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

Final Report

June 7, 2024

Prepared for:
Strohvest Ontario Inc.

Prepared by:
Stantec Consulting Ltd.

Project Number:
161413217

Revision: C

Limitations and Sign-off

The conclusions in the Report title Wellesley Property, Gerber Road – Plan 1148, Part Lot 80 – Noise Impact Study are Stantec's professional opinion, as of the time of the Report, and concerning the scope described in the Report. The opinions in the document are based on conditions and information existing at the time the scope of work was conducted and do not take into account any subsequent changes. The Report relates solely to the specific project for which Stantec was retained and the stated purpose for which the Report was prepared. The Report is not to be used or relied on for any variation or extension of the project, or for any other project or purpose, and any unauthorized use or reliance is at the recipient's own risk.

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Executive Summary

Strohvest Ontario Inc. (Strohvest) retained the services of Stantec Consulting Ltd. (Stantec) to prepare a Noise Impact Study (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 in Wellesley, Ontario.

The purpose of this study is to assess noise impact on the proposed development from road traffic and stationary noise sources in the vicinity of the proposed development and recommend noise control measures where needed. This assessment was based on the Revised Draft Plan of the Subdivision dated April 17, 2024, prepared by Stantec.

This Study was completed in accordance with the Regional Municipality of Waterloo (RMOW) Noise Policy Implementation Guideline Part A (RMOW Guideline) (RMOW 2019) and the Ministry of the Environment, Conservations and Parks (MECP) NPC-300, Part C, guideline for land use planning (MECP 2013).

No rail lines exist within 500 m of the proposed site and the site is beyond the NEF 25 noise contours for local airport. Therefore, a rail noise and vibration impact assessment, and aircraft traffic noise impact assessment on the site was not warranted or assessed in this noise study. A site visit on June 25th, 2021, 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 for the proposed site or assessed in this noise study.

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) (MECP 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 1-4, Lot 27-31, and western/eastern facing Outdoor Living Areas (OLAs) for each lot):

- Type A noise warning clause
- Type C noise warning clause and provision or installation of air-conditioning to allow windows and exterior doors to remain closed

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 blocks, lots, and units should comply 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	Meter(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

JUNE 6/2024
Date

1 Introduction

Stantec Consulting Ltd. (Stantec) was retained by Strohvest Ontario Inc. (Strohvest) to prepare a Noise Impact Study (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. Site location for the proposed development is shown on 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 to provide recommendations for noise control measures, where needed. This assessment is based on the Revised Draft Plan of Subdivision dated April 17, 2024, prepared by Stantec, as provided in Appendix B.

No significant stationary noise sources were identified in the vicinity of the site during a site visit conducted by Stantec 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. Additionally, the site is beyond the Noise Exposure Forecast (NEF) 25 noise contours for local airport, and therefore, aircraft traffic noise impact on the site is not assessed.

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

2 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 Draft Plan of Subdivision contains 57 single-detached dwellings, 34 semi-detached dwelling units 54 townhouse units, and either an additional 12 townhouse units or up to 24 apartment units

The proposed site is currently zoned 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), and lands to the east are zoned residential (UR) per the Township of Wellesley zoning, and lands to the south, across Gerber Road, are zoned agricultural (Z1) per the Township of Wilmot zoning. Zoning maps from the Townships are provided in Appendix D for reference.

3 Guidelines and Criteria

The Regional Municipality of Waterloo (RMOW) Noise Policy Implementation Guideline Part A (RMOW Guideline) (RMOW 2019) and the Ministry of the Environment, Conservations and Parks (MECP, formerly MOE) NPC-300, Part C, guideline for land use planning (MECP 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 energy equivalent 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 (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 meters (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.

A. **Active Noise Control Measures:** These are considered to be acoustic walls and/or berms, which are collectively referred to as noise barriers. Noise barriers located along the road right-of-way are not the preferred method of noise control. Area Municipalities may choose to restrict the use of noise barriers for noise control and require the use of passive noise control measures instead. Where a noise barrier is required, the Daytime noise level in the Outdoor Living Area must be attenuated to 60 dBA or less.

B. **Brick Veneer (EW5) or acoustical equivalent:** is required for the exterior wall (facing the rail line) of the first row of dwellings adjacent to the rail line if they are within 100 m of the rail line and the Leq(24) at the plane of the bedroom window exceeds 60 dBA.

C. **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.

D. **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.

E. **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.

F. **Passive Noise Control Measures:** Measures which do not require the construction of a noise barrier (wall and/or berm) to provide attenuation. These include noise insensitive land uses, road/lot configuration, and building design. Area Municipalities may differ on the extent to which passive noise control measures must be pursued.

