

**BEFORE THE INDEPENDENT HEARINGS PANEL
OF HUTT CITY COUNCIL**

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

AND

IN THE MATTER of the Proposed Hutt City District Plan ("**Proposed
Plan**")

**STATEMENT OF EVIDENCE OF MICKY SUEN WEN YANG ON BEHALF OF
TE KĀREAREA LIMITED AND WASTE MANAGEMENT NZ LIMITED**

NOISE AND VIBRATION

29 SEPTEMBER 2026

1. EXECUTIVE SUMMARY

- 1.1 This statement of evidence is prepared on behalf of Te Kārearea Limited ("TKL") and Waste Management NZ Limited ("WM") in relation to noise and vibration aspects of Hearing Stream Seven to the Proposed Plan.
- 1.2 I have reviewed NOISE-R5 as recommended in the section 42A report prepared by Stephen Davis dated 15 September 2026 ("**Section 42A Report**"), and the acoustic evidence of Mr Malcolm Hunt at Appendix 3 to the Section 42A Report.
- 1.3 NOISE-R5 describes the permitted activity status for activities that result in vibration. I find NOISE-R5 is generally appropriate except I recommend three changes:
- (a) NOISE-R5 should be separated to clearly differentiate between day-to-day operational vibration controls and temporary construction vibration controls. In my view, NOISE-R5.1a, as currently worded, is too stringent for construction vibration and NOISE-R5.1b is too lenient for operational (ie day-to-day) vibration.
 - (b) There should be further qualification in NOISE-R5.1a to include the word "unreasonably" as below (shown in red underline):

do not unreasonably compromise public health or safety,
or well-being and amenity values within any other site.
 - (c) The DIN 4150-3 standard referenced in NOISE-R5.1b should be updated to the 2016 version instead of the 1999 version. Mr Hunt has also recommended this, and the Section 42A Report has accepted this.
- 1.4 As NOISE-R5 is currently written, I consider most if not all construction activities will be a restricted discretionary activity without these suggested changes. This is because construction vibration would likely exceed the qualitative threshold in NOISE-R5.1a, even where best practicable measures are adopted. I consider this is likely not the intended outcome of the Proposed Plan and would create significant practical difficulties for the consenting of construction activities across the district.
- 1.5 Amendments to NOISE-R5 and a proposed new NOISE-RX to separate day-to-day operational vibration controls and temporary construction vibration

controls are proposed in Mr Gibson's evidence, which I agree with from a noise and vibration perspective.

2. INTRODUCTION

- 2.1 My full name is Micky Suen Wen Yang. I am an acoustic engineering consultant working for ten years at Marshall Day Acoustics ("**MDA**").
- 2.2 I hold a Bachelor of Engineering / Commerce Conjoint from the University of Auckland. I am a full member of the Acoustical Society of New Zealand.
- 2.3 I have extensive experience providing environmental acoustic (noise and / or vibration) assessment services for large infrastructure and commercial projects. These projects include new or expansions of industrial facilities, waste management operations, road and rail projects, and residential and commercial developments.
- 2.4 I am currently involved in environmental acoustic assessment work that includes computer modelling, measurement surveys, strategic mapping, effects assessments and management plans. I have prepared for and attended local authority hearings as an acoustic expert witness.

Involvement in the Project

- 2.5 I was engaged by TKL and WM to prepare evidence for this hearing which has the potential to impact TKL and WM's activities at 30 Benmore Crescent, Manor Park ("**Site**").
- 2.6 MDA has been engaged by TKL for various works at the Site including various noise and vibration monitoring visits. I have not been to the Site but my colleagues in MDA's Wellington office have.
- 2.7 I have reviewed the following where they relate specifically to Proposed Plan standard NOISE-R5:
 - (a) the Section 42A Report;¹
 - (b) the Section 42A Report appendix 1: recommended amendments to the Proposed District Plan;

¹ Section 42A Report at [136] - [154].

- (c) the Section 42A Report Appendix 3: Noise and acoustic evidence of Mr Hunt;²
- (d) TKL and WM's submissions;
- (e) the statement of evidence of Mr David Gibson on behalf of TKL, dated 29 September 2026; and
- (f) the statement of evidence of Ms Angela Goodwin on behalf of WM, dated 29 September 2026.

Code of conduct

2.8 I confirm that I have read the Code of Conduct for Expert Witnesses contained in the Environment Court Practice Note 2023. I have complied with the Code of Conduct in preparing this evidence and I agree to comply with it while giving oral evidence before the Hearing Commissioners. Except where I state that I am relying on the evidence of another person, this evidence is within my area of expertise. I have not omitted to consider material facts known to me that might alter or detract from my evidence.

3. SCOPE OF EVIDENCE

3.1 This statement of evidence will:

- (a) briefly address NOISE-R5 (Activities that result in vibration);
- (b) respond to the relief sought by the Manor Park and Haywards Residents Community Incorporated Society's ("**Association**") in relation to noise and vibration matters; and
- (c) briefly address the Council's Section 42A Report.

