Wellesley Property, Gerber Road – Plan 1148, Part Lot 80 – Noise Impact Study

FINAL REPORT

August 31, 2021

Prepared for:

Strohvest Ontario Inc.

Prepared by:

Stantec Consulting Ltd.
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Mississauga, ON L5N 0B3

Project Number: 161413217

Revision: A

Limitations and Sign-off

This document entitled Wellesley Property, Gerber Road – Plan 1148, Part Lot 80 – Noise Impact Study was prepared by Stantec Consulting Ltd. (“Stantec”) for the account of Strohvest Ontario Inc. (the “Client”) to support the Client’s development application approval for the Wellesley Property, Gerber Road - Plan 1148, Part Lot 80 located at Gerber Road in Wellesley, Ontario. In connection therewith, this document may be reviewed and used by the public authorities participating in the review process in the normal course of their duties. Except as set forth in the previous sentence, any reliance on this document by any other party or use of it for any other purpose is strictly prohibited. The material in it reflects Stantec’s professional judgment in light of the scope, schedule and other limitations stated in the document and in the contract between Stantec and the Client. The information and conclusions in the document are based on the conditions existing at the time the document was published and does not take into account any subsequent changes. In preparing the document, Stantec did not verify information supplied to it by the Client or others, unless expressly stated otherwise in the document. Any use which another party makes of this document is the responsibility and risk of such party. Such party agrees that Stantec shall not be responsible for costs or damages of any kind, if any, suffered by it or any other party as a result of decisions made or actions taken based on this document.

Prepared by Samuel Arnold Digitally signed by Samuel Arnold Date: 2021.09.01 15:40:48 -04'00'

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Samuel Arnold, M.A.Sc.
Acoustics, Noise and Vibration Specialist

Reviewed by Digitally signed by Mohammed Salim Date: 2021.09.01 16:00:15 -04'00'

(signature)

Mohammed Salim, P.Eng.
Senior Acoustics, Noise and Vibration Engineer

Approved by Digitally signed by Greg Romanick Date: 2021.09.02 11:18:28 -04'00'

(signature)

Greg Romanick, MCIP, RPP, MBA
Senior Planner

Executive Summary

Strohvest Ontario Inc. (Strohvest) retained the services of Stantec Consulting Ltd. (Stantec) to prepare a Noise Impact Study in support of the zoning by-law amendment and draft plan of subdivision application for Plan 1148, Part Lot 80 (Wellesley Property, Gerber Road) located at din Wellesley, Ontario.

The purpose of this study is to assess the noise impact on the proposed development from road traffic and stationary noise sources in the vicinity of the proposed development and recommend applicable noise control measures. This assessment was based on the conceptual Draft Plan of Subdivision dated April 21, 2021 prepared by Stantec.

This noise impact study was completed per the applicable Regional Municipality of Waterloo (RMOW) Noise Policy Implementation Guideline Part A (Regional Municipality of Waterloo 2019) and the Ministry of the Environment, Conservations and Parks (MECP, formerly MOE) NPC-300, Part C, guidelines for land use planning (Ontario Ministry of the Environment, Conservation and Parks 2013).

No rail lines exist within 500 m of the proposed site and the site is beyond the NEF 25 noise contours for local airports. Therefore, a rail noise and vibration impact assessment, and aircraft traffic noise impact assessment on the site was not warranted. A site visit confirmed that there are no significant existing stationary noise sources in the vicinity of the site. Therefore, an assessment of stationary noise sources was not required.

The road traffic noise levels at representative points of reception (PORs) were predicted according to the MECP and RMOW guidelines using STAMSON v5.03 noise modelling software. This noise modelling software implements the Ontario Road Noise Analysis Method for Environment and Transportation (ORNAMENT) (Ontario Ministry of Environment Conservation and Parks 1989), a recommended road traffic noise prediction method by MECP.

Based on this noise impact assessment, the following specific noise controls are required for Section A (Lot 1-7, Lot 25-30, and western/eastern facing OLAs for each lot):

- Type A noise warning clause
- Provision for air-conditioning and Type C noise warning clause for all units
- Compliance with Ontario Building Code for all units

The predicted road traffic noise levels at all other sections of the development are within the applicable RMOW and MECP sound level limits and do not require any noise mitigation or warning clauses. Building components for all units should be in compliance with Ontario Building Code.

The following suggested Warning Clauses are adapted from MECP and the RMOW, and they should be presented to the occupants/owners when the agreements of Offers of Purchase and Sale are prepared:

Type A Warning Clause:

> "Purchasers/tenants are advised that sound levels due to increasing road traffic may occasionally interfere with some activities of the dwelling occupants as the sound levels exceed the sound level limits of the Municipality and the Ministry of the Environment, Conservation and Parks."

Type C Warning Clause:

> "This dwelling unit has been designed with the provision for adding central air conditioning at the occupant's discretion. Installation of central air conditioning by the occupant in low and medium density developments will allow windows and exterior doors to remain closed, thereby ensuring that the indoor sound levels are within the sound level limits of the Municipality and the Ministry of the Environment, Conservation and Parks."

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Abbreviations

dB	Decibel
dBA	Decibel, A-weighted
MECP	Ontario Ministry of the Environment, Conservation and Parks
m	Metre(s)
NPC-300	Noise Pollution Control Guideline - Ontario
NWC	Noise Warning Clause
OLA	Outdoor Living Area
OLAs	Outdoor Living Areas
POR	Point of Reception
PORs	Points of Reception
POW	Plane of Window
RMOW	Regional Municipality of Waterloo

