Noise Impact Assessment

Planning Proposal
to rezone Tuckombil Quarry 540 Gap Road Alstonville to an Innovation Precinct

HEALTH SCIENCE ENVIROMENTAL EDUCATION
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Planning Proposal
to rezone Tuckombil Quarry 540 Gap Road Alstonville to an Innovation Precinct

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1. Introduction

1.1 Purpose

Tim Fitzroy & Associates (TFA) has been engaged by Ballina Shire Council to undertake a Noise Impact Assessment to support a Planning Proposal (PP) to accompany a Rezoning Application for an Innovation Precinct to be located at the Tuckombil Quarry 540 Gap Road Alstonville.

The proposal is to rezone the site to facilitate its use for a combination of high technology industrial uses, such as film studios and community recreation. Details of the proposed future use are not fully developed. Council is currently in discussions with Byron Studios Pty Ltd regarding their proposal to undertake a staged development that would establish film production facilities at the site.

1.2 Applicable Noise Criteria

Protection of the Environment Operations Act 1997 (POEO Act) and the Protection of the Environment Operations (Noise Control) Regulation 2008 (Noise Control Regulation).

The Protection of the Environment Operations Act 1997 *(*POEO Act) and the Protection of the Environment Operations (Noise Control) Regulation 2008 (Noise Control Regulation) provide the main legal framework and basis for managing unacceptable noise.

The POEO Act:

- Identifies the authority responsible for regulating noise (s. 6 of the Act)
- Defines ‘noise’ and ‘offensive noise’ (Dictionary in the Act)
- Provides a range of regulatory tools to manage noise, including Noise Control Notices, Prevention Notices, Noise Abatement Directions and Noise Abatement Orders.

Depending on the circumstances, the Noise Control Regulation may require an assessment of a noise’s audibility, time of occurrence, duration or offensiveness. The POEO Act does not always require noise to be measured to determine whether it is offensive. However, noise measurement can help in deciding what action, if any, is necessary.

1.2.1 Offensive Noise

Depending on the type of noise under consideration, noise can be considered as offensive in three ways according to its:

- Audibility
- Duration
- Inherently offensive characteristics.

Council must consider a range of factors to determine whether the noise is offensive, including the following:

- The loudness of the noise, especially compared with other noise in the area
- The character of the noise
- The time and duration of the noise
- Whether the noise is typical for the area
- How often the noise occurs
- Hhe number of people affected by the noise.

1.2.2 Intrusive Noise

Noise is identified as 'intrusive' if it is noticeably louder than the background noise and considered likely to disturb or interfere with those who can hear it.

1.2.3 Noise Policy for Industry

Despite the introduction of the new *Noise Policy for Industry* (NSW EPA 2017). The new Noise Policy for Industry provides a framework and criteria for the consistent assessment of the impact and control of noise from industrial developments.

It is specifically for large industrial developments that require development approval from the Department of Planning and Environment under the *Environmental Planning and Assessment Act 1979* and/or that the NSW Environment Protection Authority (EPA) regulates, such as mines, quarries and other large industries listed in Schedule 1 of the *Protection of the Environment Operations Act 1997*.

It also has information that may be useful for assessing and controlling noise from smaller industrial premises that are typically regulated by councils.

In general, the types of premises dealt with in the policy include:

- Industrial premises
- Extractive industry premises
- Commercial premises (generally limited to noise from heating, ventilation, air conditioning and refrigeration, and energy generation equipment)
- Warehousing premises
- Maintenance and repair facility premises
- Intensive agricultural and livestock premises, for example, cattle feedlots and poultry farms
- Utility generation/reticulation service premises, for example, energy generation from sources other than wind.

The policy can also be used to assess noise from mechanical plant and equipment; industrial and commercial processes; and ***vehicle movements within the premises and/or on private roads***.

The policy does not apply to:

- Vehicles associated with an industrial premise that are on a public road
- Transportation corridors (roadways, railways, waterways and air corridors)
- Noise from sporting facilities, including motor sport facilities
- Construction activities
- Noise sources covered by regulations (domestic/neighbourhood noise)
- Blasting activities
- Shooting ranges
- Internal or occupational noise within any workplace regulated by SafeWork NSW

- Wind farms
- Amplified music/patron noise from premises including those licensed by Liquor and Gaming NSW.

Noise associated with the commercial premises is regulated by the NSW "Noise Policy for Industry". The assessment procedure has the following components to determine the project noise trigger levels:

- Intrusiveness Noise Level (LAeq, 15 min): the limit criteria for this assessment is as follows:
    - LAeq, 15 min ≤ rating background level + 5 dB;
- Amenity Noise Level (LAeq, period): this is achieved by ensuring that the proposed development complies with the noise limit criteria set in Table 2.2 of the Policy. As the area is within an *Urban Area* (as defined in Table 2.3 of the Policy), the following limits apply:

Table 2.2: Amenity noise levels.

Receiver	**Noise amenity area**	**Time of day**	**L_{Aeq}, dB(A)**
(see Table 2.3 to determine which residential receiver category applies)			**Recommended amenity noise level**
Residential	Rural	Day	50
		Evening	45
		Night	40
	Suburban	Day	55
		Evening	45
		Night	40
	Urban	Day	60
		Evening	50
		Night	45

In accordance with the NPfI (EPA, 2017) the surrounding land use in question is considered to be of Suburban nature. The INP describes suburban noise as *"an area that has local traffic with characteristically intermittent traffic flows or with some limited commerce or industry. This area often has the following characteristics:*

- Decreasing noise levels in the evening period (1800–2200); and/or
- Evening ambient noise levels defined by the natural environment and infrequent
- Human *activity.*

This area may be located in either a rural, rural-residential or residential zone, as defined on an LEP or other planning instrument.

To limit continuing increases in noise levels, the maximum noise level within an area from industrial noise sources should not normally exceed the criteria in Table 2.1 of the NSW EPA Industrial Noise Policy. These levels represent current best practice for assessing industrial noise sources, based on research and a review of assessment practices used overseas and within Australia. In accordance with Table 2.1 (NSW EPA, 2017) the amenity criteria for a "suburban receiver" is presented in **Table 3.4** below

Table 1.1 Amenity Criteria for Suburban Receiver

Time Period	*Amenity Criterion*
Daytime (7am-6pm Mon-Sat; 8am-6pm Sun)	55-60dB(A)
Evening (6pm-10pm)	45-50 dB(A)
Night (remaining periods)	40-45 dB(A)

The NPfI (EPA, 2017)provides guidance on the controls and measures to manage industrial noise and the potential impacts on suburban receivers.

1.2.4 Noise Guideline for Local Councils

The NSW Noise Guide for Local Government provides guidance relating to noise emissions from activities that are not specifically the responsibility of the NSW EPA.

1.3 Overview of Noise Assessment

This noise assessment establishes the existing background noise levels at a position representative of the nearest sensitive receptor. **Illustration 2.1** provides the location of the noise logging site.

The noise assessment process included the following components:

- Discussions with Council staff;
- Measurement and determination of the existing background and ambient noise levels;
- A description and the results of a computer model prepared to predict the impact of the expansion of operations on the environment. The computer models were constructed in Soundplan noise modelling and prediction software. The results of the modelling are used to assess the noise impact of operations on existing neighbouring residences; and
- Consideration of what feasible and reasonable noise mitigation measures ought to be considered where the project-specific noise levels are exceeded.

1.4 Site Description

The site is located at 540 Gap Rd, Alstonville, also known as Lot 22 DP 1243105. The site is zoned DM (Deferred Matter) in the Ballina Local Environmental Plan (BLEP) 2012, therefore BLEP 1987 continues to apply. It is zoned 1(e) Rural (Extractive and Mineral Resources) under the Ballina 1987 LEP.

The property has an area of 23 ha and was operated as a full-time hard rock quarry until 2016. All quarrying activities ceased at the site in mid-2020. Two tenants occupy the area surrounding the central quarry void. Bitupave Limited (Boral) occupies a leasehold lot in the south with frontage to Gap Road (Lot 21 DP 1243105) and Ron Southon Pty Ltd in the northwest (Lot 3 DP 1130300).

The site comprises a central quarry void, various structures including buildings, offices and sheds, hardstand areas, internal access roads and vegetation interspersed throughout.

Currently, the only access to the site and the two subsidiary lots is via Gap Road, approximately 240 m east of the intersection with Teven Road. The location of the site is shown in **Illustration 1.1**.

1.4.1 Climate

Weather monitoring was undertaken of the Ballina Weather Station over the monitoring period. Rain events and wind greater than 18km/hr were excluded from the noise monitoring results

1.4.2 Surrounding Land use

The site is surrounded by large lot rural residential properties to the north, south and west, and the Gap Road Sports Field adjoining the property to the east. The village area of Alstonville is approximately 220m to the west and 300 m to the south.

Illustration 1.1 Site Locality

2. Instrumentation

2.1 Noise Monitoring Equipment

Tim Fitzroy & Associates utilised the following equipment in this Noise Impact Assessment:

- A Type 1, 1/3 Octave Band Larson Davis Noise Meter with sound recording and event trigger features.

Calibration of the noise monitoring equipment was undertaken prior to use. To ensure no significant tonal drift occurred over the monitoring period, the calibration was checked before and after each measurement period.

2.2 Monitoring Methodology

Consistent with the purpose of the acoustic assessment, the aim of the noise monitoring process was to establish:

- the existing background and ambient noise at the site;
- consideration of potential noise impacts on from operational activities on surrounding residences; and
- consideration of what feasible and reasonable noise mitigation measures ought to be considered where the project-specific noise levels are exceeded.

Long term noise monitoring was undertaken to establish the existing background noise environment at the subject site. Ambient sound pressure levels were measured generally in accordance with Australian Standard AS1055.1:1997 - 'Acoustics- Description and measurement of environmental noise - Part 1: General procedures.

A Type 1, 1/3 Octave Band Larson Davis Noise Meter was placed at a measurement location NML1 to monitor the ambient noise levels, in continuous 15-minute intervals from 31 October to 6 November 2022 to gather information of background noise during the day, evening and night. The microphone at each location was 1.35m above ground level.

The noise monitoring location was chosen as a secure location that represents the existing local noise environment. **Illustration 2.1** shows the location of the noise meter.

Illustration 2.1 Noise Monitoring Location

3. Noise Assessment

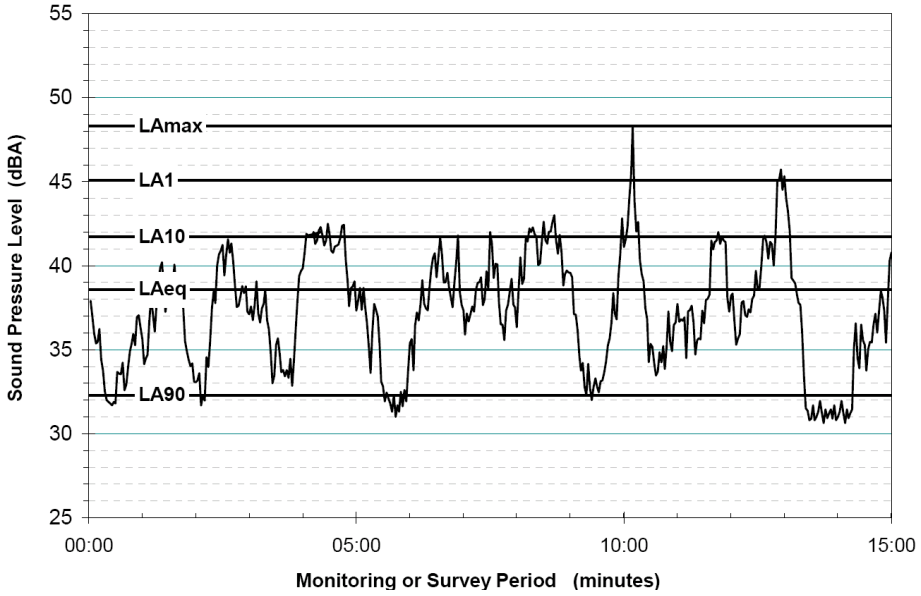
3.1 Acoustical Terms

This report makes reference to a number of different acoustical terms, particularly the L_{a01}, L_{Aeq}, L_{Amax}, L_{A10} and L_{A90} descriptors. Each descriptor is briefly explained below.

