

RESULTS OF MUSIC NOISE SIMULATIONS
AND FUTURE ACTIONS
PREPARED FOR
SUPERYACHT MARINA
ENTERTAINMENT ACTIVITIES

Prepared for: Residential Community
Urban Perspectives
Superyacht Marina

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1. INTRODUCTION

Following a meeting with the residents of Glebe Point it was decided to simulate entertainment music at the future development site known as the Superyacht Marina.

The past history of excessive music/entertainment from past activities at Liquidity Café have caused the residents to be extremely sensitive to noise from live entertainment. These activities occurred when the site was owned by others and not the current owners of the Superyacht Marina.

This report provides the results of those measurements which need to be shared with the residential community. The residents have engaged the services of two eminent professionals to provide guidance on the potential acoustic disturbance from the proposal and their concerns are being considered.

This input is invaluable and would be used to establish the noise restrictions so that the development could be designed to be in harmony with the residents. The issues raised in their documents have at this stage not been reviewed. Certain recommendations provided as a result of the music noise simulations are expected to resolve most of the issues.

1.1 THE RESIDENTS PERSPECTIVE

From the author's perspective the residents have cause for concern based on the unpleasant experiences from the past with the functions held at the existing Liquidity Café. The quality of their apartments and the desire for a reasonable acoustic amenity are strong factors that need to be respected. The residential areas have exposure to the traffic noise generated by the Anzac Bridge. This background noise is attenuated by the high apartment buildings along the northern side of Glebe Point Road for the residences located on the southern side of this road. This provides the residences along the southern side of Glebe Point Road with lower background levels and music noise that can channel up the roadway by multiple reflections off the walls of the apartment buildings is of concern to the residents.

The residents of 501 Glebe Point Road reside in a multi level apartment building. A number of these are retirees and feel very strongly that music from the proposed development would be forced on them and would cause annoyance.

The apartments facing the proposed development have decks (at ground level) and balconies on elevated floors that are open to the outside.

Music generated noise would radiate from the site to the external façade of the apartments and reflect off the façade onto the areas where the residents would be relaxing on their decks and balconies.



The residents themselves do not possess any degree of control over the regulation of music levels originating from the proposed facility, and similarly access to an authoritative regulator of the music levels does not currently exist. The facility does not come under the jurisdiction of the NSW Police but the Water Police.

Non compliances would need to be addressed through direct action to a Local Magistrate to issue Prevention Notices on the management of the facility.

None of these actions are prompt and the consequences would be extreme stress to residents who would have worked hard to afford these apartments and deserve to have their acoustic amenity and life style protected.

However this would take many months to resolve and would not correct excessive music noise or crowd behaviour on the night.

The outdoor entertainment is not proposed for large crowds as the space available is very limited. The music levels do not need to be excessive as the depth to the patrons is shallow – typically up to 10m.

On the terraces of tenanted offices there is no intention to have music. The terraces (balconies) are short in depth and therefore unable to accommodate large numbers of visitors – typically 10-15 only.

The activities inside these offices are not for entertainment and controls can easily be placed on leases or strata title contracts stating what activities are prevented.

The eateries along the marina will have minimum levels of patron activity. The simulation with two bands playing was without noise controls that will be developed into a Noise Management Plan.

These aspects are discussed in more detail in the report.

It is possible to achieve protection of the residents' amenity through adopting a Noise Management Plan.



2. NOISE TESTING AT THE MARINA SUPERYACHT

These are notes from the music simulation at the Marina Site recorded by Ros Read.

Present were Daniele Albanese (Benbow Environmental), Ros Read (Urban Perspectives), Mark – Resident on ground floor of 501 Glebe Point Road.

Mark is an experienced drummer in bands and has noise testing equipment at his work. We appreciate his assistance.

Table 2-1: Calibration of Noise Testing Equipment with Sam Grieve and Daniele Albanese at 3.20pm		
	Rock Band	Jazz Band
Instruments	Drum kit, bass guitar, electric guitar, vocals	Keyboards, drums, double bass, vocals
Amps/Speakers	Mackie 1530 (x2) speakers – 500 watts each. Faced towards building Sub woofer – 500 watts faced towards water	Vocals and piano used: <ul style="list-style-type: none">• Ashton 250 watt powered speakers (x 2)• Desk used is a 4 channel Mackie 30 watt (most of the time the amp used about 60% of the power and about 50% of the speaker power)• Facing building Double bass used: <ul style="list-style-type: none">• Bergantino 2 x 10 speaker at 400 watts model AE 210 (ie 2 x 10" speakers in the box)• Amp is Aguilar 500 watt (AG500)• Faced towards the water

Test conditions

The bands both played on the deck outside the Liquidity building. The jazz band was on the SW side (LH side looking from the water) near the edge of the Liquidity Building. The glass front of the Liquidity building was directly behind the band. The speakers for the keyboard and vocals were off the deck just water side of the band and faced towards the building. The subwoofer and amplifier (which houses a speaker) were facing the apartments. This was therefore a worst case simulation in practice all speakers would radiate the music to the west.

