Noise Impact Assessment

Skate Park
Lot 6 DP1161720
Rifle Range Road Wollongbar

DRAFT

HEALTH SCIENCE ENVIROMENTAL EDUCATION
ENVIRONMENTAL AUDITOR

Noise Impact Assessment

Skate Ramp
Lot 6 DP 1161720
Rifle Range Road Wollongbar

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1. Introduction

1.1 Purpose

Tim Fitzroy & Associates has been engaged by Ballina Shire Council to undertake a Noise Impact Assessment (NIA) to accompany a Development Application to Ballina Shire Council for a Skate Park Lot 6 DP1161720 Rifle Range Road Wollongbar.

This report provides details on the noise assessment and modelling carried out by *Tim Fitzroy & Associates* and *Noise Measurement Services, Brisbane* to establish existing noise levels at the subject site and investigate potential noise impacts on surrounding residences from the use of the skate park.

At the outset it should be noted that the proposed development is for recreational use only. It is not for commercial or industrial use and therefore the Noise Policy for Industry (NSW EPA 2017) does not apply to this development.

The purpose of this noise assessment is to:

1. Establish existing background noise levels across the subject site;
2. Examine the likely impacts from the use of the proposed skate park on sensitive receptors; and
3. Report on noise levels and provide recommendations to ensure that the noise impacts from the use of the skate park on sensitive receptors will comply as far as practicable with the intent of the NSW EPA Noise Guidelines.

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.

Given the nature of the noise complaints, it will be necessary for Council to 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
- the 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 Sleep Disturbance

Specific provisions relate to sleep disturbance and the World Health Organization recommends that a maximum level of 45 dB (A) should not be exceeded inside a bedroom. For practical purposes this is equivalent to a maximum level of 55 dB (A) outside a residence, with an open window to the bedroom (Guidelines for Community Noise WHO 1999).

1.3 Overview of Noise Assessment

This noise assessment establishes the existing background noise levels within the vicinity of the nearest affected sensitive receiver.

The noise assessment process included the following components:

- Measurement and determination of the existing background and ambient noise at the site;
- Consideration of potential noise impacts 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.

1.4 Site Description

The site is located at Lot 6 DP1161720, on the corner of Rifle Range Road and Plateau Road Wollongbar. It is noted that Lot 6 DP116170 in conjunction with Lot 5 DP1161720 is part of a new residential subdivision.

A site locality diagram is provided in **Illustration 1.1**.

1.4.1 Topography

The skate park is located at RL 167m. The site rises slightly to the north to a level of about RL167.40m

1.4.2 Climate

Weather recording data was collected from the official Bureau of Meteorology (BOM) Weather Station at Ballina Airport. Observations were taken from the Ballina Airport weather station (22 to 29 January 2019) and, while they give an indication of the weather conditions, they are not representative of the exact conditions while on site. Rain fall and wind greater than 5km/hr was excluded from the noise monitoring results.

1.4.3 Surrounding Land use

The site adjoins Rifle Range Road to the south coupled with existing residential development to further south, to the east and west across Plateau Drive. New residential development is proposed along the northern and eastern boundary The Coast Road is approximately 300m to the south.

1.5 Proposed Development

The proposed skate park is to be offset approximately 10m from the southern boundary, orientated in an east-west plan in a rectangular shape. A concept development plan for the proposed skate park are located in **Appendix A**.

Illustration 1.1

Site Locality Plan

2. Instrumentation

2.1 Noise Monitoring Equipment

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

- A Type 2 Rion NL21 environmental noise logger

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;
- An assessment of noise levels produced by existing skate ramp operations at Lennox and Ballina Public Skate Parks;
- A description and the results of a computer model prepared to predict the impact of the skate ramp use on the environment;
- The computer model was calibrated using the results of the noise measurements taken on site. The results of the modelling are used to assess the noise impact of the proposed skate park use on existing and future proposed neighbouring 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 Rion NL21, a type 2 environmental noise logger was placed at a measurement location ML1 to monitor the ambient noise levels, in continuous 15 minute intervals from 22 to 29 January 2019 to gather information of background noise during the day, evening and night. The microphone at each location was 1.35m above ground level.

Illustration 2.1 shows the location of the noise meter.

Illustration 2.1

Noise Monitoring Location

3. Acoustic Assessment

3.1 The Decibel Scale

The human ear responds to sound pressure levels over a very wide range – the loudest sound pressure level to which the human ear responds is ten million times greater than the quietest. This large ratio is reduced to a more manageable size by the use of logarithms. To avoid scale which is too compressed a factor of ten is introduced, giving rise to the decibel. The following **Table 3.1** provides an indication of typical A-Weighted sound pressure levels measured in decibels with typical noise sources. The table provides a good reference when comparing decibel readings.

Table 3.1 Example noise sources and the corresponding A-weighted decibel levels

Sound Pressure Level (dBA)	Typical Source	Subjective Evaluation
140	Long range gun, gunner's ear	
130	Threshold of pain	Extremely noisy to
120	Jet take-off at 100m	intolerable
110	Night club dance floor	
100	Loud car horn at 3 metres	Very noisy
90	Heavy truck at 10m	
80	Curbside of busy street	Loud
70	Car interior	
60	Normal conversation at 1m	Moderate to quiet
50	Office noise	
40	Living room in quiet area	Quiet to very quiet
30	Inside bedroom at night	
20	Unoccupied recording studio	Almost silent

The sensitivity of people to noise level changes varies from person to person. However generally, a change of up to 3 dBA in the level of a sound is difficult for most people to detect, whilst a 3 dBA to 5 dBA change corresponds to a small but noticeable change in loudness. A 10 dBA change corresponds to an approximate doubling or halving in loudness.

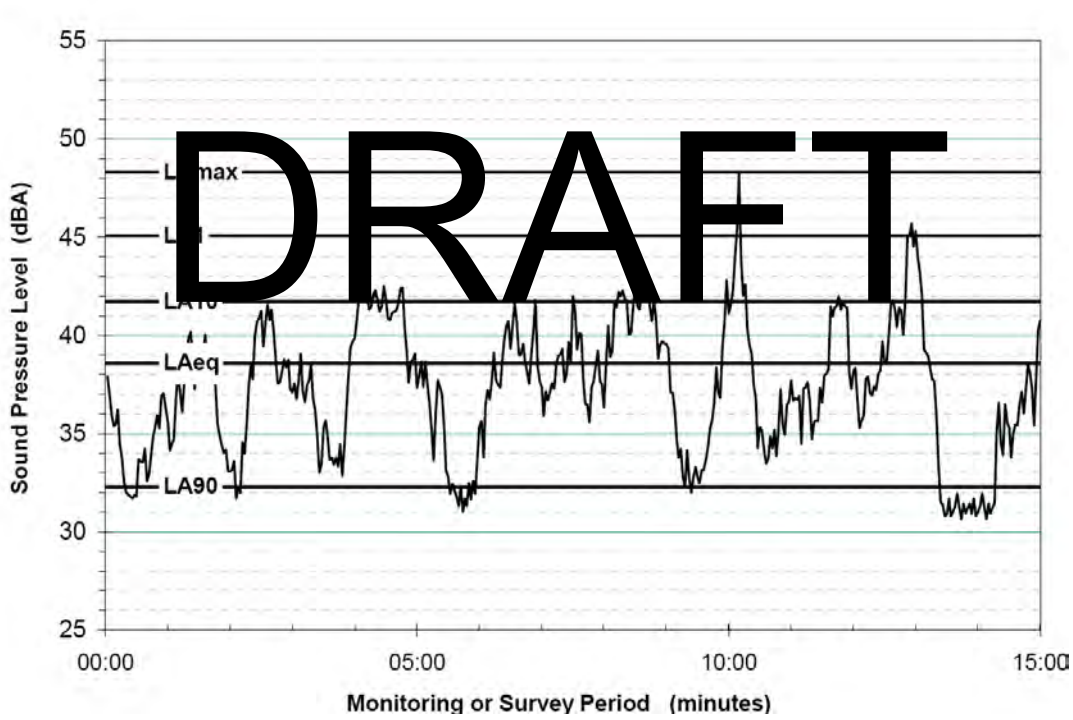
3.2 Acoustical Terms

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

- 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 as 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



3.3 Existing Noise Environment

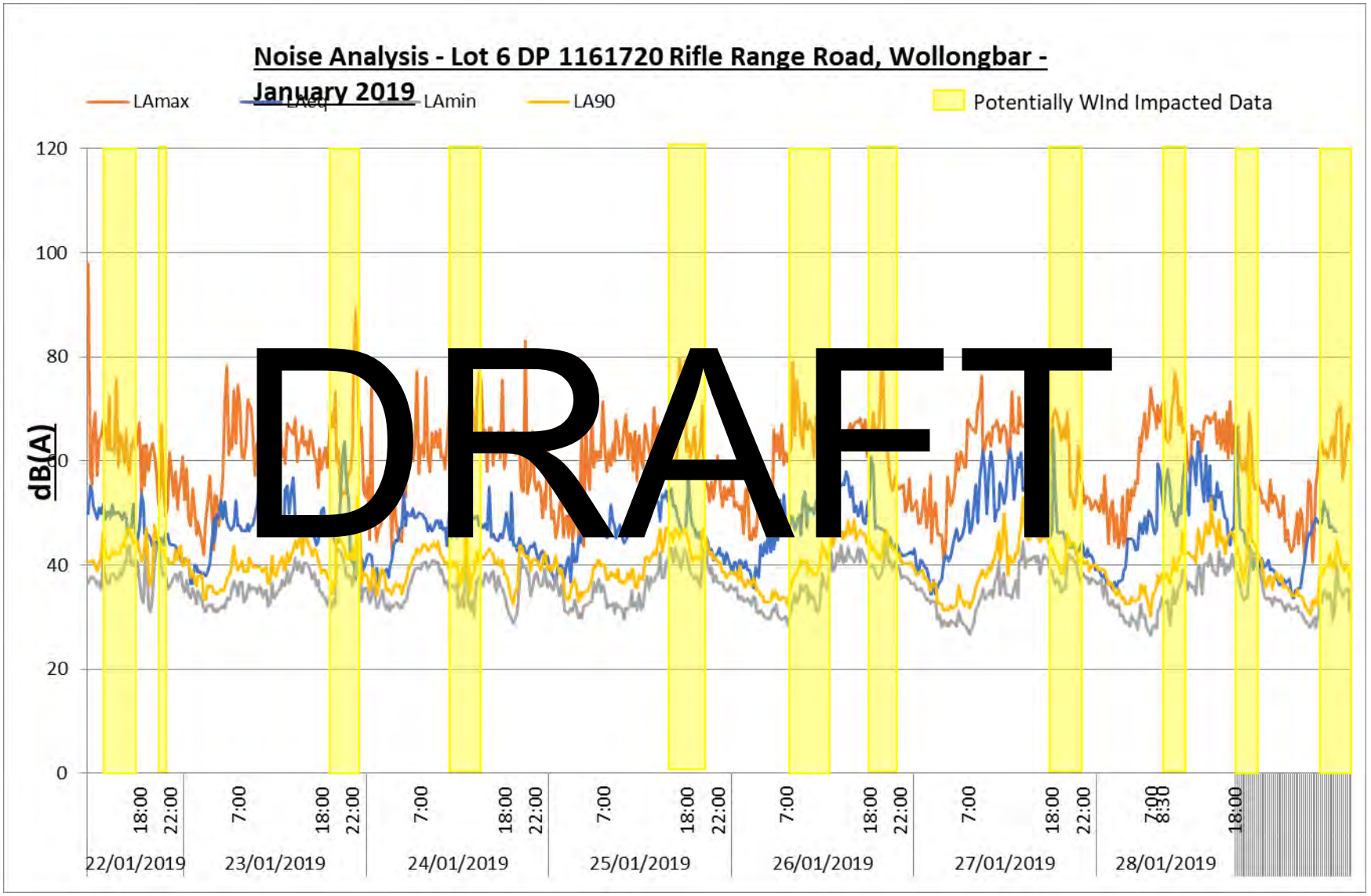
The primary noise observed while on site emanates from bird calls, and vehicular movements along Rifle Range road. Secondary noise sources impacting on the subject site observed were distant and intermittent impacts from bulk earth works operations for the future subdivision to the north. These activities were sufficiently distant and screened by topography so as not to impact on the long-term ambient noise monitoring results.