G. **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.

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

Notes:

1. NWC is Noise Warning Clause.

3.2 Stationary Noise

MECP NPC-300 environmental noise guideline establishes criteria for assessing 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 assessment. The proposed site is representative of a Class 2 Area, as defined 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} Sound Level Limits (dBA) [1]
Outdoor Receptor	07:00 - 19:00	50
Outdoor Receptor	19:00 - 23:00	45
Plane of Window Receptor	07:00 - 23:00	50
Plane of Window Receptor	23:00 - 07:00	45

Note:

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

3.2.1 Noise Control Requirements

The RMOW Guideline does not apply to stationary and mobile sources of noise from industrial or commercial activities, as described in Section 2 of the RMOW Guideline. The RMOW 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 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 proposed Plan of Subdivision in Figure 2, Appendix A.

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 OLA's at ground level were assessed in this study.

Table 4.1 Points of Reception Summary

POR ID	Site ID	Height (m)	Receptor Type[1]	Receptor Orientation (if applicable)
Section A	Lot 1-4	4.5	Plane of Window	South Facing
		1.5	OLA	West Facing
	Lot 27-31	4.5	Plane of Window	South Facing
		1.5	OLA	East Facing
Section B	Lot 32-44	4.5	Plane of Window	South Facing
		1.5	OLA	South Facing
Section C	Lot 45-54	4.5	Plane of Window	South Facing
		1.5	OLA	West Facing
	Block 10-11	4.5	Plane of Window	South Facing
		1.5	OLA	West Facing
Section D	Lot 5-26	4.5	Plane of Window	South Facing
		1.5	OLA	East Facing
Section E	Block 1-9 and Block 12[2]	4.5	Plane of Window	South Facing
		1.5	OLA	South Facing
	Lot 55-74	4.5	Plane of Window	South Facing
		1.5	OLA	South Facing

Notes:

1. Only qualifying OLAs under RMOW/MECP noise guidelines were assessed in this study.
2. Block 12 consists of a park area and will only be assessed as an OLA for residences without a private OLA.

5 Assessment methodology

5.1 Road Traffic

The road traffic noise levels at the PORs were predicted in accordance with the MECP and RMOW guidelines using STAMSON v5.03 noise modelling software which implements the Ontario Road Noise Analysis Method for Environment and Transportation (MECP 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 (Forecast AADT – 2031)

Road Segment	Speed Limit (Km/h)	Traffic Volume – 2031 AADT Forecast					
		Daytime (07:00 to 23:00)			Nighttime (23:00 to 07:00)		
		Autos	Medium Trucks	Heavy Trucks	Autos	Medium Trucks	Heavy Trucks
Gerber Road, west of Lawrence Street	50	3249	68	103	361	8	11

5.2 Stationary Noise

The site is in a residential rural area and no industries and/or significant stationary noise sources were identified during the site visit. A pet food distribution warehouse is located approximately 500m northwest of the site; however, the stationary noise was inaudible at the site during the site visit. Therefore, a noise assessment for the stationary noise sources was not completed for this site.

6 Noise Impact Assessment

The L_{eq} sound level due to road traffic was predicted at the representative PORs 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 below the applicable RMOW/MECP sound level limits.

A summary of the predicted noise levels and noise control requirements is 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 Type[1]	Receptor Orientation	Road Traffic Noise Level						Noise Control Requirements			
					Predicted Outdoor L_{eq} Noise Level (dBA)		Projected Indoor Noise L_{eq} Level[2] (dBA)		Road Traffic L_{eq} Noise Limit[3] (dBA)		Within Noise Limits?	Ventilation Requirements	Building Component Requirements	Noise Control Requirements/Noise Warning Clauses (NWC)
					Day	Night	Day	Night	Day	Night				
Section A	Lot 1-4	4.5	POW	South Facing	60	54	50	44	45	40	No	Provision or installation of air conditioning	Compliance with OBC[4]	NWC[5] (Type C)
		1.5	OLA	West Facing	60	-	-	-	55	-	No	-	-	NWC[5] (Type A)
	Lot 27-31	4.5	POW	South Facing	60	54	50	44	45	40	No	Provision or installation of air conditioning	Compliance with OBC[4]	NWC[5] (Type C)
		1.5	OLA	East Facing	60	-	-	-	55	-	No	-	-	NWC[5] (Type A)
Section B	Lot 32-44	4.5	POW	South Facing	53	46	43	37	45	40	Yes	-	Compliance with OBC[4]	
		1.5	OLA	South Facing	53	-	-	-	55	-	Yes	-	-	
Section C	Lot 45-54	4.5	POW	South Facing	51	44	41	34	45	40	Yes	-	Compliance with OBC[4]	
		1.5	OLA	West Facing	48	-	-	-	55	-	Yes	-	-	
	Block 10-11	4.5	POW	South Facing	51	44	41	34	45	40	Yes	-	Compliance with OBC[4]	
		1.5	OLA	West Facing	48	-	-	-	55	-	Yes	-	-	
Section D	Lot 5-26	4.5	POW	South Facing	51	44	41	34	45	40	Yes	-	Compliance with OBC[4]	
		1.5	OLA	East Facing	48	-	-	-	55	-	Yes	-	-	
Section E	Block 1-9 and Block 12[6]	4.5	POW	South Facing	53	47	44	37	45	40	Yes	-	Compliance with OBC[4]	
		1.5	OLA	South Facing	53	-	-	-	55	-	Yes	-	-	
	Lot 55-74	4.5	All Units	South Facing	53	47	44	37	45	40	Yes	-	Compliance with OBC[4]	
		1.5	OLA	South Facing	53	-	-	-	55	-	Yes	-	-	

