BEFORE THE INDEPENDENT COMMISSIONERS

IN THE MATTER	of the Resource Management Act 1991 ("**RMA**")
AND	
IN THE MATTER	of a submission by 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 CATHERINE LYNDA HEPPELTHWAITE ON BEHALF OF KIWIRAIL HOLDINGS LIMITED IN RESPONSE TO MINUTE #22

1. SCOPE OF SUPPLEMENTARY STATEMENT

1.1 My full name is Catherine Lynda Heppelthwaite. 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:

(a) provide my requested wording for NOISE-S5 and NOISE-S6 to ensure the ongoing provision of noise screening, and the corrected version of the requested standard NOISE-S5;[1] and

(b) provide information to enable an assessment of section 32AA evaluation (additional to the s32 assessment attached to my evidence).[2]

1.3 I address these matters below.

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1 Hearings Panel Minute 22, dated 29 October 2026, at paragraph 10.

2 Hearings Panel Minute 22, dated 29 October 2026, at paragraph 11.

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. NOISE-S5 AND NOISE-S6

2.1 As set out in my primary evidence, I do not support the retention of NOISE-S5 and NOISE-S6 as notified and instead prefer these provisions be replaced by a single noise standard based on internal noise levels. I rely on the evidence of Dr Chiles for my recommendation.[3]

2.2 However, if the Panel decides to retain NOISE-S5 and NOISE-S6 as notified, I consider an amendment is required to ensure that exterior acoustic mitigation is maintained where it is relied on to comply with these standards. Mr Davis agrees with this approach in principle,[4] but considers there is no obvious mechanism to achieve this. In my opinion, the following amendments would ensure exterior mitigation is maintained (shown in underline as follows):

> **NOISE-S5**
>
> 1. Any building in which an activity sensitive to noise occurs must either:
>
> a. – b. […]
>
> c. Be located where an acoustic screen (such as a solid noise barrier fence, terrain, or a building) is present and maintained on the same site, and which is certified in writing by a qualified acoustic expert or environmental noise officer before commencement of the activity, that:
>
> […]
>
> **NOISE-S6**
>
> 1. […]
>
> a. – b. […]
>
> c. Be located where an acoustic screen (such as a solid noise barrier fence, terrain, or a building) is present and maintained on the same site, and which is certified in writing by a qualified acoustic expert or environmental noise officer before commencement of the activity, that:

3 Statement of evidence of Dr Stephen Chiles dated 29 September 2026.

4 Rebuttal Evidence of Mr Davis dated 6 October 2026, at paragraphs 6.4-6.5.

3. FURTHER INFORMATION TO ASSIST A SECTION 32AA ANALYSIS

3.1 The Panel has requested the following further information to assist with a s32AA analysis of KiwiRail's proposed 100m application of the Highway and Railway Noise Overlay ("**100m Noise Overlay**") compared to the notified approach of 40m ("**40m Overlay**"):

(a) the number of properties that would be affected by the 100m Noise Overlay for the Wairarapa Line, relative to the 40m Overlay preferred by Council;

(b) the theoretical costs to development;

(c) an evaluation of the costs and benefits that are specific within the Hutt City context as opposed to a nationwide context;

(d) an evaluation of each method against the relevant objectives and policies; and

(e) consideration of the standardised construction method noted by Mr Davis in the Initial Reply Memorandum, and whether it should be retained or not in conjunction with KiwiRail's preferred internal sound level approach.

3.2 I consider each of these matters in turn below.

Number of properties affected by the proposed 100m Noise Overlay vs 40m Overlay

3.3 I have manually counted the number of additional residential properties that would be affected by the 100m Noise Overlay sought by KiwiRail when compared to the 40m Overlay preferred by Council. From my assessment, the 100m Noise Overlay would apply to approximately 1200 more residential sites compared to the 40m Overlay.

3.4 When manually counting the additional properties subject to the 100m Noise Overlay I excluded sites which were partially or fully within the 40m Overlay (as these are already subject to the notified noise standards), and counted sites that are not affected by the 40m Overlay and partially or fully within the 100m Noise Overlay.

3.5 I have not included non-residential zoned sites in my assessment as their ability to accommodate noise sensitive activities is highly variable due to zone

provisions. In making my assessment, I observed most sites proposed to be subject to the 100m Noise Overlay were already developed for residential purposes.

3.6 This is relevant because proposed acoustic insulation and ventilation standards applying to properties within the 100m Noise Overlay only apply where a **new or altered activity** sensitive to noise is proposed. For example, a new garage or non-habitable space would not be affected. The acoustic insulation and ventilation standards also do not apply retrospectively to existing activities sensitive to noise and therefore I consider many of the properties will not be impacted by the extended overlay at all.

3.7 In my view, the additional potential impact of the 100m Noise Overlay is minimal in the context of the Lower Hutt District, is proportionate to the potential adverse effects resulting from railway noise and is well supported by independent technical evidence. I therefore recommend it be adopted by the Panel.

Theoretical costs to development

3.8 Appended to my evidence is the *Economic Assessment of Options to Manage Adverse Rail Noise Effects* prepared by Insight Economics.[5] This refers to studies which estimate the additional construction cost of implementing acoustic mitigation to be 1% to 2%.[6]

3.9 Insight Economics indicates these costs will also be partially offset by potential energy savings and may improve capital value of the property.[7] I refer also to Table 2 (included below)[8] which shows $0 cost in terms of Housing Market (supply) Impacts for Option 1 (do nothing) and Option 2 (KiwiRail's preferred outcomes). Option 3 is omitted as it relates to a 100m no-build setback which is not proposed in this context.

