



L A S C E L L E S

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November 01, 2016

Our File Ref.: L14-142

9167-5637 Quebec Inc.

Attn: Mr. Jean-Claude Goyer
121, Eulalie-Durocher Street
Saint-Bruno, Quebec
J3V 6H4

Subject: Noise and Vibration Assessment Rationale
Proposed Residential Subdivision Development
Farm Lots 10, Registered Plan No. 15
Formerly in the Village of L'Original
Now in the Township of Champlain

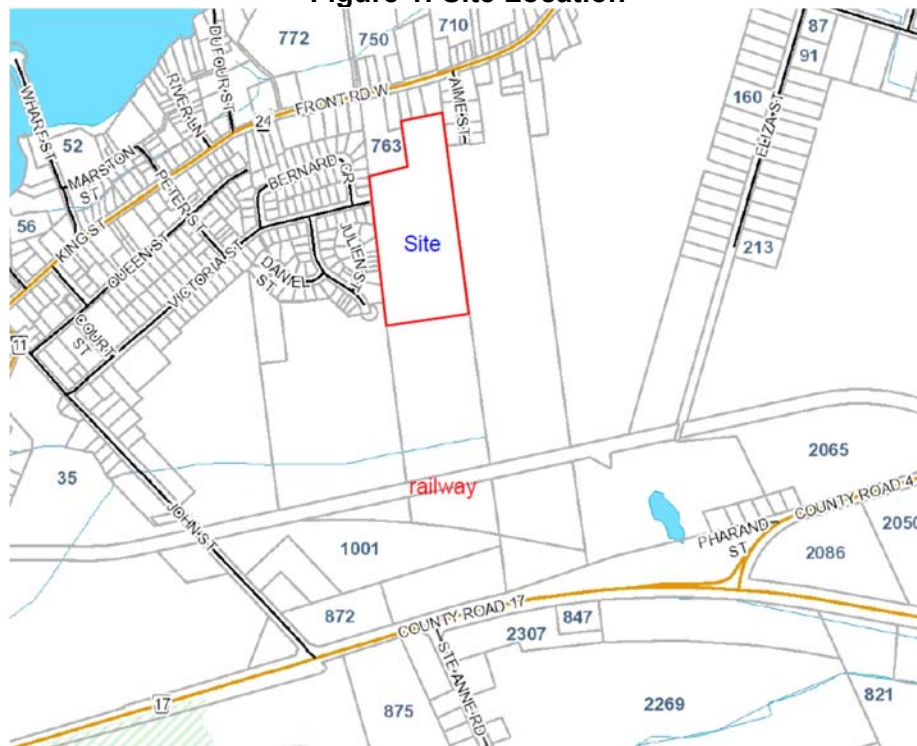
9167-5637 Quebec Inc. retained the services of Lascelles Engineering & Associates Ltd. (Lascelles) to review the need to conduct a noise and vibration assessment for a proposed residential subdivision development located in the Village of L'Original, Ontario.

Site Description

The proposed subdivision is located to the south of the Village of L'Original, Ontario. It is located to east of Victoria and Pilon Street; refer to **Figure 1** location. It is our understanding that the project will consist in the development of residential subdivision that will contained approximately 70 lots that will house single and semi-detached family dwellings. The subdivision will be serviced with municipal water and sewers, which will connect with those on Victoria Street. The stormwater facility in the form of a pond will be located along the eastern property line, south of the residential lots. Access to the subdivision will be from Victoria Street. A draft plan of subdivision is attached with this letter.

The subdivision under review has an irregular rectangular shape being approximately 175m wide (east-west) and approximately 430m deep (north-south) for an approximate total surface area of 7.33ha (18.12 acres). Most of the northern portion of the site was formerly forested and for which it was recently cleared. The southern portion of the site was former agricultural fields that were left unattended for numerous years and became overgrown with wild grasses and shrubs as well as edge rows, especially along the perimeter. Recently however, the owner has returned the property to crops over most of the site.

Figure 1: Site Location



Railway Operations

The railway runs to the south of the proposed subdivision at a distance of approximately 320m. The railway is owned and operated by the Canadian National Railway Company (CN). This portion of the railway is considered a spur line that only services the Ivaco Steel Mill, which located over than 1km to the west of John Street and it is where the spur line starts.

As per our conversation with Mr. Raymond Beshro, Senior Officer – Community Planning and Development, the operations on the railway line bordering the sites consist at most of one train per day passing the site twice. There are times that the spur line is not use for several weeks, if not months, and depends on market demand. The spur line services the Ivaco Rolling Mills that transports steel billets and hot rolled wire rod to Montreal.

It is our understanding that the train operates at a speed of approximately 30 km/h and consists of two (2) locomotives and five (5) wagons at maximum. The train uses the line between 7AM and 7PM. It is anticipated that future operations will remain the same and would not exceed the maximum of one train per day, passing the site twice a day. The train uses its whistle at the intersection with John Street.

Therefore, the maximum occurrence for this site would be two train passing the subdivision during the same day. From our discussions with the noted CN representative, they would not require a vibration and/or noise studies for a spur line, and consequently, it would be a requirement of the United Counties of Prescott-Russell.

