Environmental Noise & Vibration Assessment

15-17 Elm Street, Toronto, ON

17 Elm GP Inc.

1840 Eglinton Avenue West, Suite 202
Toronto, ON M6E 2J4

Prepared by:

SLR Consulting (Canada) Ltd.

100 Stone Road West, Suite 201
Guelph, ON N1G 5L3

SLR Project No:

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1.0 Introduction

SLR Consulting (Canada) Ltd. (SLR) was retained by 17 Elm GP Inc. ("the Client") to prepare an environmental noise and vibration assessment for the proposed development at 15-17 Elm Street in Toronto, Ontario ("the Project site"). This report is in support of a combined planning application for Zoning By-law Amendment (ZBA) and Site Plan Approval (SPA).

1.1 Focus of Report

In keeping with City of Toronto and Ministry of Environment, Conservation and Parks (MECP) requirements, this report examines the potential for:

- Impacts of the environment on the proposed development;
- Impacts of the proposed development on the environment; and
- Impacts of the proposed development on itself.

1.2 Description of Proposed Development

The Project site is located at municipal addresses 15-17 Elm Street in Toronto, Ontario. The site is current occupied by two single-storey buildings; the Elm Street Italian Deli at 15 Elm Street, and a building that houses the Fraternal Order of Eagles (east half) and vacant space (west half) at 17 Elm Street.

The proposed development will be a 32-storey mixed-use residential high-rise structure with ground-floor retail fronting towards Elm Street, and two levels of underground parking. Indoor amenity spaces are planned for the 2nd and 3rd levels of the building, with residential units from level 3 to level 30 inclusive. Levels 31 and 32 are to be mechanical equipment rooms. A ground floor outdoor amenity space will front towards Elm Street, and there will be elevated outdoor amenity space on the 21st level of the building along the north, east and south edges of the building. Site access will be via the existing laneway along the east side of the site, Harry Barbarian Lane.

Development drawings are provided for reference in **Appendix A**.

1.3 Nature of the Surroundings

The Project site is surrounded by the following:

- A high-rise residential building (Three Trilliums Community Place – 25 Elm Street) containing ground-floor commercial/retail, with single-storey retail buildings (restaurants) and Bay Street beyond to the west;
- Elm Street, with the Chelsea Hotel, commercial/retail buildings (including the Elmwood Spa and the Arts and Letters Club) and an approved high-rise residential building at 8 Elm Street beyond to the north;
- Commercial/retail buildings including Barbarian Steakhouse, with Yonge Street and Toronto Metropolitan University beyond to the east; and
- High-rise mixed-use residential buildings and Edward Street beyond to the south.

A context plan is shown in **Figure 1**.

The proposed development site is zoned Commercial Residential (CR). Lands immediately surrounding the proposed development are generally zoned Commercial Residential (CR) in all directions, according to

City of Toronto Zoning By-Law 569-2013, with the Toronto Metropolitan University and lands south of Dundas Street West governed under Former City of Toronto By-Law No. 438-86. A zoning map for the Project site and surrounding area is provided for reference in **Appendix B**.

PART 1: IMPACTS OF THE ENVIRONMENT ON THE DEVELOPMENT

In evaluating potential impacts of the environment on the proposed development, the focus of this report is to assess the potential for:

- Transportation noise and vibration impacts from surrounding roadways;
- Stationary noise impacts from the surrounding industries on the development.

The proposed development is not located in proximity to any above-grade railways or major airports; therefore, an assessment of railway and aircraft noise is not required.

2.0 Transportation Noise Assessment

2.1 Transportation Noise Sources

Transportation sources of interest with the potential to produce road traffic noise at the proposed development include:

- Elm Street;
- Yonge Street; and
- Bay Street.

Road noise from these sources has been predicted, and this information has been used to identify façade, ventilation, and warning clause requirements for the proposed development.

2.2 Surface Transportation Noise Criteria

2.2.1 Ministry of Environment Publication NPC-300

Noise-Sensitive Developments

Ministry of the Environment, Conservation and Parks (MECP) Publication NPC-300 provides sound level criteria for noise-sensitive developments. The applicable portions of NPC-300 are Part C – Land Use Planning and the associated definitions outlined in Part A – Background. **Tables 1** to **4** summarize the applicable surface transportation (road and rail) criteria limits.

Location-Specific Criteria

Table 1 summarizes criteria in terms of energy equivalent sound exposure (L_{eq}) levels for specific noise-sensitive locations. Both outdoor and indoor locations are identified, with the focus of outdoor areas being amenity spaces. Indoor criteria vary with sensitivity of the space. As a result, Sleeping Quarters have more stringent criteria than Living/Dining room spaces.

Table 1: NPC-300 Sound Level Criteria for Road and Rail Noise

Type of Space	Time Period	Energy Equivalent Sound Exposure Level L_{eq} [5] (dBA)		Assessment Location
		Road	Rail [1]	
Outdoor Amenity Area	Daytime (0700-2300h)	55	55	Outdoors [2]
Living/Dining Room [3]	Daytime (0700-2300h)	45	40	Indoors [4]
	Night-time (2300-0700h)	45	40	Indoors [4]
Sleeping Quarters	Daytime (0700-2300h)	45	40	Indoors [4]
	Night-time (2300-0700h)	40	35	Indoors [4]

Notes:
[1] Whistle noise is excluded for OLA noise assessments and included for Living/Dining Room and Sleeping Quarter assessments, where applicable.
[2] Road and Rail noise impacts are to be combined for assessment of OLA impacts.
[3] Residence area Dens, Hospitals, Nursing Homes, Schools, Daycares are also included. During the nighttime period, Schools and Daycares are excluded.
[4] An assessment of indoor noise levels is required only if the criteria in Table 3 are exceeded.
[5] Leq – the energy equivalent sound exposure level, integrated over the time period shown.

Outdoor Living Areas

Table 2 summarizes the noise mitigation requirements for communal outdoor amenity areas ("Outdoor Living Areas" or "OLAs").

For the assessment of outdoor sound levels, total surface transportation noise is determined by combining road and rail traffic sound levels. Whistle noise from trains is not included in the determination of outdoor sound levels.

Table 2: NPC-300 OLA Sound Level Criteria for Road and Rail Noise

Time Period	OLA Energy Equivalent Sound Level L_{eq} (dBA)	Mitigation/Warning Clause Requirements
Daytime (0700-2300h)	≤ 55	• None
	56 to 60 inc.	• Noise barrier **OR** Warning Clause A
	> 60	• Noise barrier to reduce noise to 55 dBA OR • Noise barrier to reduce noise to 60 dBA and Warning Clause B

Ventilation and Warning Clauses

Table 3 summarizes requirements for ventilation where windows would potentially have to remain closed as a means of noise control. Despite implementation of ventilation measures where required, if sound exposure levels exceed the guideline limits in **Table 1**, warning clauses advising future occupants of the potential excesses are required. Warning clauses also apply to OLAs.

Table 3: NPC-300 Ventilation and Warning Clause Requirements

Assessment Location	Time Period	Energy Equivalent Sound Exposure Level - L_{eq} (dBA)		Ventilation and Warning Clause Requirements [2]
		Road	Rail [1]	
Outdoor Living Area	Daytime (0700-2300h)	56 to 60 incl.		Type A Warning Clause
Plane of Window	Daytime (0700-2300h)	≤ 55		None
		56 to 65 incl.		Forced Air Heating with provision to add air conditioning + Type C Warning Clause
		> 65		Central Air Conditioning + Type D Warning Clause
	Night-time (2300-0700h)	51 to 60 incl.		Forced Air Heating with provision to add air conditioning + Type C Warning Clause
		> 60		Central Air Conditioning + Type D Warning Clause

Notes: [1] Whistle noise is excluded from assessment.
[2] Road and Rail noise is combined for determining Ventilation and Warning Clause requirements

Building Component Requirements

Table 4 provides sound level thresholds which, if exceeded, trigger a requirement for the building shell components (i.e., wall, windows) to be designed accordingly to meet the applicable indoor sound criteria.

Table 4: NPC-300 Building Component Assessment Requirements

Assessment Location	Time Period	Energy Equivalent Sound Exposure Level - L_{eq} (dBA)		Component Requirements
		Road	Rail [1]	
Plane of Window	Daytime (0700-2300h)	> 65	> 60	Designed/ Selected to Meet Indoor Requirements [2]
	Night-time (2300-0700h)	> 60	> 55	

Notes: [1] Whistle noise is included in assessment.
[2] Building component requirements are assessed separately for Road and Rail, and then combined for a resultant sound isolation parameter.

2.3 Traffic Data and Future Projections

2.3.1 Road Traffic Data

Year 2016 (Bay Street and Elm Street) and 2019 (Yonge Street and Shuter Street) turning movement counts (TMCs) were obtained from the City of Toronto's Open Data Portal. The TMCs were used to determine annual average daily traffic (AADT) volumes and commercial vehicle percentages for Elm Street, Yonge Street and Bay Street. Medium-to-heavy truck ratios were calculated based on typical breakdowns for non-industrial areas in the GTA from the SLR historical database. Day/night splits of 90%/10% were assumed, as it typical for well-travelled roadways. The 2016/2019 AADT volumes were projected to future year 2035 at a growth rate of 1.0%, which is typical for other assessments completed for this area in downtown Toronto.

Traffic data and calculations are provided for reference in **Appendix C**. **Table 5** summarizes the road traffic data considered in the assessment.

Table 5: Summary of Road Traffic Data Used in Transportation Analysis

Roadway Link	2035 Traffic Volumes [1] AADT	% Day/Night Volume Split		Commercial Vehicle Breakdown		Posted Speed Limit (km/hr)
		Daytime	Night-time	% Medium Trucks	% Heavy Trucks	
Elm Street	6,808	90	10	2.8	1.5	30
Yonge Street	15,823	90	10	5.6	4.0	40
Bay Street	23,942	90	10	3.1	1.4	40

Notes: [1] AADT and commercial vehicle breakdown based on TMC data from the City of Toronto. A 1% per annum growth rate was applied to project volumes to future year 2035.

2.4 Predicted Sound Levels

Future road traffic sound levels at the proposed development were predicted using Cadna/A, a commercially available noise propagation modelling software. Roadways were modelled as line sources of sound, with sound emission rates calculated using the ORNAMENT algorithms, the road traffic noise model of the MECP. These predictions were validated and are equivalent to those made using the MECP's ORNAMENT or STAMSON v5.04 road traffic noise models. A STAMSON validation file and output is included for reference in **Appendix D**.

Sound levels were predicted along the facades of the proposed development using the "building evaluation" feature of Cadna/A. This feature allows for noise levels to be predicted across the entire façade of a structure. The building massing of the proposed development structure is complex, with a smaller lower-floor footprint and increased floor area footprint at higher levels. The massing was therefore simplified in the analysis to conservatively assume all façade locations at their furthest extents along the north, east, south and west sides of the Project site.

Topographic contours and surrounding buildings from the City of Toronto Open Data Portal were included in the analysis. Other recently constructed buildings such as Panda Condominiums at 20 Edward Street were also included in the surrounding building massing.

Elm Street was modelled considering a vehicle travel speed of 40 km/hr (the minimum speed permitted in the ORNAMENT algorithms), instead of the posted speed limit of 30 km/hr. This is considered to be conservative.

2.4.1 Façade Sound Levels

Predicted worst-case façade sound levels due to road traffic are presented in **Table 6**.

The transportation façade sound levels on the proposed development, showing the ranges of predicted daytime and night-time sound levels, are shown in **Figure 2** (daytime) and **Figure 3** (night-time).

The façade sound levels due to road traffic are predicted to be below 65 dBA and 60 dBA during the daytime and nighttime periods, respectively (i.e., the thresholds described in **Table 4**). Therefore, an assessment of building components is not required.

Table 6: Summary of Predicted Transportation Façade Sound Levels

Project Building	Building Façade[1]	Predicted Road Traffic Sound Levels[2]	
		L_{eq} Daytime (dBA)	L_{eq} Night-time (dBA)
Building A	North	61	56
	East	59	50
	South	50	44
	West	49	43

Notes: [1] Façade locations are shown in **Figure 2** (day) and **Figure 3** (night)
[2] Sound levels presented above are the highest for the identified building façade.

2.4.2 Outdoor Living Area Sound Levels

The Outdoor Living Area (OLA) of the proposed development requiring assessment is an at-grade ground-floor amenity space fronting towards Elm Street. In accordance with NPC-300 requirements, the daytime sound level was assessed at a height of 1.5 m above grade at the centre of the amenity area. The elevated OLA on the 21st floor is less than 4 m in depth at all locations; therefore, it was not assessed.

The outdoor ground level OLA sound level is shown in **Figure 4**.

As shown in **Figure 4**, the predicted sound level at the OLA is 61 dBA, which exceeds the applicable limit. Therefore, mitigation is required. Refer to **Section 2.5.2**.

2.5 Noise Control Measures

2.5.1 Façade Assessment

An assessment of indoor noise levels is not required as façade sound levels due to road traffic do not exceed 65 dBA/60 dBA during the daytime/nighttime periods, respectively.

Exterior wall and window construction meeting the minimum non-acoustical requirements of the Ontario Building Code (OBC) are expected to be sufficient to meet the applicable indoor sound level guidelines.

2.5.2 Ventilation Requirements

The triggers for requiring warning clauses are summarized in **Table 2**. Where required, the warning clauses should be included in agreements registered on Title for the residential units, and included in all agreements of purchase and sale or lease, and all rental agreements.

