

IN THE MATTER of the Resource Management Act 1991

AND

IN THE MATTER of a submission by the National Public Health Service (submitter 190) on the Noise Chapter of the proposed Te Tai o Poutini Plan

**STATEMENT OF EVIDENCE OF STEPHEN GORDON CHILES
FOR THE NATIONAL PUBLIC HEALTH SERVICE
IN RELATION TO ACOUSTICS**

5 August 2024

QUALIFICATIONS AND EXPERIENCE

1. My full name is Stephen Gordon Chiles. I am self-employed as an acoustician through my company Chiles Ltd. I have been employed in acoustics since 1996, as a research officer at the University of Bath, a principal environmental specialist for Waka Kotahi NZ Transport Agency, as a consultant for the international firms Arup, WSP, and URS (now AECOM), and specialist firms Marshall Day Acoustics and Fleming & Barron.
2. Since 2018 I have been subcontracted by Southern Monitoring Services to provide the Environmental Noise Analysis and Advice Service ("ENAAS"), advising the Ministry of Health and Health New Zealand / Te Whatu Ora on environmental noise.
3. I have degrees of Doctor of Philosophy in Acoustics from the University of Bath, and Bachelor of Engineering in Electroacoustics from the University of Salford. I am a Chartered Professional Engineer and a Fellow of the UK Institute of Acoustics.
4. I have made acoustics assessments and designs for numerous developments including infrastructure, industrial, commercial, recreational and residential activities. I have provided advice on technical acoustics matters with respect to many district plan changes and reviews, and with respect to national regulations and guidance.
5. I am convenor of the New Zealand reference group for "ISO" acoustics standards, and a member of the joint Australian and New Zealand committee for acoustics standards. I was Chair of the 2012 New Zealand acoustics standards review, Chair for the development of the 2010 wind farm noise standard, and a member for the 2008 general environmental noise standards.

SCOPE OF EVIDENCE

6. I advised the National Public Health Service – Te Waipounamu, Health New Zealand / Te Whatu Ora ("NPHS"), regarding its submission points on the noise chapter of the proposed Te Tai o Poutini Plan ("TTPP") relating to environmental noise: S190 #527 to #548. A former name for the NPHS was given on its submission as: Te Mana Ora (Community and Public Health) of the NPHS/ Te Whatu Ora. I had previously made comments on the noise chapter of the exposure draft TTPP in 2022.

7. The NPHS submission supports some provisions and seeks amendments to others, as needed to provide effective management of adverse noise effects on public health. The amendments sought include both “mechanical” or drafting issues to ensure the provisions function as intended with appropriate technical methods, and additional noise controls for some activities. My evidence provides information on technical acoustics matters, with respect to these submission points.
8. I have been separately engaged by KiwiRail and Waka Kotahi with respect to their submissions on TTPP and will be providing separate evidence for those parties.
9. I have read the evidence of Stephen Peakall for the West Coast Regional Council dated 19 July 2024 and the Section 42A report prepared by Ruth Evans. Mr Peakall, and in turn Ms Evans, have agreed with and recommend accepting many of the NPHS submission points on the noise chapter. There are several residual areas where I disagree with Mr Peakall and Ms Evans, and I consider their recommended provisions require further amendment to adequately manage adverse noise effects on public health.
10. In my evidence I will address:
 - a. Measurement and assessment standards,
 - b. Exemptions,
 - c. Structure of zone noise limits,
 - d. Port noise, and
 - e. Airport noise.
11. My evidence does not include discussion of NPHS submission points that seek to rectify minor issues or drafting errors in the notified TTPP, where these points have been supported by Ms Evans. I do not comment on objectives and policies that would require planning as well as acoustics expertise.
12. I confirm that I have read the Code of Conduct for Expert Witnesses in the Environment Court’s Practice Note 2023. I have complied with the Code of Conduct in preparing this evidence and will continue to comply with it while giving oral evidence at the

hearing. This written evidence is within my area of expertise except where I state that I am relying on the evidence of another person. I have not omitted to consider material facts known to me that might alter or detract from the opinions that I express.

