

# FERNHILL ESTATE PICNIC RACE DAYS

## NOISE MANAGEMENT PLAN

**REPORT NO. 13101-E-NMP**  
**VERSION A**

JUNE 2014

**PREPARED FOR**  
FERNHILL ESTATE

## DOCUMENT CONTROL

Version	Status	Date	Prepared By	Reviewed By
A	Draft	20 June 2014	George Jenner	-

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ACOUSTICS AND AIR

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## GLOSSARY OF ACOUSTIC TERMS

Most environments are affected by environmental noise which continuously varies, largely as a result of road traffic. To describe the overall noise environment, a number of noise descriptors have been developed and these involve statistical and other analysis of the varying noise over sampling periods, typically taken as 15 minutes. These descriptors, which are demonstrated in the graph below, are here defined.

**Maximum Noise Level ( $L_{Amax}$ )** – The maximum noise level over a sample period is the maximum level, measured on fast response, during the sample period.

**$L_{A1}$**  – The  $L_{A1}$  level is the noise level which is exceeded for 1% of the sample period. During the sample period, the noise level is below the  $L_{A1}$  level for 99% of the time.

**$L_{A10}$**  – The  $L_{A10}$  level is the noise level which is exceeded for 10% of the sample period. During the sample period, the noise level is below the  $L_{A10}$  level for 90% of the time. The  $L_{A10}$  is a common noise descriptor for environmental noise and road traffic noise.

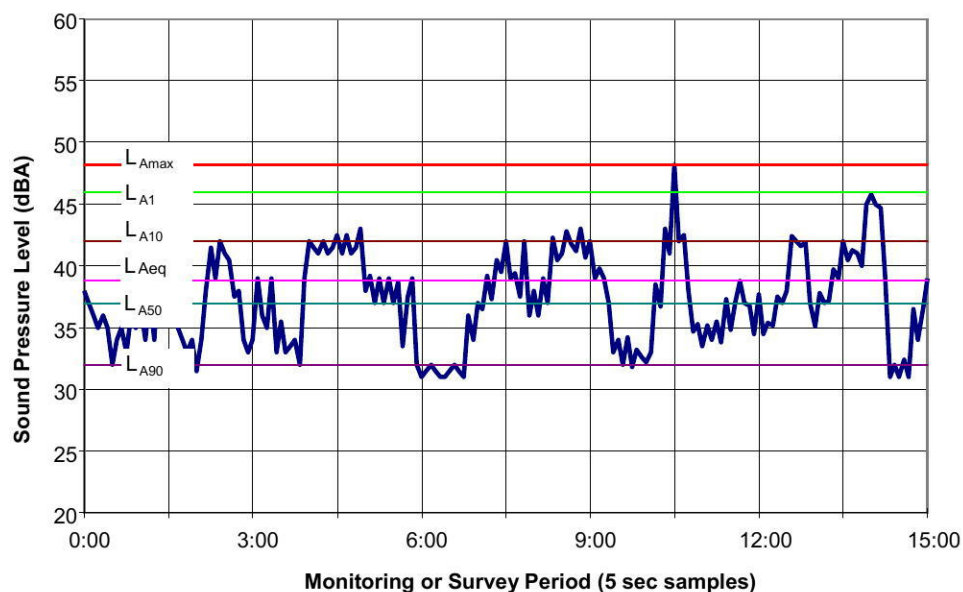
**$L_{A90}$**  – The  $L_{A90}$  level is the noise level which is exceeded for 90% of the sample period. During the sample period, the noise level is below the  $L_{A90}$  level for 10% of the time. This measure is commonly referred to as the background noise level.

**$L_{Aeq}$**  – The equivalent continuous sound level ( $L_{Aeq}$ ) is the energy average of the varying noise over the sample period and is equivalent to the level of a constant noise which contains the same energy as the varying noise environment. This measure is also a common measure of environmental noise and road traffic noise.

**ABL** – The Assessment Background Level is the single figure background level representing each assessment period (daytime, evening and night time) for each day. It is determined by calculating the 10<sup>th</sup> percentile (lowest 10<sup>th</sup> percent) background level ( $L_{A90}$ ) for each period.