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. OBC – Ontario Building Code
5. NWC – Noise Warning Clause
6. Block 12 consists of a park area and will only be assessed as an OLA for residences without a private OLA

7 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 lots, blocks, and units of the Development are within the applicable RMOW Guideline noise limits with the exception of lots within Section A (Lots 1-4 and Lots 27-31) as shown on Figure 2, Appendix A. Predicted sound levels are expected to exceed the applicable sound level limits for lots within Section A. Type A and C – Noise Warning Clauses should be included in the Offers of Purchase and Sale for lots within Section A.

The following suggested Warning Clauses are adapted from the MECP and the RMOW noise guidance documents. The Warning Clauses should be presented to potential occupants/owners and registered on title when the agreements of Offers of Purchase and Sale are prepared for dwellings and units part of the development:

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 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 noise warning clauses and provision or installation of air conditioning recommended in this Study are incorporated in the agreements of Offers of Purchase and Sale and registered on title for dwellings and units of the development. The recommendations of this Study were made under the assumption that building components and design of structures part of the Development adhere to Ontario Building Code requirements.

9 Reference

MECP (Ontario Ministry of Environment Conservation and Parks). 1989. "ORNAMENT Ontario Road Analysis Method for Environment and Transportation."

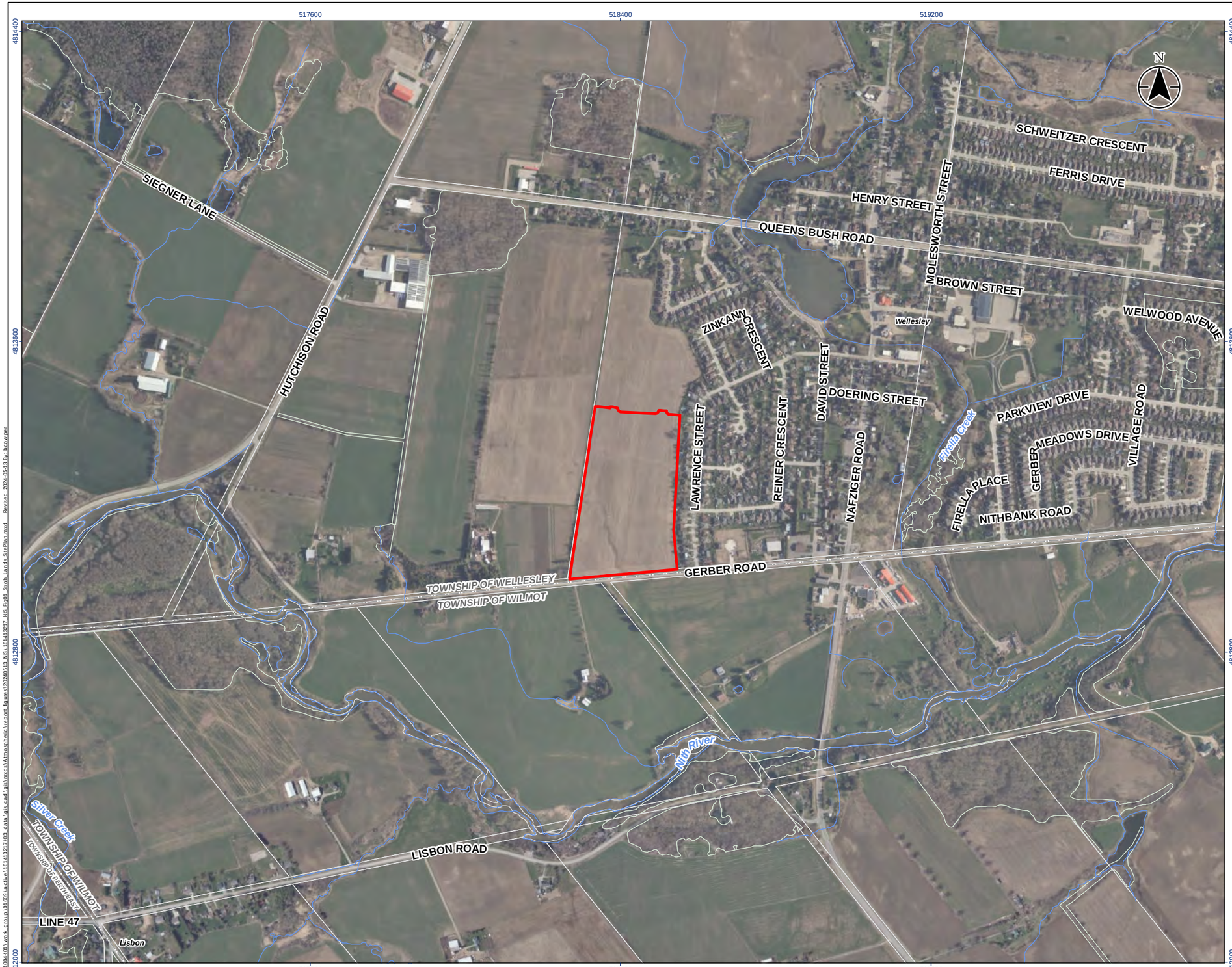
MECP Environmental Noise Guideline. Stationary and Transportation Sources-Approval and Planning. Publication NPC-300 Regional Municipality of Waterloo. 2019. "Noise Policy Implementation Guideline."