Glossary

A-Weighting	The weighting network used to account for changes in level sensitivity as a function of frequency. The A-weighting network de-emphasizes the low (i.e., below 1 kHz) frequencies, and emphasizes the frequencies between 1 kHz and 6.3 kHz, in an effort to simulate the relative response of the human ear. See also frequency weighting.
Daytime	Defined as the hours from 07:00h to 23:00h.
Decibel	A logarithmic measure of any measured physical quantity and commonly used in the measurement of sound. The decibel (dB) provides the possibility of representing a large span of signal levels in a simple manner. The difference between the sound pressure for silenced versus a loud sound is a factor of 1:1,000,000 or more and the same in Decibel is 0-130 dB, therefore it is less cumbersome to use a small range of equivalent values. A tenfold increase in sound power is equal to +10 dB; a tenfold increase in sound amplitude is equal to +20 dB.
Decibel, A-weighted	A-weighted decibels (dBA). Most common units for expressing sound levels since they approximate the response of the human ear.
Energy Equivalent Sound Level (L_{eq})	An energy-equivalent sound level (L_{eq}) over a specified period of time that would have the same sound energy as the actual (i.e., unsteady) time varying sound over the same period of time. It represents the average sound pressure encountered for the period. The period is often added as a suffix to the label (i.e., $L_{eq}(24)$ for the 24-hour equivalent sound level). A L_{eq} value expressed in dBA is a good, single-value descriptor to use as a measure of annoyance due to noise.
Frequency	The number of times per second that the sine wave of sound repeats itself. It can be expressed in cycles per second, or Hertz (Hz).
Frequency Weighting	A method used to account for changes in sensitivity as a function of frequency. Three standard weighting networks, A, B, and C, are used to account for different responses to sound pressure levels. Note: The absence of frequency weighting is referred to as “flat” response or linear weighting. See also A-weighting.

Ground Absorption Coefficient	A parameter defined based on noise reflection characteristics of a surface. It varies between 0.0 (fully reflective) to 1.0 (fully absorptive).
Mitigation	Measures taken to reduce, eliminate, or control impacts on the environment.
Night-time	Defined as the hours from 23:00h to 07:00h in Ontario
Noise	Any unwanted sound. “Noise” and “sound” are used interchangeably in this document.
Point of Reception	A representative point considered for the purpose of assessment within noise-sensitive receptor such as a residence, campground, daycare, school, church, or hospital.
Sound	A wave motion in air, water, or other media. It is the rapid oscillatory compression changes in a medium that propagate to distant points. It is characterized by changes in density, pressure, motion, and temperature as well as other physical properties. Not all rapid changes in the medium are due to sound (e.g., wind distortion on a microphone diaphragm).
Sound Level	Generally, sound level refers to the weighted sound pressure level obtained by frequency weighting, usually A- or C-weighted, and expressed in decibels
Sound Pressure	The root-mean-square of the instantaneous sound pressures during a specified time interval in a stated frequency band.
Sound Pressure Level	Logarithmic ratio of the root mean square sound pressure to the sound pressure at the threshold of human hearing (i.e., 20 micropascals).

Owner/Authorized Agent Statement

I am the owner of the property, or the owner's agent, and that I understand and agree with the noise attenuation measures proposed in the study entitled Wellesley Property, Gerber Road – Plan 1148, Part Lot 80 – Noise Impact Study for the development located at Gerber Road in Wellesley, Ontario.

The application has been designed to avoid the use of berms or walls as noise attenuation features where feasible.

If the application is changed in a way that may affect the noise level calculations, I will have a revised Noise Impact Study submitted to the Region.

Ron Stroh
Strohvest Ontario Inc.

PRESIDENT
Title

AUG 24/21
Date

1.0 INTRODUCTION

Stantec Consulting Ltd. (Stantec) was retained by Strohvest Ontario Inc. (Strohvest) to prepare a noise impact study in support of the zoning by-law amendment and draft plan of subdivision application for Plan 1148, Part Lot 80 (Wellesley Property, Gerber Road) located on Gerber Road in Wellesley, Ontario. A location plan is provided as Figure 1 in Appendix A.

The purpose of this study is to assess the noise impact of road traffic and stationary noise sources on the proposed development and provide recommendations for noise control measures, if required. This assessment is based on the conceptual draft plan of subdivision dated April 4, 2021 prepared by Stantec provided in Appendix B.

No significant stationary noise sources were identified in the vicinity of the site during a site visit on June 25, 2021. The existing background ambient sound is dominated by local road traffic from Gerber Road.

Rail noise and vibration are not considered in this assessment as there are no rail lines within 500 m radius of the proposed site. This site is also beyond the Noise Exposure Forecast (NEF) 25 noise contours for local airports and aircraft traffic noise impact on the site is therefore not assessed.

As required by the Regional Municipality of Waterloo guidelines, a copy of the consultant statutory declaration is included in Appendix C.

2.0 SITE LOCATION AND PLAN

The proposed site is located approximately 50 m northwest of the Gerber Road and Lawrence Street intersection in the Township of Wellesley, Ontario. The proposed site plan consists of 66 single detached homes, 34 semi-detached homes, and 66 townhouses.

The proposed site is currently designated as A1-17 agricultural per the Township of Wellesley Zoning By-Law 28/2006. Site specific zoning provisions restrict minimum lot area and frontage. The adjacent land to the north and west is zoned agricultural (A1) and (A1-17) per the Township of Wellesley zoning, lands to the south are zoned agricultural (Z1) per the Township of Wilmot zoning, and lands to the east are zoned residential (UR) per the Township of Wellesley zoning. Zoning maps from the townships are provide in Appendix D for reference.

3.0 GUIDELINES AND CRITERIA

The Regional Municipality of Waterloo (RMOW) Noise Policy Implementation Guideline Part A (Regional Municipality of Waterloo 2019) and the Ministry of the Environment, Conservations and Parks (MECP, formerly MOE) NPC-300, Part C, guidelines for land use planning (Ontario Ministry of the Environment, Conservation and Parks 2013) are used for this noise impact assessment.

3.1 TRANSPORTATION NOISE

Noise criteria as set by the MECP and RMOW guidelines are adapted for this assessment. Table 3.1 provides a summary of the applicable road traffic noise limits expressed as equivalent continuous sound levels (L_{eq}) for daytime (07:00 to 23:00) and nighttime (23:00 to 07:00). These sound level limits vary depending on the type of noise sensitive space being assessed (i.e., Indoor space vs. Outdoor space) and the time period being assessed (daytime vs. nighttime).