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 B**.

Table 3.2 Background Sound Pressure Levels

Period	***$L_{Aeq(period)}$****	***RBL***	***Intrusive Noise Criteria RBL+5 dB***
(1)	***(2)***	***(3)***	
Day	*50*	*36*	***41***
Evening	*47*	*35*	***40***
Night	*42*	*33*	***38***

As can be seen from the above table, the existing Laeq exceeds the intrusive noise criteria project for all time periods for the day, evening and night. The ambient and background noise levels measured at ML1 over the monitoring period are presented in **Figure 3.2**.


Noise Analysis - Lot 6 DP 1161720 Rifle Range Road, Wollongbar - January 2019
LAmax
LAeq
LAmin
LA90
Potentially WInd Impacted Data
dB(A)
120
100
80
60
40
20
0
DRAFT
18:00
22:00
7:00
22/01/2019
23/01/2019
24/01/2019
25/01/2019
26/01/2019
27/01/2019
28/01/2019
8:30

3.4 Impact of Skate Park Use on Surrounding Neighbours

3.4.1 Noise Modelling

Noise levels from the proposed skate park at have been predicted to the closest sensitive locations using SoundPLAN v8.0 and the prediction methodology ISO 9613-2: 1996. Sound power levels used in the noise model have been calculated from on-site noise measurements at Lennox Head and Ballina skate parks and 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.

3.4.2 Noise Source Levels

It is understood that the primary noise sources at the proposed site include:

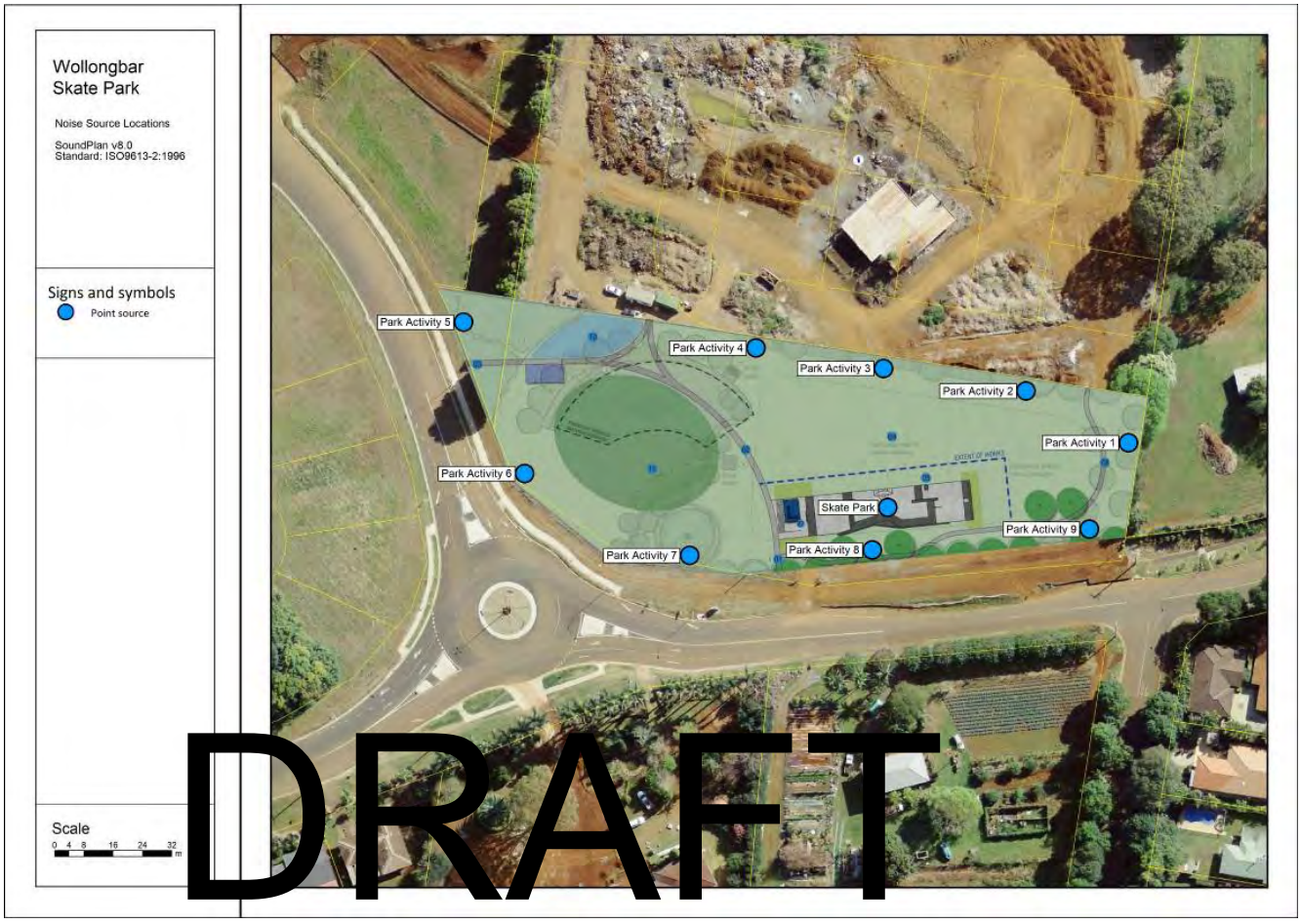
- Raised voices
- Wheels rolling on concrete
- Metal-on-metal clanging and scraping during various manoeuvres

The noise source level for the skate park has been calculated from on-site measurements at similar skate parks, made over several 15-minute periods of continuous activity. The average recorded LAeq noise level was then converted into a sound power level of 82 dB(A) SWL and positioned in the noise model at the location of the proposed skate park. Components of the noise source are expected to be impulsive, therefore a correction for impulsiveness is applied to predictions.

For comparison purposes, additional predictions have been made for general noise from the remainder of the proposed park. A source level of 65 dB(A) SWL is used to represent activities such as basketball, cycling, jogging, and voices. These sources are spread around the proposed park.

The noise source locations are presented in **Plate 3.1.**

Plate 3.1 Location of noise sources



3.4.3 Sensitive Receptors

Fourteen receptor points have been placed around the proposed skate park to represent the closest existing and future dwellings. The receptor points are placed on the property boundary closest to the noise source, or 30m from the dwelling in the direction of the noise source (whichever is shorter). The receptor locations include future proposed residential allotments to the north and east of the subject site. Receptor locations are presented in **Plate 3.2.**

Plate 3.2 Location of sensitive receptors

3.4.4 Weather Conditions

Noise modelling has been made using the prediction methodology *ISO9613-2: 1996* which, by default, presents noise levels at the receiver for meteorological conditions which are favourable for propagation from the sound source to the receiver.

The predicted noise levels are considered to represent the average propagation under meteorological conditions including wind and temperature inversion.

3.4.5 Model Verification

The noise model has been validated to a manual Concawe calculation of the noise level from the skate park propagated to Receptor 14. The comparison shows a satisfactory fit between the two prediction methods and is presented in **Table 3.4.**

Table 3.4 Model Verification

Receiver	Source to Receptor (m)	Concawe dB(A) L_{eq}	SoundPLAN dB(A) L_{eq}	Difference (dB(A))
14	155	23.1	24.3	+1.2

3.4.6 Calculation of Noise Levels

Noise levels from the skate park have been predicted to each receptor. Predicted noise levels include screening from existing and proposed structures and topography.

Topographic information sourced from the New South Wales Government and from the Client. Predicted noise levels and assessment are presented in **Table 3.5**. Visual noise contours are presented in **Plates 3.3** and **3.4**.

Table 3.5 Predicted noise levels. Levels are in dB(A) Leq, free-field.

Receiver	Skate Park Noise Level dB(A) Leq *	Park Activity Noise Level dB(A) Leq	Day Criteria	Evening Criteria	Assessment
1	36	33	41	40	Pass
2	38	32	41	40	Pass
3	40	32	41	40	Pass
4	40	33	41	40	Pass
5	38	32	41	40	Pass
6	35	35	41	40	Pass
7	37	37	41	40	Pass
8	34	25	41	40	Pass
9	42	28	41	40	+2
10	35	23	41	40	Pass
11	31	26	41	40	Pass
12	30	28	41	40	Pass
13	30	28	41	40	Pass
14	28	27	41	40	Pass

* Includes +5dB(A) correction for impulsiveness and tonality.

Plate 3.3 Noise contours at 1.5m above ground, skate park activity. Levels are in dB(A), free-field. Includes +5dB(A) correction for impulsiveness and tonality.