Regional Municipality of Waterloo (RMOW) Noise Policy Implementation Guideline Part A (RMOW Guideline) (Regional Municipality of Waterloo 2019)

The Corporation of the City of Waterloo. 2019. "Zoning By-Law 2018-050."

Appendices

Appendix A Figures



Stantec

Legend

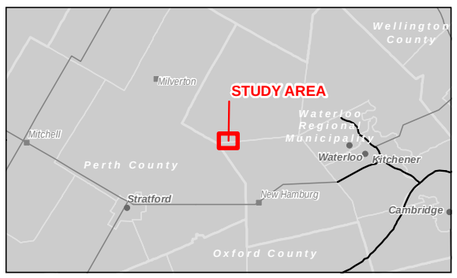
- Study Area
- Watercourse (Permanent)
- Lot/Concession Boundary
- Municipal Boundary, Lower
- Waterbody
- Wooded Area

0 150 300 m

1:10,000 (At original document size of 11x17)

Notes

1. Coordinate System: NAD 1983 UTM Zone 17N
2. Base features produced under license with the Ontario Ministry of Natural Resources and Forestry © Queen's Printer for Ontario, 2021.
3. Orthoimagery © First Base Solutions, 2021. Imagery Date, 2020.



Project Location
Township of Wellesley

161413217 REVA
Prepared by SW on 2024-05-13
Technical Review by SPE on 2021-08-05

Client/Project
STROHVEST ONTARIO INC.
WELLESLEY PROPERTY, GERBER ROAD-PLAN 1148, PART LOT 80
NOISE IMPACT STUDY

Figure No.
1

Title
Site Plan

Stantec

Legend

- Point of Reception
- Site Plan
- Watercourse (Permanent)
- Lot/Concession Boundary
- Municipal Boundary, Lower
- Waterbody
- Wooded Area

Section ID

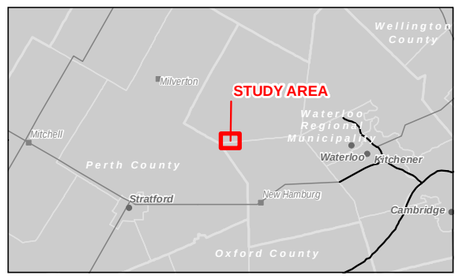
- Section A
- Section B
- Section C
- Section D
- Section E

0 150 300 m

1:10,000 (At original document size of 11x17)

Notes

1. Coordinate System: NAD 1983 UTM Zone 17N
2. Base features produced under license with the Ontario Ministry of Natural Resources and Forestry © Queen's Printer for Ontario, 2021.
3. Orthoimagery © First Base Solutions, 2021. Imagery Date, 2020.



