

4 May 2022

TM161-01F03 Acoustic Assessment for DA - Acoustic Letter (r0)

Emma Whitworth  
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Petersham NSW 2049

Dear Madam

## **Magpies Waitara, Waitara - Acoustic Assessment for DA - Addendum for mechanical plant noise assessment**

Renzo Tonin & Associates was engaged to undertake an operational noise assessment to support the Development Application (DA) for the proposed alterations and additions at the Magpies Waitara Club, 11-37 Alexandria Parade, Waitara.

Following the submission of the Acoustic Assessment for DA report [ref: TM161-02F02 Acoustic Assessment for DA (r6), dated 25 March 2022] (Acoustic Report) and review by Hornsby Shire Council, it was determined that the proposed carpark jet fans (see Section 5 of the Acoustic Report) are required to run until 2:00am.

Referring to the predicted noise levels in Table 11 and the established noise goals in Table 5 of the Acoustic Report, the noise emissions from the proposed mechanical plant are predicted to comply at Location R2 for all time periods (up to 2:00am) and Location R1 up to 12:00am midnight. An exceedance of 3dB is predicted at Location R1 during the 12:00am midnight to 2:00am period.

Council has agreed in its email to Emma Whitworth dated 3 May 2022 that the carpark fans are not viewed as a part of the licensed premises, the criteria used in the Acoustic Report are more stringent than Council's guidelines and therefore, the noise associated with the mechanical services shall instead be assessed against the NSW Environmental Protection Authority (EPA)'s Noise Policy for Industry (NPfI).

### **NSW EPA's NPfI**

The assessment procedure has two components:

- Controlling intrusive noise impacts in the short-term for residences; and
- Maintaining noise level amenity for residences and other land uses.

In accordance with the NPfl, noise impact should be assessed against the project noise trigger level which is the lower value of the project intrusiveness noise levels and project amenity noise levels.

### Project intrusive noise levels

According to the NPfl, the intrusiveness of a noise source may generally be considered acceptable if the equivalent continuous (energy-average) A-weighted level of noise from the source (represented by the  $L_{Aeq,15min}$  descriptor) does not exceed the background noise level measured in the absence of the source by more than 5dB(A). The project intrusiveness noise level, which is only applicable to residential receivers, is determined as follows:

$$L_{Aeq,15minute} \text{ Intrusiveness noise level} = \text{Rating Background Level ('RBL')} \text{ plus } 5\text{dB(A)}$$

Based on the background noise monitoring results and the proposed operating hours of the Club, the intrusiveness noise levels for residential receivers are reproduced in Table 1 below.

**Table 1: Intrusiveness noise levels**

Receiver	Intrusiveness noise level, $L_{Aeq,15min}$		
	Day	Evening	Night
Location R1	54 + 5 = 59	46 + 5 = 51	36 + 5 = 41
Location R2	59 + 5 = 64	47 + 5 = 52	41 + 5 = 46

Notes: Day: 7:00 to 18:00 Monday to Saturday and 8:00 to 18:00 Sundays & Public Holidays  
 Evening: 18:00 to 22:00 Monday to Sunday & Public Holidays  
 Night: 22:00 to 7:00 Monday to Saturday and 22:00 to 8:00 Sundays & Public Holidays

### Amenity noise levels

The project amenity noise levels for different time periods of day are determined in accordance with Section 2.4 of the NPfl. The NPfl recommends amenity noise levels ( $L_{Aq,period}$ ) for various receivers including residential, commercial, industrial receivers and sensitive receivers such as schools, hotels, hospitals, churches and parks. These "recommended amenity noise levels" represent the objective for total industrial noise experienced at receiver location. However, when assessing a single industrial development and its impact on an area, "project amenity noise levels" apply.

The recommended amenity noise levels applicable for the subject area are reproduced in Table 2 below.

**Table 2: Amenity noise levels (Table 2.2 NPfl)**

Receiver	Noise amenity area	Time of day	Recommended amenity noise level $L_{Aeq}$ dB(A)
Residential	Suburban	Day	55
		Evening	45
		Night	40

Note: The recommended amenity noise levels refer only to noise from industrial sources. However, they refer to noise from all such sources at the receiver location, and not only noise due to a specific project under consideration. The levels represent outdoor levels except where otherwise stated.

To ensure that the total industrial noise level (existing plus new) remain within the recommended amenity noise levels for an area, the project amenity noise level that applies for each new industrial noise source is determined as follows:

$$L_{Aeq,period} \text{ Project amenity noise level} = L_{Aeq,period} \text{ Recommended amenity noise level} - 5\text{dB(A)}$$

Furthermore, given that the intrusiveness noise level is based on a 15 minute assessment period and the project amenity noise level is based on day, evening and night assessment periods, the NPfI provides the following guidance on adjusting the  $L_{Aeq,period}$  level to a representative  $L_{Aeq,15minute}$  level in order to standardise the time periods.

$$L_{Aeq,15minute} = L_{Aeq,period} + 3\text{dB(A)}$$

The project amenity noise levels ( $L_{Aeq, 15min}$ ) applied for this project are reproduced in Table 3 below, based on a 'suburban' noise amenity area.

**Table 3: Project amenity noise levels**

Type of receiver	Noise amenity area	Time of dDay	Recommended noise level, dB(A)	
			$L_{Aeq, Period}$	$L_{Aeq, 15min}$
Residence	Suburban	Day	$55 - 5 = 50$	$50 + 3 = 53$
		Evening	$45 - 5 = 40$	$40 + 3 = 43$
		Night	$40 - 5 = 35$	$35 + 3 = 38$

- Notes:
1. Daytime 7.00 am to 6.00 pm; Evening 6.00 pm to 10.00 pm; Night-time 10.00 pm to 7.00 am.
  2. On Sundays and Public Holidays, Daytime 8.00 am - 6.00 pm; Evening 6.00 pm - 10.00 pm; Night-time 10.00 pm - 8.00 am.
  3. The  $L_{Aeq}$  index corresponds to the level of noise equivalent to the energy average of noise levels occurring over a measurement period.

## Project noise trigger levels

In accordance with the NPfI the project noise trigger levels, which are the lower (ie. more stringent) value of the project intrusiveness noise level and project amenity noise level, have been determined as shown in Table 4 below.

**Table 4: Project noise trigger levels**

Receiver Location	$L_{Aeq, 15min}$ Project noise trigger levels, dB(A)		
	Day	Evening	Night
R1	53	43	38
R2	53	43	38

## Mechanical plant noise assessment

Table 5 summarises the results of the mechanical plant noise assessment, presenting the predicted noise emission levels at the identified assessment locations against the established noise goals as set out in Table 4 above. Building levels nominated below are assessed to be the worst affected level of the development.

**Table 5: Predicted noise level assessment,  $L_{Aeq,15min}$**

Time of Day	Assessment scenario	Description	$L_{A,eq, 15min}$
<b>Locations R1 - Level 2, 49 Alexandria Parade, Waitara</b>			
Night	Two new jet fans operating in the existing Lower Ground Floor carpark	Predicted noise level	34
		Noise goal	38
<b>Locations R2 - Level 7, 5-9 Waitara Avenue, Waitara</b>			
Night	Two new jet fans operating in the existing Lower Ground Floor carpark	Predicted noise level	32
		Noise goal	38

Note: Night: 22:00 to 7:00 Monday to Saturday and 22:00 to 8:00 Sundays & Public Holidays

The noise emissions from the use of the jet fans until 2:00am are predicted to comply with Council's advised requirement to assess against the NSW EPA's NPfl with no acoustic mitigation measure required.

Regards,



David Suwandi

Principal Engineer

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