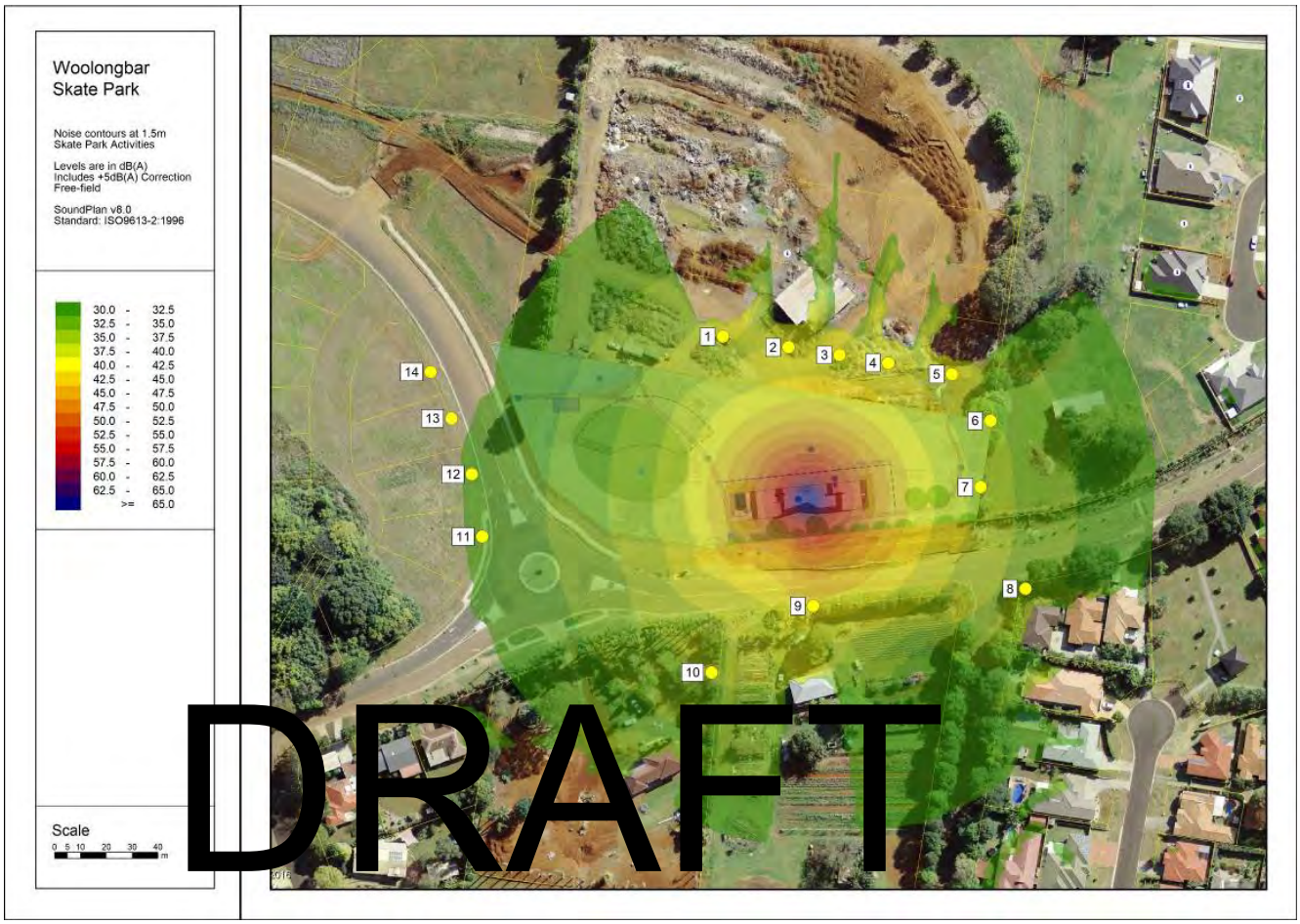


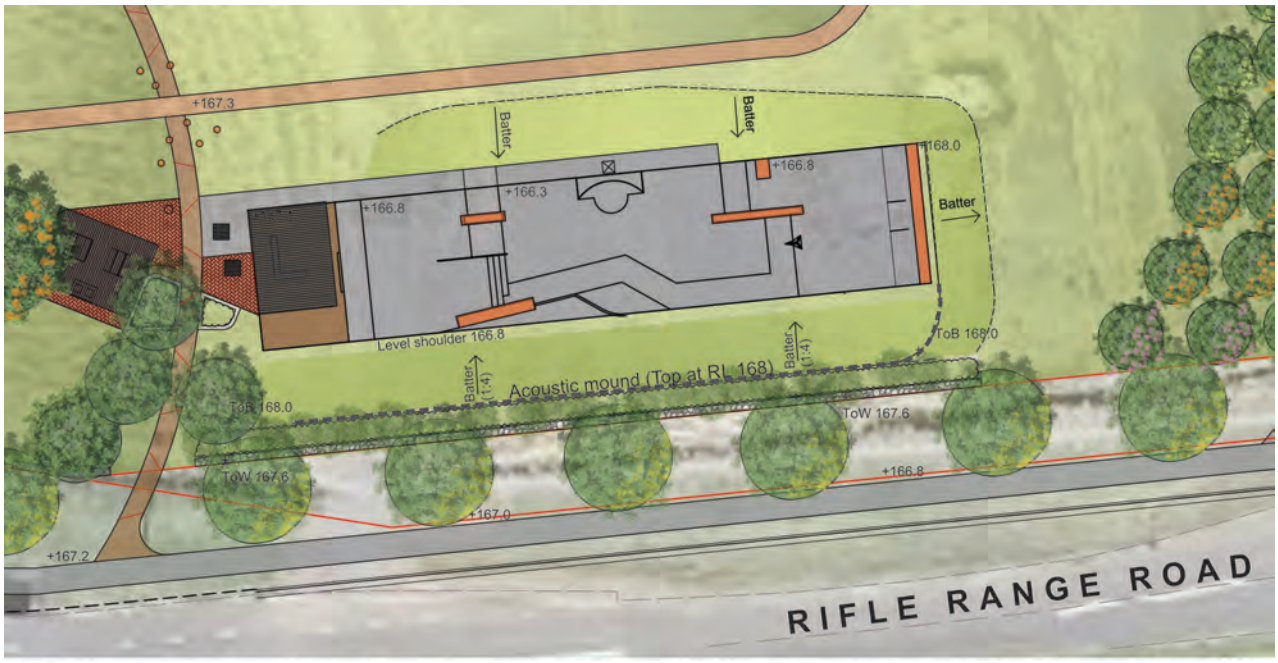
Plate 3.4 Noise contours at 1.5m above ground, park activity. Levels are in dB(A), free-field.

3.4.7 Noise Mitigation

Noise levels from the site have been predicted to exceed the criteria at Receptor 9. It is understood that an earth bund to the south and east of the skate park may be included, and the location of the proposed acoustic mound has been supplied as a digital elevation model. The location of the acoustic mound is shown in **Plate 3.5** as the line marked 'ToB 168.0' that extends along the south and east of the skate park.

Predicted noise levels include screening from the proposed barrier and are presented including screening from the proposed bund in **Table 3.6**. Visual noise contours are presented in **Plate 3.6**.

Plate 3.5 Concept Design including location of proposed acoustic mound



LEGEND

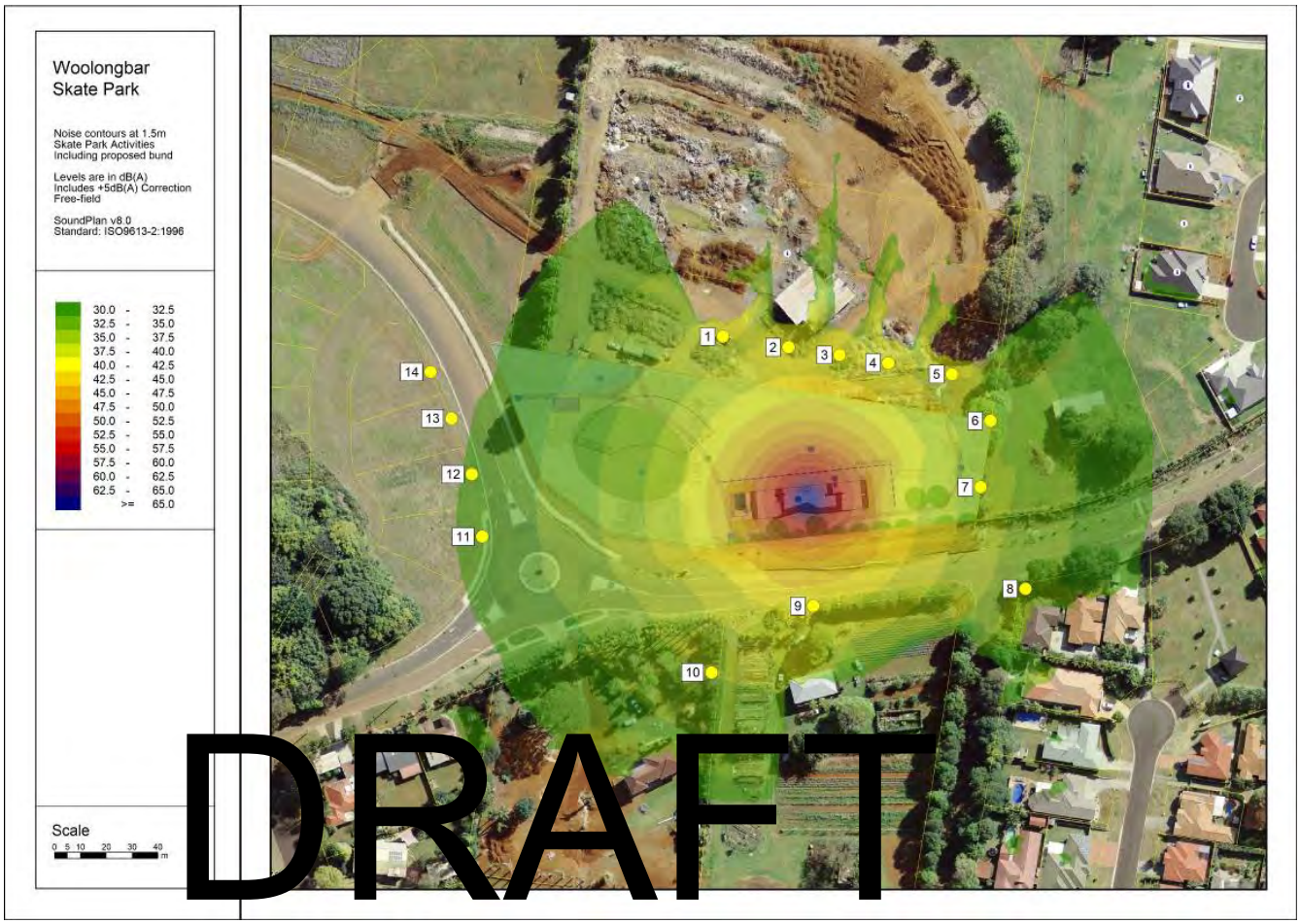
ToB Top of Batter (level) ----- Top of acoustic mound +167.7 Approx design level