4. AMENDMENTS REQUIRED TO NOISE-R5

4.1 NOISE-R5 (Activities that result in vibration) applies in all zones and reads:

1. Activity status: Permitted

Where:

- a. *The activity is managed in such a way that ground vibration effects are contained as far as practical*

² Section 42A Report, Appendix 3 at [22] and [59] – [72].

within the boundary of the site and do not compromise public health or safety, or well-being and amenity values within any other site, and

- b. The activity is managed to avoid damage to buildings, by ensuring vibration levels received at any building except for any building located on the same site do not exceed vibration guideline values set out in Tables 1 and 3 of DIN 4150-3:1999-02 Structural vibration – Part 3: Effects of vibration on structures.*

2. Activity status: Restricted discretionary

Where:

- a. Compliance is not achieved with NOISE-R5.1.*

Matters of discretion are restricted to:

- 1. Any positive effects of the activity that cannot be achieved while meeting NOISE-R5.1.*
- 2. Effects of the vibration on people's health, safety, and wellbeing.*
- 3. The planned purposes, characters, and amenity values of the relevant zones and precincts of the areas that would be subject to ground vibration effects.*

4.2 In my opinion, NOISE-R5.1 should be separated into:

- (a) an operational (ie day-to-day) vibration rule (with wording similar to R5.1a); and**
- (b) a construction specific vibration rule (with wording similar to R5.1b).**

4.3 This separation mirrors the approach already adopted in the Proposed Plan for noise, where day-to-day operational noise is controlled via NOISE-R1 and temporary construction noise is controlled via NOISE-R2. The Proposed Plan already recognises that construction noise warrants different treatment from operational noise because it is temporary in nature and typically necessitates higher noise levels. The same logic applies to vibration.

4.4 This distinction is needed to clearly show that day-to-day vibration should be assessed and managed differently to temporary construction vibration. Construction vibration, by its nature, typically emits higher short-term vibration levels that may be disruptive to vibration amenity. Taking construction noise

as an analogy, NOISE-R2 permits higher noise levels than NOISE-R1 because the Proposed Plan recognises that higher short-term noise levels from construction are acceptable given their temporary nature. In my view, the same principle should apply to construction vibration.

4.5 Further, as the rule is currently written, and from my noise and vibration perspective, I consider that many construction activities would not meet the permitted activity standard and would instead be classified as a restricted discretionary activity because they would likely not comply with NOISE-R5.1a. This would have significant unintended consequences, including longer consent timeframes and increased costs for small residential and smaller scale commercial construction projects across the district.

4.6 Mr Gibson has recommended new wording for NOISE-R5.³ Speaking specifically about the wording of NOISE-R5 I address my proposed amendments to NOISE-R5.1a and NOISE-R5.1b below.

Amendments to NOISE-R5.1a

4.7 I agree in part with the wording for NOISE-R5.1a for both operational and construction vibration (subject to my comments around this wording for construction vibration at 4.12 below).

4.8 I agree with Mr Hunt's overall view that a qualitative / subjective approach is appropriate for vibration (ie "not deficient" in Mr Hunt's words),⁴ and a prescriptive vibration limit approach is not appropriate when assessing operational vibration.⁵

4.9 I do, however, recommend one change to NOISE-R5.1a for both operation and construction vibration (noting my comments at 4.12 below regarding construction vibration). I consider NOISE-R5.1a should include the word "unreasonably" as below:

do not unreasonably compromise public health or safety, or well-being and amenity values within any other site.

³ Statement of David Gibson's (Planning) Hearing Stream Seven dated 29 September 2026 at [4.17].

⁴ Section 42A Report, Appendix 3 at [68].

⁵ Section 42A Report, Appendix 3 at [60] – [70].

- 4.10 I recommend this to reflect the intent of Section 16 of the RMA and Clause 2.3 in New Zealand Standard NZS 6802:2008 Acoustics – Environmental noise ("NZS 6802"). I reproduce relevant wording below:

Section 16

...shall adopt the best practicable option to ensure that the emission of noise from that land... does not exceed a reasonable level

NZS 6802

However, low or controlled levels of noise are not necessarily unreasonable.

- 4.11 This wording has been adopted in the Auckland Unitary Plan's objectives.⁶ I reproduce them below for ease:

(...)

- (1) People are protected from unreasonable levels of noise and vibration.
- (2) The amenity values of residential zones are protected from unreasonable noise and vibration, particularly at night.

- 4.12 I also consider the wording of NOISE-R5.1a is not fully appropriate for construction vibration. It should be different to recognise that people can tolerate a higher level of vibration when it is temporary, and that such vibration is not necessarily unreasonable given its temporary nature.

Amendments to NOISE-R5.1b

- 4.13 In my view, NOISE-R5.1b is generally appropriate for managing the risk of cosmetic building damage from vibration, noting my comments above in paragraph 4.2 regarding the need to separate day-to-day and construction vibration. I consider DIN 4150 is only appropriate for construction because the vibration levels it permits are too permissive for day-to-day vibration.
- 4.14 For example, the DIN 4150 vibration threshold where there may be a risk of causing cosmetic building damage in a residential building is 5 mm/s PPV (peak particle velocity) for a continuous vibration source received on the topmost floor.⁷ The potential vibration effect of this is that it would be highly

⁶ Auckland Unitary Plan E25.2 Objectives (1) and (2).

