BEFORE THE SELWYN DISTRICT COUNCIL

IN THE MATTER	of the Resource Management Act 1991
AND	
IN THE MATTER	of a Notice of Requirement to designate a site at 27 Hamptons Road for Recreation Reserve Purposes to enable the establishment and operation of the Prebbleton Recreation Reserve

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EVIDENCE OF WILLIAM PETER REEVE
ACOUSTIC ENGINEER ENGAGED BY THE APPLICANT
DATED 22 SEPTEMBER 2020

Qualifications and experience

1. My name is William Reeve. I am a Senior Acoustic Engineer with Acoustic Engineering Services Limited (AES), an acoustic engineering consultancy with head office based in Christchurch. I hold a Bachelor of Engineering with Honours from the University of Auckland. I am a Member of the Acoustical Society of New Zealand.

2. I have over eight years' experience in the field of acoustic engineering consultancy and have been involved with a large number of environmental noise assessments on behalf of applicants, submitters and as a peer reviewer for Councils. My experience includes assessing noise levels from activities in recreation areas.

3. While this matter is not before the Environment Court, I have read and agree to comply with the Code of Conduct for Expert Witnesses (Environment Court Practice Note 2014). I confirm this evidence is within my area of expertise, except where I state I am relying on facts or information provided by another person. I have not omitted to consider material facts known to me that might alter or detract from the opinions expressed.

4. I am familiar with the site and surrounds having visited most recently in September 2020.

Background

5. In August 2019, AES was engaged by Selwyn District Council to undertake an assessment of the Prebbleton Recreation Reserve activity. We prepared the Assessment of Environmental Noise Effects report (AES reference AC19243 – 02 – R3, dated 15 April 2020) which accompanied the Notice of Requirement Application.

6. In response to concerns raised by submitters, the Applicant then proposed changes to the activity, with an increased dog park

carpark capacity and a wider main carpark entrance to accommodate more lanes. The Applicant also provided additional information about the building use, which is only intended to accommodate changing rooms, toilets and storage, not louder post-match functions as considered during the original AES assessment. Based on these changes I prepared a supplementary memo (AES reference AC19243 – 03 – R2, dated 28 August 2020).

7. In preparing this evidence I have reviewed the Notice of Requirement, Submissions and Council Officers report in relation to the noise effects. In my evidence today I will confine my comments to key points of the noise emission assessment, and address issues raised by submitters.

Acoustic criteria

8. Based on a review of the Selwyn District Plan, World Health Organisation (WHO) Community Health Guidelines, and NZS 6802:2008 Acoustics – Environmental Noise, noise at the following levels (measured and assessed in accordance with NZS 6801:2008 and NZS 6802:2008) when received at the boundary of the surrounding residential sites and at the notional boundary of existing dwellings on the surrounding rural sites would be appropriate:

Daytime 0700 to 2200 hours	*55 dB L_{Aeq}*
Night time 2200 to 0700 hours	*45 dB L_{Aeq} / 70 dB L_{AFmax}*

9. For comparison, the relevant District Plan noise standards are as follows when assessed at the notional boundary of nearby rural dwellings:

Daytime 0730 to 2000 hours	*60 dBA L_{10} /85 dBA L_{max}*
Night time 2000 to 0730 hours	*45 dB L_{10} / 70 dB L_{AFmax}*

10. At the boundary of the Living Zone to the north west of the Prebbleton Reserve, the following limits apply:

Daytime 0730 to 2000 hours	*55 dBA L_{10} / 85 dBA L_{max}*
Night time 2000 to 0730 hours	*40 dB L_{10} / 70 dB L_{AFmax}*

11. The hours assigned to the day in the proposed limits are longer than the underlying Selwyn District Plan noise rules which apply at the Living and Rural zones, being 0730 to 2000 hours, only a 12.5 hour period. However, the proposed daytime and night time hours are consistent with the NZS 6802 and the WHO guidelines which anticipate or provide for 15 hours of daytime.