- The L_{A01} means the sound level exceeded for 1% of a specified time period. The LA1 level is an indicator of the average maximum level of non-steady sound (e.g. impulsive noise such as hammering).
- The L_{Aeq} is essentially the average sound level. It is defined as the steady sound level that contains the same amount of acoustical energy at a given time; varying sound over a defined measurement period.
- The L_{Amax} noise level is the maximum A-weighted noise level.
- The L_{A10} is the A-weighted sound pressure level exceeded 10% of a given measurement period and is utilised normally to characterise typical maximum noise levels.
- The L_{A90} noise level is the A-weighted sound pressure level exceeded 90% of a given measurement period and is representative of the average minimum background sound level (in the absence of the source under consideration), or simply the “background” level.

A graphical display of typical noise indices and the relationship between each noise descriptor is provided below in Figure 3.1.

Figure 3.1 Graphical Display of Typical Noise Indices



3.2 Existing Noise Environment

3.2.1 Background Noise ML1

The primary noise observed while on site during the daytime emanated from vehicular traffic along Teven Road. Traffic along these roads occurs regularly throughout the day. Other observed noises observed while on site included bird calls.

A summary of the results obtained from analysis of data from the background day, evening and night time noise monitoring is provided below in **Table 3.2**. Full copies of the raw data for the monitoring site can be found in **Appendix D.**

Table 3.2 Background Sound Pressure Levels

Period ***(1)***	***$L_{Aeq(period)}$**** ***(2)***	***RBL**** ***(3)***	***Amenity Criteria*** ***(4)***	***RBL+5 dB*** ***(5)***	***Project Specific Noise Criteria (PSNC)*** ***= lowest of column (4) and (5)***
Day	*48.5*	*37*	*55*	*40*	***37***
Evening	*53.4*	*35*	*45*	*35*	***35***
Night	*46*	*31*	*40*	*35*	***31***

* Minimum background level for day = 35dB(A)
**Minimum background level for evening and night = 30dB(A)

Project Noise Trigger Levels

The amenity and intrusiveness noise levels were determined as shown in **Table 3.3**.

Table 3.3 Amenity and Intrusiveness Noise Levels

Period	**Intrusiveness noise level[1]**	**Project amenity noise level[2]**
Daytime	42 dB $L_{Aeq\ 15min}$ (37 + 5)	48 $L_{Aeq\ 15min}$ (50 - 5 +3)
Evening	40 dB $L_{Aeq\ 15min}$ (35 + 5)	43 $L_{Aeq\ 15min}$ (45 - 5 + 3)
Night time	36 dB $L_{Aeq\ 15\ min}$ (31 + 5)	38 $L_{Aeq\ 15min}$ (40 - 5 + 3)

Notes:
1. Intrusiveness noise level is $L_{Aeq,15min}$ RBL + 5 (Section 2.1 (EPA 2017).
2. Project amenity noise level (ANL) is suburban ANL (Table 2.2, EPA 2017) minus 5 dB(A) plus 3 dB(A) to convert from a period level to a 15-minute level (dB = decibel; dB[A] = decibel [A-weighted]; RBL = rating background noise level).

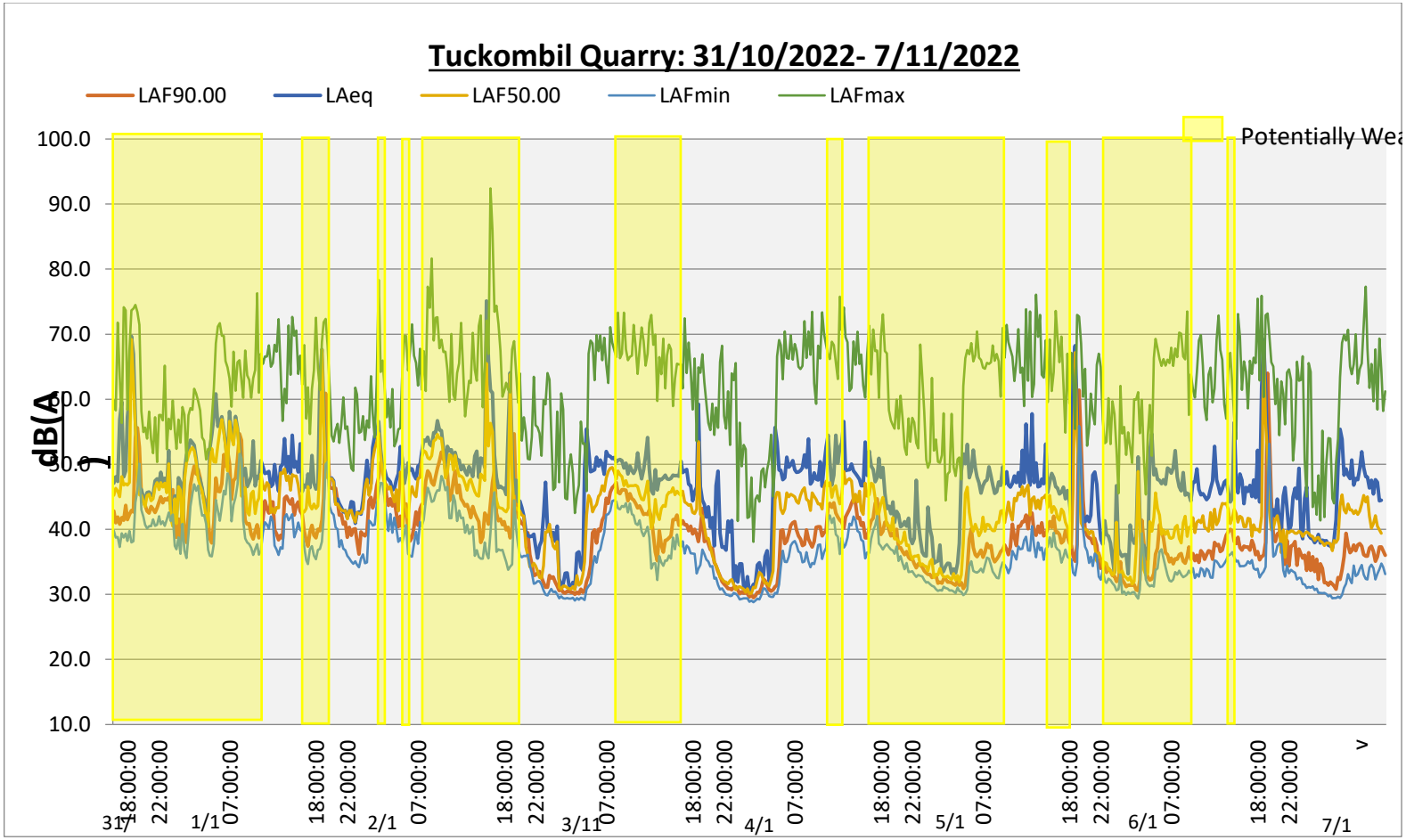
The project noise trigger level is the lower (that is, the most stringent) value of the intrusiveness and amenity noise levels. Therefore, the project noise trigger levels are as follows:

- **daytime: $L_{Aeq,15min}$ 42 dB(A)**
- **evening: $L_{Aeq,15min}$ 40 dB(A)**
- **night-time: $L_{Aeq,15min}$ 36 dB(A).**

The ambient and background noise levels measured at ML1 over the monitoring period are presented in **Figure 3.2**.

As can be seen from the above table, the project specific noise criteria are determined by the intrusive noise criteria. Section 3.3 of the Industrial Noise Policy allows consideration of the shoulder period between the Day, Evening and Night period.

Figure 3.2 **Ambient and Background Noise Levels at Measurement Location ML1**



3.3 Noise Model

Noise levels from the proposed redevelopment at the former Tuckombil Quarry, 540 Gap Road, Alstonville, have been predicted to the closest sensitive receptors using SoundPLAN v8.0 and the prediction methodology Concawe. Sound power levels used in the noise model have been sourced from the SoundPlan Emission Library.

All prediction models have limits to their accuracy of prediction. This is due to the inherent nature of the calculation algorithms that go into the design of the models, the assumptions made in the implementation of the model, and the availability of good source sound power data. Various researchers have suggested that an un-calibrated model has an accuracy of ±5 dB while a calibrated model has an accuracy of ±2 dB. Calibration means that the model has been established with reference to measured sound levels at a receiver, known source levels and tightly defined propagation variables (wind speed and direction, for example). Alternatively, a series of predictions with different programs but the same assumption variables can be used for verification purposes.

3.3.1 Noise Source Levels

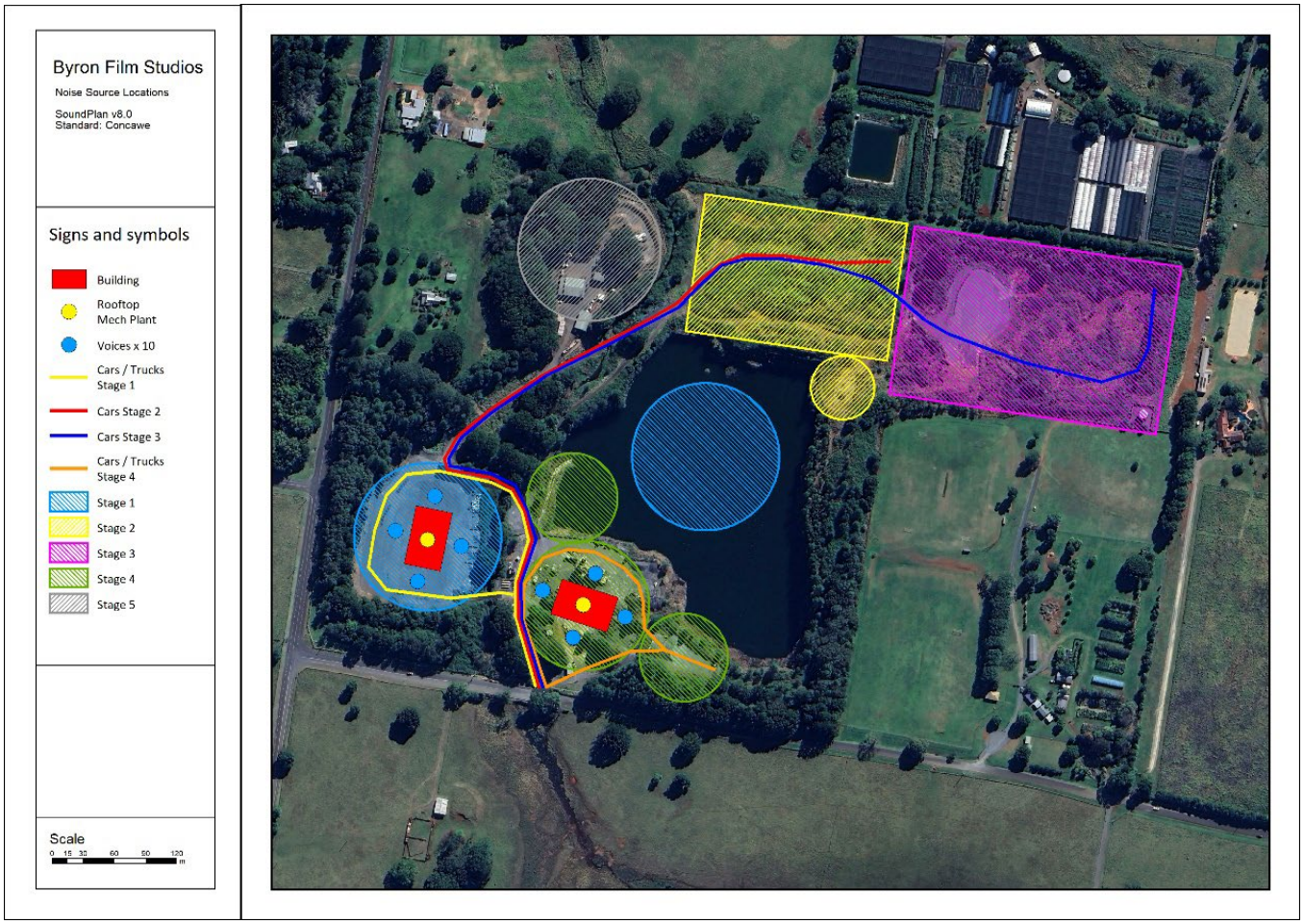
Although there are no detailed plans available at this time, it is understood that the primary noise sources at the site are expected to be vehicle movements. Noise from outdoor voices, noise from within nominal buildings, and noise from mechanical plant at the nominal buildings, is also included in the model. Noise source levels used in the model are presented in **Table 3.4** and the location of noise sources is shown in **Illustration 3.1** and **3.2**. All noise sources from Stages 1 to Stage 4 are modelled as operating simultaneously. It is understood that Stage 5 will be assessed as a future application.

