

BEFORE THE SELWYN DISTRICT COUNCIL

UNDER	The Resource Management Act 1991
IN THE MATTER OF	Proposed Private Plan Change 80 to the Operative District Plan
AND	
IN THE MATTER OF	Two Chain Road Limited Applicant

SUMMARY OF WILLIAM PETER REEVE
ACOUSTIC ENGINEER ENGAGED BY THE SELWYN DISTRICT COUNCIL
DATED 21 OCTOBER 2022

Qualifications and experience

1. My full name is William Peter Reeve.
2. I am a Senior Acoustic Engineer with Acoustic Engineering Services who were engaged by Selwyn District Council to undertake a peer review of the PC80 noise assessment. I undertook that peer review, which was circulated as part of the Section 42A report. As that review did not set out my qualifications and experience, I have set these out below.
3. I hold a Bachelor of Engineering with Honours from the University of Auckland. I am a member of the Acoustical Society of New Zealand.
4. I have over ten 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 from industrial activities which have rural and residential interfaces.
5. I am familiar with the site and general area.
6. 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.

Background

7. My peer review primarily focussed on the Applicants noise assessment by Mr Leithwaite. I also reviewed and provided comment on submissions.

8. In my review I recorded my position that if activities establishing comply with the Proposed District Plan noise limits, this would ensure that there is reasonable protection of residential amenity for nearby dwellings and other noise sensitive locations such as Rolleston Prison. These limits represent values that should not be exceeded to provide "*reasonable protection of health and amenity*" for residential land use (from NZS 6802:2008). Should this Plan Change be approved, these limits are likely to be applicable to activities establishing on the site.
9. I also agreed with the Applicants assessment that reverse sensitivity effects (i.e. occupiers of the Business zoned sites complaining about other noise in the area) is unlikely to be a key issue for a B2a zoned development in this location. I have now reviewed the further planning evidence from The New Zealand Defence Force which expands on concerns about reverse sensitivity for Burnham Military Camp and provide further comment below.
10. I stated that further assessment should be provided by the Applicant to quantify potential noise effects resulting from an increase in traffic and rail noise as a result of this proposal. I have now reviewed the noise evidence of Mr Lewthwaite where further detail has been provided on both these aspects. I have also reviewed the transport evidence of Mr Fuller where relevant to this analysis.
11. From the evidence of Mr Lewthwaite and planning evidence of Ms Seaton, I understand that the ODP has now been amended to require a 2.5 metre high earth bund on the Two Chain Road frontage. This bund will provide beneficial acoustic screening for nearby dwellings. A limit on any potential extension of rail sidings to as far as the east-west primary road is also proposed.
12. To reflect the concerns raised about the noise sensitivity of the Rolleston Prison site, and subsequent engagement with Ara Poutama Aotearoa, there is also a proposed change in activity status to discretionary or non-complying for some heavy industrial activities within 500 metres of the Walkers Road boundary of Rolleston Prison, and a new rule specifying that any business operating at night-time

within 150 metres of this boundary will be restricted discretionary.

13. In the following sections, I have discussed the additional traffic and rail noise assessments provided by the Applicant, as I have otherwise recorded general agreement with the acoustic assessment. The further detail provided by NZDF regarding the potential for reverse sensitivity effects for Burnham Military Camp is also discussed.

Traffic noise on nearby roads

14. I raised concerns that increased traffic on nearby roads could be a key noise effect for nearby sites, particularly if there were large increases in traffic volumes above the baseline at certain times of the day or increases in the number of heavy vehicles at night.
15. In his evidence, Mr Leithwaite provides “with PC80” and “without PC80” traffic noise predictions, based on forecast traffic information from Mr Fuller. The predicted traffic volume increases from 8,100 to 11,800 vpd on Two Chain Road, and 9,500 to 13,250 vpd on Walkers Road. A slightly increased percentage of heavy vehicles from 15% to 18% is also expected. On this basis Mr Leithwaite predicts an increase of 1 - 2 dB $L_{Aeq(24hr)}$ at the eastern end of Two Chain Rd and the southern end of Walkers Rd. I agree that these predicted increases are as expected for the forecasted change in traffic volume and composition.
16. The original Integrated Transport Assessment submitted with the Application, outlined that Two Chain Road has a current volume in the order of 1,800 vpd, and Walkers Road has a current traffic volume in the order of 1,700 vpd. There is therefore a significant increase to the forecasted “without PC80” scenario of 8,100 vpd at the eastern end of Two Chain and 9,500 vpd at the southern end of Walkers Road.
17. I understand from the evidence of Mr Fuller, that traffic modelling to determine these forecasts, and the effects of the Plan Change represents a scenario beyond 2033, and likely beyond 2038. This

illustrates that traffic volumes and associated noise levels in the vicinity of these roads will increase markedly in the next 10 - 20 years, by in the order of 6 - 8 dB $L_{Aeq(24hr)}$ and residential amenity (including at the Prison) will be degraded when compared to the current situation. These changes are expected to occur independent of PC80, which would mean an additional 1 - 2 dB $L_{Aeq(24hr)}$ of traffic noise.

