, it cannot be confirmed whether the modelling was conducted appropriately. Without source characteristics clearly indicated that coincide with actual operating scenarios, there is no evidence the assumptions are reasonable and whether they make sense for a worst-case scenario AQ assessment.

Request: Please provide maps and figures that reflect the operations and configurations of idling trucks along the 1.7 km distance, as well as the queuing area of 140 trucks and truck movement areas. Please provide maps and figures that reflect the operations and configurations of locomotive movement and idling. Please indicate how the mapping provides information to allow modelling of the worst-case operating scenario for truck traffic and idling, as well as locomotive operations.

AQ.33 Representativeness of meteorological data

References: i) EIS Guidelines section 6.2.1
ii) Halton Brief, Table D.7 Healthy Communities – Air Quality

Source: i) CN EIS App. E1 pg 63-64 Sect. 7.1.1

Rationale: The Meteorological Data section (App. E1 pg 63-64 Sect. 7.1.1) states: “A five-year regional meteorological dataset available from the MOECC for the Halton-Peel area was used in the modelling assessment. These data are pre-processed by the MOECC for the LAA. Project site-specific meteorological data are not available from the MOECC.”

The statement “These data are pre-processed by the MOECC for the LAA.” is misleading. The MOECC did not pre-process this data specifically for the LAA. Everyone completing ECA applications (i.e. for permits for the MOECC) in Halton Region, Peel Region, Greater Toronto Area, York Region and Durham Region use the same default meteorological data set unless instructed to use alternates.

It is not known when CN began to consider this project - they possibly could have begun site specific meteorological measurements at that time, therefore maximizing available site-specific data that could have been used for this AQ assessment.

Justification is required for the use of this dataset as without justification, there is insufficient evidence that the meteorological data set used is fully representative of this site and whether it makes sense for a worst-case scenario AQ assessment.

Request: Please provide rationale that this data set is representative of the project location.

Table B: Consolidated Information Requests

Franco DiGiovanni (Airzone One Limited),
***Air Quality* (10 March 2017) (AQ)**

AQ.34 Meteorological data from 1996–2000

References:
i) EIS Guidelines section 6.2.1
ii) Halton Brief, Table D.7 Healthy Communities – Air Quality

Source:
i) CN EIS App. E1 pg 64 Table 7.1 and section 7.1.1
ii) CN IR Response September 30, 2016 pdf pg 51-94 Att. IR13-2
iii) CN IR Response May 18, 2016 pdf pg 87-110 Att. IR12
iv) CN EIS App. E1, Sub-App C2 pdf pg 175
v) CN EIS App. E1 pg 49 Sect 6.2.4, pg 50 Sect. 6.3
vi) Environment and Climate Change Canada Conformity Review, pg 2

Rationale: The Meteorological Station Table (App. E1 pg 64 Table 7.1), states that an old meteorological data set was used (1996-2000). The CN response Sept 30 (CN response Sept 30 pdf pg 54 Att. IR13-2) mentions a newer meteorological data set "*(2010-2015) from the nearest met station*" but it is not clear this newer meteorological data set was included in the updated modelling nor is it clear which meteorological station was considered the "*nearest*".

If the 1996-2000 meteorology data set is the data set used in the AERMOD simulations (App. E1 pg 64 Sect. 7.1.1; CN response May 18 pdf pg 87-110 Att. IR12; CN response Sept 30 pdf pg 51-94 Att. IR13-2) and the MOVES model (App. E1 pdf pg 175 App. C2; CN response Sept 30 pdf pg 51-94 Att. IR13-2), as well as assumptions made in the emissions calculations (App. E1 pg 49 Sect 6.2.4, pg 50 Sect. 6.3), a newer available data set should have been used, a point that the ECCC review (pg 2) also brought up.

A 1996-2000 data set is outdated for a project that will exist into the foreseeable future. The most accurate, up-to-date, data set available should be used.

Request: Please re-evaluate all relevant model runs and emission estimates using a newer (preferably site-specific or proven equivalent) meteorological data set.

AQ.35 Anomalous meteorological data

References:
i) EIS Guidelines sections 6.2.1 and 6.6.2
ii) Halton Brief, Table D.7 Healthy Communities – Air Quality

Source:
i) CN EIS App. E1 pg 71 section 7.3

Rationale: In the Air Quality Predictions and Discussion – Existing CN Operations Alone section (App. E1 pg 71 Sect. 7.3) describes that the "*meteorological anomalies*" were removed for the "*predicted off-site concentrations*" (i.e. receptor grid).

Meteorological "anomalies" still occur (as they exist in the dataset), however, and therefore still may contribute to impacts on the surrounding environment. There is no rationale provided for why removal of "anomalous" meteorological data was appropriate for this assessment.

Removal of this data will not provide maximum impact from the project. The EIS Guidelines (pg 29) specifically required that CN's work take into account severe and extreme weather conditions. Therefore, meteorological anomalies should be returned to the dataset and the analysis re-done or justification for otherwise is required.

Request: Please re-evaluate using the "anomalous" meteorological data that was previously removed or justify otherwise.

AQ.36 Topographical data

References:
i) EIS Guidelines section 6.2.1

ii) Halton Brief, Table D.7 Healthy Communities – Air Quality

Source: i) CN EIS App. E1 pg 64 Sect. 7.1.3

Rationale: The Topographic Data section (App. E1 pg 64 Sect. 7.1.3) states: "The terrain of the subject area is also incorporated into the modelling input. Terrain data was acquired and evaluated using AERMOD's terrain processor (AERMAP) for use in the dispersion modelling." The source of the terrain data was not provided. This information is required in order to confirm whether the modelling was conducted appropriately.

Request: Please provide the source of this data and rationale for use of this topographical data in the modelling.

