development engineering (London) Limited

CONSULTING CIVIL ENGINEERS

December 16, 2019 Project: DEL18-059

Municipality of Middlesex Centre
10227 Ilderton Road
Ilderton, Ontario
N0M 2A0

Attention: Mr. Jake DeRidder, C.Tech.

Re: 9904 Oxbow Drive, Komoka, ON
Noise Report Addendum #1

Mr. DeRidder:

Development Engineering (London) Limited (DevEng) has been retained by Brantam Developments Inc. to assess noise and vibration impacts from rail traffic on both a Canadian National (CN) and a Canadian Pacific (CP) rail line as well as road traffic from Komoka Road (Middlesex County Road #16) and Oxbow Drive on a proposed residential development to be constructed at 9904 Oxbow Drive in Komoka, Ontario. A noise assessment for the proposed development was prepared by our office, dated April 3, 2019, which was subsequently reviewed by Pinchin Ltd. on behalf of Municipality of Middlesex Centre and Jade Acoustics on behalf of CN. DevEng was provided with comments from both Pinchin Ltd. and Jade Acoustics in letters dated September 4, 2019 and August 12, 2019 respectively. This addendum has been prepared to address these comments. Responses to each of the comments have been itemized below and updated report text and modelling data has been included in this submission

Pinchin Ltd.

2.1.1 – Traffic Data Projections

1) As the acoustic consultant, we have no control over the construction timing of developments. In accordance with MECP guidelines, Noise Impact Studies are traditionally conducted during the planning stage which can take a considerable length of time to proceed through before detailed design and construction is even considered. It has traditionally been our practice to consider a 10 year extrapolation beyond the date of the report is an easily identifiable and more suitable assessment target rather than beyond the date of construction. That being said, considering how late it is within the calendar year 2019 we have updated the report with a 2030 forecast; and,
2) We have confirmed with CP that the 2017 traffic information that formed the basis of the noise modelling is still valid as of 2019 and have also received updated traffic information from CN. The modelling and report have been updated accordingly. Email correspondence from both railways is appended to the updated report.

2.1.2 – Stamson Calculations

1) At the planning stage, we typically do not have sufficient architectural information for each house within a subdivision to confirm if there are day-time sensitive receivers on the second storey of homes, so assumptions are typically made that only night-time receivers are present on the second storey which is the case in the majority of builds. In addition, STAMSON will not allow for multiple day-time receiver heights to be modelled in a single file to reflect both outdoor and indoor noise. Since the night time indoor noise criteria is lower we have found it governs in the majority of cases;

2) Without detailed architectural plans, house density values were determined assuming each lot will be built out with a house utilizing standard front (6.0 m) and side (1.5 m) yard setbacks and a 12.0 m building depth;
3) The model results for POA26 have been adjusted to reflect 0 building rows between the CP railway and the receiver. In reality, development of Block 177 will provide some shielding but since the site plan layout is unknown at this time it will not be included in the model. The updated modelling results have been compiled in the updated Report;
4) The updated modelling results now include whistle noise during the day-time hours;
5) It is noted NPC-300 includes different indoor noise criteria for Road and Rail noise. Since this assessment includes both road and rail sources, the rail criteria, as the more conservative of the two, were selected. These criteria are 40 dBA and 35 dBA for the indoor day and night time noise respectively, which amounts to 50 dBA and 45 dBA outdoor noise assuming a 10 dBA reduction for a standard OBC wall assembly; and,
6) As noted earlier, architectural details for each unit are not available at the planning stage. As a result, EW5 as a conservative standard is selected for each unit that will experience indoor noise levels in excess of 10 dBA above the NPC-300 criteria. Typically architectural details are provided to us at the permit stage for a more detailed assessment of building components of these units, including the assessment of windows and possible alternatives to EW5.

3.0 – Vibration Impact Assessment

1) Our inspector was present for every train pass-by over a 2 day period (September 6 and September 10, 2018). Unfortunately, there was an equipment malfunction on the September 6 pass-by and so only two full trains were recorded. While we agree more trains should have been recorded, we note there are no single family lots proposed within 75 m of the CP railway. Supplemental vibration readings will be conducted as part of the separate assessments of Blocks 177 and 178 for Site Plan Approval of the same;
2) As noted above, no single family homes are proposed within 75 m of the CP Railway. Supplemental vibration readings will be conducted as part of the separate assessments of Blocks 177 and 178 for Site Plan Approval of the same which will include 1 second intervals as a more continual reading;
3) In our experience, weather conditions have never been brought up as having a considerable impact on vibration test results. Upon speaking with a representative from Explotech who provided the equipment rental, it was noted that significant rainfall (not in a drizzle) could have an impact on the geophone but it would only result in elevated readings (more conservative); and,
4) As noted earlier, no architectural details are available for the individual single family homes at the planning stage that could be assessed. A cross section of a typical vibration resistant foundation assembly was included in Appendix B as provided to our office by the MECP years ago and which we have proposed as a standard for countless projects since when vibration is a concern. As noted in Section 8.0, this is only applicable for the multi-family blocks closest to the railway (Blocks 177 and 178).

4.0 – Stationary sources

1) In our opinion, the local road and rail sources located within 100 m of the subject site, as well as the industrial properties located at MN#9911-22747 Oxbow Drive within 50 m of the site will far outweigh noise generated by the gravel pit operations located 300-450 m away regardless of the equipment there. From satellite imagery it appears both pits pits are also shielded via significant vegetation, buildings as well as a wooden barrier between the Caradoc pit and the adjacent existing residential development (Caverhill Cres.). For these reasons, we did not provide assessment for the gravel pits in question.

   The ambient background noise noted during our noise measurements was generally caused by vehicular traffic and general urban hum.

Jade Acoustics

1) As noted in the response to Pinchin's comments, we have confirmed with CP that the 2017 traffic information that formed the basis of the noise modelling is still valid as of 2019 and have also received updated traffic information from CN. The modelling and report have been updated accordingly. Email correspondence from both railways is appended to the updated report;
2) As noted in the response to Pinchin's comments, architectural details for each unit are not available at the planning stage. As a result, EW5 as a conservative standard is selected for each unit that will experience indoor noise levels in excess of 10 dBA above the NPC-300 criteria. Typically architectural details are provided to us at the permit stage for a more detailed assessment of building components of these units, including the assessment of windows and possible alternatives to EW5;
3) As indicated in the note below table 3, the unattenuated night-time sound levels are simply 10 dBA more than the reported indoor noise levels, as is a typical wall assembly constructed to OBC standards;
4) A legend has been added to table 3 accordingly;
5) We note there are no proposed single family dwellings located within 100 m of either railway. As such, alternative assemblies with a similar STC rating should be allowable if a builder so chooses to utilize them;
6) We note this clause is required for every unit within the proposed subdivision. A note to this effect has been added to Figure 1;
7) Noted. Supplemental assessments for these blocks will be compiled as part of Site Plan approval of the same; and,
8) As noted earlier, no architectural details are available for the individual single family homes at the planning stage that could be assessed. A cross section of a typical vibration resistant foundation assembly was included in Appendix B as provided to our office by the MECP years ago and which we have proposed as a standard for countless projects since when vibration is a concern. As noted in Section 8.0, this is only applicable for the multi-family blocks closest to the railway (Blocks 177 and 178).

If you have any questions or concerns about the above, please contact the undersigned.

DEVELOPMENT ENGINEERING (LONDON) LIMITED

Derek J. Hoevenaars, P.Eng.
Senior Project Engineer

cc: Mr. Doug Stanlake
Mr. Joe Haasan

encl. Updated Report
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