BEFORE THE INDEPENDENT COMMISSIONERS

IN THE MATTER	of the Resource Management Act 1991 ("**RMA**")
AND	
IN THE MATTER	of submissions by New Zealand Transport Agency Waka Kotahi ("**NZTA**") (submitter 385 and further submitter F20) and KiwiRail Holdings Limited ("**KiwiRail**") (submitter 442) on Hearing Stream 7 (Light, Noise, and Temporary Activities) of the Proposed Lower Hutt District Plan ("**Proposed Plan**")

SUPPLEMENTARY STATEMENT OF EVIDENCE OF DR STEPHEN CHILES ON BEHALF OF NZ TRANSPORT AGENCY WAKA KOTAHI AND KIWIRAIL HOLDINGS LIMITED IN RESPONSE TO MINUTE 22

NOISE

1. SCOPE OF SUPPLEMENTARY STATEMENT

1.1 My name is Dr Stephen Gordon Chiles. My qualifications and experience are set out in my primary statement of evidence for Hearing Stream 7.

1.2 The purpose of this supplementary statement is to respond to the Panel's request for further information on noise-related matters, as set out in Minute 22 dated 29 October 2026. In particular, the Panel has asked me to comment on the following two matters raised in the Initial Reply Memorandum of Stephen Davis and Malcolm Hunt dated 19 October 2026 ("**Reply Memorandum**"):

(a) use of a standardised construction schedule as a second compliance pathway for acoustic performance standards; and

(b) relevant national and international standards.

1.3 I address these matters below.

Code of conduct

1.4 I confirm that I have read the Code of Conduct for Expert Witnesses set out in the Environment Court's Practice Note 2023. I have complied with the Code of Conduct in preparing this supplementary statement.

2. ACOUSTIC PERFORMANCE STANDARDS

2.1 Mr Hunt and I disagree on the form of the noise controls that should be included in the Proposed Plan for road and rail. For the reasons set out in my written and oral evidence, I consider rail and road noise controls should be based on achieving internal sound level criteria as this is more efficient because buildings then only need acoustic treatment to the extent necessary to achieve healthy internal conditions. Mr Hunt disagrees and prefers the notified provisions, which are based on a standardised level difference approach.

2.2 In section 3 of the Reply Memorandum, Mr Davis comments that the Proposed Plan includes a second compliance pathway for acoustic performance standards involving the use of a standardised construction schedule. The Panel has requested my view on the merits (or otherwise) of this option being retained, whether in combination with an internal sound level approach or standardised level difference approach.

2.3 In response to this question, fundamentally, I consider that any alternative compliance pathways should result in the same or lower internal sound levels for road and rail.

2.4 I am familiar with numerous district plans that have set internal sound level criteria and have also included alternative compliance pathways. However, in my experience, those alternative pathways often have reduced efficiency, where account is not taken of the specific site and building, and instead conservative approximations are introduced.

2.5 A standardised construction schedule does not take account of specific sites and buildings. Therefore, the standard constructions must be conservative to ensure internal sound levels would be within the criteria. Essentially, the constructions for all parts of all buildings are required to provide the degree of sound insulation needed for the most exposed part of the nearest building to a road or railway. This is the same problem that occurs when using the standardised level difference approach rather than internal sound level criteria, which I prefer. However, I acknowledge an applicant may choose an

alternative compliance pathway (such as the construction schedule) because it does not require an acoustics specialist to be engaged.

2.6 I generally do not recommend standardised construction schedules be included as an alternative compliance pathway for road and railway sound as they are significantly inefficient (ie result in mitigation over and above what is actually required). I have also experienced difficulties with practical application of standardised construction schedules in relation to interpretation and coverage of requirements. However, standardised construction schedules can be used to result in appropriate internal sound levels, albeit inefficiently. Therefore, provided the constructions are conservative enough to address the most exposed sites, from an acoustics perspective I consider they could be provided as an alternative compliance pathway.

2.7 My opinions set out above apply equally to road and rail. The main difference between road and rail is that greater sound insulation performance is required at the highest rail noise exposures, compared to road noise. Therefore, while NOISE-APP5 or an alternative schedule might be adequate for road noise, it is currently inadequate for rail noise.

3. NEW ZEALAND AND INTERNATIONAL NOISE STANDARDS

3.1 Mr Hunt discusses two acoustic insulation standards: ISO 12354-3 and NZS 6806 in section 4 of the Reply Memorandum. I am familiar with, and have used, both standards. I have been appointed by Standards New Zealand as chair of the technical committee currently revising NZS 6806, with publication of the new version likely to be in mid-2027.

3.2 The Panel has requested I comment on these two standards Mr Hunt refers to. I understand this to be in the context of whether these standards support (or otherwise) my recommended internal sound level criteria for the acoustic performance standards.

ISO 12354-3

3.3 I agree with Mr Hunt that ISO 12354-3 provides relevant methods that should be used when designing buildings to comply with internal road and rail sound level criteria. I also agree that ISO 12354-3 does not provide a complete specification or method for this application. I consider that basic professional practice requires an acoustics specialist to reference various information sources including ISO 12354-3 when assessing compliance with acoustic insulation standards. I do not consider it necessary or appropriate to specify

reference to this standard in the Proposed Plan. Rather, I consider it important that the Proposed Plan should require compliance to be demonstrated by a suitably qualified professional, making them responsible for implementing a complete method appropriate for each situation. In my opinion this should often include use of methods in ISO 12354-3 as part of the overall analysis, and as such, the availability of ISO 12354-3 supports the use of internal sound level criteria.

NZS 6806

3.4 I acknowledge the sections of NZS 6806 that Mr Hunt has quoted, which refer to measurement methods for sound level differences. Those extracts are from NZS 6806 Section 5 "Measurement and prediction". However, as set out in Appendix 1 to the Joint Witness Statement of acoustic insulation experts for the Wellington City Proposed District Plan,[1] for physical testing, this same measurement method is relevant to, and can be used for, both internal sound level and standardised level difference criteria. I therefore do not consider the reference here to support the adoption of standardised level difference criteria in the Proposed Plan acoustic performance standards for road and rail.

3.5 As I discussed in my oral evidence at the hearing, NZS 6806 Section 6 "Criteria" does not include standardised level difference criteria, but does include an explicit "internal noise criterion" of 40 dB $L_{Aeq(24h)}$.[2] NZS 6806 explicitly refers to this as a criterion. The existing NZS 6806 also only applies to new and altered roads and does not apply to new sensitive activities establishing near existing roads. However, as the same noise effects arise in both situations (new road by existing house, or new house by existing road), NZTA has adopted the same 40 dB $L_{Aeq(24h)}$ internal sound level criterion from NZS 6806 in its proposed provisions. I consider this is the only criterion available from reference to NZS 6806.

Dr Stephen Chiles

10 November 2026

1 https://wellington.govt.nz/-/media/your-council/plans-policies-and-bylaws/district-plan/proposed-district-plan/files/hearing-streams/05/submitter-evidence/jws/joint-witness-statement-of-acoustic-experts-for-internal-noise-insulation-standards.pdf.

2 NZS 6806:2010, Table 2.