**RBL** – The Rating Background Level for each period is the median value of the ABL values for the period over all of the days measured. There is therefore an RBL value for each period – daytime, evening and night time.

Typical Graph of Sound Pressure Level vs Time



## **1 INTRODUCTION**

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This noise management plan concerns noise from picnic race day events at Fernhill Estate, Mulgoa Road, Mulgoa.

The development includes four precincts. Picnic race day activities occur in the Central Precinct.

The Eastern and Western Precincts are being developed as residential. This plan may require updating as those Precincts are developed to take into account noise impact at all residences potentially impacted by the site.

## **2 PURPOSE**

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The purpose of this Operational Noise Management Plan (ONMP) is to outline methods available to manage noise during the use of the Site for picnic race day events. This ONMP is a working document and the plan may be updated based on future approvals and measurements.

The ONMP covers:

- appropriate training of all staff in relation to noise issues;
- noise monitoring required for events; and
- operational measures (e.g. restriction of function hours, location of activities, music levels etc).

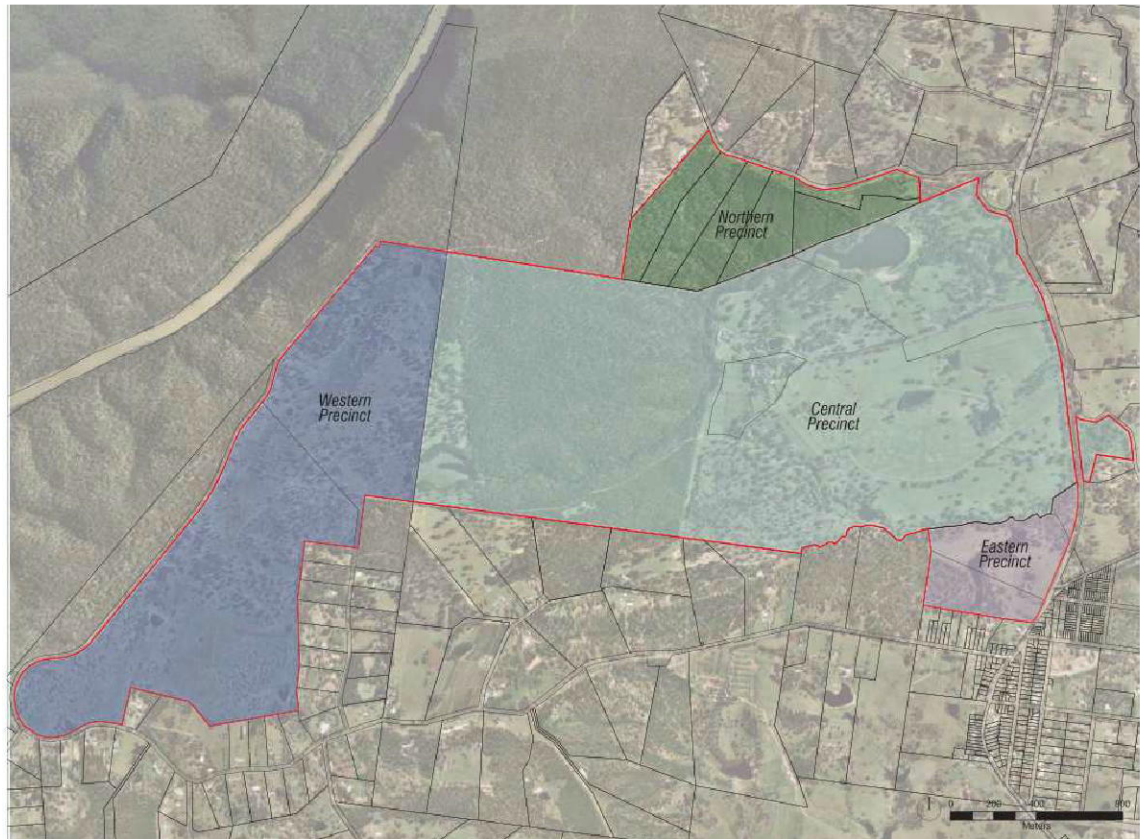
## **3 SITE DESCRIPTION**

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The picnic race days would take place in the Central Precinct of Fernhill estate, shown on Figure 3-1. Figure 3-2 shows the details of the race day facilities within the Central Precinct.