Based on the predicted façade noise levels, an MECP **Type C** warning clause and provision for installation of air conditioning at a later date are required for residential units in the proposed development.

Ventilation and warning clause requirements for the proposed development are summarized in **Appendix E**.

2.5.3 OLA Mitigation Requirements

The unmitigated OLA sound level is predicted to be 61 dBA, as shown in **Figure 4**.

A barrier 1.5 m in height and approximately 8 m in length is required along the north property line, near the centre of the OLA. The location and extent of the barrier is shown in **Figure 5**. With the barrier, the predicted outdoor sound level is 58 dBA.

The barrier can be composed of solid material and/or glass/plexiglass panels. The barrier construction material should be selected so that is has sufficient mass to adequately attenuate the road traffic noise (generally, a minimum surface density of 20 kg/m^2). The barrier should be free of gaps and cracks on the sides and bottom, except for small, localized openings required for drainage purposes.

An MECP **Type B** warning clause will also be required for all residential units. Refer to **Appendix E**.

3.0 Stationary Source Noise Assessment

During a site visit to the Project site and surrounding area completed by SLR personnel on July 22, 2022, observations were collected with respect to nearby facilities with the potential for generating stationary source noise at the proposed development.

The Project site was found to be primarily surrounded by commercial/retail and residential land uses. The surrounding area contains land zoned as Commercial Residential in all directions. There are no industrial facilities in proximity to the proposed development. Nearby stationary sources identified that are discussed further in the following sections include the commercial/retail land uses east of the Project site along the Yonge Street corridor, and the Toronto Metropolitan University (formerly Ryerson University) campus, located on the east side of Yonge Street.

3.1 Commercial/Retail Land Uses

Commercial/retail land uses along Elm Street to the east and along the Yonge Street corridor were identified through aerial imagery and during the site visit by SLR personnel. Noise sources with the potential to generate stationary source noise at the proposed development include rooftop mechanical equipment such as HVAC units and exhaust fans.

During the site visit, the acoustic environment at the Project site and immediate surrounding area was dominated by traffic from the surrounding roadways. Sounds from stationary noise sources were faint or inaudible. Due to the elevated ambient sound levels in the immediate surrounding area, the stationary noise guideline limits should be met. Stationary source noise from nearby rooftop mechanical equipment is not expected to be of concern at the proposed development. Further assessment of these sources is not required.

An MECP **Type E** warning clause in recommended for all residential units. Refer to **Appendix E**.

3.2 Toronto Metropolitan University

The Toronto Metropolitan University (formerly Ryerson University) is located at municipal address 350 Victoria Street, Toronto. The educational buildings are generally located within the bounds of Yonge Street to the west, Gerrard Street to the north, Mutual Street to the east and Dundas Street East to the south. The buildings include laboratories, student residences, lecture halls and office buildings, each with potential sources of noise associated with mechanical systems/equipment and standby power.

SLR personnel reviewed the MECP Access Environment database and identified several Environmental Compliance Approval – Air & Noise (ECA – Air & Noise) and Environmental Activity and Sector Registry (EASR) permits for the facility. These includes (but may not be limited to) the following:

- ECA Number 9048-8V6RPH issued July 10, 2012
- EASR permits:
  - Registration # R-002-5130190979 filed June 28, 2012 – 111 Bond Street
  - Registration # R-003-4130094562 filed June 28, 2012 – 111 Bond Street
  - Registration # R-010-9111880824 filed January 7, 2020 – 245 Church Street
  - Registration # R-010-1111881794 filed January 7, 2020 – 285 Victoria Street
  - Registration # R-010-6111990852 filed February 3, 2020 – 350 Victoria Street
  - Registration # R-010-1111985076 filed January 31, 2020 – 122 Bond Street
  - Registration # R-010-7112917875 filed February 10, 2021 – 350 Victoria Street

The facility buildings and sources associated with the Toronto Metropolitan University are required to meet applicable limits at surrounding noise-sensitive receptors to comply with the ECA and EASR permits noted above, considering both existing residences/sensitive receptors and zoning-approved future-developments.

The proposed development at 15-17 Elm Street does not introduce a new noise-sensitive land use that is closer to, or more exposed to, the sources at Toronto Metropolitan University, and is not expected to impact the compliance status of the facility with respect existing approvals/permits. There are closer/more exposed existing noise-sensitive developments, and new noise-sensitive developments approved by the City of Toronto, at which the facility must demonstrate compliance with applicable limits, including (but not limited to):

- 8 Elm Street – a 68-storey mixed-use tower at the northwest corner of Elm Street and Yonge Street;
- 335 Yonge Street – a high-rise mixed-use building at the southeast corner of Yonge Street and Gould Street; and
- 363-391 Yonge Street & 3 Gerrard Street – a mixed-use building and an 85-storey residential tower located at the southeast corner of Yonge Street and Gerrard Street.

As applicable limits must be met at the above-mentioned existing residences, they will be met at the proposed 17 Elm development. Sound levels exceeding applicable limits at the proposed development are not expected. Further assessment of Toronto Metropolitan University sources are not required.

4.0 Vibration Assessment

4.1 Industrial (Stationary) Sources

Based on the site visit completed by SLR staff on July 22, 2022, the surrounding lands includes residential and commercial/retail buildings. No significant sources of industrial vibration (such as large stamping presses or forges) were identified. Effects from industrial vibration are not of concern for the proposed development, and a detailed assessment of industrial vibration was not completed.

4.2 Transportation Sources

The Toronto Transit Commission (TTC) Line 1 Subway (herein referred to as "TTC Line 1") is a transportation source of vibration located approximately 60 m east of the proposed development. The subway line runs in a north-south direction underneath Yonge Street. Ground-borne vibration due to subway traffic along TTC Line 1 is the focus of this assessment.

4.2.1 Vibration Assessment Guidelines

The MECP has published criteria for specific TTC transit projects in the past and has draft criteria for general transit projects in the Province of Ontario. Both the former MOECC/TTC 1993 "Protocols for Noise and Vibration Assessment" and the MOECC 2010 Draft "Guideline for Noise and Vibration Assessment of Transit Projects" require that vibration levels from TTC vehicle pass-by events, measured in terms of root-mean-square (RMS) vibration, should not exceed 0.10 mm/s at the point of reception, which in this case would be the proposed development building foundation. This criterion was applied in the assessment.

4.2.2 Vibration Measurements and Data Processing

Measurements of ground-induced vibration due to subway train pass-by events were conducted on July 22, 2022 at two (2) locations within the Project site. More than five (5) pass-by events of both northbound and southbound subway trains were measured. SLR staff recorded subway arrival and departure times underground at the nearby Dundas Station southbound platform, approximately 190 m southeast of the measurement locations.

Measurement Location 1 in the basement of 15 Elm Street, with equipment set up on the building foundation. This location approximated as closely as possible the nearest setback distance from the subway line to the proposed development building foundation. Measurement Location 2 was set up at-grade, within the laneway between the existing buildings at 15 Elm Street and 17 Elm Street, away from vehicle traffic along Elm Street and foot traffic along the sidewalk. The approximate vibration measurement locations are shown in **Figure 6**.

Vibration velocity amplitudes were collected with Syscom MR3000C units at a sample rate of 1024 Hz. Collected vibration data were reviewed and post-processed using MATLAB to compute overall RMS vertical vibration levels. The measured data were post-processed to compute the maximum 1-second sliding window RMS amplitudes of the vibration velocity, in units of mm/s, within sequential 2-minute measurement windows, for comparison with the applicable guideline limit.

4.2.3 Vibration Measurement Results

The measured vibration levels are summarized in **Table 7** for subway pass-by events captured between 10:17 AM and 10:38 AM on July 22, 2022. In some cases, the pass-by event times for northbound and southbound trains were very similar, and it was not possible to differentiate between them in the

recorded measurement data windows. The values summarized **Table 7** represent the highest recorded RMS vibration levels for the measurement time window encompassing the noted subway train pass-by event.

Table 7: Summary of Predicted Stationary Source and Ambient Outdoor Sound Levels

Train Pass-By Event	Maximum Measured RMS Vibration Level (mm/s)		Criteria RMS Velocity (mm/s)	Compliance with Criteria RMS Velocity (Y/N)?
	Measurement Location 1	Measurement Location 2		
1	0.038	0.018	0.10	Y
2	0.010	0.018		Y
3	0.012	0.031		Y
4	0.012	0.031		Y
5	0.021	0.032		Y
6	0.012	0.018		Y
7	0.015	0.043		Y
8	0.043	0.043		Y
9	0.013	0.019		Y
10	0.013	0.019		Y
11	0.015	0.029		Y
12	0.015	0.021		Y
13	0.010	0.019		Y

Notes: [1] Measurement locations are shown in **Figure 6**.

Measured RMS vibration levels ranged from 0.010 mm/s to 0.043 mm/s at both measurement locations, well below the 0.10 mm/s RMS threshold in the vibration guidelines. Based on the current building design and setback distance from TTC Line 1, vibration mitigation measures are not required.

PART 2: IMPACTS OF THE DEVELOPMENT ON ITSELF

5.0 Stationary Source Noise Impacts of the Development on Itself

At the time of this assessment, the proposed development's mechanical systems have not been sufficiently designed to complete a detailed assessment of stationary source noise levels from the development on itself.

For common mechanical systems that will be implemented as part of the proposed development, the sound levels from all noise-generating equipment should comply with the guideline limits in MECP Publication NPC-300. The sound levels due to operation of mechanical equipment associated with proposed development (such as make-up air units, cooling towers, parking garage exhaust fans, emergency generators) should be assessed as part of the final building design. The criteria can be met at all on-site receptors through appropriate selection of mechanical equipment, by locating equipment with sufficient setback from noise sensitive locations, and by incorporating control measures (e.g., silencers) into the design. This can be confirmed either later in the site plan approval process, or at the building permit approval stages.

It is recommended that the mechanical systems be reviewed by an acoustical consultant prior to final equipment selection.

If individual air conditioning systems are to be implemented for each residential unit for the proposed site, the sound levels from each unit should meet MECP Publication NPC-216.

PART 3: IMPACTS OF THE DEVELOPMENT ON THE SURROUNDING AREA

6.0 Stationary Source Noise Impacts on the Surrounding Area

With respect to the acoustic environment of the area, it is expected that the proposed development will have a negligible effect on neighbouring noise-sensitive properties.

The traffic related to the proposed development will be small relative to the existing traffic volumes within the area, and is not of concern.

Other noise sources associated with the development with possible effects on the surrounding neighbourhood are mechanical equipment such as make up air units, cooling units, emergency generators, and parking garage exhaust fans. Sound levels due to operation of these sources are required to meet MECP Publication NPC-300 requirements at all off-site noise sensitive receptors.

Mechanical equipment sound levels exceeding applicable limits are not anticipated given the elevated ambient sound levels in the area, and because systems will be designed to ensure that the applicable guidelines are met at on-site receptors (i.e., the development itself).

Regardless, potential impacts should be assessed as part of the final building design to ensure compliance. The criteria can be met at all surrounding and on-site receptors though the use of routine mitigation measures, including the appropriate selection of mechanical equipment, by locating equipment with sufficient setback from noise sensitive locations, and by incorporating control measures (e.g., silencers, barriers) into the design.

It is recommended that the mechanical systems be reviewed by an acoustical consultant prior to final selection of equipment.

7.0 Conclusions and Recommendations

The potential for noise impacts on and from the proposed development have been assessed. Impacts of the environment on the development, the development on itself, and the development on the surrounding area have been considered. Based on the results of this assessment, the following conclusions have been reached:

Transportation Noise

- An assessment of transportation noise from surrounding roadways has been completed.
- Based on transportation façade sound levels upgraded glazing is not required for the development (refer to **Section 2.5.1**).
- Ventilation and warning clause requirements are outlined in **Section 2.5.2**.
  - The provision for installing air conditioning at a later date and an MECP **Type C** warning clauses are required for residential units.
- Outdoor sound levels at the OLA are predicted to exceed applicable criteria, and mitigation will be required as outlined in **Section 2.5.3**.
- Warning clauses should be included in agreements registered on Title for the residential units and included in agreements of purchase and sale/rental agreements. All warning clause requirements are summarized in **Appendix E**.

Stationary Source Noise

- A review of the surrounding stationary noise sources was completed by SLR personnel during a site visit to the area, through available aerial photography, and through a review of MECP approvals for nearby facilities.
- The proposed development is not expected to introduce a new noise-sensitive receptor that would impact the compliance status of Toronto Metropolitan University with their existing approvals.
- Stationary source sound levels from nearby commercial/retail land uses along Elm Street and Yonge Street are not expected to be of concern.
- A **Type E** warning clause is recommended for all residential units.

Vibration

- No significant industrial vibration sources were identified within the surrounding area. Therefore, vibration impacts from industrial sources are not of concern.
- Measurements at two (2) locations on the Project site indicate vibration levels from TTC Line 1 are well below applicable criteria, and vibration mitigation measures are not required.

Overall Assessment

- Impacts of the environment on the proposed development can be adequately controlled with acoustic barriers and the inclusion of ventilation and warning clause requirements, detailed in **Part 1** of this report.