Project Location
Township of Wellesley

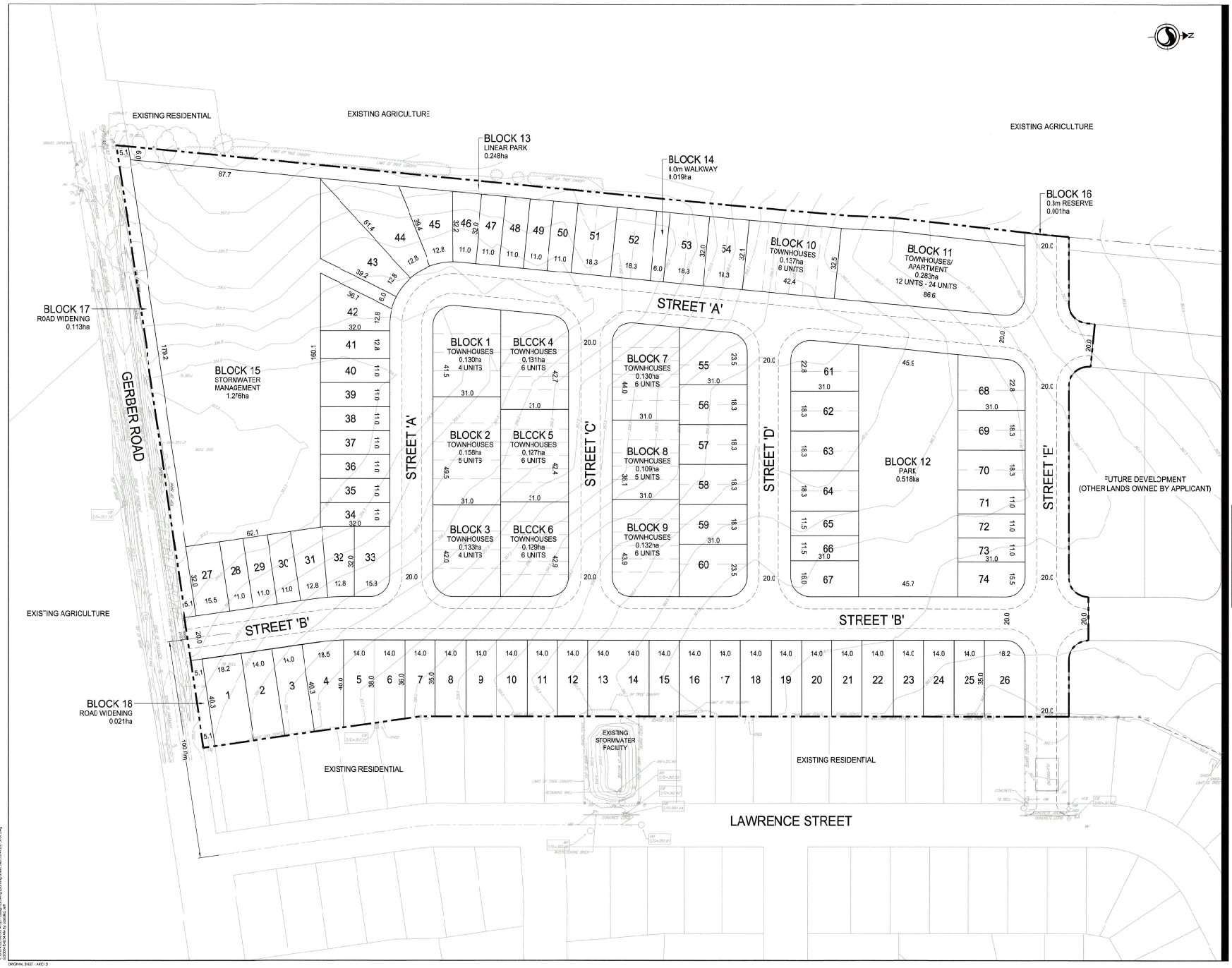
161413217 REVA
Prepared by SW on 2024-05-13
Technical Review by SPE on 2021-07-29

Client/Project
STROHVEST ONTARIO INC.
WELLESLEY PROPERTY, GERBER ROAD-PLAN 1148, PART LOT 80
NOISE IMPACT STUDY

Figure No.
2

Title
Receptor Location Map

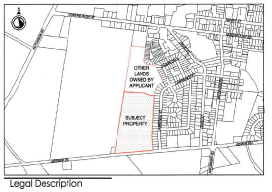
Appendix B Proposed Plan of Subdivision



Stantec

Stantec Consulting Ltd.
100-300 Hagey Boulevard
Waterloo ON N2L 0A4
Tel: (519) 579-4410
www.stantec.com

Key Map NTS.



Legal Description

Plan 1148, Part Lot 80,
Registered Reference 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 land and their relationship to the adjoining lands have been accurately and correctly shown.

Signed
Merrill McLean, O.L.S.
Stantec Geomatics Ltd.

Date 2024.05.29

Owner's Certificate

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

Signed
Ron Shah
Strohvest Ontario Inc.

Date June 10, 24

Land Use Schedule

Lots/Blocks	Land Use	Area (ha)	# of Units (Min - Max)
Lots 1-50, 65-67, 71-74	Single Detached	2.694	57
Lots 51-64, 68-70	Semi Detached	1.046	34
Blocks 1-10	Townhouse	1.316	54
Block 11	Townhouse/Apartment	0.283	2 - 24
Block 12	Park	0.518	
Block 13	Linear Park	0.248	
Block 14	6.0m Walkway	0.019	
Block 15	Stormwater Management	1.276	
Block 16	0.3m Reserve	0.001	
Blocks 17-18	Road Widening	0.134	
Roads		2.612	
TOTAL		10.149	157-169 Units

Revision		By	Apprd	YYYY.MM.DD
1.	ISSUED FOR DRAFT PLAN APPROVAL	JJ	GK	2024.05.31
1.	REVISED AS PER TOWNSHIP COMMENTS	JJ	GK	2021.07.26
	ISSUED FOR CLIENT REVIEW	JJ	GK	2021.06.14
File Name: 161413217_R-DP		Dwn. JJ	Dsgn. JJ	Chkd. GK 2021.04.21 YYYY.MM.DD

