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April 9, 2019

Joseph Ronzio,  
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c/o Canadian Environmental Assessment Agency  
160 Elgin Street, 22nd Floor, Ottawa ON K1A 0H3  
MiltonHubPanel.PoleMiltonCommission@ceaa-acee.gc.ca

Subject: Health Canada's partial comments on the technical merit of the response to the Second Information Request to support the Environmental Impact Statement for the Milton Logistics Hub Project

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Dear Mr. Ronzio,

Health Canada is participating in the review of the Canadian National Railway Company's (the Proponent's) Milton Logistics Hub Project (the Project) as a Federal Authority in accordance with Section 20 of the *Canadian Environmental Assessment Act, 2012*, providing expertise in its possession when requested to do so by a Responsible Authority.

Health Canada has conducted a review, within its mandate, of responses to the second information request that were made available from February 14, 2019 to present. Health Canada previously provided partial comments on the second information request responses up to February 14, 2019 ([CEAR#716](#)). The second information request is comprised of Information Request (IR) packages 6, 7 and 8. This partial review focused on areas within Health Canada's expert information and knowledge to determine whether these areas have been sufficiently addressed with respect to effects of the Project on human health.

Health Canada's partial review includes comments on mitigation and follow-up for potential air quality and noise effects on human health. These have been provided for your consideration in Annex 1. Additionally, Health Canada also reviewed the Proponent's response to IR8.3 with respect to other potentially operable pathways. Based on the information reviewed, Health Canada is of the view that oral ingestion and dermal exposure are minor exposure pathways from the Project when compared to inhalation.

Suggested additional information and revisions may impact sections of the Environmental Impact Statement (EIS) and associated documents not specifically listed in the comments provided. It is assumed that any future changes made based on these comments will be appropriately reflected throughout the EIS, technical data reports and IR responses, as required.

Should you have any questions, please contact the undersigned.

Sincerely,  
<Original signed by>

Kitty Ma  
A/ Ontario Manager  
Environmental Health Program  
Regulatory Operations and Enforcement Branch

Phone: <contact information removed>

cc: Chantal Roberge, A/National Director, Environmental Health Program, Regulatory Operations and Enforcement Branch  
Gregory Kaminski, Senior Environmental Health Assessment Specialist, Environmental Assessment Division, Healthy Environment and Consumer Safety Branch  
Julie Boudreau, Environmental Assessment Specialist, Environmental Health Program, Regulatory Operations and Enforcement Branch

## Annex 1 – Partial Comments on the Response to the Second Information Request

**Participant:** Health Canada

**Organization (if applicable):** Health Canada

**General Comments:** These comments relate to mitigation and follow-up for the air quality and noise effects assessments on human health.