- Impacts of the proposed development on itself are not anticipated and can be adequately controlled by following the design guidance outlined in **Part 2** of this report.
- Impacts of the proposed development on the surroundings are expected to meet the applicable guideline limits, and can be adequately controlled by following the design guidance outlined in **Part 3** of this report.
- As the mechanical systems for the proposed development have not been designed in detail, the acoustical design should be reviewed by an acoustical consultant later in the site plan approval process, or as part of the final building design.

Sincerely,

SLR Consulting (Canada) Ltd.

Keni Mallinen, M.A.Sc., P.Eng.
Acoustics Engineer

R.L. Scott Penton, P.Eng.
Principal Acoustics Engineer

Distribution: 1 electronic copy – 17 Elm GP Inc.
1 electronic copy – SLR Consulting (Canada) Ltd.

8.0 References

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Ontario Ministry of the Environment, Conservation and Parks, Publication NPC-300: Environmental Noise Guideline, Stationary and Transportation Sources – Approval and Planning, 2013.

Ontario Ministry of the Environment, Conservation and Parks, 1996, STAMSON v5.04: Road, Rail and Rapid Transit Noise Prediction.

9.0 Statement of Limitations

This report has been prepared and the work referred to in this report has been undertaken by SLR Consulting (Canada) Ltd. (SLR) for 17 Elm GP Inc., hereafter referred to as the "Client." It is intended for the sole and exclusive use of the Client. The report has been prepared in accordance with the Scope of Work and agreement between SLR and the Client. Other than by the Client and by the City of Toronto in their role as land use planning approval authority, copying or distribution of this report or use of or reliance on the information contained herein, in whole or in part, is not permitted unless payment for the work has been made in full and express written permission has been obtained from SLR.

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Figures

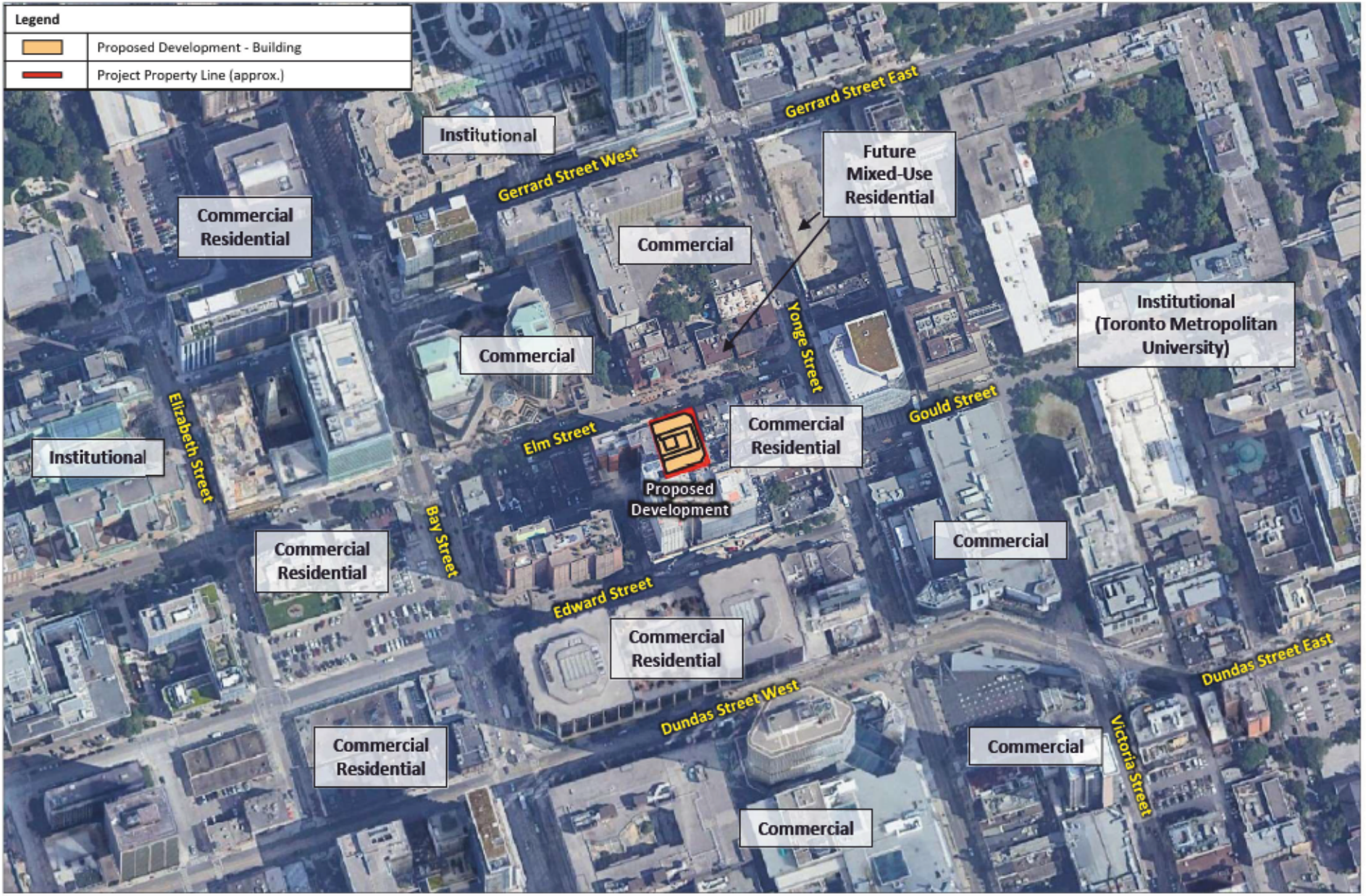
Environmental Noise & Vibration Assessment

15-17 Elm Street, Toronto, ON

17 Elm GP Inc.

SLR Project No. 241.30447.00000

August 31, 2022



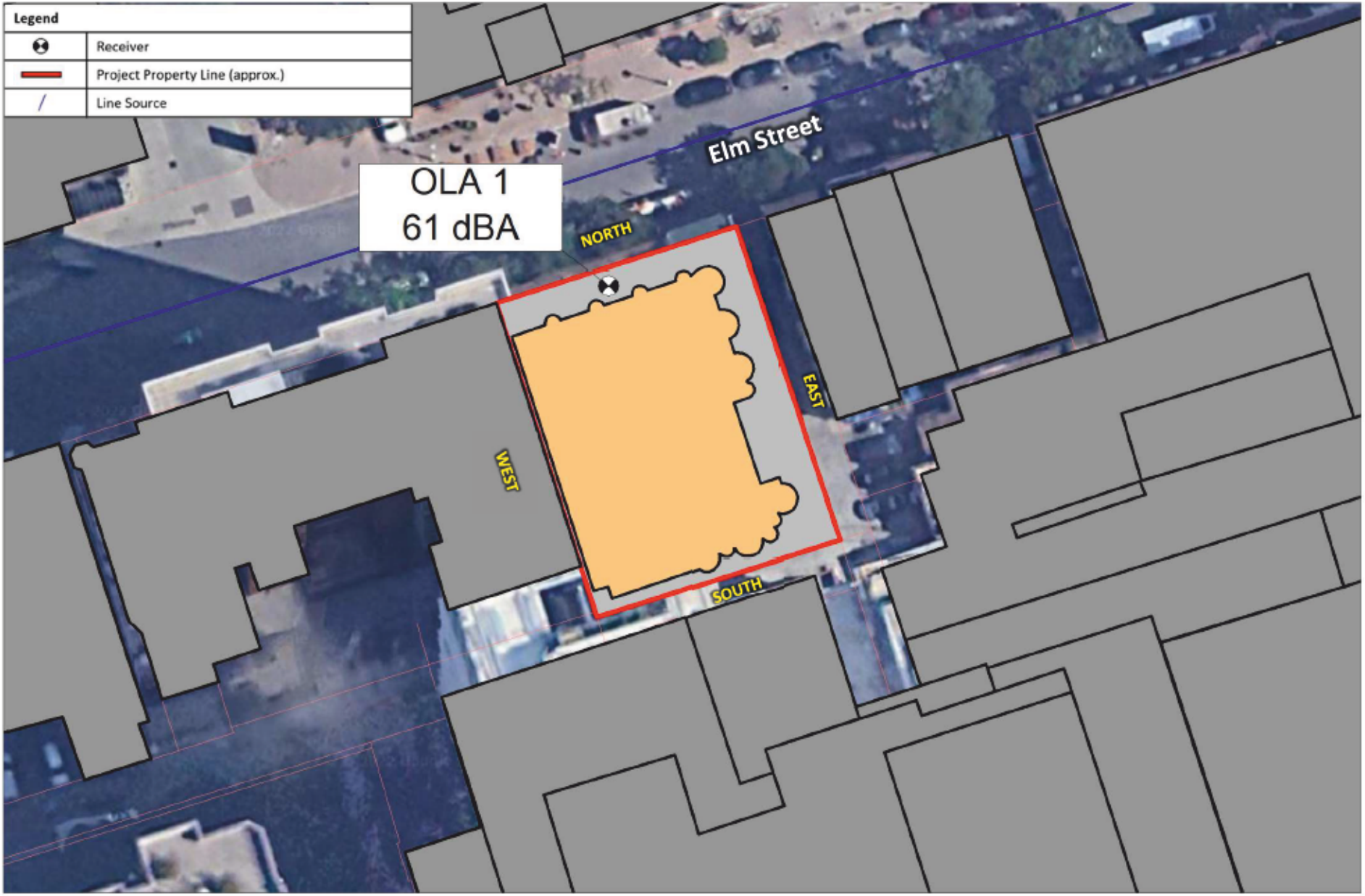
17 ELM GP INC.	True North	Scale: 1:3000	METRES	SLR global environmental solutions
15-17 ELM STREET, TORONTO		Date: Aug. 31, 2022 Rev 1.0	Figure No. 1	
CONTEXT PLAN		Project No. 241.30447.00000		

17 ELM GP INC.	True North	Scale: 1:500	METRES
15-17 ELM STREET, TORONTO		Date: Aug. 31, 2022 Rev 1.0	Figure No. 2
PREDICTED FAÇADE SOUND LEVELS – ROADWAY – DAYTIME		Project No. 241.30447.00000	

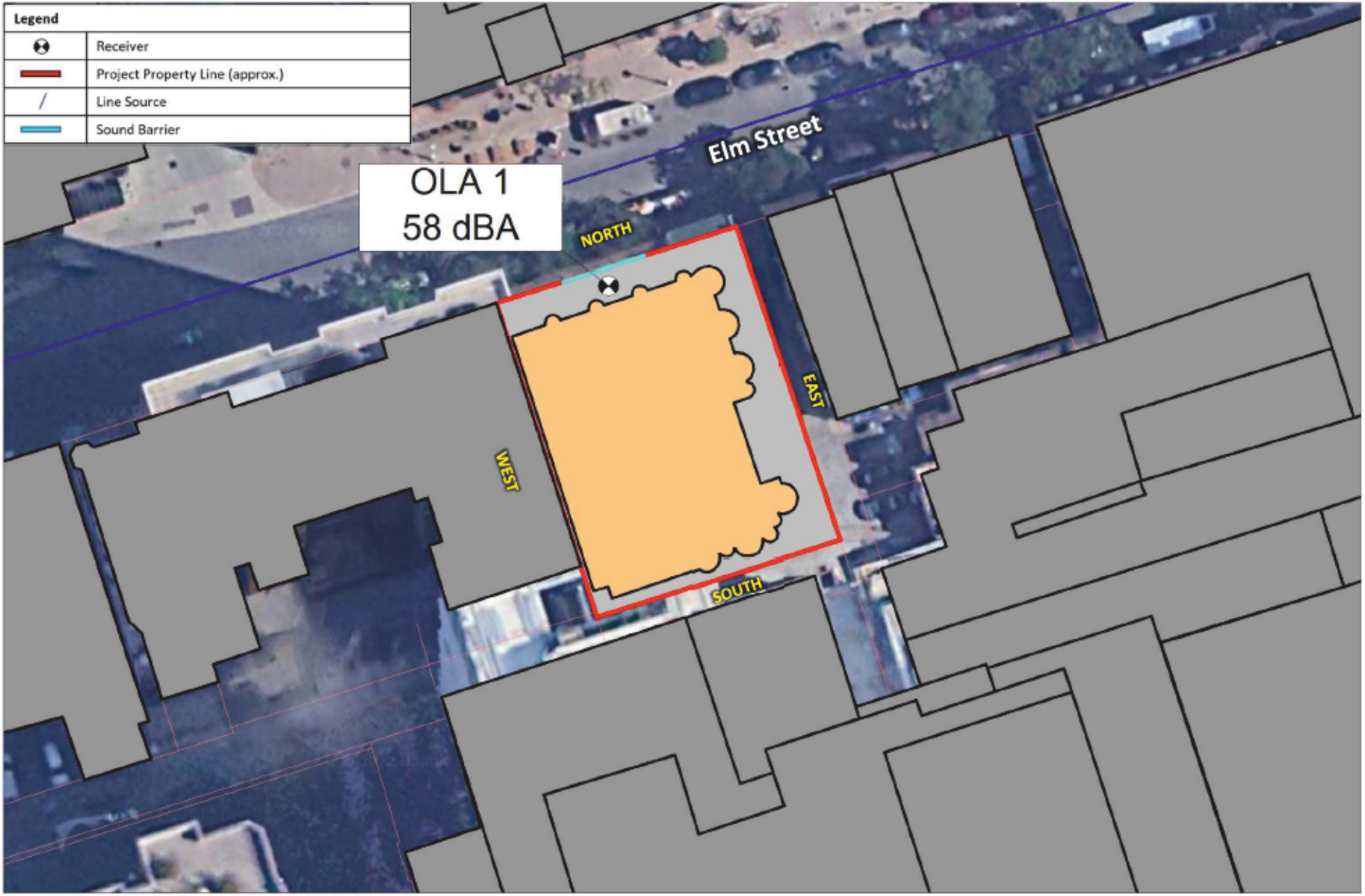
SLR global environmental solutions

17 ELM GP INC.	True North	Scale: 1:500	METRES
15-17 ELM STREET, TORONTO		Date: Aug. 31, 2022 Rev 1.0	Figure No. 3
PREDICTED FAÇADE SOUND LEVELS – ROADWAY – NIGHTTIME		Project No. 241.30447.00000	

