November 9, 2021

Greenlane Joint Ventures Inc.
c/o Peter DeSantis Sr.
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Re: Noise & Vibration Impact Study Stationary Sources

1.0 Introduction

Thornton Tomasetti (TT) presents this memorandum regarding stationary noise sources for the proposed residential development (the Project), located at the northeast corner of Greenlane and Ontario Street in Beamsville, Ontario. TT prepared a Noise & Vibration Impact Study (NVIS) for the Project, dated October 20, 2021. This study was required by the Town of Lincoln and the Niagara Region for a Zoning By-law Amendment (ZBA) application.

This memo provides additional consideration and recommendations regarding the stationary noise source assessment (Part 5.0 of the NVIS). Based on the expected level of background noise in the area due to traffic noise, noise from the stationary noise sources neighbouring the Project site is expected to meet noise level limits at the Project.

2.0 Stationary Noise Sources

2.1 Noise Criteria for Stationary Noise Sources

The site-specific noise criteria for each time of day are the higher of the exclusionary noise level limits or the minimum hourly background noise level ($L_{EQ[1hr]}$).

Exclusionary Noise Limits

The guidelines for assessing the noise impact of noise-generating facilities on proposed noise-sensitive areas in Ontario are given in Part C of the MECP publication NPC-300 "Environmental Noise Guideline, Stationary and Transportation Sources – Approval and Planning," dated 2013. Due to the proximity of the Project site to Ontario Street and the CN Rail line, it is considered a Class 2 Area, which is characterized by higher background noise levels during the day and lower background noise levels at night. The exclusionary limits for stationary sources in a Class 2 Area are given in Table 1.

Table 1: MECP exclusionary noise level criteria for stationary noise sources (Class 2 Area)

Time Period	Plane of Window Point of Reception $L_{EQ\,[1hr]}$ (dBA)
Day-time (07:00 – 19:00)	50
Evening (19:00 – 23:00)	50
Night-time (23:00 – 07:00)	45

Background Sound Levels

Based on road traffic data described in the NVIS, the minimum hourly background noise level was calculated for the most-impacted noise-sensitive receptors, at the highest level (Level 8) on the north façade of the Project building. These points of reception (POR5a, POR5b, and POR5c) are labelled in Appendix A, Figure 1. The background noise calculations were based on a typical minimum hourly traffic distribution (based on the AADT), as shown in Table 2. The night-time period is split into 2 separate time periods, since the traffic volume between the hours of 00:00 – 06:00 is expected to be significantly lower than during the hours of 06:00 – 07:00 and 23:00 – 00:00 when stationary sources are expected to impact the Project site (see Section 2.2). Rail traffic was not included in the determination of the minimum hourly background noise levels, since the minimum hours are expected to include zero train passes, based on the provided rail traffic data. POR5c is shielded from road traffic noise due to the shape of the Project building itself, so the MECP exclusionary noise level criteria (Table 1) are used at this location. The calculated background noise levels for each receptor at each time period are summarized in Table 3.

Table 2: Minimum Hourly Traffic Volume for Each Time Period

Time of Day	Minimum Hourly Traffic Volume (% of AADT/24-hour Traffic Volume)
Night-time (00:00 – 06:00)	0.5%
Night-time (06:00 – 07:00; 23:00 – 00:00)	2.5%
Daytime (07:00 – 19:00)	4%
Evening (19:00 – 23:00)	3%

Table 3: Estimated background noise levels at points of reception (PORs)

POR ID	Time of Day	Estimated Background Noise Level from Road Traffic (L_{eq}, dBA)
POR5a	Night-time (00:00 – 06:00)	42
	Night-time (06:00 – 07:00; 23:00 – 00:00)	49
	Daytime (07:00 – 19:00)	51
	Evening (19:00 – 23:00)	50
POR5b	Night-time (00:00 – 06:00)	43
	Night-time (06:00 – 07:00; 23:00 – 00:00)	50
	Daytime (07:00 – 19:00)	52
	Evening (19:00 – 23:00)	51
POR5c	Night-time (00:00 – 06:00)	-
	Night-time (06:00 – 07:00; 23:00 – 00:00)	-

POR ID	Time of Day	Estimated Background Noise Level from Road Traffic (L_{eq}, dBA)
	Daytime (07:00 – 19:00)	-
	Evening (19:00 – 23:00)	-

Project Stationary Source Sound Level Limits

The site-specific noise criteria for each time of day are the higher of the exclusionary noise level limits (Table 1) or the minimum hourly background noise levels (Table 3). The site-specific criteria are shown in Table 4.

