

Environmental Noise Assessment

2 Borland Street East

Proposed Mixed-use Development

City of Orillia


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Project: 120-0470

Prepared for


County of Simcoe

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Environmental Noise Assessment

2 Borland Street East

Proposed Mixed-use Development

City of Orillia

EXECUTIVE SUMMARY

Valcoustics Canada Ltd. (VCL) was retained to prepare an Environmental Noise Assessment report addressing the potential noise impact from the existing environment onto the proposed development as well as the noise impact from the proposed development on the surrounding environment.

The proposed development consists of an “L”-shaped residential building at the southwest corner of the site. The west and south wings of the “L” will be 6 and 4 storeys, respectively. Community space, including childcare facilities with play yards, will be located on the ground floor. Common indoor amenity space for the residents will be provided on the third floor. Common outdoor amenity space will be provided on at grade as well as on the third floor. Parking spaces will be provided at grade.

The significant noise source in the vicinity is road traffic on West Street North. There are no stationary noise sources in the vicinity that are expected to have a significant impact at the subject site.

The sound levels on site have been determined and compared with the applicable Ministry of the Environment, Conservation and Parks (MECP) noise guideline limits to determine the need for noise mitigation.

To meet the applicable transportation noise source guideline limits:

- All suites require mandatory air conditioning. Note that the building design includes air conditioning, thus meeting this requirement;
- At all dwellings units, exterior wall and window construction meeting the minimum non-acoustical requirements of the Ontario Building Code (OBC) will be sufficient to meet the indoor criteria; and
- Sound barriers are not required for noise control purposes.

The main noise source associated with the proposed development is the HVAC system. The development will have rooftop mechanical units as well as in-suite air conditioning units at each dwelling unit.

With the proposed rooftop mechanical units, the noise guideline limits will be met if in-suite HVAC units with an outdoor sound power level of 71 dBA are used. If louder in-suite HVAC units are used, the noise guideline limits can be met by including screening at the rooftop mechanical units. The final mitigation measures should be determined once the mechanical design and unit selections are complete.

1.0 INTRODUCTION

Valcoustics Canada Ltd. (VCL) was retained to prepare an Environmental Noise Assessment for the proposed development in support of the Zoning By-law Amendment (ZBA) application submission to the City of Orillia.

The potential sound levels and noise mitigation measures for the proposed development to comply with the Ministry of the Environment, Conservation and Parks (MECP) noise guideline requirements are outlined herein.

1.1 SITE DESCRIPTION

The site is located at the northeast corner of the intersection of West Street North and Borland Street East in the City of Orillia. The site is bounded by:

- Existing detached dwellings and Peter Street North to the east;
- Existing detached residential dwellings and North Street East to the north;
- West Street North, with existing detached and apartment dwellings as well as commercial uses beyond, to the west; and
- Borland Street East, with existing detached residential dwellings beyond, to the south.

Figure 1 shows the Key Plan.

This report is based on the architectural drawing set prepared by MCL Architects, dated December 16, 2020. The Site Plan from the drawing set is shown as Figure 2.

1.2 PROPOSED DEVELOPMENT

The proposed development is an “L”-shaped residential building at the southwest corner of the site. The west and south wings of the “L” will be 6 and 4 storeys, respectively. Community space, including childcare facilities with play yards, will be located on the ground floor. Common indoor amenity space for the residents will be provided on the third floor. Common outdoor amenity space will be provided on at grade as well as on the third floor. Parking spaces will be provided at grade.

2.0 IMPACT OF THE ENVIRONMENT ONTO THE PROJECT

2.1 NOISE SOURCES

2.1.1 Transportation Noise Sources

The transportation noise source with potential for impact on the proposed development is road traffic on West Street North.

Road traffic data (AADT) for West Street North was provided by the City of Orillia for the year 2016. This data was projected to the year 2031 using a 2% growth rate, compounded annually. In the absence of truck count data, it was assumed that medium trucks would be 5% of the total traffic volume. No heavy trucks are permitted on the stretch of West Street North in the vicinity of the subject site. The day/night split was assumed to be 90%/10%, as is typical for well travelled roadways.

Due to low traffic volumes and screening from intervening developments, traffic on other local roadways in the vicinity is not expected to create a significant noise impact on the proposed development. Thus, these roadways have not been considered further in this assessment.

The road traffic data is shown in Appendix A and summarized in Table 1.

TABLE 1: ROAD TRAFFIC DATA

Roadway	AADT ⁽¹⁾	% Trucks		Day/Night Split (%)	Speed Limit (km/h)
		Medium	Heavy		
Borland Street East ⁽²⁾	12 500 (16 823)	5	0	90/10	50

Notes:

- (1) AADT – Annual Average Daily Traffic
- (2) Road traffic volumes were obtained from the City of Orillia. Year 2016 volumes were projected to the year 2031 at a growth rate of 2%, compounded annually. The projected traffic volume is shown in brackets. Medium truck percentages and day/night split were assumed.

2.1.2 Stationary Noise Sources

There are existing commercial uses to the west of the subject site, on the west side of West Street North. The closest commercial use is approximately 45 m from the proposed building. The uses include a small retail store, restaurants, a salon, and a medical office. The main noise sources associated with these units are anticipated to be the rooftop mechanical units. Based on aerial imagery, the units appear to be small HVAC units and exhaust fans. No other noise sources were observed during a site visit by VCL staff. Due to the small sizes of the units, the distance separation, and the presence of existing dwellings at closer setback distances, noise from these facilities is not expected to have a significant impact at the subject site. Thus, these facilities have not been considered further in this assessment.

The Skid Watson Family YMCA building is located to the east of the subject site, on the east side of Peter Street North. The YMCA building is approximately 130 m from the proposed building.

The main noise sources associated with the YMCA are anticipated to be the rooftop HVAC units. Due to the distance separation and the presence of existing residential dwellings at closer setback distances, noise from the YMCA is not expected to have a significant impact at the subject site. Thus, the YMCA has not been considered further in this assessment.

2.2 ENVIRONMENTAL NOISE GUIDELINES

2.2.1 MECP Publication NPC-300 – Noise Transportation Sources

The applicable noise guidelines for use in development applications for both stationary sources and sensitive land uses are those in MECP Publication NPC-300, “Environmental Noise Guideline, Stationary and Transportation Sources – Approval and Planning”. The environmental noise guidelines of the MECP, as provided in Publication NPC-300, are discussed briefly below and summarized in Appendix A.

2.2.1.1 Architectural Elements

In the daytime, the indoor criterion for road noise is $L_{eq\ Day}^{(1)}$ of 45 dBA for sensitive spaces such as living/dining rooms, dens and bedrooms. At night, the indoor criterion for road noise is $L_{eq\ Night}^{(2)}$ of 45 dBA for sensitive spaces such as living/dining rooms and dens and 40 dBA for bedrooms.

The architectural design of the building envelope (walls, windows, etc.) must provide adequate sound isolation to achieve these indoor sound level limits.

2.2.1.2 Ventilation

In accordance with the MECP noise guideline for road traffic sources, if the daytime sound level, $L_{eq\ Day}$, at the exterior face of a noise sensitive window is greater than 65 dBA, means must be provided so that windows can be kept closed for noise control purposes and central air conditioning is required. For daytime sound levels between 56 dBA and 65 dBA inclusive, there need only be the provision for adding air conditioning at a later date. A warning clause advising the occupant of the potential interference with some activities is also required. At nighttime, air conditioning would be required when the sound level exceeds 60 dBA ($L_{eq\ Night}$) at a noise sensitive window (provision for adding air conditioning is required when greater than 50 dBA).

2.2.1.3 Outdoors

For outdoor amenity areas (“Outdoor Living Areas” - OLA’s), the guideline is 55 dBA $L_{eq\ Day}$ (0700 o 2300 hours), with an excess not exceeding 5 dBA considered acceptable if it is technically not practicable to achieve the 55 dBA objective, providing warning clauses are registered on title. Note that for road traffic sources, a balcony is not considered an OLA, unless it is:

- the only OLA for the occupant;
- at least 4 m in depth; and
- unenclosed.

(1) 16-hour energy equivalent sound level (0700-2300 hours).

(2) 8-hour energy equivalent sound level (2300-0700 hours).

Note that NPC-300 defines OLA's as areas that are "intended and designed for the quiet enjoyment of the outdoor environment" and that are "readily accessible from the building". Outdoor plays areas, such as the play area on the north side of the south wing and the play areas of the childcare facilities, do not strictly meet this definition, as they are not intended for the quiet enjoyment of the outdoors.

2.3 NOISE IMPACT ASSESSMENT

Using the road traffic data in Table 1, the sound levels, in terms of $L_{eq\ Day}$ and $L_{eq\ Night}$, were determined using STAMSON V5.04 – ORNAMENT, the computerized road traffic noise prediction model of the MECP.

Daytime and nighttime sound levels at the building facades were calculated at a height of 17.9 m above grade for the west wing and 11.9 m above grade for the east wing, representing the top storey windows (the worst case locations). Daytime OLA sound levels were calculated at a height of 1.5 m above grade or the terrace floor, at the centre of the amenity space. Inherent screening of each building face due to its orientation to the noise source is accounted for.

Table 2 summarizes the predicted sound levels outdoors at specific locations. A sample sound level calculation is contained in Appendix C.

The highest unmitigated daytime and nighttime facade sound levels of 62 dBA and 56 dBA, respectively, are predicted to occur at the western facade of the building, adjacent to West Street North.

The daytime OLA sound levels at the grade-level and 3rd floor common outdoor amenity terrace are predicted to be 51 dBA and 54 dBA, respectively.

TABLE 2: PREDICTED OUTDOOR SOUND LEVELS DUE TO ROAD TRAFFIC

Location ⁽¹⁾	Source	Distance (m) ⁽²⁾	$L_{eq\ Day}$ (dBA)	$L_{eq\ Night}$ (dBA)
West Wing (West Facade)	Borland Street East	19	62	56
South Wing (South Facade)	Borland Street East	47	53	47
Grade-Level Common Outdoor Amenity Area (OLA)	Borland Street East	51	51	-
3 rd Floor Common Outdoor Amenity Area (OLA)	Borland Street East	23	54	-

Notes:

- (1) See Figure 2 for receptor locations.
- (2) Distance indicated is from the centreline of the noise source to the point of reception.

2.4 NOISE ABATEMENT REQUIREMENTS

The noise control measures can generally be classified into two categories which are interrelated, but which the designer can treat separately for the most part:

- a) Architectural elements to achieve acceptable indoor noise guidelines;
- b) Design features to protect the OLA's.

Noise abatement requirements are summarized on Figure 2 and in Table 3 along with the notes to Table 3.

2.4.1 Indoors

2.4.1.1 Architectural Elements

Based on the predicted sound levels, at all dwelling units, exterior wall and window construction meeting the minimum non-acoustical requirements of the Ontario Building Code (OBC) will be sufficient to meet the indoor noise criteria.

2.4.1.2 Ventilation Requirements

Based on the predicted sound levels, all suites in the development require the provision for adding air conditioning at a later date. In mid-rise construction, such as the proposed development, the provision for adding air conditioning requirement is typically not practical to implement. Thus, the requirement has been increased to mandatory air conditioning, which exceeds the minimum requirement.

The mechanical plans show that all suites will be provided with air conditioning, thus meeting this requirement.

2.4.2 Outdoors

The unmitigated daytime OLA sound level at the grade level and 3rd floor common outdoor amenity areas are predicted to be below the 55 dBA design objective. Thus, sound barriers are not required for noise control purposes (for transportation noise sources).

2.4.3 Warning Clauses

Warning clauses are a tool to inform prospective owners/occupants of potential annoyance due to existing noise sources. Where the guideline sound level limits are exceeded, appropriate warning clauses should be registered on title or included in the development agreement that is registered on title. The warning clauses should also be included in agreements of Offers of Purchase and Sale and lease/rental agreements to make future occupants aware of the potential noise situation. Locations requiring warning clauses and the appropriate wording are given in Table 3 and in the notes to Table 3, respectively.

TABLE 3: NOISE ABATEMENT MEASURES – TRANSPORTATION SOURCES

Location	Air Conditioning ⁽¹⁾	Exterior Wall ⁽²⁾	Exterior Window ⁽³⁾	Sound Barrier ⁽⁴⁾	Warning Clauses ⁽⁵⁾
All suites	Mandatory	No special acoustical requirements	No special acoustical requirements	None	A + B + C

Notes:

- (1) Where means must be provided to allow windows to remain closed for noise control purposes, a commonly used technique is that of air conditioning. Air conditioning equipment must comply with any guidelines laid out within the local municipal code.
- (2) STC - Sound Transmission Class Rating (Reference ASTM-E413).
- (3) STC - Sound Transmission Class Rating (Reference ASTM-E413). A sliding glass walkout door should be considered as a window and be included in the percentage of glazing.
- (4) Sound barriers must be of solid construction having a minimum face density of 20 kg/m² with no gaps or cracks. The acoustic fence height shown is taken relative to grade.
- (5) Warning clauses to be registered on title and be included in Offers of Purchase and Sale for designated lots:
 - A. "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 occasionally interfere with some activities of the dwelling occupants as the sound level may exceed the noise criteria of the Ministry of the Environment and/or the municipality."
 - B. "This dwelling unit has been supplied with an air conditioning system which will allow windows and 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."
 - C. "Purchasers/tenants are advised that due to the proximity of the existing commercial developments and YMCA, sound levels from these facilities may at times be audible."
- (6) All exterior doors shall be fully weatherstripped

3.0 IMPACT OF THE PROJECT ONTO THE ENVIRONMENT

3.1 NOISE SOURCES

3.1.1 Mechanical Equipment

The building will have rooftop mechanical equipment (HVAC units and ERU's) as well as in-suite air conditioning units for each dwelling unit. The locations of the mechanical units are shown on the mechanical drawing set, prepared by Tristar Engineering, dated December 2020.

Sound data for the rooftop HVAC units and ERU's was provided by the mechanical engineers.

The in-suite HVAC units interface with the exterior through the wall of the building. Outdoor sound power levels for the in-suite HVAC units were not available. The in-suite HVAC units were therefore each assumed to have an outdoor sound power level of 71 dBA. The units were modelled as a single sound source distributed across the facades of the building. The sound sources were modelled with a sound power level of 71 dBA, scaled up by the number of in-suite HVAC units on the respective facade (using a 10 log (X) relationship where X is the number of units).

The source locations are shown on Figure 3. The source sound power levels are summarized in Table 4.

3.1.2 Childcare Facilities

Childcare facilities will be located on the ground floor of the building. The infant and toddler play areas will be located at the east side of the south wing. The preschool play area will be located at the south side of the south wing.

The sound generated by activities at the childcare facilities are not considered stationary noise sources under MECP noise guideline NPC-300. Thus, there are no sound level limits associated with these activities. However, to determine the potential noise impact on the neighbouring dwellings, sound associated with outdoor activities at the childcare facility were modelled. Based on the capacities of the classrooms, the activities in the play yards were modelled as:

- Infant play area: 10 children “speaking” at a relaxed volume;
- Toddler play area: 15 children speaking at a raised volume; and
- Preschool play area: 32 children speaking at a raised volume.

The source locations are shown on Figure 4. The source sound power levels are summarized in Table 4.

TABLE 4: SOURCE SOUND LEVEL SUMMARY

Source ID ⁽¹⁾	Description	Make and Model	Source Sound Power Level (dBA)	Source Height (m) ⁽²⁾	Operating Time (min/hour)	
					Day / Evening (0700 to 2300)	Night (2300 to 0700)
Mechanical Equipment						
ERU1	Rooftop emergency recovery unit	Daikin DP5A031	93	1.5	60	60
ERU2	Rooftop emergency recovery unit	Daikin RPS025D	91	1.5	60	60
ERU3	Rooftop emergency recovery unit	Daikin DPS016A	80	1.5	60	60
RTU1	Rooftop HVAC unit	Daikin DPS006A	78	1.5	60	30
RTU2	Rooftop HVAC unit	Daikin DPS010A	81	1.5	60	30
RTU3	Rooftop HVAC unit	Daikin DPS012A	81	1.5	60	30
RTU4	Rooftop HVAC unit	Daikin DPS010A	81	1.5	60	30
RTU5	Rooftop HVAC unit	Daikin DPS010A	81	1.5	60	30

.../cont'd

TABLE 1: SOURCE SOUND LEVEL SUMMARY (continued)

Source ID ⁽¹⁾	Description	Make and Model	Source Sound Power Level (dBA)	Source Height (m) ⁽²⁾	Operating Time (min/hour)	
					Day / Evening (0700 to 2300)	Night (2300 to 0700)
RTU6	Rooftop HVAC unit	Daikin DPS016A	80	1.5	60	30
RTU7	Rooftop HVAC unit	Daikin DPS016A	80	1.5	60	30
South Wing – South PTACs	2 nd to 4 th Floor in-suite HVAC units (36 units)	-	87	4-14	60	30
South Wing – North PTACs	2 nd to 4 th Floor in-suite HVAC units (33 units)	-	86	4-14	60	30
West Wing – West PTACs	2 nd to 6 th Floor in-suite HVAC units (50 units)	-	88	4-20	60	30
West Wing – East PTACs	2 nd to 6 th Floor in-suite HVAC units (50 units)	-	88	4-20	60	30
Lower Podium – West PTACs	Ground and 2 nd Floor HVAC units (4 units)	-	77	0-7.4	60	30
Lower Podium – South PTACs	Ground and 2 nd Floor HVAC units (1 unit)	-	71	0-7.4	60	30
Upper Podium – West PTACs	3 rd Floor HVAC units (1 unit)	-	71	7.4-10.4	60	30
Upper Podium – South PTACs	3 rd Floor HVAC units (1 unit)	-	71	7.4-10.4	60	30
Childcare Play Yards						
Infant Play Area	Play yard – 10 infants	-	70	0.5	30	0
Toddler Play Area	Play yard – 15 toddlers	-	90	0.8	30	0
Preschool Play Area	Play yard – 32 preschoolers	-	94	1.2	30	0

Notes:

- (1) See Figures 3 and 4.
- (2) Rooftop mechanical unit heights are relative to the top of the roof. In-suite (PTAC) unit heights describe the vertical extent of the area source (e.g. “4-10” means lower and upper extents of source are 4 m and 10 above grade, respectively). Play area source heights are relative to grade.