Permit-Seal

APPROVED: DATE: 2024.05.31

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

DRAFT PLAN OF SUBDIVISION

Project No. 161413217

Scale 1:750 (0, 7.5, 22.5, 37.5m)

Revision 1

Sheet 1 of 1

Drawing No. DP-1

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, Samuel Arnold, of the City of Ottawa, in the Regional Municipality of Ottawa-Carleton, in the Province of Ontario, 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 Activa Huron (B2 Lands) located at Plan 1148, Part Lot 80, Strohvest Wellesley Property located at 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 June 7, 2024, 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.

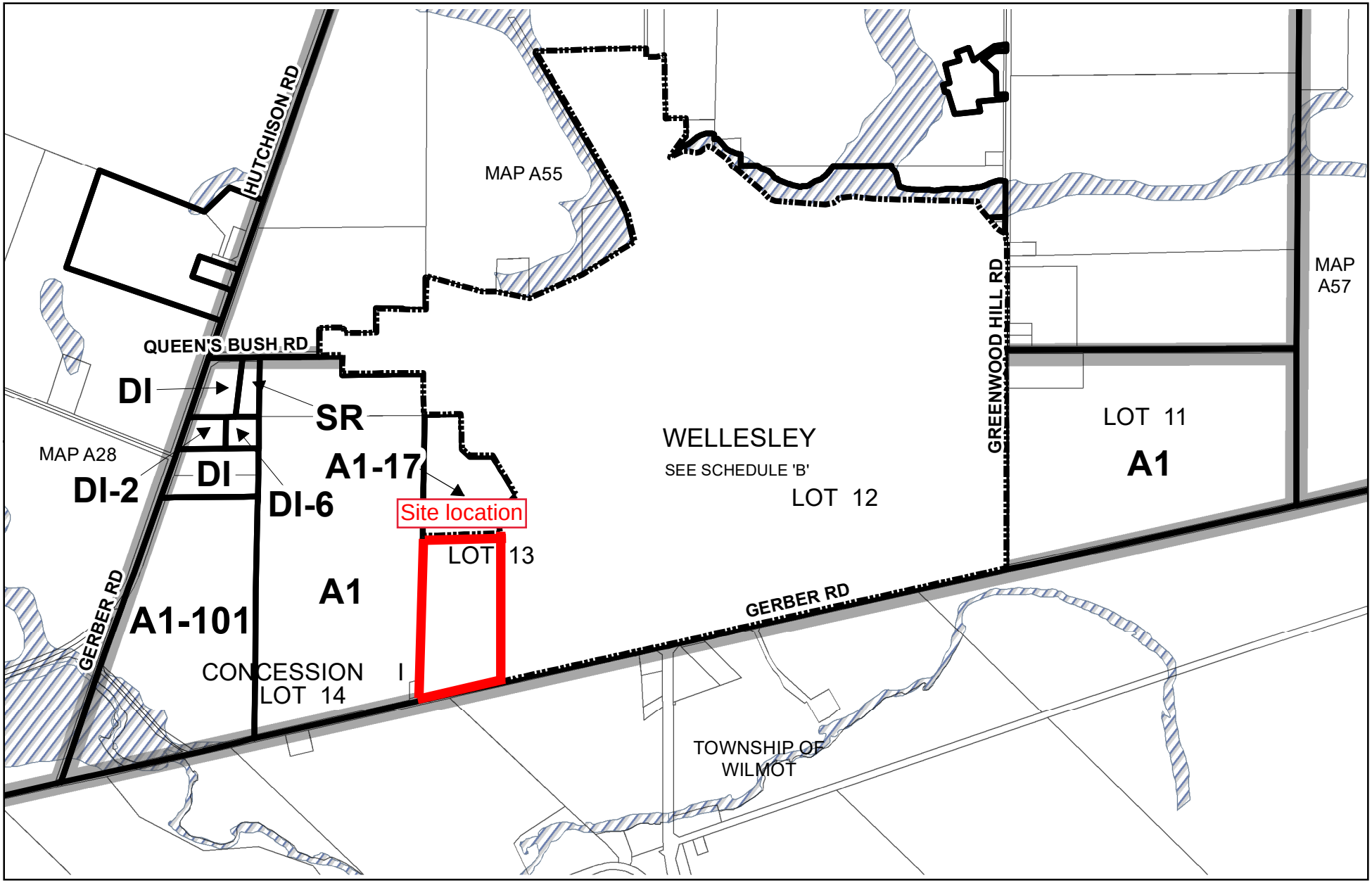
AND I make this solemn Declaration conscientiously believing it to be true and knowing that it is of the same force and effect as if made under oath.