AQ.37 Variable emissions

References: i) EIS Guidelines section 6.2.1

ii) Halton Brief, Table D.7 Healthy Communities – Air Quality

Source: i) CN EIS App. E1, Sub-App pdf pg 175

ii) CN EIS App. E1, Sub-App C4 pdf pg 211

Rationale: Variable emissions should have been used but were not.

If peak activities coincide with poor dispersion conditions (i.e., dawn/dusk), this should be accounted for as maximal air contaminants emissions may then coincide with poor dispersion conditions and result in worst-case AQ impacts in the local community.

As an example, the On-Road Vehicle Emissions in Future Facility emission estimates table with the title "*key input data to MOVES*" (App. E1 pdf pg 175 App. C2) states that 84 trucks/hour were "*conservatively used based on the traffic data for peak AM hour*".

However, the Traffic Memo (App. E1 pdf pg 211 App. C4) provides the number of trucks every hour of a 24 hour period, projected to 2017 and 2022. The Traffic Memo also states there will be 124 trucks per hour at 13:00. This hourly variable data set was available for CN to use in their AQ assessment.

Also, it is not clear how the use of 84 trucks per hour is a conservative assumption given that Appendix C4 of App. E1 indicates the worst-case hour will have 124 trucks on-site. Justification is required for assumptions used.

In the modelling, CN did not vary emissions temporally. This is important for longer term averages (i.e. 24 hour averages or longer).

Also, there are hourly air quality criteria (as opposed to 24 hour air quality criteria) for some contaminants, e.g. NO_2, which requires that the maximal operational hour should have been chosen for AQ assessment of those short-term contaminants.

Request: Please re-assess with variable emissions for all applicable emission scenarios for all relevant project sources including locomotive and truck traffic. Alternatively, the worst-case emissions scenario (for example, 124 trucks/hour at all times of day) should be applied in the modelling and justification provided.

AQ.38 Ozone limiting method (OLM) for nitrogen dioxide (NO_2)

References: i) EIS Guidelines section 6.2.1

ii) Halton Brief, Table D.7 Healthy Communities – Air Quality

Source: i) CN EIS App. E1 pg 65 section 7.1.5

Rationale: In the Modelling Assessment Approach section for NO to NO_2 conversions (App. E1 pg 65 Sect.

7.1.5), it is stated: "A standard methodology for determining ambient NO_2 concentrations based on maximum NO_x concentrations predicted by a dispersion model is the Ozone Limiting Method (OLM). The OLM assumes that some NO_2 is emitted directly from the exhaust and that additional NO_2 is formed in the atmosphere by the direct mole for mole oxidation of NO by O_3 in the presence of organic radicals and sunlight. The OLM method is also referred to as the US EPA Tier 3 approach to the NO to NO_2 conversion."

The Tier 1 (or Tier 2) approach of assuming full conversion of NO_x to NO_2 would be conservative. Tier 1 is the default approach, which assumes that all NO_x is converted to NO_2.

In contrast, Tier 3 considers atmospheric conditions and a lower conversion rate. It is therefore less conservative than Tier 1.

CN refers to the Tier 3 approach as "*standard methodology*". However, the Tier 3 approach is not a default option in AERMOD, and requires pre-approval from regulatory authorities for its use.

Without justification, there is no evidence that this Tier 3 approach is appropriate and whether it is appropriate for a worst-case scenario AQ assessment.

Request: Please provide rationale for the use of the Tier 3 OLM approach as opposed to the more conservative methods of Tier 1 or Tier 2.

AQ.39 Receptors

References:
i) EIS Guidelines section 6.2.1
ii) Halton Brief, Table D.7 Healthy Communities – Air Quality

Source:
i) CN IR Response September 30, 2016 pdf pg 54 Att. IR13-2
ii) CN EIS App. E1 pg 24-25 Table 5.5
iii) CN IR Response September 30, 2016 pdf pg 92 figure IR13-1
iv) CN IR Response September 30, 2016 pdf pg 94 Table 1

Rationale: The CN response to CEAA (CN response Sept 30 pdf pg 54 Att. IR13-2) indicates "*a total of 58 special receptors*" and references the App. E1 report for the location of the receptors (App. E1 pg 24-25 Table 5.5). However, there are only 40 receptors listed in Table 5.5.

However, Figure IR13-1 (CN response Sept 30 pdf pg 92) shows more than 110 receptors. It is unclear whether all receptors in the figure were used in this evaluation, and whether different receptors for each scenario shown in Table 1 (CN response Sept 30 pdf pg 94) were used. It is also not clear which of those receptors are current residential homes or areas zoned for residential in the future.

Without the appropriate input options provided in the AQ assessment, it cannot be confirmed whether the modelling was conducted appropriately.

Request: Please provide an updated and consolidated AQ assessment report combining all assessments.

Provide clear tables and figures identifying all, non-gridded, receptors used in the dispersion modelling. Identify if the chosen receptors included predicted future receptor locations, such as areas already zoned for sensitive receptors including residential areas. Identify all currently zoned, as-of-right, receptors (special or otherwise) in the AQ assessment even if they do not presently exist.

Please add rationale for inclusion and (where appropriate) exclusion of receptors chosen.

AQ.40 Emission rates in model input table and source summary tables

References:
i) EIS Guidelines section 6.2.1
ii) Halton Brief, Table D.7 Healthy Communities – Air Quality

Table B: Consolidated Information Requests

Franco DiGiovanni (Airzone One Limited),
***Air Quality* (10 March 2017) (AQ)**

Source: i) CN EIS App. E1 pg 68 Table 7.4

ii) CN EIS App. E1 pg 57 Table 6.2

Rationale: Tabulated emission rates do not match between the modelling input table and the source summary table.