ToW Top of Wall (level) Low stone wall ------- Bottom of batter

Table 3.6 Predicted noise levels including screening from proposed barrier. Levels are in dB(A) free-field. Includes +5dB(A) correction for impulsiveness and tonality

Receiver	Skate Park Noise Level dB(A) Leq *	Day Criteria	Evening Criteria	Assessment
1	36	41	40	Pass
2	38	41	40	Pass
3	40	41	40	Pass
4	40	41	40	Pass
5	38	41	40	Pass
6	36	41	40	Pass
7	36	41	40	Pass
8	34	41	40	Pass
9	40	41	40	Pass
10	35	41	40	Pass
11	31	41	40	Pass
12	30	41	40	Pass
13	30	41	40	Pass
14	29	41	40	Pass

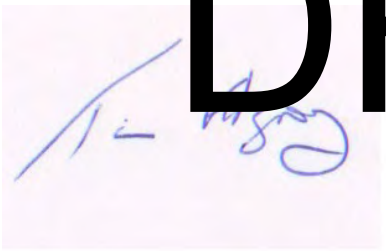
Plate 3.6 Noise contours at 1.5m above ground, with barrier. Levels are in dB(A), free-field. Includes +5dB(A) correction for impulsiveness and tonality



4. Conclusion

- A noise model has been constructed to predict the propagation of noise from the proposed skate park. The model includes shielding effects from existing and proposed structures and topography. Topography information included in the model was sourced from the New South Wales Government and the Client.
- Noise levels from expected activities at the skate park are predicted to exceed the daytime and evening Intrusiveness Noise Criteria at Receptor 9 to the south.
- Noise levels from expected activities at the skate park, including screening from the proposed earth bund discussed in Section 3.4.7, are predicted to be within the daytime and evening Intrusiveness Noise Criteria at all nearby sensitive receptors, including proposed residential Lots in the locale.

This report has been prepared by Tim Fitzroy of *Tim Fitzroy & Associates* and Matt Dever of *Noise Measurement Services, Brisbane*



Tim Fitzroy
Environmental Health Scientist

References

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

A/NZ Standards, 1987 Internal noise limits from Australian/New Zealand Standard AS/NZS 2107:1987.

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

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A Concept Plan

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WOLLONGONG DISTRICT PARKLAND: FUN AND FITNESS FOR ALL

CHALLENGING _ LEARNING _ CONNECTING : EMPOWERING BODIES _ MAKING MEMORIES

PRELIMINARY CONCEPT PLAN

design team ink : landscape architecture + urban design
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DATE: 5 MARCH 2019

SCOPE

Ballina Shire Council has engaged design team ink to prepare a concept plan for the future embellishment of land at the corner of Plateau Drive and Rifle Range Road, Wollongbar, as a district level parkland. A district level parkland supports not only the local residents but also visitors from other nearby villages and towns.

In the past there have been numerous community engagement activities undertaken and a number of plan options prepared for this site. The concept design developed herein seeks to best address the varied consultation outcomes with Council's recreation planning objectives for the site.

The things we like about our village

The things we think could be improved

The things important for Wollongbar's future

Above: Extracts from the engagement undertaken as part of the Wollongbar

SITE

Above: Photo of the site taken during remediation works - looking towards the roundabout.

KEY FEATURES OF THE SITE AND CONTEXT

The proposed Wollongbar District Parkland is located at the corner of Rifle Range Road and Plateau Drive near the interface of the original and newer areas of Wollongbar. The site is central to an existing as well as planned future residential population.

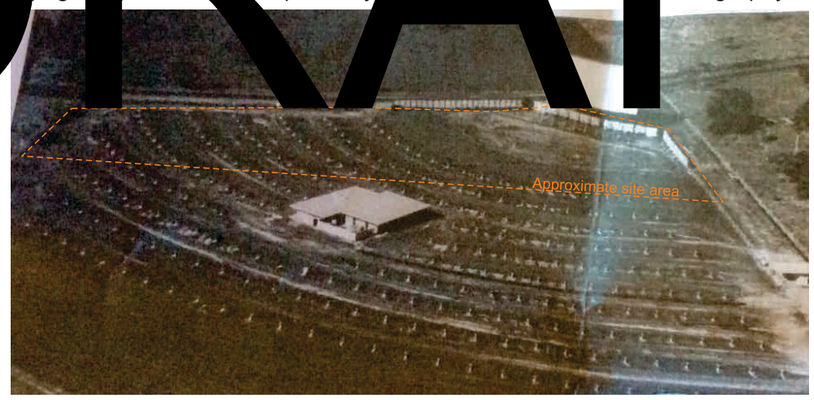
The land is part of the Bundjalung Nation and, according to Keats N.C. (1988) is within the Nyangbal and Wiyabal tribal language areas.

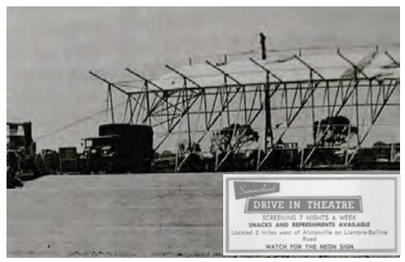
An existing park containing play equipment is located 100m to the south-east at Killarney Crescent. This park provides for children ages 4-10 years. The site is also located approximately 500m - 1km from the new sports fields which provide multipurpose ovals and multi-courts for public use and teams sports - primarily ball games.

The site in it's present form is unconstrained by existing vegetation and the landform is relatively flat with a small portion at the western extent falling away to Plateau Drive to the west.

The Wollongbar and broader plateau area contains prime agricultural land and once supported The Big Scrub. This vegetation type is highly valued by the com[illegible].

Historic[illegible], the site was [illegible] former Su[illegible]mer[illegible]d Drive-in T[illegible]atre which [illegible]as a s[illegible]ificant social[illegible] arts reso[illegible]e up[illegible]l it ceased [illegible]eration in the [illegible]80's. [illegible]ns of the [illegible]cle acc[illegible]s isles re[illegible] [illegible]ogra[illegible]y of the [illegible]dscape today [illegible] can be [illegible]n in aer[illegible] photography.





Above: Summerland Drive-In Theatre
(Source: download from facebook "Ballina Blast from the Past" contribution by Brian Rose

THE VISION

The vision, is to provide a parkland to service the broader district which offers fun and fitness opportunities for all.

KEY PRINCIPLES

Welcoming and Inclusive

- A welcoming setting where people feel included, comfortable, safe and want to stay.
- Adaptive spaces which can be used for festive or seasonal, as well as supporting day-to-day recreational and fitness needs.
- Connected to adjoining complementary facilities such as path networks, residential areas, play areas, the recreation grounds and transport nodes.
- Suitable for people of all capabilities, ages and backgrounds.
- Compatible with surrounding existing and proposed future uses.

Suppor[illegible]nd Active Lifestyle and Healthy Living

- Oppo[illegible]nities for people to improve fitness, challenge themselves and conn[illegible] socially and thrive.
- Spac[illegible] for group and individual exercise.
- A pla[illegible] of high quality amenity with places to sit, walk, run or play in the shad[illegible]nd to enjoy the sun.
- **Appreciates and Informs About the Environment**
- Improves the environmental quality of the site and provides habitat.
- Reuses site materials and makes best use of local materials in construction where possible.
- Provides opportunities for education relating to the natural environment of the locality and historic uses of the site (in particular, subtropical rainforest vegetation of the plateau and the drive-in theatre).
- A place where people learn new things and create great memories.

PARKLAND CONCEPT PRECINCTS

There are five key precincts proposed:

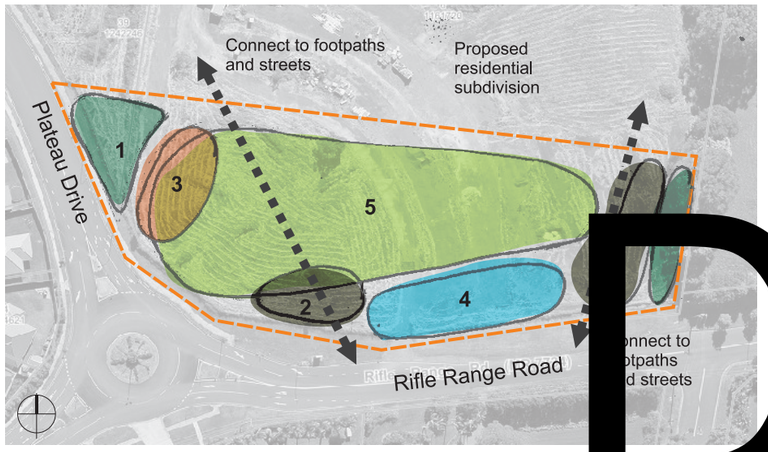
Precinct 1 Rainforest Mini-Arboretum (or natural edge)

Precinct 2 Produce and Picnic

Precinct 3 Group Fitness and Amenities

Precinct 4 Skate and Ride

Precinct 5 Multi-functional Open Space



Context Theme Generators

Deep red soils and orange basalt rock

Bright green pastures and deep green forests and orchards

Grey timber and metal rural infrastructure

Grey bitumen of the old drive-in isles

INDICATIVE CONCEPT IMAGERY

1. Rainforest Mini-Arboretum:
Steeper land planted with local rainforest plants supported by interpretative signage - a place to explore - a place to learn - a place to relax - tactile

Above left: Wild Play area by Ian Potter, Above right: My children exploring a native garden

2. Produce and Picnic:
A place for people or groups to sit and have lunch - a community food tree orchard (nuts/fru… a place to … eat - observe … ervise - socialis…

3. Group Fitness and Amenities:
Functional equipment for street workouts and cross training to suit all ages including elderly - a place to challenge yourself - colourful - fun - run

Above: Fitness equipment montage prepared by Urban Play

4. Skate and Ride
A small skate park set within landscaped parkland, suitable for skate boards, scooters and park bikes- a place for youth/families - a place to connect - fun

Above: Kwinana Skate Park (WA) by Convic

Above left: …te park in Woolwich Canada, Above right: Singleton Skate Park by Skate Sculpture (WA)

5. Multi-…ctional Open Space:
Open gra… areas which can be used for a variety of informal activities - a place to run, sit o… rticipate in group activities - a place to gather - adaptable

Above: Outdoor table tennis at Jamieson Park, South Penrith, hammocks, running track

Above: Adaptable spaces for group yoga, painting or cultural activities

design team ink : landscape architecture + urban design www.designteamink.com
Document Revision Date 1 February 2019

GENERAL FEATURES
1. Car parking - 24 spaces (22 + 2 accessible)
2. Main parkland entrance - Recycled brick paving, seating, gardens and artwork
3. Main street footpath (2m wide)
4. Park interpretative footpath (1.5m wide) with pavement etchings providing historical information about the drive-in theatre or other related themes
5. Site of former drive-in theatre screen (footings to be removed). New collaborative art interpretative pillars (drive-in theatre theme)
6. Toilet Building - two unisex accessible toilets

RAINFOREST MINI-ARBORETUM
7. Area 1- Subtropical rainforest species with a narrow walking trail and species information signage
8. Area 2 - Subtropical rainforest species with information signage along the pathway edge
9. Street and park trees including species tags

PRODUCE AND PICNIC
10. BBQ and picnic area
11. Community orchard (fruit and nut trees of the plateau)

GROUP FITNESS AREA
12. Fitness equipment (street workout and cross training) suitable for teenagers, adults and seniors
13. Climbing net (children and adults)
14. Multipurpose pathway and running track (250m long) with distance markers

SKATE AND RIDE
15. Small skate park facility suitable for skate boards, scooters and park bikes.
16. Acoustic and observation mound.