### Comments on the Response to the Second Information Request (Partial IR Package 8)

ID	Information Source	Comments	Rationale
	CN response to IR8.2 (c) CN response to IR8.3 CN response to IR8.8	Health Canada has reviewed these responses and has no further comment.	
HC(IR2)-3	IR8.2 (a,b)	Health Canada recommends that additional technologically and economically feasible mitigation measures be considered to reduce emission of non-threshold contaminants. Furthermore, monitoring of PM <sub>2.5</sub> and NO <sub>2</sub> should be included to validate Environmental Assessment (EA) predictions for these non-threshold contaminants.	<p>In table IR8.2-2, it is predicted that NO<sub>2</sub> emissions above the Canadian Ambient Air Quality Standards (CAAQS) management level may occur in the cumulative effects scenario for 2031. As EA is a planning tool, it is appropriate to take a precautionary approach and consider the maximum concentration scenario and plan mitigation and monitoring accordingly. Also, NO<sub>2</sub> and PM<sub>2.5</sub> are non-threshold pollutants, where health effects may occur at any level of exposure, even below the CAAQS levels. Therefore, the CAAQS should not be considered as “pollute-up-to” levels. Furthermore, the principles of keeping clean areas clean and continuous improvement are operative, thus proposed mitigation measures should not be confined to meeting the standards, but should also be targeted towards reducing population exposure to non-threshold contaminants associated with the proposed project.</p> <p>The proponent has summarized some of the proposed mitigation measures from the Air Effects Technical Document Report (EIS Appendix E1). Although these mitigation measures may be effective in reducing non-threshold contaminants such as PM<sub>2.5</sub>, Health Canada is aware that other advanced emissions control technologies are available and effective at reducing diesel exhaust (DE) emissions. DE is the source of primary concern for this project, with nitrogen oxides (NO<sub>x</sub>)<sup>1</sup> and diesel particulate matter (DPM) being the predominant contaminants of concern derived from DE with respect to potential health impacts from predicted air quality changes from the proposed project. The proponent has proposed the incorporation of some emission reduction approaches into the project, including that <i>“SmartStart® equipped locomotives would be used as much as possible to reduce idling during warm months; for other vehicles, a no idling policy would be applied to reduce mobile equipment and other use vehicle emissions where possible and appropriate; [and] non-road mobile and stationary equipment will be equipped with low emissions and high fuel combustion efficiency engines”</i>.</p> <p>Although Health Canada is not well placed to evaluate the efficacy of mitigation technologies, we note that other transportation hubs such as the Port of Los Angeles, have incorporated a range of measures to reduce emissions, including ones that require trucks entering the facility to use recent-year emissions technology. As Health Canada understands, these measures are designed to reduce DE emissions of both particulate matter and NO<sub>x</sub> as part of the port’s clean air plan. Additionally, the Port of New York has in place a range of incentive programs to replace diesel vehicles servicing the port with advanced diesel trucks. While European cities have adopted a range of programs, all of these focus on limiting access of conventional diesel vehicles to the city and facilitating adoption of advanced diesel technology vehicles that meet the latest regulations. The approaches taken internationally support Health Canada’s view that both PM<sub>2.5</sub> and NO<sub>2</sub> are significant contributors to adverse health effects and emissions should be reduced to the degree feasible.</p> <p>Although Health Canada has provided guidance on the assessment of the incremental lifetime cancer risk from DPM (<a href="#">CEAR#630</a> and <a href="#">CEAR#666</a>) no further information has been provided for review at this time.</p>

<sup>1</sup> Nitrogen oxides (NO<sub>x</sub>) are the nitrogen-based emissions from combustion processes and consist of both NO and NO<sub>2</sub>. The CAAQS is specifically set for NO<sub>2</sub> as most health research uses it for analysis of effects.