In the AERMOD Modelling Input – Emission Data for Identical Volume Sources Table (App. E1 pg 68 Table 7.4), the model inputs listed for the overall emissions of benzene and 1,3-butadiene, for non-road equipment do not match the values listed in the Source Summary Table for Project Operation (App. E1 pg 57 Table 6.2). This suggests the wrong emission rates were used in the model.

The estimated emission rates need to be used in the model. Errors need to be corrected.

Request: Please confirm the emission rates that were used in the model are correct.

AQ.41 Traffic assessments

References: i) EIS Guidelines section6.2.1

ii) Halton Brief, Table D.7 Healthy Communities – Air Quality

Source: i) CN EIS App. E1 pdf pg 227 App. C4

ii) CN IR Response September 30, 2016 pdf pg 94

Rationale: Two traffic impact assessments were done: one in the original EIS, and another in response to an information request. However, the results are very different in each, in particular for the assessments of B(a)P:

g. the original traffic memo said that B(a)P related to "CN Traffic" was 111% of the Air Quality Criteria for the 24 hour AQ assessment, and 138% of the Air Quality Criteria for the annual AQ assessment, and therefore was in excess (App. E1 pdf pg 227 App. C4).

h. the second traffic assessment done as part of the September 30 response stated the corresponding numbers for B(a)P as 40% and 60% (CN response Sept 30 pdf pg 94).

Differences between these two AQ assessments and how they were each conducted should be explained.

Request: Please describe the difference between the two AQ assessments done in the traffic memos. It currently appears that the assumptions were the same but the outcome was very different.

AQ.42 Project Site Air Monitoring Program Purpose

References: i) EIS Guidelines section 6.2.1

ii) Halton Brief, Table D.7 Healthy Communities – Air Quality

Source: i) CN EIS App. E1 pg 45-46 section 5.3.2.7 and pg 95 section 9.0

ii) CN EIS App. E1, Sub-App C5 pdf pg 241

iii) CN IR Response May 18, 2016 pg 13-14, IR11

Rationale: CN provided a brief description of the Project Site Air Monitoring Program (App. E1 pg 45-46 Sect. 5.3.2.7) and some Preliminary Ambient Monitoring data (App. E1 pdf pg 241 App. C5).

The Conclusions (App. E1 pg 95 Sect 9.0) state "CN has established a site-specific air monitoring station to confirm the existing background air quality for the site. The station was initially brought on line during the months of July to August 2015, with further changes as systems were revised October 2015. Preliminary raw data from the monitoring cannot yet be considered representative . . . A sensitivity analysis comparing the site specific air station dataset and the published background dataset can be completed when sufficient site data is available. This is expected to be nominally one year from the time of first obtaining valid data" (my underlining). CN implied they

would use this monitoring data as part of the determination of baseline AQ levels.

CEAA asked for additional information about this monitoring campaign (CN response May 18 pg 13-14, IR11-Baseline Air Quality). However, CN responded (pg 14 Sect. IR11) with: "*The supplemental collection of ambient air quality data described in EIS Section 9.4.1 (pages 333 to 334) is not part of the baseline data collection program in support of the EIS. This data collection program, which is currently underway, is part of the proposed follow-up monitoring program.*" (my underlining).

The final statement above would seem to contradict their original stated intentions in App. E1. The purposes of their measurement program should be clarified as the purposes dictate the sampling design; whether it be to collect data representative of baseline AQ at sensitive receptors, or, fenceline (or similar) monitoring as part of the post-implementation monitoring program.

Request: Please clarify the technical goals of the monitoring program.

AQ.43 Project Site Air Monitoring Program technical issues

References: i) EIS Guidelines section 6.2.1

ii) Halton Brief, Table D.7 Healthy Communities – Air Quality

Source: i) CN EIS App. E1 pg 45 Sect. 5.3.2.7

ii) CN EIS App. E1, Sub-App C5 pdf pg 233-260

iii) CN EIS App. E1 pg 13 Sect. 3.4

Rationale: There are technical issues with the Project Site Air Monitoring Program sampling techniques.

For example, does the location of the monitoring site fit the purposes of the monitoring program? It is claimed that the location is "*within the local assessment area (LAA)*" (App. E1 pg 45 Sect. 5.3.2.7) but this is a large area. There was no information provided on exact sampling location(s) or how this monitoring data is related to the proposed project location. Given that the location or locations of the monitoring have not been provided, it is not known if those measurements are placed in an area suitable for its purpose.

There was also no information provided on sampling methods and calibration procedures. For instance, the Preliminary Ambient Monitoring raw data (App. E1 pdf pg 233 App. C5) showed all 3 non-continuous NH_3 samples in the App. E1 as "*non-detect measurements*". CN should have used instrumentation with a better detection limit, as is available with other methods outside of those used in the App. E1; it seems an inappropriate method was used.

As well, only selected VOCs were considered (App. E1 pdf pg 234-237), even though additional CoPCs were identified (App. E1 pg 13 Sect. 3.4). For instance, there was no analysis provided of acrolein, acetaldehyde, and formaldehyde, which are defined as CoPCs for this study.

Data had not been quality controlled. There were negative concentrations and missing data. For example, the PM10 concentrations were approximately two times higher than the TSP concentrations for 2015-07-11. This is indicative of a significant problem, as PM10 is a size fraction of TSP and therefore PM10 should never exceed TSP at the same location and time.

Clarity is required as to the purposes of their measurement program so that its design can be assessed. Independent of this, it appears that different instrumentation should be used due to the indications that the quality of the data collected so far is poor.

Request: Clarification of the purpose of CN's monitoring program is needed. In addition, please provide the sampling location(s), information on the sampling methods and calibration procedures, and a quality controlled data set. Please also ensure the study includes measurement of all CoPCs (and with appropriate detection limits) or justify otherwise.