MULTI-FUNCTIONAL OPEN SPACE
17. Multi-functional open space for general use (painting, outdoor learning, ball games etc)
18. Multi-court (15m x 10m) with basketball ring and backboard

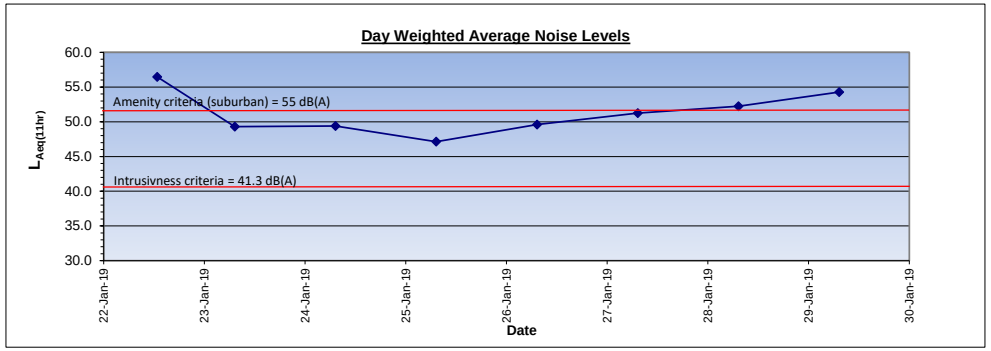
CONCEPT DESIGN PLAN

B Noise Data

DRAFT

Noise Assessment

Day Period	7am to 6pm		
amenity criteria	55	dB(A)	suburban
Intrusiveness criteria (RBL+ 5)	41.3	dB(A)	



Day	Date	$L_{Aeq(day)}$	ABL	RBL
Tuesday	22/01/2019	56.5	38.8	
Wednesday	23/01/2019	49.3	37.9	
Thursday	24/01/2019	49.4	38.0	
Friday	25/01/2019	47.1	35.7	**36.3**
Saturday	26/01/2019	49.6	35.0	
Sunday	27/01/2019	51.2	32.9	
Monday	28/01/2019	52.2	34.3	
Tuesday	29/01/2019	54.3	36.9	
		50.4		

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
									#NUM!
									#NUM!
								0	#NUM!
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2	22/01/2019	11:30:00	46	40.5	39.9	39811			
3	22/01/2019	11:45:00	45.1	40.5	40.2	32359			
4	22/01/2019	12:00:00	47.3	41	40.5			2526879	58.0
5	22/01/2019	12:15:00	48	39.9	40.5	63096			
6	22/01/2019	12:30:00	44.3	38.8	40.6	26915			
7	22/01/2019	12:45:00	46.4	40.2	41	43652			
8	22/01/2019	13:00:00	49.8	42	41.2			133663	45.2
9	22/01/2019	13:15:00	55.3	46.5	41.2				
10	22/01/2019	13:30:00	54	42.5	41.8				
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13	22/01/2019	14:15:00	48.8	41.8	42.1				
14	22/01/2019	14:30:00	51	42.8	42.5				
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16	22/01/2019	15:00:00	51.7	42.6	42.7			0	#NUM!
17	22/01/2019	15:15:00	48.6	42.1	42.7				
18	22/01/2019	15:30:00	50.3	42.7	42.8				
19	22/01/2019	15:45:00	50.1	44	43.5				

20	22/01/2019	16:00:00	49.1	43.5	44			0	#NUM!
21	22/01/2019	16:15:00	51.6	46.4	44				
22	22/01/2019	16:30:00	49.7	46.7	44.3				
23	22/01/2019	16:45:00	50.1	47.2	44.6				
24	22/01/2019	17:00:00	50.2	45.8	45.8			0	#NUM!
25	22/01/2019	17:15:00	49.7	44	46.4				
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3	23/01/2019	7:45	46.7	38.8	37.9	46774			
4	23/01/2019	8:00	46.9	38.6	38.3	48978		219889	47.4
5	23/01/2019	8:15	47.7	38.9	38.5	58884			
6	23/01/2019	8:30	52.3	41.4	38.6	169824			
7	23/01/2019	8:45	47.5	40.6	38.6	56234			
8	23/01/2019	9:00	47.6	39.7	38.8	57544		342487	49.3
9	23/01/2019	9:15	46.5	39.7	38.9	44668			
10	23/01/2019	9:30	46.5	39.7	39	44668			
11	23/01/2019	9:45	46.6	39.8	39.2	45709			
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	23/01/2019	13:30	51.2	42.5	40.8				
24	23/01/2019	13:45	47.8	40.6	41.4	60256			
	23/01/2019	14:00	47.8	42	41.6			115210	44.6
	23/01/2019	14:15	48.3	42.9	41.7				
	23/01/2019	14:30	48.9	44.6	41.8				
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6	25/01/2019	8:30	46.4	38.2	36.9	43652			
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11	25/01/2019	9:45	51.5	36.3	37.4	141254			
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13	25/01/2019	10:15	47.4	38.5	37.9	54954			
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16	25/01/2019	11:00	47.8	39.2	38.5	60256	192992	48.1	
17	25/01/2019	11:15	45.6	35.7	38.6	36308			
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	27/01/2019	12:00	58.8	45.8	42.3			97724	43.9
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	27/01/2019	13:15	54.4	42.6	43.7				
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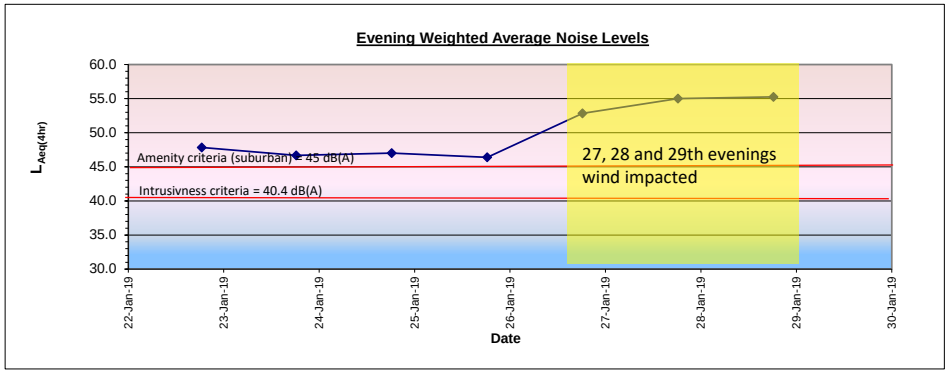
						2263105			
1	28/01/2019	7:15	48.1	34.3	34.3	64565			
2	28/01/2019	7:30	48	34.7	34.7	63096			
3	28/01/2019	7:45	45.9	35.9	35.9	38905			
4	28/01/2019	8:00	49.3	38.1	36.5	85114		251679	48.0
5	28/01/2019	8:15	46.2	36.7	36.7	41687			
6	28/01/2019	8:30	50.5	38.3	37.3	112202			
7	28/01/2019	8:45	49.6	37.3	38	91201			
8	28/01/2019	9:00	47.8	38.4	38.1	60256		305346	48.8
9	28/01/2019	9:15	45.9	38	38.3	38905			
10	28/01/2019	9:30	47	36.5	38.4	50119			
11	28/01/2019	9:45	59.4	38.4	38.4	870964			
	28/01/2019	[illegible]	58	[illegible]	38.9	[illegible]		[illegible]	[illegible]
12	28/01/2019	10:15	54.1	39	39	25[illegible]			
13	28/01/2019	10:30	50.8	38.9	40.4	12[illegible]			
	28/01/2019	10:45	[illegible].1	41.1	41.[illegible]				
	28/01/2019	11:00	[illegible].4	41.9	41[illegible]			377[illegible]	49.7
	28/01/2019	11:15	[illegible].1		4[illegible]				
	28/01/2019	11:30	[illegible].4	42.2	[illegible]				
	28/01/2019	11:45	[illegible].1	42.4					
	28/01/2019	12:00	[illegible].4	42.3	[illegible]9				#NUM!
	28/01/2019	12:15	47.5	41.8	[illegible].1				
	28/01/2019	[illegible]	51.6	41.6	[illegible].2				
	28/01/2019	12:45	49.9	41.7	42.2				
14	28/01/2019	13:00	56.5	40.4	42.3	446684		446684	50.5
	28/01/2019	13:15	59.6	46.9	42.4				
	28/01/2019	13:30	52.3	44.8	43.4				
	28/01/2019	13:45	49.6	42.2	44.5				
	28/01/2019	14:00	60.2	45.3	44.8			0	#NUM!
	28/01/2019	14:15	60.8	48.2	44.9				
	28/01/2019	14:30	59.5	45.9	45				
	28/01/2019	14:45	55.5	46.1	45.3				
	28/01/2019	15:00	63.8	52.7	45.5			0	#NUM!
	28/01/2019	15:15	61.8	47.5	45.6				
	28/01/2019	15:30	55.7	47	45.9				
	28/01/2019	15:45	52.1	43.4	46.1				
	28/01/2019	16:00	61	48.7	46.2			0	#NUM!
	28/01/2019	16:15	52.4	44.5	46.3				
	28/01/2019	16:30	59.1	45.5	46.8				
	28/01/2019	16:45	50.2	42.1	46.9				
	28/01/2019	17:00	53.4	44.9	47			0	#NUM!
	28/01/2019	17:15	50.6	45.6	47.5				
	28/01/2019	17:30	55.8	46.2	48.2				
	28/01/2019	17:45	52.9	46.3	48.7				
	28/01/2019	18:00	54	45	52.7			0	#NUM!
						2340962			