12. In these proposed criteria the L_{10} descriptor used in the Selwyn District Plan has also been replaced with the best practice L_{Aeq} parameter. This is consistent with the changes made to NZS 6802 in 1999, where the L_{10} parameter was superseded for consistency with international practice. This is also consistent with the New Zealand National Planning Standards, which requires the adoption of this parameter in updated District Plans.

13. Since the L_{10} descriptor is the noise level that is exceeded for 10 % of the measurement time, it is directly related to the time period selected, the length of time that the noise source is on the site and the noise level it generates. This descriptor does not always well represent noise effects and is very difficult to calculate for intermittent noise sources such as vehicle movements in a carpark.

14. I note that while I have proposed acoustic criteria which differ from the District Plan noise limits for the above reasons, my assessment actually confirms that compliance with the District Plan limits will also be generally be achieved.

15. As discussed below, the exceptions are a predicted 1 dB exceedance of the 45 dB L_{10} night time District Plan limit at the notional

boundary of the dwellings at 2 and 32 Hamptons Road, and a 2 dB exceedance of the night time 40 dB L_{A10} District Plan limit at the site boundary of 116 Birchs Road – but only if the peak activity I have assessed occurs between 0700 and 0730 hours, or between 2000 and 2200 hours – which is unlikely. I note a noise level difference of 1 – 2 dB is generally inaudible.

Noise generated by daytime activity

16. I have assessed noise associated with vehicles, sporting activities (including spectators and whistles), breakout from the changing rooms, children playing and dogs barking in the dog exercise area.

17. During a peak period when all of the fields are in use with sporting activities at the same time as activity in the youth space and dog exercise area, worst case noise levels of 43 dB L_{Aeq} are expected at the notional boundary of the dwellings at 2 and 32 Hamptons Road. This scenario is expected to be representative of a busy weekend day, or a weekday evening for training.

18. Since predicted levels are well below the proposed 55 dB L_{Aeq} daytime criteria at the notional boundary of the closest dwellings, I consider that the noise effects from this level of activity will be minimal.

19. If the changing room is also fully occupied during this period, with doors held open (on all sides of the building), noise levels of less than 30 dB L_{Aeq} are expected at the notional boundary of the closest dwelling at 176 Birches Road. Because this predicted noise level is low, it will not make a measurable difference to the noise levels associated with outdoor sources, discussed in paragraph 14 above.

20. Noise associated with peak activity in the carpark areas has also been assessed, based on the increased capacity of the Leadleys Road carpark in response to submissions.

21. During a scenario when the Leadleys Road carpark (65 – 75 carparks) empties in a 15 minute period, this is expected to generate noise

levels of less than 43 dB L_{Aeq} at the notional boundary of the closest dwelling at 333 Leadleys Road, which complies with the proposed daytime criteria by some margin.

22. Noise associated with vehicle movements from the main carpark during a peak period are expected to be less than 49 dB L_{Aeq} at the notional boundary of the closest dwellings to the entrance (160 and 176 Birchs Road).

23. These predicted traffic noise levels therefore remain well below the 55 dB L_{Aeq} criteria and therefore I consider the effects will be minimal.

24. Noise levels associated with maintenance vehicles manoeuvring in the Service / Maintenance Area are also expected to be 44 dB L_{Aeq} or less at the notional boundaries of the closest dwellings.

Noise generated by night-time activity

25. I have assumed that there may be use of the dog park prior to 0700 hours, which would fall into the night-time period. I have predicted noise levels based on 15 dogs barking for 1 minute out of a 15 minute period.

26. With this level of activity, the highest noise level predicted at the boundary of 2 Hamptons Road to the north of the dog park is 42 dB L_{Aeq}, which complies with the proposed night time criteria. Noise levels received at other dwellings will be less than 35 dB L_{Aeq} due to the increased distance from the dog park area. A low number of vehicle movements associated with this activity would also be expected to achieve the proposed night-time noise criteria.