The rock band played at the north east end of the Liquidity building. There is a gap of about 8 metres behind the band towards the servery of the café which has an awning over the top of it. The main speakers faced towards the building/servery. The subwoofers and amplifiers faced towards the water in front of the drummer.

Neither band was able to say the levels of the noise used on their amps/speakers as both said that there were so many variables. The bands were not under an awning – they were in open air.

Both bands started off playing louder than they would ever play at a gig like this – too loud to be pleasant and able to speak over eg whilst having lunch. They reduced the sound later to lower levels which they would normally play at.

At all bar one of the tests (H) both bands were playing at the same time. Both sets of speakers were about 6 m from the water's edge. All tests were done for approximately 2 minutes each.

Table 2-2: Observations from the Marina				
File No.	Site No.	Site & test description	Time	Comments
5	A	Rock 5m in front of speakers near water Song – "Do what you like"	3.25	A, B & C were done at much louder levels than they said they would ever play in eg a beer garden or this environment
6	B	Rock 5 m behind the speakers ie right next to the drummer	3.30	
7	C	Rock 5 m behind the drummer (ie 10 m from the speakers)	3.33	
8	D	Rock Same position as A – 5 m in front of speakers near water	3.39	This was the maximum level that they would play for standard operating levels for eg a beer garden. (lower than tests A, B & C) They clearly would likely reduce this level.
10	E	Jazz 5 m in front of speakers near water Song – Sweet Georgia Brown	3.51	This would be the normal level that they would play at
11	F	Jazz 5m at 45° angle from the band in front	3.54	
12	G	Jazz 5m at 45° angle from the band behind	3.56	
13	H	Jazz Same place as E, 5m from speakers at front 1 band only – no rock band	4.00	
14	I	Rock Jazz played "Blue Sky" Rock played "Why does this happen?" Same place as A & D – 5 m in front of speakers	4.11	Lowered level to what they would normally play in this situation although accepted the view from Mark that with conversation the noise may be higher than how they were playing
15	J	Rock Same place as C – 10m behind the speakers towards the building, 5m behind drummer	4.14	



Table 2-2: Observations from the Marina				
File No.	Site No.	Site & test description	Time	Comments
16	K	Between the two bands Equidistant on the forefront about 2 m from the water's edge	4.17	
17	L	Rock 45° angle towards NE from rock band at 15m distance	4.27	
18	M	Rock 45° angle towards NE from rock band at 20m distance	4.29	
19	N	Rock 45° angle towards NE from rock band at 30m distance	4.31	

2.1 RESULTS FOR MARINA SITE MEASUREMENT

Instrument type – SVANTEK 957

Calibrated to 94 dB(A)

Serial numbers of instrument: 15336

Location: A : rock band - 5m in front of speakers near water

Time: 3.25pm

Observations:

L_{AF} 92.1 dB(A)

Location: D : rock band - 5 m in front of speakers near water

Time: 3.39pm

Observations:

L_{AF} 88.5 dB(A)

Location: I : rock band - 5 m in front of speakers near water

Time: 4.11pm

Observations:

L_{AF} 84.2 dB(A)

Location: C : rock band - 5 m behind the drummer (ie 10 m from the speakers)

Time: 3.33pm

Observations:

L_{AF} 96.0 dB(A)



Location: J : rock band - 5 m behind the drummer (ie 10 m from the speakers)
Time: 4.14pm
Observations:
L_{AF} 90.1 dB(A)