1	29/01/2019	7:15	48.2	39.7	34.7	66069
2	29/01/2019	7:30	52.1	44.9	36.9	162181
3	29/01/2019	7:45	50.4	42.3	37.3	109648
4	29/01/2019	8:00	50.5	40.6	37.7	112202
5	29/01/2019	8:15	47.2	39.7	38.1	52481
6	29/01/2019	8:30	47.5	38.9	38.3	56234
7	29/01/2019	8:45	47.3	39.8	38.3	53703
8	29/01/2019	9:00	46.5	39.1	38.7	44668
9	29/01/2019	9:15	46.4	37.3	38.9	43652
10	29/01/2019	9:30	44.6	36.9	39	28840
11	29/01/2019	9:45	49.5	38.7	39.1	89125
	29/01/2019	10:00	61.9	41.1	39.4	
12	29/01/2019	10:15	48.4	40.7	39.7	69183
13	29/01/2019	10:30	58.1	38.3	39.7	645654
	29/01/2019	10:45	48.6	41.8	39.8	
14	29/01/2019	11:00	51.7	40.9	40.3	147911
	29/01/2019	11:15	66.2	51.2	40.4	
	29/01/2019	11:30	65.5	49.4	40.5	
15	29/01/2019	11:45	60	38.3	40.6	1000000
16	29/01/2019	12:00	60.4	40.9	40.7	1096478
17	29/01/2019	12:15	45.1	34.7	40.9	32359
18	29/01/2019	12:30	57.4	37.7	40.9	549541
19	29/01/2019	[illegible]	48.2	[illegible]	41.1	6[illegible]
20	29/01/2019	[illegible]	46.7	[illegible]	41.2	4[illegible]
	29/01/2019	13:15	49.7	42.4	41.8	
	29/01/2019	13:30	[illegible]1.9	41.2	42.3	
21	29/01/2019	13:45	[illegible].2	40.3	42[illegible]	5[illegible]
22	29/01/2019	14:00	[illegible].4	[illegible]	4[illegible]	8[illegible]
23	29/01/2019	14:15	[illegible].7	[illegible]9	[illegible]	37[illegible]
24	29/01/2019	14:30	[illegible].6	40.5	[illegible]	1445[illegible]0
	29/01/2019	14:45	[illegible]5.8	53.4	[illegible].4	
	29/01/2019	15:00	[illegible]60.9	46.1	[illegible]1.2	
	29/01/2019	[illegible]	63.7	46.9	[illegible]63.4	

6429325

Noise Assessment

Evening Period	6pm to 10pm		
amenity criteria	45	dB(A)	Suburban
Intrusiveness criteria (RBL+ 5)	40.4	dB(A)	



Day	Date	$L_{Aeq(evening)}$	ABL	RBL
Thursday Evening	22/01/2019	47.8	36.2	
Friday Evening	23/01/2019	46.7	34.5	
Saturday Evening	24/01/2019	47.0	33.8	
Sunday Evening	25/01/2019	46.4	40.6	**35.4**
Monday Evening	26/01/2019	52.8	41.5	
Tuesday Evening	27/01/2019	55.0	38.4	
Wednesday Evening	28/01/2019	55.3	37.2	
		46.8		

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
	22/01/2019	18:15	45.8	40.7	36.2				
	22/01/2019	18:3		41.7	37.8				
	22/01/2019	18:4	47.2	43.4	6				
	22/01/2019	19:0	51.7	47.2	4			0	#NUM!
1	22/01/2019	19:1	46.1	7.8	2	40			
2	22/01/2019	19:3	44.9	.2	4	309			
3	22/01/2019	19:4	47.2	.6	41.4	5248			
4	22/01/2019	20:0	53.7	.8	41.7	234423		358545	49.5
5	22/01/2019	20:1	51.6	6.5	42.7				
6	22/01/2019	20:3	45.9	4.7	1	38905			
7	22/01/2019	20:4	46	44.3	3	39811			
8	22/01/2019	21:0		43.1	4	38019		261278	48.2
9	22/01/2019	21:15	45.1	42.7	44.7	32359			
10	22/01/2019	21:30	43.7	41.4	45.5	23442			
11	22/01/2019	21:45	44.3	41.4	47.2	26915			
12	22/01/2019	22:00	44.5	40.1	47.8	28184		110901	44.4
							730724		
1	23/01/2019	18:15	45.7	39.1	34.5	37154			
2	23/01/2019	18:30	45.9	39.1	36.3	38905			
3	23/01/2019	18:45	45.4	37.7	36.8	34674			
4	23/01/2019	19:00	43.8	37.4	37.4	23988		134720	45.3
5	23/01/2019	19:15	44.7	34.5	37.7	29512			
6	23/01/2019	19:30	47.1	36.8	39.1	51286			
7	23/01/2019	19:45	50.4	36.3	39.1	109648			
	23/01/2019	20:00	51	49.1	41			190446	46.8
	23/01/2019	20:15	47.7	45.4	41.1				
	23/01/2019	20:30	46.2	44.6	41.3				
	23/01/2019	20:45	47.3	44	42.3				
	23/01/2019	21:00	47.4	43.3	43.3			0	#NUM!
	23/01/2019	21:15	45.9	41.3	44				
	23/01/2019	21:30	44.3	41.1	44.6				
	23/01/2019	21:45	44.7	42.3	45.4				
	23/01/2019	22:00	44.4	41	49.1			0	#NUM!
							325166		
1	24/01/2019	18:15	46	38	32.4	39811			

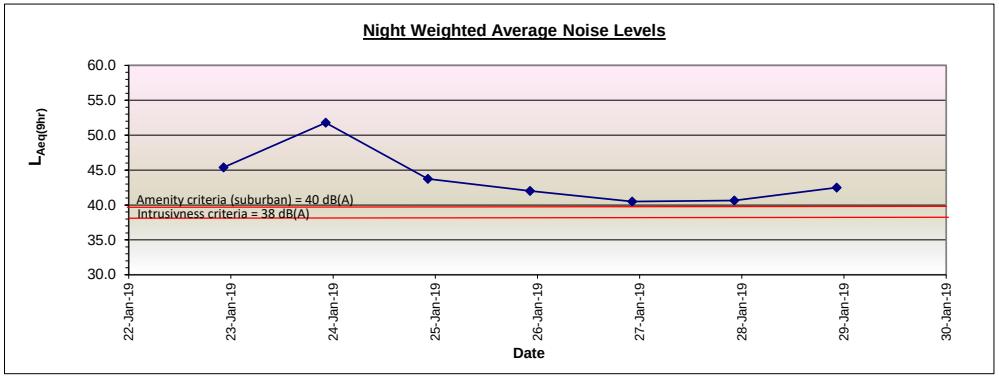
2	24/01/2019	18:30	45.2	36.8	33.8	33113			
3	24/01/2019	18:45	44.9	34.1	34.1	30903			
4	24/01/2019	19:00	44.7	33.8	35.2	29512		133339	45.2
5	24/01/2019	19:15	46	32.4	35.2	39811			
6	24/01/2019	19:30	45.3	35.2	36.8	33884			
7	24/01/2019	19:45	47.1	35.2	38	51286			
8	24/01/2019	20:00	50.1	43.7	39	102329		227311	47.5
9	24/01/2019	20:15	47	43.7	40.9	50119			
10	24/01/2019	20:30	44.8	42.4	41.1	30200			
11	24/01/2019	20:45	53.8	41.5	41.5	239883			
12	24/01/2019	21:00	43.9	41.8	41.6	24547		344749	49.4
13	24/01/2019	21:15	43.8	41.6	41.8	23988			
14	24/01/2019	21:30	42.7	39	42.4	18621			
15	24/01/2019	21:45	45.3	40.9	43.7	33884			
16	24/01/2019	22:00	43.9	41.1	43.7	24547		101041	44.0
							806439		
	25/01/2019	18:15	51.3	44.7	40.6				
	25/01/2019	18:30	49.4	42.6	40.7				
7	25/01/2019	18:45	48.1	40.7	40.9	64565			
8	25/01/2019	19:00	46.9	40.9	41.1	48978		113543	44.5
	25/01/2019	19:15	46.4	41.9	41.1				
	25/01/2019	19:30	46.8	41.1	41.1				
	25/01/2019	19:4		41.1	41.6				
	25/01/2019	20:0		46.9	9			0	#NUM!
	25/01/2019	20:1	50.4	45.2					
	25/01/2019	20:3	47.7	5.6					
1	25/01/2019	20:4	47.1	3.9		512			
2	25/01/2019	21:0	45.4	1.9	3.9	3467		0	43.3
3	25/01/2019	21:1	46.4	1.6	44.7	4365			
4	25/01/2019	21:3	45.1	1.1	45.2				
5	25/01/2019	21:4	45.5	1.6	5.6	35481			
6	25/01/2019	22:0	45.7	40.6	9	37154		148646	45.7
							34	49	
1	26/01/2019	18:15	49.4	42.9	41.1	87096			
2	26/01/2019	18:30	50.9	43.6	41.5	123027			
3	26/01/2019	18:45	52.1	42.8	41.6	162181			
4	26/01/2019	19:00	48.4	41.5	42.2	69183		441487	50.4
5	26/01/2019	19:15	47.9	42.2	42.2	61660			
6	26/01/2019	19:30	51.4	41.1	42.4	138038			
7	26/01/2019	19:45	53	42.4	42.8	199526			
8	26/01/2019	20:00	60.8	45.8	42.9	1202264		1601489	56.0
9	26/01/2019	20:15	58.4	46.8	42.9	691831			
10	26/01/2019	20:30	46.9	43.9	42.9	48978			
11	26/01/2019	20:45	47.6	43.8	43.4	57544			
12	26/01/2019	21:00	47.3	43.4	43.6	53703		852056	53.3
13	26/01/2019	21:15	46.9	42.9	43.8	48978			
14	26/01/2019	21:30	46.9	42.9	43.9	48978			
15	26/01/2019	21:45	46.5	41.6	45.8	44668			
16	26/01/2019	22:00	45.7	42.2	46.8	37154		179778	46.5
							3074810		
1	27/01/2019	18:15	48.7	42.3	38.4	74131			
2	27/01/2019	18:30	49.6	41.2	38.4	91201			
3	27/01/2019	18:45	48.7	40.8	39.6	74131			
4	27/01/2019	19:00	48.2	39.6	40.6	66069		305532	48.8
5	27/01/2019	19:15	46.8	38.4	40.6	47863			
6	27/01/2019	19:30	45.5	38.4	40.8	35481			