Table 4: Site-specific stationary source sound level limits

POR ID	Time of Day	MECP exclusionary noise level criteria (L_{eq}, dBA)	Estimated Background Noise Level from Road Traffic (L_{eq}, dBA)	Site-Specific Noise Level Criteria (L_{eq}, dBA)
POR5a	Night-time (00:00 – 06:00)	45	42	45
	Night-time (06:00 – 07:00; 23:00 – 00:00)	45	49	49
	Daytime (07:00 – 19:00)	50	51	51
	Evening (19:00 – 23:00)	50	50	50
POR5b	Night-time (00:00 – 06:00)	45	43	45
	Night-time (06:00 – 07:00; 23:00 – 00:00)	45	50	50
	Daytime (07:00 – 19:00)	50	52	52
	Evening (19:00 – 23:00)	50	51	51
POR5c	Night-time (00:00 – 06:00)	45	-	45
	Night-time (06:00 – 07:00; 23:00 – 00:00)	45	-	45
	Daytime (07:00 – 19:00)	50	-	50
	Evening (19:00 – 23:00)	50	-	50

2.2 Existing Stationary Noise Sources

Truck noise from the Across Country Transport (ACT) facility (4641 Falletta Court) is an existing stationary noise source that impacts the Project. As described in the NVIS, the worst-case predictable hour consists of 30 minutes of truck operations at the ACT site between the hours of 06:00 and 00:00 (midnight). Activity at the ACT site outside of the hours noted is not typically expected to occur.

The predicted noise levels at the Project during the worst-case predictable hour were calculated using the methods described in the NVIS. The estimated noise levels at POR5a, POR5b, and POR5c are shown in Table 5.

Table 5: Estimated noise levels from stationary sources at points of reception (PORs)

POR ID	POR Location	Distance from Stationary Source (Truck Noise at ACT)	Estimated Noise Level from Stationary Sources during the Worst-Case Predictable Hour (L_{eq}, dBA)
POR5a	Project north façade, Level 8 (east side of building)	130m	49
POR5b	Project north façade, Level 8 (center of building)	160m	47
POR5c	Project north façade, Level 8 (west side of building)	190m	45

2.3 Compliance with Site-Specific Noise Criteria

In Table 6, the site-specific noise criteria are compared with the estimated noise level from stationary sources during the worst-case operating hour. The noise levels due to stationary sources at ACT are expected to meet the noise limit criteria for all receptors at all time periods.

Table 6: Stationary source sound levels compared to site-specific noise criteria

POR ID	Time of Day	Site-Specific Noise Level Criteria (L_{eq}, dBA)	Estimated Noise Level from Stationary Sources during the Worst-Case Predictable Hour (L_{eq}, dBA)	Compliance with Noise Level Criteria?
POR5a	Night-time (00:00 – 06:00)	45	-[1]	Yes
	Night-time (06:00 – 07:00; 23:00 – 00:00)	49	49	Yes
	Daytime (07:00 – 19:00)	51	49	Yes
	Evening (19:00 – 23:00)	50	49	Yes
POR5b	Night-time (00:00 – 06:00)	45	-[1]	Yes
	Night-time (06:00 – 07:00; 23:00 – 00:00)	50	47	Yes
	Daytime (07:00 – 19:00)	52	47	Yes
	Evening (19:00 – 23:00)	51	47	Yes
POR5c	Night-time (00:00 – 06:00)	45	-[1]	Yes
	Night-time (06:00 – 07:00; 23:00 – 00:00)	45	45	Yes
	Daytime (07:00 – 19:00)	50	45	Yes
	Evening (19:00 – 23:00)	50	45	Yes

[1] No stationary noise activity is expected during these hours

3.0 Concluding Remarks

Based on the worst-case operation of the stationary sources, as described in Section 2.2, and the background noise levels due to traffic noise at the Project site, as described in Section 2.1, the noise levels from stationary sources meet the noise level criteria at the Project site. Therefore, no noise mitigation for stationary sources is required.

Achieving the required noise control requirements relies on correct incorporation of noise control recommendations into Architectural and Mechanical drawings and specifications, as well as correct installation during construction. On request, TT will conduct drawing reviews and onsite reviews of noise control measures and provide observations as appropriate; however, notwithstanding the foregoing, it is expressly understood and agreed that TT shall not have control or charge of, and shall not be responsible for the acts or omissions, including but not limited to means, methods, techniques, sequences and procedures, of the Design Professionals and/or Contractors performing design and/or construction on the Project. Accordingly, TT shall not be held responsible for the failure of any party to properly incorporate the noise control measures stated in this report.