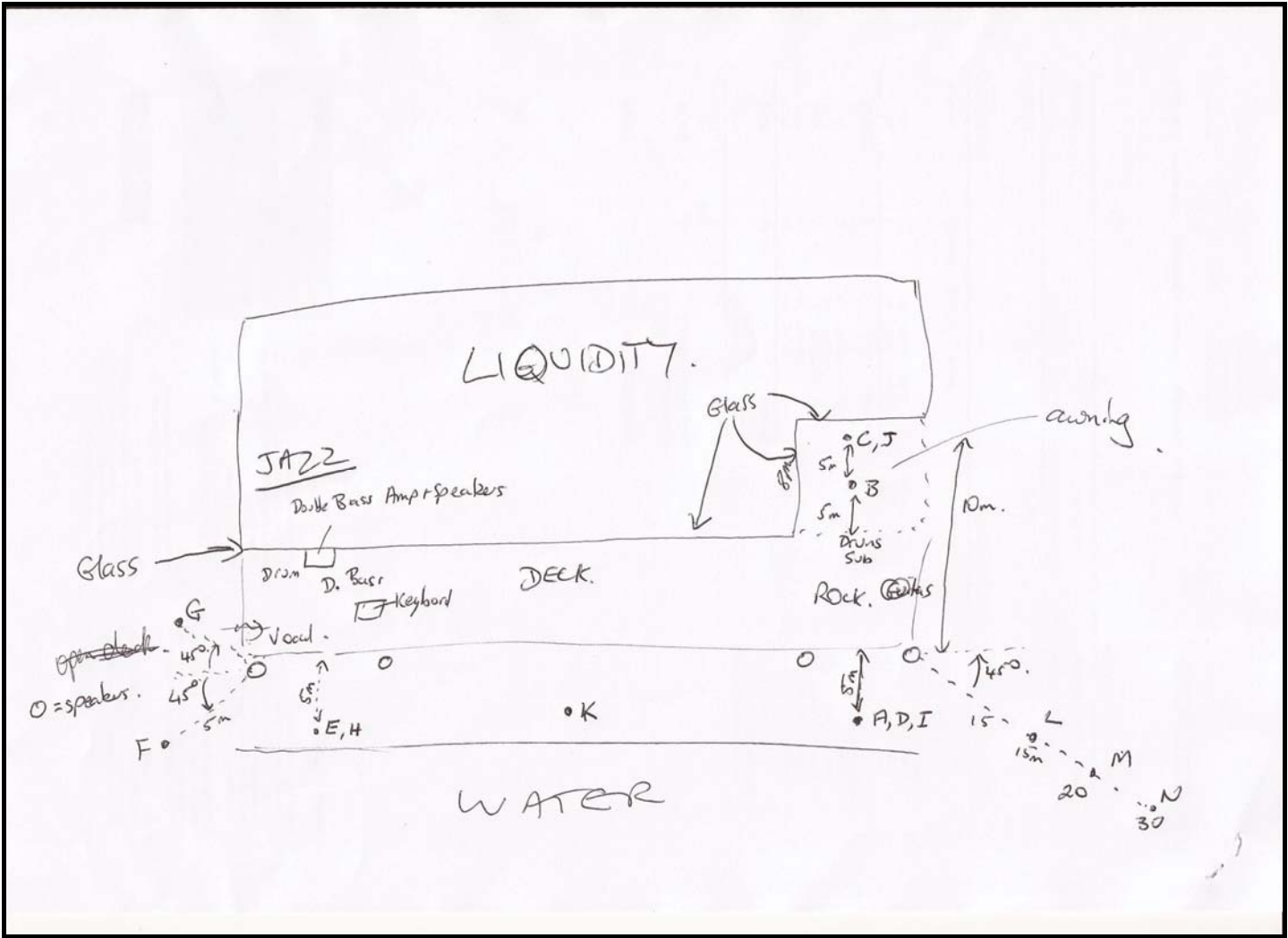
Location: E : jazz band - 5 m in front of speakers near water
Time: 3.51pm
Observations:
L_{AF} 81.7 dB(A)

Location: H : jazz band - 5 m in front of speakers near water
Time: 4.00pm
Observations:
L_{AF} 81.5 dB(A)

Location: G : jazz band - 5m at 45° angle from the band behind
Time: 3.56pm
Observations:
L_{AF} 80.0 dB(A)

Location: K : Between the two bands
Time: 4.17pm
Observations:
L_{AF} 81.2 dB(A)

Figure 2-1: Sketch of Location of Bands





3. RESULTS OF THE NOISE SIMULATIONS

This section of the report presents the results of the noise measurements conducted during the simulation of light entertainment music.

A Jazz Group and a Rock Band were located at the area of the proposed development and played music at noise levels the musicians considered were typical for small areas.

During the music simulation the Rock Band decided their volume was too high and reduced the music levels. These details were recorded by having three personnel at the site and are noted in Section 2.