Table 3.4 Noise Sources

Description	Sum dB(A)	Timing for Leq			
		Stage 1	Stage 2	Stage 3	Stage 4
Building internal level (internal SPL, Leq) - internal SPL emanates through all walls and roof with a nominal transmission loss of 32 Rw.	85	Day: 100% Evening: 100% Night: 100%	N/A	N/A	Day: 100% Evening: 100% Night: 100%
Outdoor patrons, group of 10 (sound power level, Leq)	79	Day: 100% Evening: 100% Night: 100%	N/A	N/A	Day: 100% Evening: 100% Night: 100%
Mechanical Plant outdoor unit, large (sound power level, Leq)	82	Day: 100% Evening: 100% Night: 100%	N/A	N/A	Day: 100% Evening: 100% Night: 100%
Car movement (sound power level per metre, Leq, moving source)	85	175 vph	40 vph	100 vph	175 vph
Truck movement (sound power level per metre, Leq, moving source)	94	25 vph	N/A	N/A	25 vph

Note: Stage 5 is understood to be assessed in a future application.

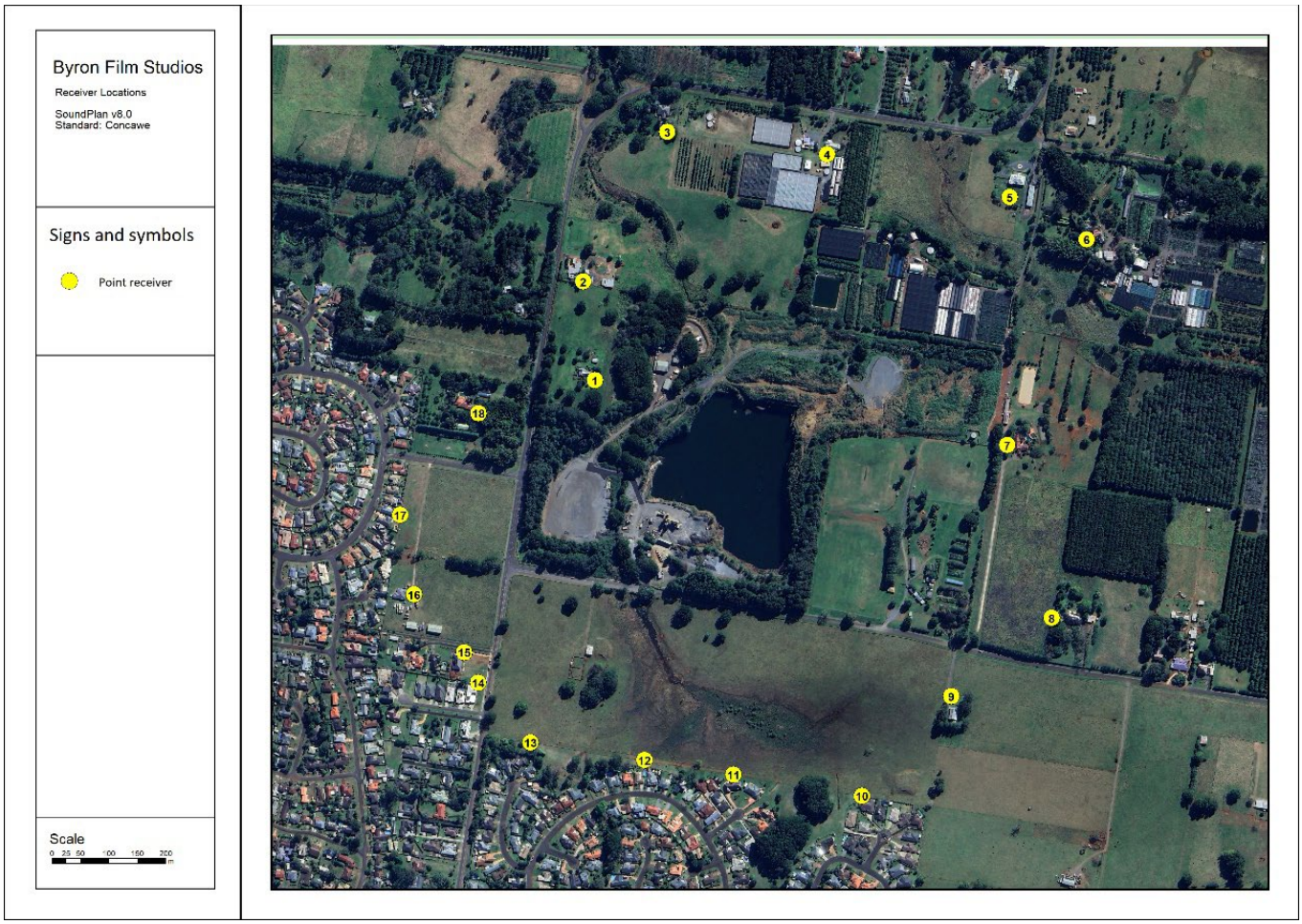
Illustration 3.1 Location of noise sources (zoomed out)



3.3.2 Sensitive Receptors

Receptor points have been positioned at the closest nearby dwellings, these receiver locations are presented in **Illustration 3.2**. Receivers are placed approximately 30m from each dwelling in the direction of the development, or the property boundary if less than 30m.

Illustration 3.2 Location of receptors at nearby sensitive dwellings



3.3.3 Weather Conditions

Noise sources at the site are understood to include car and truck movement, forklift movement, front end loader moveme Noise modeling has been made using the prediction methodology Concawe which may be used to present both Standard and Noise-enhancing meteorological conditions.

Standard meteorological conditions are represented in the SoundPlan software with a stability class of D and wind speed of 0.5m/s source-to-receiver.
Noise-enhancing meteorological conditions for daytime and evening are represented in the SoundPlan software with a stability class of D and wind speed of 3m/s source-to-receiver.
Noise-enhancing meteorological conditions for night-time are represented in the SoundPlan software with a stability class of F and wind speed of 2m/s source-to-receiver.

To present a conservative assessment, noise modelling is undertaken under noise-enhancing meteorological conditions.

3.3.5 Model Verification

The noise model presents results for a future scenario with nominal noise source information. The verification of the predicted noise levels is therefore not possible, and an uncertainty of ±5dB(A) is assumed.

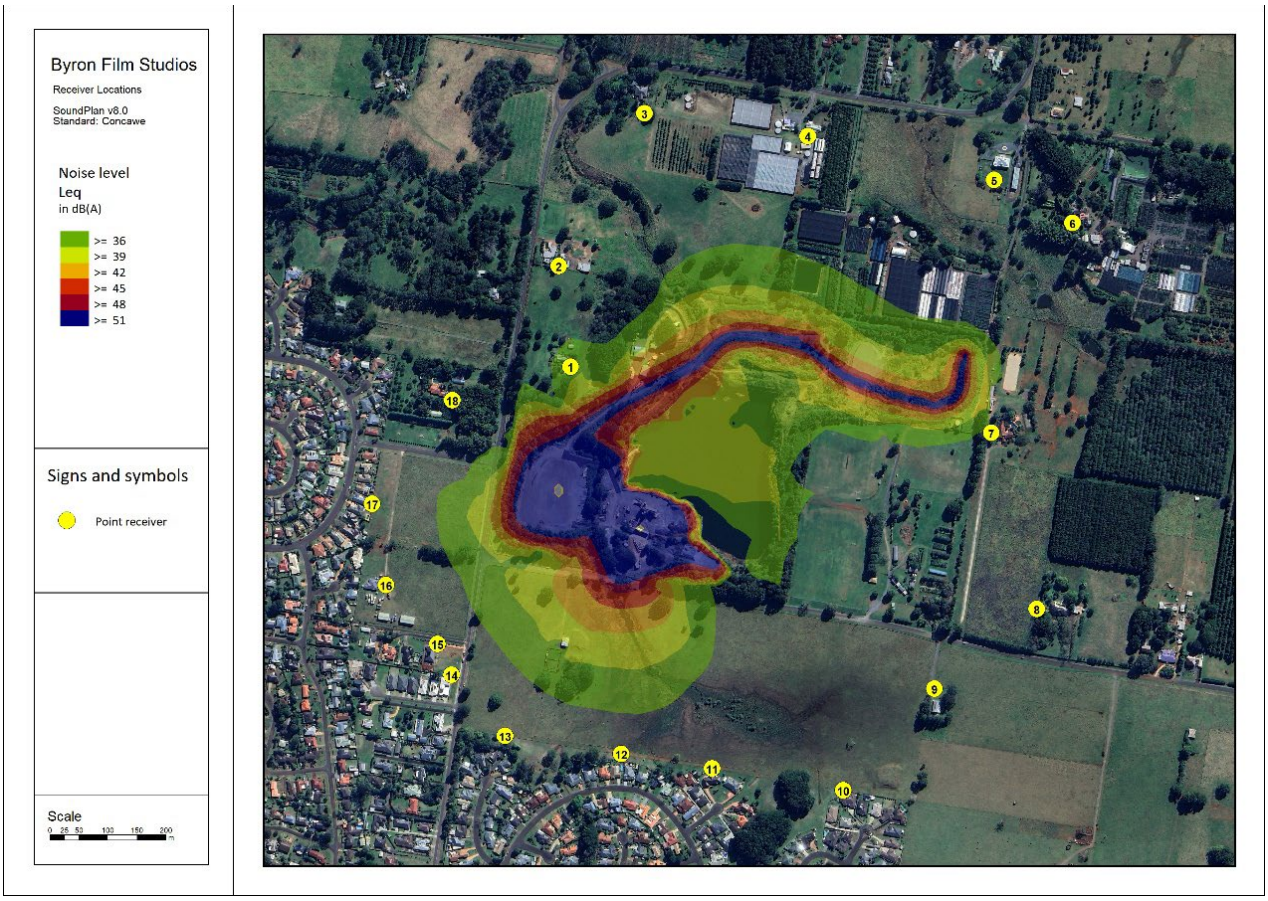
3.3.6 Calculation of Noise Levels

Noise levels from the site have been predicted to each receptor with all noise sources operating simultaneously. Predicted noise levels include screening from topography, with topographic information sourced from Geoscience Australia. The predicted noise level is assessed to all time periods. Predicted noise levels and assessment are presented in **Table 3.5**. Visual noise contours are presented in **Illustration 3.3**.