Table B: Consolidated Information Requests

Franco DiGiovanni (Airzone One Limited),
***Air Quality* (10 March 2017) (AQ)**

AQ.44 Influence of local non-subject sources on the baseline

References: i) EIS Guidelines section 6.2.1
ii) Halton Brief, Table D.7 Healthy Communities – Air Quality

Source: i) CN EIS App. E1 pg 25-26 Sect. 5.3
ii) CN EIS App. E1 pdf pg 127 Figure 3

Rationale: CN relied on existing data from the National Air Pollution Surveillance (NAPS) program of measurements obtained at specific localities in Southern Ontario as its assumed baseline AQ in the LAA (App. E1 pg 25-26 Sect. 5.3).

However, the influence of specific non-subject sources in the LAA was generally not included. By using NAPS data alone, the baseline will reflect the area that the NAPS sites are located in and not necessarily reflect all of the sources interacting in the surrounding region of the PDA, which will be different.

Further, NAPS stations are all located in developed/urban areas, while the project location is in a semi-rural region. Periodic agricultural sources of dust and other contaminants would not be represented in the NAPS data used, for example. Figure 4 (in Appendix C of this report) shows the selected NAPS stations and their proximity to the CN PDA (the NAPS stations are also shown in App. E1 pdf pg 127 Figure 3) . CN has not considered site-specific, non-subject local sources, such as waste treatment facilities in the area.

Some potential non-subject sources that could have been assessed have been identified and are shown in Figure 3 (in Appendix C of this report). These sources may have similar contaminants as the project.

These local, non-subject, sources could influence the local air quality and were not likely captured by the chosen NAPS sites, and therefore could result in underestimated AQ levels for some contaminants.

Request: Please provide an assessment of local emissions that may be experienced by receptors that will also be impacted by the CN site, and that may not have been reflected in the data from the National Air Pollution Surveillance Program (NAPS).

Alternatively, please provide evidence that the NAPS stations represent a conservative estimate of baseline AQ at all sensitive receptors for all CoPCs.

AQ.45 NAPS baseline 90th percentile

References: i) EIS Guidelines section 6.2.1
ii) Halton Brief, Table D.7 Healthy Communities – Air Quality

Source: i) CN EIS App. E1 pg 44 section 5.3.2.6

Rationale: In the Summary of Background Levels of CoPCs section (App. E1 pg 44 Sect. 5.3.2.6), CN used a baseline of the 90th percentile for ambient monitoring data, stating that the 90th percentile assumption is conservative. However, the 90th percentile is not conservative, 100th percentile is conservative, as it would result in the maximum value for each CoPC being considered.

Request: Please recalculate the baselines by using the 100th percentile or justify otherwise.

AQ.46 Baseline statistics and margins of error

References: i) EIS Guidelines pg 8 Section 4.2
ii) EIS Guidelines section 6.2.1
iii) Halton Brief, Table D.7 Healthy Communities – Air Quality

Table B: Consolidated Information Requests

Franco DiGiovanni (Airzone One Limited),
***Air Quality* (10 March 2017) (AQ)**

Source: i) CN EIS App. E1 pg 25-46 Sect. 5.3

Rationale: The EIS Guidelines at section 4.2, page 8 requires that calculations of margins of error and other relevant statistical information be provided for baseline data. However, none has been provided in regard to the AQ baseline data used by CN in App. E1.

Request: Please provide margin of error and statistical information in regards to the baseline data.

AQ.47 Baseline air quality levels for PM, acrolein, acetaldehyde, and formaldehyde

References: i) EIS Guidelines section 6.2.1

ii) Halton Brief, Table D.7 Healthy Communities – Air Quality

Source: i) CN EIS App. E1 pg 85 Table 7.13, pg 86 Table 7.14

ii) CN IR Response September 30, 2016 pdf pg 94 Table 1

Rationale: There appears to be some errors with setting the baseline air quality levels for the contaminants PM, acrolein, acetaldehyde, formaldehyde, and in some cases it appears that they were set at zero.

In the case of PM, no baseline was provided for this category. However, baseline concentrations were provided for subsets of this category, for PM2.5 and PM10 (e.g. App. E1 pg 85 Table 7.13). This means that the baseline for PM must be at least at the level for the baselines for PM2.5 or PM10, but this point should be clarified. This is an important point as this oversight has resulted in an underestimation of the cumulative maximum receptor concentration for PM, which is shown to be a smaller number than for PM10 alone (e.g. Table 7.13).

In the case of acrolein, acetaldehyde, and formaldehyde, CN stated in the Cumulative Effects Assessment at App. E1 pg 85 Table 7.13, pg 86 Table 7.14 and in the response to CEAA information requests (CN response Sept 30 pdf pg 94 Table 1) that there were no background measurements or estimates for PM or for these contaminants. However, this is unclear because the calculations of the "cumulative" concentrations for some contaminants was larger than the "project alone", meaning that there must have been some background level assumed for these, but which background level was assumed is unknown (e.g. Table 7.13 for acrolein).

If baseline levels for these CoPCs are not estimated, then cumulative air quality levels at receptors will be underestimated.

Request: Please provide background concentrations for PM, acrolein, acetaldehyde and formaldehyde, either estimated or measured. Re-evaluate all relevant cumulative AQ assessments by taking these into account.

If the background concentration of acrolein, acetaldehyde and formaldehyde have been set at zero, please provide justification for the assumptions.

AQ.48 Baseline future projections

References: i) EIS Guidelines section 6.2.1

ii) Halton Brief, Table D.7 Healthy Communities – Air Quality

Source: i) CN IR Response September 30, 2016 pdf pg 51-94

ii) CN EIS App. E1 pg 36 Graph 5.14

Rationale: CN seemed to have taken into account future traffic predictions (CN response Sept 30 pdf pg 51-94) but that may not be the only source of future increases or changes in emissions of all CoPCs from non-subject sources.