A meeting with about 10 residents took place at the foregrounds at the end of Glebe Point Road before the noise measurements commenced. Several times it needed to be explained that the sole purpose of the measurements was to find out the level of music at apartments and residences – especially apartments at upper floor levels.

The tests were not being conducted to compare to background levels or to prove compliance.

The tests were not to compare the music to background noise levels as these were high due to the time of the day. The comparison of music levels to background levels would be made by doing a new round of noise logging at three apartments in the absence of any music. This information would be used to re establish the noise criteria and set the level of music noise that would be acceptable. There was a general feeling of mistrust that the tests were being used to prove that the level of music that was audible was acceptable.

Every effort was made to give the residents confidence in our objectivity and music levels were shown and shared. If the music levels were higher than the criteria used in the original noise report this was stated.

Music Arrangement

The two bands were set up with subwoofers and amplifiers facing the residents. This meant that the speakers in the amplifiers were directing the sound emitted directly across the water to the residences. The other speakers were faced towards the musicians.

Behind the jazz musicians were the glass walls of the Liquidity Café. The music emitted by the speakers would reflect off the walls of the Café back in the direction of the apartments and residences. The weather conditions were not ideal. There was a wind from the north – north east with gusts up to 20km/hour. This would have the effect of reducing the level of music measured at residences. The music levels were measured at set distances from the rear of the speakers so that the combined noise level from the sound system from each band was recorded. The noise model used in the original report will be calibrated using the music levels measured at source and at the ground and high level apartments.



The contribution from traffic was able to be observed and recorded. Lyrics were audible. Cymbals and the percussion of drums were clearly audible.

Measurements at this address are recorded on outdoor decks (ground floor) or balconies. During all measurements traffic noise was present.

3.1 RESULTS FOR 501 GLEBE POINT ROAD

Instrument type – Bruel & Kjaer 2260 Precision Sound Level Meter

Calibrated to 94 dB(A)

Serial numbers of instruments and calibration records can be provided.

Location: Unit 28 – Ground Floor
(north west corner of apartment building and direct line of sight to site)

Time: 3.23pm

Observations:

Jazz and vocals audible L_{AF} 56-58 dB(A)

Traffic from Anzac Bridge L_{AF} 54-56 dB(A)

Time: 3.25pm

Observations:

Rock band also audible L_{AF} 56-58 dB(A)

L_{Aeq} 56.5 dB(A) from combined noise sources.

Short term measurements are being undertaken to complete as many music noise observations as possible.

Location: Unit 30 – First Floor
(north west corner of apartment building)

Time: 3.27pm

Observations:

Both bands playing L_{AF} 64 dB(A)

Rock band stopped L_{AF} 59 dB(A)

When music not discernable, traffic L_{AF} 58 dB(A)

Jazz vocals clearly audible L_{AF} 57 dB(A)

Vocals not audible, traffic L_{AF} 54 dB(A)

Rock band cymbals L_{AF} 62 dB(A)

Rock band keyboard L_{AF} 58 dB(A)

Rock band vocals L_{AF} 59 dB(A)

L_{Aeq} 57.5 dB(A)



Location: Unit 17 – Ground Floor
(north east corner of apartment building)

Time: 3.36pm

Observations:

Jazz vocals audible L_{AF} 54 dB(A)

Time: 3.38pm

Observations:

Rock band music volume reduced.

Section 2 notes 3.39pm.

Cymbals L_{AF} 55-57 dB(A)

Vocals audible L_{AF} 54 dB(A)

Traffic L_{AF} 54 dB(A)

Jazz band L_{AF} 52-53 dB(A)

L_{Aeq} 54.1 dB(A)

Location: Unit 46, Level Five
(north west corner of apartment building)

Time: 3.49pm

Observations:

Rock band audible L_{AF} 57 dB(A)

Jazz band masked by rock band

L_{Aeq} 56.4 dB(A)

Location: Unit 19, Level Three
(north east corner of apartment building)

Time: 4.01pm

Observations:

Jazz band audible L_{AF} 59 dB(A)

Vocals L_{AF} 61 dB(A)

Traffic and music L_{AF} 63 dB(A)

No bass audible throughout the music simulations.

No music audible L_{AF} 58 dB(A)

L_{Aeq} 61.3 dB(A)

Location: Unit 37, Higher Level Apartment
(Balcony trapezoidal in shape).
Measurements at the north east corner – no reflective surfaces and at north west corner in front of bedroom sliding glass door, reflection off adjacent wall surface.