DECLARED remotely By Samuel Arnold, P.Eng., stated as being located in the City of Ottawa, in the Regional Municipality of Ottawa-Carleton, in the Province of Ontario, before me at the Town of Whitby, in the Regional Municipality of Durham, in the Province of Ontario, on this 10th day of June, 2024, in accordance with O. Reg 431/20 Administering Oath or Declaration Remotely.

Samuel Arnold, MASc., P.Eng.

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

Appendix D Zoning Maps



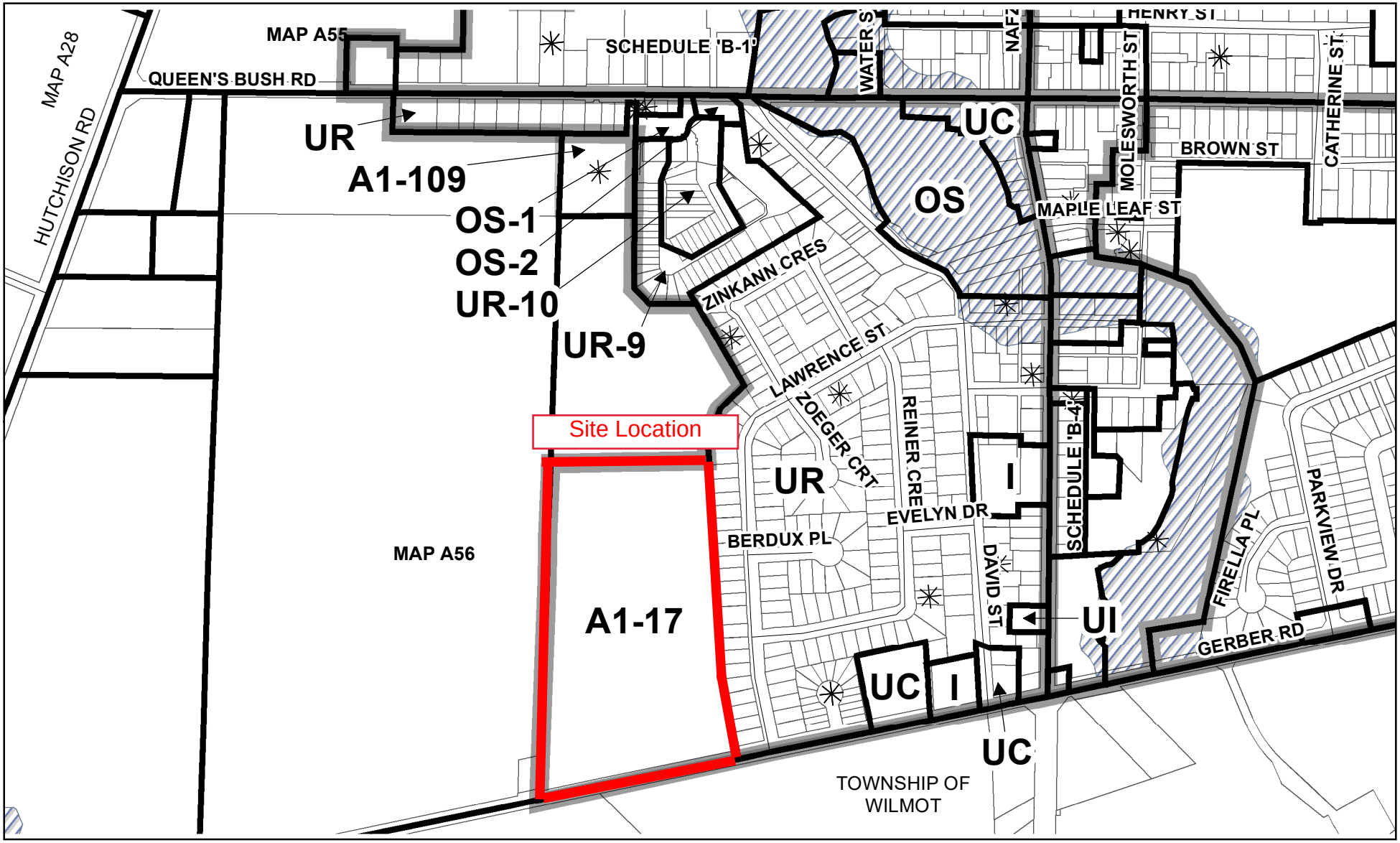
TOWNSHIP OF WELLESLEY
SCHEDULE 'A'

0 500 1,000 m

Scale 1:15,000

MAP No. 56

N



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

Key Plan

Township of Wilmot Zoning By-law 83-38, as amended by By-law 2020-26 on August 24, 2020, and includes further amendments up to July 24, 2023

