BEFORE THE HUTT CITY COUNCIL

Proposed District Plan Hearings Panel – Stream 7 – Other Topics

IN THE MATTER of the Resource Management Act 1991

AND

IN THE MATTER of the Proposed Lower Hutt District Plan

INITIAL REPLY MEMORANDUM OF STEPHEN DAVIS AND MALCOLM HUNT

Noise and acoustics

19 October 2026

1.0 Introduction

1.1 This memorandum is from Stephen Davis, reporting officer for the Noise topic; and Malcolm Hunt, noise and acoustic consultant and author of the expert evidence accompanying the Section 32 report, Section 42A report, and rebuttal evidence. Mr Davis is the author of sections 2 and 3, and Mr Hunt is the author of sections 4 and 5.

1.2 The memorandum provides some additional context that we hope will be useful to the panel if it reviews the joint witness statement between Mr Hunt and Dr Stephen Chiles that was made in similar proceedings for the Wellington City District Plan, as referenced by witnesses for NZTA and KiwiRail, and as the panel makes its decisions about what information to seek and conferencing to direct for this hearing stream.

1.3 We repeat the confirmations previously given that we have read and agree to comply with the Code of Conduct for Expert Witnesses.

1.4 For this evidence, we have attended the hearings (in person or online) and listened to the presentations of:

1.4.1 Dr Stephen Chiles for NZTA (385) and KiwiRail (442),

1.4.2 Ms Catherine Heppelthwaite for NZTA (385) and KiwiRail (442),

1.4.3 Ms Kirsty Dibley for KiwiRail (442),

1.4.4 Ms Michelle Grinlinton-Hancock for KiwiRail (442)

1.4.5 Mr David Gibson for Te Kārearea and Rosco Ice Cream (447)

1.4.6 Mr Micky Yang for Te Kārearea and Rosco Ice Cream (447) and Waste Management NZ (461)

1.4.7 Ms Angela Goodwin for Waste Management NZ (461)

1.4.8 Mr Tony Michelle for the NZ Agricultural Aviation Association (231) and NZ Helicopter Association (215)

1.4.9 Mr Philip Heffernan for Winstone Aggregates (444)

1.4.10 Mr Jamie Exeter for Winstone Aggregates (444)

2.0 Applicability of the Wellington City Joint Witness Statement

Stephen Davis

2.1 Dr Chiles in his presentation for NZTA and KiwiRail made reference to the joint witness statement he prepared with Mr Hunt on the *Te oro / Noise* chapter of the Proposed Wellington District Plan 2024.

2.2 This joint witness statement is dated 15 September 2023 and is available on the Wellington City Council website[1].

2.3 I note that this joint witness statement covers some matters specific to the Wellington City District Plan that are not relevant to this process (e.g. airport noise), and while Mr Hunt and Dr Chiles are parties to it, the statement also includes views from other experts who are not involved in the Lower Hutt hearings.

2.4 However, the Wellington City plan did face some very similar issues to those in the Lower Hutt PDP around acoustic insulation for sensitive activities near highways and railways. Hutt City Council also had significant regard to the outcomes of the Wellington City process in preparing the PDP before notification.

2.5 I thus agree that it is appropriate for the panel to consider the aspects of the Wellington Joint Witness Statement (in its Appendix 1) that are applicable to the Lower Hutt PDP and there is no need to reassess matters on which Mr Hunt and Dr Chiles were already agreed in that statement.

[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

3.0 Differences in NZTA and KiwiRail positions

Stephen Davis

3.1 Despite the discussion of the difference between the internal sound level ("ISL") and standardised level difference ("SLD", or "ISO method" in Mr Hunt's description in his rebuttal evidence) in the hearing, the panel should note that the PDP as proposed also provides that compliance can be achieved through a standardised construction schedule without needing an acoustic report (NOISE-App5, NOISE-App6). The relief sought by KiwiRail in their original submission would have removed this option, while the relief sought by NZTA would have retained it (albeit with a slightly different construction schedule to that proposed).

3.2 However, there is overlap in the witnesses for the two submitters, and while generally helpful, this creates an issue of being sure about the position of any given submitter where they differ. To the best of my understanding no view was set out in the hearing by either Ms Heppelthwaite or Dr Chiles as to whether they supported or opposed the construction schedule option. Given the situation with two different submissions but shared witnesses, I suggest the panel first seek a statement from KiwiRail as to whether they are pursuing the relief of removing the construction schedule option, or are aligned with NZTA, prior to seeking any further comment on the merits of the construction schedule option from their (or Council's) planning and acoustic experts, as it will aid the efficiency of that process if KiwiRail and NZTA are able to present a joint position.

4.0 Standards

Malcolm Hunt

4.1 I identified two relevant acoustic Standards referred to in my oral presentation, together with brief context statements for each.

A Possibly Relevant Acoustic Insulation Standard

4.2 As mentioned in my presentation, there exists an ISO standard that hasn't been mentioned by those submitters requesting 'Indoor dBA' type insulation standard, yet calculating indoor noise via such a standard would, in my opinion, helpfully reduce some of the uncertainty considered inherent in the indoor dBA method. The standard I identify is ISO 12354-3 *Building Acoustics- Estimation of Acoustic Performance of Buildings From the Performance of Elements- Part 3 Airborne Sound Installation Against Outdoor Sound.*

4.3 Two further comments - this ISO standard has not been referred to within any conferencing carried out to date regarding previous district plan hearings. Secondly, and perhaps most importantly, adopting this ISO Standard into the requested 'indoor dBA' insulation standard would resolve only some of the causes of potential uncertainty in adopting the 'Indoor dBA' method. For example, without further reference to other standards and/or specified sound spectra, simply requiring the calculation method to be as per ISO 12354-3 does not address the potential for low frequency sound problems within rooms insulated to meet an indoor dBA standard. Also, this does nothing to address potential errors in how outdoor noise levels against which the insulation will act, are to be reliably determined.