This is of concern because, for example, it can be seen that some parameters, such as PM2.5, shows an increasing trend from 2009-2013 as seen in App. E1 pg 36 Graph 5.14 (also replicated as

Figure 5 in Appendix C of this report).

Future baseline projections should be conducted so that all foreseeable future effects can be assessed (for example, in 5, 10 or 20 years).

Request: Please provide a complete prediction of future changes in baseline concentrations of Chemicals of Potential Concern (CoPCs), to be used in the projected future AQ assessments.

AQ.49 Project emissions combined with off-site project-related traffic

References: i) EIS Guidelines section 6.2.1

ii) Halton Brief, Table D.7 Healthy Communities – Air Quality

Source: i) CN IR Response September 30, 2016 pg 11-12 IR13, and pdf pg 51-94 Att. IR 13-2

ii) CN EIS App. E1, Sub-App C4 pdf pg 203-229

Rationale: In a further response to IR-13 dated September 30 (pg 11-12 and pdf pg 51-94, attachment IR 13-2), a cumulative assessment was provided combining baseline and project emissions and incorporating project-related truck traffic and future public traffic, presumably replacing the Traffic Memo provided in the initial EIS (App. E1 pdf pg 203-229 App. C4). Further basic information such as a map (with either satellite imagery or roads indicated) indicating all components of the revised AQ assessment, including all 166 road segments in the AQ assessment, the location of the project itself, the future developments, the outline of the RAA used in this AQ assessment, receptors considered in this cumulative AQ assessment and any other components in the AQ assessment will be needed in order to fully understand and assess this work.

Maps indicating all aspects considered in the study are required for conducting an appropriate review and correlating to model inputs (which have also been separately requested).

Request: In order to provide adequate information to allow full review and assessment of the final consolidated AQ assessment (as requested earlier), please include a map indicating all components of the AQ assessment.

AQ.50 Cumulative AQ levels

References: i) EIS Guidelines section 6.2.1

ii) Halton Brief, Table D.7 Healthy Communities – Air Quality

Source: i) CN IR Response September 30, 2016 pdf pg 94 Table 1

ii) CN EIS App. E1 pg 85 Table 7.13

Rationale: A "cumulative effects assessment" includes the combination of the project emissions and background levels. However, there appears to be problems with the numbers provided by CN, as for several CoPCs, the value attributed to project emissions is higher than the cumulative value.

For instance, the cumulative contribution (project+traffic+background) for acetaldehyde in CN response Sept 30 pdf pg 94 Table 1 was 0.0754 $\mu g/m^3$ (for 0.5 hour time period, year 2021), yet the impacts calculated for the corresponding project + project traffic effects was 0.422 $\mu g/m^3$ (with no background included). The project alone had 0.0952 $\mu g/m^3$ concentration, which is greater than the cumulative assessment concentration. A similar discrepancy occurred for the year 2031 assessment. This suggests issues with methodology, which may extend to all contaminants considered. Similar issues are seen with the data for formaldehyde (App. E1 pg 85 Table 7.13) and acrolein (App. E1 pg 86 Table 7.14).

All numbers should be checked and any illogical results such as the above should be explained.

Request: a) Please provide corrected AQ assessments at appropriate receptors for acetaldehyde, in particular, as well as the other contaminants as needed, if additional inconsistencies are

found.

b) Please provide justification for any assumptions, and re-evaluate all relevant cumulative AQ assessments accordingly.

AQ.51 Diesel Particulate Matter information for Human Health Risk Assessment

References: i) EIS Guidelines section 6.2.1

ii) Halton Brief, Table D.7 Healthy Communities – Air Quality

Source: i) CN EIS App. E1 pg 14 Sect. 3.4

Rationale: CN states in its Chemicals of Potential Concern section (App. E1 pg 14 Sect. 3.4) that any analysis of Diesel Particulate Matter (DPM) was addressed in the same category as other fine particulate matter. However, some analysis of the effects of DPM could be lost or obscured if it is addressed in the broader category of fine particulate matter. DPM should have been treated as a separate species, and forwarded to the HHRA.

Request: Please complete an assessment of Diesel Particulate Matter for all diesel exhausts (baseline, project, construction and on-road traffic), to be passed along to the Human Health Risk Assessment.

AQ.52 Off-site traffic exposure data to be included in Human Health Risk Assessment

References: i) EIS Guidelines section 6.2.1

ii) Halton Brief, Table D.7 Healthy Communities – Air Quality

Source: i) CN IR Response September 30, 2016 pg 11-12 IR 13 and pdf pg 51-94 Att. IR13-2

ii) CN EIS App. E1 pg 82-86, Sect. 7.6

iii) CN EIS App. E7 pg 17 Table 7

iv) CN EIS App. E1< Sub-App C4 pdf pg 203-229

Rationale: The cumulative AQ assessment that included off-site traffic exposure data (CN response to information request Sept 30 pg 11-12 IR 13 and pdf pg 51-94 Att. IR13-2) appeared to not be supplied to HHRA (App. E7). It appears that the HHRA only evaluated an earlier cumulative AQ assessment from the original EIS (at App. E1 pg 82-86, Sect. 7.6) that did not include off-site traffic data (App. E7 pg 17 Table 7).

The same applies to the Traffic Impact Memo (App. E1 pdf pg 203-229 App. C4), which was presumably superseded by CN's response to CEAA Sept 30 2016 IR13 and IR 13-2. It does not appear to have been forwarded for HHRA.

The HHRA cannot be completed appropriately unless all relevant sources, CoPCs and emission rates are included in the full cumulative AQ assessment, including project emissions (on- and off-site) and future traffic projections, as well as future predictions of the baseline concentrations in the area.

