

IN THE MATTER of the Resource Management Act
1991

AND

IN THE MATTER of an application to establish and
operate a purpose built travellers
accommodation, conference and
wedding facility at 206A Silverstream
Falls ROW, Tairua Hill

STATEMENT OF EVIDENCE BY NEVIL IAN HEGLEY

8 April 2016

1 Introduction

1.1 My name is NEVIL IAN HEGLEY. I have the following experience and qualifications relevant to the evidence I shall give:

- (a) I have more than 40 years' experience in civil engineering and for the last 35 years I have specialised in acoustics;
- (b) I have an MSc from Southampton University where I undertook research in acoustics in 1975/76;
- (c) I am a Chartered Professional Engineer, International Professional Engineer, a Member of the Institution of Professional Engineers New Zealand, the Institution of Civil Engineers London and the Acoustical Society of America;

- (d) I have appeared on the majority of the Standards sub-committees dealing with sound issues since 1977 and I was the Chairman of both the 1984 and 1999 versions of the Construction Noise Standard NZS6803;
 - (e) In 2010 I received the Meritorious Award by Standards New Zealand for outstanding commitment to the development of New Zealand Acoustic Standards; and
 - (f) I have been involved with a large number of conference and wedding facilities throughout the country.
- 1.2 I have read the Code of Conduct for Expert Witnesses contained in the Environment Court Consolidated Practice Note (2011) and I agree to comply with it as if this hearing was before the Environment Court. My qualifications as an expert are set out above. I confirm that the issues addressed in this brief of evidence are within my area of expertise. I have not omitted to consider material facts known to me that might alter or detract from the opinions expressed.

2 Proposal

- 2.1 It is proposed to establish travellers' accommodation plus conference and wedding facility within the Silverstream Falls subdivision on Lot 17 to the north of Tairua as shown on the plans before the Commissioners.
- 2.2 This evidence considers how the noise from the proposed development will be controlled to ensure compliance with the noise limits of the Thames Coromandel District Plan.

3 District Plan Requirements

- 3.1 As shown on Figure 1 the site is located in a Rural Zone in the Thames Coromandel District Plan.

