

July 26, 2024
Project/File: 160310788 Millenium Lands

Janine Fletcher
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Kitchener, ON N2G 4J3

Dear Janine Fletcher,

**Reference: Proposed Millenium Lands - Block 320, Plan 58M-503 331 City of Waterloo, ON
Noise Impact Study Peer Review**

1 Introduction

Stantec Consulting Ltd. was retained by Activa Holdings Inc. (Activa) to prepare a Noise Impact Study in support of Official Plan and Zoning By-law Amendment and Draft Plan of Subdivision applications for the development of lands located at Block 320, Plan 5M-506, in Waterloo, Ontario (the Site). The proposed subdivision includes residential and multiple residential blocks, a park block, a stormwater management block, and one commercial block.

RWDI has peer reviewed the Noise Impact Study prepared by Stantec and has summarized their comments in a letter dated February 29, 2024. The following are responses prepared by Stantec to the comments received.

2 Comment Responses

2.1 Assessment Approach Comments

RWDI Comment 1

The Noise Study reviews the potential sources of environmental noise in the area.

- A. *Transportation noise from the surrounding roadways and railway, which is considered appropriate.*
- B. *Offsite stationary sources were assessed from surrounding facilities, which is considered appropriate.*

Stantec's Response 1:

Noted.

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RWDI Comment 2

The submission package includes the appropriate Owners Declaration Statement, as required by the Region. The Consultant's Declaration Statement does not appear to be included and is required to be provided. As a reminder, the Consultant's Declaration Statement is required to be commissioned by a Commissioner of Oaths (or notarized by a Notary Public).

Stantec's Response 2:

Noted, statutory declaration will be included in updated final noise report.

2.2 Surface Transportation Noise

RWDI Comment 3

Indoor sound level limits for transportation noise are summarized in Section 3.1 of the Noise Study, which appropriately align with the guidance documents.

Stantec Response 3:

Noted

RWDI Comment 4

Noise Warning Clause and Ventilation requirements for transportation noise are summarized in Section 6.1 of the Noise Study, which appropriately align with the guidance documents.

Stantec Response 3:

Noted.

RWDI Comment 5

Transportation noise levels were evaluated at 6 locations shown in Figure 1 and summarized in Table 4-1 of the Noise Study. The 6 locations are considered to be representative of worst-case locations for each of the Noise Study block IDs (which differ from the Site Plan IDs) covering Block A, to E, and the Amenity Area/Planned Park. The 6 locations are considered acceptable representations of worst-case impacts for the development.

Stantec Response 5:

Noted.

RWDI Comment 6

Aircraft noise was excluded from the assessment, as the development is located outside of the local airport NEF 25 noise contours. This exclusion is considered appropriate.

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Stantec Response 6:

Noted.

RWDI Comment 7

Road Data is summarized in Table 5-1 of the Noise Study. The following is noted:

- A. The future road traffic information for Millenium Boulevard was provided by the Region. The data remains valid at this time.*
- B. County Squire Drive was excluded from the transportation assessment, as traffic data was not provided, and volumes were assumed to have an insignificant impact. This is considered an acceptable assumption for exclusion.*

Stantec Response 7:

Noted.

RWDI Comment 8

Modelling of transportation noise was completed using the STAMSON software package for each worst-case receptor identified. The following is noted:

- A. In general, the STAMSON modelling was completed appropriately with no major concerns.*
- B. A sample modelling file for Block C does not appear to be included. Future submissions/revisions to the Noise Study should include all sample modelling files.*
- C. Future submissions/revisions of the Noise Study should ensure modelled inputs are correct. For example, the Amenity Area STAMSON file (file AAMHBC.te) was assessed at a receptor height of 7.5 m. Although the corrected height will not affect the results, modelling inputs should reflect the receptor as accurately as possible.*
- D. Additional STAMSON Files from another report (600olaaar.te and 600POWNA.te) are included in Appendix E and should be removed.*

Stantec Response 8:

Stantec estimated noise impacts of Block C using modelled impacts from Block B with an estimated acoustic shielding factor. Stamson will include sample Stamson modelling outputs for Block C in future revisions of the Noise Study.