Table 3.1 MECP/RMOW Noise Criteria Limits for Road Traffic Noise

Type of Space	Time Period	Noise Criteria L_{eq} (dBA)
Indoor Living/Dining room	Daytime - (07:00 to 23:00)	45
	Nighttime - (23:00 to 07:00)	45
Indoor Sleeping Quarters (Bedrooms)	Daytime - (07:00 to 23:00)	45
	Nighttime - (23:00 to 07:00)	40
Outdoor Living Areas (OLA)	Daytime - (07:00 to 23:00)	55
	Nighttime - (23:00 to 07:00)	N/A

An OLA is defined as an outdoor amenity area where the enjoyment of the outdoor environment is important during the daytime period (07:00 to 23:00). Such areas may include:

- The backyard or patio within 3 metres (m) of the rear wall of a residential unit, or the recreational area designated on the development application
- The common outdoor area allocated for recreational purposes outside residential buildings such as apartments or condominiums
- Balconies and elevated patios[1]
- Parks and open spaces identified by the Area Municipality for passive recreation purposes within a plan of subdivision

[1] Balconies and elevated patios are considered part of the outdoor living area where they are the only outdoor living area for the occupant and meet the following conditions: depth greater than 4 m; outside exterior building façade; and unenclosed.

3.1.1 Noise Control Requirements

In accordance with MECP and RMOW Guidelines, where predicted noise levels exceed the criteria in Table 3.1, appropriate warning clauses and/or noise control measures will be required as a condition of the development application. These noise control measures are summarized in terms of ventilation requirements, building component upgrades and outdoor noise control requirements in Table 3.2, Table 3.3 and Table 3.4, respectively, and are further explained below.

Noise Warning Clause (NWC): Since sensitivity to noise varies among individuals, the projected noise level may be allowed to exceed the noise level objective by up to 5 dB without attenuation provided that a clause warning the future occupant of the potential noise concern is included in the Regional or Area Municipal Development Agreement whereby the owner agrees to advise future owners or tenants through all offers of purchase and sale, and rental agreements.

Provision for air conditioning: Units with this requirement must be designed to allow future occupants to install central air conditioning which will provide alternative ventilation if windows must be closed to reduce interior noise levels. In general, a forced air ducted heating system suitably sized and designed to permit the future installation of a central air conditioning system by the occupant is required. A sentence will be added to the Noise Warning Clause to notify future occupants of this provision. The provision for, or installation of, window or through-the-wall box air conditioners is not generally acceptable as a means of satisfying the requirement for air conditioning.

Central air conditioning or provision of alternate ventilation: Central air conditioning is required where projected interior noise levels are more than 10 dB in excess of the noise level objectives, so that windows may be closed to provide effective noise attenuation.

Building components designed to achieve indoor sound level criteria: Special wall, window and door construction that exceeds Ontario Building Code specifications may be required as determined by the Acoustic Insulation Factor or Sound Transmission Class. The recommendations must comply with local regulations; it should be clearly stated how the recommendations differ from Ontario Building Code requirements.

Outdoor Noise Control Measures: These are acoustic walls and/or berms, which are collectively referred to as noise barriers. Where a noise barrier is required the daytime noise level in the OLA must be attenuated to 60 dBA or less.

Table 3.2 Noise Control Ventilation Requirements for Indoor Living Areas

Predicted Indoor Noise Level[1], L_{eq} (dBA)		Required Noise Control Measures
Daytime (07:00 to 23:00)	**Nighttime (23:00 to 07:00)**	
46 to 55	41 to 50	Provision for air conditioning (A/C) and NWC[2] (Type C)
56+	51+	Central A/C or other ventilation system installed prior to occupancy and NWC (Type D)

Notes:

1. Defined as 10 dB less than the energy equivalent road traffic noise level calculated at exterior plane of window.
2. NWC is Noise Warning Clause.

Table 3.3 Building Component Requirements for Indoor Living Areas

Predicted Indoor Noise Level[1], L_{eq} (dBA)		Required Noise Control Measures
Daytime (07:00 to 23:00)	**Nighttime (23:00 to 07:00)**	
46 to 55	41 to 50	Compliance with Ontario Building Code
56+	51+	Building components designed and/or specified to achieve indoor sound level criteria

Note:

1. Defined as 10 dB less than the energy equivalent road traffic noise level calculated at exterior plane of window.

Table 3.4 Noise Control Requirements for Outdoor Living Areas

Predicted Outdoor Noise Level[1], L_{eq} (dBA)	Required Noise Control Measures
Daytime (07:00 to 23:00)	
56 to 60	NWC[2] (Type A)
61+	Alternative Land Use, Alternative Draft Plan Designs, Barriers and Possible NWC

Notes:

1. Defined as 10 dB less than the energy equivalent road traffic noise level calculated at exterior plane of window.
2. NWC is Noise Warning Clause.

3.2 STATIONARY NOISE

The MECP NPC-300 environmental noise guideline establishes criteria limit for noise level from stationary sources for both Outdoor Receptors and Plane of Window Receptors The sound level is expressed in terms of one-hour equivalent sound levels (L_{eq-1hr}) at the receptor. The higher of the MECP exclusion limit and the lowest existing hourly background sound level (ambient) at any point of reception is used as the applicable criteria for stationary noise. The proposed site is representative of a Class 3 Area, as described by the MECP classification, and the corresponding noise criteria limits for stationary noise impacting the site, as outlined in NPC-300, are summarized in Table 3.5.

Table 3.5 MECP Noise Exclusion Limits for Stationary Noise Sources

Receiver Category	Time Period (hh:mm)	L_{eq} (1hr) dBA [1]
Outdoor Receptor	07:00 - 19:00	45
Outdoor Receptor	19:00 - 23:00	40
Plane of Window Receptor	07:00 - 23:00	45
Plane of Window Receptor	23:00 - 07:00	40

Note:
1 Higher of the minimum existing hourly background (ambient) sound level or the exclusion limits.

3.2.1 Noise Control Requirements

The RMOW Noise Policy Implementation guideline does not apply to stationary and mobile sources of noise from industrial or commercial activities, as described in Section 2 of the guideline. The guideline defers to applicable MECP guidelines for stationary noise assessment and mitigation (if required). The applicable MECP guideline is NPC-300, section C4.