Table 3.5 Predicted noise levels at external receivers, all noise sources. Levels are in dB(A) Leq 15-minute, free-field

Receiver	Noise Level (dB(A) Leq)	Assessment		
		Day (42)	Evening (40)	Night (36)
1	38	Pass	Pass	+2
2	31	Pass	Pass	Pass
3	28	Pass	Pass	Pass
4	29	Pass	Pass	Pass
5	28	Pass	Pass	Pass
6	27	Pass	Pass	Pass
7	36	Pass	Pass	Pass
8	28	Pass	Pass	Pass
9	26	Pass	Pass	Pass
10	28	Pass	Pass	Pass
11	33	Pass	Pass	Pass
12	34	Pass	Pass	Pass
13	33	Pass	Pass	Pass
14	33	Pass	Pass	Pass
15	33	Pass	Pass	Pass
16	32	Pass	Pass	Pass
17	32	Pass	Pass	Pass
18	34	Pass	Pass	Pass

Illustration 3.3 Noise contours at 1.5m above ground, all noise sources. Levels are in dB(A) Leq 15-minute, including façade effects where applicable.

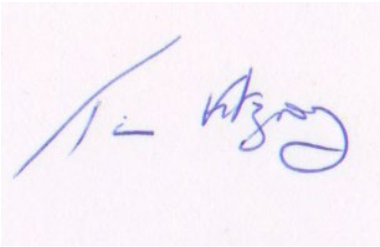


4. Recommendations & Conclusion

It is concluded that –

- A noise model has been constructed to predict the propagation of anticipated noise sources from the proposed development. The model includes shielding effects from existing structures, proposed structures, and topography. Topographic information included in the model was sourced from Geoscience Australia.
- Given the assumptions presented in the noise modelling, cumulative noise levels from anticipated activities at the proposed development are predicted to be within the Project Noise Trigger Level during the day and evening periods at all sensitive receptors.
- An exceedance of 2 dB(A) is predicted at Receptor 1 during the night period. This exceedance is based on a scenario that may overstate the activities that will occur at night, and therefore the exceedance is not considered to be significant.

This Noise Impact Assessment report has been prepared by *Tim Fitzroy of Tim Fitzroy & Associates*. Noise modelling was undertaken by *Matt Dever, Noise Measurement Services, Brisbane*.



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References

NSW EPA 2017 Noise Policy for Industry, Environment, Protection Authority, Sydney

NSW DECC, 2009 Noise Guide for Local Government, Department of Environment, Climate Change & Water, Sydney

World Health Organisation 1999 Guidelines for Community Noise (Editor B Berglund et al Geneva Switzerland 1999)

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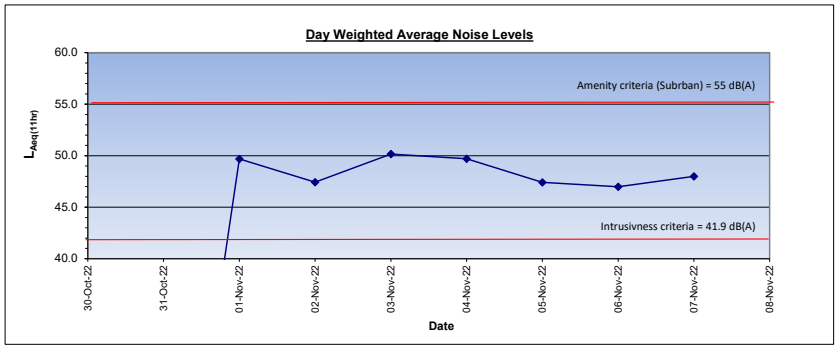
A Concept Plan

B Noise Data

Noise Assessment

Day Period	7am to 6pm		
amenity criteria	55	dB(A)	Suburban
Intrusiveness criteria (RBL+ 5)	41.9	dB(A)	
Interim Construction Noise Guidelines (RBL + 10)	46.9	dB(A)	
Average LaeqDay 07:00-18:00	48.5	dB(A)	



Day	Date	$L_{Aeq(day)}$	ABL	RBL
Monday	31/10/2022	Nil	Nil	
Tuesday	1/11/2022	49.7	39.1	
Wednesday	2/11/2022	47.4	38.0	
Wednesday	3/11/2022	50.2	35.2	36.9
Thursday	4/11/2022	49.7	37.5	
Friday	5/11/2022	47.4	36.9	
Saturday	6/11/2022	47.0	35.4	
Sunday	7/11/2022	48.0	35.1	

no.	Date	time	$L_{Aeq(15\ minute)}$	$L_{A90(15minute)}$	$L_{A90(15min)}$ assending order	$10^{((L_{Aeq(15\ minute)}/10))}$	period sums	hrly sums	hrly Laeq
	2022-10-31	16:15:00	48.6	42.8	40.8			0	
	2022-10-31	16:30:00	47.8	41.0	41.0				#NUM!
	2022-10-31	16:45:00	47.1	41.9	41.4				
	2022-10-31	17:00:00	48.1	40.8	41.5				
	2022-10-31	17:15:00	47.4	41.8	41.8			0	
	2022-10-31	17:30:00	56.9	41.4	41.9				#NUM!
	2022-10-31	17:45:00	59.6	43.7	42.8				
	2022-10-31	18:00:00	48.1	41.5	43.7				
							0		
	2022-11-01	07:15:00	50.0	44.6	37.4				
	2022-11-01	07:30:00	58.1	47.5	38.3				
	2022-11-01	07:45:00	54.7	47.9	38.4				
	2022-11-01	08:00:00	53.8	50.8	38.5			0	#NUM!
	2022-11-01	08:15:00	57.4	54.7	38.6				
	2022-11-01	08:30:00	55.6	53.7	38.7				
	2022-11-01	08:45:00	52.7	45.1	38.7				
1	2022-11-01	09:00:00	49.6	41.3	38.8	92198		92198	43.6
2	2022-11-01	09:15:00	48.3	40.8	39.1	67369			
3	2022-11-01	09:30:00	49.4	40.9	39.1	86409			
4	2022-11-01	09:45:00	46.6	39.2	39.2	45306			
5	2022-11-01	10:00:00	47.3	38.5	39.3	53494		252578	48.0
6	2022-11-01	10:15:00	48.1	39.7	39.6	65108			
7	2022-11-01	10:30:00	53.6	40.7	39.7	228635			
8	2022-11-01	10:45:00	46.7	38.7	39.7	46509			
9	2022-11-01	11:00:00	48.2	39.7	39.7	65464		405716	50.1
10	2022-11-01	11:15:00	47.9	41.5	39.8	61076			
11	2022-11-01	11:30:00	50.6	44.4	39.9	113740			
12	2022-11-01	11:45:00	49.7	43.2	40.0	92458			
13	2022-11-01	12:00:00	48.6	42.5	40.6	72041		339316	49.3
14	2022-11-01	12:15:00	48.7	44.2	40.7	73729			
15	2022-11-01	12:30:00	48.9	44.2	40.8	77665			
16	2022-11-01	12:45:00	46.6	39.9	40.8	45300			
17	2022-11-01	13:00:00	46.9	39.3	40.9	49221		245915	47.9
18	2022-11-01	13:15:00	50.0	38.4	41.1	99008			
19	2022-11-01	13:30:00	47.6	39.1	41.3	57187			
20	2022-11-01	13:45:00	45.9	38.6	41.4	38895			
21	2022-11-01	14:00:00	49.7	44.8	41.5	92401		287491	48.6
22	2022-11-01	14:15:00	50.0	45.1	42.2	99205			
23	2022-11-01	14:30:00	53.9	44.4	42.2	246939			
24	2022-11-01	14:45:00	48.8	43.9	42.3	75509			
	2022-11-01	15:00:00	51.2	44.7	42.3			421653	50.2
	2022-11-01	15:15:00	48.6	42.2	42.5				
25	2022-11-01	15:30:00	54.5	43.7	42.8	279413			
26	2022-11-01	15:45:00	49.6	44.2	43.2	90254			
	2022-11-01	16:00:00	50.4	42.8	43.7			369667	49.7

	2022-11-01	16:15:00	48.8	42.3	43.9				
	2022-11-01	16:30:00	53.2	39.7	44.2				
	2022-11-01	16:45:00	45.8	38.3	44.2				
	2022-11-01	17:00:00	46.8	37.4	44.2			0	#NUM!
	2022-11-01	17:15:00	46.5	39.6	44.3				
	2022-11-01	17:30:00	48.5	40.6	44.4				
	2022-11-01	17:45:00	46.4	39.1	44.4				
	2022-11-01	18:00:00	51.4	38.7	44.6			0	#NUM!
							2414535		
1	2022-11-02	07:15:00	47.7	43.1	38.0	59553			
	2022-11-02	07:30:00	49.8	43.8	38.8				
	2022-11-02	07:45:00	49.9	44.1	40.7				
	2022-11-02	08:00:00	51.9	47.4	40.8			59553	41.7
	2022-11-02	08:15:00	53.7	49.0	41.2				
	2022-11-02	08:30:00	53.5	48.5	41.2				
	2022-11-02	08:45:00	54.2	47.2	41.3				
	2022-11-02	09:00:00	53.1	46.8	41.6			0	#NUM!
	2022-11-02	09:15:00	52.8	48.2	41.8				
	2022-11-02	09:30:00	54.9	49.4	41.8				
	2022-11-02	09:45:00	54.9	50.5	42.0				
	2022-11-02	10:00:00	56.7	51.9	42.5			0	#NUM!
	2022-11-02	10:15:00	55.3	50.8	42.5				
	2022-11-02	10:30:00	55.2	50.4	42.5				
	2022-11-02	10:45:00	52.5	48.7	42.9				
	2022-11-02	11:00:00	49.2	44.4	43.1			0	#NUM!
	2022-11-02	11:15:00	52.7	45.2	43.5				
	2022-11-02	11:30:00	52.1	47.5	43.6				
	2022-11-02	11:45:00	52.2	49.0	43.8				
	2022-11-02	12:00:00	50.1	45.6	43.8			0	#NUM!
	2022-11-02	12:15:00	51.8	46.8	44.0				
	2022-11-02	12:30:00	50.6	44.7	44.1				
	2022-11-02	12:45:00	50.7	44.2	44.2				
	2022-11-02	13:00:00	49.2	43.6	44.4			0	#NUM!
	2022-11-02	13:15:00	49.8	43.8	44.7				
	2022-11-02	13:30:00	49.0	42.9	45.2				
	2022-11-02	13:45:00	48.3	41.8	45.6				
	2022-11-02	14:00:00	49.7	43.5	46.8			0	#NUM!
	2022-11-02	14:15:00	49.0	42.5	46.8				
	2022-11-02	14:30:00	48.1	41.8	47.2				
	2022-11-02	14:45:00	51.3	41.2	47.2				
	2022-11-02	15:00:00	52.0	38.0	47.4			0	#NUM!
	2022-11-02	15:15:00	48.0	38.8	47.5				
	2022-11-02	15:30:00	50.9	42.5	48.2				
	2022-11-02	15:45:00	50.8	42.0	48.5				
	2022-11-02	16:00:00	49.5	40.8	48.7			0	#NUM!
	2022-11-02	16:15:00	75.1	44.0	49.0				
	2022-11-02	16:30:00	66.0	47.2	49.0				
	2022-11-02	16:45:00	61.4	49.1	49.1				
	2022-11-02	17:00:00	61.0	42.5	49.4			0	#NUM!
	2022-11-02	17:15:00	51.4	41.3	50.4				
2	2022-11-02	17:30:00	48.0	41.6	50.5	62536			
3	2022-11-02	17:45:00	46.4	40.7	50.8	43699			
	2022-11-02	18:00:00	46.6	41.2	51.9			106235	44.2
							165788		
1	2022-11-03	07:15:00	48.5	44.0	35.2	70160			
2	2022-11-03	07:30:00	52.0	45.7	36.5	156789			
3	2022-11-03	07:45:00	51.3	46.4	36.5	135766			
4	2022-11-03	08:00:00	51.2	46.7	37.6	132202		494916	50.9
5	2022-11-03	08:15:00	50.9	47.2	38.3	122927			
	2022-11-03	08:30:00	51.1	45.7	38.4				
	2022-11-03	08:45:00	50.3	45.5	38.7				
	2022-11-03	09:00:00	50.6	46.1	39.0			122927	44.9
	2022-11-03	09:15:00	50.7	46.1	39.2				
	2022-11-03	09:30:00	50.6	46.0	39.3				
	2022-11-03	09:45:00	49.4	44.4	39.8				
	2022-11-03	10:00:00	50.2	45.5	39.8			0	#NUM!