Regarding modelled receptor heights, Stantec conservatively modelled road traffic noise impacts using reflective ground as a Stamson modelling input. Receptor heights have no impact on modelled noise levels when using the reflective ground assumption. Stantec notes the comment and will update modelling files to match heights presented in Table 4-1 of the Study.

Additional modelling files will be removed from report appendices.

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RWDI Comment 9

Table 7-1 summarizes the transportation modelling results for all predicted locations of facades and OLAs. The following is noted:

- A. The results align with the STAMSON modelling results in Appendix E, with minor typos.*
- B. Although a STAMSON modelling file was not provided for Block C, the results seem appropriate.*
- C. The requirement for the Provision for Air Conditioning is considered appropriate for Block A and B of the development, based on the Noise Study block labelling.*
- D. Façade construction meeting the minimum requirements of Ontario Building Code for all development blocks is considered appropriate for the development.*
- E. Warning clauses are summarized in Table 7-1 and Section 8.1 of the Noise Study. The following is noted:*
 - i. The inclusion of a Type C warning clause is considered appropriate for Block A and Block B the development, based on the Noise Study block labelling.*
 - ii. No warning clauses are recommended for the amenity areas, which is considered appropriate, based on the results of the Noise Study.*

Stantec Response 9:

Noted.

2.3 Stationary Noise – Off Site Sources Comments

RWDI Comment 10

The Noise Study initially identifies the surroundings as a Class 2 area, based on observations and measurements during a site visit on September 20, 2024. This is considered appropriate.

Stantec Response 10:

Noted.

RWDI Comment 11

The default NPC-300 guideline limits were applied and summarized in Table 3-2, which is considered appropriate.

Stantec Response 11:

Noted.

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RWDI Comment 12

Receptor heights are summarized in Table 4-1 and are considered appropriate based on the anticipated building types within the development.

Stantec Response 12:

Noted.

RWDI Comment 13

A review of the stationary noise sources included in the Noise Study was completed. The following is noted:

- A. Potential sources of stationary noise considered in the Noise Study were identified during site visits within the area on September 20, 2022 and September 26, 2022.*
- B. Identified significant noise sources include:*
 - i. Rooftop HVAC equipment associated with RIM Park, Enova Power/ Alliance Metering Solutions, Container Building (southeast of Enova Power), and commercial facilities southeast of the site;*
 - ii. Vehicle noise associated with the Enova Power facility;*
 - iii. Cooling towers associated with the Rim Park complex.*

In general, inclusion of the above equipment is considered appropriate.
- C. In addition to the above, the following continuous noise sources were noted:*
 - i. The Enova Power (formerly Waterloo North Hydro Inc. and Kitchener-Wilmot Hydro Inc.)/Alliance Metering Solutions facility is understood to be operating under the CofA (Air) No. 4794-8K6K5C, which includes an emergency generator. As the emergency generator is visible in available on-line imagery on the south-west portion of the site, an assessment of generator testing noise impacts is required to confirm the NPC-300 guideline limits are met at the proposed development.*
 - ii. The container building, located outside of the Enova Power/Alliance Metering Solutions site to the south-east, appears to include an emergency generator. Confirmation is required regarding the type of equipment and included in the assessment, if identified as a significant noise source.*
- D. On review the Enova Power (formerly Waterloo North Hydro Inc. and Kitchener-Wilmot Hydro Inc.)/Alliance Metering Solutions yard, stockpiles are visible in available on-line imagery and appear to be piping. A review of Alliance Metering Solutions yard activities is required, to confirm impulsive noise is not applicable and/or a concern for the proposed development. Documented communications with Alliance Metering Solutions are to be included in future revisions/updates to the Noise Study.*