Measurement and assessment standards (NOISE-R1)

13. The NPHS submitted to include reference to general noise measurement and assessment standards in the noise chapter overview as these standards need to apply across all rules. Ms Evans has recommended keeping the reference to the standards in NOISE-R1. Ms Evans has also recommended amendments to NOISE-R1 to clarify other measurement and assessment requirements in accordance with all relevant New Zealand Standards.
14. While retaining these references in NOISE-R1 might be adequate, it doesn't explicitly recognise a fundamental difference between the general environmental noise standards (NZS 6801 / NZS 6802) that operate in conjunction with noise limits in other rules, and the other standards that might operate alone on the basis of the recommended noise limits they contain (NZS 6803, NZS 6805, NZS 6806, NZS 6807, NZS 6808, NZS 6809). I note that the National Planning Standards only require use of the noise metrics from New Zealand Standards and not other matters such as recommended noise limits.
15. Regardless of the issue with measurement and assessment standards, there remains a significant anomaly in NOISE-R1.3 with the treatment of "mobile noise sources". Ms Evans and Mr Peakall do not explicitly comment on this part of the NPHS submission, and do not recommend any changes to NOISE-R1.3. In my opinion the notified NOISE-R1.3 is out of place in NOISE-R1 because NOISE-R1.3 explicitly sets noise limits for a source, rather than other parts of NOISE-R1 that define measurement and assessment standards. Also, as noted in the NPHS submission, the term "mobile noise sources" is not defined, and therefore NOISE-R1.3 represents a broad and unacceptable loophole in the noise chapter that could be widely applied to undermine the protection of public health provided by other noise rules.

16. I recommend that all reference to mobile noise sources should be removed from NOISE-R1. If any special provision is required for clearly defined mobile noise sources, I recommend this should be incorporated into the relevant part of NOISE-R2 or a standalone rule.

Exemptions (NOISE-R2)

17. The NPHS submitted that the notified NOISE-R2 provided too broad exclusions to noise limits. Mr Peakall and Ms Evans have agreed with several aspects of the submission point and recommended amendments to some parts of NOISE-R2, which should result in better protection of public health.
18. The NPHS submitted to remove a general exemption of infrequent aircraft movements in the notified NOISE-R2.12. Mr Peakall and Ms Evans have proposed to retain the exemption but with some limitations. In my opinion, the resulting provision they recommend remains broad and could result in significant noise disturbance from aircraft. Ms Evans considers that New Zealand Standards (NZS 6805 / NZS 6807) would manage the effect. I disagree because the activity is likely to be below the threshold of application of the standards, and otherwise, the weekly (NZS 6807) or three-monthly (NZS 6805) averaging of noise would not adequately address the adverse effects of this activity. I recommend that NOISE-R2.12 be deleted to adequately manage adverse noise effects from aircraft.
19. The NPHS submitted to remove an exemption for non-commercial watercraft in NOISE-R2.13. Mr Peakall does not address this in his evidence. Ms Evans considers noise effects would be intermittent and controls too onerous. The exemption does not include any limitations on the activity and therefore I consider that it cannot be assumed that effects are intermittent or dispersed. I recommend the exemption in NOISE-R2.13 be deleted, or alternatively, all affected craft be required to comply with a noise limit of say 67 dB L_{ASmax} , measured at 25 metres in accordance with ISO 2922 or ISO 14509-1. Other options could include graduated noise limits combined with restrictions on hours of operation.