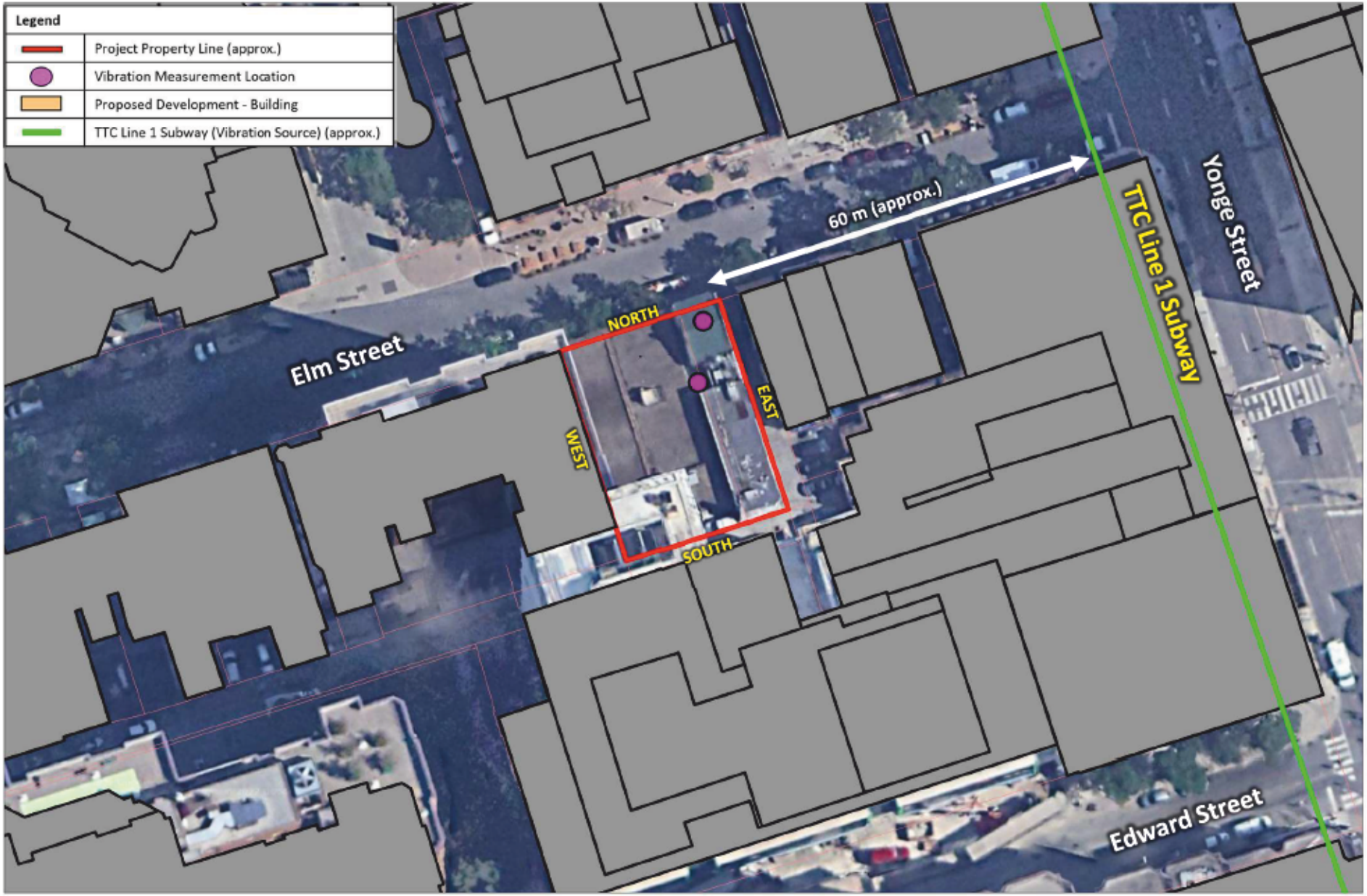
SLR global environmental solutions



17 ELM GP INC.	True North	Scale: 1:500	METRES	SLR global environmental solutions
15-17 ELM STREET, TORONTO		Date: Aug. 31, 2022 Rev 1.0	Figure No. 4	
PREDICTED OLA SOUND LEVELS – ROADWAY – DAYTIME – UNMITIGATED		Project No. 241.30447.00000		



17 ELM GP INC.	True North	Scale: 1:500	METRES	SLR global environmental solutions
15-17 ELM STREET, TORONTO		Date: Aug. 31, 2022 Rev 1.0	Figure No. 5	
PREDICTED OLA SOUND LEVELS – ROADWAY – DAYTIME – MITIGATED		Project No. 241.30447.00000		



17 ELM GP INC.	True North	Scale: 1:750	METRES	SLR global environmental solutions
15-17 ELM STREET, TORONTO		Date: Aug. 31, 2022 Rev 1.0	Figure No. 6	
VIBRATION MEASUREMENT LOCATIONS		Project No. 241.30447.00000		

Appendix A Development Drawings

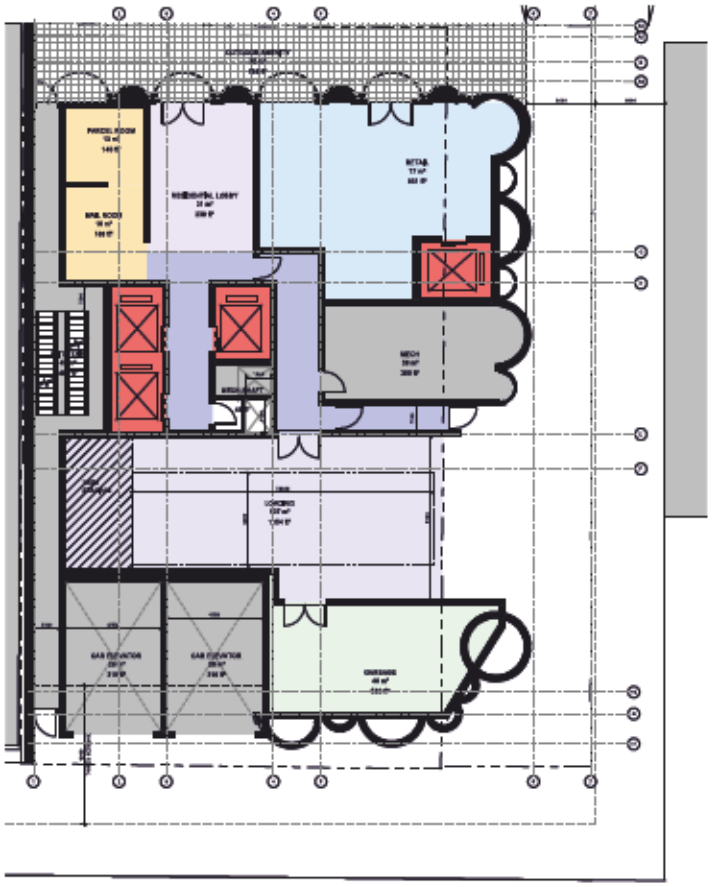
Environmental Noise & Vibration Assessment