Please do not hesitate to contact us if there are any questions.

Yours Truly,

Thornton Tomasetti

Paul Vanoostveen, P.Eng.
Engineer

Reviewed by:

Galen Wong
Senior Project Director

Appendix A: Figures

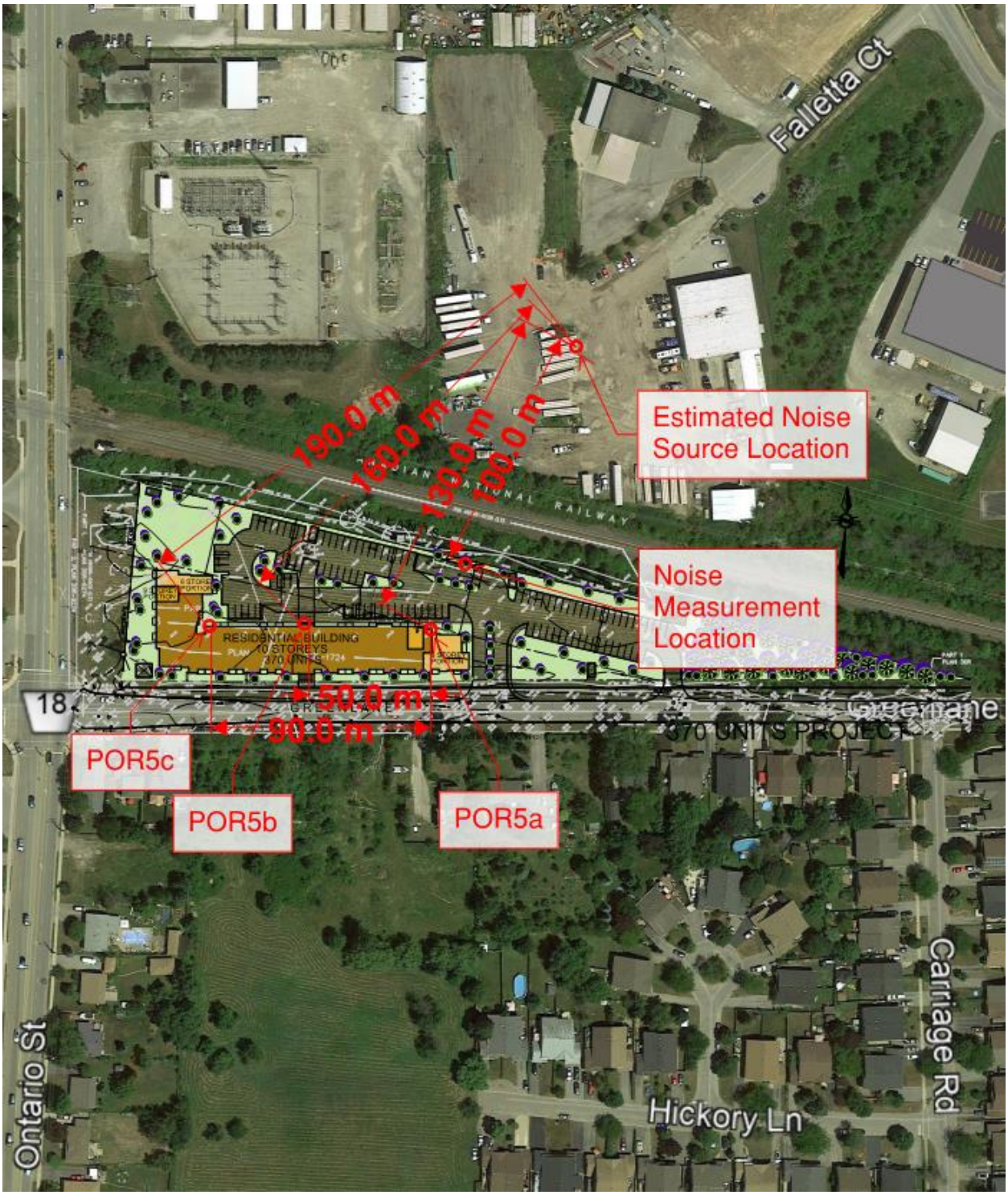

Figure 1: Noise measurement and point of reception (POR) locations (Level 8 of the north façade)