Official Plan Policies

According to United Counties of Prescott-Russell's Official Plan (Office Consolidation – April 2016) that relates to development near existing railways more specifically, Section 3.3.14.2 Railway Properties; which states;

“All proposed residential or other sensitive use development within 300 metres of a railway right-of-way will be required to undertake noise studies, to the satisfaction of the Municipality in consultation with the appropriate railway, and shall undertake appropriate measures to mitigate any adverse effects from noise that were identified. All available options, including alternative site layouts and/or attenuation measures, will be thoroughly investigated and implemented if practicable to ensure appropriate sound levels are achieved, particularly with respect to the 55 dBA outdoor living area criterion.”

Furthermore, Section 3.3.14.3 states;

“All proposed residential or other sensitive use development within 75 metres of a railway right-of-way will be required to undertake vibration studies, to the satisfaction of the Municipality in consultation with the appropriate railway, and shall undertake appropriate measures to mitigate any adverse effects from vibration that were identified.”

CN Guidelines

As mentioned above, the CN considers this railway a spur line. From our discussions with their representative, they are only requesting that we adhere to their spur line requirements, if applicable. We have reviewed these requirements and considering that we have no residential lots located within 300m of their right-of-way, none of the requirements are applicable to this subdivision development. We have attached the CN's spur line requirements for review.

Conclusion

In conclusion and considering that the most southern boundary of a residential lot within the proposed draft plan of subdivision will be located more than 75m and 300m from the railway right-of-way, no noise or vibration studies are required as per UCPR' Official Plan policies and the CN guidelines. The actual distance from the most southern residential lot to the railway right-of-way is 320m. At this distance, no safety measures are also required.

We trust this report provides sufficient information for your present purposes. If you have any questions concerning this report or if we may be of further services to you, please do not hesitate to contact our office.

**Yours truly,
Lascelles Engineering & Associates Ltd.**



Mario Elie, Senior Technologist
Project Manager



Will Ball, P. Eng.

Attach: Draft Plan of Subdivision – Dated November 01, 2016
CN Spur Line Requirements

PRINCIPAL BRANCH LINE REQUIREMENTS

- A.** Safety setback of habitable buildings from the railway rights-of-way to be a minimum of 15 metres in conjunction with a safety berm. The safety berm shall be adjoining and parallel to the railway rights-of-way with returns at the ends, 2.0 metres above grade at the property line, with side slopes not steeper than 2.5 to 1.
- B.** The Owner shall engage a consultant to undertake an analysis of noise. At a minimum, a noise attenuation barrier shall be adjoining and parallel to the railway rights-of-way, having returns at the ends, and a minimum total height of 4.0 metres above top-of-rail. Acoustic fence to be constructed without openings and of a durable material weighing not less than 20 kg. per square metre of surface area. Subject to the review of the noise report, the Railway may consider other measures recommended by an approved Noise Consultant.
- C.** Ground-borne vibration transmission to be evaluated in a report through site testing to determine if dwellings within 75 metres of the railway rights-of-way will be impacted by vibration conditions in excess of 0.14 mm/sec RMS between 4 Hz and 200 Hz. The monitoring system should be capable of measuring frequencies between 4 Hz and 200 Hz, ± 3 dB with an RMS averaging time constant of 1 second. If in excess, isolation measures will be required to ensure living areas do not exceed 0.14 mm/sec RMS on and above the first floor of the dwelling.
- D.** The Owner shall install and maintain a chain link fence of minimum 1.83 metre height along the mutual property line.
- E.** The following clause should be inserted in all development agreements, offers to purchase, and agreements of Purchase and Sale or Lease of each dwelling unit within 300m of the railway right-of-way: "Warning: Canadian National Railway Company or its assigns or successors in interest has or have a rights-of-way within 300 metres from the land the subject hereof. There may be alterations to or expansions of the railway facilities on such rights-of-way in the future including the possibility that the railway or its assigns or successors as aforesaid may expand its operations, which expansion may affect the living environment of the residents in the vicinity, notwithstanding the inclusion of any noise and vibration attenuating measures in the design of the development and individual dwelling(s). CNR will not be responsible for any complaints or claims arising from use of such facilities and/or operations on, over or under the aforesaid rights-of-way."
- F.** Any proposed alterations to the existing drainage pattern affecting railway property must receive prior concurrence from the Railway and be substantiated by a drainage report to the satisfaction of the Railway.
- G.** The Owner shall through restrictive covenants to be registered on title and all agreements of purchase and sale or lease provide notice to the public that the safety berm, fencing and vibration isolation measures implemented are not to be tampered with or altered and further that the Owner shall have sole responsibility for and shall maintain these measures to the satisfaction of CN.
- H.** The Owner shall enter into an Agreement stipulating how CN's concerns will be resolved and will pay CN's reasonable costs in preparing and negotiating the agreement.
- I.** The Owner shall be required to grant CN an environmental easement for operational noise and vibration emissions, registered against the subject property in favour of CN.