

July 12, 2019

EMAIL ONLY

Lesley Griffiths, Chair
Milton Logistics Hub Project Review Panel
c/o Canadian Environmental Assessment Agency
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MTCS File : **0002708**
Proponent : **Canadian National Railway Company (CN)**
Subject : **Undertaking 33**
Project : **Milton Logistics Hub**
Location : **Milton, Ontario**

Dear Ms. Griffiths,

At the public hearing on July 10, 2019, the Ministry of Tourism, Culture and Sport (MTCS) undertook to “provide a summary of the information and documents that support the viability of a 50-metre buffer as being protective of buildings from vibration”. The matter in question was MTCS’s conclusion that CN’s proposed use of this buffer as the distance threshold for vibration monitoring of cultural heritage resources during construction is in keeping with industry best practices.

The use of a 50-meter buffer for this purpose, although not specified in any formal guidance document, is a standard practice used by consultants in the field, and it is employed frequently in cultural heritage technical documents prepared in support of environmental assessment projects that are reviewed by MTCS.

It is also standard practice among consultants addressing the matter of potential vibration-related impacts to cite the four studies referenced by CN on this topic, namely:

- Crispino, M. and M. D’Apuzzo. 2001. Measurement and Prediction of Traffic-induced Vibrations in a Heritage Building. *Journal of Sound and Vibration* 246 (2): 319-335.
- Ellis, Patricia. 1987. Effects of Traffic Vibration on Historic Buildings. *The Science of the Total Environment* 59: 37-45.
- Rainer, J.H. 1982. Effect of Vibrations on Historic Buildings. *The Association for Preservation Technology Bulletin* XIV (1): 2-10.
- Wiss, J.F. 1981. Construction Vibrations; State-of-the-Art. *Journal of Geotechnical Engineering Division* 107:167-181.

Although the literature is not conclusive in establishing any particular distance as a universal threshold for potential vibration effects on heritage buildings, we are of the opinion that 50 meters serves as an appropriate conservative default buffer for monitoring, and we generally expect proponents to use it in the absence of an engineering justification for a more narrow buffer.

Undertaking 33. Ministry of Tourism, Culture and Sport to provide a summary of the information and documents that support the viability of a 50-metre buffer as being protective of buildings from vibration by July 12, 2019.

We trust that this information is helpful to the Review Panel. Please do not hesitate to contact the undersigned should you have further questions about this topic.

Sincerely,

Dan Minkin
Heritage Planner, Heritage Planning Unit