Although the most economical and practical noise control measures for stationary sources is at source mitigation, mitigation at receptors is permitted and recommended for land use planning. Air conditioning in lieu of operable windows, is not considered as an appropriate noise mitigation option for stationary sources, except for Class 4 acoustical areas as defined by NPC-300. Windows for noise sensitive spaces are assumed to be closed for Class 4 Areas and the use of central air conditioning may be acceptable if it forms an essential part of the overall building designs.

4.0 POINTS OF RECEPTION

Noise Impacts are evaluated at physical locations defined as points of reception (PORs). The PORs considered in this assessment are listed in Table 4.1 and are shown in relation to the site plan in Appendix B.

To assess sound levels for the indoor living areas, the PORs were located at the exterior plane of window (POW) at the highest storey height. Storey heights are defined as 1.5 m for the first floor and an additional 3 m for each subsequent floor. For outdoor living areas (OLAs), PORs were modelled at a height of 1.5 m above ground.

In accordance with RMOW/MECP noise guidelines, only private OLAs at ground level were assessed in this study.

Table 4.1 Points of Reception Summary

POR ID	Site ID	Height (m)	Receptor Type	Receptor Orientation (if applicable)
Section A	Lot 1-7	4.5	Plane of Window	
		1.5	OLA	West Facing
	Lot 25-30	4.5	Plane of Window	
		1.5	OLA	East Facing
Section B	Lot 31-43	4.5	Plane of Window	
		1.5	OLA	South Facing
Section C	Lot 8-24	4.5	Plane of Window	
		1.5	OLA	West Facing
	Block 10-12	4.5	Plane of Window	
		1.5	OLA	West Facing
Section D	Lot 44-63	4.5	Plane of Window	
		1.5	OLA	East Facing
Section E	Block 1-9	4.5	Plane of Window	
		1.5	OLA	South Facing
	Lot 64-83	4.5	Plane of Window	
		1.5	OLA	South Facing

Note:
1. Only qualifying OLAs under RMOW/MECP noise guidelines were assessed in this study.

5.0 ASSESSMENT METHODOLOGY

5.1 ROAD TRAFFIC

The road traffic noise levels at the PORs were predicted according to the MECP and RMOW guidelines using STAMSON v5.03 noise modelling software which implements the Ontario Road Noise Analysis Method for Environment and Transportation (Ontario Ministry of Environment Conservation and Parks 1989), a recommended road traffic noise prediction method by the MECP.

STAMSON modelling was configured to account for the separation distance from Gerber Road and set to calculate road traffic noise levels over an acoustically reflective intermediate surface (i.e., paved areas or water) between the roadway and the PORs.

A summary of the road traffic data used in the noise model is provided in Table 5.1. The road traffic data is based on the 2031 forecast of the Annual Average Daily Traffic (AADT) for Gerber Road provided by the Region of Waterloo (the Region). A copy of the AADT provided by the Region of Waterloo is attached as Appendix E.

Table 5.1 Road Traffic Volume Summary and Posted Speed

Roadway	Speed Limit (Km/h)	Traffic Volume					
		Daytime (07:00 to 23:00)			Nighttime (23:00 to 07:00)		
		Autos	Medium Trucks	Heavy Trucks	Autos	Medium Trucks	Heavy Trucks
Gerber Road	50	2993	63	95	333	7	11

5.2 STATIONARY NOISE

The site is in a residential rural area and no industries and/or significant stationary noise sources were identified in the vicinity of the site during the site visit. Therefore, a noise assessment for the stationary noise sources is not completed for this site.

6.0 NOISE IMPACT ASSESSMENT

The L_{eq} sound level due to road traffic was predicted at the representative POR for the sections outlined in Table 4.1. The worst-case noise impact at PORs for each section are summarized in Table 6.1. The predicted L_{eq} sound levels at PORs within Section A are at or above the applicable RMOW/MECP sound level limits. The predicted L_{eq} sound levels at PORs for all other Sections are at or below the applicable RMOW/MECP sound level limits.

A summary of the noise control requirements is also provided in Table 6.1. STAMSON sample calculations are attached as Appendix F.

Table 6.1 Summary of Predicted Road Traffic Noise Levels and Noise Control Measures

Section ID	POR ID	Height (m)	Receptor Type1	Receptor Orientation	Predicted Road Traffic Noise Level						Noise Control Requirements			
					Outdoor Leq (dBA)		Projected Indoor Noise Level2 Leq (dBA)		Road Traffic Noise Limit3 Leq (dBA)		Within Noise Limits?	Ventilation Requirements	Building Component Requirements	Required Warning Clause
					Day	Night	Day	Night	Day	Night				
Section A	Lot 1-7	4.5	POW		60	54	50	44	45	40	No	Provision for air conditioning and Type C Warning Clause	Compliance with OBC	NWC (Type C)
		1.5	OLA	West Facing	60	-	-	-	55	-	No	N/A	N/A	NWC (Type A)
	Lot 25-30	4.5	POW		60	54	50	44	45	40	No	Provision for air conditioning and Type C Warning Clause	Compliance with OBC	NWC (Type C)
		1.5	OLA	East Facing	60	-	-	-	55	-	No	N/A	N/A	NWC (Type A)
Section B	Lot 31-43	4.5	POW		53	47	43	37	45	40	Yes	N/A	Compliance with OBC	
		1.5	OLA	South Facing	53	-	-	-	55	-	Yes	N/A	N/A	
Section C	Lot 8-24	4.5	POW		52	45	42	35	45	40	Yes	N/A	Compliance with OBC	
		1.5	OLA	West Facing	49	-	-	-	55	-	Yes	N/A	N/A	
	Block 10-12	4.5	POW		52	45	42	35	45	40	Yes	N/A	Compliance with OBC	
		1.5	OLA	West Facing	49	-	-	-	55	-	Yes	N/A	N/A	
Section D	Lot 44-63	4.5	POW		52	45	42	35	45	40	Yes	N/A	Compliance with OBC	
		1.5	OLA	East Facing	49	-	-	-	55	-	Yes	N/A	N/A	
Section E	Block 1-9	4.5	POW		50	44	40	34	45	40	Yes	N/A	Compliance with OBC	
		1.5	OLA	South Facing	50	-	-	-	55	-	Yes	N/A	N/A	
	Lot 64-83	4.5	All Units		50	44	40	34	45	40	Yes	N/A	Compliance with OBC	
		1.5	OLA	South Facing	50	-	-	-	55	-	Yes	N/A	N/A	