Time: ~4.20pm

Observations:

North east corner Music, vocals and traffic L_{AF} 59-62 dB(A)

Rock band vocals L_{AF} 62-64 dB(A) and L_{Aeq} 61 dB(A)

North west corner Both bands audible L_{AF} 60-62 dB(A)

Traffic < L_{AF} 60 dB(A) and L_{Aeq} 61.5 dB(A)



3.2 RESIDENCE AT 306 GLEBE POINT ROAD

This residence is on the south side of this road and is one of the nearest residences to the foreshore.

The residence is elevated above the road by ~3m.

The noise observations were made in the front study with the front door open, front windows open 10%.

Time: 4.10pm
Observations:
Jazz vocals audible L_{AF} 37 dB(A)
Car past L_{AF} 43-51 dB(A)
Rock band audible L_{AF} 44 dB(A)
 L_{Aeq} 43-44 dB(A)

The resident explained the previous problems she has encountered with the activity at the Liquidity Café. High music noise levels were experienced with her own noise meter from DSE measuring 65 dB(A) and higher.

Telephone calls to the management were unanswered and the harmony of their area was ruined by the activities at this Café – hence their strong opposition to the proposal.

3.3 RESIDENCE AT 9/18 OXLEY STREET

This residence has a backyard patio and garden which faces Rozelle Bay and is separated from the water only by a footpath and small boat mooring.

The noise monitoring was undertaken in the backyard patio area and is approximately six (6) meters above sea level.

Time: 4.13pm
Observations:
Bands Audible L_{AF} 49-50 dB(A)
Cymbal Crash L_{AF} 51 dB(A)
 L_{Aeq} 54 dB(A)

The residence noted that during night time hours when the ambient noise level of the area is lower, the potential for music coming from the opposite side of the bay to cause annoyance or be intrusive is increased.



3.4 RESIDENCE AT 10/18 OXLEY STREET

This residence is located directly next door to Unit 9, 18 Oxley Street as seen above. Similarly it has a backyard patio and garden which faces Rozelle Bay and is separated from the water only by a footpath and small boat mooring.

The noise monitoring was undertaken in the backyard patio area and was slightly more elevated than that of Unit 9.

Time: 4.16pm
Observations:
Bands Audible L_{AF} 49-50 dB(A)
Cymbal Crash L_{AF} 51 dB(A)
 L_{Aeq} 55 dB(A)

Noise level observations were practically the same at this Unit location as that of Unit 9 as would be expected.

3.5 RESIDENCE AT 19/23 STEWART STREET

This residence is situated one (1) street back from the foreshore of Rozelle Bay at a distance of approximately 70 meters from the waters edge. Unit 19 contains a balcony which is orientated to the north-west facing the location of the two (2) bands.

The noise monitoring was undertaken outside on the balcony.

Throughout the duration of the measurement period no music from either of the bands could be heard.

Time: 4.04pm
Observations:
Music assumed to be L_{AF} 43.5 dB(A)
 L_{Aeq} 53.5 dB(A)

3.6 RESIDENCE AT 7 LEICHHARDT STREET

This residence is located three (3) streets back from the foreshore of Rozelle Bay approximately 100 meters from the waters edge. This terrace style house contains an upstairs balcony and a downstairs entertaining area both of which were monitored.

Construction work was underway at the residence adjacent this location and influenced the overall L_{Aeq} level however music from the two (2) bands was still audible and could be observed.



Top Balcony:

Time: 3.48pm

Observations:

Music Audible L_{AF} 48 dB(A)

L_{Aeq} 54 dB(A)

Bottom Balcony:

Time: 3.53pm

Observations:

Music Audible L_{AF} 48 dB(A)

L_{Aeq} 53 dB(A)

The resident expressed concerns about the proposed development as previous operations on the opposite side of Rozelle Bay have caused annoyance and intrusion at this location.

3.7 RESIDENCE AT 22 ALEXANDRA ROAD

This residence is located adjacent to Jubilee Park approximately 230 meters from the waters edge. This apartment block contains units on the north-west and north-east sides of the building. The apartments on the north-east side have an opening window, but do not have an outside balcony. The apartments on the north-west side have an outside balcony overlooking Jubilee Park. Direct line-of-site from apartments on both aspects to the Marina is obscured by trees, but no substantial obstructions such as buildings are present. Monitoring was conducted on the outside balcony of unit 11 on the north-west side, and out the front of the building on the north-east side, as these apartments were not accessible.