15-17 Elm Street, Toronto, ON

17 Elm GP Inc.

SLR Project No. 241.30447.00000

August 31, 2022



NOT FOR CONSTRUCTION

PARTISANS

ONTARIO ASSOCIATION OF ARCHITECTS

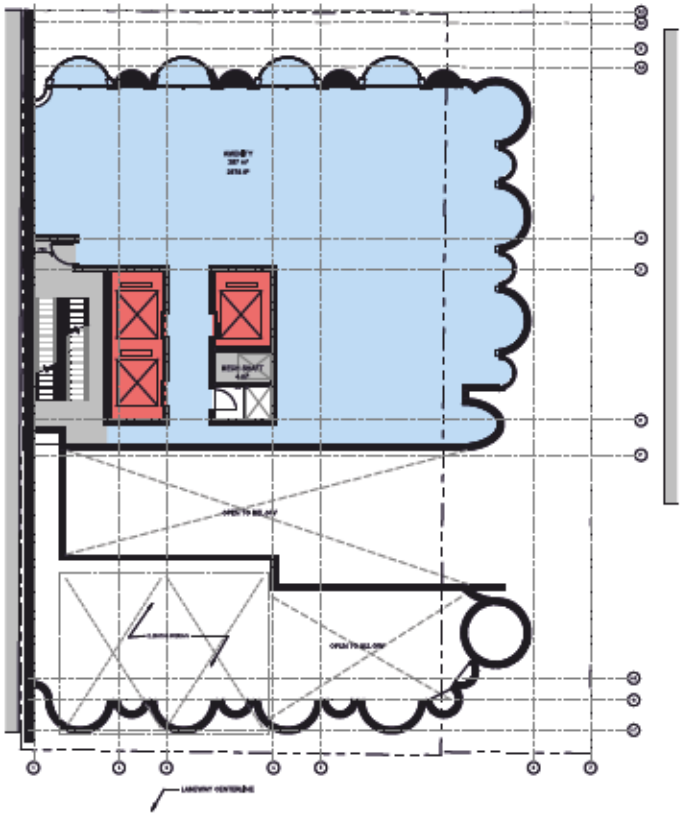
Fora Developments

15-17 ELM STREET

Project Address:
250 Dupont Street
Toronto, On,
Canada, M6R 1Z8

Ground Floor Plan

99 | A1000



NOT FOR CONSTRUCTION

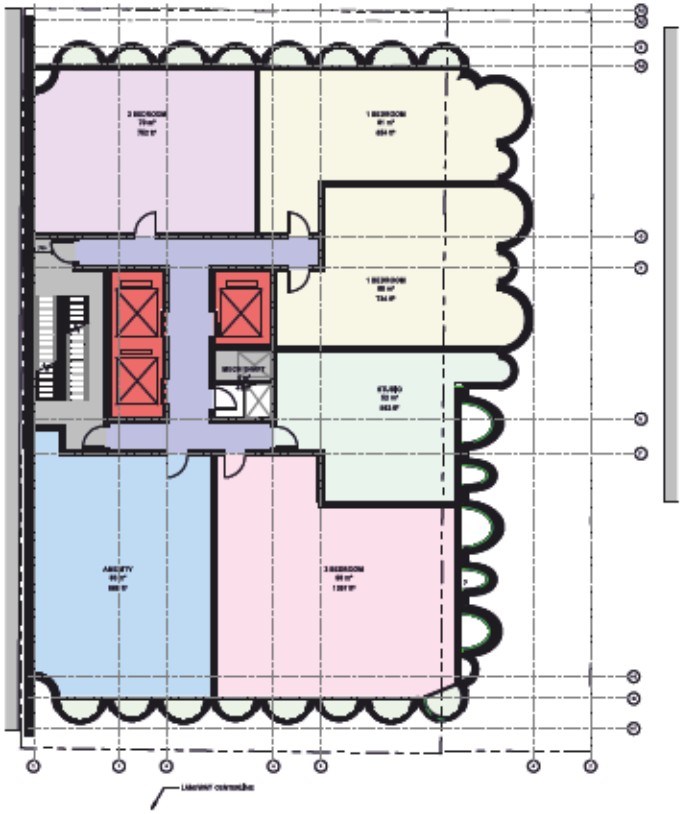
PARTISANS

ONTARIO ASSOCIATION OF ARCHITECTS

Fora Developments

15-17 ELM STREET

A1000



NOT FOR CONSTRUCTION

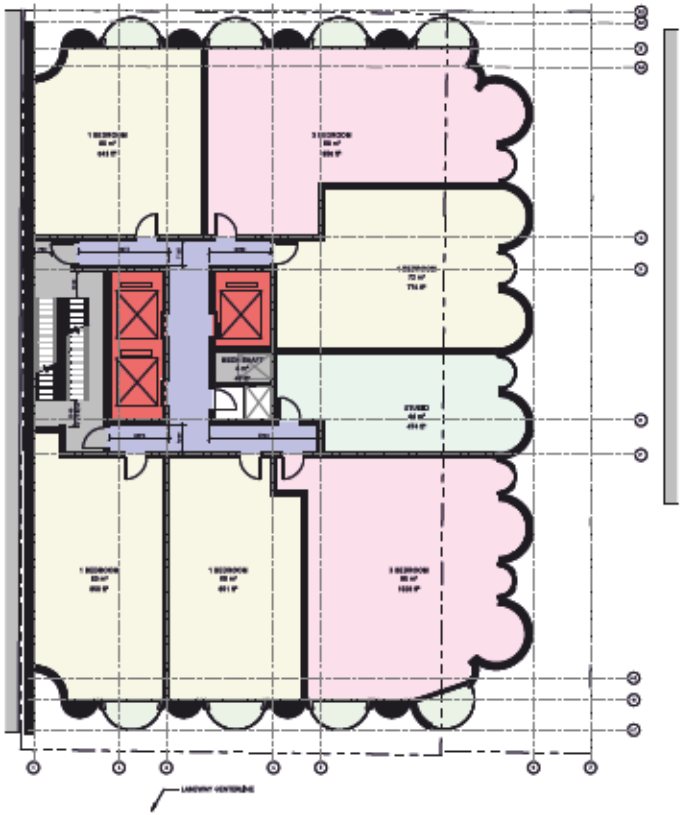
PARTISANS

ONTARIO ASSOCIATION OF ARCHITECTS

Fora Developments

15-17 ELM STREET

A1000



NOT FOR CONSTRUCTION

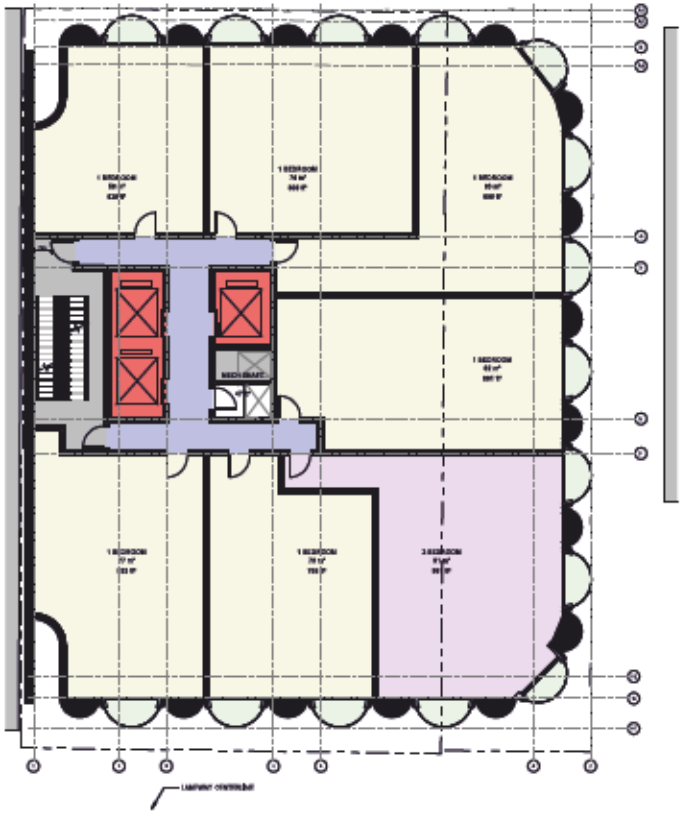
PARTISANS

ONTARIO ASSOCIATION OF ARCHITECTS

Project
10-17 ELM STREET

Drawing title
Typical Podium Floor Level (+4)

