

UNDER the Resource Management Act 1991 ("**RMA**")

AND

IN THE MATTER of a notice of requirement ("**NoR**") for a designation by KiwiRail Holdings Limited ("**KiwiRail**") for the Palmerston North Regional Freight Hub ("**Freight Hub**") under section 168 of the RMA

JOINT STATEMENT OF ACOUSTICS EXPERTS

1. INTRODUCTION

1.1 This joint witness statement relates to expert conferencing on the topic of acoustics. Participants in the conferencing were:

- (a) Stephen Chiles engaged by KiwiRail; and
- (b) Nigel Lloyd engaged by the Palmerston North City Council ("**Council**").

1.2 Our qualifications and experience are set out in our individual statements of evidence dated 18 June 2021 (Lloyd) and 9 July 2021 (Chiles).

1.3 We confirm that we have read and agree to comply with the Code of Conduct for Expert Witnesses in the Environment Court Practice Note 2014. The matters set out in this statement are within our areas of expertise except where we state that we are relying on facts or information provided by another person. We have not omitted to consider material facts known to us that might alter or detract from the opinions that we express.

1.4 We discussed the matters set out in this statement in Zoom calls on Thursday 12 August 2021 and Tuesday 17 August 2021, followed by email exchanges.

1.5 The scope of our conferencing was limited to areas of potential disagreement on proposed designation conditions for construction and operational noise and vibration. We have not commented on all conditions but addressed the main areas where there may be material points of difference. Through our discussions we have reconsidered matters and narrowed potential points of difference, such that we have now recorded agreement on many of the following issues.

- 1.6 We have based our discussions on the version of designation conditions dated 13 August 2021, presented by Karen Bell.

2. CONDITIONS 71A AND 73

- 2.1 We agree with the requirement relating to night works as set out in new condition 71A.
- 2.2 The requirement in condition 71A has been taken from part of a condition previously proposed by Council (72A, 9 August 2021) that also specified procedures around assessment and management of night works. We agree those other aspects still need to be addressed either as part of the Construction Noise and Vibration Management Plan (“**CNVMP**”) (Condition 73), or as a standalone condition.
- 2.3 Mr Lloyd considers that night-time construction works that exceed the construction noise limits will have a significant impact on residents and that, consequently, a standalone condition is required to specifically deal with high construction noise at night. His recommended condition is the original condition proposed by Council (72A, 9 August 2021)
- 2.4 Dr Chiles considers that the processes for night works will be most effective if integrated in the CNVMP. He recommends amendment of Condition 73 to address the following matters from the condition proposed by the Council:
- (a) Notifications for night works in Condition 73(h) need to be at least 5 days prior to night works, include the expected timing and duration, and be copied to the Council; and
 - (b) Condition 73(l) needs to include the specific noise assessment of night works, as well as the resulting mitigation.

3. CONDITION 72(d)

- 3.1 At the hearing Commissioner Sweetman noted that Condition 72(d) did not explicitly require the actions described by Dr Chiles when questioned about vibration management. We agree that key components of actions to be taken when construction vibration Category B is exceeded are that building condition surveys should be undertaken (subject to access) before and after the works, and that any damage shown to be caused by the works should be repaired.
- 3.2 We have reviewed other recent conditions that might have suitable wording. [2020] NZEnvC176 was suggested but we found it did not have a condition

framed in a manner that directly addresses this issue. However, wording from the following condition for Waka Kotahi's designation for Warkworth to Wellsford includes relevant elements.

If prior to or during Project Works vibration levels from Project Works are predicted or measured to exceed the Category B criteria in Condition 27, then the relevant works shall not commence or proceed until a Suitably Qualified and Experienced Person has undertaken a building condition survey (provided the owner and/or occupier has agreed to such survey), and identified specific Best Practicable Option measures to manage the effects of vibration.

The measures shall be added as a Schedule to the CNVMP and implemented by the Requiring Authority for the duration of the relevant works. The Schedule shall, as a minimum, contain the information set out in Condition 29 and the findings of the building pre-condition survey. Where practicable, the Schedules shall be provided to the Manager for information within five Days before the specific construction activity is undertaken.