3.2 ENVIRONMENTAL NOISE GUIDELINES

3.2.1 MECP Publication NPC-300 – Stationary Noise Sources

The applicable noise guidelines for use in development applications for both stationary sources and sensitive land uses are those in MECP Publication NPC-300, “Environmental Noise Guideline, Stationary and Transportation Sources – Approval and Planning”. The environmental noise guidelines of the MECP, as provided in Publication NPC-300, are discussed briefly below and summarized in Appendix B.

3.2.1.1 Sound Level Criteria

The site and lands around the site are Class 1 – i.e., an area where the ambient sound environment is dominated by “urban hum”, primarily traffic noise in this case, 24 hours per day. This is due to the proximity to the area road network.

The MECP requires a predictable “worst case” one-hour operating scenario be analysed. This would typically occur when the background ambient sound level is at a minimum and the noise generated from the stationary noise sources is at a maximum. The predictable worst case is not the absolute worst-case operation that could occur on a site but is “a planned and predictable mode of operation”.

The guideline limits apply to the outdoor plane of window of habitable spaces such as living/dining/family rooms and sleep areas as well at locations amenable for use outdoors. There are no indoor sound level limits provided for stationary sources.

MECP Publication NPC-300 states that the guideline limits shall be defined by the higher of the ambient sound level, due to road traffic noise, or the minimum exclusion limits, in any hour of the day, evening, or nighttime. The minimum exclusion limits are 50 dBA during the daytime (0700 to 1900 hours) and evening (1900 to 2300 hours) and 45 dBA at night (2300 to 0700 hours). Sound levels are assessed using one-hour L_{eq} (dBA), the energy equivalent continuous sound level. The sound level limits apply at a noise sensitive plane of window (at all times) or at an outdoor point of reception in the daytime and evening only. The sound level limits do not apply to outdoor points of reception at night.

3.2.1.2 Applicable Sound Level Limits

3.2.1.2.1 *Mechanical Equipment*

For this analysis, the minimum exclusion limits were applied to all receptors for the assessment of noise impact from the mechanical units.

3.2.1.2.2 *Childcare Play Yards*

As discussed above, the outdoor play areas are not considered stationary noise sources. The sound level limits therefore do not apply. However, for reference, the predicted sound levels due to the activities in the play yard are compared to the guideline limits for stationary noise sources in this assessment.

3.3 OPERATING SCENARIOS

3.3.1 Mechanical Equipment

For the mechanical equipment, the two “worst case” scenarios were assessed. The scenarios considered reflect operating conditions beyond that which would be expected to occur on a regular basis, and perhaps occur only occasionally. In practice, it is expected that actual operating activities will be less than considered in this report, making the analysis conservative.

The two operating scenarios analysed are:

- Daytime/Evening Scenario Hours (any hour between 0700 and 2300):
 - All rooftop HVAC units, ERUs and in-suite HVAC units operating for the full hour.
- Nighttime Scenario Hour (any hour between 2300 and 0700):
 - All rooftop and in-suite HVAC units operating at 50% duty cycle (30 minutes out of the hour); and
 - All ERUs operating for the full hour.

3.3.2 Childcare Play Yards

It is expected that the play yards at the childcare facility will be in use during the daytime hours only. Thus, a single operating scenario was analysed:

- Daytime Scenario Hours (any hour between 0700 and 1900):
 - Children playing/speaking in the infant, toddler and preschool play areas for 30 minutes out of the hour.

3.4 ANALYSIS METHOD

The following procedures were used to assess potential noise impacts of the proposed residential development on the environment:

- A 3-D acoustic model of the relevant sources, identified above, as shown in Figures 3 to 6, was developed using CadnaA V2020 MR1 environmental noise modelling software, which follows the protocol of the ISO Standard 9613-2, “Acoustics – Attenuation of Sound During Propagation in Outdoors”, to determine the predicted sound levels at each of the receptor locations. Accounting for distance attenuation, ground attenuation, atmospheric effects and inherent screening, where present, the sound level (1-hour L_{eq}) was calculated.
- Flat topography was used in the analysis.
- The roofs of the west and south wings of the building were modelled at heights of 20 m and 14 m above grade, respectively. The lower and upper podium roofs between the two wings were modelled at heights of 7.4 m and 10.4 m, respectively.

Details with respect to source reference sound levels, activity assumptions and calculations are found in Appendix D.

3.5 ASSESSMENT RECEPTORS

The noise-sensitive uses in the vicinity of the proposed development are the detached single-family dwellings to the east, west and south and the apartment building to the west. The dwellings are represented by seven receptors:

- R01 – representing the 3-storey apartment building to the west of the site. The receptor was assessed at a top storey height of 7.5 m above grade.
- R02 – representing the 2-storey dwelling to the west of the site. The receptor was assessed at a top storey height of 4.5 m above grade.
- R03 – representing the single-storey dwelling the west of the site. The receptor was assessed at a ground floor height of 2.5 m above grade.
- R04 – representing the 3-storey dwelling to the south of the site. The receptor was assessed at a top storey height of 7.5 m above grade.
- R05 and R06 – representing the 2-storey dwellings to the south of the site. The receptors were assessed at a top storey height of 4.5 m above grade.
- R07 – representing the 2-storey dwelling to the east of the subject site. The receptor was assessed at a top storey height of 4.5 m above grade.

3.6 SOUND LEVEL ASSESSMENT

3.6.1 Mechanical Equipment

Figure 5 and Table 5 show the predicted sound levels due to the mechanical equipment. As shown on the figures, the sound levels are predicted to meet the noise guideline limits at all receptors.

Note that this assessment is based on an outdoor sound power level of 71 dBA for the in-suite HVAC units. If units with higher sound power levels are used, mitigation measures, such as acoustic screens at the rooftop units, may be required.

The mitigation measures should be confirmed once the mechanical design is finalized.

TABLE 5: PREDICTED SOUND LEVELS DUE TO MECHANICAL EQUIPMENT

Receptor ⁽¹⁾	Predicted Sound Levels L_{eq} ⁽¹⁾ (dBA)		Guideline Limits (dBA) ⁽²⁾	
	Day / Evening (0700 to 2300)	Night (2300 to 0700)	Day / Evening (0700 to 2300)	Night (2300 to 0700)
R01	48	45	50	45
R02	46	44	50	45
R03	45	42	50	45
R04	45	43	50	45
R05	46	43	50	45
R06	44	42	50	45
R07	46	43	50	45

Notes:

- (1) See Figure 5.
- (2) MECP Class 1 minimum exclusion limits.

3.6.2 Childcare Play Yards

Figure 6 and Table 6 show the predicted sound levels due to activities at the childcare play areas. At the closest dwellings, sound levels up to 53 dBA are predicted.

TABLE 6: PREDICTED SOUND LEVELS DUE TO PLAY YARD

Receptor	Predicted Sound Levels L_{eq1} (dBA) ⁽¹⁾
	Day (0700 to 2300)
R01	15
R02	30
R03	29
R04	45
R05	51
R06	53
R07	49

Note:

- (1) See Figure 6.

4.0 CONCLUSIONS

With the appropriate design of the development, a suitable acoustical environment can be provided for the occupants and the applicable MECP noise guideline requirements can be met. Future occupants will be made aware of the potential noise situation through warning clauses, as per MECP guidelines.


5.0 REFERENCES

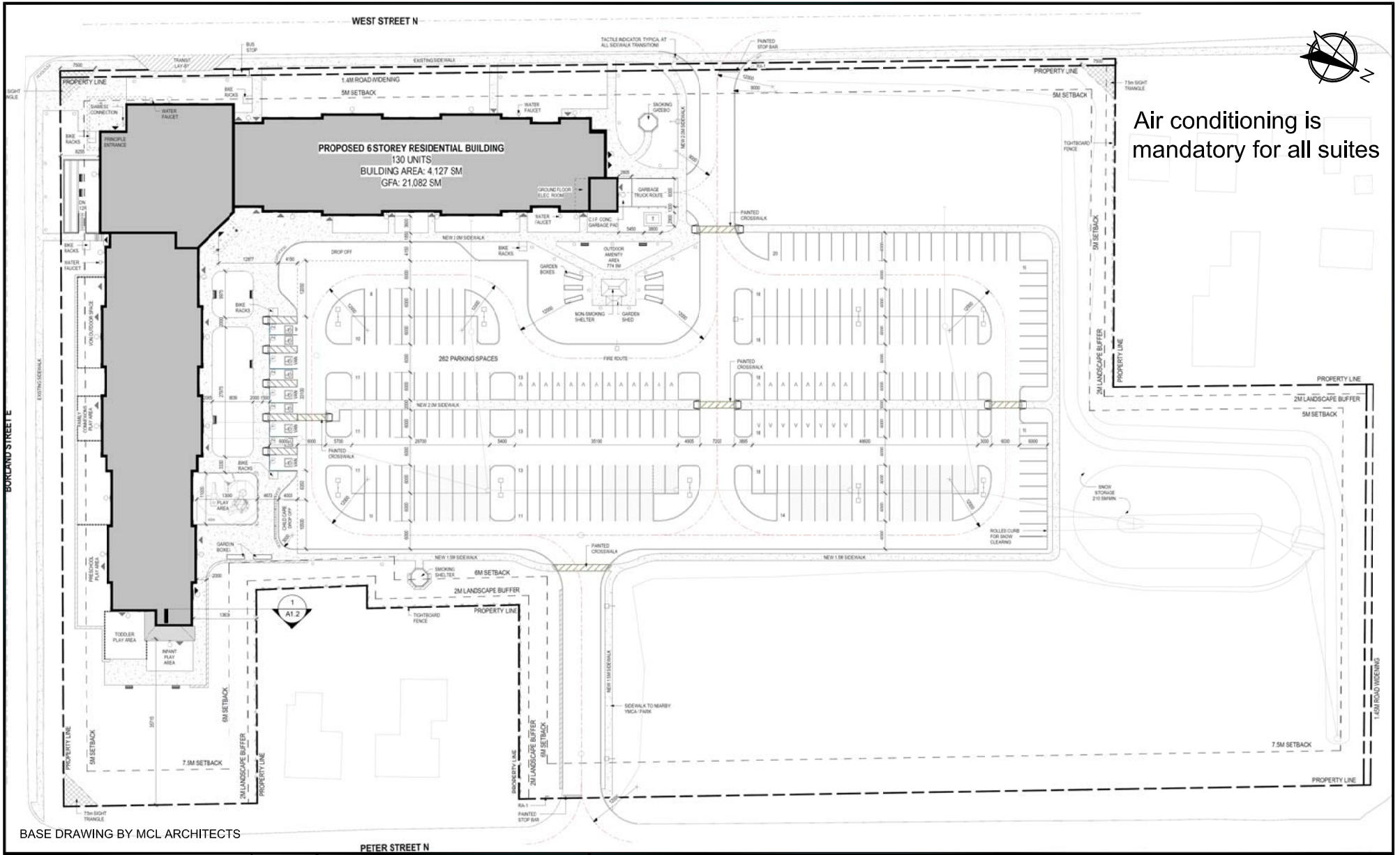
1. “Environmental Noise Guideline, Stationary and Transportation Sources - Approval and Planning”, Ontario Ministry of the Environment, Publication NPC-300, August 2013.

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J:\2020\1200470\000\Reports\2 Borland St E, Orillia - Noise v1_0 Dft.docx



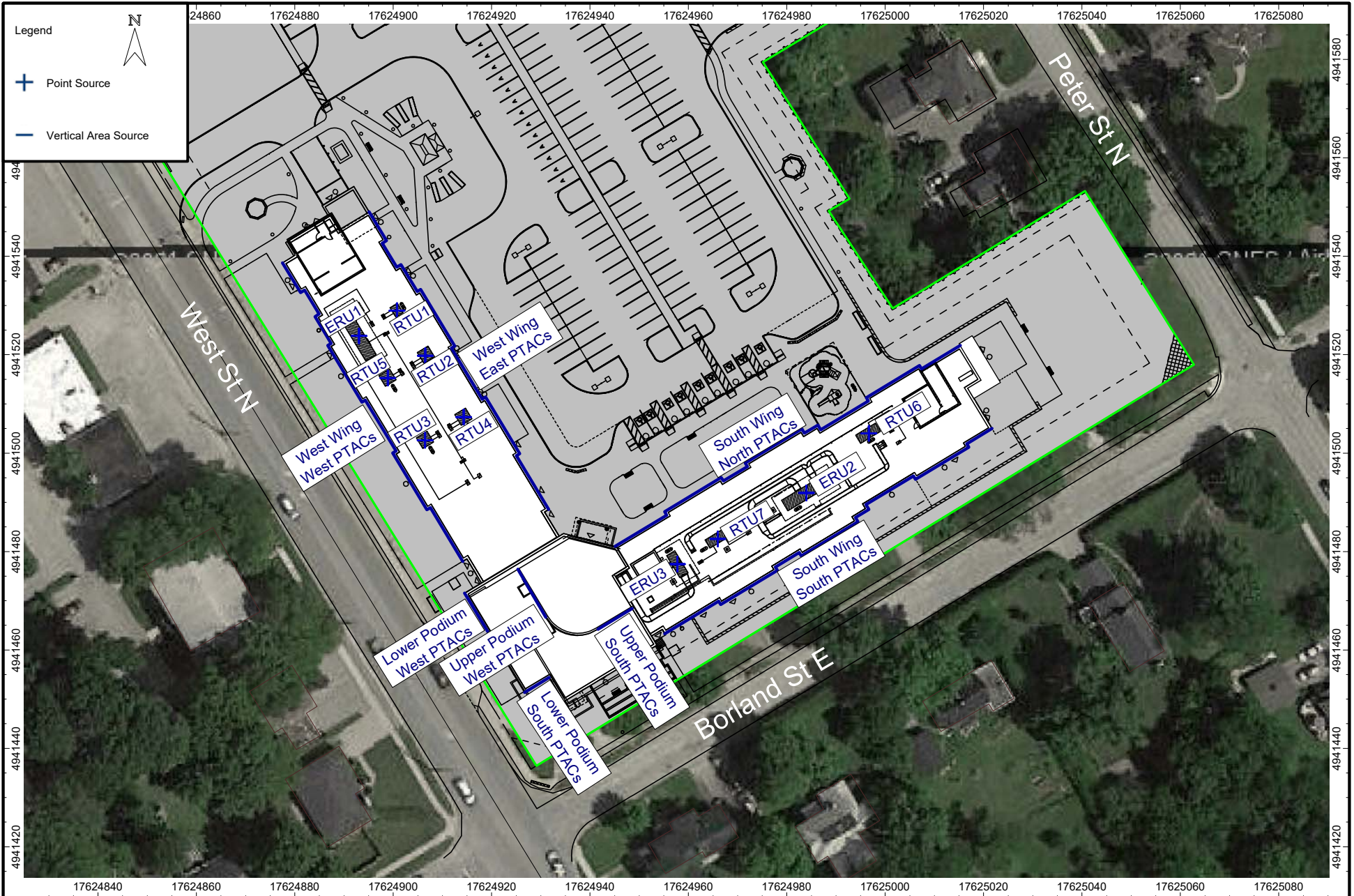
SITE

		 <p>30 Wertheim Court, Unit 25 Richmond Hill, Ontario Canada L4B 1B9 solutions@valcoustics.com Phone: (905) 764-5223 Fax: (905) 764-6813</p>	<p>Title</p> <p>Key Plan</p>	<p>Project No.</p> <p>120-0470</p>	<p>Date</p> <p>Feb. 23, 2021</p>
			<p>Project Name</p> <p>2 Borland Street East, Orillia</p>	<p>Scale</p> <p>N.T.S.</p>	<p>Figure</p> <p>1</p>
No.	Revision/Issue	Date			