Table Notes:
1. Only qualifying OLAs under RMOW/MECP noise guidelines were assessed in this study (i.e., common Amenity Area OLA and private OLAs at ground level).
2. Projected Indoor Noise Level assumed to be 10 dB less than the energy equivalent road traffic noise level calculated at exterior plane of window.
3. Applicable Road Traffic Noise limit from Table 3.1.
4. NWC - Noise Warning Clause
5. OBC - Ontario Building Code

7.0 NOISE WARNING CLAUSES

The results of the noise impact assessment indicate that road traffic noise levels at the OLAs and indoor living areas for all units are within the applicable limits, except for Section A. Predicted sound levels are expected to exceed the applicable sound level limits for Section A units. A Type A and C – Noise Warning Clause should be included in the Offers of Purchase and Sale for units within Section A.

The following suggested Warning Clauses are adapted from MECP and the RMOW, and they should be presented to the occupants/owners when the agreements of Offers of Purchase and Sale are prepared:

Type A Warning Clause:

> "Purchasers/tenants are advised that sound levels due to increasing road traffic may occasionally interfere with some activities of the dwelling occupants as the sound levels exceed the sound level limits of the Municipality and the Ministry of the Environment."

Type C Warning Clause:

> "This dwelling unit has been designed with the provision for adding central air conditioning at the occupant's discretion. Installation of central air conditioning by the occupant in low and medium density developments will allow windows and exterior doors to remain closed, thereby ensuring that the indoor sound levels are within the sound level limits of the Municipality and the Ministry of the Environment, Conservation and Parks."

8.0 CONCLUSIONS

Stantec was retained by Strohvest to prepare a Noise Impact Study in support of the zoning by-law amendment and draft plan of subdivision application for the proposed development at the Strohvest Wellesley Property, Plan 1148, part Lot 80, located in Wellesley Ontario.

Gerber Road was identified as a potential source of road traffic noise which could impact the proposed development. A site visit to the property was completed and determined that there were no significant stationary noise sources in the surrounding area, and therefore, an assessment of stationary noise sources is not required for this development.

No rail lines exist within 500 m of the proposed site and the site is beyond the NEF 25 noise contours for local airports. Therefore, rail noise and vibration, and aircraft traffic noise impact assessment on the site was not warranted.

The results of the study indicate that the predicted noise levels at the proposed development meet applicable MECP and RMOW requirements if the recommended warning clauses and provisions for air conditioning provisions provided in this report are incorporated in the agreements of Offers of Purchase and Sale, and building components adhere to Ontario Building Code requirements.

9.0 REFERENCES

Ontario Ministry of Environment Conservation and Parks. 1989. "ORNAMENT Ontario Road Analysis Method for Environment and Transportation."
Ontario Ministry of the Environment. 2013. "Environmental Noise Guideline. Stationary and Transportation Sources-Approval and Planning. Publication NPC-300."
Ontario Ministry of the Environment, Conservation and Parks. 2013. "Environmental Noise Guideline. Stationary and Transportation Sources-Approval and Planning. Publication NPC-300."
Regional Municipality of Waterloo. 2019. "Noise Policy Implementation Guideline."
The Corporation of the City of Waterloo. 2019. "Zoning By-Law 2018-050."