Request: Once the cumulative assessment is re-evaluated, including all sources and CoPCs and emission rate estimates that were not completed appropriately before, the full assessment needs to be passed along to a HHRA.

AQ.53 Mitigation

References: i) EIS Guidelines section 6.4 and 6.2.1

ii) Halton Brief, Table D.7 Healthy Communities – Air Quality

Table B: Consolidated Information Requests

Franco DiGiovanni (Airzone One Limited),
***Air Quality* (10 March 2017) (AQ)**

Source:
i) CN EIS App. E1 pg 91-92 Sect. 8.0
ii) Greenhouse Gases Report pg 31 Sect. 8.0
iii) CN IR Response May 18, 2016 pdf pg 155-157 Att. IR23

Rationale: There are many mitigation measures described in the App. E1 (pg 91-92 Sect. 8.0), the CN response to CEAA information request (CN response May 18 pdf pg 155-157 Att. IR23) and the GHG report (pg 31 Sect. 8.0) but none are quantified. The EIS Guidelines require that all mitigation measures are "*specific, achievable, measurable and verifiable"*. The efficacy of any given mitigation measures should therefore be quantified.

In order to learn if mitigation measures are effective, these measures must be quantified.

Request: Please provide quantification related to efficacy of all mitigation measures proposed.

Table B: Consolidated Information Requests

GEORGE THURSTON,
***HUMAN HEALTH* (9 MARCH 2017) (RHH)**

HUMAN HEALTH IMPACT

RHH.1 Traffic Induced Air Pollution Should be Modeled

References: i) EIS Guideline section 6.2.1

ii) Halton Brief, Table D.7 Healthy Communities – Air Quality

Source: i) CN EIS App. E.1

Rationale: Appendix E.1 fails to directly and quantitatively assess the specific environmental and health impacts of diesel particulate matter (DPM) emissions that will be added by the train and truck traffic induced by the proposed facility. In order to properly assess the environmental health impacts of the proposed facility, this information is required.

Request: Added air pollution from the proposed facility should be modeled. The model should include all the added loading and unloading equipment, and on-site and off-site traffic induced by the new facility, incorporating not only that directly from the trucks and rail vehicles transferring and carrying goods, but also any added pollution from any other local secondary (indirect) development and traffic that would be induced by the operation of the proposed new intermodal facility.

Pollution impact estimates should include population weighted means by Census subdivision, for input to a subsequent health impact analysis.

RHH.2 Impact on Municipalities

References: i) EIS Guideline section 6.2.1

ii) Halton Brief, Table D.7 Healthy Communities – Air Quality

Source: i) CN EIS App. E1

Rationale: The potential human health impacts of the added air pollution upon persons living in municipalities surrounding the facility have not been assessed. This is a factor that should be considered in determining impacts on the surrounding community.

Request: The human health impacts of the air pollution from the direct and indirect air emissions induced by the operation of the proposed facility should be assessed on finer Census sub-districts for the persons living in the municipalities surrounding the facility.

This can be conducted, for example, using the Canadian Air Quality Benefits Assessment Tool (AQBAT) (http://www.science.gc.ca/eic/site/063.nsf/eng/h_97170.html).

Table B: Consolidated Information Requests

RUSSELL MATHEW (HEMSON CONSULTING LTD.),
***EMPLOYMENT LANDS* (10 MARCH 2017) (E)**

EMPLOYMENT USE AND DENSITY

E.1 Details of onsite Employment should be provided

References: i) EIS Guidelines, Part 1 s. 4.3.3, Part 2, s. 3.2.1, 3.2.2, 6.1.10, and 6.3.5
ii) Halton Brief, Table D. 8

Source: i) CN EIS Section 8.3.2, pages 326, 327, 328

Rationale: There is no comprehensive information provided on the total employment, location or land occupancy of on-site project employment.

Request: Please provide the direct onsite employment by type (e.g. office/administration, container handlers, etc.).

E.2 Details of Indirect Employment should be provided

References: i) EIS Guidelines, Part 1 s. 4.3.3, Part 2, s. 3.2.1, 3.2.2, 6.1.10, and 6.3.5
ii) Halton Brief, Table D. 8

Source: i) CN EIS Section 8.3.2, pages 326, 327, 328

Rationale: There is no comprehensive information provided on the "indirect off-site employment" or employment planned for CNR's other land holdings in the district or outside of the urban designated area in Halton Region.

Request: Please provide the indirect employment offsite by type (e.g. transportation, warehousing, manufacturing, etc.).

E.3 Details of Indirect Employment should be provided

References: i) EIS Guidelines, Part 1 s. 4.3.3, Part 2, s. 3.2.1, 3.2.2, 6.1.10, and 6.3.5
ii) Halton Brief, Table D. 8

Source: i) CN EIS Section 8.3.2, pages 326, 327, 328

Rationale: There is no comprehensive information provided on the "indirect off-site employment" or employment planned for CNR's other land holdings in the district or outside of the urban designated area in Halton Region.

Request: Please clarify what CN defines as indirect employment – total and by type.

E.4 Details of Indirect Employment should be provided

References: i) EIS Guidelines, Part 1 s. 4.3.3, Part 2, s. 3.2.1, 3.2.2, 6.1.10, and 6.3.5
ii) Halton Brief, Table D. 8

Source: i) CN EIS Section 8.3.2, pages 326, 327, 328

Rationale: There is no comprehensive information provided on the "indirect off-site employment" or employment planned for CNR's other land holdings in the district or outside of the urban designated area in Halton Region.

Request: How did CN calculate the indirect employment? Please provide supporting study/documentation.