**Figure 3-1 Site Outline<sup>1</sup>**



Note 1 – Central Precinct shown shaded light green.

[illegible]

Unattended background measurements were done at four locations from 12 to 21 March 2014. The full results are given in Wilkinson Murray Report 13101-A Version C (April 2014). There are required by Council Conditions 2.31 and 2.45).

Based on the long-term noise monitoring, four assessment zones have been assigned to the site, as shown in Figure 6-1. The noise criteria derived from the monitoring and applied to those zones are given in Table 4-1.

**Table 4-1 Noise Criteria dBA**

Assessment Zone	Daytime (7am-6pm)		Evening (6pm-10pm)		Night time (10pm-7am)		
	RBL	Intrusiveness, L <sub>Aeq,15min</sub>	RBL	Intrusiveness, L <sub>Aeq,15min</sub>	RBL	Intrusiveness, L <sub>Aeq,15min</sub>	Sleep Disturbance, L <sub>A1,1min</sub>
North East	37	43	38	43	32	37	47
North West	39	44	39	44	37	42	52
South East	37	42	37	42	37	42	52
South West	30	35	30	35	30	35	45

## 5 REQUIREMENTS FOR PICNIC RACE DAYS

### 5.1 Event Description

This section covers picnic race days with attendance of approximately 10,000 people.

### 5.2 Event Location

These events will be held in/around the racetrack and/or the Central Precinct slopes/amphitheatres. Endurance athletic events could use other precincts.

### 5.3 Event Description

These Events will involve amplified music in external areas. Based on previous events minimal acoustic disturbance is predicted and all events will comply with the Protection of Environment (Noise Control) Regulation 2008.

### 5.4 Procedures

Each event will have a nominated Event Manager.

- The Event Manager and Security staff will be made-aware of the Noise Management Plan for the venue.
- The Event Manager and Security Staff should be made aware that noise nuisance can be due to vehicle movements, crowd movements or the PA system.
- Neighbours within 500m of Fernhill Estate should be notified of event occurrence by letterbox drop. This requirement may be changed to include more or fewer residents based



on the noise disturbance recorded during events. The notification should include the contact number for noise complaints.

- Picnic race days may require noise monitoring at the locations specified in this plan subject to council conditions.
- The noise complaint number will be monitored by the Event Manager responsible for the function.
- The Event Manager will be authorised to take the appropriate action if there is a noise complaint.
- An Event Acoustic Report is to be submitted to Penrith City Council within 28 days if required.
- Notification of the event will be done according to Council Conditions if required.
- Where possible, orient loud speakers so that noise projection is away from residential areas.

## **6 NOISE MONITORING PROCEDURES**

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On-site noise monitoring may be required during picnic race day events. Noise monitoring and reporting shall be undertaken in compliance with the following proposed regimen.