APPENDIX A
Figures

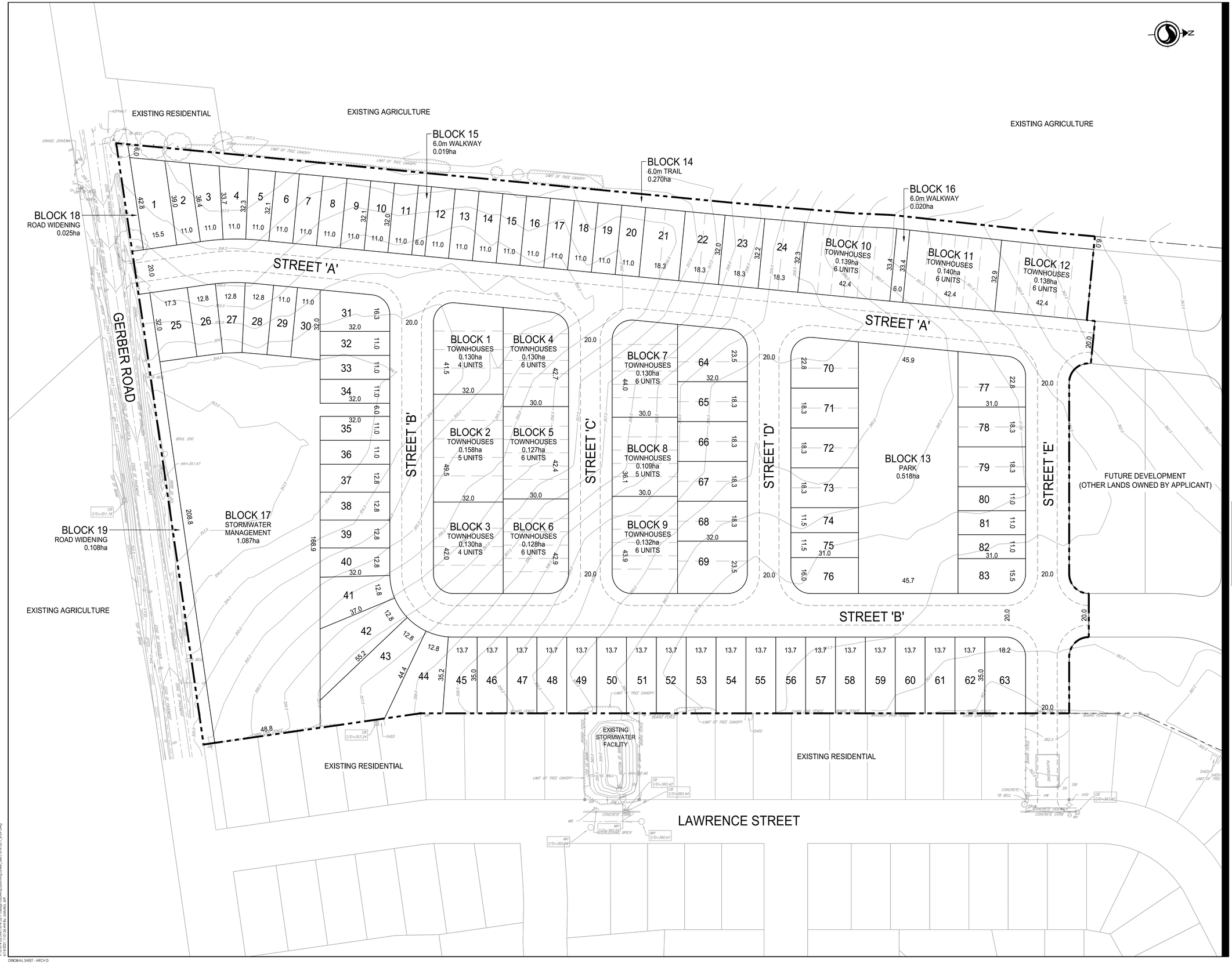
Stantec

N

NOISE IMPACT STUDY
STROHVEST ONTARIO INC - WELLESLEY,ONTARIO

FIGURE 1
SITE LOCATION PLAN

APPENDIX B
Site Plan



Stantec

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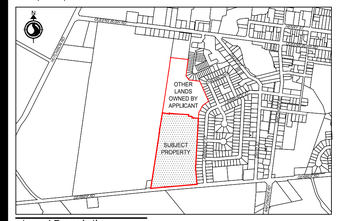
Key Map NTS.



Legal Description

Plan 1148, Part Lot 80,
Registered Plan 58R-3548, Part 1,
Township of Wellesley,
Regional Municipality of Waterloo

Information Required

Under Section 51(17) of the Planning Act,
R.S.O 1990 c.P 13 as Amended
a) - As Shown
b) - As Shown
c) - As Shown
d) - As Listed Below
e) - As Shown
f) - As Shown
g) - As Shown
h) - Municipal Water
i) - As Shown
j) - Municipal Sanitary and Storm Sewers
k) - None

Surveyor's Certificate

I hereby certify the boundaries of the subject lands and their relationship to the adjoining lands have been accurately and correctly shown.

Signed _____
O.L.S Name
Company Name

Date _____

Owner's Certificate

I hereby authorize Stantec Consulting Ltd. to submit this Draft Plan of Subdivision on my behalf.

Signed _____
Owner Name
Company Name

Date _____

Land Use Schedule

Lots/Blocks	Land Use	Area (ha)	# of Units
Lots 1-20, 25-63, 74-76, 80-83	Single Detached	2.915	66
Lots 21-24, 64-73, 77-79	Semi Detached	1.047	34
Blocks 1-12	Townhouse	1.596	66
Block 13	Park	0.518	
Block 14	6.0m Trail	0.270	
Blocks 15-16	6.0m Walkway	0.039	
Block 17	Stormwater Management	1.087	
Blocks 18-19	Road Widening	0.133	
Roads		2.582	
TOTAL		10.187	166 Units

Issued for Client Review	JJ	GR	2021.06.14
Revision	By	Appd	YYYY.MM.DD
File Name: 161413217_R-DP	JJ	JJ	GR	2021.04.21
	Dwn.	Dsgn.	Chkd.	YYYY.MM.DD

Permit-Seal

APPROVED: _____ DATE: _____

I hereby certify that the plan was prepared under the supervision of a registered professional planner, within the meaning of the Ontario Professional Planners Institute Act, 1994.

Client/Project
STROHVEST ONTARIO INC.

WELLESLEY PROPERTY
GERBER ROAD

TOWNSHIP OF WELLESLEY, ON

Title
CONCEPTUAL
DRAFT PLAN OF SUBDIVISION

Project No. 161413217
Scale 1:750 (0, 7.5, 22.5, 37.5m)
Revision 0
Sheet 1 of 1
Drawing No. DP-1

V:\161\414\active\161413217\design\drawing\planning\sheet_files\161413217_R-DP.dwg
6/14/2021 11:01:36 AM By: jasbolts, jeff

ORIGINAL SHEET - ARCH D

APPENDIX C
Consultant Statutory Declaration

CONSULTANT STATUTORY DECLARATION

CANADA	)	In the Matter of the Environmental Protection
	)	Act and the Planning Act
PROVINCE OF ONTARIO	)	
	)	And in the Matter of Future Development at
	)	Plan 1148, Part Lot 80, Strohvest Wellesley
	)	Property located at Gerber Road in
	)	Wellesley, Ontario, in the Regional
	)	Municipality of Waterloo

I, **Mohammed Salim Thottathikulam**, of the **Town of Ancaster**, in the **City of Hamilton**, SOLEMNLY DECLARE THAT:

1. I am a Licensed Professional Engineer employed by Stantec Consulting Ltd. ("Stantec"), which holds a Certificate of Authorization and have personal knowledge of the matters set out below.

2. I was retained or employed as the principal consultant to undertake the assessment of noise impacts and recommendation of noise mitigation measures for the property described as Wellesley Property, Gerber Road – Plan 1148, Part Lot 80 located on Gerber Road in Wellesley, Ontario, in the Regional Municipality of Waterloo.

3. I had the expertise required to perform these services. Any assessment activities or recommendations requiring the application of engineering principles have been undertaken or supervised by an engineer qualified to perform such services.

4. The information used in the study entitled Wellesley Property, Gerber Road – Plan 1148, Part Lot 80 – Noise Impact Study, dated August 31, 2021 is the best available information provided to Stantec as of the date of the study.

5. The noise level calculations, the interpretation of noise attenuation requirements, and the recommended measures are in accordance with the Ministry of Environment, Conservation and Parks Guidelines (Publication NPC-300 (2013)), and the Regional Municipality of Waterloo's Noise Policy Implementation Guideline (July 14, 1999, as updated on October 22, 2019).

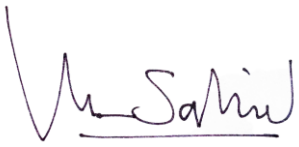
6. The physical noise attenuation measures (if any) proposed in this study are feasible to implement and will provide the level of attenuation indicated in the study.