Drawing number
A1004



NOT FOR CONSTRUCTION

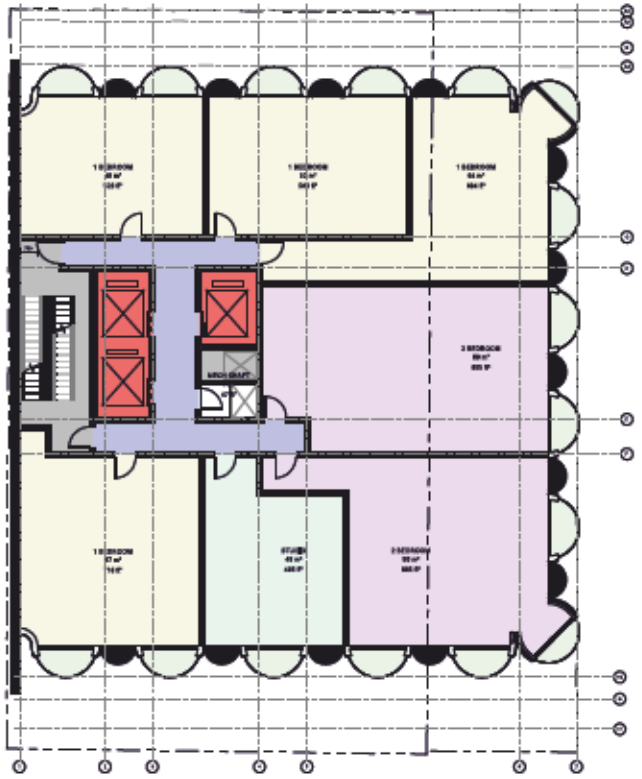
PARTISANS

ONTARIO ASSOCIATION OF ARCHITECTS

Fora Developments

15-17 ELM STREET

A100S



NOT FOR CONSTRUCTION

PARTISANS

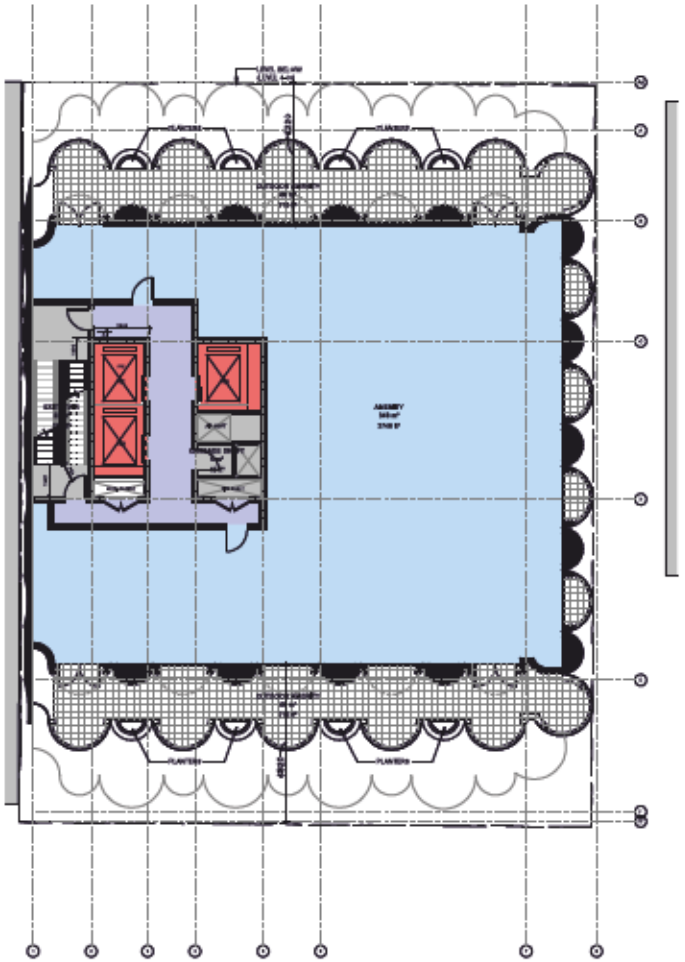
ONTARIO ASSOCIATION OF ARCHITECTS

LICENCE

Fora Developments

15-17 ELM STREET

A1006



NOT FOR CONSTRUCTION

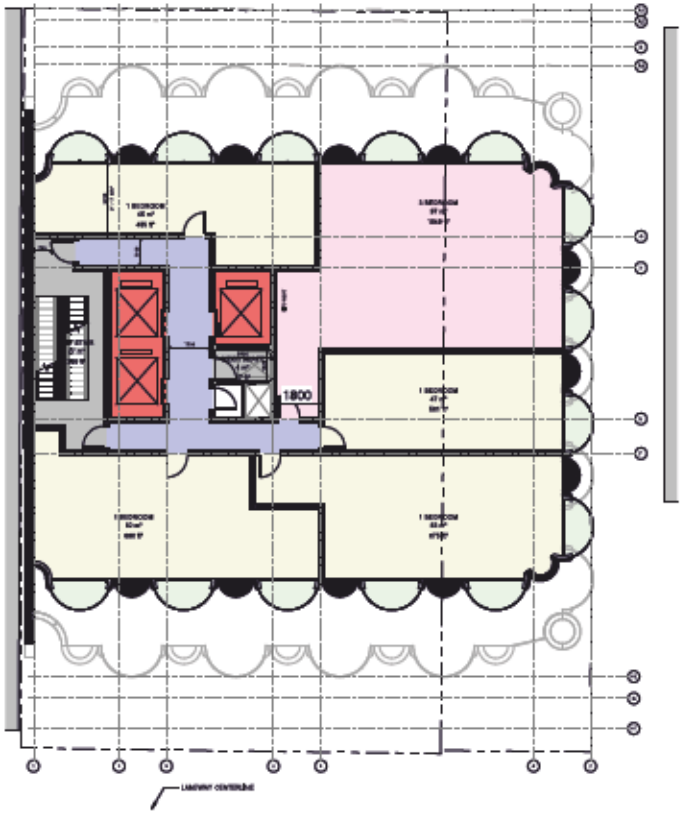
PARTISANS

Fora Developments

15-17 ELM STREET

17 Elm Street
Toronto, Ontario
M5G 1P1

A1007



NOT FOR CONSTRUCTION

PARTISANS

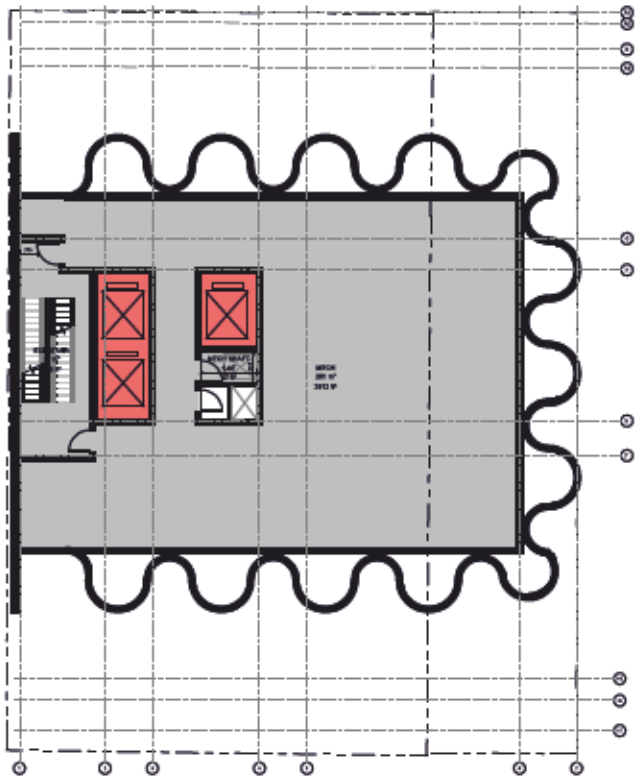
ONTARIO ASSOCIATION OF ARCHITECTS

Client
Fora Developments

Project
16-17 ELM STREET

Drawing title
Typical Tower Short Level

Drawing no.
A1007



NOT FOR CONSTRUCTION

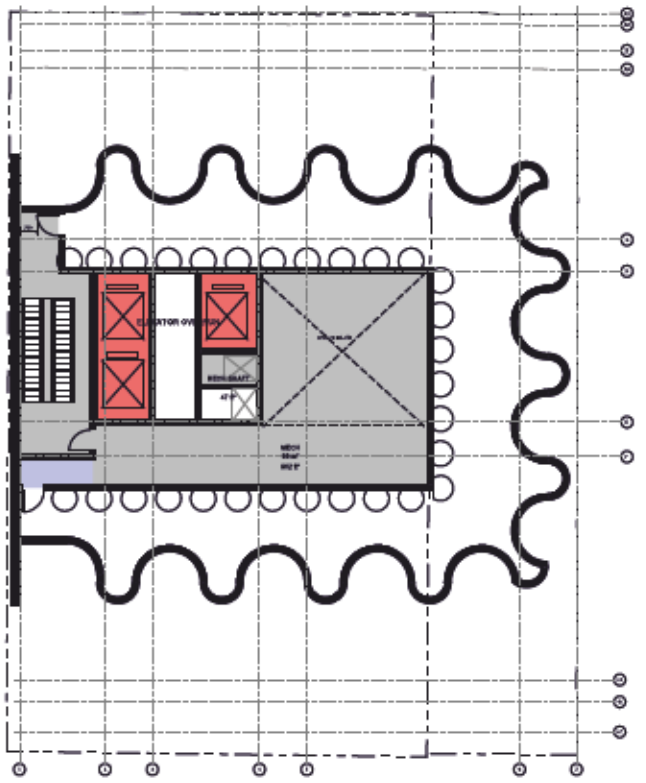
PARTISANS

ONTARIO ASSOCIATION OF ARCHITECTS

Fora Developments

10-17 ELM STREET

A1000



NOT FOR CONSTRUCTION

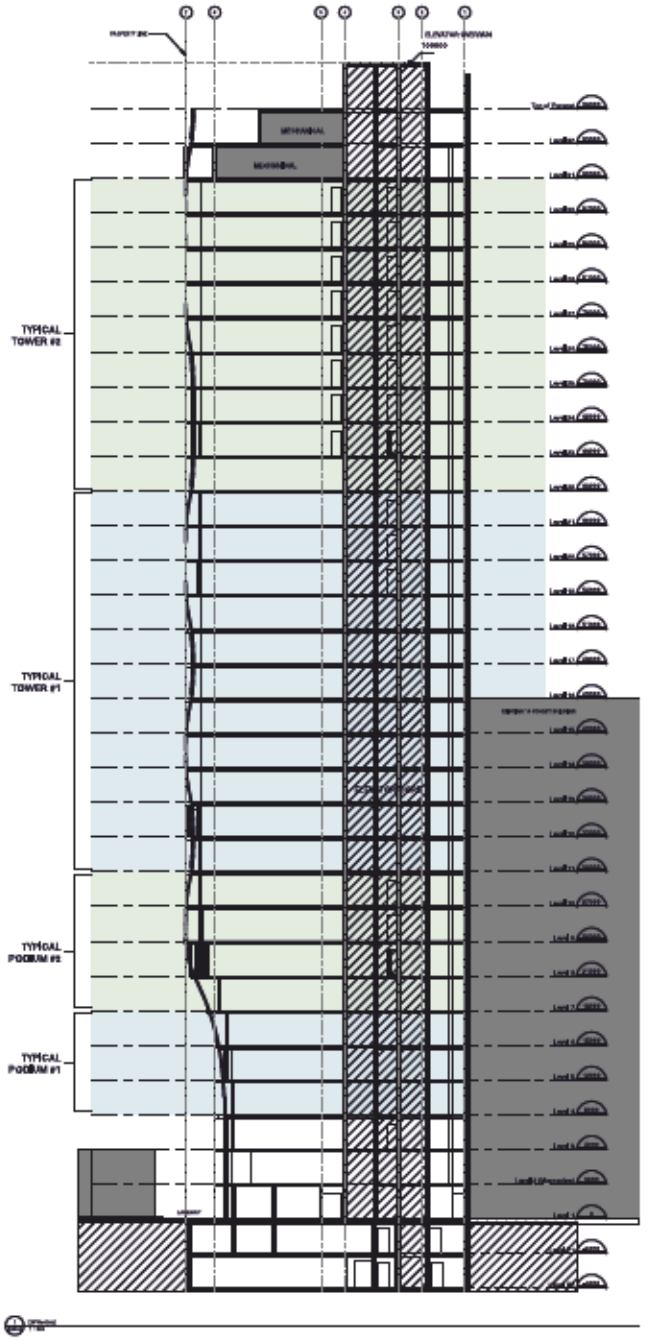
PARTISANS

ONTARIO ASSOCIATION OF ARCHITECTS

Fora Developments

15-17 ELM STREET

A1000



NOT FOR CONSTRUCTION

PARTISANS

ONTARIO ASSOCIATION OF ARCHITECTS

Fora Developments

15-17 ELM STREET

A0000

Appendix B Zoning Information

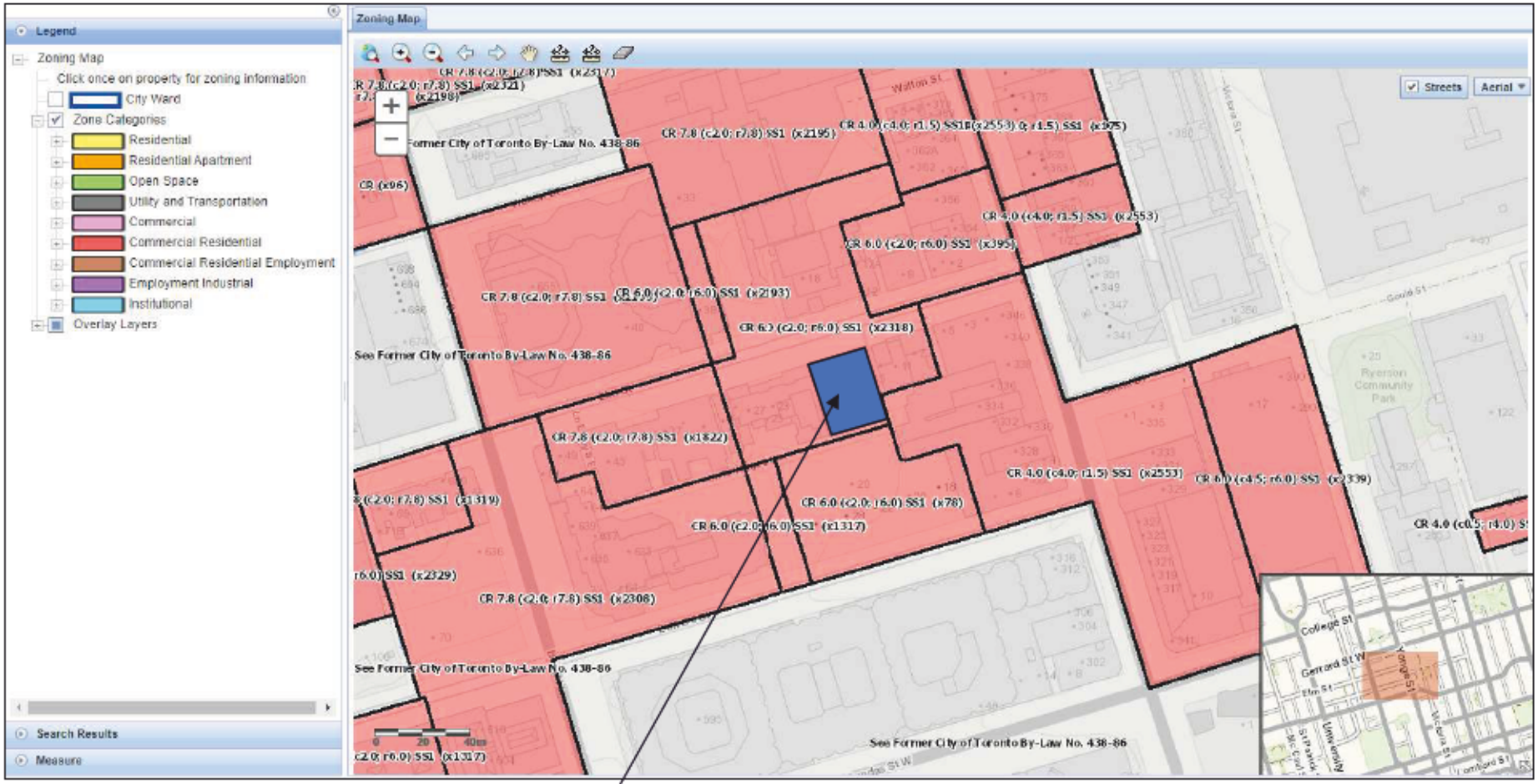
Environmental Noise & Vibration Assessment

15-17 Elm Street, Toronto, ON

17 Elm GP Inc.

SLR Project No. 241.30447.00000

August 31, 2022



Proposed Development Location (15-17 Elm Street, Toronto) – Zoning CR (Commercial Residential)

Source: https://map.toronto.ca/maps/map.jsp?app=ZBL_CONSULT

17 ELM GP INC.	True North	Scale: n.t.s.	METRES	SLR global environmental solutions
15-17 ELM STREET, TORONTO		Date: Aug. 31, 2022 Rev 1.0	Figure No. **B1**	
ZONING INFORMATION		Project No. 241.30447.00000		

Appendix C Traffic Data and Calculations

Environmental Noise & Vibration Assessment

15-17 Elm Street, Toronto, ON

17 Elm GP Inc.

SLR Project No. 241.30447.00000

August 31, 2022

Bay Street at Elm Street (2016)

count_date	location_id	location	time_start	time_end	sb_cars_r	sb_cars_t	sb_cars_l	nb_cars_r	nb_cars_t	nb_cars_l	wb_cars_r	wb_cars_t	wb_cars_l	eb_cars_r	eb_cars_t	eb_cars_l	sb_trucks_r	sb_trucks_t	sb_trucks_l	nb_trucks_r	nb_trucks_t	nb_trucks_l	wb_trucks_r	wb_trucks_t	wb_trucks_l	eb_trucks_r	eb_trucks_t	eb_trucks_l	sb_bus_r	sb_bus_t	sb_bus_l	nb_bus_r	nb_bus_t	nb_bus_l	wb_bus_r	wb_bus_t	wb_bus_l	eb_bus_r	eb_bus_t	eb_bus_l
11/10/2016	4210	BAY ST AT ELM ST (PX 913)	2016-11-10 07:30:00-05:00	2016-11-10 07:45:00-05:00	30	151	1	9	91	0	9	20	10	6	15	10	1	7	0	0	3	0	1	2	0	0	1	2	0	3	0	0	5	0	0	0	0	1	1	0
11/10/2016	4210	BAY ST AT ELM ST (PX 913)	2016-11-10 07:45:00-05:00	2016-11-10 08:00:00-05:00	25	167	1	18	136	1	7	13	6	9	11	13	1	1	0	0	4	0	0	1	0	1	2	0	0	5	0	0	4	0	0	0	0	0	1	0
11/10/2016	4210	BAY ST AT ELM ST (PX 913)	2016-11-10 08:00:00-05:00	2016-11-10 08:15:00-05:00	38	185	1	17	101	0	11	39	4	8	26	23	0	3	0	0	7	0	0	0	0	0	0	2	0	5	0	0	4	0	0	0	0	0	0	0
11/10/2016	4210	BAY ST AT ELM ST (PX 913)	2016-11-10 08:15:00-05:00	2016-11-10 08:30:00-05:00	28	198	1	12	109	0	11	18	11	7	13	17	0	5	0	0	3	0	0	1	0	0	0	0	0	4	0	0	4	0	0	0	0	1	0	0
11/10/2016	4210	BAY ST AT ELM ST (PX 913)	2016-11-10 08:30:00-05:00	2016-11-10 08:45:00-05:00	30	156	0	13	104	1	7	23	8	8	20	20	0	8	0	0	0	0	1	1	0	1	2	0	0	3	0	0	2	0	0	0	0	0	0	0
11/10/2016	4210	BAY ST AT ELM ST (PX 913)	2016-11-10 08:45:00-05:00	2016-11-10 09:00:00-05:00	21	166	0	15	108	0	10	17	13	4	14	19	1	3	0	1	4	0	1	0	0	0	1	1	0	4	0	0	6	0	0	0	0	3	0	0
11/10/2016	4210	BAY ST AT ELM ST (PX 913)	2016-11-10 09:00:00-05:00	2016-11-10 09:15:00-05:00	24	150	2	8	95	1	7	14	10	8	23	23	0	3	0	0	10	0	0	0	0	1	4	1	0	4	0	0	5	0	0	0	0	1	0	0
11/10/2016	4210	BAY ST AT ELM ST (PX 913)	2016-11-10 09:15:00-05:00	2016-11-10 09:30:00-05:00	25	139	1	13	134	0	4	12	10	11	23	10	0	3	0	1	2	0	2	0	0	0	1	0	0	3	0	0	2	0	0	0	0	0	1	0
11/10/2016	4210	BAY ST AT ELM ST (PX 913)	2016-11-10 10:00:00-05:00	2016-11-10 10:15:00-05:00	26	128	1	18	127	0	11	6	4	5	12	14	0	4	0	0	8	0	1	0	0	0	1	1	0	3	0	0	1	0	0	0	0	1	0	0
11/10/2016	4210	BAY ST AT ELM ST (PX 913)	2016-11-10 10:15:00-05:00	2016-11-10 10:30:00-05:00	22	111	0	10	108	0	14	6	7	5	17	18	1	11	0	0	3	0	0	1	0	0	0	2	0	1	0	0	2	0	0	0	0	0	0	0
11/10/2016	4210	BAY ST AT ELM ST (PX 913)	2016-11-10 10:30:00-05:00	2016-11-10 10:45:00-05:00	16	124	0	17	104	0	5	6	7	7	17	14	0	8	0	0	2	0	0	2	1	0	1	1	0	3	0	0	2	0	0	0	0	0	0	0
11/10/2016	4210	BAY ST AT ELM ST (PX 913)	2016-11-10 10:45:00-05:00	2016-11-10 11:00:00-05:00	21	129	0	15	86	0	5	9	10	6	23	15	0	2	1	0	4	0	0	1	1	0	0	1	0	2	0	0	1	0	0	0	0	0	0	0
11/10/2016	4210	BAY ST AT ELM ST (PX 913)	2016-11-10 11:00:00-05:00	2016-11-10 11:15:00-05:00	25	140	0	10	130	0	10	6	8	4	15	20	0	8	0	0	2	0	0	2	0	0	1	1	0	0	0	0	2	0	0	0	0	0	1	0
11/10/2016	4210	BAY ST AT ELM ST (PX 913)	2016-11-10 11:15:00-05:00	2016-11-10 11:30:00-05:00	29	137	0	13	86	0	7	3	5	4	19	17	0	10	0	0	5	0	0	2	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0
11/10/2016	4210	BAY ST AT ELM ST (PX 913)	2016-11-10 11:30:00-05:00	2016-11-10 11:45:00-05:00	31	125	0	9	91	0	7	5	9	3	23	11	1	9	0	0	2	0	0	0	1	0	0	2	0	1	0	0	1	0	0	0	0	2	0	0
11/10/2016	4210	BAY ST AT ELM ST (PX 913)	2016-11-10 11:45:00-05:00	2016-11-10 12:00:00-05:00	28	138	0	17	101	0	9	4	7	8	20	18	0	5	0	0	1	0	1	1	0	0	2	1	0	2	0	0	1	0	0	0	0	0	0	0
11/10/2016	4210	BAY ST AT ELM ST (PX 913)	2016-11-10 13:00:00-05:00	2016-11-10 13:15:00-05:00	27	131	0	16	105	1	10	10	6	8	20	26	1	9	0	1	7	0	0	1	1	1	1	0	0	2	0	0	1	0	0	0	0	0	0	0
11/10/2016	4210	BAY ST AT ELM ST (PX 913)	2016-11-10 13:15:00-05:00	2016-11-10 13:30:00-05:00	14	116	1	11	96	0	2	11	8	8	22	19	0	5	0	0	5	0	0	1	0	0	1	1	0	2	0	0	1	0	0	0	0	1	0	0
11/10/2016	4210	BAY ST AT ELM ST (PX 913)	2016-11-10 13:30:00-05:00	2016-11-10 13:45:00-05:00	22	140	0	15	85	0	8	10	4	5	17	23	0	4	0	0	3	0	0	2	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0
11/10/2016	4210	BAY ST AT ELM ST (PX 913)	2016-11-10 13:45:00-05:00	2016-11-10 14:00:00-05:00	16	129	0	10	93	0	7	8	5	3	21	28	0	10	0	0	4	0	0	1	0	0	1	2	0	1	0	0	1	0	0	0	0	1	0	0
11/10/2016	4210	BAY ST AT ELM ST (PX 913)	2016-11-10 14:00:00-05:00	2016-11-10 14:15:00-05:00	19	136	0	11	112	0	5	6	2	7	19	34	0	7	0	0	4	0	0	0	1	0	0	1	0	2	0	0	2	0	0	0	0	0	0	0
11/10/2016	4210	BAY ST AT ELM ST (PX 913)	2016-11-10 14:15:00-05:00	2016-11-10 14:30:00-05:00	20	148	1	13	139	0	11	6	4	11	20	30	0	3	0	0	7	0	1	1	0	0	3	3	0	2	0	0	1	0	0	0	0	0	0	0
11/10/2016	4210	BAY ST AT ELM ST (PX 913)	2016-11-10 14:30:00-05:00	2016-11-10 14:45:00-05:00	14	117	0	10	126	1	8	11	8	9	16	30	0	8	0	0	3	0	0	2	1	0	1	1	0	1	0	0	2	0	0	0	0	1	0	0
11/10/2016	4210	BAY ST AT ELM ST (PX 913)	2016-11-10 14:45:00-05:00	2016-11-10 15:00:00-05:00	23	157	0	15	145	0	8	7	8	12	21	31	0	7	0	1	4	0	0	0	0	0	1	0	0	4	0	0	1	0	0	0	0	0	0	0
11/10/2016	4210	BAY ST AT ELM ST (PX 913)	2016-11-10 16:00:00-05:00	2016-11-10 16:15:00-05:00	9	150	0	15	151	0	6	15	7	14	23	37	0	3	0	1	1	0	0	0	0	1	1	0	0	3	0	0	1	0	0	0	0	3	0	0
11/10/2016	4210	BAY ST AT ELM ST (PX 913)	2016-11-10 16:15:00-05:00	2016-11-10 16:30:00-05:00	15	154	1	6	134	0	10	9	2	7	40	36	0	2	0	0	2	0	0	0	2	1	0	1	0	3	0	0	2	0	0	0	0	1	0	0
11/10/2016	4210	BAY ST AT ELM ST (PX 913)	2016-11-10 16:30:00-05:00	2016-11-10 16:45:00-05:00	17	145	0	6	133	1	4	10	5	8	20	43	2	2	0	0	2	0	0	0	0	1	0	2	0	2	0	0	1	0	0	0	0	1	1	0
11/10/2016	4210	BAY ST AT ELM ST (PX 913)	2016-11-10 16:45:00-05:00	2016-11-10 17:00:00-05:00	24	121	0	13	117	0	12	18	4	11	37	39	1	4	0	0	1	0	0	0	0	0	0	0	1	2	0	0	4	0	0	0	0	2	0	0
11/10/2016	4210	BAY ST AT ELM ST (PX 913)	2016-11-10 17:00:00-05:00	2016-11-10 17:15:00-05:00	20	134	0	14	141	0	9	15	2	9	25	31	0	3	0	0	0	0	0	0	0	1	0	1	0	2	0	0	4	0	0	0	0	0	0	0
11/10/2016	4210	BAY ST AT ELM ST (PX 913)	2016-11-10 17:15:00-05:00	2016-11-10 17:30:00-05:00	22	122	1	12	148	0	14	18	8	10	34	39	2	2	0	0	2	0	0	0	0	0	1	0	1	1	0	0	3	0	0	0	0	1	1	0
11/10/2016	4210	BAY ST AT ELM ST (PX 913)	2016-11-10 17:30:00-05:00	2016-11-10 17:45:00-05:00	27	143	0	21	153	0	16	25	7	12	38	28	0	0	0	0	1	0	0	1	0	0	1	0	0	3	0	0	2	0	0	0	0	0	0	0
11/10/2016	4210	BAY ST AT ELM ST (PX 913)	2016-11-10 17:45:00-05:00	2016-11-10 18:00:00-05:00	15	110	4	18	156	2	11	10	6	6	39	38	0	1	0	0	4	0	0	0	1	0	1	0	1	1	0	0	3	1	0	0	0	0	1	0