18. While I understand from the evidence of Mr Fuller that buildings will not be constructed on the site until after the completion of the SH1 / Dunns Crossing Road / Walkers Road intersection anticipated in 2026, I am unsure whether traffic growth as a result of PC80 would occur at a similar, or higher rate to that of other general traffic in the area as a result of network changes.
19. If PC80 traffic growth occurs more rapidly than the other forecasted increases to traffic growth which form the basis of the comparison, then changes to traffic noise as a result of PC80 in the short term will be more evident than Mr Leithwaites analysis would suggest and could represent an obvious change.
20. However, Mr Leithwaites analysis is representative of the anticipated future situation. When considered alongside other anticipated changes to the network, the future change in traffic noise will be small. If growth in traffic from PC80 occurs at a similar rate to other changes in traffic in the area, it may be difficult to distinguish between them.
21. I agree with Mr Leithwaites description in paragraph 70 of his evidence, that individual louder vehicle movements to / from the site will be distinguishable but at a similar level to louder vehicle movements passing on the road.
22. Mr Leithwaite has also provided comment on night-time traffic generation from the site focusing on maximum noise levels, which I agree is relevant. I understand from his evidence that while night-time traffic generation from the PC80 site is uncertain, there is a potential doubling of traffic volumes overnight, along the east

section of Two Chain Road and south section of Walkers Road.

23. Mr Leithwaite considers that heavy vehicle passings could potentially lead to levels in the order of 70 dB L_{AFmax} at a dwelling 35 metres from Two Chain Road, and levels which exceed the WHO recommended maximum event criterion of 45 dB L_{Amax} inside bedrooms, meaning there is the potential for sleep disturbance.
24. I agree that this assessment is reasonable, and whether this criterion is exceeded in practice will depend on where bedrooms are located relative to the road, individual dwelling constructions, and whether residents sleep with windows open for ventilation. For dwellings further setback from the road the noise levels will be lower, and the risk of awakening events less.
25. Mr Leithwaite ultimately concludes that since the majority of PC80 additional movements are anticipated to be remote from rural dwellings along the west section of Two Chain Road, and the Rolleston Prison cell blocks alongside Walkers Road, there is not expected to be a readily observable change for those locations. While not stated, I assume this is also when compared to a future (2033 - 2038+) traffic scenario. Given the setbacks involved I agree this will be the case.
26. Generally the dwellings on Two Chain Road that are east of the indicative primary roads shown in the ODP are setback more than 35 metres from the existing carriageway of Two Chain Road. However, there appears to be a dwelling at 90 Two Chain Road (between the two primary accesses to Two Chain Road) which is in the order of 21 metres from the road.
27. For this dwelling, it is likely that noise levels from a heavy vehicle on Two Chain Road would exceed the WHO recommended maximum event criterion of 45 dB L_{Amax} inside bedrooms. The frequency of these events will increase as a result of PC80, although given the location between the accesses I assume there will not be as many as double the overnight movements, as for further east along Two Chain Road.

28. While the number of potential awakening events at this dwelling may increase as a result of PC80, I accept that heavy vehicle movements on Two Chain Road, including at night are likely to be prevalent as a result of anticipated network changes in the area. While residents of this dwelling may be required to adapt their behaviour, or the dwelling, to manage road noise in sleeping areas, this effect is likely to occur regardless of PC80. If heavy vehicle movements at night as a result of PC80 increase more quickly than other traffic in the wider area, this effect may be realised more quickly than it would have otherwise.

Rail noise

29. Since my initial review, the Applicant has proposed a restriction on any potential extension of rail sidings to as far as the east-west primary road without a resource consent.
30. Mr Leithwaite has also provided further clarification that he anticipates activities such as loading and unloading of wagons would take place on a private siding within private land and would be subject to the PDP noise limits.
31. Noise from train movements within the rail corridor, including shunting of wagons from sidings where within the rail corridor, would be exempt as a permitted activity under the PDP.
32. Given the limit on the location of potential rail sidings relative to rural dwellings and Rolleston Prison, the fact that loading and unloading activities are anticipated to be subject to the PDP rules, and the additional bunding along Two Chain Road now proposed in the ODP I am satisfied that noise effects from this aspect of the proposal can be adequately controlled at sensitive receivers.

Reverse Sensitivity from Burnham Military Camp

33. Further detail on the anticipated noise generating activities at Burnham Military Camp and their location has been provided by NZDF. This includes NZDF training exercises on the eastern side of

the Military camp, along with a driver training circuit and Aylesbury Range.

34. I identified the Aylesbury Range in my original review, noting that given the distance from the Proposed PC80 area, and the number of residential dwellings in closer proximity, or at a similar setback, I did not expect reverse sensitivity issues relating to the Burnham Military Base to arise from proposed B2A activities in this location. I consider that the driver training circuit would be a similar case.
35. NZDF have confirmed that training exercises will occur in closer proximity to the PC80 site than these other sources. While these are closer, I remain of the opinion that given the relative proximity of other, more sensitive activities, including Rolleston Prison and Te Puna Wai o Tuhinapo that reverse sensitivity issues for Burnham Military Base are unlikely to arise as a result of the proposed B2A activities.

William Peter Reeve

21 October 2022