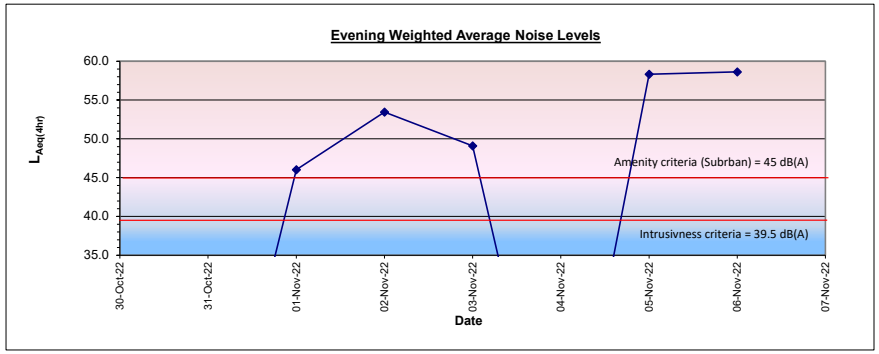
	2022-11-03	10:15:00	48.5	44.7	40.5				
	2022-11-03	10:30:00	49.8	44.5	40.6				
	2022-11-03	10:45:00	49.0	44.0	40.7				
	2022-11-03	11:00:00	48.6	43.3	40.7			0	#NUM!
	2022-11-03	11:15:00	49.2	43.6	40.8				
	2022-11-03	11:30:00	51.7	43.0	41.3				
	2022-11-03	11:45:00	49.3	42.3	41.5				
	2022-11-03	12:00:00	47.8	42.4	41.5			0	#NUM!
	2022-11-03	12:15:00	49.2	42.3	41.8				
	2022-11-03	12:30:00	51.2	43.0	42.2				
	2022-11-03	12:45:00	54.1	41.8	42.3				
	2022-11-03	13:00:00	49.2	39.2	42.3			0	#NUM!
	2022-11-03	13:15:00	46.0	36.5	42.4				
	2022-11-03	13:30:00	45.4	35.2	43.0				
	2022-11-03	13:45:00	49.2	39.8	43.0				
	2022-11-03	14:00:00	46.0	37.6	43.3			0	#NUM!
	2022-11-03	14:15:00	47.7	36.5	43.6				
	2022-11-03	14:30:00	47.6	38.3	44.0				
	2022-11-03	14:45:00	47.9	38.4	44.0				
	2022-11-03	15:00:00	48.3	38.7	44.4			0	#NUM!
	2022-11-03	15:15:00	47.8	39.0	44.5				
	2022-11-03	15:30:00	47.7	41.5	44.7				
	2022-11-03	15:45:00	47.9	41.5	45.5				
	2022-11-03	16:00:00	48.3	42.2	45.5			0	#NUM!
	2022-11-03	16:15:00	48.2	40.6	45.7				
	2022-11-03	16:30:00	48.3	40.8	45.7				
	2022-11-03	16:45:00	48.2	41.3	46.0				
	2022-11-03	17:00:00	50.5	40.7	46.1			0	#NUM!
	2022-11-03	17:15:00	48.7	40.7	46.1				
6	2022-11-03	17:30:00	49.0	39.8	46.4	79229			
7	2022-11-03	17:45:00	49.2	40.5	46.7	83102			
8	2022-11-03	18:00:00	46.9	39.3	47.2	49355		211686	47.2
							829530		
1	2022-11-04	07:15:00	50.6	39.9	37.3	113534			
2	2022-11-04	07:30:00	49.2	39.0	37.5	82387			
3	2022-11-04	07:45:00	48.8	38.5	37.7	75241			
4	2022-11-04	08:00:00	48.8	37.5	37.8	76188		347350	49.4
5	2022-11-04	08:15:00	49.0	37.7	38.1	79796			
6	2022-11-04	08:30:00	49.5	39.9	38.5	88181			
7	2022-11-04	08:45:00	51.5	38.5	38.5	139882			
8	2022-11-04	09:00:00	49.5	37.8	38.7	89441		397299	50.0
9	2022-11-04	09:15:00	53.9	37.3	38.7	246234			
10	2022-11-04	09:30:00	47.0	38.1	39.0	49637			
11	2022-11-04	09:45:00	47.3	40.3	39.0	53940			
	2022-11-04	10:00:00	48.7	40.4	39.2			349811	49.4
	2022-11-04	10:15:00	47.7	40.4	39.5				
	2022-11-04	10:30:00	47.6	39.0	39.8				
	2022-11-04	10:45:00	50.4	39.5	39.9				
	2022-11-04	11:00:00	46.6	39.8	39.9			0	#NUM!
	2022-11-04	11:15:00	50.0	43.6	40.2				
	2022-11-04	11:30:00	52.7	44.0	40.2				
	2022-11-04	11:45:00	54.5	43.4	40.3				
	2022-11-04	12:00:00	50.5	44.1	40.4			0	#NUM!
	2022-11-04	12:15:00	46.8	42.5	40.4				
	2022-11-04	12:30:00	48.3	41.9	40.6				
	2022-11-04	12:45:00	54.5	41.4	41.0				
	2022-11-04	13:00:00	50.2	41.1	41.1			0	#NUM!
	2022-11-04	13:15:00	52.6	40.2	41.3				
	2022-11-04	13:30:00	53.3	41.9	41.4				
	2022-11-04	13:45:00	56.6	42.5	41.4				
	2022-11-04	14:00:00	49.0	43.1	41.7			0	#NUM!
	2022-11-04	14:15:00	49.1	44.0	41.7				
	2022-11-04	14:30:00	49.2	44.7	41.8				
	2022-11-04	14:45:00	50.0	44.0	41.9				
12	2022-11-04	15:00:00	49.0	41.7	41.9	79550		79550	43.0
13	2022-11-04	15:15:00	48.6	41.8	42.5	72426			

14	2022-11-04	15:30:00	48.1	40.6	42.5	65225			
15	2022-11-04	15:45:00	47.7	41.0	43.1	58353			
16	2022-11-04	16:00:00	46.7	38.7	43.4	46669		242673	47.8
17	2022-11-04	16:15:00	46.7	38.7	43.6	46997			
18	2022-11-04	16:30:00	53.4	40.2	44.0	220509			
	2022-11-04	16:45:00	48.3	41.3	44.0				
	2022-11-04	17:00:00	52.0	41.7	44.0			267506	48.3
	2022-11-04	17:15:00	49.7	44.0	44.0				
	2022-11-04	17:30:00	49.2	44.7	44.1				
	2022-11-04	17:45:00	47.3	41.4	44.7				
	2022-11-04	18:00:00	48.0	39.2	44.7			0	#NUM!
							1684188		
	2022-11-05	07:15:00	45.6	36.5	35.0				
	2022-11-05	07:30:00	46.7	37.8	35.4				
	2022-11-05	07:45:00	47.4	37.2	35.7				
	2022-11-05	08:00:00	47.6	37.5	35.9			0	#NUM!
	2022-11-05	08:15:00	49.6	35.7	36.1				
	2022-11-05	08:30:00	48.2	35.0	36.5				
	2022-11-05	08:45:00	46.9	35.4	36.6				
1	2022-11-05	09:00:00	45.5	35.9	36.9	35632		35632	39.5
2	2022-11-05	09:15:00	45.8	36.6	36.9	38124			
3	2022-11-05	09:30:00	47.3	36.9	37.2	53322			
4	2022-11-05	09:45:00	46.8	37.6	37.3	47411			
5	2022-11-05	10:00:00	49.6	36.9	37.5	91639		230495	47.6
6	2022-11-05	10:15:00	47.0	36.1	37.5	49886			
7	2022-11-05	10:30:00	48.9	37.3	37.6	77143			
8	2022-11-05	10:45:00	46.8	40.8	37.8	48099			
	2022-11-05	11:00:00	46.5	38.8	37.9			175129	46.4
	2022-11-05	11:15:00	47.0	37.5	37.9				
	2022-11-05	11:30:00	48.2	40.5	38.2				
	2022-11-05	11:45:00	47.2	40.5	38.8				
	2022-11-05	12:00:00	48.7	41.2	38.9			0	#NUM!
	2022-11-05	12:15:00	46.6	41.2	39.0				
	2022-11-05	12:30:00	52.1	42.2	39.1				
	2022-11-05	12:45:00	47.1	40.1	39.2				
	2022-11-05	13:00:00	56.2	42.6	39.2			0	#NUM!
	2022-11-05	13:15:00	48.7	42.5	39.5				
	2022-11-05	13:30:00	46.8	39.5	39.5				
	2022-11-05	13:45:00	57.7	39.1	39.5				
	2022-11-05	14:00:00	47.2	40.5	39.6			0	#NUM!
	2022-11-05	14:15:00	50.2	39.5	39.8				
	2022-11-05	14:30:00	46.5	41.0	40.1				
	2022-11-05	14:45:00	46.7	39.0	40.1				
	2022-11-05	15:00:00	47.7	39.2	40.3			0	#NUM!
	2022-11-05	15:15:00	47.0	40.1	40.5				
	2022-11-05	15:30:00	53.1	41.2	40.5				
	2022-11-05	15:45:00	45.7	40.3	40.5				
	2022-11-05	16:00:00	47.3	42.0	40.8			0	#NUM!
	2022-11-05	16:15:00	48.6	39.5	41.0				
	2022-11-05	16:30:00	47.9	39.6	41.2				
	2022-11-05	16:45:00	46.5	39.2	41.2				
	2022-11-05	17:00:00	46.4	37.9	41.2			0	#NUM!
	2022-11-05	17:15:00	45.4	38.2	42.0				
	2022-11-05	17:30:00	45.7	39.8	42.2				
	2022-11-05	17:45:00	46.5	38.9	42.5				
	2022-11-05	18:00:00	44.7	37.9	42.6			0	#NUM!
							441255		
	2022-11-06	07:15:00	49.2	34.7	34.7				
	2022-11-06	07:30:00	48.6	35.5	34.8				
	2022-11-06	07:45:00	49.4	35.4	34.9				
	2022-11-06	08:00:00	52.1	36.1	35.1			0	#NUM!
	2022-11-06	08:15:00	48.1	36.3	35.2				
	2022-11-06	08:30:00	46.5	35.1	35.4				
	2022-11-06	08:45:00	45.9	34.8	35.4				
1	2022-11-06	09:00:00	48.7	35.8	35.4	74920		74920	42.7
2	2022-11-06	09:15:00	45.3	37.3	35.4	33598			

