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Local Planning Panel

26 September, 2018 Refer: R \ 6308-3.1L

Attention: Chairperson

Dear Sir/Madam,

# 38 – 44 KEECH ROAD, CASTLEREAGH

## **GREYHOUND FACILITY - ACOUSTIC ASSESSMENT**

Penrith City Council has prepared a Major Assessment Report dated 19 September 2018 in response to a development application DA17/1344 for the continued use of the site as a greyhound boarding, training and breeding establishment.

Day Design has prepared an Environmental Noise Impact Assessment (**DD Report**) for the proposal, dated 1 September 2017 and an Operating Scenario Assessment (**DD Letter**) dated 8 August 2018.

We concluded that the facility is able to operate within the acceptable noise limits provided engineering noise controls and management controls are implemented and adhered to. The engineering controls incorporated into the construction were inspected in August 2017 and found to be satisfactory. In summary, these **engineering controls** are:

Site:

- A 1.8 metre high lapped and capped timber fence has been constructed along approximately 200 metres of the southern boundary of the site;
- A 2.4 metre high lapped and capped timber fence exists on a section of the northern boundary of the site.

## Exercise Yards:

• The adult dog exercise yards are bounded by 1.8 metre high timber sound barriers.

Kennel Area:

• The internal northern, eastern and western walls of the shed are lined internally with 100 mm thick cool room panels;



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- The southern wall (approximately 3 metres) is constructed with an internal layer of plasterboard and an external layer of fibre cement on a 90 mm timber stud with the cavity lined with 75 mm thick glasswool insulation;
- The pedestrian access doors located at the southern end of the kennel are of solid core construction;
- Kennels are separated by a solid divider.

The **management controls** required include:

- The roller door on the western side of the shed is only opened when necessary to move the dogs to the exercise yards during the day for approximately 30 minutes;
- Adult dogs are kept inside the kennels between the hours of 10 pm and 7 am, 7 days a week.
- Dogs returning to the shed from offsite after 10 pm are placed in the kennels through the doors on the southern side of the shed;
- Barking dogs are dealt with as soon as possible;
- All dogs are only fed during the day, 7 am to 6 pm.

The **Major Assessment Report** identifies several issues relating to acoustics. In summary these are:

- Operating Acoustic Assessment did not assess maximum capacity
- Cumulative noise from adult dogs and pups barking simultaneously
- Assessment of distressed dogs or pups
- Sleep disturbance
- Neighbour Submissions

# **Maximum Capacity**

The night time noise criteria from the premises, reported in Section 4.3 of the DD Report is  $L_{eq,15 min}$  38 dBA.

Our acoustic assessment was carried out during operation when 12 adult dogs (maximum capacity) were in the shed and 6 pups and 2 adult dogs were in the outdoor kennels during a week long period.

Three noise loggers were deployed – one inside the Shed, one near the pups and a third at 46-50 Keech Road (Receptor R3), being the closest residential receptor. The graphs of the measured data is shown in Appendix C to H of the DD Report. Times of dogs barking is clearly identifiable. Several times each night, the measured noise level was in the range of 90-100 dBA for short periods. During those same periods, the noise level at R3 was measured.



Compiling a representative sample from the measured data, we determine an  $L_{eq,15 min}$  of 35 dBA as reported in Section 5.1 of the DD Report, which is less than the criteria of 38 dBA.

Similarly, the noise logger near the pup's enclosure was used to determine the noise impact from the 6 pups and 2 adults, when calculated to R3. We determined an  $L_{eq,15 min}$  of 32 dBA as reported in Section 5.2 of the DD Report. In order to extrapolate this information to a maximum capacity of 24 dogs in that area, 5 dB should be added using the formula:

• 10log (24/8), where 24 is the maximum capacity and 8 is the measured number of dogs.

Therefore the noise impact from 24 dogs in the pup's area is (32+5) 37 dBA, which is less than the criteria of 38 dBA.

## **Cumulative Noise**

Upon reviewing the data in Appendices C to H, it is rare to find periods where the barking of adult dogs and pups occur simultaneously.

Nevertheless, it is possible that this may occur and so the noise impact (at R3) of 35 dBA from 12 adult dogs and 37 dBA from 24 pups is added together as 39 dBA using the formula:

• L<sub>cumulative</sub> **39** dBA = 10\*log(10^(**35**/10) + 10^(**37**/10))

This level is 1 dB above the night time noise criteria, which is insignificant (ref NPI Table 4.1).

However, a 1 dB reduction is possible by limiting the number of pups to 19, thus achieving the noise criteria of 38 dBA during periods of both adults and pups barking.

## **Distressed Dogs or Pups**

We have assessed the noise from barking dogs and pups. We are advised by Mathew Pryce, owner and operator of the proposal, that the noise from distressed dogs or pups is no louder than barking dogs, and in many cases is quieter as the dogs tend to 'whine' rather than bark.

Therefore the noise impact of distressed dogs will be less than from barking dogs.

# **Sleep Disturbance**

The DD Report provides a sleep disturbance assessment in accordance with the Noise Guide for Local Government, using a noise criteria of  $L_{1,1min}$  (or  $L_{max}$ ) 48 dBA.