E.5 Details of Indirect Employment should be provided

References: i) EIS Guidelines, Part 1 s. 4.3.3, Part 2, s. 3.2.1, 3.2.2, 6.1.10, and 6.3.5

ii) Halton Brief, Table D. 8

Source: i) CN EIS Section 8.3.2, pages 326, 327, 328

Rationale: There is no comprehensive information provided on the "indirect off-site employment" or employment planned for CNR's other land holdings in the district or outside of the urban designated area in Halton Region.

Request: Please identify how much of the indirect employment is on CN lands outside of the project site.

E.6 Details of Indirect Employment should be provided

References: i) EIS Guidelines, Part 1 s. 4.3.3, Part 2, s. 3.2.1, 3.2.2, 6.1.10, and 6.3.5

ii) Halton Brief, Table D. 8

Source: i) CN EIS Section 8.3.2, pages 326, 327, 328

Rationale: There is no comprehensive information provided on the "indirect off-site employment" or employment planned for CNR's other land holdings in the district or outside of the urban designated area in Halton Region.

Request: Please identify what proportion of the indirect employment is within approximately 2 km of the project site vs. at a distance from the South Milton employment district.

E.7 Details of Indirect Employment should be provided

References: i) EIS Guidelines, Part 1 s. 4.3.3, Part 2, s. 3.2.1, 3.2.2, 6.1.10, and 6.3.5

ii) Halton Brief, Table D. 8

Source: i) CN EIS Section 8.3.2, pages 326, 327, 328

Rationale: There is no comprehensive information provided on the "indirect off-site employment" or employment planned for CNR's other land holdings in the district or outside of the urban designated area in Halton Region.

Request: Please confirm what jobs are identified for lands that are not part of the Region's urban area but are within the project site and outside of the project site.

E.8 Copies of reports relied on are required

References: i) EIS Guidelines, Part 1 s. 4.3.3, Part 2, s. 3.2.1, 3.2.2, 6.1.10, and 6.3.5

ii) Halton Brief, Table D. 8

Source: i) CN EIS p. 326, 327

ii) CN EIS p. 23, 43, 151, 325, 326

iii) CN EIS p. 151

iv) CN EIS p. 24, 26, 151

v) CN EIS p. 150 - 152

Rationale: Would like to review findings of the referenced reports.

Request: Please provide a copy of the following reports that were referenced in the EIS:

1) Cushman & Wakefield 2014
2) Strategic Projections Inc. 2013
3) Metropolitan Knowledge International 2008

Russell Mathew (Hemson Consulting Ltd.),
***Employment Lands* (10 March 2017) (E)**

4) Cushman & Wakefield 2015
5) Dillon 2011

Table B: Consolidated Information Requests

GARY SCANDLAN (WATSON & ASSOCIATES ECONOMISTS LTD.), CHRIS HAMEL (GM BLUEPLAN), *MUNICIPAL FINANCE AND INFRASTRUCTURE* (10 MARCH 2017) (EW)

MUNICIPAL FINANCE

EW.1 Complete Fiscal Impact Study

References: i) EIS Guidelines, Part 1, s. 3.3.2, Part 2, 3.1, 3.2.2, 6.1.10, 6.3.5, and 6.4

ii) Halton Brief, Table D.8

Source: i) CN EIS App E.11 Section 3.4

Rationale: Appendix E.11 undertaken in support of the CN Intermodal project provides a limited level of financial evaluation of the development. A fiscal impact study is intended to identify the potential long term capital and operating costs for a municipality and, as an offset, the potential property taxes and user fee related revenues to assess the net financial impacts of a particular development onto the municipality. This assessment allows municipalities, in the first instance, to evaluate the financial contributions of different development alternatives and secondly, to budget for the additional cost and revenues in the future. It is expected that the study include identification of the following:

1) Infrastructure needed to support the development directly (e.g. local roads, water/sewer servicing, etc.) along with broader needs (e.g. major road system, fire protection, water/sewer treatment facilities, etc.)
2) Potential funding available to pay for the infrastructure (e.g. development charges, direct funding by the development)
3) Annual operating expenditures to maintain the infrastructure along with the day to day expenditures to provide the municipal services to the development (e.g. snow clearing, road maintenance, water treatment, etc.)
4) Annual property taxes and user fee revenue generated by the development to offset the annual operating expenditures

Request: Please conduct a fiscal impact study that addresses the following:

a) For the CN Project:
   1) What are the direct capital cost impacts on all Region and Town services?
   2) What are the direct capital cost recoveries, including development charges, for all Region and Town services?
   3) What are the direct operating expenditure impacts on all Region and Town services?
   4) What are the direct operating revenue recoveries, including property taxes for all Region and Town services?
   5) Identify the impact of the CN Project displacing the prestige industrial development planned for the area on capital and annual operating expenditures, and Property tax revenues and Development Charge revenues.

b) For the induced IOD (Intermodal Oriented Development):
   1) What are the capital cost impacts on all Region and Town services?
   2) What are the capital cost recoveries, including development charges, for all Region and Town services?
   3) What are the operating expenditure impacts on all Region and Town services?
   4) What are the direct operating revenue recoveries, including property taxes for all Region and Town services?
   5) Identify if the IOD is in addition to or displaces the prestige industrial development planned for the area and if so, what are the impacts on capital and annual operating expenditures and Property tax revenues and Development Charge revenues.

Table B: Consolidated Information Requests

Gary Scandlan (Watson & Associates Economists Ltd.), Chris Hamel (GM BluePlan),
***Municipal Finance and Infrastructure* (10 March 2017) (EW)**

EW.2 Cushman Wakefield 2015 Report

References: i) EIS Guidelines, Part 1, s. 4.3.3, Part 2, 3.1, 3.2.2, 6.1.10, 6.3.5, and 6.4
ii) Halton Brief, Table D.8

Source: i) CN EIS App E.11 Section 3.4

Rationale: This report references a report called "Economic and Financial Impact of an Intermodal Terminal in Milton" undertaken by Cushman Wakefield in 2015. The "Cushman Wakefield" report was not appended to the Planning Justification Report.