Yonge Street at Shuter Street (2019)

count_date	location_id	location	time_start	time_end	eb_cars_r	eb_cars_t	eb_cars_l	nb_cars_r	nb_cars_t	nb_cars_l	wb_cars_r	wb_cars_t	wb_cars_l	sb_cars_r	sb_cars_t	sb_cars_l	eb_truck_r	eb_truck_t	eb_truck_l	nb_truck_r	nb_truck_t	nb_truck_l	wb_truck_r	wb_truck_t	wb_truck_l	sb_truck_r	sb_truck_t	sb_truck_l	eb_bus_r	eb_bus_t	eb_bus_l	nb_bus_r	nb_bus_t	nb_bus_l	wb_bus_r	wb_bus_t	wb_bus_l	sb_bus_r	sb_bus_t	sb_bus_l
10/17/2019	4639	SHUTER ST AT YONGE ST (PX 35)	2019-10-17 07:30:00-05:00	2019-10-17 07:45:00-05:00	0	68	9	15	67	0	14	28	24	0	1	0	0	7	5	2	4	0	2	4	4	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0
10/17/2019	4639	SHUTER ST AT YONGE ST (PX 35)	2019-10-17 07:45:00-05:00	2019-10-17 08:00:00-05:00	1	56	21	34	95	0	23	41	23	0	2	0	0	5	1	2	5	0	6	0	7	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0
10/17/2019	4639	SHUTER ST AT YONGE ST (PX 35)	2019-10-17 08:00:00-05:00	2019-10-17 08:15:00-05:00	0	77	11	30	73	3	28	25	28	0	1	0	0	6	4	6	19	0	6	0	0	0	0	0	0	2	0	0	2	0	0	0	1	0	0	0
10/17/2019	4639	SHUTER ST AT YONGE ST (PX 35)	2019-10-17 08:15:00-05:00	2019-10-17 08:30:00-05:00	1	79	23	17	84	1	34	31	28	0	3	0	1	2	1	3	15	0	5	1	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
10/17/2019	4639	SHUTER ST AT YONGE ST (PX 35)	2019-10-17 08:30:00-05:00	2019-10-17 08:45:00-05:00	1	67	25	28	80	0	32	35	30	0	3	0	0	9	3	1	7	0	3	0	3	0	0	0	0	0	0	0	3	0	0	0	0	0	0	0
10/17/2019	4639	SHUTER ST AT YONGE ST (PX 35)	2019-10-17 08:45:00-05:00	2019-10-17 09:00:00-05:00	0	56	16	26	77	0	26	44	25	1	3	0	0	6	2	2	7	0	4	0	2	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0
10/17/2019	4639	SHUTER ST AT YONGE ST (PX 35)	2019-10-17 09:00:00-05:00	2019-10-17 09:15:00-05:00	2	75	21	9	79	0	31	49	26	1	3	0	0	1	5	3	11	0	2	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10/17/2019	4639	SHUTER ST AT YONGE ST (PX 35)	2019-10-17 09:15:00-05:00	2019-10-17 09:30:00-05:00	2	86	12	28	80	5	26	37	18	0	3	0	0	7	3	4	8	1	7	1	6	0	0	0	0	2	0	0	1	0	1	0	0	0	0	0
10/17/2019	4639	SHUTER ST AT YONGE ST (PX 35)	2019-10-17 09:30:00-05:00	2019-10-17 09:45:00-05:00	4	74	15	29	66	2	16	27	21	0	8	0	0	10	5	4	13	0	7	2	1	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0
10/17/2019	4639	SHUTER ST AT YONGE ST (PX 35)	2019-10-17 09:45:00-05:00	2019-10-17 10:00:00-05:00	1	63	15	27	87	4	30	18	16	1	8	0	0	11	7	5	9	0	3	0	1	0	0	0	0	1	1	0	1	0	0	0	0	0	0	0
10/17/2019	4639	SHUTER ST AT YONGE ST (PX 35)	2019-10-17 10:00:00-05:00	2019-10-17 10:15:00-05:00	5	61	16	23	66	0	23	23	33	0	6	0	0	10	3	5	10	0	4	0	2	0	0	0	0	3	0	0	1	0	0	0	0	0	0	0
10/17/2019	4639	SHUTER ST AT YONGE ST (PX 35)	2019-10-17 10:15:00-05:00	2019-10-17 10:30:00-05:00	2	66	11	23	64	3	26	19	18	2	8	0	0	13	3	9	10	0	5	1	2	0	0	0	0	1	0	1	1	0	0	0	0	0	0	0
10/17/2019	4639	SHUTER ST AT YONGE ST (PX 35)	2019-10-17 10:30:00-05:00	2019-10-17 10:45:00-05:00	1	50	12	25	79	5	25	30	26	0	16	0	0	8	3	3	12	0	4	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10/17/2019	4639	SHUTER ST AT YONGE ST (PX 35)	2019-10-17 10:45:00-05:00	2019-10-17 11:00:00-05:00	1	41	8	25	80	3	19	23	27	1	15	0	0	3	7	5	17	0	6	0	2	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0
10/17/2019	4639	SHUTER ST AT YONGE ST (PX 35)	2019-10-17 11:00:00-05:00	2019-10-17 11:15:00-05:00	3	88	16	15	67	4	26	18	35	2	11	1	0	9	7	4	13	0	8	0	0	0	0	0	0	2	0	0	0	0	1	0	0	0	0	0
10/17/2019	4639	SHUTER ST AT YONGE ST (PX 35)	2019-10-17 11:15:00-05:00	2019-10-17 11:30:00-05:00	3	69	13	20	73	5	26	30	25	1	20	0	0	3	2	3	15	0	3	0	2	0	0	0	0	0	0	1	1	0	1	0	0	0	0	0
10/17/2019	4639	SHUTER ST AT YONGE ST (PX 35)	2019-10-17 11:30:00-05:00	2019-10-17 11:45:00-05:00	1	52	17	33	77	2	26	27	26	0	23	0	0	8	4	2	13	0	5	0	3	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0
10/17/2019	4639	SHUTER ST AT YONGE ST (PX 35)	2019-10-17 11:45:00-05:00	2019-10-17 12:00:00-05:00	3	64	16	23	82	4	20	25	32	0	16	2	0	5	3	1	6	0	9	1	2	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0
10/17/2019	4639	SHUTER ST AT YONGE ST (PX 35)	2019-10-17 12:00:00-05:00	2019-10-17 12:15:00-05:00	3	76	26	24	70	1	24	20	34	4	24	1	0	10	1	3	4	0	4	1	2	0	0	0	0	4	0	0	0	0	1	0	0	0	0	0
10/17/2019	4639	SHUTER ST AT YONGE ST (PX 35)	2019-10-17 12:15:00-05:00	2019-10-17 12:30:00-05:00	1	67	15	23	98	5	21	17	25	3	29	0	0	7	1	4	8	1	3	0	2	0	0	0	0	1	0	1	0	0	1	0	0	0	0	0
10/17/2019	4639	SHUTER ST AT YONGE ST (PX 35)	2019-10-17 12:30:00-05:00	2019-10-17 12:45:00-05:00	1	55	18	24	87	3	27	9	34	3	42	0	0	6	0	5	9	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10/17/2019	4639	SHUTER ST AT YONGE ST (PX 35)	2019-10-17 12:45:00-05:00	2019-10-17 13:00:00-05:00	4	63	15	28	83	2	33	19	23	0	28	0	0	9	1	3	7	0	1	1	1	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0
10/17/2019	4639	SHUTER ST AT YONGE ST (PX 35)	2019-10-17 13:00:00-05:00	2019-10-17 13:15:00-05:00	1	52	17	33	77	2	28	27	26	0	23	0	0	8	4	2	13	0	5	0	3	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0
10/17/2019	4639	SHUTER ST AT YONGE ST (PX 35)	2019-10-17 13:15:00-05:00	2019-10-17 13:30:00-05:00	3	64	16	23	82	4	20	25	32	0	16	2	0	5	3	1	6	0	9	1	2	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0
10/17/2019	4639	SHUTER ST AT YONGE ST (PX 35)	2019-10-17 13:30:00-05:00	2019-10-17 13:45:00-05:00	3	76	26	24	70	1	24	20	34	4	24	1	0	10	1	3	4	0	4	1	2	0	0	0	0	4	0	0	0	0	1	0	0	0	0	0
10/17/2019	4639	SHUTER ST AT YONGE ST (PX 35)	2019-10-17 13:45:00-05:00	2019-10-17 14:00:00-05:00	1	67	15	23	98	5	21	17	25	3	29	0	0	7	1	4	8	1	3	0	2	0	0	0	0	1	0	1	0	0	1	0	0	0	0	0
10/17/2019	4639	SHUTER ST AT YONGE ST (PX 35)	2019-10-17 14:00:00-05:00	2019-10-17 14:15:00-05:00	1	55	18	24	87	3	27	9	34	3	42	0	0	6	0	5	9	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10/17/2019	4639	SHUTER ST AT YONGE ST (PX 35)	2019-10-17 14:15:00-05:00	2019-10-17 14:30:00-05:00	4	63	15	28	83	2	33	19	23	0	28	0	0	9	1	3	7	0	1	1	1	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0
10/17/2019	4639	SHUTER ST AT YONGE ST (PX 35)	2019-10-17 14:30:00-05:00	2019-10-17 14:45:00-05:00	2	56	15	29	81	2	26	12	23	1	17	0	0	3	4	1	5	0	4	0	0	0	0	0	0	1	0	0	2	0	3	0	0	0	0	0
10/17/2019	4639	SHUTER ST AT YONGE ST (PX 35)	2019-10-17 14:45:00-05:00	2019-10-17 15:00:00-05:00	2	62	16	29	90	3	30	10	35	3	25	0	0	8	3	2	9	0	2	0	5	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0
10/17/2019	4639	SHUTER ST AT YONGE ST (PX 35)	2019-10-17 15:00:00-05:00	2019-10-17 15:15:00-05:00	5	62	21	27	91	3	24	12	18	2	18	1	0	3	0	3	9	0	5	0	1	0	0	0	0	2	0	0	2	0	1	0	0	0	0	0
10/17/2019	4639	SHUTER ST AT YONGE ST (PX 35)	2019-10-17 15:15:00-05:00	2019-10-17 15:30:00-05:00	2	66	26	18	83	3	26	16	17	4	34	0	0	3	2	2	5	0	0	0	2	0	0	0	0	0	0	0	1	0	2	0	0	0	0	0
10/17/2019	4639	SHUTER ST AT YONGE ST (PX 35)	2019-10-17 15:30:00-05:00	2019-10-17 15:45:00-05:00	1	60	22	32	105	4	24	16	13	1	49	1	0	2	2	1	3	0	3	0	1	0	0	0	0	0	0	1	2	0	0	0	0	0	0	0
10/17/2019	4639	SHUTER ST AT YONGE ST (PX 35)	2019-10-17 15:45:00-05:00	2019-10-17 16:00:00-05:00	2	49	19	30	95	3	31	17	18	0	40	0	0	6	0	3	3	0	3	0	1	0	0	0	0	1	0	0	3	0	0	0	0	0	0	0
10/17/2019	4639	SHUTER ST AT YONGE ST (PX 35)	2019-10-17 16:00:00-05:00	2019-10-17 16:15:00-05:00	2	69	25	21	86	3	35	18	11	0	46	3	0	2	2	2	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
10/17/2019	4639	SHUTER ST AT YONGE ST (PX 35)	2019-10-17 16:15:00-05:00	2019-10-17 16:30:00-05:00	2	77	23	25	94	0	21	16	21	2	37	0	0	6	0	0	3	0	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
10/17/2019	4639	SHUTER ST AT YONGE ST (PX 35)	2019-10-17 16:30:00-05:00	2019-10-17 16:45:00-05:00	2	72	17	29	102	4	23	16	17	2	43	0	1	2	2	1	2	1	2	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	0	0
10/17/2019	4639	SHUTER ST AT YONGE ST (PX 35)	2019-10-17 16:45:00-05:00	2019-10-17 17:00:00-05:00	2	56	24	30	108	6	35	21	19	1	39	1	0	1	1	2	5	0	1	0	1	0	0	0	0	3	0	0	1	0	0	0	0	0	0	0