Structure of zone noise limits (s42A NOISE-RX – notified NOISE-R5/R6/R7/R8/R11)

20. The NPHS submitted that the notified zone noise limits had numerous omissions and inconsistencies arising from an inappropriate structure. Mr Peakall and Ms Evans have proposed a new structure based on the zones where noise is received, in accordance with the NPHS submission. I agree that the structure proposed by Ms Evans in NOISE-RX addresses the fundamental problem raised in the NPHS submission.
21. I agree that it is beneficial to consolidate and standardise the zone noise limits. However, in this process Mr Peakall and Ms Evans have made some provisions more lenient than the notified rules, particularly by extension of all daytime periods to 2200h. Such a relaxation is not appropriate for protection of public health and was not sought by the NPHS. I recommend that to provide standardised time periods across zones, a separate 'evening' shoulder period should be added with a 5 dB stepped noise limit for residential and rural zones. To implement this in the version of the rule proposed by Ms Evans, the daytime columns should be changed to 0700h to 1900h and the columns with a noise limit for "*Saturdays, Sundays and Public Holidays*" should also apply on all days in the evening period between 1900h and 2200h. This would address the concerns discussed by Mr Peakall, without making the rules significantly more lenient than the notified TTPP.
22. There appear to be some drafting issues with NOISE-RX proposed by Ms Evans:
 - a. The rule text and table header rows use the terms "*maximum noise*" and "*maximum noise limit*". These should be rephrased to avoid confusion with the "*maximum noise level*" (L_{AFmax}), which is one of the two noise metrics in the tables.
 - b. Part 2 of the rule states "*...at any point at the notional boundary of any of the following zones*". By definition, notional boundaries relate to specific activities rather than zones. This might be clarified as "*...at any point within the notional boundary of any activity in any of the following zones.*" or "*....at any point within any notional boundary in any of the following zones.*".

- c. The noise limits are phrased to apply “...at any point within...” zones. This would result in erroneous application of noise limits at roads. This might be corrected by stating “...at any point within any site within...”.

Port noise (NOISE-R9)

23. The NPHS submitted that port noise should be managed in accordance with a publicly available Port Noise Management Plan. This submission point does not seek to prescribe any noise limits or constraints but seeks transparency around operation of ports in accordance with the port noise standard NZS 6809. I consider this a minimal regulatory step to ensure basic good noise management practice. Mr Peakall and Ms Evans recommend accepting this submission point with a minor amendment for annual ‘review’ rather than ‘update’ of the management plan. I agree that this amendment is appropriate.

Airport noise (NOISE-R10)

24. The NPHS submitted that airport noise controls should be amended. Mr Peakall and Ms Evans have agreed with aspects of this submission point and proposed various changes. From the proposed changes there appear to be some areas where I disagree with Mr Peakall, although he does not explicitly state his opinion on all matters.
25. I agree with Mr Peakall that it is best for general engine testing to comply with the NOISE-RX zone noise limits, and I support NOISE-R10.2Y proposed by Ms Evans in place of NOISE-R10.3. However, Ms Evans has also added NOISE-R10.2X, which makes some engine testing noise unregulated. Such an exemption was not sought by the NPHS (which was seeking more not less control) and seemingly nor by any other submitter. I consider that NOISE-R10.2X proposed by Ms Evans is inappropriate as it does not manage noise effects, and should be removed.
26. The NPHS submission sought to clarify that aircraft operations must be assessed including taxiing and pre and post flight engine running. This was sought to address a known omission/ambiguity in NZS 6805 and NZS 6807 that has repeatedly caused disagreement and debate since they were published around three decades ago. Mr

Peakall and Ms Evans do not comment on this point or address it in their proposed provisions. I consider this to be an important clarification to avoid ambiguity and to ensure all noise affecting public health is adequately managed. I consider the clarification as set out in the NPHS submission is necessary to adequately manage airport noise.

27. The NPHS submitted that airports should have management plans, and Mr Peakall and Ms Evans recommend accepting this point. For the same reasons I have discussed above with respect to management plans for ports, I consider this is also an important provision to manage airport noise affecting public health.

Stephen Chiles
5 August 2024