7	27/01/2019	19:45	47	40.6	40.9	50119			
8	27/01/2019	20:00	66.1	46.1	41.2	4073803		4207266	60.2
9	27/01/2019	20:15	54.6	44.3	41.4	288403			
10	27/01/2019	20:30	46.3	43.7	42.3	42658			
11	27/01/2019	20:45	46.2	44.2	42.9	41687			
12	27/01/2019	21:00	46.3	44.3	43.7	42658		415406	50.2
13	27/01/2019	21:15	46.3	42.9	44.2	42658			
14	27/01/2019	21:30	44.9	40.6	44.3	30903			
15	27/01/2019	21:45	44.1	40.9	44.3	25704			
16	27/01/2019	22:00	44.9	41.4	46.1	30903		130168	45.1
							5058372		
1	28/01/2019	18:15	50.9	43.6	36.7	123027			
2	28/01/2019	18:30	49.1	42.4	37.2	81283			
3	28/01/2019	18:45	48.7	41	37.4	74131			
4	28/01/2019	19:00	44.6	37.4	39.2	28840		307281	48.9
5	28/01/2019	19:15	43.8	36.7	39.6	23988			
6	28/01/2019	19:30	46.7	39.2	40.9	46774			
7	28/01/2019	19:45	47.3	41.4	41	53703			
8	28/01/2019	20:00	66.4	60.8	41.4	4365158		4489623	60.5
9	28/01/2019	20:15	55.3	45.1	41.6	338844			
10	28/01/2019	20:30	47	44.2	42.4	50119			
11	28/01/2019	20:45	46.8	43.8	42.7	47863			
12	28/01/2019	21:0	[illegible]	42.7	43.6	[illegible]738		[illegible]	
13	28/01/2019	21:1	44.4	41.6	[illegible]8	[illegible]42			
14	28/01/2019	21:3	43.9	40.9	[illegible]	2[illegible]7			
15	28/01/2019	21:4	43.7	[illegible]9.6	[illegible]	23[illegible]			
16	28/01/2019	22:0	42	[illegible]7.2	[illegible]	158		91381	43.6
							53[illegible]		
	28/02/2018	18:1	48.7	[illegible].5	41.8				
	28/02/2018	18:3	48.2	[illegible].3	42.2				
	28/02/2018	18:4	50.3	[illegible].3	[illegible].3				
	28/02/2018	19:0	53.8	45.4	[illegible]			0	#NUM!
	28/02/2018	19:1	[illegible]	44.2	[illegible]				
	28/02/2018	19:30	50.6	44.4	42.7				
	28/02/2018	19:45	53.6	45	42.8				
	28/02/2018	20:00	45.7	43.7	43			0	#NUM!
	28/02/2018	20:15	45	43	43.7				
	28/02/2018	20:30	44.9	42.8	44.2				
	28/02/2018	20:45	45.1	42.7	44.4				
	28/02/2018	21:00	44.2	42.5	44.5			0	#NUM!
	28/02/2018	21:15	44	42.3	45				
	28/02/2018	21:30	44.3	42.4	45.3				
	28/02/2018	21:45	44	42.2	45.3				
	28/02/2018	22:00	43.7	41.8	45.4			0	#NUM!
							0		

Noise Assessment

Night Period	10pm to 7am		
amenity criteria	40	dB(A)	Suburban
Intrusiveness criteria (RBL+ 5)	38.0	dB(A)	
Sleep Disturbance criteria (RBL+ 15)	48.0	dB(A)	

Night	Date	$L_{aeq(night)}$	ABL	RBL
Tuesday Night	22/01/2019	45.4	34.0	
Wednesday Night	23/01/2019	51.8	34.5	
Thursday Night	24/01/2019	43.7	33.7	
Friday Night (wind Impacted)	25/01/2019	42.0	33.0	**33.0**
Saturday Night	26/01/2019	40.5	31.4	
Sunday Night	27/01/2019	40.6	32.0	
Monday Night	28/01/2019	42.5	31.8	
		42.5		



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
	22/01/2019	22:15	44	40.4	33.3				
	22/01/2019			40.4	34				
	22/01/2019		45	42.7	34.4				
	22/01/2019	0	43.8	40.9	34.7			0	#NUM!
	22/01/2019	5	46.2	42.9	34.8				
	22/01/2019	0	45.9	43.6	34.8				
	22/01/2019	5	44	39.8	34.9				
	23/01/2019	0	43.8	40.2	35.3			0	#NUM!
	23/01/2019	5	43.9	41.3	35.6				
	23/01/2019	0	43.7	40.5	35.9				
1	23/01/2019	5	41	37.7	36	1412			
2	23/01/2019			38.9	36	19953		34078	39.3
3	23/01/2019	1:15	41.2	36.9	36	13183			
4	23/01/2019	1:30	40.1	36	36.9	10233			
5	23/01/2019	1:45	41.2	37.9	37.3	13183			
6	23/01/2019	2:00	40.9	37.9	37.7	12303		48901	40.9
7	23/01/2019	2:15	41	38.1	37.8	12589			
8	23/01/2019	2:30	36.4	34	37.9	4365			
9	23/01/2019	2:45	36.6	33.3	37.9	4571			
10	23/01/2019	3:00	40	35.9	38.1	10000		31525	39.0
11	23/01/2019	3:15	39.9	36	38.9	9772			
12	23/01/2019	3:30	38.7	36	38.9	7413			
13	23/01/2019	3:45	38.9	34.8	39.1	7762			
14	23/01/2019	4:00	38.1	34.8	39.8	6457		31404	38.9
15	23/01/2019	4:15	38.5	34.4	40.2	7079			
16	23/01/2019	4:30	37.8	34.7	40.3	6026			
17	23/01/2019	4:45	38.8	35.3	40.4	7586			
18	23/01/2019	5:00	40.2	34.9	40.4	10471		31162	38.9
19	23/01/2019	5:15	44.2	35.6	40.4	26303			
20	23/01/2019	5:30	48.9	37.3	40.5	77625			
21	23/01/2019	5:45	44.7	37.8	40.9	29512			
22	23/01/2019	6:00	49.6	38.9	41.3	91201		224641	47.5
23	23/01/2019	6:15	49.1	40.4	42.7	81283			
24	23/01/2019	6:30	52.4	43.7	42.9	173780			

25	23/01/2019	6:45	48.8	40.3	43.6	75858			
26	23/01/2019	7:00	52.1	39.1	43.7	162181			
							894813		
	23/01/2019	22:15	53.1	43.5	34.3	204174			
	23/01/2019	22:30	60.7	41.2	34.5	1174898			
1	23/01/2019	22:45	63.7	53.3	34.5	2344229			
2	23/01/2019	23:00	55.9	49.3	34.7	389045		4112345	60.1
3	23/01/2019	23:15	52.6	36.6	34.9	181970			
4	23/01/2019	23:30	41.2	38.6	35.2	13183			
5	23/01/2019	23:45	40.4	38.1	35.3	10965			
6	24/01/2019	0:00	41.2	37.9	35.6	13183		219300	47.4
7	24/01/2019	0:15	37.2	35.2	35.8	5248			
8	24/01/2019	0:30	42.9	36.5	35.9	19498			
9	24/01/2019	0:45	41.7	39.5	35.9	14791			
10	24/01/2019	1:00	41.3	38.9	36.4	13490		53027	41.2
11	24/01/2019	1:15	39.2	34.3	36.5	8318			
12	24/01/2019	1:30	40.3	35.9	36.6	10715			
13	24/01/2019	1:45	41.9	38.9	36.6	15488			
14	24/01/2019	2:00	42.1	39.2	36.8	16218		50739	41.0
15	24/01/2019	2:15	41.8	37.6	37.6	15136			
16	24/01/2019	2:30	39.6	34.9	37.6	9120			
17	24/01/2019	2:45	38.3	35.3	37.9	6761			
18	24/01/2019				38.1	8710			
19	24/01/2019				38.6	4571			
20	24/01/2019				38.9	6918			
21	24/01/2019				38.9				
22	24/01/2019				39.2			26496	38.2
23	24/01/2019				39.5				
24	24/01/2019				39.5				
25	24/01/2019				40.2				
26	24/01/2019				41.2			35615	39.5
27	24/01/2019				41.4				
28	24/01/2019								
29	24/01/2019	5:45	44.7	40.2	42.4	29512			
30	24/01/2019	6:00	47.1	41.4	42.7	51286		134610	45.3
31	24/01/2019	6:15	47.1	41.9	43.1	51286			
32	24/01/2019	6:30	53.8	43.1	43.5	239883			
33	24/01/2019	6:45	47.6	42.4	49.3	57544			
34	24/01/2019	7:00	50.2	42.7	53.3	104713		453426	50.5
							5125285		
1	24/01/2019	22:15	43.6	41	33.1	22909			
2	24/01/2019	22:30	42.6	40.2	33.3	18197			
3	24/01/2019	22:45	41.3	39.1	33.7	13490			
4	24/01/2019	23:00	42.8	40.4	33.9	19055		73650	42.7
5	24/01/2019	23:15	43.7	42.4	34.2	23442			
6	24/01/2019	23:30	43.4	42	34.7	21878			
7	24/01/2019	23:45	44.2	39	34.7	26303			
8	25/01/2019	0:00	42.3	39.8	34.8	16982		88605	43.5
9	25/01/2019	0:15	40.8	38.9	35.1	12023			
10	25/01/2019	0:30	42.2	39.6	35.2	16596			
11	25/01/2019	0:45	42.8	41.9	35.3	19055			
12	25/01/2019	1:00	42	39.6	35.9	15849		63522	42.0
13	25/01/2019	1:15	40.1	38.3	36.5	10233			
14	25/01/2019	1:30	41.8	39.2	36.8	15136			
15	25/01/2019	1:45	39	36.8	37.3	7943			
16	25/01/2019	2:00	38.4	34.2	37.4	6918		40230	40.0