⁷ Table 4 of DIN 4150-3 2016.

unsettling and if the exposure is prolonged, then some people may leave the building.⁸ Therefore my view is to drop reference to DIN 4150 for the operational vibration standard.

- 4.15 As requested in Winstone Aggregates' submission⁹ and supported by Mr Hunt's evidence,¹⁰ NOISE-R5.1b should reference the 2016 version of the DIN 4150-3 standard, instead of the 1999 version. I agree with this.

5. RESPOND TO RELIEF SOUGHT BY THE ASSOCIATION

- 5.1 The Association's submission sought amendments to NOISE-R1, NOISE-R2, and NOISE-R5 in the Proposed Plan's Noise Chapter to ensure noise and vibration emitted from the use of heavy vehicles and machinery is monitored on the site boundary, with Hutt City Council being able to require the results of monitoring at its discretion.¹¹

- 5.2 The Association's submission also sought amendments to NOISE-R1, NOISE-R2, and NOISE-R5 in the Proposed Plan's Noise Chapter that:¹²

- (a) require vibration to not be discernible on any residential land outside the subject development; and
- (b) identify a "discretionary" activity status for vibration which is discernible outside the subject development site.

- 5.3 With respect to measuring "on the site boundary", I interpret "site" as being the subject site. I agree with Mr Hunt that this is not appropriate.¹³ Clause 8.4.4 of NZS 6802 provides specific wording as well about the measurement location:

The measurement location should always be defined in terms of 'received sound', that is immissions. The appropriate measurement location will generally be at any point within an area desired to be protected.

- 5.4 With respect to the requested amendment that vibration "not be discernible", I agree with the conclusion in the s42A Report.¹⁴ Namely, that "not be

⁸ Based on the table developed during expert conferencing for the Northern Corridor Improvements Proposal Board of Inquiry dated 27 and 28 June and 3 to 5 July 2017.

⁹ Winstone Aggregates' submission point 444.13.

¹⁰ Section 42A Report, Appendix 3 at [72].

¹¹ Association submission point 377.10(a).

¹² Association submission point 377.10(b) and (c).

¹³ Section 42A Report, Appendix 3, at [22].

¹⁴ Section 42A Report, at [143].

discernible" is unrealistic because vibration levels are already experienced in a day-to-day situation from existing sources (mainly vehicles on roads). Measuring compliance or confirming an exceedance would therefore be very difficult or impracticable. Mr Hunt and I share the same opinion on this.¹⁵

6. SECTION 42A REPORT

- 6.1 I agree with the Section 42A Report's conclusions with respect to NOISE-R5 in relation to the Association's submission, as set out above. I also agree with the Section 42A Report's recommendation to update the DIN 4150-3 reference to the 2016 version.
- 6.2 I disagree in part with the Section 42A Report's recommendation to reject the relief sought by TKL.¹⁶ TKL's submission sought that NOISE-R5 be modified so that construction activities are not subject to NOISE-R5.1a. The Section 42A Report rejected this on the basis that "NOISE-R5.1.b is only intended to manage vibration so severe it would potentially damage structures, and not more general issues of health and nuisance arising from vibration" and that these issues "are still relevant for construction and temporary activities." I disagree in part because I consider operational vibration and construction vibration needs to be separated out, while the Section 42A, in essence, does not. My reasoning for the separation is set out at paragraphs 4.2 to 4.5 of this evidence.

7. SUGGESTED WORDING

- 7.1 I agree with the amendments to NOISE-R5 and the proposed new rule NOISE-RX as set out in Mr Gibson's evidence at paragraphs 4.17 to 4.18. In my opinion, these amendments appropriately separate operational vibration controls from construction vibration controls and reflect the temporary nature of construction activities.

8. CONCLUSION

- 8.1 For the reasons set out above, I recommend that the Panel:
- (a) amend NOISE-R5 to separate operational vibration controls from construction vibration controls, as set out in Mr Gibson's evidence at

¹⁵ Section 42A Report, Appendix 3, at [63] and [64].

¹⁶ Section 42A Report at [154].

paragraphs 4.17 to 4.18, to avoid unintended consenting requirements for construction activities across the district;

- (b) include the word "unreasonably" in NOISE-R5.1(a) to reflect the intent of section 16 of the RMA and NZS 6802;
- (c) update the reference to DIN 4150-3 from the 1999 version to the 2016 version; and
- (d) reject the relief sought by the Association in relation to noise and vibration monitoring at the site boundary and the "discernible" vibration test.

8.2 In my opinion, the amendments I support would more appropriately enable construction activities to proceed as permitted activities where vibration effects are appropriately managed. The amendments would also provide greater protection for day-to-day vibration, where the previous wording could potentially permit unreasonable day-to-day vibration.

Micky Suen Wen Yang
29 September 2026