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- E. *Representative sound level data for the modelled equipment was taken from Stantec's sound database and measurements during the September 22nd 2022 site visit, which is acceptable. However, source sound level data was not provided. Reference sound level data is required to confirm assumptions are considered appropriate.*
- F. *In addition to the sound level data, modelling parameters such as the number of trucks and speeds applied in the noise modelling are to be provided. In general, future submissions/revisions to the noise study are required to include assumptions and inputs covering all types of noise sources.*
- G. *HVAC duty cycling of 100% during the daytime (assumed to include evening) and 50% during the night-time is considered acceptable.*

Stantec Response 13:

- A. Noted.
- B. Noted
- C. Noted, see below.
 - i. As is visible from satellite imagery, there is an existing two storey residence at 515 Country Squire Road which is located 337 meters east of the emergency generator operated by Enova Power. The closest potential receptor at the Millenium Lands Development given required setback distances from the edge of the property line is 345 meters east of the Enova Power emergency generator. The Millenium Lands Development receptor location is at the western edge of Block D. As the Enova Power corporation must meet applicable NPC-300 sound level limits at existing receptors, and the Millenium Lands Development receptors are further away than then 515 Country Road existing receptor, by inference then the generator (which is assessed as an independent emergency testing scenario) is considered in compliance. Stantec has excluded the generator based on this assessment.
 - ii. Stantec confirms that the structure identified by RWDI southeast of the Enova Power facility is an emergency generator operated by a separate legal entity. Stantec has included this generator using O.Reg. 524/98 exclusionary noise limits, Section 4, Subsection 7. Stantec has assumed that the owner has sought an exemption per O.Reg. 524/98 and that the generator meets the acoustic specifications required for the exemption as the generator does not have a registered environmental approval.
- D. Per MECP publication NPC-101 "Definitions" the Ministry defines "impulsive sound" as a single pressure pulse or single burst of pressure pulses as defined by IEC 179A. Further, MECP publication NPC-103 procedures, Section 3, "Procedures for Measurement of Steady or Impulsive Sound" provides examples of impulsive sounds which include gunshots, certain explosive pest control devices, and certain industrial metal working operations (e.g. forging, hammering, punching, stamping, cutting, forming, and molding).

Stantec conducted three (3) site visits on September 20th, 2022, September 26th, 2022, and July 7th, 2023 and did not identify any sources of impulsive sound at the Enova Power facility which meet the above definition.

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Operations observed at the Enova Power facility during the site visit were limited to vehicles entering and exiting the site, picking and loading of electrical equipment onto company vehicles, and unloading of vehicles at the warehouse portion of the facility.

- E. Noted, Stantec will include reference sound power data for modelled sources
- F. Noted, input parameters for truck speed and quantity will be included in updated report
- G. Noted

RWDI Comment 14

A review was completed of the sound level measurement procedure. The following is noted:

- A. *Measurements were completed using a Larson Davis LXT Type 1 sound level meter, following NPC-103. This is considered appropriate.*
- B. *Future submissions/revisions to the noise study are required to include weather conditions during the measurement period.*

Stantec Response 15:

Noted, Stantec will include weather conditions during site visits.

RWDI Comment 15

Modelling was completed in the Cadna/A software package. The following is noted:

- A. *The ISO 9613 sound propagation algorithms in Cadna/A are a suitable model.*
- B. *The application of a 0.2 general ground absorption factor with 0.8 ground absorption factor applied to areas covered in vegetation. This is considered acceptable.*
- C. *The Noise Study indicated that the modelling was completed “consistent with MECP accepted practice”, which is considered appropriate. Confirmation is required regarding the Cadna/A options “No Subtraction of negative Ground Attenuation” and “No negative path difference” are selected in the noise modelling, to be consistent with MECP practices.*

Stantec Response 15:

Noted, Stantec has confirmed that the selection of “No Subtraction of Negative Ground Attenuation” and “No negative path difference” in the Cadna calculation configuration results in no changes of contours of predicted noise impact at the development.