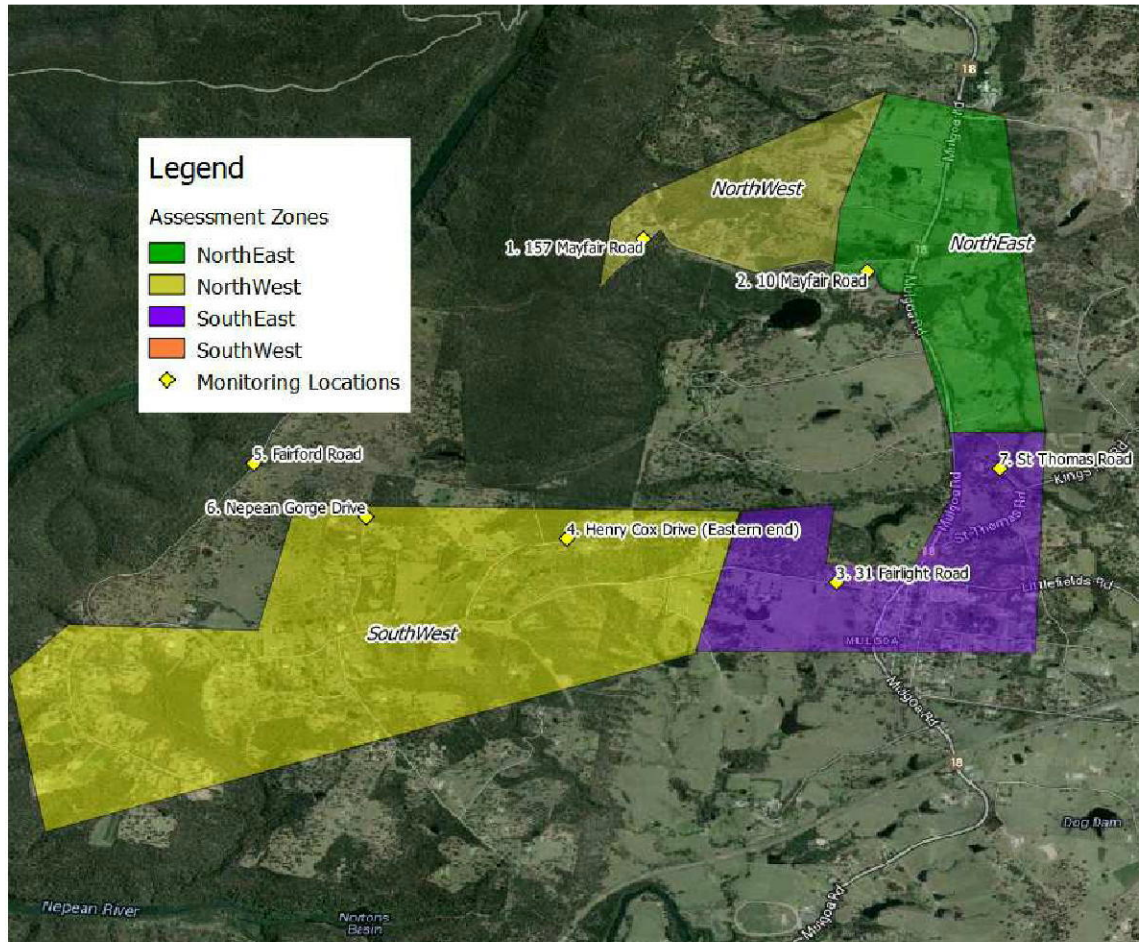
### **6.1 Monitoring Locations**

The compliance monitoring shall be undertaken at the following locations if relevant.

1. 157 Mayfair Road;
2. 10 Mayfair Road;
3. 31 Fairlight Road;
4. Henry Cox Drive (Eastern End)
5. Fairford Road (if relevant);
6. Nepean Gorge Drive (if relevant);
7. St Thomas Road,

These locations are identified in Figure 6-1. The assessment zone of the monitoring location determines the noise criteria from Table 4-1.

**Figure 6-1 Monitoring Locations**



## 6.2 Noise Limits

All event noise including (but not limited to) PA systems and music from performances shall not exceed the  $L_{Aeq,15min}$  noise limits set out in Section 4.2.

## 6.3 Noise Monitoring Protocol

For events where monitoring is required, monitoring will be done by a suitably qualified and experienced acoustic consultant who shall work in liaison with the event manager and sound engineer(s). If noise levels approach within 5 dB of the zone limits, the acoustic consultant will immediately inform the event sound engineer and event organiser (or nominated individual reporting to the event organiser) to make them aware of the situation.

Noise monitoring should take into account noise emission from vehicle movements, crowd movements and the PA system.

In the event of any exceedance of the zone noise limits, the acoustic consultant will immediately inform the event sound engineer and event organiser (or nominated individual reporting to the event organiser). In this instance the sound engineer will be required to immediately reduce sound levels (with consideration to overall and octave band levels, as advised by the acoustic consultant). The acoustic consultant would then perform further measurements to demonstrate on-going compliance.

Further to this, the community hotline will be responding to any noise complaints and adjustments made accordingly on the night.

#### **6.4 Monitoring Frequency**

During the event, compliance shall be confirmed by measurements undertaken at least twice at each location during the daytime period (10.00am to 6.00pm) and evening period (6.00pm to 10.00pm).

#### **6.5 Personnel**

Measurements should be undertaken by a suitably qualified and experienced acoustic consultant.