7. I acknowledge that this study may be subject to a peer review by the Regional Municipality of Waterloo conducted at Stantec's cost.

8. I acknowledge that public authorities may rely on this statement, subject to the qualifications and limitations contained within the Noise Study Report.

AND I make this solemn Declaration conscientiously believing it to be true and knowing that it is of the same force and effect as if made under oath.

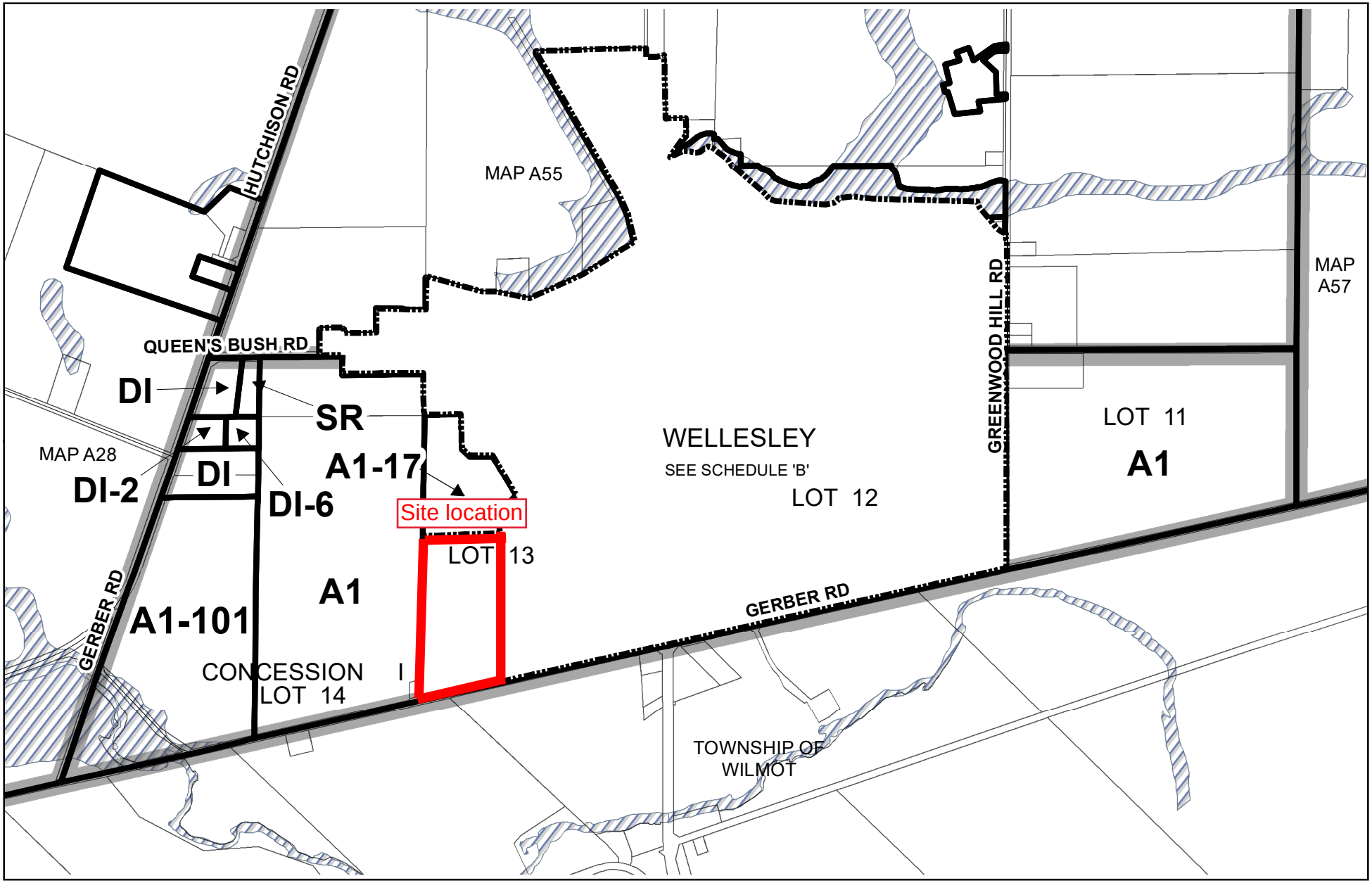
DECLARED remotely by Mohammed Salim Thottathikulam, P.Eng., stated as being located in the Town of Ancaster, in the City of Hamilton, in the Province of Ontario, before me at the Town of Whitby, in the Regional Municipality of Durham, on this 31 day of August, 2021, in accordance with O. Reg 431/20, Administering Oath or Declaration Remotely)



Mohammed Salim Thottathikulam, P.Eng.

Ashley A Pichut
In the Province of Ontario,
Being a licensed paralegal, LSO #P06191
Commissioned by video conference