The Noise Policy for Industry (NPI) was published in October 2017, after our report was prepared. Nevertheless, the sleep disturbance criteria in that document in Section 2.5 is:

- LAeq,15 min 40 dB(A) or the prevailing RBL plus 5dB, which ever is the greater, and/or
- L<sub>Fmax</sub> 52 dB(A) or the prevailing RBL plus 15dB, which ever is the greater.

In both cases above, the NPI allows a higher (less stringent) noise criteria than applied in the DD Report.



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Therefore, the sleep disturbance assessment will also meet the more contemporary requirements in the NPI.

## **Neighbour Submissions**

The Major Assessment Report notes that three submissions have been received from the immediate adjacent and adjoining lots identifying disruptive dog barking from the site. Our assessment has demonstrated that the noise impact from the use of the site will be acceptable. I have seen no evidence to the contrary.

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Principal Acoustical Engineer

for and on behalf of Day Design Pty Ltd

# AAAC MEMBERSHIP

Day Design Pty Ltd is a member company of the Association of Australasian Acoustical Consultants, and the work herein reported has been performed in accordance with the terms of membership.









# 6308-3 Appendix

### Noise Policy for Industry

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ISBN 978 1 76039 481 3 EPA 2016/0524 October 2017 The approach of deriving the project amenity noise level resulting from a new development on the basis of the recommended amenity noise level minus 5 dB is based on a receiver not being impacted by more than three to four individual industrial noise sources.

Where an existing cluster of industry, for example, an industrial estate or port area, is undergoing redevelopment and/or expansion and the development constitutes a single premises addition or expansion, with no other redevelopment planned in the foreseeable future, the project amenity noise level approach procedure in Section 2.4 can be applied.

However, where a greenfield or redevelopment of an existing cluster of industry consisting of **multiple new** noise-generating premises is proposed, the approach for determining the project amenity noise level in Section 2.4 is not applicable and the approach below should be applied.

Equation 1: New multiple premises or redevelopment of existing clusters of industry Individual project amenity noise level = 10Log (10<sup>(ANL - 5 dB/10)</sup>/N) where: ANL = relevant recommended amenity noise level from Table 2.2

N = number of proposed additional premises.

Where a greenfield development is proposed and it can be demonstrated that existing levels of industrial noise are more than 5 dB lower than the relevant recommended amenity noise level, equation 1 can be modified to reflect 'amenity noise level' in lieu of 'amenity noise level – 5 dB(A)'.

## 2.4.3 Effects of changing land use

When land uses in an area are undergoing significant change, for example, residential subdivisions with associated development of local and regional roads, the background noise levels would be expected to change, sometimes significantly. The impact of noise from an existing industry on a proposed new residential area should be made using the recommended amenity noise level for the residential land use, not the project intrusiveness noise level. Where impacts exceed the amenity noise level, consideration should be given to how these impacts can be avoided or mitigated, such as modifying the location of the proposed residential development, placing screening land uses in-between the proposed residences and existing industry, or ensuring residences are built in a manner that provides acceptable indoor noise amenity.

## 2.5 Maximum noise level event assessment

The potential for sleep disturbance from maximum noise level events from premises during the night-time period needs to be considered. Sleep disturbance is considered to be both awakenings and disturbance to sleep stages.

Where the subject development/premises night-time noise levels at a residential location exceed:

- L<sub>Aeq,15min</sub> 40 dB(A) or the prevailing RBL plus 5 dB, whichever is the greater, and/or
- L<sub>AFmax</sub> 52 dB(A) or the prevailing RBL plus 15 dB, whichever is the greater,

a detailed maximum noise level event assessment should be undertaken.

The detailed assessment should cover the maximum noise level, the extent to which the maximum noise level exceeds the rating background noise level, and the number of times this happens during the night-time period. Some guidance on possible impact is contained in the review of research results in the <u>NSW Road Noise Policy</u>.

### Noise Policy for Industry

If the predicted noise level minus the project noise trigger level is:	And the total cumulative industrial noise level is:	Then the significance of residual noise level is:
≤ 2 dB(A)	Not applicable	Negligible
≥ 3 but ≤ 5 dB(A)	< recommended amenity noise level or > recommended amenity noise level, but the increase in total cumulative industrial noise level resulting from the development is less than or equal to 1dB	Marginal
≥ 3 but ≤ 5 dB(A)	> recommended amenity noise level and the increase in total cumulative industrial noise level resulting from the development is more than 1 dB	Moderate
> 5 dB(A)	≤ recommended amenity noise level	Moderate
> 5 dB(A)	> recommended amenity noise level	Significant

Table 4.1: Significance of residual noise impacts.

Note: This approach is designed for new and substantially-modified developments and should be applied with caution to assessments of existing operations.

Examples of noise mitigation at a residence that **may** be required by planning authorities to mitigate residual noise impacts are outlined in Table 4.2.

Significance of residual noise level	Example of potential treatment       The exceedances would not be discernible by the average listener and therefore would not warrant receiver-based treatments or controls.	
Negligible		
Marginal	Provide mechanical ventilation/comfort condition systems to enable windows to be closed without compromising internal air quality/amenity.	
Moderate	As for 'marginal', but also upgraded façade elements, such as windows, doors or roof insulation, to further increase the ability of the building façade to reduce noise levels.	
Significant	May include suitable commercial agreements where considered feasible and reasonable.	

Table 4.2: Examples of receiver-based	treatments to mitigate	residual noise impacts.
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