O R N A M E N T - Sound Power Emissions & Source Heights

Ontario Road Noise Analysis Method for Environment and Transportation

Road Segment ID	Roadway Name	Link Description	Speed (kph)	Period (h)	Total Traffic Volumes	Auto %	Med %	Hvy %	Auto	Med	Heavy	Road Gradient (%)	Cadna/A Ground Absorption G	PWL (dBA)	Source Height, s (m)
Elm_avg	Elm Street	Daytime Impacts	40	16	6127	95.7%	2.8%	1.5%	5864	172	92	0	0.00	74.6	1.1
		Night-time Impacts	40	8	681	95.7%	2.8%	1.5%	652	19	10	0	0.00	68.0	1.1
Yonge_avg	Yonge Street	Daytime Impacts	40	16	14241	90.4%	5.6%	4.0%	12874	797	570	0	0.00	81.1	1.4
		Night-time Impacts	40	8	1582	90.4%	5.6%	4.0%	1430	89	63	0	0.00	74.6	1.4
Bay_avg	Bay Street	Daytime Impacts	40	16	21548	95.5%	3.1%	1.4%	20578	668	302	0	0.00	80.0	1.1
		Night-time Impacts	40	8	2394	95.5%	3.1%	1.4%	2286	74	34	0	0.00	73.4	1.1

Appendix D STAMSON Output File

Environmental Noise & Vibration Assessment

15-17 Elm Street, Toronto, ON

17 Elm GP Inc.

SLR Project No. 241.30447.00000

August 31, 2022

STAMSON 5.04 NORMAL REPORT Date: 12-08-2022 16:43:58
MINISTRY OF ENVIRONMENT CONSERVATION AND PARKS / NOISE ASSESSMENT

Filename: st5.te Time Period: 16 hours
Description: STAMSON Validation - Sample Calculation

Road data, segment # 1: Elm Street

Car traffic volume : 5864 veh/TimePeriod
Medium truck volume : 172 veh/TimePeriod
Heavy truck volume : 92 veh/TimePeriod
Posted speed limit : 40 km/h
Road gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete)

Data for Segment # 1: Elm Street

Angle1 Angle2 : -90.00 deg 90.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0
Surface : 2 (Reflective ground surface)
Receiver source distance : 11.00 m
Receiver height : 7.50 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

Road data, segment # 2: Yonge Street

Car traffic volume : 12874 veh/TimePeriod
Medium truck volume : 797 veh/TimePeriod
Heavy truck volume : 570 veh/TimePeriod
Posted speed limit : 40 km/h
Road gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete)

Data for Segment # 2: Yonge Street

Angle1 Angle2 : -5.00 deg 0.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0
Surface : 2 (Reflective ground surface)
Receiver source distance : 86.00 m
Receiver height : 7.50 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

Road data, segment # 3: Bay Street

Car traffic volume : 20578 veh/TimePeriod
Medium truck volume : 668 veh/TimePeriod
Heavy truck volume : 302 veh/TimePeriod
Posted speed limit : 40 km/h
Road gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete)

Data for Segment # 3: Bay Street

Angle1 Angle2 : 0.00 deg 5.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0
Surface : 2 (Reflective ground surface)
Receiver source distance : 148.80 m
Receiver height : 7.50 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

Results segment # 1: Elm Street

Source height = 1.11 m

ROAD (0.00 + 60.84 + 0.00) = 60.84 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.00	59.49	0.00	1.35	0.00	0.00	0.00	0.00	60.84

Segment Leq : 60.84 dBA

Results segment # 2: Yonge Street

Source height = 1.41 m

ROAD (0.00 + 42.88 + 0.00) = 42.88 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-5	0	0.00	66.03	0.00	-7.58	-15.56	0.00	0.00	0.00	42.88

Segment Leq : 42.88 dBA

Results segment # 3: Bay Street

Source height = 1.09 m

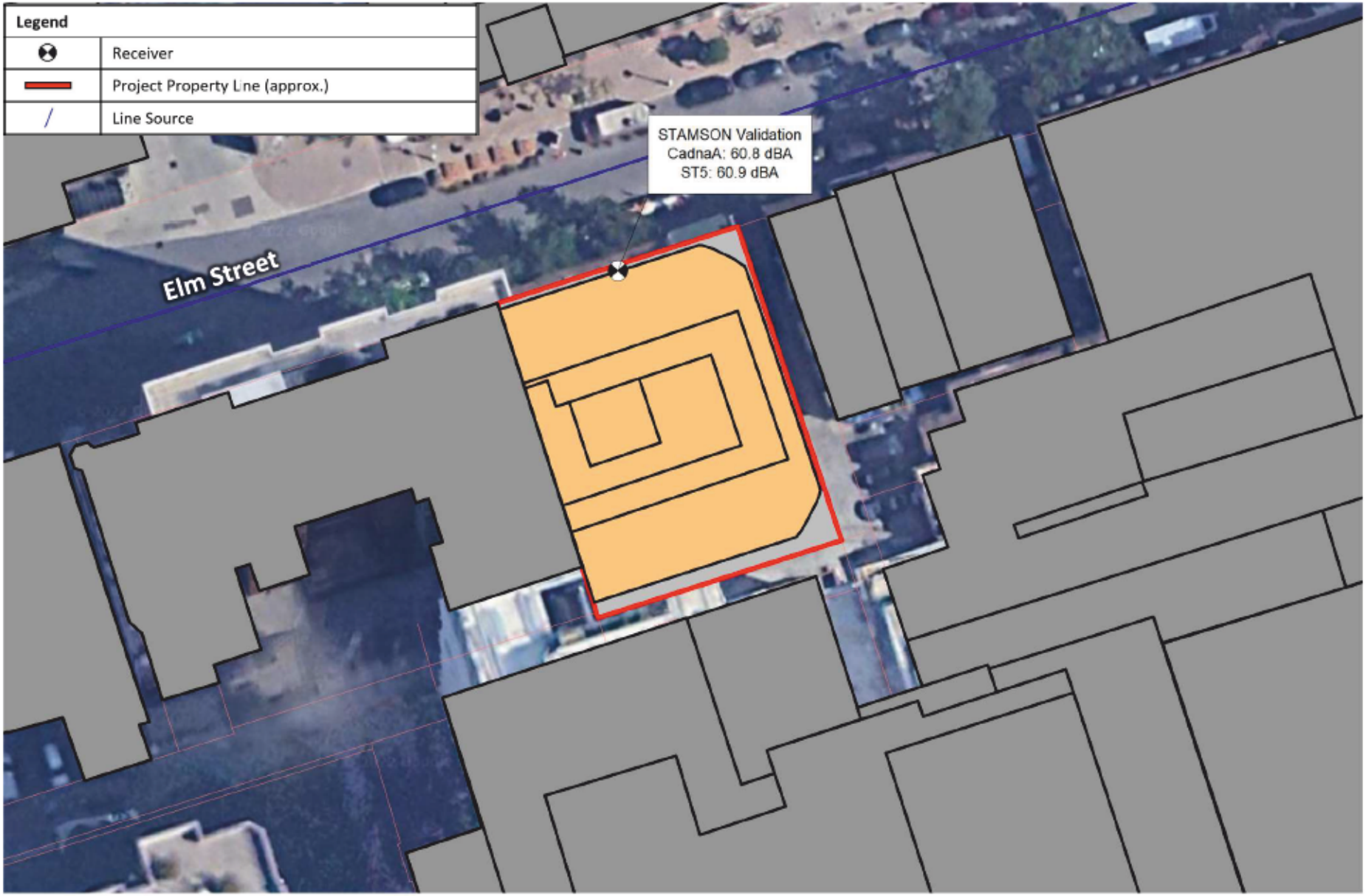
ROAD (0.00 + 39.36 + 0.00) = 39.36 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
0	5	0.00	64.89	0.00	-9.97	-15.56	0.00	0.00	0.00	39.36

Segment Leq : 39.36 dBA

Total Leq All Segments: 60.94 dBA

TOTAL Leq FROM ALL SOURCES: 60.94



17 ELM GP INC.	True North	Scale: 1:500	METRES	SLR global environmental solutions
15-17 ELM STREET, TORONTO		Date: Aug. 31, 2022 Rev 1.0	Figure No. D1	
COMPARISON OF CADNA/A AND STAMSON – ROAD NOISE		Project No. 241.30477.00000		

Appendix E Warning Clause, Ventilation and Barrier Summary

Environmental Noise & Vibration Assessment

15-17 Elm Street, Toronto, ON

17 Elm GP Inc.

SLR Project No. 241.30447.00000

August 31, 2022

Ventilation, Warning Clause and Barrier Summary

The following Warning Clauses are recommended for inclusion in agreements registered on Title for the residential units, and included in all agreements of purchase and sale or lease, and all rental agreements.

A summary of the Warning Clause and Ventilation Requirements is included in **Table E1** on the following page.

> **MECP Type B:** "Purchasers/tenants are advised that despite the inclusion of noise control features in the development and within the building units, sound levels due to increasing road traffic may on occasions 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."
>
> **MECP Type D:** "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."
>
> **MECP Type E:** "Purchasers/tenants are advised that due to the proximity of the adjacent commercial/retail facilities, noise from the facilities may at times be audible."

Table E1: Summary of Ventilation, Warning Clause and Barrier Requirements

Development Building	Barrier Required?	Air Conditioning Requirement	Warning Clause(s)
Residential Tower – All Units	Yes – 1.5 m High, At-Grade Amenity Area	Provision for A/C	Type B, Type C, Type E

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