APPENDIX D
Zoning Map

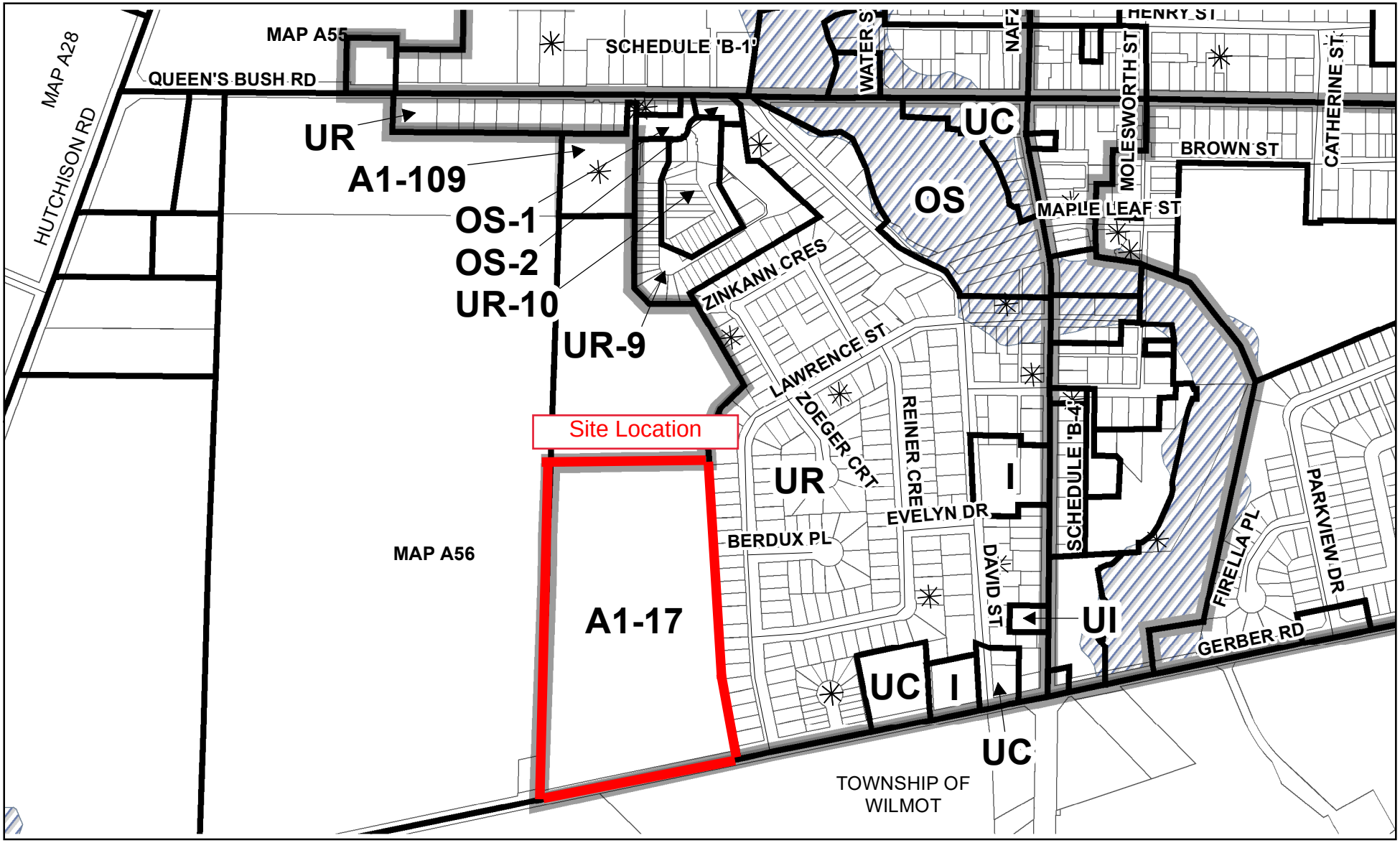


TOWNSHIP OF WELLESLEY
SCHEDULE 'A'

0 500 1,000 m

Scale 1:15,000

MAP No. 56



WELLESLEY

0 250 500 m

Scale 1:7,500

SCHEDULE 'B-3'

AMENDED BY
A09-1998 A11-1998 A08-2001
A03-2002 A01-2003 A05-2003
A04-2005 A10-2005 A04-2006
A08-2010 A05-2011 A10-2012
A07-2013 A02-2017 A14-2018
A15-2018 A06-2020

N

Z1 (Agricultural)

Z1(H) (Agricultural)

Z2 (Residential)

Z8 (Commercial)

Z10 (Industrial)

Z11 (Open Space)

Z12 (Institutional)

Z12f (Institutional)

Z14 (Extractive Industrial)

"f" indicates lands are subject to Section 6.31
(H) indicates lands are subject to a holding symbol

For areas labelled S., see assoicated section and map within Schedule 'B'

For areas labelled Part, see associated map within Schedule 'A'

Site Location

TOWNSHIP OF WILMOT

BUILDING A SURE FOUNDATION

Key Plan

Township of Wilmot Zoning By-law 83-38, as amended by By-law 2020-26 on August 24, 2020

0 1,600 3,200 Metres

APPENDIX E
Road Traffic Data

Region of Waterloo AADT Forecast for Noise Studies

1. Development/Location

Gerber Rd, west of Lawrence St

2. Current AADT (2021)

Gerber Rd
2,600

3. Forecast AADT (2031)

Gerber Rd
3,500

4. Commercial Vehicle Rates

	Gerber Rd
% Medium Trucks	2%
% Heavy Trucks	3%

5. Posted Speed Limit

Gerber Rd
50 km/h

6. Day/Night Splits

Regional Standard 90/10 Day/Night Split

7. Expiry

Dec 31 2023

8. Notes

This forecast is intended for the purpose of carrying out a noise study only. The above AADT represents the traffic volumes on Gerber Rd adjacent to the development. This forecast remains valid up to the date indicated above. The Region of Waterloo should be contacted for an updated forecast if there are plans to use this forecast beyond the above validity period.

APPENDIX F
STAMSON Sample Calculations

STAMSON 5.0 NORMAL REPORT Date: 06-07-2021 13:28:33
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: stroh1.te Time Period: Day/Night 16/8 hours
Description:

Road data, segment # 1: Gerber Rd. (day/night)

Car traffic volume : 2993/333 veh/TimePeriod
Medium truck volume : 63/7 veh/TimePeriod
Heavy truck volume : 95/11 veh/TimePeriod
Posted speed limit : 50 km/h
Road gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete)

Data for Segment # 1: Gerber Rd. (day/night)

Angle1 Angle2 : -90.00 deg 90.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 2 (Reflective ground surface)
Receiver source distance : 15.00 / 15.00 m
Receiver height : 4.50 / 4.50 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

Results segment # 1: Gerber Rd. (day)

Source height = 1.32 m

ROAD (0.00 + 60.00 + 0.00) = 60.00 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.00	60.00	0.00	0.00	0.00	0.00	0.00	0.00	60.00

Segment Leq : 60.00 dBA

Total Leq All Segments: 60.00 dBA

Results segment # 1: Gerber Rd. (night)

Source height = 1.33 m

ROAD (0.00 + 53.58 + 0.00) = 53.58 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.00	53.58	0.00	0.00	0.00	0.00	0.00	0.00	53.58

Segment Leq : 53.58 dBA

Total Leq All Segments: 53.58 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 60.00
(NIGHT): 53.58