Air conditioning is mandatory for all suites

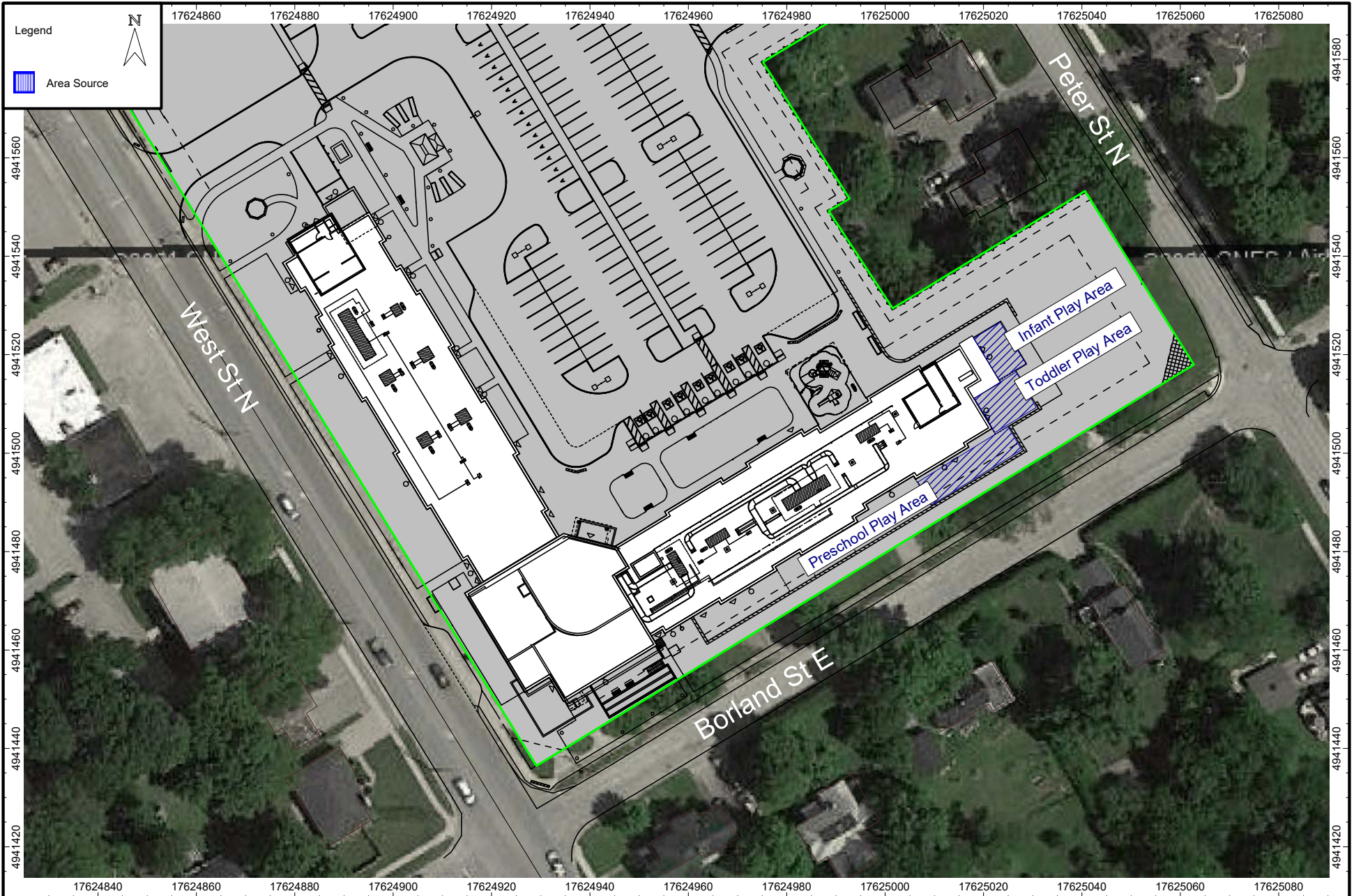
		 30 Wertheim Court, Unit 25 Richmond Hill, Ontario Canada L4B 1B9 solutions@valcoustics.com Phone: (905) 764-5223 Fax: (905) 764-6813	Title	Project No.	Date
			Site Plan	120-0470	Feb. 23, 2021
			Project Name	Scale	Figure
			2 Borland Street East, Orillia	N.T.S.	2
No.	Revision/Issue	Date			



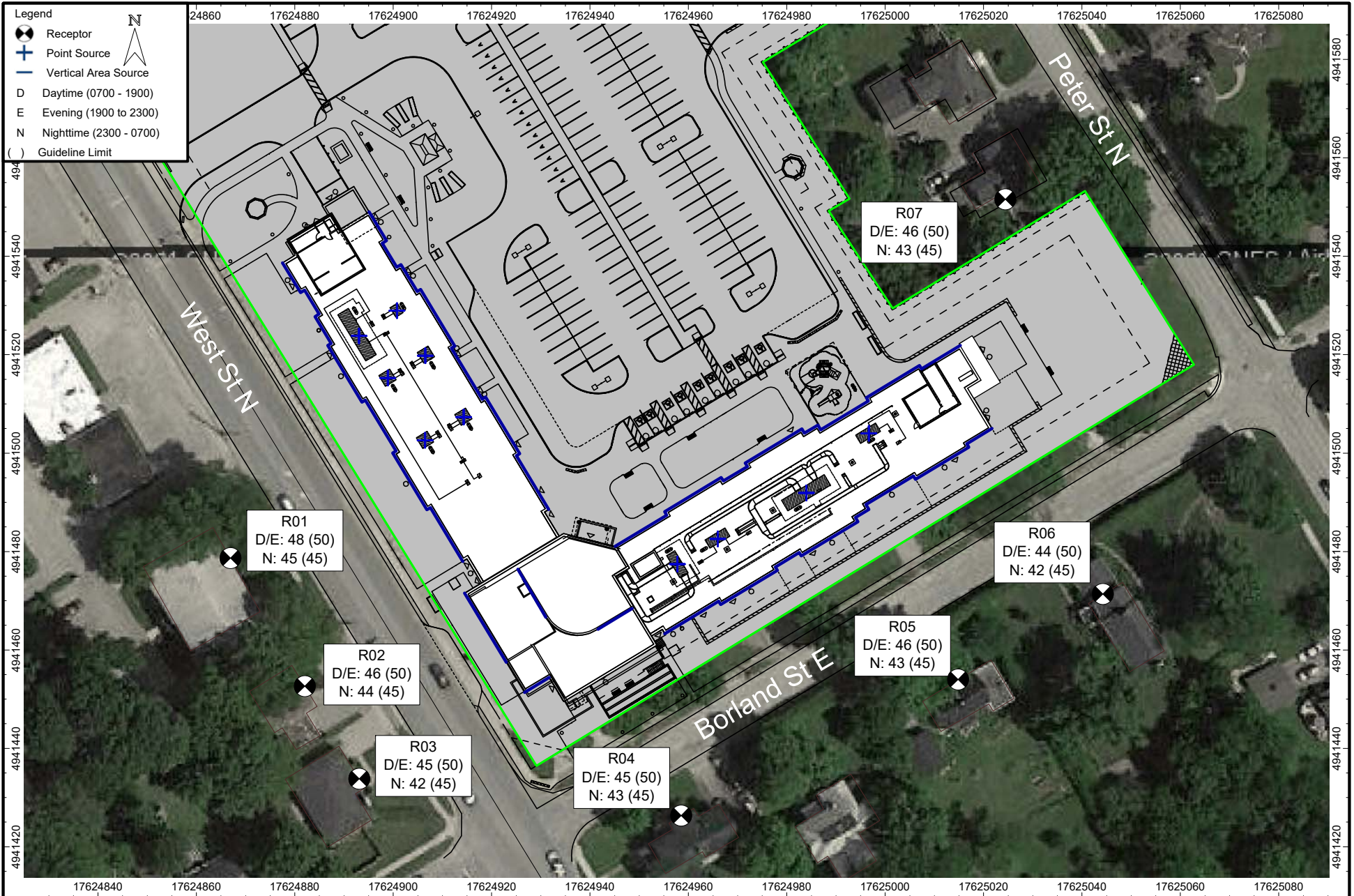
Title	Source ID's - Mechanical Equipment
Project Name	2 Borland Street East, Orillia

Date	Feb. 23, 2021
Project No.	120-0470

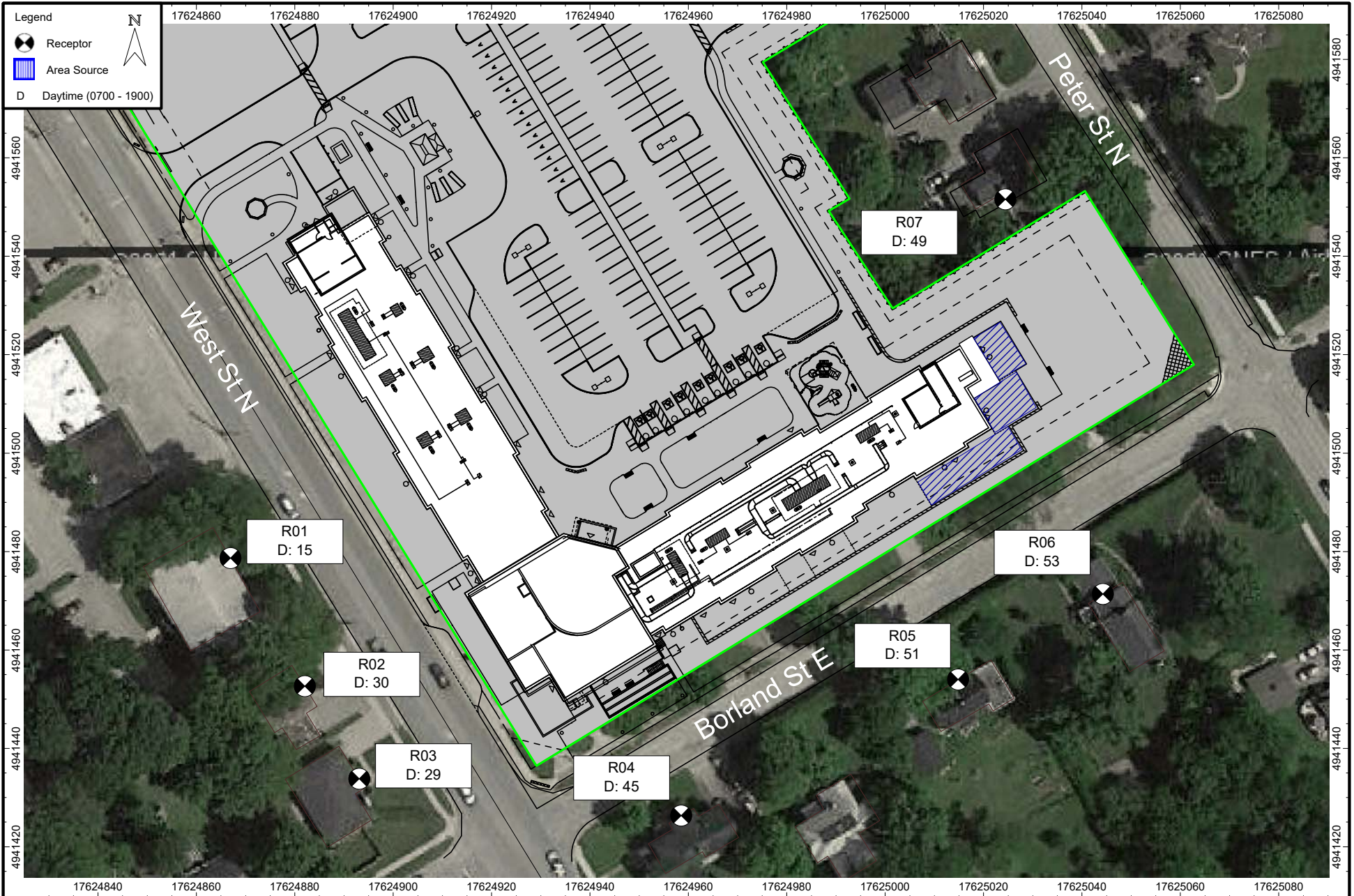
Figure
3



	Title Source ID's - Childcare Play Yards	Date Feb. 23, 2021	Figure <h1 style="font-size: 2em; margin: 0;">4</h1>
	Project Name 2 Borland Street East, Orillia	Project No. 120-0470	



	Title	Date	Figure
	Predicted Sound Levels due to Mechanical Equipment Project Name 2 Borland Street East, Orillia	Feb. 23, 2021 Project No. 120-0470	5



	Title Unmitigated Sound Levels due to Childcare Play Yards	Date Feb. 23, 2021	Figure 6
	Project Name 2 Borland Street East, Orillia	Project No. 120-0470	



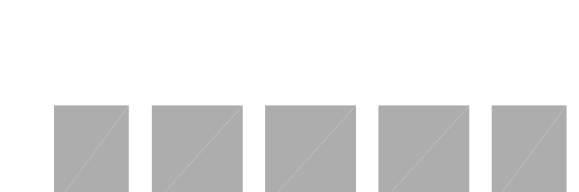
APPENDIX A

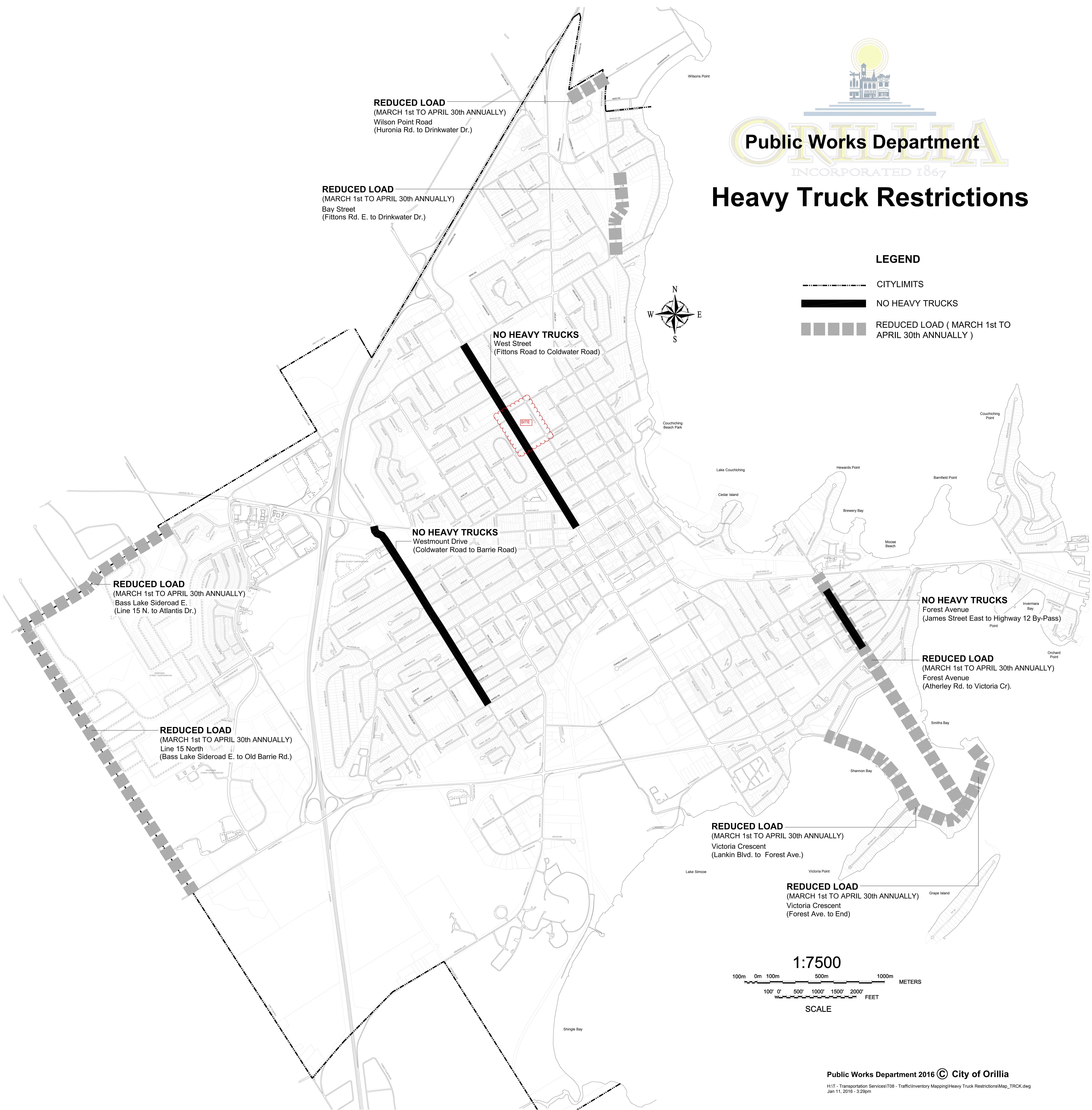
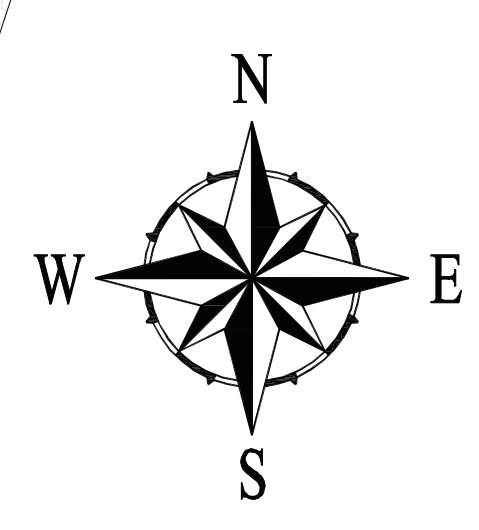
ROAD TRAFFIC DATA



Public Works Department
Heavy Truck Restrictions

LEGEND

-  CITYLIMITS
-  NO HEAVY TRUCKS
-  REDUCED LOAD (MARCH 1st TO APRIL 30th ANNUALLY)



REDUCED LOAD
(MARCH 1st TO APRIL 30th ANNUALLY)
Wilson Point Road
(Huron Rd. to Drinkwater Dr.)

