



HEGGIES

30 May 2007

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Tweed Shire Council
PO Box 816
Murwillumbah
NSW 2484

Attention: Rebecca Grothe

Lot 503 Dp1000612
Eviron Road, Duranbah.

Dear Rebecca

**DA06/025 Review - Acoustics
Motorcycle Riding Facility, Duranbah**

1 Introduction

Heggies Pty Ltd (Heggies) have been commissioned by Tweed Shire Council (TSC) to provide a technical review of the acoustic component of the development application for the abovementioned motorcycle riding facility, located at Duranbah, NSW.

2 Inputs from the Client

The following documents were provided by the TSC as part of this review:

- Statement of Environmental Effects - Recreational Motor Cycle Riding Facility 'Dirty Bikes' - Appendix J Noise Impact Assessment - March 2006 - Prepared by Craig Hill Acoustics
- Proposed Trail Bike Riding Facility, Duranbah, NSW. - Noise Impact Assessment and Design Review - 14 November 2006 - Prepared by James Heddle Pty Ltd
- Letter documenting changes to track layout - 29 January 2007 - Prepared by Jeff and Merrin Gilliland
- Letter documenting changes to track layout - 1 February 2007 - Prepared by James Heddle Pty Ltd

3 Summary of Issues

A trail bike riding facility with three recreational riding tracks is proposed for a site adjoining the Pacific Highway in NSW. Several isolated residences and a cemetery are located nearby.

This report provides a review of the previous acoustic assessments provided as part of the development application as documented above.



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4 Review Findings

4.1 Ambient Noise Environment

The ambient noise environment has been characterized by measurements taken at the site in the vicinity of the sensitive residential locations. The Rating Background Level (RBL) has been determined from background noise levels measured near the residences without a direct line of sight to the Pacific Highway, providing a more conservative determination of the ambient noise levels for the area. Residences and the adjacent Cemetery have been included as noise sensitive receivers.

4.2 Operating Times

Times of operation are proposed between 10pm and 5pm Friday to Monday. These hours fall within the EPA's requirements.

4.3 Operational Noise Criteria

The NSW INP specifically excludes motor sports facilities from the scope of the policy, however the '*RBL + 5 dBA*' (plus a 5 dBA impulsive penalty) assessment criteria provided in the proposal is based on the principles of the INP and provides a conservative criteria for the benefit of the noise sensitive receivers.

The reference to the '*Trail Bike Assessment Tool*' also provides for the consideration of buffer distances between the site and noise sensitive receivers, and the use of natural topography as acoustic shielding to minimize exposure to noise levels associated with the site.

4.4 Vehicle Impacts

Potential noise impacts for vehicles traveling to and from the site have been determined, based on a limited number of daily vehicle trips (280) and a speed limit of less than 80 km per hour on the local roads. Provided these volumes and speeds are accurate for this proposal, this assessment is considered appropriate.

4.5 Modelling Methodology

The assessment methodology has been based on the noise measurement of actual motorbikes on the site as well as predictive noise modeling using the CONCAWE industrial noise algorithm. This is consistent with the methods outlined in the NSW Industrial Noise Policy (INP) and is considered appropriate for this type of noise source.

4.6 Meteorological Impacts

From the noise predictions, it was determined that under worst case weather conditions with the noise sensitive receivers downwind of the site, the predicted noise levels are in the order of 5 dBA higher than under calm conditions.

4.7 Noise Mitigation Measures

4.7.1 Natural Topography

The use of natural topography as acoustic shielding has been utilized as part of this proposal. This appears to be the most effective (and practical) form of noise mitigation available to the proposal. This is effective in most instances, particularly at the adjacent cemetery.



4.7.2 Motorcycle Noise and Number Limits

Based on a limit of 12 motorcycles per track and the source levels of each bike being limited 130 dBA at 500mm (107 dBA at 7.5 m), a satisfactory noise level is likely to be achieved. Compulsory testing of each motorcycle on site prior to access approval is an appropriate method for policing this requirement.

4.7.3 Noise Barriers/Screening

In areas where the natural topography is unable to satisfactorily achieve sufficient screening between the site and noise sensitive receivers, noise barriers in the form of hay bales have been recommended as a means of noise mitigation.

We would recommend that confirmation of 'barrier' locations and dimensions be confirmed during the detailed design of the project or as part of the development application and post construction monitoring be undertaken to determine the effectiveness (or otherwise) of the hay bales as a noise mitigation measure or whether something more appropriate is required.

The hay bales may have been recommended as a 'soft barrier' option for other reasons (e.g. safety, aesthetics and practicality).

4.7.4 Complaints Management

In the event of complaint, the application has addressed the POEO (Noise Control) Regulation 2000 as an avenue for the management of complaints.

5 Conclusions

Based on the above information, we would consider that the development application has satisfactorily addressed the necessary requirements for an acoustic assessment of motorcycle noise emissions associated with a trail bike riding facility

We would recommend that confirmation of 'barrier' locations and dimensions be confirmed during the detailed design of the project or as an addendum to the development application and post construction monitoring be undertaken to determine the effectiveness (or otherwise) of the hay bales as a noise mitigation measure or whether something more appropriate is required.

I hope that this meets your requirements. Please feel free to contact me on (07) 3858 4800 should you have any questions.

Regards,

Joe Feltham
Brisbane Environment Manager