ID	Information Source	Comments	Rationale
HC(IR2)-4	IR8.9 (a,b)	<p>i) Health Canada recommends that a case-by-case noise resolution process be implemented for noise receptors along haul routes, especially as baseline noise levels are already elevated.</p> <p>ii) As part of <a href="#">CEAR#716</a>, Health Canada previously submitted a proposed information request to determine if sleep impacts are likely from truck related noise events. The proposed information request has been provided below for convenience.</p> <p><i>“For each receptor location, provide the distribution of baseline noise at night in comparison to individual noise events from project related activities (e.g., additional trains, coupling, truck traffic, etc.). Compare additional noise events to the WHO (1999) outdoor <math>L_{max}</math> of 60 A-weighted decibels (dBA). Where project night time noise events exceed <math>L_{max}</math> of 60dBA, propose additional mitigation measures.”</i></p>	<p>i) In submission <a href="#">CEAR#666</a>, Health Canada noted that according to HC (2017), “...due to the non-linear nature of the relationship between noise and percent highly annoyed (%HA), there can be a substantial increase in the %HA, with relatively small changes in the noise environment - in situations where the initial baseline noise level is high.” Although the %HA predictions in response to IR8.9 are below 6.5%HA, as baseline noise levels are already elevated, it is possible that noise complaints due to project related truck traffic will increase. It is important to notify the community of planned changes to noise as a result of the project. According to HC (2017) “[t]he community is more likely to be understanding and accepting of project noise if related information is provided and is frank, and does not attempt to understate the likely noise level, and if commitments are respected.” In Attachment IR5.1-1, the proponent has indicated “[i]f noise complaints occur, CN will log and investigate complaints to assess whether they are linked with Project activities, and take appropriate action to ensure that the issue is managed.” It is not clear if this will include receptors along haul routes. It is important that haul route noise receptors be included in the complaints resolution process on a case-by-case basis.</p> <p>ii) As previously noted by Health Canada in <a href="#">CEAR#716</a>, it is recommended that “noise distribution and sound level(s) of individual noise events at night be considered”. This information will assist in the evaluation of potential sleep impacts from road traffic noise. Depending on the distribution of noise events at night, it is possible that sleep impacts may result from project induced truck noise.</p>
HC(IR2)-5	IR8.17	<p>Health Canada recommends evaluating the ANSI (2005) section 12.9 criteria for rattling and annoyance in the 16 hertz (Hz) band. In the absence of this, it is recommended that a commitment be made to apply mitigation measures in the event of a reported complaint associated with idling locomotives independent of whether the Broner (2011) criterion is exceeded.</p> <p>Alternatively, the proponent may consider alternate locations for idling trains in an area that has fewer receptors and/or receptors at a greater distance from the rail track.</p>	<p>The proponent has indicated that 16 Hz levels were measured for four locomotives. Specifically, “[a] review of on-site measurements that were conducted for the Project identified idling noise measurements of four idling locomotives for 63Hz, 31.5Hz and 16Hz.” However, specific measurements within these octave bands have not been provided.</p> <p>The predicted noise levels presented in response to IR8.17 are relatively close to the Broner (2011) criterion. The ANSI (2005) and Broner threshold for rattling are similar, although the Broner (2011) criterion may not capture the 16Hz frequency, which, when combined with the other low frequency bands (i.e., 32Hz and 63Hz), may lead to rattling. Given the uncertainty indicated by the proponent, “we noted a large discrepancy (i.e., range of 7dB variation at 16Hz) in the low frequency noise depending on the locomotive measured”, and that the Broner (2011) criterion does not include this band, it is possible that rattling may occur at some receptor locations.</p> <p>The proponent has indicated in its response that “CN proposes to implement confirmatory noise monitoring for low frequency noise from idling locomotives (refer to the response to IR4.82; CEAR #652). This would involve completing noise monitoring measurements at the idling location. If complaints are received, the noise data can be verified to review whether exceedances occurred. If this were to occur, CN will investigate applicable low frequency noise mitigation (for example administrative controls, idling speed modifications to reduce rpm such that they do not generate low-frequency noise, and implementing new technologies, such as Automatic Engine Start-Stop (AESS) Control Technology, Auxiliary Power Unit (APU) Technology, or Shore Power Plug-In Technology).” As rattling from idling locomotives is a possibility, and it is possible that the Broner (2011) criterion may not pick up the 16Hz frequency band, it may not be appropriate to only apply mitigation measures where monitoring data shows exceedances of the Broner (2011) criterion. Mitigation measures should be applied in the event of a noise complaint associated with idling locomotives.</p>

**References:**

American National Standards Institute (ANSI). 2005. Quantities and Procedures for Description and Measurement of Environmental Sound Part 4: Noise Assessment and Prediction of Long-Term Community Response (ANSI S12.9-2005/Part 4). Standards Secretariat Acoustical Society of America.

Broner, N. 2011. A Simple Outdoor Criterion for Assessment of Low Frequency Noise Emission. Acoustic Australia, Vol. 39 April (2011) No.1.

Canadian Council of Ministers of the Environment. 2016. Canadian Ambient Air Quality Standards (CAAQS) for nitrogen dioxide.

Canadian Council of Ministers of the Environment. 2014. Canada-Wide Standards for Particulate Matter and Ozone. 2012 Final Report.

Port of Los Angeles, Clean Truck Program, accessible at: <https://www.portoflosangeles.org/environment/air-quality/clean-truck-program>