REDUCED LOAD
(MARCH 1st TO APRIL 30th ANNUALLY)
Bay Street
(Fittons Rd. E. to Drinkwater Dr.)

NO HEAVY TRUCKS
West Street
(Fittons Road to Coldwater Road)

NO HEAVY TRUCKS
Westmount Drive
(Coldwater Road to Barrie Road)

REDUCED LOAD
(MARCH 1st TO APRIL 30th ANNUALLY)
Bass Lake Sideroad E.
(Line 15 N. to Atlantis Dr.)

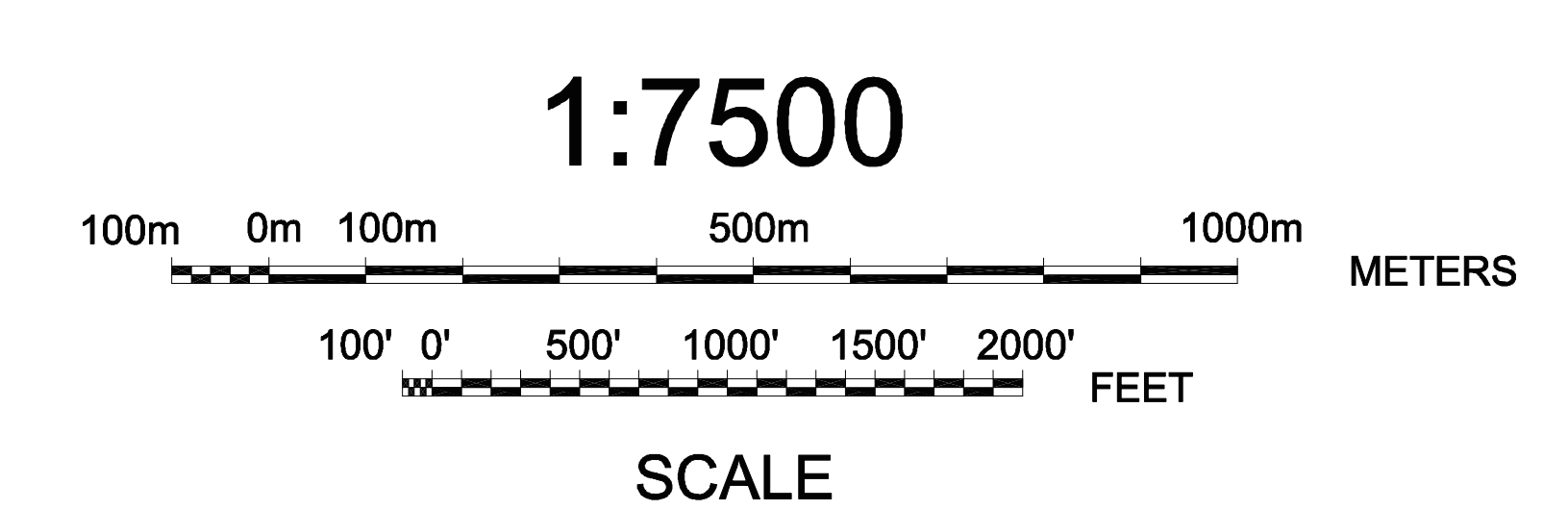
REDUCED LOAD
(MARCH 1st TO APRIL 30th ANNUALLY)
Line 15 North
(Bass Lake Sideroad E. to Old Barrie Rd.)

NO HEAVY TRUCKS
Forest Avenue
(James Street East to Highway 12 By-Pass)

REDUCED LOAD
(MARCH 1st TO APRIL 30th ANNUALLY)
Forest Avenue
(Atherley Rd. to Victoria Cr.)

REDUCED LOAD
(MARCH 1st TO APRIL 30th ANNUALLY)
Victoria Crescent
(Lankin Blvd. to Forest Ave.)

REDUCED LOAD
(MARCH 1st TO APRIL 30th ANNUALLY)
Victoria Crescent
(Forest Ave. to End)

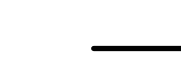


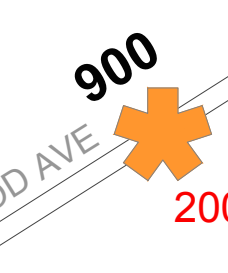























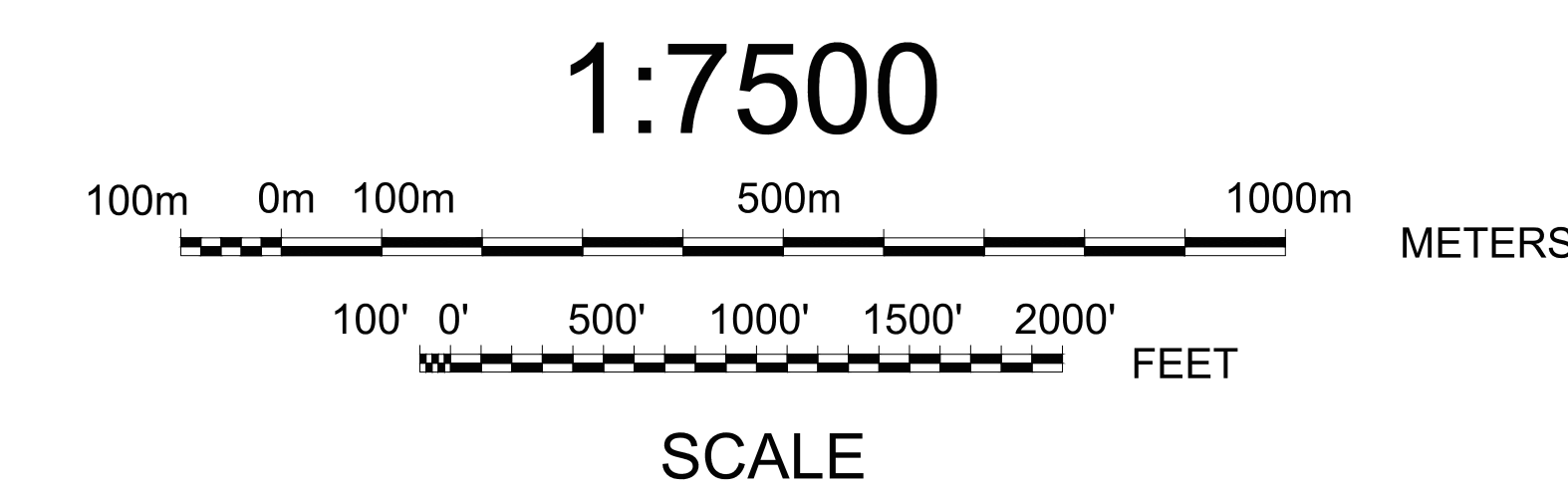
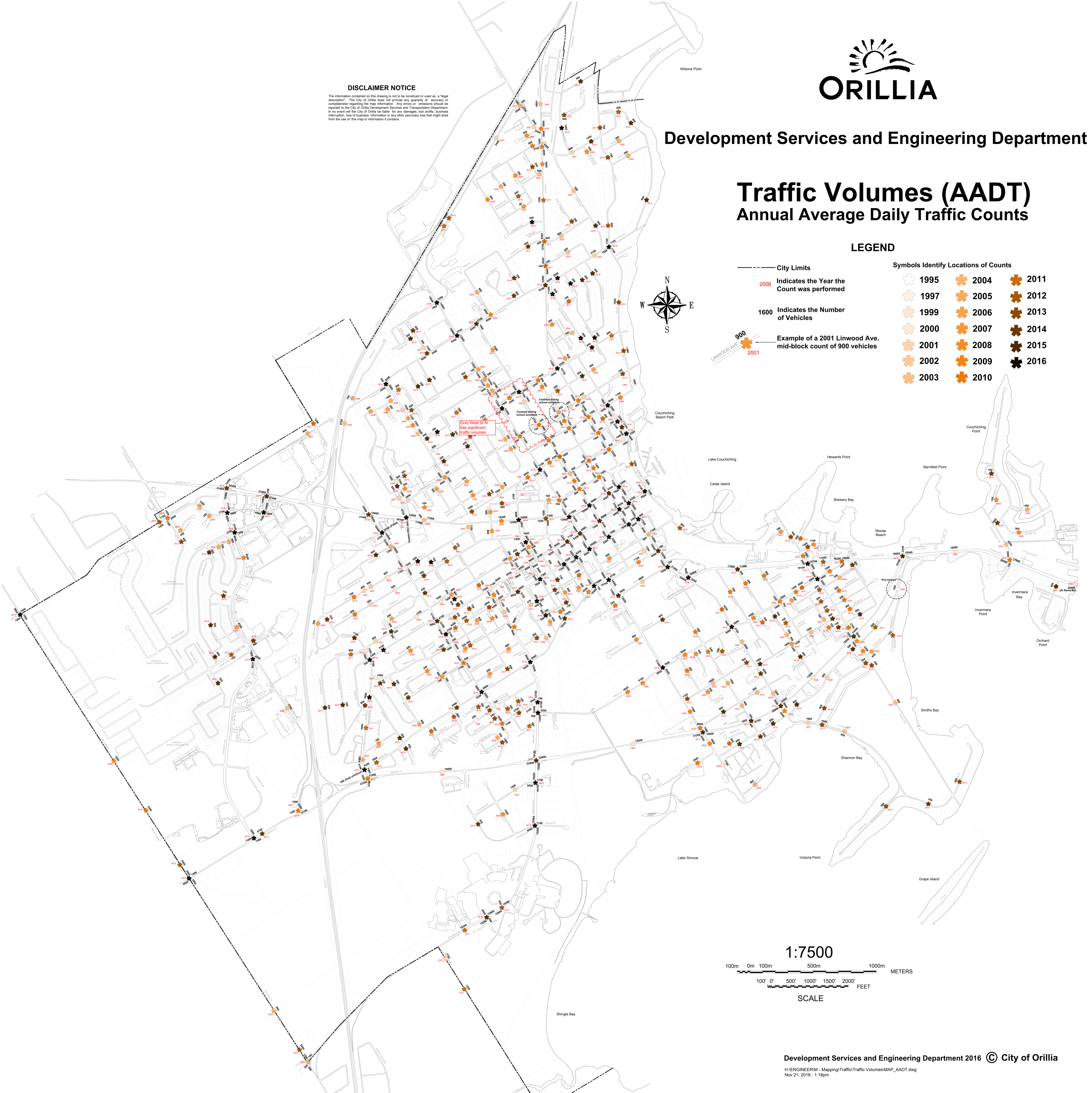
Traffic Volumes (AADT)

Annual Average Daily Traffic Counts

DISCLAIMER NOTICE
 The information contained on this drawing is not to be construed or used as a "legal description". The City of Orillia does not provide any guarantee of accuracy or completeness regarding the map information. Any errors or omissions should be reported to the City of Orillia Development Services and Transportation Department. In no event will the City of Orillia be liable for any damages, lost profits, business interruption, loss of business information or any other pecuniary loss that might arise from the use of this map or information it contains.

LEGEND

-  City Limits
 -  2006 Indicates the Year the Count was performed
 -  1600 Indicates the Number of Vehicles
 -  Example of a 2001 Linwood Ave. mid-block count of 900 vehicles
- Symbols Identify Locations of Counts
- | | | | | | |
|---|---|---|------|------|------|
|  |  |  | 1995 | 2004 | 2011 |
|  |  |  | 1997 | 2005 | 2012 |
|  |  |  | 1999 | 2006 | 2013 |
|  |  |  | 2000 | 2007 | 2014 |
|  |  |  | 2001 | 2008 | 2015 |
|  |  |  | 2002 | 2009 | 2016 |
|  |  |  | 2003 | 2010 | |



APPENDIX B

ENVIRONMETNAL NOISE GUIDELINES

APPENDIX B
ENVIRONMENTAL NOISE GUIDELINES
MINISTRY OF THE ENVIRONMENT AND CLIMATE CHANGE (MOE)

Reference: MOE Publication NPC-300, October 2013: “*Environmental Noise Guideline, Stationary and Transportation Source – Approval and Planning*”.

SPACE	SOURCE	TIME PERIOD	CRITERION
Living/dining, den areas of residences, hospitals, nursing homes, schools, daycare centres, etc.	Road	07:00 to 23:00	45 dBA
	Rail	07:00 to 23:00	40 dBA
	Aircraft	24-hour period	NEF/NEP 5
Living/dining, den areas of residences, hospitals, nursing homes, etc. (except schools or daycare centres)	Road	23:00 to 07:00	45 dBA
	Rail	23:00 to 07:00	40 dBA
	Aircraft	24-hour period	NEF/NEP 5
Sleeping quarters	Road	07:00 to 23:00	45 dBA
	Rail	07:00 to 23:00	40 dBA
	Aircraft	24-hour period	NEF/NEP 0
Sleeping quarters	Road	23:00 to 07:00	40 dBA
	Rail	23:00 to 07:00	35 dBA
	Aircraft	24-hour period	NEF/NEP 0
Outdoor Living Areas	Road and Rail	07:00 to 23:00	55 dBA
Outdoor Point of Reception	Aircraft	24-hour period	NEF/NEP 30 [#]
	Stationary Source		
	Class 1 Area	07:00 to 19:00 ⁽¹⁾	50 ⁺ dBA
		19:00 to 23:00 ⁽¹⁾	50 ⁺ dBA
	Class 2 Area	07:00 to 19:00 ⁽²⁾	50 ⁺ dBA
		19:00 to 23:00 ⁽²⁾	45 ⁺ dBA
	Class 3 Area	07:00 to 19:00 ⁽³⁾	45 ⁺ dBA
		19:00 to 23:00 ⁽³⁾	40 ⁺ dBA
Class 4 Area	07:00 to 19:00 ⁽⁴⁾	55 ⁺ dBA	
	19:00 to 23:00 ⁽⁴⁾	55 ⁺ dBA	

..../cont'd

SPACE	SOURCE	TIME PERIOD	CRITERION
Plane of a Window of Noise Sensitive Spaces	Stationary Source Class 1 Area	07:00 to 19:00 ⁽¹⁾	50 ⁺ dBA
		19:00 to 23:00 ⁽¹⁾	50 ⁺ dBA
		23:00 to 07:00 ⁽¹⁾	45 ⁺ dBA
	Class 2 Area	07:00 to 19:00 ⁽²⁾	50 ⁺ dBA
		19:00 to 23:00 ⁽²⁾	50 ⁺ dBA
		23:00 to 07:00 ⁽²⁾	45 ⁺ dBA
	Class 3 Area	07:00 to 19:00 ⁽³⁾	45 ⁺ dBA
		19:00 to 23:00 ⁽³⁾	45 ⁺ dBA
		23:00 to 07:00 ⁽³⁾	40 ⁺ dBA
	Class 4 Area	07:00 to 19:00 ⁽⁴⁾	60 ⁺ dBA
		19:00 to 23:00 ⁽⁴⁾	60 ⁺ dBA
		23:00 to 07:00 ⁽⁴⁾	55 ⁺ dBA

- # may not apply to in-fill or re-development.
 * or the minimum hourly background sound exposure $L_{eq(1)}$, due to road traffic, if higher.
 (1) Class 1 Area: Urban.
 (2) Class 2 Area: Urban during day; rural-like evening and night.
 (3) Class 3 Area: Rural.
 (4) Class 4 Area: Subject to land use planning authority's approval.

Reference: MOE Publication ISBN 0-7729-2804-5, 1987: "Environmental Noise Assessment in Land-Use Planning".

EXCESS ABOVE RECOMMENDED SOUND LEVEL LIMITS (dBA)	CHANGE IN SUBJECTIVE LOUDNESS ABOVE	MAGNITUDE OF THE NOISE PROBLEM	NOISE CONTROL MEASURES (OR ACTION TO BE TAKEN)
No excess (<55 dBA)	—	No expected noise problem	None
1 to 5 inclusive (56 to 60 dBA)	Noticeably louder	Slight noise impact	If no physical measures are taken, then prospective purchasers or tenants should be made aware by suitable warning clauses.
6 to 10 inclusive (61 - 65 dBA)	Almost twice as loud	Definite noise impact	Recommended.
11 to 15 inclusive (66 - 70 dBA)	Almost three times as loud	Serious noise impact	Strongly Recommended.
16 and over (>70 dBA)	Almost four times as loud	Very serious noise impact	Strongly Recommended (may be mandatory).