Request: Please provide a copy of the Cushman Wakefield 2015 report referred to in Appendix E.11.

EW.3 Complete Property Value Impact Assessment

References: i) EIS Guidelines, Part 1, s. 3.3.2, Part 2, 3.1, 3.2.2, 6.1.10, 6.3.5, and 6.4
ii) Halton Brief, Table D.8

Source: i) CN EIS App E.11 Section 3.4
ii) CN EIS – Table 4.3: Public and Interest

Rationale: Appendix E.11 undertaken in support of the CN Intermodal project provides a limited level of financial evaluation of the development. A fiscal impact study is intended to identify the potential long term capital and operating costs for a municipality and, as an offset, the potential property taxes and user fee related revenues to assess the net financial impacts of a particular development onto the municipality. This would include impacts on property tax revenue generated from existing homes and businesses.

Request: Please provide an assessment of the impact of the Project on the property value and correspondingly property taxes for surrounding residences and businesses.

WATER AND WASTEWATER SERVICING

EW.4 Servicing Requirements and Capacity Analysis

References: i) EIS Guidelines, Part 2, 3.1, 3.2.2, 6.1.10, 6.3.5 and 6.6.3
ii) Halton Brief, Table D.3 and D.8

Source: i) EIS Section 2.2.3.4 and 2.2.3.5
ii) EIS Section 9.4.10
iii) CN EIS App E.11, Section 4.6 and 5

Rationale: There is no information on the approach, process or coordination required to consider and implement future connection of the Project lands to the municipal systems. Additional information is required to address the following issues:

1) The existing and planned municipal systems do not consider additional capacity generated by the Project's use
2) The municipal systems are sized and financed by planned land use
3) Should municipal system capacity be required in the future, how would the current infrastructure financing be reconciled and what would the plan be for municipal system capacity

Request: Please provide information regarding:

1) The daily water use and wastewater generation and basis for the calculations for the Project

2) The fire flow requirements for the Project
3) Detailed specifications of the proposed private systems

EW.5 Servicing Risk Analysis

References: i) EIS Guidelines, Part 2, 3.1, 3.2.2, 6.1.10, 6.3.5 and 6.6.3
ii) Halton Brief, Table D.3 and D.8

Source: i) CN EIS Section 2.2.3.4 and 2.2.3.5
ii) CN EIS Section 9.4.10
iii) CN EIS App E.11 Section 4.6 and 5

Rationale: There is no information on the approach, process or coordination required to consider and implement future connection of the Project lands to the municipal systems. A risk analysis would provide further clarity on water and wastewater servicing security of supply and future requirements.

Request: Please provide information regarding

1) Overall water and wastewater servicing risk analysis
2) Water and wastewater system protection and mitigation measures
3) Private system contingency plan

EW.6 Surrounding New Development Servicing Requirements and Capacity Analysis

References: i) EIS Guidelines, Part 2, 3.1, 3.2.2, 6.1.10, 6.3.5 and 6.6.3
ii) Halton Brief, Table D. 3 and D.8

Source: i) CN EIS Section 2.2.3.4 and 2.2.3.5
ii) CN EIS Section 9.4.10
iii) CN EIS App E.11 Section 4.6 and 5

Rationale: The EIS and background documentation contained in the EIS did not address the potential "halo effect" of additional related development and the servicing requirements for this surrounding development. This information is needed to understand the servicing requirements of this potential development including the need to connect to the municipal systems

Request: Please provide information regarding:

1) Anticipated level of surrounding development including potential land uses and servicing requirements
2) References to industry examples of "halo effect"

Table B: Consolidated Information Requests

LISA MERRITT (ARCHAEOLOGICAL SERVICES INC.), *ARCHAEOLOGY* (10 MARCH 2017) (ECA)

STAGE 3 ARCHAEOLOGICAL ASSESSMENT

ECA.1 Stage 3 Archaeological Assessment Reports

References:
i) EIS Guidelines, Section 3.3.2 and Part 2, Sections 6.3.4 and 6.3.5
ii) Halton Brief: F.3.6 Cultural Heritage Resources

Source:
i) CN EIS, section 6.2.2
ii) CN EIS, App. E.14
iii) CN IR Response, September 30, 2016, page 6

Rationale: Stage 3 reports are required in order to assess the potential impacts of the Project on archaeological resources and to determine if the archaeological assessments have been conducted sufficiently to ensure the conservation of these heritage resources.

CN has advised that Stage 3 field investigations are scheduled to be completed in 2016 (IR9 Response). However, to date, CN has not provided any Stage 3 assessments. CN has also advised that Stage 4 excavations, if required, are planned for Spring 2017 (IR9 Response).

Request: Please provide all Stage 3 Archaeological Assessment Reports, including a Stage 3 report for Location 5.

MTCS APPROVAL

ECA.2 MTCS Approval

References:
i) EIS Guidelines, Section 3.3.2 and Part 2, Sections 6.3.4 and 6.3.5
ii) Halton Brief: F.3.6 Cultural Heritage Resources
iii) *Ontario Heritage Act* and MTCS Standards and Guidelines

Source:
i) CN EIS, section 6.2.2
ii) CN EIS, App. E.14

Rationale: The MTCS letters are required to determine the reports' compliance with MTCS provincial Standards and Guidelines.

Request: Please provide the Ministry of Tourism Culture and Sport (MTCS) Letter of Acceptance into the Ontario Public Register of Archaeological Reports for Stantec's Stage 1 and 2 Archaeological Assessment as well as MTCS Letters of Acceptance for all Stage 3 and Stage 4 reports once available.