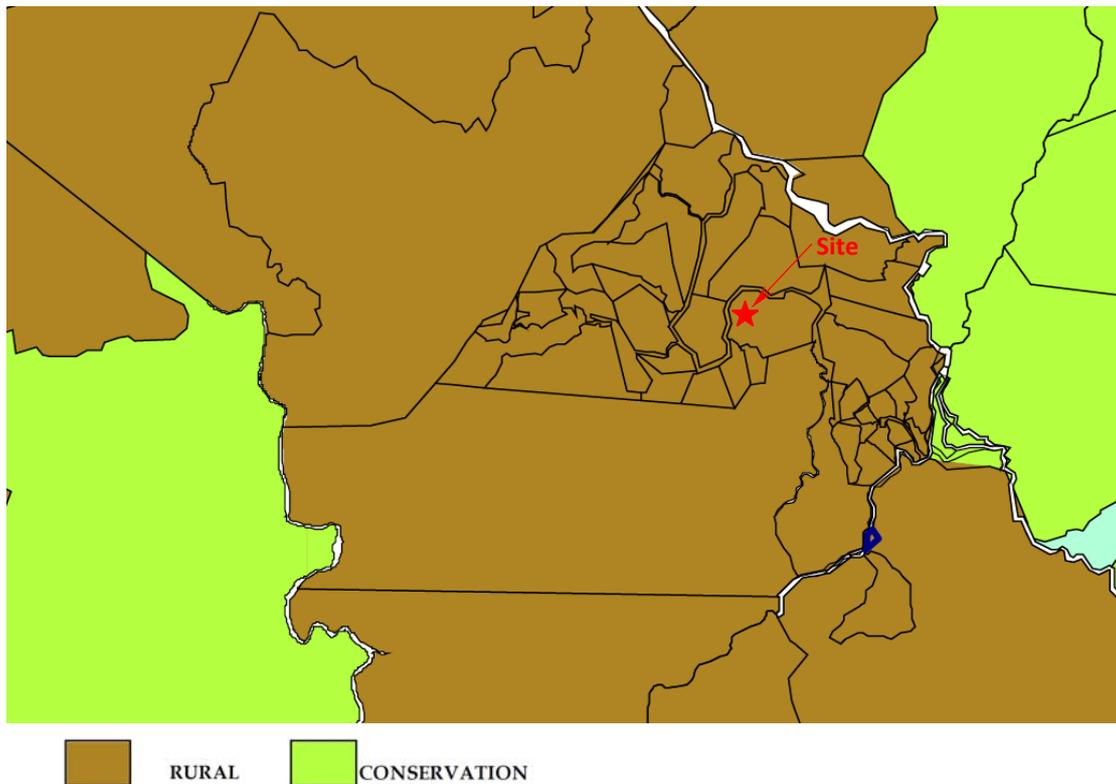


Figure 1. Site Zoning

From District Plan Map 60/01

- 3.2 Rule 491.4, Noise Standards of the District Plan requires the noise in a Rural Zone to comply with a level of 50dBA L_{10} during the daytime and 40dBA L_{10} plus 60dBA L_{max} at night time. Daytime is defined in the District Plan as being between 7:00am and 10:00pm and night time between 10:00pm and 7:00am on the following day.
- 3.3 The noise is to be measured at the notional boundary, which is defined in the District Plan as a line 20m from the façade of any house or the legal boundary of the Lot on which the house is located when this is closer to the house.
- 3.4 The noise must be measured in accordance with the requirements of NZS 6801:1991 Measurement of Sound and assessed in accordance with the requirements of NZS 6802:1991 Assessment of Environmental Sound.

- 3.5 During any construction work on site the requirements of NZS 6803P:1984 The Measurement and Assessment of Noise from Construction, Maintenance, and Demolition Work must be complied with. It is noted that NZS6803P has been updated with NZS 6803:1999 Acoustics – Construction Noise. The main difference between the two Standards is that L_{10} has been replaced with L_{eq} and the ambiguities have been removed in the 1999 updated version of NZS6803. Compliance with one Standard will mean compliance with the other Standard so it is recommended that the latest Standard should be adopted mainly to remove any uncertainties associated with the earlier version of the Standard.

4 Existing Noise Environment

- 4.1 The existing noise environment is controlled by a combination of traffic noise from the Tairua to Whitianga Highway (State Highway 25) to the north of the site as shown on Figure 1 and environmental noise. Sounds from the environment include the effects of birds and wind in the trees. In the summer months there is also the influence of cicada noise during the daytime and cricket noise at night time, both of which are significant.
- 4.2 To determine the existing noise environment field measurements were undertaken over a full day between Friday 11 and Saturday 12 February 2011 as shown on Figure 2. The measurements were undertaken at the road access to the site, which is considered to be representative of the noise environment in the area. During the measurement period the only noise in the area was from a light wind in the trees (although there were occasional gusts), bird noise and cicada noise during the daytime, as shown by the elevated noise levels during the daytime and distant traffic noise from State Highway 25. The effects of cicada noise are shown by the sudden drop in levels around 8:00pm when it became dark and by the increase in levels around 6:30am the following day when the day started to warm up. However, subjectively, the area is a quiet rural environment. The background sound (L_{95}) was measured over a 15 minute period on a day when there was no cicada noise and the levels were 34dBA with an L_{10} of 38dBA. I have been on site recently and the above levels are considered

to be representative of what is currently experienced in the area.