3	2022-11-06	09:30:00	45.6	35.4	35.5	36060			
4	2022-11-06	09:45:00	45.3	36.3	35.8	34010			
5	2022-11-06	10:00:00	44.3	35.2	36.0	27200		130868	45.1
6	2022-11-06	10:15:00	47.2	36.0	36.1	52733			
7	2022-11-06	10:30:00	47.3	34.9	36.1	53488			
8	2022-11-06	10:45:00	49.3	36.7	36.1	85194			
9	2022-11-06	11:00:00	46.1	36.3	36.3	40983		232398	47.6
10	2022-11-06	11:15:00	45.3	35.4	36.3	33848			
11	2022-11-06	11:30:00	45.5	36.1	36.3	35366			
12	2022-11-06	11:45:00	45.1	36.7	36.6	32197			
13	2022-11-06	12:00:00	44.6	36.6	36.6	28674		130084	45.1
14	2022-11-06	12:15:00	44.9	35.4	36.6	31222			
15	2022-11-06	12:30:00	46.3	38.0	36.7	42426			
16	2022-11-06	12:45:00	47.4	37.5	36.7	54905			
17	2022-11-06	13:00:00	52.8	37.7	36.8	189010		317563	49.0
18	2022-11-06	13:15:00	47.6	36.6	36.8	57897			
	2022-11-06	13:30:00	46.6	36.8	36.8				
	2022-11-06	13:45:00	45.5	38.0	37.2				
19	2022-11-06	14:00:00	46.2	39.1	37.3	41951		99848	44.0
20	2022-11-06	14:15:00	47.3	39.6	37.3	53189			
	2022-11-06	14:30:00	47.5	40.0	37.3				
	2022-11-06	14:45:00	45.8	39.8	37.4				
	2022-11-06	15:00:00	44.2	38.1	37.5			53189	41.2
	2022-11-06	15:15:00	44.7	37.8	37.6				
	2022-11-06	15:30:00	56.4	38.8	37.7				
	2022-11-06	15:45:00	47.1	37.2	37.8				
21	2022-11-06	16:00:00	45.6	36.8	38.0	36338		36338	39.6
22	2022-11-06	16:15:00	48.5	37.4	38.0	70654			
23	2022-11-06	16:30:00	47.6	37.3	38.1	56996			
24	2022-11-06	16:45:00	44.0	37.3	38.3	24865			
25	2022-11-06	17:00:00	46.4	36.8	38.8	43935		196450	46.9
26	2022-11-06	17:15:00	45.8	38.3	39.1	38343			
27	2022-11-06	17:30:00	46.7	37.6	39.6	47172			
28	2022-11-06	17:45:00	45.0	36.1	39.8	31844			
29	2022-11-06	18:00:00	47.6	36.6	40.0	57396		174756	46.4
							1446413		
1	2022-11-07	07:15:00	47.6	37.4	35.1	57756			
2	2022-11-07	07:30:00	49.4	36.1	35.8	86126			
3	2022-11-07	07:45:00	51.9	35.9	35.9	155587			
4	2022-11-07	08:00:00	49.5	35.9	35.9	88769		388238	49.9
5	2022-11-07	08:15:00	48.1	37.1	36.0	65002			
6	2022-11-07	08:30:00	48.0	37.4	36.1	63625			
7	2022-11-07	08:45:00	46.4	36.6	36.6	43411			
8	2022-11-07	09:00:00	47.5	35.1	36.7	56566		228604	47.6
9	2022-11-07	09:15:00	45.4	35.8	37.1	34932			
10	2022-11-07	09:30:00	47.6	37.3	37.3	58141			
11	2022-11-07	09:45:00	47.2	37.3	37.3	52690			
12	2022-11-07	10:00:00	44.4	36.7	37.4	27538		173301	46.4
13	2022-11-07	10:15:00	44.5	36.0	37.4	27929			
							818072		

Noise Assessment

Evening Period	6pm to 10pm		
amenity criteria	45	dB(A)	Suburban
Intrusiveness criteria (RBL+ 5)	39.5	dB(A)	
Median LAeqEvening 18:00-22:00	53.4	dB(A)	



Day	Date	$L_{Aeq(evening)}$	ABL	RBL
Monday Evening	31/10/2022	Nil	Nil	
Tuesday Evening	1/11/2022	46.0	46.3	
Wednesday Evening	2/11/2022	53.4	33.0	
Thursday Evening	3/11/2022	49.1	31.6	**34.5**
Friday Evening	4/11/2022	Nil	Nil	
Saturday Evening	5/11/2022	58.3	34.5	
Sunday Evening	6/11/2022	58.6	34.6	

item	Date	time	$L_{Aeq(15\ minute)}$	$L_{A90(15minute)}$	$L_{A90(15min)}$ assending order	$10^{((L_{Aeq(15\ minute)}/10))}$	period sums	hrly sums	hrly Laeq
	2022-10-31	18:15:00	49.0	42.3	42.3				
	2022-10-31	18:30:00	57.3	42.9	42.5				
	2022-10-31	18:45:00	60.6	42.7	42.6				
	2022-10-31	19:00:00	69.7	54.1	42.7			0	#NUM!
	2022-10-31	19:15:00	67.0	55.6	42.8				
	2022-10-31	19:30:00	56.6	52.6	42.9				
	2022-10-31	19:45:00	48.9	45.1	43.1				
	2022-10-31	20:00:00	46.4	44.3	43.3			0	#NUM!
	2022-10-31	20:15:00	46.1	43.7	43.5				
	2022-10-31	20:30:00	44.9	42.8	43.7				
	2022-10-31	20:45:00	44.7	42.5	44.2				
	2022-10-31	21:00:00	45.7	43.5	44.3			0	#NUM!
	2022-10-31	21:15:00	45.8	43.1	45.1				
	2022-10-31	21:30:00	45.2	42.6	52.6				
	2022-10-31	21:45:00	45.2	43.3	54.1				
	2022-10-31	22:00:00	47.4	44.2	55.6			0	#NUM!
							0		
	2022-11-01	18:15:00	47.1	40.0	44.7				
	2022-11-01	18:30:00	46.2	39.8	44.8				
	2022-11-01	18:45:00	46.5	41.4	44.8				
	2022-11-01	19:00:00	63.1	44.8	45.1			0	#NUM!
	2022-11-01	19:15:00	67.6	60.9	45.1				
	2022-11-01	19:30:00	59.3	53.5	46.3				
	2022-11-01	19:45:00	50.5	46.5	46.3				
1	2022-11-01	20:00:00	48.1	46.3	46.3	63873		63873	42.0
2	2022-11-01	20:15:00	47.8	46.3	46.5	60249			
3	2022-11-01	20:30:00	47.9	46.3	47.5	61355			
4	2022-11-01	20:45:00	47.5	44.3	47.9	55841			
5	2022-11-01	21:00:00	44.1	42.2	50.8	25554		202999	47.1
6	2022-11-01	21:15:00	44.7	42.3	53.5	29305			
7	2022-11-01	21:30:00	44.0	40.8	53.7	24918			
8	2022-11-01	21:45:00	43.4	41.1	54.7	21734			
9	2022-11-01	22:00:00	42.7	38.8	60.9	18570		94527	43.7
							361399		
	2022-11-02	18:15:00	46.3	39.9	32.9				
1	2022-11-02	18:30:00	46.3	40.3	33.0	42419			
2	2022-11-02	18:45:00	45.3	38.7	34.7	34132			
3	2022-11-02	19:00:00	55.1	40.0	36.1	322582		399133	50.0
4	2022-11-02	19:15:00	64.1	54.7	38.7	2546736			
5	2022-11-02	19:30:00	51.8	44.5	39.3	152902			

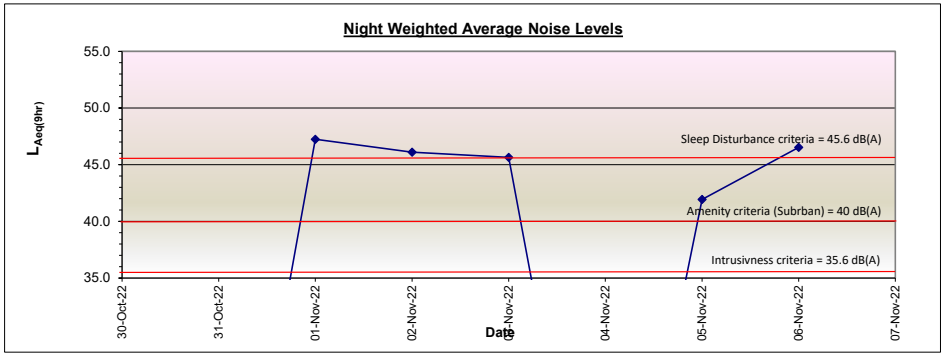
6	2022-11-02	19:45:00	45.5	41.9	39.5	35280			
7	2022-11-02	20:00:00	47.6	41.4	39.9	56897		2791815	58.4
8	2022-11-02	20:15:00	44.3	40.9	40.0	26713			
9	2022-11-02	20:30:00	44.4	40.7	40.3	27255			
10	2022-11-02	20:45:00	43.3	39.3	40.7	21478			
11	2022-11-02	21:00:00	42.0	39.5	40.9	15987		91433	43.6
12	2022-11-02	21:15:00	39.7	36.1	41.4	9370			
13	2022-11-02	21:30:00	39.1	34.7	41.9	8105			
14	2022-11-02	21:45:00	38.9	32.9	44.5	7711			
15	2022-11-02	22:00:00	38.9	33.0	54.7	7831		33017	39.2
							3315398		
1	2022-11-03	18:15:00	46.7	40.0	31.6	47031			
2	2022-11-03	18:30:00	44.4	39.2	32.0	27602			
3	2022-11-03	18:45:00	45.7	38.1	32.8	37395			
4	2022-11-03	19:00:00	46.5	40.0	33.5	44687		156714	45.9
5	2022-11-03	19:15:00	59.3	43.2	34.4	843995			
6	2022-11-03	19:30:00	46.6	38.1	34.9	45217			
7	2022-11-03	19:45:00	44.5	38.7	36.9	28042			
8	2022-11-03	20:00:00	43.8	37.8	37.1	24177		941431	53.7
9	2022-11-03	20:15:00	41.9	36.9	37.8	15503			
10	2022-11-03	20:30:00	43.5	37.1	38.1	22234			
11	2022-11-03	20:45:00	40.3	34.9	38.1	10713			
12	2022-11-03	21:00:00	41.8	34.4	38.7	15098		63547	42.0
13	2022-11-03	21:15:00	37.5	33.5	39.2	5599			
14	2022-11-03	21:30:00	46.7	32.8	40.0	46661			
15	2022-11-03	21:45:00	49.0	32.0	40.0	78723			
16	2022-11-03	22:00:00	39.4	31.6	43.2	8679		139662	45.4
							1301355		
	2022-11-04	18:15:00	50.9	39.7	35.4				
	2022-11-04	18:30:00	48.0	41.1	35.5				
	2022-11-04	18:45:00	49.5	41.0	35.7				
	2022-11-04	19:00:00	45.5	40.0	36.1			0	#NUM!
	2022-11-04	19:15:00	43.2	39.0	36.6				
	2022-11-04	19:30:00	43.6	39.4	36.6				
	2022-11-04	19:45:00	42.4	38.7	37.1				
	2022-11-04	20:00:00	44.2	40.0	37.2			0	#NUM!
	2022-11-04	20:15:00	41.1	37.1	38.7				
	2022-11-04	20:30:00	42.8	37.2	39.0				
	2022-11-04	20:45:00	42.2	36.6	39.4				
	2022-11-04	21:00:00	40.4	36.1	39.7			0	#NUM!
	2022-11-04	21:15:00	40.6	36.6	40.0				
	2022-11-04	21:30:00	41.2	35.7	40.0				
	2022-11-04	21:45:00	40.5	35.4	41.0				
	2022-11-04	22:00:00	41.7	35.5	41.1			0	#NUM!
							0		
1	2022-11-05	18:15:00	46.0	37.5	34.0	39546			
2	2022-11-05	18:30:00	44.3	35.9	34.5	26777			
3	2022-11-05	18:45:00	41.4	35.1	35.1	13716			
4	2022-11-05	19:00:00	65.0	37.7	35.9	3169662		3249701	59.1
5	2022-11-05	19:15:00	68.2	61.4	37.5	6661653			
6	2022-11-05	19:30:00	58.1	53.1	37.5	640588			
7	2022-11-05	19:45:00	48.5	44.5	37.7	70764			
8	2022-11-05	20:00:00	44.1	39.9	37.8	25415		7398420	62.7
9	2022-11-05	20:15:00	41.9	39.1	38.6	15600			
10	2022-11-05	20:30:00	41.2	38.7	38.6	13201			
11	2022-11-05	20:45:00	42.0	38.6	38.7	15951			
12	2022-11-05	21:00:00	41.2	37.8	39.1	13167		57919	41.6
13	2022-11-05	21:15:00	42.2	38.6	39.9	16426			
14	2022-11-05	21:30:00	48.3	37.5	44.5	68139			
15	2022-11-05	21:45:00	48.8	34.5	53.1	76080			