Unit 11 Balcony – North-West Side:

Time: 4.10pm

Observations:

Birds Prominent L_{AF} 68 dB(A)

Music Audible – was unable to assess a level due to constant noise from the birds in the trees only a few metres from the balcony

L_{Aeq} 64 dB(A)

Outside Building – North-East Side:

Time: 4.15pm

Observations:

Birds Prominent L_{AF} 65 dB(A)

Music Audible L_{AF} 52 dB(A)

Traffic on ANZAC Bridge also audible

L_{Aeq} 61.5 dB(A)

The resident expressed concerns about the proposed development as previous operations on the opposite side of Rozelle Bay have caused annoyance and intrusion at this location. The resident also expressed concerns that the majority of complaints from tenants occur during the night as the birds are not present so the music is clearly audible due to the lower level of background noise.



4. LIMITATIONS

Our services for this project are carried out in accordance with our current professional standards for site assessment investigations. No guarantees are either expressed or implied.

This report has been prepared solely for the use by Urban Perspectives, as per our agreement for providing noise assessment services. Although all due care has been taken in the preparation of this study, no warranty is given, nor liability accepted (except that required by law) in relation to the information contained within this document.

Urban Perspectives is entitled to rely upon the findings in the report within the scope of work described in this report. No responsibility is accepted for the use of any part of the report in any other context or for any other purpose.

Opinions and judgements expressed herein, which are based on our understanding and interpretation of current regulatory standards, should not be construed as legal opinions.

ATTACHMENTS

GLOSSARY

Environmental noise is generally measured over time periods. Statistical descriptors are then used to quantify the measured noise levels. These descriptors are used throughout the report and are defined below:

- L_{AF}

Instantaneous sound pressure level.
- L_{A1}

The L_{A1} is the sound pressure level exceeded for 1% of the measurement period. This descriptor provides an indication of the average peak noise level.
- L_{A10}

The L_{A10} is the sound pressure level exceeded for 10% of the measurement period.
- L_{Aeq}

The L_{Aeq} represents the equivalent continuous (energy average) A-weighted sound pressure level over the measurement period.
- L_{A90}

The L_{A90} is the sound pressure level exceeded for 90% of the measurement period. The L_{A90} is often referred to as the “background noise level”.

These sound pressure levels are measured in Fast response.

The NSW Industrial Noise Policy sets out noise criteria for varying receiver types and time periods. The definitions for these terms provided in the INP are as follows:

- Rural

An area with an acoustical environment that is dominated by natural sounds, having little or no road traffic. Such areas may include:
 - an agricultural area, except those used for intensive agricultural activities;
 - a rural recreational area such as resort areas;
 - a wilderness area or national park; and
 - an area generally characterised by low background noise levels (except in the immediate vicinity of industrial noise sources).This area may be located in either a rural, rural-residential, environment protection zone or scenic protection zone, as defined on a council zoning map (Local Environmental Plan (LEP) or other planning instrument).
- lin-weighting

An un-weighted sound, all frequencies treated equally, often used as input into noise models.

- L_{Amax}

The maximum A-weighted sound pressure level with the "fast" time constant.

- L_{Cmax}

The maximum C-weighted sound pressure level with the "fast" time constant.

- A-weighting

A frequency weighting applied to sound to approximate human hearing response.

- C-weighting

A frequency weighting that takes account of low frequency sound.

- Suburban

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 (18:00 – 22:00); and/or
- evening ambient noise 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.

- Urban

An area with an acoustical environment that:

- is dominated by 'urban hum' or industrial source noise;
- has through traffic with characteristically heavy and continuous traffic flows during peak periods;
- is near commercial or industrial districts;
- has any combination of the above;

where 'urban hum' means the aggregate sound of many unidentifiable, mostly traffic related sound sources.

This area may be located in either a rural, rural-residential or residential zone as defined on an LEP or other planning instrument, and also includes mixed land use zones such as mixed commercial and industrial uses.

- Urban / industrial interface

An area as defined for 'urban' above that is in close proximity to industrial premises and that extends out to a point where the existing industrial noise from the source has fallen by 5 dB(A). Beyond this region the amenity criteria for the urban category applies. This category may be used only for existing situations.

- Commercial

An area defined as business zone, except neighbourhood business zone, on an LEP.

- Industrial

An area defined as an industrial zone on an LEP. For isolated residences within an industrial zone, the industrial amenity criteria would usually apply.

- Time of day

- Day is the period from 7am to 6pm Monday to Saturday, or 8am to 6pm on Sundays and public holidays;
- Evening is the period from 6pm to 10pm;
- Night is the remaining periods.