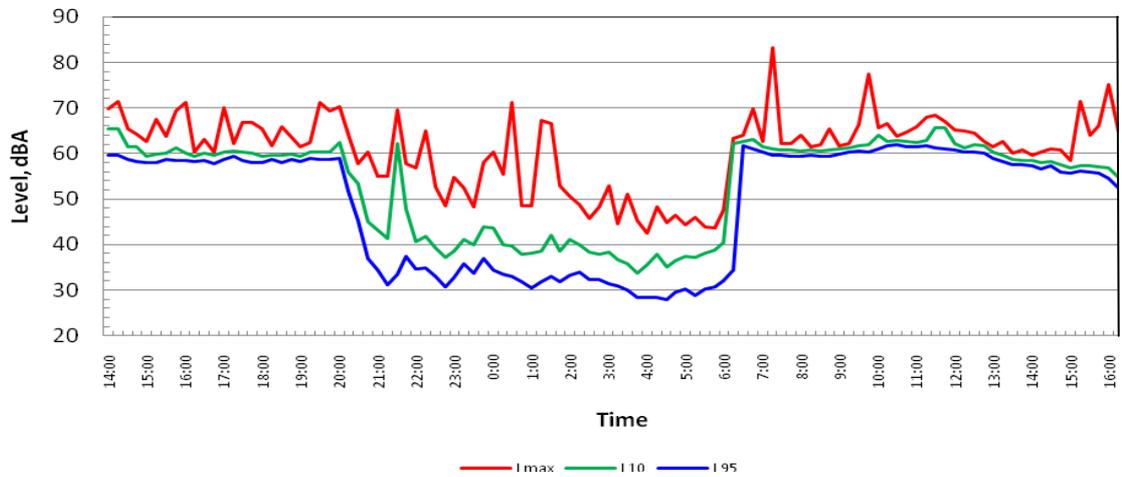


Figure 2. Existing Noise Environment

5 THE PROPOSAL

- 5.1 It is proposed to develop 14 travellers' accommodation units and a wedding facility/retreat/team building facility that would accommodate a maximum of 120 persons plus staff on site as shown on Figure 3.



Figure 3. Proposed Development

- 5.2 The general hours of operation will be 7:30am to 12 midnight Thursday to Sunday including Public Holidays. Monday to Wednesday hours of operation would be from 7:30am to 10:00pm.
- 5.3 The typical activity at the facility will be a restaurant for guests only and people walking or spending leisure time in the grounds so there will be very little noise associated with the site and any noise is unlikely to be heard off site during these times. The only activity expected to generate any noise that may influence the noise off site is the proposed 24 weddings per year where the effects of people noise and amplified music at these functions may be heard.
- 5.4 To evaluate the noise from the proposed wedding functions field measurements have been undertaken at a separate wedding venue for approximately 60 guests. The noise level from this venue was 80dBA L_{10} at 5m. To provide a factor of safety a level of 85dBA L_{10} at 5m has been adopted in the analysis. Assuming there is line of sight between the noise source and the receiver position the level at the closest notional boundary at the subject site will be 50dBA L_{10} , which is the District Plan daytime (7:00am and 10:00pm) noise limit. As set out above, this includes a 5dBA factor of safety based on measurements undertaken at an existing function.
- 5.5 By locating the band inside of the building and based on the proposed layout of the buildings the noise will drop a minimum of 15dBA and up to 25dBA at the closest houses due to the screening effects of the building facade. A reduction of 15dBA is achieved with windows left open although they will be kept closed, and no additional screening effect included. This will result in a level of below 40dBA L_{10} at night time at the notional boundary of all dwellings in the area, which is within the night time noise limits as set out in the District Plan.
- 5.6 The single event sound (L_{max}) from the weddings will be up to 12dBA above the L_{10} level, which is also within the night time noise limit of the District Plan.

6 Traffic Noise

- 6.1 The only potential traffic noise will be from vehicles on the internal roading network. Based on the traffic engineer's report it is expected the total vehicle movements to and from the site will be 60 vehicles/day (2 persons/car), plus minibus and staff vehicle movements, say 70 vehicle movements a day.
- 6.2 During the daytime when the vehicles arrive there will be the minimum noise intrusion for residents. At the end of the function it has been assumed that up to half of the vehicles could leave in a one hour period which would be up to 35 vehicles in a single hour after 10:00pm. This would occur for up to 24 times a year.
- 6.3 The closest house is within 20m of the access road with the next house being approximately 40m from the access road. A flow of 35 vehicles an hour gives a level of 38dBA L_{eq} as measured at 1m from the facade of the dwelling 20m from the road, which is the typical location where traffic noise is measured. This is a low level and reflects the low traffic flow and low speed of the traffic. It is generally accepted that 55 – 60dBA L_{eq} is within a reasonable level for traffic noise so the predicted level of 38dBA would be acceptable.
- 6.4 The above levels are for the wedding functions that will finish by midnight. For the majority of functions the daily traffic generation of the proposal would be 42 vehicles/day, plus some staff movements when assuming 100% occupancy. For much of the time vehicle flows will be considerably lower. In these cases the traffic noise will be well below 38dBA and have little influence on the existing noise environment.

7 Submissions

- 7.1 As summarised in the reporting Officer's S42A report the submissions on noise included statements such as there would be unacceptable noise and inconsistent with the expected amenity values of the area and incorrect reading of the district plan noise standards.