16	2022-11-05	22:00:00	46.9	34.0	61.4	49334		209979	47.2
							10916019		
1	2022-11-06	18:15:00	44.8	35.3	34.4	30546			
2	2022-11-06	18:30:00	52.1	35.8	34.6	163370			
3	2022-11-06	18:45:00	44.2	36.0	35.3	26464			
4	2022-11-06	19:00:00	61.7	38.0	35.7	1492609		1712990	56.3
5	2022-11-06	19:15:00	69.2	64.0	35.8	8229245			
6	2022-11-06	19:30:00	61.4	54.9	36.0	1387056			
7	2022-11-06	19:45:00	51.6	44.3	38.0	144037			
8	2022-11-06	20:00:00	45.5	39.2	38.1	35547		9795885	63.9
9	2022-11-06	20:15:00	41.9	38.1	38.3	15542			
10	2022-11-06	20:30:00	43.0	39.3	39.2	20003			
11	2022-11-06	20:45:00	42.0	39.5	39.3	15972			
12	2022-11-06	21:00:00	44.7	41.0	39.5	29244		80760	43.1
13	2022-11-06	21:15:00	41.4	35.7	41.0	13905			
14	2022-11-06	21:30:00	40.0	34.6	44.3	9946			
15	2022-11-06	21:45:00	45.1	38.3	54.9	32534			
16	2022-11-06	22:00:00	46.4	34.4	64.0	43938		100324	44.0
							11689959		

Noise Assessment

Night Period	10pm to 7am		
amenity criteria	40	dB(A)	Suburban
Intrusiveness criteria (RBL+ 5)	35.6	dB(A)	
Sleep Disturbance criteria (RBL+ 15)	45.6	dB(A)	
Median LAeqNight 22:00-07:00	46.1	dB(A)	

Night	Date	$L_{aeq(night)}$	ABL	RBL
Monday Night	31/10/2022	Nil	Nil	
Tuesday Night	1/11/2022	47.2	38.1	
Wednesday Night	2/11/2022	46.1	30.2	
Thursday Night	3/11/2022	45.7	29.8	**30.6**
Friday Night	4/11/2022	Nil	Nil	
Monday Night	5/11/2022	41.9	30.6	
Tuesday Night	6/11/2022	46.5	31.4	



no.	date	time	$L_{Aeq(15\ minute)}$	$L_{A90(15minute)}$	$L_{A90(15min)}$ assending order	10^(($L_{Aeq(15\ minute)}$/10))	period sums	hrly sums	hrly Laeq	Sleep Disturbance events
	2022-10-31	22:15:00	47.8	45.0	37.9					0
	2022-10-31	22:30:00	47.2	44.1	38.0					0
	2022-10-31	22:45:00	48.8	44.7	38.4					0
	2022-10-31	23:00:00	47.2	44.5	38.6			0	#NUM!	0
	2022-10-31	23:15:00	47.9	44.9	38.8					0
	2022-10-31	23:30:00	46.2	43.8	39.6					0
	2022-10-31	23:45:00	52.1	46.1	39.8					0
	2022-11-01	00:00:00	43.1	39.6	41.0			0	#NUM!	0
	2022-11-01	00:15:00	41.7	38.8	41.5					0
	2022-11-01	00:30:00	45.1	41.6	41.6					0
	2022-11-01	00:45:00	41.7	38.4	42.4					0
	2022-11-01	01:00:00	47.9	44.2	43.8			0	#NUM!	0
	2022-11-01	01:15:00	47.2	39.8	44.1					0
	2022-11-01	01:30:00	40.2	38.0	44.1					0
	2022-11-01	01:45:00	48.7	42.4	44.2					0
	2022-11-01	02:00:00	51.4	46.8	44.5			0	#NUM!	0
	2022-11-01	02:15:00	52.4	48.5	44.7					0
	2022-11-01	02:30:00	53.7	49.7	44.9					0
	2022-11-01	02:45:00	53.3	48.5	44.9					0
	2022-11-01	03:00:00	52.9	49.2	45.0			0	#NUM!	0
	2022-11-01	03:15:00	50.9	47.9	45.7					0
	2022-11-01	03:30:00	48.3	45.7	45.8					0
	2022-11-01	03:45:00	47.6	44.9	45.9					0
	2022-11-01	04:00:00	46.4	44.1	46.1			0	#NUM!	0
	2022-11-01	04:15:00	44.3	41.5	46.8					0
	2022-11-01	04:30:00	43.2	38.6	47.0					0
	2022-11-01	04:45:00	42.8	37.9	47.9					0
	2022-11-01	05:00:00	52.5	41.0	47.9			0	#NUM!	0
	2022-11-01	05:15:00	54.6	47.9	48.5					0
	2022-11-01	05:30:00	57.4	45.9	48.5					0
	2022-11-01	05:45:00	60.8	45.8	49.2					0
	2022-11-01	06:00:00	55.8	47.0	49.7			0	#NUM!	0
	2022-11-01	06:15:00	56.6	51.5	49.7					0
	2022-11-01	06:30:00	57.3	49.7	50.1					0
	2022-11-01	06:45:00	55.4	52.1	51.5					0
	2022-11-01	07:00:00	53.3	50.1	52.1			0	#NUM!	0
								0		**0**
1	2022-11-01	22:15:00	42.9	40.3	36.2	19497				0
2	2022-11-01	22:30:00	41.8	39.1	38.1	15135				0

3	2022-11-01	22:45:00	42.6	40.0	38.2	18263				0
4	2022-11-01	23:00:00	44.2	40.1	38.8	26563		79458	43.0	0
5	2022-11-01	23:15:00	44.1	38.1	39.0	25843				0
6	2022-11-01	23:30:00	40.9	36.2	39.1	12328				0
7	2022-11-01	23:45:00	42.5	39.6	39.2	17822				0
8	2022-11-02	00:00:00	42.7	39.2	39.4	18534		74528	42.7	0
9	2022-11-02	00:15:00	42.3	39.0	39.6	17122				0
10	2022-11-02	00:30:00	44.4	39.6	39.6	27825				0
11	2022-11-02	00:45:00	47.5	44.4	40.0	55916				0
12	2022-11-02	01:00:00	50.6	44.9	40.1	114621		215483	47.3	0
13	2022-11-02	01:15:00	47.5	43.3	40.3	56583				0
14	2022-11-02	01:30:00	47.0	44.3	40.3	50427				0
15	2022-11-02	01:45:00	52.6	46.7	40.4	180414				0
	2022-11-02	02:00:00	54.4	48.0	40.4			287425	48.6	0
	2022-11-02	02:15:00	54.9	50.3	40.6					0
	2022-11-02	02:30:00	56.6	50.0	42.0					0
	2022-11-02	02:45:00	52.2	47.5	42.4					0
	2022-11-02	03:00:00	49.6	45.0	42.7			0	#NUM!	0
	2022-11-02	03:15:00	49.1	43.7	43.3					0
	2022-11-02	03:30:00	47.9	44.7	43.6					0
16	2022-11-02	03:45:00	47.7	43.6	43.7	58608				0
17	2022-11-02	04:00:00	47.3	44.6	43.7	53214		111822	44.5	0
18	2022-11-02	04:15:00	46.1	42.4	43.9	40396				0
	2022-11-02	04:30:00	46.3	40.4	44.3					0
	2022-11-02	04:45:00	47.6	42.0	44.4					0
	2022-11-02	05:00:00	48.6	40.3	44.6			40396	40.0	0
	2022-11-02	05:15:00	52.7	43.7	44.7					0
	2022-11-02	05:30:00	50.8	43.9	44.9					0
	2022-11-02	05:45:00	47.0	39.4	45.0					0
19	2022-11-02	06:00:00	48.5	38.2	46.7	70738		70738	42.5	0
20	2022-11-02	06:15:00	50.2	38.8	47.5	105381				0
21	2022-11-02	06:30:00	49.1	40.4	48.0	81706				0
22	2022-11-02	06:45:00	49.3	42.7	50.0	85172				0
23	2022-11-02	07:00:00	48.3	40.6	50.3	68107		340366	49.3	0
							1220215			0
1	2022-11-02	22:15:00	39.2	33.3	30.0	8406				0
2	2022-11-02	22:30:00	37.4	33.5	30.1	5539				0
3	2022-11-02	22:45:00	35.6	32.6	30.2	3615				0
4	2022-11-02	23:00:00	37.5	31.8	30.3	5595		23156	37.6	0
5	2022-11-02	23:15:00	38.2	31.1	30.3	6589				0
6	2022-11-02	23:30:00	42.1	31.1	30.3	16157				0
7	2022-11-02	23:45:00	47.2	32.9	30.3	53033				0
8	2022-11-03	00:00:00	40.3	32.5	30.3	10650		86428	43.3	0
9	2022-11-03	00:15:00	40.1	32.7	30.5	10310				0
10	2022-11-03	00:30:00	38.9	31.9	30.5	7746				0
11	2022-11-03	00:45:00	39.5	31.3	30.5	8971				0
12	2022-11-03	01:00:00	38.2	30.6	30.6	6565		33592	39.2	0
13	2022-11-03	01:15:00	40.5	30.8	30.8	11136				0
14	2022-11-03	01:30:00	32.4	30.3	30.8	1747				0
15	2022-11-03	01:45:00	31.2	30.2	31.1	1327				0
16	2022-11-03	02:00:00	31.6	30.5	31.1	1452		15662	35.9	0
17	2022-11-03	02:15:00	33.2	30.5	31.3	2106				0
18	2022-11-03	02:30:00	33.3	30.3	31.8	2136				0
19	2022-11-03	02:45:00	31.5	30.3	31.9	1414				0
20	2022-11-03	03:00:00	30.9	30.0	32.0	1239		6895	32.4	0
21	2022-11-03	03:15:00	31.8	30.3	32.5	1526				0
22	2022-11-03	03:30:00	31.0	30.1	32.6	1262				0
23	2022-11-03	03:45:00	36.3	30.8	32.7	4269				0
24	2022-11-03	04:00:00	36.5	30.3	32.8	4510		11567	34.6	0
25	2022-11-03	04:15:00	34.2	30.5	32.9	2613				0