Council Officers report

27. Mr Friedel has correctly summarised our analysis in his report. On the basis of our assessment of effects and supplementary noise assessment which show that noise levels will be below 55 dB L_{Aeq} (0700 – 2200 hours) and 45 dB L_{Aeq} / 70 dB L_{AFmax} (2200 – 0700 hours),

Mr Friedel ultimately concludes that potential noise effects will be within the limits prescribed in the current industry standard (NZS 6802:2008) and will not generate an unreasonable nuisance to the adjoining neighbours. I agree.

Submissions

28. 15 submissions were received in response to the Notice of Requirement. Five of these submissions (Sheaf, Drinnan, KNOT Family Trust, Rademaker and Fraser) specifically mention noise related concerns.

29. I have summarised these concerns and provided additional comments below.

- That the gates should be locked at a reasonable hour to prevent late night noise and vandalism. That roadside parking on Leadleys Road will encourage boy racers and associated noise.

I agree that late night noise and vandalism are not desirable. I understand from the evidence of Phillip Millar, that while SDC does not propose to install gates at the carpark access points, power will be supplied to these points should this be required in the future.

I also understand that if this site is designated, a Reserve Management Plan will be required, which will include provisions relating to day to day management of the park and will have opportunity for community input. This plan will be subject to continuous review.

I consider that these measures will provide a sufficient framework and opportunity to address noise effects from anti-social behaviour should this occur.

- That noise associated with people talking and leaving in their

cars after 10.30 pm will be intrusive. That the proposal will result in significant noise. That noise associated with traffic and the clubrooms will generate high noise levels at the residential property opposite the main carpark (160 Birchs Road) and other properties.

Noise associated with the development will be audible on neighbouring sites from time to time. However as described in my evidence above, the expected noise levels are relatively modest, and well within guidance relating to the protection of residential amenity in rural areas.

If the lights on the main field are turned off at 2200 hours as proposed, then there will likely be a period shortly afterward when vehicles depart the site, which is during the night-time hours proposed in the acoustic criteria.

However, even in a situation where 25 vehicles depart from the main carpark in a 15 minute period after 2200 hours, noise levels from vehicles on the Prebbleton Reserve site will be less than 45 dB L_{Aeq} at the notional boundary of 160 and 176 Birchs Road which are closest to the access, which is consistent with the proposed acoustic criteria.

- That the planted-out buffer between the dog park and 2 Hamptons Lane be retained so that the likelihood of noisy activities occurring near the submitters boundary is reduced.

I agree that a setback between the fenced dog exercise area and the property at 2 Hamptons Road would be advantageous to reduce noise levels received at this property and should be retained.

- That more weight should have been placed on the District Plan standards when considering the noise effects of the proposal.

In paragraphs 11 and 12 above I have discussed how the predicted noise emissions compare with the District Plan noise limits. An exceedance of the District Plan limits is only expected if peak activity occurs between 0700 and 0730 hours, or between 2000 and 2200 hours – which is unlikely, and even then the magnitude of the exceedance is small. As above, I consider the alternative limits I have proposed to be in line with current best practice.

- That noise will travel further than the contours depicted in our report show.

I agree that noise will be audible beyond the area covered by the noise contours. These contours provide an indication of the distance noise will travel from each source before the level is reduced to below our proposed criteria. I note that noise levels received at properties further from the site which have not been identified in our predicted noise level tables, will receive even lower noise levels.

Conclusions

30. Noise levels associated with the operation of the Prebbleton Recreation Reserve are predicted to comply with the proposed acoustic criteria outlined below, which I consider to be in line with current best practice.

Daytime 0700 to 2200 hours	*55 dB L_{Aeq}*
Night time 2200 to 0700 hours	*45 dB L_{Aeq} / 70 dB L_{AFmax}*

31. Noise levels are also expected to generally comply with the District Plan limits. An exceedance of the District Plan limits is only expected if peak activity occurs between 0700 and 0730 hours, or between 2000 and 2200 hours – which is unlikely, and even then the magnitude of the exceedance is small.

32. I consider that the preparation of a Reserve Noise Management Plan and provision of power supply to the access points, to support automatic gates should these be required, represents sufficient opportunity for mitigation should noise associated with anti-social behaviour from late night use of the carparks become evident.

William Peter Reeve

22 September 2020