APPENDIX C

SAMPLE CALCULATION TRANSPORTATION SOURCES

STAMSON 5.04 NORMAL REPORT Date: 25-02-2021 15:51:33
MINISTRY OF ENVIRONMENT, CONSERVATION AND PARKS / NOISE ASSESSMENT

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

Description: West Wing - West Facade

Road data, segment # 1: West St N (day/night)

Car traffic volume : 14384/1598 veh/TimePeriod *
Medium truck volume : 757/84 veh/TimePeriod *
Heavy truck volume : 0/0 veh/TimePeriod *
Posted speed limit : 50 km/h
Road gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete)

* Refers to calculated road volumes based on the following input:

24 hr Traffic Volume (AADT or SADT): 12500
Percentage of Annual Growth : 2.00
Number of Years of Growth : 15.00
Medium Truck % of Total Volume : 5.00
Heavy Truck % of Total Volume : 0.00
Day (16 hrs) % of Total Volume : 90.00

Data for Segment # 1: West St N (day/night)

Angle1 Angle2 : -90.00 deg 90.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 19.00 / 19.00 m
Receiver height : 17.90 / 17.90 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

Results segment # 1: West St N (day)

Source height = 0.50 m

ROAD (0.00 + 62.36 + 0.00) = 62.36 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.20	64.12	0.00	-1.23	-0.53	0.00	0.00	0.00	62.36

Segment Leq : 62.36 dBA

Total Leq All Segments: 62.36 dBA

Results segment # 1: West St N (night)

Source height = 0.50 m

ROAD (0.00 + 55.83 + 0.00) = 55.83 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.20	57.59	0.00	-1.23	-0.53	0.00	0.00	0.00	55.83

Segment Leq : 55.83 dBA

Total Leq All Segments: 55.83 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 62.36
(NIGHT): 55.83

APPENDIX D

SAMPLE CALCULATION

TRANSPORTATION SOURCES

Point Sources

Name	M.	ID	Result. PWL			Lw / Li		Correction				Sound Reduction		Attenuation			Operating Time			K0	Freq.	Direct.	Height	Coordinates		
			Day (dBA)	Evening (dBA)	Night (dBA)	Type	Value	norm. dB(A)	Day dB(A)	Evening dB(A)	Night dB(A)	R	Area (m²)	Day (min)	Special (min)	Night (min)	(dB)	(Hz)	(m)					X (m)	Y (m)	Z (m)
ERU1		ERU1	93.0	93.0	93.0	Lw	ERU_1		0.0	0.0	0.0						60.00	60.00	60.00	0.0	(none)	1.50	g17624893.05	4941523.85	21.50	
ERU2		ERU2	90.6	90.6	90.6	Lw	ERU_2		0.0	0.0	0.0						60.00	60.00	60.00	0.0	(none)	1.50	g17624983.97	4941491.90	15.50	
ERU3		ERU3	80.2	80.2	80.2	Lw	ERU_3		0.0	0.0	0.0						60.00	60.00	60.00	0.0	(none)	1.50	g17624957.75	4941477.44	15.50	
RTU1		RTU1	77.6	77.6	77.6	Lw	RTU_1		0.0	0.0	0.0						60.00	60.00	30.00	0.0	(none)	1.50	g17624900.75	4941528.97	21.50	
RTU2		RTU2	80.6	80.6	80.6	Lw	RTU_245		0.0	0.0	0.0						60.00	60.00	30.00	0.0	(none)	1.50	g17624906.54	4941519.81	21.50	
RTU3		RTU3	80.6	80.6	80.6	Lw	RTU_3		0.0	0.0	0.0						60.00	60.00	30.00	0.0	(none)	1.50	g17624906.46	4941502.63	21.50	
RTU4		RTU4	80.6	80.6	80.6	Lw	RTU_245		0.0	0.0	0.0						60.00	60.00	30.00	0.0	(none)	1.50	g17624914.31	4941507.33	21.50	
RTU5		RTU5	80.6	80.6	80.6	Lw	RTU_245		0.0	0.0	0.0						60.00	60.00	30.00	0.0	(none)	1.50	g17624898.90	4941515.26	21.50	
RTU6		RTU6	80.2	80.2	80.2	Lw	RTU_67		0.0	0.0	0.0						60.00	60.00	30.00	0.0	(none)	1.50	g17624996.65	4941504.03	15.50	
RTU7		RTU7	80.2	80.2	80.2	Lw	RTU_67		0.0	0.0	0.0						60.00	60.00	30.00	0.0	(none)	1.50	g17624965.95	4941482.57	15.50	

Vertical Area Sources

Name	M.	ID	Result. PWL			Result. PWL*			Lw / Li		Correction				Sound Reduction		Attenuation	Operating Time			K0	Freq.	Direct.	
			Day (dBA)	Evening (dBA)	Night (dBA)	Day (dBA)	Evening (dBA)	Night (dBA)	Type	Value	norm. dB(A)	Day dB(A)	Evening dB(A)	Night dB(A)	R	Area (m²)		Day (min)	Special (min)	Night (min)				(dB)
South Wing - South PTACs		PTAC_SouthWing_South	86.6	86.6	86.6	57.3	57.3	57.3	Lw	PTAC		15.6	15.6	15.6			60.00	60.00	30.00	0.0	(none)			
South Wing - North PTACs		PTAC_SouthWing_North	86.2	86.2	86.2	56.8	56.8	56.8	Lw	PTAC		15.2	15.2	15.2			60.00	60.00	30.00	0.0	(none)			
West Wing - West PTACs		PTAC_WestWing_West	88.0	88.0	88.0	57.2	57.2	57.2	Lw	PTAC		17.0	17.0	17.0			60.00	60.00	30.00	0.0	(none)			
West Wing - East PTACs		PTAC_WestWing_East	88.0	88.0	88.0	57.2	57.2	57.2	Lw	PTAC		17.0	17.0	17.0			60.00	60.00	30.00	0.0	(none)			
Lower Podium - West PTACs		PTAC_LowerPodium_West	77.0	77.0	77.0	56.2	56.2	56.2	Lw	PTAC		6.0	6.0	6.0			60.00	60.00	30.00	0.0	(none)			
Lower Podium - South PTACs		PTAC_LowerPodium_South	71.0	71.0	71.0	57.1	57.1	57.1	Lw	PTAC		0.0	0.0	0.0			60.00	60.00	30.00	0.0	(none)			
Upper Podium - West PTACs		PTAC_UpperPodium_West	71.0	71.0	71.0	55.7	55.7	55.7	Lw	PTAC		0.0	0.0	0.0			60.00	60.00	30.00	0.0	(none)			
Upper Podium - South PTACs		PTAC_UpperPodium_South	71.0	71.0	71.0	57.2	57.2	57.2	Lw	PTAC		0.0	0.0	0.0			60.00	60.00	30.00	0.0	(none)			

Area Sources

Name	M.	ID	Result. PWL			Result. PWL*			Lw / Li		Correction				Sound Reduction		Attenuation	Operating Time			K0	Freq.	Direct.	Moving Pt. Src			
			Day (dBA)	Evening (dBA)	Night (dBA)	Day (dBA)	Evening (dBA)	Night (dBA)	Type	Value	norm. dB(A)	Day dB(A)	Evening dB(A)	Night dB(A)	R	Area (m²)		Day (min)	Special (min)	Night (min)				(dB)	(Hz)	Day	Evening
Infant Play Area	~	Play_Infant	70.1	70.1	70.1	52.2	52.2	52.2	Lw	Infant_Play		0.0	0.0	0.0			30.00	30.00	0.00	0.0	(none)						
Toddler Play Area	~	Play_Toddler	90.3	90.3	90.3	71.2	71.2	71.2	Lw	Toddler_Play		0.0	0.0	0.0			30.00	30.00	0.00	0.0	(none)						
Preschool Play Area	~	Play_Preschool	93.6	93.6	93.6	72.9	72.9	72.9	Lw	Preschool_Play		0.0	0.0	0.0			30.00	30.00	0.00	0.0	(none)						

Sound Level Library

Name	ID	Type	Oktave Spectrum (dB)													Source
			Weight.	31.5	63	125	250	500	1000	2000	4000	8000	A	lin		
ERU-1	ERU_1	Lw			44.0	78.0	83.0	88.0	86.0	86.0	85.0	82.0	93.0	93.8	Manufacturer's data	
ERU-2	ERU_2	Lw			91.0	88.0	88.0	86.0	86.0	83.0	80.0	79.0	94.9	94.9	Manufacturer's data	
ERU-3	ERU_3	Lw			80.0	74.0	76.0	76.0	75.0	72.0	73.0	65.0	80.2	84.4	Manufacturer's data	
RTU-1	RTU_1	Lw			82.0	82.0	78.0	75.0	73.0	68.0	61.0	54.0	77.6	86.4	Manufacturer's data	
RTU-2, 4 and 5	RTU_245	Lw			85.0	85.0	81.0	78.0	76.0	71.0	64.0	57.0	80.6	89.4	Manufacturer's data	
RTU-3	RTU_3	Lw			85.0	85.0	81.0	78.0	76.0	71.0	64.0	57.0	80.6	89.4	Manufacturer's data	
RTU-6 and 7	RTU_67	Lw			80.0	74.0	76.0	76.0	75.0	72.0	73.0	65.0	80.2	84.4	Manufacturer's data	
PTAC spectrum normalized to 71 dBA	PTAC	Lw			62.9	69.4	64.0	68.1	63.4	57.9	49.2	71.0	73.5	73.5	Manufacturer's data (spectrum only)	
Preschool play area - 32 raised voices	Preschool_Play	Lw			73.8	84.5	88.9	91.3	84.9	78.6	72.9	93.6	94.5	2021-01-28 Playground noise spreadsheet		
Toddler play area - 15 raised voices	Toddler_Play	Lw			71.8	81.2	85.6	88.0	81.6	75.3	69.6	90.3	91.2	2021-01-28 Playground noise spreadsheet		
Infant play area - 10 relaxed voices	Infant_Play	Lw			67.3	68.9	68.0	65.8	61.1	55.5	51.0	74.0	70.1	74.0	2021-01-28 Playground noise spreadsheet	

Calculation Configuration

Configuration	
Parameter	Value
General	
Country	International
Max. Error (dB)	0.00
Max. Search Radius (#(Unit,LEN))	2000.00
Min. Dist Src to Rcvr	0.00
Partition	
Raster Factor	0.50
Max. Length of Section (#(Unit,LEN))	1000.00

Configuration	
Parameter	Value
Min. Length of Section #(Unit,LEN))	1.00
Min. Length of Section (%)	0.00
Proj. Line Sources	On
Proj. Area Sources	On
Ref. Time	
Reference Time Day (min)	960.00
Reference Time Night (min)	480.00
Daytime Penalty (dB)	0.00
Recr. Time Penalty (dB)	6.00
Night-time Penalty (dB)	10.00
DTM	
Standard Height (m)	0.00
Model of Terrain	Triangulation
Reflection	
max. Order of Reflection	2
Search Radius Src	100.00
Search Radius Rcvr	100.00
Max. Distance Source - Rcvr	1000.00 1000.00
Min. Distance Rcvr - Reflector	1.00 1.00
Min. Distance Source - Reflector	0.10
Industrial (ISO 9613)	
Lateral Diffraction	some Obj
Obst. within Area Src do not shield	On
Screening	Excl. Ground Att. over Barrier
	Dz with limit (20/25)
Barrier Coefficients C1,2,3	3.0 20.0 0.0
Temperature #(Unit,TEMP))	10
rel. Humidity (%)	70
Ground Absorption G	0.00
Wind Speed for Dir. #(Unit,SPEED))	3.0
Roads (RLS-90)	
Strictly acc. to RLS-90	
Railways (Schall 03 (1990))	
Strictly acc. to Schall 03 / Schall-Transrapid	
Aircraft (???)	
Strictly acc. to AzB	

Receiver
 Name: R01
 ID: R01
 X: 17624866.91 m
 Y: 4941478.66 m
 Z: 7.50 m

Point Source, ISO 9613, Name: "ERU1", ID: "ERU1"																				
Nr.	X	Y	Z	Refl.	DEN	Freq.	Lw	l/a	Optime	K0	Di	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	Lr
	(m)	(m)	(m)			(Hz)	dB(A)	dB	dB	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)
1	17624893.05	4941523.85	21.50	0	D	63	17.8	0.0	0.0	0.0	0.0	45.7	0.0	-3.0	0.0	0.0	4.9	0.0	0.0	-29.8
1	17624893.05	4941523.85	21.50	0	D	125	61.9	0.0	0.0	0.0	0.0	45.7	0.0	-2.1	0.0	0.0	5.2	0.0	0.0	13.1
1	17624893.05	4941523.85	21.50	0	D	250	74.4	0.0	0.0	0.0	0.0	45.7	0.1	-2.3	0.0	0.0	6.1	0.0	0.0	24.9
1	17624893.05	4941523.85	21.50	0	D	500	84.8	0.0	0.0	0.0	0.0	45.7	0.1	-2.3	0.0	0.0	6.8	0.0	0.0	34.6
1	17624893.05	4941523.85	21.50	0	D	1000	88.0	0.0	0.0	0.0	0.0	45.7	0.2	-2.3	0.0	0.0	7.5	0.0	0.0	37.0
1	17624893.05	4941523.85	21.50	0	D	2000	87.2	0.0	0.0	0.0	0.0	45.7	0.5	-2.3	0.0	0.0	8.4	0.0	0.0	35.0
1	17624893.05	4941523.85	21.50	0	D	4000	86.0	0.0	0.0	0.0	0.0	45.7	1.8	-2.3	0.0	0.0	9.6	0.0	0.0	31.3
1	17624893.05	4941523.85	21.50	0	D	8000	80.9	0.0	0.0	0.0	0.0	45.7	6.3	-2.3	0.0	0.0	11.3	0.0	0.0	19.9
1	17624893.05	4941523.85	21.50	0	N	63	17.8	0.0	0.0	0.0	0.0	45.7	0.0	-3.0	0.0	0.0	4.9	0.0	0.0	-29.8
1	17624893.05	4941523.85	21.50	0	N	125	61.9	0.0	0.0	0.0	0.0	45.7	0.0	-2.1	0.0	0.0	5.2	0.0	0.0	13.1
1	17624893.05	4941523.85	21.50	0	N	250	74.4	0.0	0.0	0.0	0.0	45.7	0.1	-2.3	0.0	0.0	6.1	0.0	0.0	24.9
1	17624893.05	4941523.85	21.50	0	N	500	84.8	0.0	0.0	0.0	0.0	45.7	0.1	-2.3	0.0	0.0	6.8	0.0	0.0	34.6
1	17624893.05	4941523.85	21.50	0	N	1000	88.0	0.0	0.0	0.0	0.0	45.7	0.2	-2.3	0.0	0.0	7.5	0.0	0.0	37.0
1	17624893.05	4941523.85	21.50	0	N	2000	87.2	0.0	0.0	0.0	0.0	45.7	0.5	-2.3	0.0	0.0	8.4	0.0	0.0	35.0
1	17624893.05	4941523.85	21.50	0	N	4000	86.0	0.0	0.0	0.0	0.0	45.7	1.8	-2.3	0.0	0.0	9.6	0.0	0.0	31.3
1	17624893.05	4941523.85	21.50	0	N	8000	80.9	0.0	0.0	0.0	0.0	45.7	6.3	-2.3	0.0	0.0	11.3	0.0	0.0	19.9
1	17624893.05	4941523.85	21.50	0	E	63	17.8	0.0	0.0	0.0	0.0	45.7	0.0	-3.0	0.0	0.0	4.9	0.0	0.0	-29.8
1	17624893.05	4941523.85	21.50	0	E	125	61.9	0.0	0.0	0.0	0.0	45.7	0.0	-2.1	0.0	0.0	5.2	0.0	0.0	13.1
1	17624893.05	4941523.85	21.50	0	E	250	74.4	0.0	0.0	0.0	0.0	45.7	0.1	-2.3	0.0	0.0	6.1	0.0	0.0	24.9
1	17624893.05	4941523.85	21.50	0	E	500	84.8	0.0	0.0	0.0	0.0	45.7	0.1	-2.3	0.0	0.0	6.8	0.0	0.0	34.6
1	17624893.05	4941523.85	21.50	0	E	1000	88.0	0.0	0.0	0.0	0.0	45.7	0.2	-2.3	0.0	0.0	7.5	0.0	0.0	37.0
1	17624893.05	4941523.85	21.50	0	E	2000	87.2	0.0	0.0	0.0	0.0	45.7	0.5	-2.3	0.0	0.0	8.4	0.0	0.0	35.0
1	17624893.05	4941523.85	21.50	0	E	4000	86.0	0.0	0.0	0.0	0.0	45.7	1.8	-2.3	0.0	0.0	9.6	0.0	0.0	31.3
1	17624893.05	4941523.85	21.50	0	E	8000	80.9	0.0	0.0	0.0	0.0	45.7	6.3	-2.3	0.0	0.0	11.3	0.0	0.0	19.9