17	25/01/2019	2:15	37.7	33.7	38.3	5888			
18	25/01/2019	2:30	36.1	33.3	38.9	4074			
19	25/01/2019	2:45	39.4	35.1	39	8710			
20	25/01/2019	3:00	40	36.5	39.1	10000		28672	38.6
21	25/01/2019	3:15	39.8	37.3	39.2	9550			
22	25/01/2019	3:30	39.1	35.3	39.6	8128			
23	25/01/2019	3:45	37.6	33.1	39.6	5754			
24	25/01/2019	4:00	40.4	34.7	39.7	10965		34397	39.3
25	25/01/2019	4:15	41.5	33.9	39.7	14125			
26	25/01/2019	4:30	36.8	34.7	39.8	4786			
27	25/01/2019	4:45	44.3	34.8	39.8	26915			
28	25/01/2019	5:00	40.5	35.2	40.2	11220		57047	41.5
29	25/01/2019	5:15	40.7	35.9	40.2	11749			
30	25/01/2019	5:30	45.4	37.4	40.4	34674			
31	25/01/2019	5:45	44.3	39.7	40.9	26915			
32	25/01/2019	6:00	46.8	39.7	41	47863		121201	44.8
33	25/01/2019	6:15	48	40.9	41	63096			
34	25/01/2019	6:30	48.1	41	41.9	64565			
35	25/01/2019	6:45	47.3	39.8	42	53703			
36	25/01/2019	7:00	50.6	40.2	42.4	114815		296180	48.7
							803504		
1	25/01/2019	22:15	45.4	40.5	32.8	34674			
2	25/01/2019	[illegible]	[illegible]	[illegible]	32.8	30200			
3	25/01/2019	[illegible]	[illegible]	38.6	32.8	16596			
4	25/01/2019	[illegible]0	43	38.6	33	19953		101422	44.0
5	25/01/2019	[illegible]5	41	37.5	33.3	[illegible]589			
6	25/01/2019	[illegible]0	41.8	38.3	33.5	[illegible]36			
7	25/01/2019	[illegible]5	42.4	38.6	33.8	[illegible]78			
8	26/01/2019	[illegible]0	43.2	38.7	33.8	[illegible]3		65996	42.2
9	26/01/2019	[illegible]5	42	38.1	33.9				
10	26/01/2019	[illegible]0	42.1	38.6	33.9	162[illegible]			
11	26/01/2019	[illegible]5	40.6	37	34.1	1023[illegible]			
12	26/01/2019	[illegible]	[illegible]	39.8	34.2	17378		59678	44.7
13	26/01/2019	1:15	41	37.7	34.9	12589			
14	26/01/2019	1:30	39.9	36.3	35	9772			
15	26/01/2019	1:45	38.5	35.7	35	7079			
16	26/01/2019	2:00	40.5	37.1	35	11220		40661	40.1
17	26/01/2019	2:15	40.4	36.7	35.7	10965			
18	26/01/2019	2:30	38.3	35.9	35.9	6761			
19	26/01/2019	2:45	40.9	37.4	36.3	12303			
20	26/01/2019	3:00	40.5	36.4	36.4	11220		41248	40.1
21	26/01/2019	3:15	39.5	35	36.7	8913			
22	26/01/2019	3:30	40.8	35	37	12023			
23	26/01/2019	3:45	39	34.2	37.1	7943			
24	26/01/2019	4:00	39	34.1	37.4	7943		36822	39.6
25	26/01/2019	4:15	37.4	32.8	37.5	5495			
26	26/01/2019	4:30	35.5	32.8	37.7	3548			
27	26/01/2019	4:45	39.7	32.8	38.1	9333			
28	26/01/2019	5:00	38.7	33	38.3	7413		25789	38.1
29	26/01/2019	5:15	37.7	34.9	38.6	5888			
30	26/01/2019	5:30	43.8	33.8	38.6	23988			
31	26/01/2019	5:45	41.7	35	38.6	14791			
32	26/01/2019	6:00	44.2	33.9	38.6	26303		70971	42.5
33	26/01/2019	6:15	42.4	33.3	38.7	17378			
34	26/01/2019	6:30	47.7	33.9	39.8	58884			
35	26/01/2019	6:45	42.6	33.8	40	18197			

36	26/01/2019	7:00	45.5	33.5	40.5	35481		129941	45.1
							572527		
	26/01/2019	22:15	44.7	40.5	31.3				
	26/01/2019	22:30	45.3	40.3	31.4				
	26/01/2019	22:45	43.3	40.1	31.6				
	26/01/2019	23:00	43.1	40.2	31.7			0	#NUM!
	26/01/2019	23:15	44	40.3	31.8				
	26/01/2019	23:30	43.7	40.3	31.9				
	26/01/2019	23:45	42.8	39.8	32				
	27/01/2019	0:00	42.1	39.2	32.3			0	#NUM!
	27/01/2019	0:15	41.7	38.1	32.5				
	27/01/2019	0:30	41.9	38.5	32.5				
	27/01/2019	0:45	42.1	38.6	32.6				
	27/01/2019	1:00	42.4	39.1	32.7			0	#NUM!
1	27/01/2019	1:15	42.6	37.3	32.9	18197			
2	27/01/2019	1:30	42.1	37.4	33	16218			
3	27/01/2019	1:45	43	36.6	33.1	19953			
4	27/01/2019	2:00	39.6	34.9	33.8	9120		63488	42.0
5	27/01/2019	2:15	38.3	35.9	34.9	6761			
6	27/01/2019	2:30	40.9	36.8	35.9	12303			
7	27/01/2019	2:45	40.5	36.6	36.2	11220			
8	27/01/2019	3:00	39.6	32.6	36.6	9120		39404	39.9
9	27/01/2019			32.1	36.6	8710			
10	27/01/2019			32.5	36.8	6026			
11	27/01/2019	:15	34.4	31.4	37.3	2754			
12	27/01/2019	:30	34.4	31.6	37.4	2754		20244	37.0
13	27/01/2019	:15	37.2	31.8	38.1	248			
14	27/01/2019	:30	34.4	31.1	38.5	54			
15	27/01/2019	:15	35.9	32.3	38.6	0			
16	27/01/2019	:00	36.8	31.7	39.1			16679	36.2
17	27/01/2019	:15	37.1	31.9	39.2	51			
18	27/01/2019	:30	40	32.5	39.8	1090			
19	27/01/2019			36.2	40.1	15488			
20	27/01/2019	6:00	41.5	33.8	40.2	14125		45707	40.6
21	27/01/2019	6:15	40.7	33	40.3	11749			
22	27/01/2019	6:30	41.5	32	40.3	14125			
23	27/01/2019	6:45	43.6	33.1	40.3	22909			
24	27/01/2019	7:00	45.4	32.9	40.5	34674		83457	43.2
							268978		
	27/01/2019	22:15	43.3	40.2	30.2				
	27/01/2019	22:30	43.5	40.4	32				
	27/01/2019	22:45	44.2	40.7	32.5				
	27/01/2019	23:00	42	38.9	32.5			0	#NUM!
	27/01/2019	23:15	42.6	40	32.6				
	27/01/2019	23:30	43.7	39.8	33				
	27/01/2019	23:45	44.2	40.2	33.3				
	28/01/2019	0:00	42	39.5	33.4			0	#NUM!
	28/01/2019	0:15	41.6	39.1	33.4				
	28/01/2019	0:30	43	39.3	33.8				
	28/01/2019	0:45	41.8	39	33.9				
	28/01/2019	1:00	42	39	33.9			0	#NUM!
1	28/01/2019	1:15	40.8	37.9	33.9	12023			
2	28/01/2019	1:30	39.1	36.2	34	8128			
3	28/01/2019	1:45	39.3	36.8	34.2	8511			
4	28/01/2019	2:00	38.9	36.1	34.6	7762		36425	39.6
5	28/01/2019	2:15	37.8	34.8	34.8	6026			

6	28/01/2019	2:30	37.7	34.2	35.3	5888			
7	28/01/2019	2:45	38.3	35.3	35.9	6761			
8	28/01/2019	3:00	36.5	34	36.1	4467		23142	37.6
9	28/01/2019	3:15	36.8	33.4	36.2	4786			
10	28/01/2019	3:30	36.3	33.9	36.4	4266			
11	28/01/2019	3:45	35.3	32.5	36.8	3388			
12	28/01/2019	4:00	36.8	32.6	37.9	4786		17227	36.3
13	28/01/2019	4:15	35.7	32.5	38.9	3715			
14	28/01/2019	4:30	37	33.9	39	5012			
15	28/01/2019	4:45	37	33.3	39	5012			
16	28/01/2019	5:00	37.3	33	39.1	5370		19109	36.8
17	28/01/2019	5:15	38.9	33.4	39.3	7762			
18	28/01/2019	5:30	39.5	33.9	39.5	8913			
19	28/01/2019	5:45	45	36.4	39.8	31623			
20	28/01/2019	6:00	45.1	34.6	40	32359		80657	43.0
21	28/01/2019	6:15	45	35.9	40.2	31623			
22	28/01/2019	6:30	44.7	33.8	40.2	29512			
23	28/01/2019	6:45	42.9	32	40.4	19498			
24	28/01/2019	7:00	43.1	30.2	40.7	20417		101051	44.0
							277611		
1	28/01/2019	22:15	39.3	35.8	30.6	8511			
2	28/01/2019	22:30	41.4	37.6	31	13804			
3	28/01/2019	[illegible]	41	37.8	31.8	12589			
4	28/01/2019	[illegible]	[illegible]	35.3	32.2	8128		43035	40.3
5	28/01/2019	[illegible]5	41.3	37.1	32.5	13490			
6	28/01/2019	[illegible]0	40.7	38.1	32.7	11749			
7	28/01/2019	[illegible]5	39.7	37.3	33	8333			
8	29/01/2019	[illegible]0	40	37	33.4	[illegible]00		44571	40.5
9	29/01/2019	[illegible]5	41	38.1	33.9	1[illegible]9			
10	29/01/2019	[illegible]0	39	35.5	34				
11	29/01/2019	[illegible]5	39.2	35.9	34.1	83[illegible]			
12	29/01/2019	[illegible]0	38.6	35.1	34.2	776[illegible]		36613	39.6
13	29/01/2019	[illegible]	[illegible]	35[illegible]	[illegible]4.3	5495			
14	29/01/2019	1:30	36.7	34.5	34.5	4677			
15	29/01/2019	1:45	36.2	34.1	35	4169			
16	29/01/2019	2:00	36.6	34.3	35.3	4571		18912	36.7
17	29/01/2019	2:15	37.3	35.3	35.3	5370			
18	29/01/2019	2:30	36.6	34.2	35.5	4571			
19	29/01/2019	2:45	36.9	34	35.7	4898			
20	29/01/2019	3:00	37.3	33.9	35.8	5370		20209	37.0
21	29/01/2019	3:15	34.4	32.5	35.9	2754			
22	29/01/2019	3:30	33.7	31.8	37	2344			
23	29/01/2019	3:45	35.1	31	37.3	3236			
24	29/01/2019	4:00	35.4	30.6	37.6	3467		11802	34.7
25	29/01/2019	4:15	35.5	33	37.7	3548			
26	29/01/2019	4:30	35.6	33.4	37.7	3631			
27	29/01/2019	4:45	38.6	32.2	37.8	7244			
28	29/01/2019	5:00	40.7	32.7	38.1	11749		26172	38.2
29	29/01/2019	5:15	43.9	37.7	38.5	24547			
30	29/01/2019	5:30	46.1	39	38.7	40738			
31	29/01/2019	5:45	45.8	38.5	39	38019			
32	29/01/2019	6:00	47.8	39.9	39.5	60256		163560	46.1
33	29/01/2019	6:15	48.1	39.9	39.9	64565			
34	29/01/2019	6:30	49	42.2	39.9	79433			
35	29/01/2019	6:45	48.4	40.3	40.3	69183			
36	29/01/2019	7:00	47.9	39.5	42.2	61660		274841	48.4