#### **6.6 Equipment**

Sound measuring equipment for attended measurement should conform to Australian Standard 1259 *Acoustics – Sound Level Meters* as a Type 1.

Sound measuring equipment for long-term measurement should conform to Australian Standard 1259 *Acoustics – Sound Level Meters* as a Type 2 or Type 1.

The sound level must incorporate an octave band filter capable of recording noise levels in octave bands from 31.5Hz to 8Hz.

#### **6.7 Procedures**

Measurement should be undertaken in accordance with the procedures of Australian Standard 1055 – *Acoustics-Description and Measurement of Environmental Noise*. In particular,:

- Measurements should be A-weighted and the time weighting of equipment set to "Fast"; and
- Equipment should be calibrated in the field before and after measurement.

#### **6.8 Records**

As a minimum the following will be recorded and incorporated into a Compliance Summary Report, which shall be submitted to Penrith City Council within 28 days of the event:

- Pre and post calibration status of the sound level meter(s);
- Prevailing meteorological conditions during measurements;
- Measurement period;



- $L_{A_{Max}}$ ,  $L_{A1}$ ,  $L_{A10}$ ,  $L_{A90}$  and  $L_{Aeq}$  levels over the measurement period;
- Additionally the  $L_{A10}$  octave band levels should be recorded;
- Statement of compliance and any non-compliances; and
- Qualitative assessment of the noise environment – The principal noise sources influencing the measured noise levels should be noted and the dominant noise source(s) identified. Where the contribution from event noise sources is not accurately determinable due to the influence of other extraneous sources, the event noise level should be estimated.

## 7 NON-COMPLIANCE

Non-compliant noise levels may be determined by noise monitoring or as a result of a complaint. Table 7-1 outlines actions to be taken for non-compliances.

**Table 7-1 Mitigation Measures**

Non-Compliance	Action	Responsibility
	Consider appropriate mitigation measures:	
Exceedance of noise limits determined from noise monitoring	<ul style="list-style-type: none"> <li>Where event PA or music levels exceed the identified noise limit(s), these levels will be reduced to within the relevant limit(s) immediately. Compliance to be confirmed by further noise measurements at the identified monitoring sites.</li> <li>Patron noise to be managed by on site event staff as appropriate.</li> <li>Details of all exceedances to be noted in Compliance Summary Report, submitted to Penrith City Council.</li> </ul>	Event Organiser or nominated individual reporting to Event Organiser
Noise complaint	<ul style="list-style-type: none"> <li>Investigate and if substantiated consider appropriate mitigation measures, such as further noise monitoring.</li> <li>Event Organiser or nominated individual should respond back to complainant within 2 hour of complaint.</li> <li>Details of all complaints to be noted in Compliance Summary Report, submitted to Penrith City Council.</li> </ul>	Event Organiser or nominated individual reporting to Event Organiser
Operation outside allowed hours (determined from complaint or operational procedure)	<ul style="list-style-type: none"> <li>Investigate and report details in Compliance Summary Report, submitted to Penrith City Council.</li> </ul>	Event Organiser or nominated individual reporting to Event Organiser



## 8 NOTIFICATION

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Notification of the event will be done according to Council Condition 2.35 *One (1) week prior to the any functions being held on the site, details of the noise complaint hotline (including landline and mobile phone), the dates and times of the events are to be distributed to residents within 1km of the property boundaries of the site. Details of the function to be held on the site are also to be displayed within the Mulgoa Progress Association Notice Board, located within the Mulgoa Village Shopping Centre.*

The notice shall include the following:

- date and nature of the event;
- the hours of operation for the event and expected numbers;
- proposed outdoor activities; and
- the name and contact number for the event organiser (or nominated responsible representative for any complaints). The representative must be on site for the entire event.

## 9 COMPLAINTS HANDLING

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Noise complaints will be managed through a 24-hour complaints hotline to be operated by the event organiser. The hotline telephone number shall be included on the notification to residents and on the event website.

Records of all received noise complaints shall be recorded and included in the Compliance Summary Report, submitted to Penrith City Council.

All complaints shall be investigated immediately and where validated by subjective assessment and/or by noise measurement action should be taken to reduce noise levels as appropriate. A response shall be provided to all complainants within 2 hours of the complaint.