Point Source, ISO 9613, Name: "ERU2", ID: "ERU2"																				
Nr.	X	Y	Z	Refl.	DEN	Freq.	Lw	l/a	Optime	K0	Di	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	Lr
	(m)	(m)	(m)			(Hz)	dB(A)	dB	dB	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)
2	17624983.97	4941491.90	15.50	0	D	125	74.9	0.0	0.0	0.0	0.0	52.4	0.0	-2.6	0.0	0.0	15.0	0.0	0.0	10.0
2	17624983.97	4941491.90	15.50	0	D	250	79.4	0.0	0.0	0.0	0.0	52.4	0.1	-2.7	0.0	0.0	19.1	0.0	0.0	10.5
2	17624983.97	4941491.90	15.50	0	D	500	82.8	0.0	0.0	0.0	0.0	52.4	0.2	-2.7	0.0	0.0	22.6	0.0	0.0	10.2
2	17624983.97	4941491.90	15.50	0	D	1000	86.0	0.0	0.0	0.0	0.0	52.4	0.4	-2.7	0.0	0.0	25.8	0.0	0.0	10.1
2	17624983.97	4941491.90	15.50	0	D	2000	84.2	0.0	0.0	0.0	0.0	52.4	1.1	-2.7	0.0	0.0	27.1	0.0	0.0	6.2
2	17624983.97	4941491.90	15.50	0	D	4000	81.0	0.0	0.0	0.0	0.0	52.4	3.9	-2.7	0.0	0.0	27.4	0.0	0.0	0.0
2	17624983.97	4941491.90	15.50	0	D	8000	77.9	0.0	0.0	0.0	0.0	52.4	13.8	-2.7	0.0	0.0	27.6	0.0	0.0	-13.2
2	17624983.97	4941491.90	15.50	0	N	125	74.9	0.0	0.0	0.0	0.0	52.4	0.0	-2.6	0.0	0.0	15.0	0.0	0.0	10.0
2	17624983.97	4941491.90	15.50	0	N	250	79.4	0.0	0.0	0.0	0.0	52.4	0.1	-2.7	0.0	0.0	19.1	0.0	0.0	10.5
2	17624983.97	4941491.90	15.50	0	N	500	82.8	0.0	0.0	0.0	0.0	52.4	0.2	-2.7	0.0	0.0	22.6	0.0	0.0	10.2
2	17624983.97	4941491.90	15.50	0	N	1000	86.0	0.0	0.0	0.0	0.0	52.4	0.4	-2.7	0.0	0.0	25.8	0.0	0.0	10.1
2	17624983.97	4941491.90	15.50	0	N	2000	84.2	0.0	0.0	0.0	0.0	52.4	1.1	-2.7	0.0	0.0	27.1	0.0	0.0	6.2
2	17624983.97	4941491.90	15.50	0	N	4000	81.0	0.0	0.0	0.0	0.0	52.4	3.9	-2.7	0.0	0.0	27.4	0.0	0.0	0.0
2	17624983.97	4941491.90	15.50	0	N	8000	77.9	0.0	0.0	0.0	0.0	52.4	13.8	-2.7	0.0	0.0	27.6	0.0	0.0	-13.2
2	17624983.97	4941491.90	15.50	0	E	125	74.9	0.0	0.0	0.0	0.0	52.4	0.0	-2.6	0.0	0.0	15.0	0.0	0.0	10.0
2	17624983.97	4941491.90	15.50	0	E	250	79.4	0.0	0.0	0.0	0.0	52.4	0.1	-2.7	0.0	0.0	19.1	0.0	0.0	10.5
2	17624983.97	4941491.90	15.50	0	E	500	82.8	0.0	0.0	0.0	0.0	52.4	0.2	-2.7	0.0	0.0	22.6	0.0	0.0	10.2
2	17624983.97	4941491.90	15.50	0	E	1000	86.0	0.0	0.0	0.0	0.0	52.4	0.4	-2.7	0.0	0.0	25.8	0.0	0.0	10.1
2	17624983.97	4941491.90	15.50	0	E	2000	84.2	0.0	0.0	0.0	0.0	52.4	1.1	-2.7	0.0	0.0	27.1	0.0	0.0	6.2
2	17624983.97	4941491.90	15.50	0	E	4000	81.0	0.0	0.0	0.0	0.0	52.4	3.9	-2.7	0.0	0.0	27.4	0.0	0.0	0.0
2	17624983.97	4941491.90	15.50	0	E	8000	77.9	0.0	0.0	0.0	0.0	52.4	13.8	-2.7	0.0	0.0	27.6	0.0	0.0	-13.2
5	17624983.97	4941491.90	15.50	1	D	4000	81.0	0.0	0.0	0.0	0.0	56.1	5.9	-2.8	0.0	0.0	27.8	0.0	2.0	-7.9
5	17624983.97	4941491.90	15.50	1	D	8000	77.9	0.0	0.0	0.0	0.0	56.1	20.9	-2.8	0.0	0.0	27.8	0.0	2.0	-26.1
5	17624983.97	4941491.90	15.50	1	N	4000	81.0	0.0	0.0	0.0	0.0	56.1	5.9	-2.8	0.0	0.0	27.8	0.0	2.0	-7.9
5	17624983.97	4941491.90	15.50	1	N	8000	77.9	0.0	0.0	0.0	0.0	56.1	20.9	-2.8	0.0	0.0	27.8	0.0	2.0	-26.1

Point Source, ISO 9613, Name: "ERU2", ID: "ERU2"																				
Nr.	X	Y	Z	Refl.	DEN	Freq.	Lw	l/a	Optime	K0	Di	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	Lr
	(m)	(m)	(m)			(Hz)	dB(A)	dB	dB	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)
5	17624983.97	4941491.90	15.50	1	E	4000	81.0	0.0	0.0	0.0	0.0	56.1	5.9	-2.8	0.0	0.0	27.8	0.0	2.0	-7.9
5	17624983.97	4941491.90	15.50	1	E	8000	77.9	0.0	0.0	0.0	0.0	56.1	20.9	-2.8	0.0	0.0	27.8	0.0	2.0	-26.1

Point Source, ISO 9613, Name: "RTU3", ID: "RTU3"																				
Nr.	X	Y	Z	Refl.	DEN	Freq.	Lw	l/a	Optime	K0	Di	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	Lr
	(m)	(m)	(m)			(Hz)	dB(A)	dB	dB	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)
9	17624906.46	4941502.63	21.50	0	D	63	58.8	0.0	0.0	0.0	0.0	44.7	0.0	-3.0	0.0	0.0	7.9	0.0	0.0	9.2
9	17624906.46	4941502.63	21.50	0	D	125	68.9	0.0	0.0	0.0	0.0	44.7	0.0	-2.2	0.0	0.0	7.2	0.0	0.0	19.2
9	17624906.46	4941502.63	21.50	0	D	250	72.4	0.0	0.0	0.0	0.0	44.7	0.1	-2.4	0.0	0.0	7.6	0.0	0.0	22.5
9	17624906.46	4941502.63	21.50	0	D	500	74.8	0.0	0.0	0.0	0.0	44.7	0.1	-2.4	0.0	0.0	8.0	0.0	0.0	24.4
9	17624906.46	4941502.63	21.50	0	D	1000	76.0	0.0	0.0	0.0	0.0	44.7	0.2	-2.4	0.0	0.0	8.7	0.0	0.0	24.8
9	17624906.46	4941502.63	21.50	0	D	2000	72.2	0.0	0.0	0.0	0.0	44.7	0.5	-2.4	0.0	0.0	9.8	0.0	0.0	19.6
9	17624906.46	4941502.63	21.50	0	D	4000	65.0	0.0	0.0	0.0	0.0	44.7	1.6	-2.4	0.0	0.0	11.5	0.0	0.0	9.6
9	17624906.46	4941502.63	21.50	0	D	8000	55.9	0.0	0.0	0.0	0.0	44.7	5.6	-2.4	0.0	0.0	13.6	0.0	0.0	-5.6
9	17624906.46	4941502.63	21.50	0	N	63	58.8	0.0	-3.0	0.0	0.0	44.7	0.0	-3.0	0.0	0.0	7.9	0.0	0.0	6.2
9	17624906.46	4941502.63	21.50	0	N	125	68.9	0.0	-3.0	0.0	0.0	44.7	0.0	-2.2	0.0	0.0	7.2	0.0	0.0	16.2
9	17624906.46	4941502.63	21.50	0	N	250	72.4	0.0	-3.0	0.0	0.0	44.7	0.1	-2.4	0.0	0.0	7.6	0.0	0.0	19.4
9	17624906.46	4941502.63	21.50	0	N	500	74.8	0.0	-3.0	0.0	0.0	44.7	0.1	-2.4	0.0	0.0	8.0	0.0	0.0	21.4
9	17624906.46	4941502.63	21.50	0	N	1000	76.0	0.0	-3.0	0.0	0.0	44.7	0.2	-2.4	0.0	0.0	8.7	0.0	0.0	21.8
9	17624906.46	4941502.63	21.50	0	N	2000	72.2	0.0	-3.0	0.0	0.0	44.7	0.5	-2.4	0.0	0.0	9.8	0.0	0.0	16.6
9	17624906.46	4941502.63	21.50	0	N	4000	65.0	0.0	-3.0	0.0	0.0	44.7	1.6	-2.4	0.0	0.0	11.5	0.0	0.0	6.6
9	17624906.46	4941502.63	21.50	0	N	8000	55.9	0.0	-3.0	0.0	0.0	44.7	5.6	-2.4	0.0	0.0	13.6	0.0	0.0	-8.7
9	17624906.46	4941502.63	21.50	0	E	63	58.8	0.0	0.0	0.0	0.0	44.7	0.0	-3.0	0.0	0.0	7.9	0.0	0.0	9.2
9	17624906.46	4941502.63	21.50	0	E	125	68.9	0.0	0.0	0.0	0.0	44.7	0.0	-2.2	0.0	0.0	7.2	0.0	0.0	19.2
9	17624906.46	4941502.63	21.50	0	E	250	72.4	0.0	0.0	0.0	0.0	44.7	0.1	-2.4	0.0	0.0	7.6	0.0	0.0	22.5
9	17624906.46	4941502.63	21.50	0	E	500	74.8	0.0	0.0	0.0	0.0	44.7	0.1	-2.4	0.0	0.0	8.0	0.0	0.0	24.4
9	17624906.46	4941502.63	21.50	0	E	1000	76.0	0.0	0.0	0.0	0.0	44.7	0.2	-2.4	0.0	0.0	8.7	0.0	0.0	24.8
9	17624906.46	4941502.63	21.50	0	E	2000	72.2	0.0	0.0	0.0	0.0	44.7	0.5	-2.4	0.0	0.0	9.8	0.0	0.0	19.6
9	17624906.46	4941502.63	21.50	0	E	4000	65.0	0.0	0.0	0.0	0.0	44.7	1.6	-2.4	0.0	0.0	11.5	0.0	0.0	9.6
9	17624906.46	4941502.63	21.50	0	E	8000	55.9	0.0	0.0	0.0	0.0	44.7	5.6	-2.4	0.0	0.0	13.6	0.0	0.0	-5.6

Point Source, ISO 9613, Name: "RTU5", ID: "RTU5"																				
Nr.	X	Y	Z	Refl.	DEN	Freq.	Lw	l/a	Optime	K0	Di	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	Lr
	(m)	(m)	(m)			(Hz)	dB(A)	dB	dB	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)
14	17624898.90	4941515.26	21.50	0	D	63	58.8	0.0	0.0	0.0	0.0	45.1	0.0	-3.0	0.0	0.0	7.8	0.0	0.0	8.9
14	17624898.90	4941515.26	21.50	0	D	125	68.9	0.0	0.0	0.0	0.0	45.1	0.0	-2.2	0.0	0.0	7.0	0.0	0.0	18.9
14	17624898.90	4941515.26	21.50	0	D	250	72.4	0.0	0.0	0.0	0.0	45.1	0.1	-2.4	0.0	0.0	7.3	0.0	0.0	22.3
14	17624898.90	4941515.26	21.50	0	D	500	74.8	0.0	0.0	0.0	0.0	45.1	0.1	-2.4	0.0	0.0	7.5	0.0	0.0	24.5
14	17624898.90	4941515.26	21.50	0	D	1000	76.0	0.0	0.0	0.0	0.0	45.1	0.2	-2.4	0.0	0.0	7.7	0.0	0.0	25.4
14	17624898.90	4941515.26	21.50	0	D	2000	72.2	0.0	0.0	0.0	0.0	45.1	0.5	-2.4	0.0	0.0	8.3	0.0	0.0	20.7
14	17624898.90	4941515.26	21.50	0	D	4000	65.0	0.0	0.0	0.0	0.0	45.1	1.7	-2.4	0.0	0.0	9.2	0.0	0.0	11.5
14	17624898.90	4941515.26	21.50	0	D	8000	55.9	0.0	0.0	0.0	0.0	45.1	5.9	-2.4	0.0	0.0	10.6	0.0	0.0	-3.3
14	17624898.90	4941515.26	21.50	0	N	63	58.8	0.0	-3.0	0.0	0.0	45.1	0.0	-3.0	0.0	0.0	7.8	0.0	0.0	5.9
14	17624898.90	4941515.26	21.50	0	N	125	68.9	0.0	-3.0	0.0	0.0	45.1	0.0	-2.2	0.0	0.0	7.0	0.0	0.0	15.9
14	17624898.90	4941515.26	21.50	0	N	250	72.4	0.0	-3.0	0.0	0.0	45.1	0.1	-2.4	0.0	0.0	7.3	0.0	0.0	19.3
14	17624898.90	4941515.26	21.50	0	N	500	74.8	0.0	-3.0	0.0	0.0	45.1	0.1	-2.4	0.0	0.0	7.5	0.0	0.0	21.5
14	17624898.90	4941515.26	21.50	0	N	1000	76.0	0.0	-3.0	0.0	0.0	45.1	0.2	-2.4	0.0	0.0	7.7	0.0	0.0	22.3
14	17624898.90	4941515.26	21.50	0	N	2000	72.2	0.0	-3.0	0.0	0.0	45.1	0.5	-2.4	0.0	0.0	8.3	0.0	0.0	17.7
14	17624898.90	4941515.26	21.50	0	N	4000	65.0	0.0	-3.0	0.0	0.0	45.1	1.7	-2.4	0.0	0.0	9.2	0.0	0.0	8.4
14	17624898.90	4941515.26	21.50	0	N	8000	55.9	0.0	-3.0	0.0	0.0	45.1	5.9	-2.4	0.0	0.0	10.6	0.0	0.0	-6.3
14	17624898.90	4941515.26	21.50	0	E	63	58.8	0.0	0.0	0.0	0.0	45.1	0.0	-3.0	0.0	0.0	7.8	0.0	0.0	8.9
14	17624898.90	4941515.26	21.50	0	E	125	68.9	0.0	0.0	0.0	0.0	45.1	0.0	-2.2	0.0	0.0	7.0	0.0	0.0	18.9
14	17624898.90	4941515.26	21.50	0	E	250	72.4	0.0	0.0	0.0	0.0	45.1	0.1	-2.4	0.0	0.0	7.3	0.0	0.0	22.3
14	17624898.90	4941515.26	21.50	0	E	500	74.8	0.0	0.0	0.0	0.0	45.1	0.1	-2.4	0.0	0.0	7.5	0.0	0.0	24.5
14	17624898.90	4941515.26	21.50	0	E	1000	76.0	0.0	0.0	0.0	0.0	45.1	0.2	-2.4	0.0	0.0	7.7	0.0	0.0	25.4
14	17624898.90	4941515.26	21.50	0	E	2000	72.2	0.0	0.0	0.0	0.0	45.1	0.5	-2.4	0.0	0.0	8.3	0.0	0.0	20.7
14	17624898.90	4941515.26	21.50	0	E	4000	65.0	0.0	0.0	0.0	0.0	45.1	1.7	-2.4	0.0	0.0	9.2	0.0	0.0	11.5
14	17624898.90	4941515.26	21.50	0	E	8000	55.9	0.0	0.0	0.0	0.0	45.1	5.9	-2.4	0.0	0.0	10.6	0.0	0.0	-3.3

Point Source, ISO 9613, Name: "RTU4", ID: "RTU4"																				
Nr.	X	Y	Z	Refl.	DEN	Freq.	Lw	l/a	Optime	K0	Di	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	Lr
	(m)	(m)	(m)			(Hz)	dB(A)	dB	dB	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)
17	17624914.31	4941507.33	21.50	0	D	63	58.8	0.0	0.0	0.0	0.0	46.1	0.0	-3.0	0.0	0.0	8.9	0.0	0.0	6.8

