

June 26, 2024

Aercoustics Project #: 23234.00

BelCal Inc.

2907 Upper James St.
Mt Hope, ON, L0R 1W0

ATTN: Rob Stovel Sr. – Stovel and Associates Inc.

CC: -

Subject: 6640 7th Line (Belwood Subdivision)
Township of Centre Wellington, Ontario

1 Introduction

Aercoustics Engineering Limited (Aercoustics) was retained by BelCal Inc. to prepare an Environmental Noise Impact Study (ENIS) to support an application for a proposed residential subdivision in the Township of Centre Wellington, located at 6640 7th Line, Belwood, Ontario.

This letter serves to address comments made by Valcoustics Canada Ltd. on behalf of the County of Wellington, regarding a peer review of Aercoustics' Noise Study, dated August 16, 2023. The peer review comments letter is dated January 26, 2024.

Updated calculations and an updated report have been provided to address incorrect input road traffic parameters inadvertently used in original noise model and the resultant predicted sound levels presented in the original ENVIS report. (i.e. traffic speed and overly conservative projected traffic volumes).

2 Peer Review Comments and Responses

Comment 1:

We are in agreement with the findings of the Study that there are no aircraft, railway or stationary noise sources in the vicinity significantly impacting the site. Road traffic is the dominant noise source.

Response 1:

No response is required.



Comment 2:

As per the current governing noise guidelines NPC-300, the method to be used for predicting road traffic noise is ORNAMENT, typically using the industry standard software STAMSON. Within the new draft noise guideline document NPC-306, the methodology for predicting road traffic noise has been updated to the TNM algorithm by the US Federal Highway Administration (FHWA), together with the most current FHWA version of TNM software available.

The use of the TNM algorithm via third-party software, such as Cadna(A) is acceptable as long as verification can be provided to show identical results using the FHWA version of TNM software and those from the third-party software. The FHWA has prepared documentation on this consistency testing for TNM as well as Automated Consistency Test Suite 1.0 software to facilitate this verification. FHWA documents on consistency testing have been attached for reference.

Given the above, please provide appropriate verification of the TNM algorithm via Cadna(A). Alternatively, use ORNAMENT/STAMSON or the most current FHWA version of TNM software available for the analysis.

Response 2:

Representative sample calculations have been provided in Appendix C to show results using the latest TNM software (TNM 3.2) and the TNM implementation in Cadna(A) (TNM 2.5). Modelling comparison shows that results from Cadna(A) (TNM 2.5) are comparable with the latest TNM software (TNM 3.2) and within a 1 dB margin. It should be noted where slight deviations occur the Cadna(A) software implementation (TNM 2.5) results are higher and thus considered conservative.

Table 1 Modelling comparison - CadnaA TNM 2.5 and TNM software TNM 3.2

Calculation Location	Receptor Height (m)	Description	CadnaA TNM 2.5 Day L_{eq} (dBA)	FHWA TNM 3.2 Day L_{eq} (dBA)
C01	7.5	Lot 107, 3-storey dwelling, Southeast façade	55	54
C02	7.5	Lot 99, 3-storey dwelling, Northeast façade	51	50
C03	7.5	Lot 2, 3-storey dwelling, Southeast façade	53	53
OLA 1	1.5	Lot 107 backyard	53	52

Calculation Location	Receptor Height (m)	Description	CadnaA TNM 2.5 Day Leq (dBA)	FHWA TNM 3.2 Day Leq (dBA)
OLA 2	1.5	Lot 99 backyard	50	49
OLA 3	1.5	Lot 2 backyard	50	49

Comment 3:

The Study does not provide adequate supporting information to review the road traffic noise analysis. Please provide sample calculations, source and protocol tables and/or the Cadna(A) files themselves for review.

Response 3:

Representative sample calculations have been included in Appendix C of the updated report.

Comment 4:

It's not clear what the correlation is between the peak hour Traffic Study excerpt in Appendix C and the road traffic volumes shown in Table 2. Please provide additional source information from the Traffic Study as well as any calculations used to derive the projected 2042 traffic volumes, truck percentages and day/night split.

Response 4:

The road traffic volume-counts were obtained from the Traffic Study conducted by WSP. Turning movement counts were used to estimate the AADT, i.e. the maximum of peak a.m. or p.m. traffic on either side of the intersection times a factor of 10. The AADT was projected from 2022 at a growth rate of 2% to the year 2042 and is meant to account for 10 years after the full build out of the future community. Percentage of trucks were based on the Peak hour truck percentages from the Traffic Study and a 50/50 medium heavy split has been assumed. A day night split of 80/20 for major arterial roads is assumed for County Road 19 and a day night split of 90/10 for residential road is assumed for 7th Line.

Comment 5:

Given the scale of Figures 2, 3a and 3b and the oversized receptor circles (), it is difficult to determine the exact receptor locations relative to the dwellings and road sources. Please provide drawings that clearly indicate the receptor locations.

Response 5:

Updated figures showing receptor locations relative to dwellings and road sources have been provided in the updated report.

Comment 6:

Source to receiver distances given in Table 3 are incorrect. Please revise the analysis and Study, as needed.

Response 6:

The source to receiver distances given in Table 3 contain typographical errors. The calculation results were not affected, and the inadvertent errors included in Table 3 have been corrected in the updated report attached to this response letter.

Comment 7:

Section 2.1 of the Study states that, "If it is not technically, economically or administratively feasible to achieve a level of 55 dBA, predicted noise levels between 55 dBA and 60 dBA may be acceptable provided that future occupants of the building are made aware of the potential noise problems through appropriate warning clauses.". At OLA locations where daytime sound levels exceed 55 dBA, Section 5.1 of the study does not provide rationale to indicate why it is not technically, economically or administratively feasible to mitigate sound levels to below 55 dBA. Please provide rationale or consider mitigation (i.e. sound barriers, increased setback etc.) for these locations.

Response 7:

Updated results show OLA locations previously identified with sound levels that exceed 55 dBA are no longer above the outdoor amenity area noise criteria and as such mitigation is not a consideration or requirement.

Comment 8:

Based on the noise contours in Figures 3a/3b, it appears that the requirement for future provision of central air conditioning should be applied to Lot 39. However, specific sound levels for this receptor were not provided in Figures 3a/3b or

Table 3. Please confirm the sound levels and ventilation requirements, if any, for Lot 39.

Response 8:

Updated results show lots previously identified for a requirement for future provision of central air conditioning are no longer above the noise criteria for ventilation requirements, including lot 39.

3 Closure

The comments made in the January 26, 2024, peer review performed by Valcoustics Canada Ltd. have been reviewed and addressed in this letter. Please let us know if there are any questions or concerns.

Sincerely,

AERCOUSTICS ENGINEERING LIMITED

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