0 1,600 3,200 Metres

Appendix E Road Traffic Data

Region of Waterloo AADT Forecast for Noise Studies

1. Development/Location Gerber Road West of Lawrence Avenue

2. Current AADT 2022

Erb Street W.
1,911

3. Forecast AADT 2036

Erb Street W.
3,800

4. Commercial Vehicle Rates

	Erb Street W.
% Medium Trucks	1.2%
% Heavy Trucks	1.9%

5. Posted Speed Limit

Erb Street W.
50 KM/h

6. Day/Night Splits Regional Standard 90/10 Day/Night Split

7. Validity Period December 31st, 2025

8. Notes This forecast is intended for the purpose of carrying out a noise study only. The above AADTs are for Gerber Road are behind the development locatioin. 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: 07-06-2024 10:02:04
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

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

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

Car traffic volume : 3249/361 veh/TimePeriod
Medium truck volume : 68/8 veh/TimePeriod
Heavy truck volume : 103/11 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 + 60.35 + 0.00) = 60.35 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.00	60.35	0.00	0.00	0.00	0.00	0.00	0.00	60.35

Segment Leq : 60.35 dBA

Total Leq All Segments: 60.35 dBA

Results segment # 1: Gerber Rd (night)

Source height = 1.30 m

ROAD (0.00 + 53.74 + 0.00) = 53.74 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.00	53.74	0.00	0.00	0.00	0.00	0.00	0.00	53.74

Segment Leq : 53.74 dBA

Total Leq All Segments: 53.74 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 60.35
(NIGHT): 53.74

STAMSON 5.0 NORMAL REPORT Date: 07-06-2024 10:02:23
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

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

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

Car traffic volume : 3249/361 veh/TimePeriod
Medium truck volume : 68/8 veh/TimePeriod
Heavy truck volume : 103/11 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 : 79.20 / 79.20 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 + 53.12 + 0.00) = 53.12 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.00	60.35	0.00	-7.23	0.00	0.00	0.00	0.00	53.12

Segment Leq : 53.12 dBA

Total Leq All Segments: 53.12 dBA

Results segment # 1: Gerber Rd (night)

Source height = 1.30 m

ROAD (0.00 + 46.51 + 0.00) = 46.51 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.00	53.74	0.00	-7.23	0.00	0.00	0.00	0.00	46.51

Segment Leq : 46.51 dBA

Total Leq All Segments: 46.51 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 53.12
(NIGHT): 46.51

STAMSON 5.0 NORMAL REPORT Date: 07-06-2024 10:02:41
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

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

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

Car traffic volume : 3249/361 veh/TimePeriod
Medium truck volume : 68/8 veh/TimePeriod
Heavy truck volume : 103/11 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 : 135.00 / 135.00 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 + 50.81 + 0.00) = 50.81 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.00	60.35	0.00	-9.54	0.00	0.00	0.00	0.00	50.81

Segment Leq : 50.81 dBA

Total Leq All Segments: 50.81 dBA

Results segment # 1: Gerber Rd (night)

Source height = 1.30 m

ROAD (0.00 + 44.20 + 0.00) = 44.20 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.00	53.74	0.00	-9.54	0.00	0.00	0.00	0.00	44.20

Segment Leq : 44.20 dBA

Total Leq All Segments: 44.20 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 50.81
(NIGHT): 44.20

STAMSON 5.0 NORMAL REPORT Date: 07-06-2024 10:03:01
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

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

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

Car traffic volume : 3249/361 veh/TimePeriod
Medium truck volume : 68/8 veh/TimePeriod
Heavy truck volume : 103/11 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 : 67.60 / 67.60 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 + 53.81 + 0.00) = 53.81 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.00	60.35	0.00	-6.54	0.00	0.00	0.00	0.00	53.81

Segment Leq : 53.81 dBA

Total Leq All Segments: 53.81 dBA

Results segment # 1: Gerber Rd (night)

Source height = 1.30 m

ROAD (0.00 + 47.20 + 0.00) = 47.20 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.00	53.74	0.00	-6.54	0.00	0.00	0.00	0.00	47.20

Segment Leq : 47.20 dBA

Total Leq All Segments: 47.20 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 53.81
(NIGHT): 47.20

STAMSON 5.0 NORMAL REPORT Date: 07-06-2024 10:26:46
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

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

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

Car traffic volume : 3249/361 veh/TimePeriod
Medium truck volume : 68/8 veh/TimePeriod
Heavy truck volume : 103/11 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 : 133.80 / 133.80 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 + 50.85 + 0.00) = 50.85 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.00	60.35	0.00	-9.50	0.00	0.00	0.00	0.00	50.85

Segment Leq : 50.85 dBA

Total Leq All Segments: 50.85 dBA

Results segment # 1: Gerber Rd (night)

Source height = 1.30 m

ROAD (0.00 + 44.24 + 0.00) = 44.24 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.00	53.74	0.00	-9.50	0.00	0.00	0.00	0.00	44.24

Segment Leq : 44.24 dBA

Total Leq All Segments: 44.24 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 50.85
(NIGHT): 44.24