- 7.2 The noise from the proposed development will be within the expectations of the District Plan and at a level that reflects the lower recommendations of NZS 6802:1991 Assessment of Environmental Sound (as adopted by the District Plan). I also note that during the summer period the existing noise environment experiences high levels of cicada and cricket noise.
- 7.3 Silverstream Falls Row is not, in fact, a quiet rural area. This is a rural area located in bush and within hearing of a highway and for much of the time the existing noise environment is well above the design level for the proposed activities.
- 7.4 The use of the site will be within the District Plan noise requirements at all times and the noise levels set in the District Plan reflect the expectation of the area for a permitted activity.
- 7.5 It has been suggested the design levels do not reflect the District Plan requirements. With respect to noise, the District Plan states:
- These standards recognise that occupiers of houses, wherever they are located, are entitled to protection from excessive noise. The standards in Table 1 will therefore only apply where more stringent noise standards than those applying to an activity in the zone or policy area, are required to ensure that occupants of a house are not subject to excessive noise.
- 7.6 Taking into account the existing noise environment, the noise levels as set out in Table 1 of Rule 491.4 at 55/40dBA L₁₀ during the day/night period will protect the neighbours from excessive noise so the requirements of Table 2 are not necessary to ensure that the occupants of any house are not subject to excessive noise.
- 7.7 Rather than adopting the higher noise levels as set out in Table 2 I have retained the lower levels as set out in Table 2 and adopted the notional boundary rather than the lot boundary as the appropriate location to monitor the noise.
- 7.8 I also note there are potential problems if the lot boundary is adopted to

monitor the noise. The lot boundary in this case can be well screened from the activity by the topography while the neighbour's house may be elevated and not have the benefit of reduced noise levels due to the topography. Thus, there can be compliance at the lot boundary (the condition specifies "at the boundary of the lot" [emphasis added]) yet not comply at the house where the protection is important.

7.9 In addition, there is an example where a specific point was set for noise control and screening was located to protect that point although the house was not protected so the neighbour received unreasonable noise. These people did not receive the noise protection they were reasonably expecting. At the subject site the lot boundary can be screened without a problem but the desired acoustic protection would not be achieved. I do not support any condition that will not provide the protection that can reasonably be expected by the neighbours.

7.10 I could have easily made a strong case to adopt the recommendation of Table 1, which sets levels 5dBA higher than I have adopted for this application but have not done so.

8 Officer's Report

I have read the Officer's report and, with respect to noise, agree with the report.

9 Proposed Conditions

9.1 The following noise conditions (using the numbers of the draft conditions) are recommended with any consent granted.

46. The noise generated by the operation of the facility, as measured within the notional boundary of any dwelling in the rural zone (not on the same site), shall not exceed the following noise levels when measured in accordance with the requirements of NZS 6801:2008 Acoustics - Measurement of Environmental Sound and assessed in accordance with the requirements of NZS 6802:2008 - Acoustics - Environmental Noise:

7:00am - 10:00pm	10:00pm-7:00am	10:00pm-7:00am
50dB L_{Aeq}	40dB L_{Aeq}	60dB L_{AFmax}

47. All events/functions where amplified sound is required must utilise an in-house amplification system (with speakers located inside the building) for amplification of music, speeches and announcements.

48. An acoustic limiter shall be installed as part of the in-house amplification system to prevent the volume level being increased beyond a set limit which will ensure compliance with condition 46.

49. Prior to the commencement of events occurring within the reception centre, the consent holder shall provide a statement from an appropriately qualified acoustic consultant certifying that the acoustic limiter and its settings will achieve compliance of the required noise levels as outlined in condition 46.

9.2 It is noted that the most recent standards have been adopted in the proposed condition, including the use of L_{Aeq} rather than L_{10} . For this project the results are similar and this reflects the latest method to control noise.

10 Conclusions

10.1 For the majority of the time the noise from the proposed travellers' accommodation and conference/wedding facility will be no different to any other rural environment. The only time when some additional noise will be generated will be during the periods when conferences or weddings are being held.

10.2 Based on a band or DJ playing at a wedding being located inside and after 10:00pm with windows closed (although the doors may remain open) with a level of no more than 85dBA L_{10} at 5m, the noise requirements of 40dBA L_{Aeq} plus 60dB L_{Amax} will be complied with. As a guide, at a level of 85dB it becomes difficult for two people to carry on a conversation, which is higher than the levels proposed for the wedding functions so a factor of safety has been built into the assessment.

10.3 The only other potential noise effect is from vehicles leaving wedding functions after 10:00pm. However, as shown above, the noise of this traffic at the closest house to the access road, and assuming no screening of the vehicles, will be well within a reasonable level. For the majority of the time the noise from the proposed development will not be heard off the site.

10.4 Based on the above, the noise effects of the proposed travellers accommodation and conference/wedding facility will be no more than minor

in terms of the requirements of the Resource Management Act.

Nevil Hegley

8 April 2016