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RWDI Comment 16

Modelled daytime sound level contours are shown in Figure 2 of the Noise Study. The following is noted:

- A. *Noise contours were provided at a height of 4.5 m, which is considered generally acceptable. As the receptor heights vary from 1.5 m to 10.5 m above grade, the worst-case noise contour height should be provided.*
- B. *As the OLA height is lower than the provided noise contours, impacts are considered worst-case and acceptable.*
- C. *Noise contours are shown for daytime only and indicated as applicable for night-time periods. This is considered conservative and acceptable.*

Stantec Response 16:

Noted.

RWDI Comment 16

Modelled daytime sound level contours are shown in Figure 2 of the Noise Study. The following is noted:

- A. *Noise contours were provided at a height of 4.5 m, which is considered generally acceptable. As the receptor heights vary from 1.5 m to 10.5 m above grade, the worst-case noise contour height should be provided.*
- B. *As the OLA height is lower than the provided noise contours, impacts are considered worst-case and acceptable.*
- C. *Noise contours are shown for daytime only and indicated as applicable for night-time periods. This is considered conservative and acceptable.*

Stantec Response 16:

Noted.

RWDI Comment 17

Modelled results are discussed as daytime and night-time only, where daytime is assumed to include the evening period. Future submissions/revisions to the Noise Study are required to include the evening period with the results/conclusions. In general, a table of results should be provided, similar to Table 7-1 for Transportation impacts, showing compliance for each section of the development.

Stantec Response 17:

Noted, Stantec provided assumption in report that daytime noise impacts are representative of evening noise impacts. Stantec will update tables, results, and conclusions to include mention specific evening conditions.

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RWDI Comment 18

The Class 2 sound level limits are shown to be met, based on the 4.5 m noise contours. A comment cannot be provided on compliance from the surrounding stationary noise sources, as insufficient information is currently provided in the Noise Study regarding source sound level data and assumptions. In addition, emergency generator testing and yard activity is required to be considered in the noise assessment.

Stantec Response 18:

Reference Stantec comment response 13 c) i. above.

RWDI Comment 19

A sample calculation for all sources at a representative worst-case point of reception is required, particularly since source data and locations are not provided in the Noise Study.

Stantec Response 19:

Noted, Stantec will provide sample calculations for worst-case points of reception.

RWDI Comment 20

As the Enova Power/Alliance Metering Solutions facility has the potential to be audible at the development, an MECP Type E warning clause is required to be included.

Stantec Response 20:

Based on site visits and existing residences which are in closer proximity to the Enova Power facility, Stantec does not recommend a Type E warning Clause. The Enova Power facility was not audible at the Site during site visits.

2.4 Stationary Noise – On Site Sources Comments

RWDI Comment 21

An assessment of development mechanical systems on the proposed development was not included in the Noise Study. In the absence of specific information, a general discussion should be included in future revisions/submissions of the Noise Study.

Stantec Response 21:

Noted, Stantec will provide a general discussion on this topic in the updated report.

RWDI Comment 22

When the applicable information becomes available, the Region of Waterloo requires an assessment of the development mechanical systems on itself and its surroundings. Reference to this requirement should be made in the Noise Study. Demonstrated compliance with applicable sound level limits for these sources must be shown prior to final planning approval.

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Stantec Response 22:

Stantec notes this comment and will provide a recommendation in the updated report that an assessment on on/off site noise impacts from on-site noise sources be conducted when additional mechanical information becomes available.

RWDI Comment 23

The Recommendation section of the Noise Study summarizes the mitigation requirements in the Noise Study.

Stantec Response 23:

Noted.

RWDI Comment 24

The report provides no specific concluding statement concerning feasibility of the development. A concluding statement regarding feasibility of the development is needed.

Stantec Response 24:

Noted, concluding statement recommending that the Development is feasible will be included in the conclusion.

3 Closing

We trust that the above responses are satisfactory. If you have any questions, please contact the undersigned.

Regards,

STANTEC CONSULTING LTD.

 Digitally signed
by Samuel Arnold
Date: 2024.07.29
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