26	2022-11-03	04:30:00	33.7	32.0	33.3	2326				0
27	2022-11-03	04:45:00	49.4	32.8	33.5	86608				0
28	2022-11-03	05:00:00	55.5	34.5	34.5	351065		442612	50.4	0
29	2022-11-03	05:15:00	52.3	39.5	37.9	169066				0
30	2022-11-03	05:30:00	48.9	39.9	39.5	76874				0
31	2022-11-03	05:45:00	49.0	37.9	39.8	78903				0
32	2022-11-03	06:00:00	49.2	40.0	39.9	82384		407227	50.1	0
33	2022-11-03	06:15:00	51.1	39.8	40.0	128790				0
34	2022-11-03	06:30:00	49.8	41.4	41.4	94514				0
35	2022-11-03	06:45:00	50.6	42.0	42.0	116086				0
36	2022-11-03	07:00:00	50.0	44.8	44.8	100094		439484	50.4	0
							1466623			0
1	2022-11-03	22:15:00	37.3	31.3	29.5	5325				0
2	2022-11-03	22:30:00	37.3	30.9	29.6	5358				0
3	2022-11-03	22:45:00	36.8	30.9	29.8	4800				0
4	2022-11-03	23:00:00	41.3	30.7	29.9	13425		28908	38.6	0
5	2022-11-03	23:15:00	39.6	31.1	30.1	9136				0
6	2022-11-03	23:30:00	41.4	31.2	30.1	13681				0
7	2022-11-03	23:45:00	32.0	30.7	30.2	1568				0
8	2022-11-04	00:00:00	34.4	30.1	30.3	2747		27133	38.3	0
9	2022-11-04	00:15:00	31.9	30.4	30.3	1555				0
10	2022-11-04	00:30:00	34.7	30.2	30.3	2954				0
11	2022-11-04	00:45:00	34.7	30.3	30.4	2959				0
12	2022-11-04	01:00:00	31.1	30.1	30.5	1299		8767	33.4	0
13	2022-11-04	01:15:00	30.6	29.6	30.7	1137				0
14	2022-11-04	01:30:00	32.7	29.9	30.7	1879				0
15	2022-11-04	01:45:00	30.3	29.5	30.7	1064				0
16	2022-11-04	02:00:00	30.9	29.8	30.7	1219		5298	31.2	0
17	2022-11-04	02:15:00	31.6	30.3	30.9	1434				0
18	2022-11-04	02:30:00	31.7	30.3	30.9	1473				0
19	2022-11-04	02:45:00	34.5	31.0	31.0	2828				0
20	2022-11-04	03:00:00	34.9	32.4	31.1	3081		8816	33.4	0
21	2022-11-04	03:15:00	33.4	32.1	31.2	2193				0
22	2022-11-04	03:30:00	32.9	31.4	31.2	1956				0
23	2022-11-04	03:45:00	35.9	30.7	31.3	3849				0
24	2022-11-04	04:00:00	36.7	30.5	31.4	4685		12683	35.0	0
25	2022-11-04	04:15:00	32.1	30.7	31.4	1613				0
26	2022-11-04	04:30:00	35.1	31.2	32.1	3257				0
27	2022-11-04	04:45:00	46.3	31.4	32.4	42916				0
28	2022-11-04	05:00:00	55.6	34.2	34.2	366253		414039	50.1	0
29	2022-11-04	05:15:00	53.4	39.8	37.8	217732				0
30	2022-11-04	05:30:00	49.1	39.9	38.2	81689				0
31	2022-11-04	05:45:00	49.1	37.8	39.3	81006				0
32	2022-11-04	06:00:00	47.6	38.2	39.8	58196		438623	50.4	0
33	2022-11-04	06:15:00	47.9	39.3	39.9	62191				0
34	2022-11-04	06:30:00	51.1	40.6	40.6	129180				0
35	2022-11-04	06:45:00	49.6	41.0	41.0	90524				0
36	2022-11-04	07:00:00	49.9	41.2	41.2	98099		379994	49.8	0
							1324261			0
	2022-11-04	22:15:00	38.7	34.7	30.9					0
	2022-11-04	22:30:00	37.8	34.1	31.4					0
	2022-11-04	22:45:00	38.6	34.7	31.4					0
	2022-11-04	23:00:00	47.6	34.5	31.4			0	#NUM!	0
	2022-11-04	23:15:00	41.2	34.2	31.6					0
	2022-11-04	23:30:00	38.6	33.6	31.7					0
	2022-11-04	23:45:00	36.5	33.3	31.7					0
	2022-11-05	00:00:00	36.0	33.1	31.8			0	#NUM!	0
	2022-11-05	00:15:00	35.9	33.1	31.8					0
	2022-11-05	00:30:00	43.4	32.6	31.9					0
	2022-11-05	00:45:00	40.1	32.9	31.9					0

	2022-11-05	01:00:00	38.8	32.9	31.9				0	#NUM!	0
	2022-11-05	01:15:00	34.8	31.7	32.2						0
	2022-11-05	01:30:00	35.0	31.9	32.4						0
	2022-11-05	01:45:00	35.1	31.7	32.4						0
	2022-11-05	02:00:00	37.6	32.4	32.6				0	#NUM!	0
	2022-11-05	02:15:00	33.3	32.4	32.9						0
	2022-11-05	02:30:00	33.6	31.9	32.9						0
	2022-11-05	02:45:00	34.4	31.9	33.1						0
	2022-11-05	03:00:00	34.8	31.8	33.1				0	#NUM!	0
	2022-11-05	03:15:00	34.7	31.6	33.3						0
	2022-11-05	03:30:00	33.2	31.4	33.6						0
	2022-11-05	03:45:00	33.9	32.2	33.9						0
	2022-11-05	04:00:00	33.3	31.4	34.1				0	#NUM!	0
	2022-11-05	04:15:00	34.8	31.8	34.2						0
	2022-11-05	04:30:00	37.9	30.9	34.5						0
	2022-11-05	04:45:00	48.9	31.4	34.7						0
	2022-11-05	05:00:00	51.6	33.9	34.7				0	#NUM!	0
	2022-11-05	05:15:00	50.1	38.5	35.7						0
	2022-11-05	05:30:00	53.1	40.1	35.8						0
	2022-11-05	05:45:00	48.0	37.2	36.1						0
	2022-11-05	06:00:00	48.9	36.1	36.3				0	#NUM!	0
	2022-11-05	06:15:00	52.2	35.8	36.8						0
	2022-11-05	06:30:00	49.5	36.3	37.2						0
	2022-11-05	06:45:00	48.1	36.8	38.5						0
	2022-11-05	07:00:00	47.2	35.7	40.1				0	#NUM!	0
								0			0
1	2022-11-05	22:15:00	41.9	35.1	30.6	15599					0
	2022-11-05	22:30:00	38.5	34.2	30.7						0
	2022-11-05	22:45:00	37.7	33.4	31.2						0
	2022-11-05	23:00:00	41.3	34.0	31.4				15599	35.9	0
	2022-11-05	23:15:00	39.2	33.6	31.4						0
	2022-11-05	23:30:00	39.0	32.9	31.4						0
	2022-11-05	23:45:00	37.9	32.8	31.5						0
	2022-11-06	00:00:00	35.4	32.0	31.8				0	#NUM!	0
	2022-11-06	00:15:00	33.4	32.2	32.0						0
	2022-11-06	00:30:00	46.7	35.0	32.2						0
	2022-11-06	00:45:00	37.0	32.3	32.2						0
	2022-11-06	01:00:00	36.2	31.8	32.2				0	#NUM!	0
	2022-11-06	01:15:00	35.8	31.2	32.3						0
	2022-11-06	01:30:00	36.1	31.4	32.4						0
	2022-11-06	01:45:00	36.1	31.4	32.7						0
	2022-11-06	02:00:00	33.2	31.4	32.8				0	#NUM!	0
	2022-11-06	02:15:00	40.7	31.5	32.9						0
	2022-11-06	02:30:00	38.7	30.7	33.2						0
	2022-11-06	02:45:00	37.9	30.6	33.4						0
	2022-11-06	03:00:00	38.8	32.2	33.6				0	#NUM!	0
	2022-11-06	03:15:00	51.1	41.4	33.6						0
	2022-11-06	03:30:00	42.0	37.9	34.0						0
	2022-11-06	03:45:00	35.7	33.6	34.2						0
	2022-11-06	04:00:00	37.6	32.7	35.0				0	#NUM!	0
	2022-11-06	04:15:00	36.4	32.2	35.0						0
	2022-11-06	04:30:00	35.4	32.4	35.1						0
	2022-11-06	04:45:00	52.0	33.2	35.6						0
	2022-11-06	05:00:00	54.7	36.2	36.1				0	#NUM!	0
	2022-11-06	05:15:00	48.4	37.1	36.2						0
	2022-11-06	05:30:00	49.3	40.7	36.4						0
	2022-11-06	05:45:00	47.7	39.8	37.1						0
	2022-11-06	06:00:00	47.5	38.6	37.9				0	#NUM!	0
	2022-11-06	06:15:00	47.0	36.4	38.6						0
	2022-11-06	06:30:00	47.6	36.1	39.8						0

	2022-11-06	06:45:00	46.9	35.0	40.7					0
	2022-11-06	07:00:00	49.4	35.6	41.4			0	#NUM!	0
							15599			0
1	2022-11-06	22:15:00	43.2	37.4	30.8	20922				0
2	2022-11-06	22:30:00	39.7	37.6	31.3	9308				0
3	2022-11-06	22:45:00	40.6	38.1	31.4	11513				0
4	2022-11-06	23:00:00	45.0	34.5	31.6	31266		73009	42.6	0
5	2022-11-06	23:15:00	46.3	37.0	31.8	42624				0
6	2022-11-06	23:30:00	44.7	36.2	31.8	29822				0
7	2022-11-06	23:45:00	49.4	35.6	31.9	86683				0
8	2022-11-07	00:00:00	39.5	36.0	32.3	8933		168062	46.2	0
9	2022-11-07	00:15:00	38.6	33.7	32.3	7186				0
10	2022-11-07	00:30:00	44.8	36.4	32.6	30225				0
11	2022-11-07	00:45:00	46.5	33.7	33.5	45052				0
12	2022-11-07	01:00:00	39.1	35.8	33.7	8138		90600	43.6	0
13	2022-11-07	01:15:00	38.7	33.5	33.7	7342				0
14	2022-11-07	01:30:00	38.6	35.4	33.8	7190				0
15	2022-11-07	01:45:00	38.0	32.3	34.0	6238				0
16	2022-11-07	02:00:00	38.4	34.7	34.5	6882		27652	38.4	0
17	2022-11-07	02:15:00	39.2	34.0	34.7	8331				0
18	2022-11-07	02:30:00	37.9	31.8	35.4	6171				0
19	2022-11-07	02:45:00	38.3	31.8	35.6	6794				0
20	2022-11-07	03:00:00	38.2	31.4	35.8	6647		27942	38.4	0
21	2022-11-07	03:15:00	38.2	31.9	35.8	6654				0
22	2022-11-07	03:30:00	37.5	31.6	36.0	5687				0
23	2022-11-07	03:45:00	37.5	31.3	36.2	5572				0
24	2022-11-07	04:00:00	37.1	30.8	36.4	5140		23053	37.6	0
25	2022-11-07	04:15:00	38.4	32.6	36.4	6959				0
26	2022-11-07	04:30:00	41.5	32.3	36.7	14094				0
27	2022-11-07	04:45:00	49.8	33.8	36.7	94638				0
28	2022-11-07	05:00:00	55.4	35.8	37.0	346626		462317	50.6	0
29	2022-11-07	05:15:00	53.9	39.4	37.4	243206				0
30	2022-11-07	05:30:00	48.3	37.6	37.6	67783				0
31	2022-11-07	05:45:00	49.3	36.4	37.6	84680				0
32	2022-11-07	06:00:00	48.3	36.7	37.6	67598		463267	50.6	0
33	2022-11-07	06:15:00	47.8	37.6	37.6	60101				0
34	2022-11-07	06:30:00	50.7	36.7	37.8	116517				0
35	2022-11-07	06:45:00	46.8	37.6	38.1	47960				0
36	2022-11-07	07:00:00	47.8	37.8	39.4	60585		285163	48.5	0
							1621065			0