Point Source, ISO 9613, Name: "RTU4", ID: "RTU4"																				
Nr.	X	Y	Z	Refl.	DEN	Freq.	Lw	l/a	Optime	K0	Di	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	Lr
	(m)	(m)	(m)			(Hz)	dB(A)	dB	dB	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)
17	17624914.31	4941507.33	21.50	0	D	125	68.9	0.0	0.0	0.0	0.0	46.1	0.0	-2.3	0.0	0.0	9.1	0.0	0.0	16.0
17	17624914.31	4941507.33	21.50	0	D	250	72.4	0.0	0.0	0.0	0.0	46.1	0.1	-2.5	0.0	0.0	10.6	0.0	0.0	18.1
17	17624914.31	4941507.33	21.50	0	D	500	74.8	0.0	0.0	0.0	0.0	46.1	0.1	-2.5	0.0	0.0	12.5	0.0	0.0	18.6
17	17624914.31	4941507.33	21.50	0	D	1000	76.0	0.0	0.0	0.0	0.0	46.1	0.2	-2.5	0.0	0.0	14.8	0.0	0.0	17.4
17	17624914.31	4941507.33	21.50	0	D	2000	72.2	0.0	0.0	0.0	0.0	46.1	0.6	-2.5	0.0	0.0	17.4	0.0	0.0	10.6
17	17624914.31	4941507.33	21.50	0	D	4000	65.0	0.0	0.0	0.0	0.0	46.1	1.9	-2.5	0.0	0.0	20.2	0.0	0.0	-0.7
17	17624914.31	4941507.33	21.50	0	D	8000	55.9	0.0	0.0	0.0	0.0	46.1	6.7	-2.5	0.0	0.0	22.5	0.0	0.0	-16.9
17	17624914.31	4941507.33	21.50	0	N	63	58.8	0.0	-3.0	0.0	0.0	46.1	0.0	-3.0	0.0	0.0	8.9	0.0	0.0	3.8
17	17624914.31	4941507.33	21.50	0	N	125	68.9	0.0	-3.0	0.0	0.0	46.1	0.0	-2.3	0.0	0.0	9.1	0.0	0.0	13.0
17	17624914.31	4941507.33	21.50	0	N	250	72.4	0.0	-3.0	0.0	0.0	46.1	0.1	-2.5	0.0	0.0	10.6	0.0	0.0	15.1
17	17624914.31	4941507.33	21.50	0	N	500	74.8	0.0	-3.0	0.0	0.0	46.1	0.1	-2.5	0.0	0.0	12.5	0.0	0.0	15.6
17	17624914.31	4941507.33	21.50	0	N	1000	76.0	0.0	-3.0	0.0	0.0	46.1	0.2	-2.5	0.0	0.0	14.8	0.0	0.0	14.4
17	17624914.31	4941507.33	21.50	0	N	2000	72.2	0.0	-3.0	0.0	0.0	46.1	0.6	-2.5	0.0	0.0	17.4	0.0	0.0	7.6
17	17624914.31	4941507.33	21.50	0	N	4000	65.0	0.0	-3.0	0.0	0.0	46.1	1.9	-2.5	0.0	0.0	20.2	0.0	0.0	-3.7
17	17624914.31	4941507.33	21.50	0	N	8000	55.9	0.0	-3.0	0.0	0.0	46.1	6.7	-2.5	0.0	0.0	22.5	0.0	0.0	-19.9
17	17624914.31	4941507.33	21.50	0	E	63	58.8	0.0	0.0	0.0	0.0	46.1	0.0	-3.0	0.0	0.0	8.9	0.0	0.0	6.8
17	17624914.31	4941507.33	21.50	0	E	125	68.9	0.0	0.0	0.0	0.0	46.1	0.0	-2.3	0.0	0.0	9.1	0.0	0.0	16.0
17	17624914.31	4941507.33	21.50	0	E	250	72.4	0.0	0.0	0.0	0.0	46.1	0.1	-2.5	0.0	0.0	10.6	0.0	0.0	18.1
17	17624914.31	4941507.33	21.50	0	E	500	74.8	0.0	0.0	0.0	0.0	46.1	0.1	-2.5	0.0	0.0	12.5	0.0	0.0	18.6
17	17624914.31	4941507.33	21.50	0	E	1000	76.0	0.0	0.0	0.0	0.0	46.1	0.2	-2.5	0.0	0.0	14.8	0.0	0.0	17.4
17	17624914.31	4941507.33	21.50	0	E	2000	72.2	0.0	0.0	0.0	0.0	46.1	0.6	-2.5	0.0	0.0	17.4	0.0	0.0	10.6
17	17624914.31	4941507.33	21.50	0	E	4000	65.0	0.0	0.0	0.0	0.0	46.1	1.9	-2.5	0.0	0.0	20.2	0.0	0.0	-0.7
17	17624914.31	4941507.33	21.50	0	E	8000	55.9	0.0	0.0	0.0	0.0	46.1	6.7	-2.5	0.0	0.0	22.5	0.0	0.0	-16.9

Point Source, ISO 9613, Name: "RTU2", ID: "RTU2"																				
Nr.	X	Y	Z	Refl.	DEN	Freq.	Lw	l/a	Optime	K0	Di	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	Lr
	(m)	(m)	(m)			(Hz)	dB(A)	dB	dB	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)
24	17624906.54	4941519.81	21.50	0	D	63	58.8	0.0	0.0	0.0	0.0	46.4	0.0	-3.0	0.0	0.0	8.7	0.0	0.0	6.7
24	17624906.54	4941519.81	21.50	0	D	125	68.9	0.0	0.0	0.0	0.0	46.4	0.0	-2.2	0.0	0.0	8.7	0.0	0.0	16.0
24	17624906.54	4941519.81	21.50	0	D	250	72.4	0.0	0.0	0.0	0.0	46.4	0.1	-2.4	0.0	0.0	10.1	0.0	0.0	18.3
24	17624906.54	4941519.81	21.50	0	D	500	74.8	0.0	0.0	0.0	0.0	46.4	0.1	-2.4	0.0	0.0	11.8	0.0	0.0	18.9
24	17624906.54	4941519.81	21.50	0	D	1000	76.0	0.0	0.0	0.0	0.0	46.4	0.2	-2.4	0.0	0.0	14.0	0.0	0.0	17.8
24	17624906.54	4941519.81	21.50	0	D	2000	72.2	0.0	0.0	0.0	0.0	46.4	0.6	-2.4	0.0	0.0	16.5	0.0	0.0	11.2
24	17624906.54	4941519.81	21.50	0	D	4000	65.0	0.0	0.0	0.0	0.0	46.4	1.9	-2.4	0.0	0.0	19.3	0.0	0.0	-0.2
24	17624906.54	4941519.81	21.50	0	D	8000	55.9	0.0	0.0	0.0	0.0	46.4	6.9	-2.4	0.0	0.0	22.1	0.0	0.0	-17.1
24	17624906.54	4941519.81	21.50	0	N	63	58.8	0.0	-3.0	0.0	0.0	46.4	0.0	-3.0	0.0	0.0	8.7	0.0	0.0	3.7
24	17624906.54	4941519.81	21.50	0	N	125	68.9	0.0	-3.0	0.0	0.0	46.4	0.0	-2.2	0.0	0.0	8.7	0.0	0.0	13.0
24	17624906.54	4941519.81	21.50	0	N	250	72.4	0.0	-3.0	0.0	0.0	46.4	0.1	-2.4	0.0	0.0	10.1	0.0	0.0	15.3
24	17624906.54	4941519.81	21.50	0	N	500	74.8	0.0	-3.0	0.0	0.0	46.4	0.1	-2.4	0.0	0.0	11.8	0.0	0.0	15.9
24	17624906.54	4941519.81	21.50	0	N	1000	76.0	0.0	-3.0	0.0	0.0	46.4	0.2	-2.4	0.0	0.0	14.0	0.0	0.0	14.8
24	17624906.54	4941519.81	21.50	0	N	2000	72.2	0.0	-3.0	0.0	0.0	46.4	0.6	-2.4	0.0	0.0	16.5	0.0	0.0	8.1
24	17624906.54	4941519.81	21.50	0	N	4000	65.0	0.0	-3.0	0.0	0.0	46.4	1.9	-2.4	0.0	0.0	19.3	0.0	0.0	-3.2
24	17624906.54	4941519.81	21.50	0	N	8000	55.9	0.0	-3.0	0.0	0.0	46.4	6.9	-2.4	0.0	0.0	22.1	0.0	0.0	-20.1
24	17624906.54	4941519.81	21.50	0	E	63	58.8	0.0	0.0	0.0	0.0	46.4	0.0	-3.0	0.0	0.0	8.7	0.0	0.0	6.7
24	17624906.54	4941519.81	21.50	0	E	125	68.9	0.0	0.0	0.0	0.0	46.4	0.0	-2.2	0.0	0.0	8.7	0.0	0.0	16.0
24	17624906.54	4941519.81	21.50	0	E	250	72.4	0.0	0.0	0.0	0.0	46.4	0.1	-2.4	0.0	0.0	10.1	0.0	0.0	18.3
24	17624906.54	4941519.81	21.50	0	E	500	74.8	0.0	0.0	0.0	0.0	46.4	0.1	-2.4	0.0	0.0	11.8	0.0	0.0	18.9
24	17624906.54	4941519.81	21.50	0	E	1000	76.0	0.0	0.0	0.0	0.0	46.4	0.2	-2.4	0.0	0.0	14.0	0.0	0.0	17.8
24	17624906.54	4941519.81	21.50	0	E	2000	72.2	0.0	0.0	0.0	0.0	46.4	0.6	-2.4	0.0	0.0	16.5	0.0	0.0	11.2
24	17624906.54	4941519.81	21.50	0	E	4000	65.0	0.0	0.0	0.0	0.0	46.4	1.9	-2.4	0.0	0.0	19.3	0.0	0.0	-0.2
24	17624906.54	4941519.81	21.50	0	E	8000	55.9	0.0	0.0	0.0	0.0	46.4	6.9	-2.4	0.0	0.0	22.1	0.0	0.0	-17.1

Point Source, ISO 9613, Name: "ERU3", ID: "ERU3"																				
Nr.	X	Y	Z	Refl.	DEN	Freq.	Lw	l/a	Optime	K0	Di	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	Lr
	(m)	(m)	(m)			(Hz)	dB(A)	dB	dB	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)
30	17624957.75	4941477.44	15.50	0	D	63	53.8	0.0	0.0	0.0	0.0	50.2	0.0	-3.0	0.0	0.0	5.6	0.0	0.0	1.0
30	17624957.75	4941477.44	15.50	0	D	125	57.9	0.0	0.0	0.0	0.0	50.2	0.0	-2.5	0.0	0.0	7.1	0.0	0.0	3.0
30	17624957.75	4941477.44	15.50	0	D	250	67.4	0.0	0.0	0.0	0.0	50.2	0.1	-2.6	0.0	0.0	9.2	0.0	0.0	10.5
30	17624957.75	4941477.44	15.50	0	D	500	72.8	0.0	0.0	0.0	0.0	50.2	0.2	-2.6	0.0	0.0	11.6	0.0	0.0	13.4
30	17624957.75	4941477.44	15.50	0	D	1000	75.0	0.0	0.0	0.0	0.0	50.2	0.3	-2.6	0.0	0.0	14.2	0.0	0.0	12.8
30	17624957.75	4941477.44	15.50	0	D	2000	73.2	0.0	0.0	0.0	0.0	50.2	0.9	-2.6	0.0	0.0	16.9	0.0	0.0	7.8
30	17624957.75	4941477.44	15.50	0	D	4000	74.0	0.0	0.0	0.0	0.0	50.2	3.0	-2.6	0.0	0.0	19.5	0.0	0.0	4.0
30	17624957.75	4941477.44	15.50	0	D	8000	63.9	0.0	0.0	0.0	0.0	50.2	10.7	-2.6	0.0	0.0	21.8	0.0	0.0	-16.1

Point Source, ISO 9613, Name: "ERU3", ID: "ERU3"																				
Nr.	X	Y	Z	Refl.	DEN	Freq.	Lw	l/a	Optime	K0	Di	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	Lr
	(m)	(m)	(m)			(Hz)	dB(A)	dB	dB	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)
30	17624957.75	4941477.44	15.50	0	N	63	53.8	0.0	0.0	0.0	0.0	50.2	0.0	-3.0	0.0	0.0	5.6	0.0	0.0	1.0
30	17624957.75	4941477.44	15.50	0	N	125	57.9	0.0	0.0	0.0	0.0	50.2	0.0	-2.5	0.0	0.0	7.1	0.0	0.0	3.0
30	17624957.75	4941477.44	15.50	0	N	250	67.4	0.0	0.0	0.0	0.0	50.2	0.1	-2.6	0.0	0.0	9.2	0.0	0.0	10.5
30	17624957.75	4941477.44	15.50	0	N	500	72.8	0.0	0.0	0.0	0.0	50.2	0.2	-2.6	0.0	0.0	11.6	0.0	0.0	13.4
30	17624957.75	4941477.44	15.50	0	N	1000	75.0	0.0	0.0	0.0	0.0	50.2	0.3	-2.6	0.0	0.0	14.2	0.0	0.0	12.8
30	17624957.75	4941477.44	15.50	0	N	2000	73.2	0.0	0.0	0.0	0.0	50.2	0.9	-2.6	0.0	0.0	16.9	0.0	0.0	7.8
30	17624957.75	4941477.44	15.50	0	N	4000	74.0	0.0	0.0	0.0	0.0	50.2	3.0	-2.6	0.0	0.0	19.5	0.0	0.0	4.0
30	17624957.75	4941477.44	15.50	0	N	8000	63.9	0.0	0.0	0.0	0.0	50.2	10.7	-2.6	0.0	0.0	21.8	0.0	0.0	-16.1
30	17624957.75	4941477.44	15.50	0	E	63	53.8	0.0	0.0	0.0	0.0	50.2	0.0	-3.0	0.0	0.0	5.6	0.0	0.0	1.0
30	17624957.75	4941477.44	15.50	0	E	125	57.9	0.0	0.0	0.0	0.0	50.2	0.0	-2.5	0.0	0.0	7.1	0.0	0.0	3.0
30	17624957.75	4941477.44	15.50	0	E	250	67.4	0.0	0.0	0.0	0.0	50.2	0.1	-2.6	0.0	0.0	9.2	0.0	0.0	10.5
30	17624957.75	4941477.44	15.50	0	E	500	72.8	0.0	0.0	0.0	0.0	50.2	0.2	-2.6	0.0	0.0	11.6	0.0	0.0	13.4
30	17624957.75	4941477.44	15.50	0	E	1000	75.0	0.0	0.0	0.0	0.0	50.2	0.3	-2.6	0.0	0.0	14.2	0.0	0.0	12.8
30	17624957.75	4941477.44	15.50	0	E	2000	73.2	0.0	0.0	0.0	0.0	50.2	0.9	-2.6	0.0	0.0	16.9	0.0	0.0	7.8
30	17624957.75	4941477.44	15.50	0	E	4000	74.0	0.0	0.0	0.0	0.0	50.2	3.0	-2.6	0.0	0.0	19.5	0.0	0.0	4.0
30	17624957.75	4941477.44	15.50	0	E	8000	63.9	0.0	0.0	0.0	0.0	50.2	10.7	-2.6	0.0	0.0	21.8	0.0	0.0	-16.1

Point Source, ISO 9613, Name: "RTU1", ID: "RTU1"																				
Nr.	X	Y	Z	Refl.	DEN	Freq.	Lw	l/a	Optime	K0	Di	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	Lr
	(m)	(m)	(m)			(Hz)	dB(A)	dB	dB	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)
41	17624900.75	4941528.97	21.50	0	D	63	55.8	0.0	0.0	0.0	0.0	46.9	0.0	-3.0	0.0	0.0	8.7	0.0	0.0	3.2
41	17624900.75	4941528.97	21.50	0	D	125	65.9	0.0	0.0	0.0	0.0	46.9	0.0	-2.2	0.0	0.0	8.7	0.0	0.0	12.5
41	17624900.75	4941528.97	21.50	0	D	250	69.4	0.0	0.0	0.0	0.0	46.9	0.1	-2.4	0.0	0.0	10.2	0.0	0.0	14.7
41	17624900.75	4941528.97	21.50	0	D	500	71.8	0.0	0.0	0.0	0.0	46.9	0.1	-2.4	0.0	0.0	11.9	0.0	0.0	15.3
41	17624900.75	4941528.97	21.50	0	D	1000	73.0	0.0	0.0	0.0	0.0	46.9	0.2	-2.4	0.0	0.0	14.1	0.0	0.0	14.2
41	17624900.75	4941528.97	21.50	0	D	2000	69.2	0.0	0.0	0.0	0.0	46.9	0.6	-2.4	0.0	0.0	16.7	0.0	0.0	7.5
41	17624900.75	4941528.97	21.50	0	D	4000	62.0	0.0	0.0	0.0	0.0	46.9	2.0	-2.4	0.0	0.0	19.4	0.0	0.0	-3.9
41	17624900.75	4941528.97	21.50	0	D	8000	52.9	0.0	0.0	0.0	0.0	46.9	7.3	-2.4	0.0	0.0	22.3	0.0	0.0	-21.2
41	17624900.75	4941528.97	21.50	0	N	63	55.8	0.0	-3.0	0.0	0.0	46.9	0.0	-3.0	0.0	0.0	8.7	0.0	0.0	0.2
41	17624900.75	4941528.97	21.50	0	N	125	65.9	0.0	-3.0	0.0	0.0	46.9	0.0	-2.2	0.0	0.0	8.7	0.0	0.0	9.5
41	17624900.75	4941528.97	21.50	0	N	250	69.4	0.0	-3.0	0.0	0.0	46.9	0.1	-2.4	0.0	0.0	10.2	0.0	0.0	11.7
41	17624900.75	4941528.97	21.50	0	N	500	71.8	0.0	-3.0	0.0	0.0	46.9	0.1	-2.4	0.0	0.0	11.9	0.0	0.0	12.3
41	17624900.75	4941528.97	21.50	0	N	1000	73.0	0.0	-3.0	0.0	0.0	46.9	0.2	-2.4	0.0	0.0	14.1	0.0	0.0	11.2
41	17624900.75	4941528.97	21.50	0	N	2000	69.2	0.0	-3.0	0.0	0.0	46.9	0.6	-2.4	0.0	0.0	16.7	0.0	0.0	4.4
41	17624900.75	4941528.97	21.50	0	N	4000	62.0	0.0	-3.0	0.0	0.0	46.9	2.0	-2.4	0.0	0.0	19.4	0.0	0.0	-7.0
41	17624900.75	4941528.97	21.50	0	N	8000	52.9	0.0	-3.0	0.0	0.0	46.9	7.3	-2.4	0.0	0.0	22.3	0.0	0.0	-24.2
41	17624900.75	4941528.97	21.50	0	E	63	55.8	0.0	0.0	0.0	0.0	46.9	0.0	-3.0	0.0	0.0	8.7	0.0	0.0	3.2
41	17624900.75	4941528.97	21.50	0	E	125	65.9	0.0	0.0	0.0	0.0	46.9	0.0	-2.2	0.0	0.0	8.7	0.0	0.0	12.5
41	17624900.75	4941528.97	21.50	0	E	250	69.4	0.0	0.0	0.0	0.0	46.9	0.1	-2.4	0.0	0.0	10.2	0.0	0.0	14.7
41	17624900.75	4941528.97	21.50	0	E	500	71.8	0.0	0.0	0.0	0.0	46.9	0.1	-2.4	0.0	0.0	11.9	0.0	0.0	15.3
41	17624900.75	4941528.97	21.50	0	E	1000	73.0	0.0	0.0	0.0	0.0	46.9	0.2	-2.4	0.0	0.0	14.1	0.0	0.0	14.2
41	17624900.75	4941528.97	21.50	0	E	2000	69.2	0.0	0.0	0.0	0.0	46.9	0.6	-2.4	0.0	0.0	16.7	0.0	0.0	7.5
41	17624900.75	4941528.97	21.50	0	E	4000	62.0	0.0	0.0	0.0	0.0	46.9	2.0	-2.4	0.0	0.0	19.4	0.0	0.0	-3.9
41	17624900.75	4941528.97	21.50	0	E	8000	52.9	0.0	0.0	0.0	0.0	46.9	7.3	-2.4	0.0	0.0	22.3	0.0	0.0	-21.2