Vibration monitoring shall be undertaken and continue throughout the works covered by the Schedule. Following completion of the activity, a building condition survey shall be undertaken to determine if any damage has occurred as a result of construction vibration, and any such damage shall be repaired by the Requiring Authority.

4. CONDITION 85

- 4.1 We note that Condition 85 currently excludes noise from rail traffic on the North Island Main Trunk (“**NIMT**”), and we understand there are legal considerations as to how noise from the NIMT should be addressed. Dr Chiles confirmed that the NIMT is not included in the noise model, and if it were included the proposed Noise Management Boundary would be likely to need to expand slightly.

5. CONDITION 85A

- 5.1 The way Special Audible Characteristics are addressed in Condition 85A remains unresolved between us, primarily in relation to impulsive noise.
- 5.2 We agree that tonality should be addressed in accordance with NZS 6802:2008, following the hierarchy of subjective and objective

assessment whereby an objective test can be used if there is debate over a subjective assessment.

- 5.3 For impulsive noise, NZS 6802 does not include an objective method to assess special audible characteristics and does not make reference to international methods. The only guidance in NZS 6802 regarding impulsiveness is in a commentary clause CB4.1:

Special audible characteristics may be: ... (b) Impulsive, for example, bangs or thumps; examples include chipping hammers, panel beating, dropped timber;...

- 5.4 We agree that normal container handling including sound of containers being picked up and placed down should not be classified as having special audible characteristics under this definition. We also agree that 'careless' container handling creating louder impact sounds generally should be classified as having special audible characteristics.

- 5.5 Mr Lloyd considers that the special audible characteristics should therefore be applied as written in NZS 6802.

- 5.6 Dr Chiles considers that while he and Mr Lloyd agree how this commentary from NZS 6802 should be interpreted, he is concerned that other acousticians may consider all normal container handling and other railyard activity to have special audible characteristics. In his experience, such disagreements could distract from or delay resolution of potential noise disturbance. Dr Chiles considers the most effective and efficient method of addressing aberrant operator behaviour that gives rise to more noticeable impulsive noises is through site management under the Operational Noise and Vibration Management Plan.

6. CONDITION 85B

- 6.1 We agree that investigation of building treatment should be triggered based on noise predictions for forthcoming activity. When building treatment is implemented at a particular house we agree it should be designed to address noise from full future operation of the Freight Hub, rather than just the noise from the upcoming stage/activity. It would be undesirable to have to return to a house later and upgrade the building treatment.

- 6.2 We disagree on how the noise of future operations should be specified in Condition 85B.

- 6.3 Mr Lloyd considers that the building treatment design should be based on noise exposure shown by the indicative noise contours included with the Notice of Requirement. He considers this is necessary to provide certainty as to the ultimate noise exposure from the Freight Hub.
- 6.4 Dr Chiles considers the indicative noise contours in the Notice of Requirement could change significantly during detailed design, and are therefore not an appropriate basis for building treatment design. He considers the wording in Condition 85B to be appropriate: "... including allowance for future noise from further stages of development of the Freight Hub". Ultimately if insufficient allowance was made then KiwiRail would have to bear the cost of any subsequent upgrades required to building treatment. However, in practical terms, Dr Chiles considers that the most common treatment will be provision of mechanical ventilation, which will address a wide range of noise exposures regardless.

7. **CONDITION 90**

- 7.1 We agree that Condition 90(c)(i) should specify a height of "at least 5 metres".

8. **65 dB NOISE LIMIT**

- 8.1 Dr Chiles has reviewed the noise model and confirmed that for the indicative activity and mitigation, a criterion of 65 dB $L_{Aeq(1h)}$ is predicted to be met at all rural and residentially zoned sites (excluding traffic on the Perimeter Road and rail traffic on the NIMT). In response to questions from the panel, Dr Chiles indicated that 65 dB may be exceeded, but he has now confirmed that is not the case for the modelled scenario.
- 8.2 We agree that establishing a known upper level of noise exposure from the Freight Hub would be beneficial when designing any future new buildings for sensitive activities establishing near the site.
- 8.3 On this basis we agree that a Freight Hub noise limit at rural or residential zone sites of 65 dB $L_{Aeq(1h)}$ could be appropriate.

19 August 2021



Nigel Lloyd



Stephen Chiles