The Only NZ Standard Referring to Acoustic Insulation Standards

4.4 I identified in my oral presentation the only relevant guidance found in NZ Standards I am aware of that is applicable to specifying district plan acoustic insulation standards to protect against outdoor noise. This is a reference found at clause 5.2.3.2 of NZS6806:2010 *Acoustics – Road-traffic noise – New and altered roads* where it is recommended that acoustic insulation against traffic noise should be based on "*standardised level difference*" which are the methods which form the basis of PDP acoustic insulation standards. I attach the following screen shot from NZS6806:2010 as evidence of the existence of this recommendation which Dr Chiles disputed:

5.2.3.1 Reduction of noise received indoors depends upon the airborne sound insulation of buildings. Methods used in this Standard to assess the degree to which external noise is reduced when transmitted through the external building envelope shall take into account the frequency dependence of the building elements for the spectra of the incident road traffic noise.

C5.2.3.1 *The frequency spectrum characteristic of road-traffic noise is part of the rating method.*

5.2.3.2 For assessment of internal noise this Standard requires the acoustic insulation performance of buildings to be specified and, where necessary, rated using the 'standardised level difference' which describes the acoustic performance of the external building envelope (including windows, walls, ceilings, and floors where appropriate).

C5.2.3.2 *Noise received inside buildings should be quantified by using the 'standardised level difference' which is a single figure value representing the characteristics of the building structure, the location of any openings and the rating of any acoustically weak elements such as windows. Care should be taken when assessing indoor levels to ensure that the effects of separation distance, noise barriers, and building orientation on external sound levels are included.*

5.2.3.3 In circumstances where it is necessary to assess the acoustic insulation performance of the building, field tests of the standardised level difference shall be performed using ISO 140-5.

4.5 Dr Chiles did state, and I agree, there is a reference to indoor dBA traffic noise levels within NZS6806:2010.

4.6 This is in relation to noise mitigation assessment at clause 6.1.2 of the Standard which recommends where neither Category A or Category B noise mitigation targets cannot be achieved, the Standard recommends an indoor design 'target' noise level as a mitigation measure of last resort. This is a design target and is not intended to be used as a method for specifying a standard for acoustic insulation against outdoor traffic noise (as above, this is covered under clause 5.2.3).

5.0 Quarry Noise Limit Comparison

Malcolm Hunt

5.1 Commissioner Jones sought a comparison of the 70 dBA LA10 quarry noise limit of the Operative district plan with a noise limits of 67 dBA LAeq(15 min) of the Proposed district plan. I summarise the two requirements as follows;

OPERATIVE:

14C 2.1.8 Extraction Activity Area

All activities must not exceed the conditions as specified, measured anywhere within a residential or rural activity area. Appendix Noise 2 identifies the locations -

Location Reference	Location Description	Performance Standards	
37	SH No.58	Maximum 70dBA	6.00am - 10.00pm
		Maximum 45dBA	10.00pm - 6.00am
38	SH No.2	Maximum 70dBA	6.00am - 10.00pm
		Maximum 45dBA	10.00pm - 6.00am

PROPOSED:

Quarry Zone	**All zones other than the Quarry Zone** (at the boundary of, or outside, the Quarry Zone)	67 dB $L_{Aeq\ (15min)}$	55 dB $L_{Aeq\ (15min)}$	45 dB $L_{Aeq\ (15min)}$ 75 dB L_{AFmax}

5.2 The Proposed District Plan sets a daytime Quarry Zone noise limit of 67 dB LAeq(15 min) to be complied with at, or beyond, the quarry site boundary. The Operative District Plan sets a 70 dB LA10 noise limit which applies at the quarry boundary with either State Highway 2 or 58 (depending on which quarry).

5.3 Applying the quarry noise limits to apply at (or beyond) the quarry boundary better protects sensitive receivers that are variously located in the vicinity, but not close to the quarry operational areas. Setting aside any technical differences between LA10 and LAeq, the noise limit of the Proposed plan probably reflects that a slightly lower limit to protect sensitive receiver positions located in nearby areas which, under the operative plan, may not be adequately protected if noise compliance only needs to be achieved at the state highway boundary. The higher 70 dBA limit probably reflects the highways site boundaries are relatively close to working areas and sites of actual extraction and processing activities, compared to other points around the quarry boundary.

5.4 I reviewed but did not set the proposed quarry noise limits myself, however I support the intent of the PDP which is to enable

measurements to be taken at the perimeter of the Quarry Zone, in the direction of nearby residential areas. The Operative plan approach to only limiting quarry noise at the state highway is considered to be relatively ineffective as it only controls quarry noise propagating in the direction of the state highway boundary.

5.5 Whilst, for the above reasons, I do not support the request to increase the quarry noise limit by 1 dB to 68 dB LAeq(15 min), I wish to point out that, should the Panel be supportive of the submitter's request, any adverse noise effect on the receiving environment of granting the request would be very minor, if not insignificant.

STEPHEN DAVIS

MALCOLM HUNT

For Hutt City Council

19 October 2026