Point Source, ISO 9613, Name: "RTU7", ID: "RTU7"																				
Nr.	X	Y	Z	Refl.	DEN	Freq.	Lw	l/a	Optime	K0	Di	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	Lr
	(m)	(m)	(m)			(Hz)	dB(A)	dB	dB	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)
46	17624965.95	4941482.57	15.50	0	D	63	53.8	0.0	0.0	0.0	0.0	51.0	0.0	-3.0	0.0	0.0	8.1	0.0	0.0	-2.3
46	17624965.95	4941482.57	15.50	0	D	125	57.9	0.0	0.0	0.0	0.0	51.0	0.0	-2.5	0.0	0.0	11.4	0.0	0.0	-2.0
46	17624965.95	4941482.57	15.50	0	D	250	67.4	0.0	0.0	0.0	0.0	51.0	0.1	-2.6	0.0	0.0	15.1	0.0	0.0	3.8
46	17624965.95	4941482.57	15.50	0	D	500	72.8	0.0	0.0	0.0	0.0	51.0	0.2	-2.6	0.0	0.0	18.4	0.0	0.0	5.9
46	17624965.95	4941482.57	15.50	0	D	1000	75.0	0.0	0.0	0.0	0.0	51.0	0.4	-2.6	0.0	0.0	21.5	0.0	0.0	4.8
46	17624965.95	4941482.57	15.50	0	D	2000	73.2	0.0	0.0	0.0	0.0	51.0	1.0	-2.6	0.0	0.0	23.8	0.0	0.0	0.2
46	17624965.95	4941482.57	15.50	0	D	4000	74.0	0.0	0.0	0.0	0.0	51.0	3.3	-2.6	0.0	0.0	25.3	0.0	0.0	-2.8
46	17624965.95	4941482.57	15.50	0	D	8000	63.9	0.0	0.0	0.0	0.0	51.0	11.6	-2.6	0.0	0.0	26.3	0.0	0.0	-22.3
46	17624965.95	4941482.57	15.50	0	N	63	53.8	0.0	-3.0	0.0	0.0	51.0	0.0	-3.0	0.0	0.0	8.1	0.0	0.0	-5.3
46	17624965.95	4941482.57	15.50	0	N	125	57.9	0.0	-3.0	0.0	0.0	51.0	0.0	-2.5	0.0	0.0	11.4	0.0	0.0	-5.0
46	17624965.95	4941482.57	15.50	0	N	250	67.4	0.0	-3.0	0.0	0.0	51.0	0.1	-2.6	0.0	0.0	15.1	0.0	0.0	0.8
46	17624965.95	4941482.57	15.50	0	N	500	72.8	0.0	-3.0	0.0	0.0	51.0	0.2	-2.6	0.0	0.0	18.4	0.0	0.0	2.9
46	17624965.95	4941482.57	15.50	0	N	1000	75.0	0.0	-3.0	0.0	0.0	51.0	0.4	-2.6	0.0	0.0	21.5	0.0	0.0	1.8
46	17624965.95	4941482.57	15.50	0	N	2000	73.2	0.0	-3.0	0.0	0.0	51.0	1.0	-2.6	0.0	0.0	23.8	0.0	0.0	-2.8
46	17624965.95	4941482.57	15.50	0	N	4000	74.0	0.0	-3.0	0.0	0.0	51.0	3.3	-2.6	0.0	0.0	25.3	0.0	0.0	-5.9

Point Source, ISO 9613, Name: "RTU7", ID: "RTU7"																				
Nr.	X	Y	Z	Refl.	DEN	Freq.	Lw	l/a	Optime	K0	Di	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	Lr
	(m)	(m)	(m)			(Hz)	dB(A)	dB	dB	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)
46	17624965.95	4941482.57	15.50	0	N	8000	63.9	0.0	-3.0	0.0	0.0	51.0	11.6	-2.6	0.0	0.0	26.3	0.0	0.0	-25.3
46	17624965.95	4941482.57	15.50	0	E	63	53.8	0.0	0.0	0.0	0.0	51.0	0.0	-3.0	0.0	0.0	8.1	0.0	0.0	-2.3
46	17624965.95	4941482.57	15.50	0	E	125	57.9	0.0	0.0	0.0	0.0	51.0	0.0	-2.5	0.0	0.0	11.4	0.0	0.0	-2.0
46	17624965.95	4941482.57	15.50	0	E	250	67.4	0.0	0.0	0.0	0.0	51.0	0.1	-2.6	0.0	0.0	15.1	0.0	0.0	3.8
46	17624965.95	4941482.57	15.50	0	E	500	72.8	0.0	0.0	0.0	0.0	51.0	0.2	-2.6	0.0	0.0	18.4	0.0	0.0	5.9
46	17624965.95	4941482.57	15.50	0	E	1000	75.0	0.0	0.0	0.0	0.0	51.0	0.4	-2.6	0.0	0.0	21.5	0.0	0.0	4.8
46	17624965.95	4941482.57	15.50	0	E	2000	73.2	0.0	0.0	0.0	0.0	51.0	1.0	-2.6	0.0	0.0	23.8	0.0	0.0	0.2
46	17624965.95	4941482.57	15.50	0	E	4000	74.0	0.0	0.0	0.0	0.0	51.0	3.3	-2.6	0.0	0.0	25.3	0.0	0.0	-2.8
46	17624965.95	4941482.57	15.50	0	E	8000	63.9	0.0	0.0	0.0	0.0	51.0	11.6	-2.6	0.0	0.0	26.3	0.0	0.0	-22.3

Point Source, ISO 9613, Name: "RTU6", ID: "RTU6"																				
Nr.	X	Y	Z	Refl.	DEN	Freq.	Lw	l/a	Optime	K0	Di	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	Lr
	(m)	(m)	(m)			(Hz)	dB(A)	dB	dB	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)
55	17624996.65	4941504.03	15.50	0	D	63	53.8	0.0	0.0	0.0	0.0	53.4	0.0	-3.0	0.0	0.0	12.0	0.0	0.0	-8.7
55	17624996.65	4941504.03	15.50	0	D	125	57.9	0.0	0.0	0.0	0.0	53.4	0.1	-2.7	0.0	0.0	15.5	0.0	0.0	-8.4
55	17624996.65	4941504.03	15.50	0	D	250	67.4	0.0	0.0	0.0	0.0	53.4	0.1	-2.8	0.0	0.0	19.5	0.0	0.0	-2.9
55	17624996.65	4941504.03	15.50	0	D	500	72.8	0.0	0.0	0.0	0.0	53.4	0.3	-2.8	0.0	0.0	22.9	0.0	0.0	-1.0
55	17624996.65	4941504.03	15.50	0	D	1000	75.0	0.0	0.0	0.0	0.0	53.4	0.5	-2.8	0.0	0.0	26.0	0.0	0.0	-2.2
55	17624996.65	4941504.03	15.50	0	D	2000	73.2	0.0	0.0	0.0	0.0	53.4	1.3	-2.8	0.0	0.0	27.3	0.0	0.0	-6.0
55	17624996.65	4941504.03	15.50	0	D	4000	74.0	0.0	0.0	0.0	0.0	53.4	4.3	-2.8	0.0	0.0	27.5	0.0	0.0	-8.5
55	17624996.65	4941504.03	15.50	0	D	8000	63.9	0.0	0.0	0.0	0.0	53.4	15.5	-2.8	0.0	0.0	27.6	0.0	0.0	-29.9
55	17624996.65	4941504.03	15.50	0	N	63	53.8	0.0	-3.0	0.0	0.0	53.4	0.0	-3.0	0.0	0.0	12.0	0.0	0.0	-11.7
55	17624996.65	4941504.03	15.50	0	N	125	57.9	0.0	-3.0	0.0	0.0	53.4	0.1	-2.7	0.0	0.0	15.5	0.0	0.0	-11.4
55	17624996.65	4941504.03	15.50	0	N	250	67.4	0.0	-3.0	0.0	0.0	53.4	0.1	-2.8	0.0	0.0	19.5	0.0	0.0	-5.9
55	17624996.65	4941504.03	15.50	0	N	500	72.8	0.0	-3.0	0.0	0.0	53.4	0.3	-2.8	0.0	0.0	22.9	0.0	0.0	-4.0
55	17624996.65	4941504.03	15.50	0	N	1000	75.0	0.0	-3.0	0.0	0.0	53.4	0.5	-2.8	0.0	0.0	26.0	0.0	0.0	-5.2
55	17624996.65	4941504.03	15.50	0	N	2000	73.2	0.0	-3.0	0.0	0.0	53.4	1.3	-2.8	0.0	0.0	27.3	0.0	0.0	-9.0
55	17624996.65	4941504.03	15.50	0	N	4000	74.0	0.0	-3.0	0.0	0.0	53.4	4.3	-2.8	0.0	0.0	27.5	0.0	0.0	-11.5
55	17624996.65	4941504.03	15.50	0	N	8000	63.9	0.0	-3.0	0.0	0.0	53.4	15.5	-2.8	0.0	0.0	27.6	0.0	0.0	-32.9
55	17624996.65	4941504.03	15.50	0	E	63	53.8	0.0	0.0	0.0	0.0	53.4	0.0	-3.0	0.0	0.0	12.0	0.0	0.0	-8.7
55	17624996.65	4941504.03	15.50	0	E	125	57.9	0.0	0.0	0.0	0.0	53.4	0.1	-2.7	0.0	0.0	15.5	0.0	0.0	-8.4
55	17624996.65	4941504.03	15.50	0	E	250	67.4	0.0	0.0	0.0	0.0	53.4	0.1	-2.8	0.0	0.0	19.5	0.0	0.0	-2.9
55	17624996.65	4941504.03	15.50	0	E	500	72.8	0.0	0.0	0.0	0.0	53.4	0.3	-2.8	0.0	0.0	22.9	0.0	0.0	-1.0
55	17624996.65	4941504.03	15.50	0	E	1000	75.0	0.0	0.0	0.0	0.0	53.4	0.5	-2.8	0.0	0.0	26.0	0.0	0.0	-2.2
55	17624996.65	4941504.03	15.50	0	E	2000	73.2	0.0	0.0	0.0	0.0	53.4	1.3	-2.8	0.0	0.0	27.3	0.0	0.0	-6.0
55	17624996.65	4941504.03	15.50	0	E	4000	74.0	0.0	0.0	0.0	0.0	53.4	4.3	-2.8	0.0	0.0	27.5	0.0	0.0	-8.5
55	17624996.65	4941504.03	15.50	0	E	8000	63.9	0.0	0.0	0.0	0.0	53.4	15.5	-2.8	0.0	0.0	27.6	0.0	0.0	-29.9
62	17624996.65	4941504.03	15.50	1	D	2000	73.2	0.0	0.0	0.0	0.0	55.2	1.6	-2.8	0.0	0.0	27.8	0.0	2.0	-10.5
62	17624996.65	4941504.03	15.50	1	D	4000	74.0	0.0	0.0	0.0	0.0	55.2	5.3	-2.8	0.0	0.0	27.8	0.0	2.0	-13.5
62	17624996.65	4941504.03	15.50	1	D	8000	63.9	0.0	0.0	0.0	0.0	55.2	18.9	-2.8	0.0	0.0	27.8	0.0	2.0	-37.2
62	17624996.65	4941504.03	15.50	1	N	2000	73.2	0.0	-3.0	0.0	0.0	55.2	1.6	-2.8	0.0	0.0	27.8	0.0	2.0	-13.6
62	17624996.65	4941504.03	15.50	1	N	4000	74.0	0.0	-3.0	0.0	0.0	55.2	5.3	-2.8	0.0	0.0	27.8	0.0	2.0	-16.5
62	17624996.65	4941504.03	15.50	1	N	8000	63.9	0.0	-3.0	0.0	0.0	55.2	18.9	-2.8	0.0	0.0	27.8	0.0	2.0	-40.2
62	17624996.65	4941504.03	15.50	1	E	2000	73.2	0.0	0.0	0.0	0.0	55.2	1.6	-2.8	0.0	0.0	27.8	0.0	2.0	-10.5
62	17624996.65	4941504.03	15.50	1	E	4000	74.0	0.0	0.0	0.0	0.0	55.2	5.3	-2.8	0.0	0.0	27.8	0.0	2.0	-13.5
62	17624996.65	4941504.03	15.50	1	E	8000	63.9	0.0	0.0	0.0	0.0	55.2	18.9	-2.8	0.0	0.0	27.8	0.0	2.0	-37.2

vert. Area Source, ISO 9613, Name: "West Wing - West PTACs", ID: "PTAC_WestWing_West"																				
Nr.	X	Y	Z	Refl.	DEN	Freq.	Lw	l/a	Optime	K0	Di	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	Lr
	(m)	(m)	(m)			(Hz)	dB(A)	dB	dB	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)
66	17624903.38	4941494.25	13.50	0	D	125	32.9	11.3	0.0	0.0	0.0	43.1	0.0	-2.0	0.0	0.0	0.0	0.0	0.0	3.2
66	17624903.38	4941494.25	13.50	0	D	250	46.9	11.3	0.0	0.0	0.0	43.1	0.0	-2.2	0.0	0.0	0.0	0.0	0.0	17.3
66	17624903.38	4941494.25	13.50	0	D	500	46.9	11.3	0.0	0.0	0.0	43.1	0.1	-2.2	0.0	0.0	0.0	0.0	0.0	17.3
66	17624903.38	4941494.25	13.50	0	D	1000	54.2	11.3	0.0	0.0	0.0	43.1	0.1	-2.2	0.0	0.0	0.0	0.0	0.0	24.5
66	17624903.38	4941494.25	13.50	0	D	2000	50.7	11.3	0.0	0.0	0.0	43.1	0.4	-2.2	0.0	0.0	0.0	0.0	0.0	20.8
66	17624903.38	4941494.25	13.50	0	D	4000	45.0	11.3	0.0	0.0	0.0	43.1	1.3	-2.2	0.0	0.0	0.0	0.0	0.0	14.2
66	17624903.38	4941494.25	13.50	0	D	8000	34.2	11.3	0.0	0.0	0.0	43.1	4.7	-2.2	0.0	0.0	0.0	0.0	0.0	-0.0
66	17624903.38	4941494.25	13.50	0	N	125	32.9	11.3	-3.0	0.0	0.0	43.1	0.0	-2.0	0.0	0.0	0.0	0.0	0.0	0.1
66	17624903.38	4941494.25	13.50	0	N	250	46.9	11.3	-3.0	0.0	0.0	43.1	0.0	-2.2	0.0	0.0	0.0	0.0	0.0	14.3
66	17624903.38	4941494.25	13.50	0	N	500	46.9	11.3	-3.0	0.0	0.0	43.1	0.1	-2.2	0.0	0.0	0.0	0.0	0.0	14.3
66	17624903.38	4941494.25	13.50	0	N	1000	54.2	11.3	-3.0	0.0	0.0	43.1	0.1	-2.2	0.0	0.0	0.0	0.0	0.0	21.5
66	17624903.38	4941494.25	13.50	0	N	2000	50.7	11.3	-3.0	0.0	0.0	43.1	0.4	-2.2	0.0	0.0	0.0	0.0	0.0	17.8
66	17624903.38	4941494.25	13.50	0	N	4000	45.0	11.3	-3.0	0.0	0.0	43.1	1.3	-2.2	0.0	0.0	0.0	0.0	0.0	11.2