5 Statement of evidence of Cath Heppelthwaite dated 29 September 2026, Appendix 3 (Insight Economics, *Economic Assessment of Options to Manage Adverse Rail Noise Effects*, 16 August 2023).

6 Section 8.2, at pdf pages 105 and 106.

7 Section 8.2, at pdf page 107.

8 Section 10.2, at pdf page 111.

Costs/Benefits per km of Track	Option 1	Option 2	
Amenity & health benefits	-$4,665,600	$0	
Impacts on rail operation	-$97,000	$0	
Policy compliance costs	$0	-$1,728,000	
Housing market impacts	$0	$0	-:
Option Net Benefits/Costs	**-$4,762,600**	**-$1,728,000**	-:

Table 2: Estimated net benefits and costs per kilometre of track (Economic Assessment)

Costs and benefits within the Hutt City context

Rail network within the Hutt City context

3.10 Firstly, the rail network is a busy passenger line with forecast growth. Ms Grinlinton-Hancock in her evidence outlines that approximately 730 trains run through the district per week. This means the risk of community health effects and reverse sensitivity effects is greater, and increasing, when compared with the rail network across New Zealand generally (excluding the Auckland Metro Network).

3.11 Secondly, the Lower Hutt District has a unique long stretch of rail line where roads adjoin both sides of the rail line (Pohutukawa Street/Cambridge Terrace and Oxford Terrace (Naenae) south to Whites Line East Overpass). While roads do not ameliorate rail noise, their presence does reduce the number of land parcels subject to the 100m Noise Overlay which would be able to be developed / further intensified with activities sensitive to noise.

3.12 As was noted by the Panel at the hearing, there is existing residential development directly adjacent to the rail corridor in the Lower Hutt District. Some of these have buildings that are close to rail boundaries and on small sites, which in my experience is common across New Zealand. I consider this makes it even more important that the Proposed Plan include appropriate acoustic insultation and ventilation standards so that when these sites are redeveloped, the Overlay will manage adverse effects on people and reverse sensitivity effects on KiwiRail's infrastructure.

Benefits of the 100m Noise Overlay

3.13 The benefits of ensuring there are appropriate acoustic insulation and ventilation controls applying to properties that will be subject to rail noise are well documented and include:

(a) management and reduction of adverse community health effects from exposure to noise; and

(b) ensuring appropriate management of reverse sensitivity effects on nationally significant infrastructure.

3.14 Dr Chiles' evidence explains the adverse effects of sound and vibration on people living near the rail corridor include ischaemic heart disease, annoyance and sleep disturbance for building occupants.[9]

Costs of the 100m Noise Overlay

3.15 The costs of the 100m Noise Overlay include slightly increased compliance cost and, where required, construction costs. As above, Insight Economics estimates the additional construction cost of implementing acoustic mitigation to be 1% to 2% and notes there are other benefits to acoustic insulation measures which may offset these costs.[10]

3.16 In my opinion, the benefits of the 100m Noise Overlay outweigh the costs, particularly when considering the expected life of a residential dwelling (noting some are over 100 years old). Further, the most cost-effective time to include mitigation is at the time of construction. The benefits are also intergenerational and will provide mitigation where there are increases in train numbers over the life of the Proposed Plan.

Comparison of the costs and benefits of the notified 40m Overlay vs KiwiRail's 100m Noise Overlay

3.17 I have assessed costs and benefits (environmental, economic, social, and cultural effects) of each approach as far as practicable on the information available in the table below.

Table 1: Benefits of an Overlay applying 100m from the rail corridor v 40m

Benefits	
100m Noise Overlay	**40m Overlay**
Acoustic insulation and mechanical ventilation required to be assessed and, where required, implemented in new or altered activities sensitive to noise seeking to establish within 100m of the rail corridor designation boundary will provide	No acoustic assessment or mitigation between 40m and 100m reducing compliance and building costs.

9 Statement of evidence of Dr Chiles dated 29 September 2026 at [4.1].

10 Statement of evidence of Cath Heppelthwaite dated29 September 2026, Appendix 3 (Insight Economics, *Economic Assessment of Options to Manage Adverse Rail Noise Effects*, 16 August 2023) at section 8.2, at pdf pages 105 and 106.

Benefits	
100m Noise Overlay	**40m Overlay**
reduced community health effects as 100m is the extent to which the majority of noise effects are expected to impact building occupants. Long term, intergenerational benefits result for communities, noting housing stock has a long lifespan (50 to 100 years). Better protection of rail network from reverse sensitivity effects.	

Table 2: Costs of an Overlay applying 100m from the rail corridor v 40m

Costs	
100m Noise Overlay	**40m Overlay**
Acoustic assessment required between 40m and 100m which costs money for owners/occupiers. Acoustic mitigation is potentially required over a larger number of buildings. Potential small dis-benefit in housing supply (external noise approach may result in over-mitigation and increased construction costs).	Community health and reverse sensitivity effects not managed between 40m and 100m. Results in 60% more population exposure to noise. Increase in potential reverse sensitivity effects on rail network. Potentially more nuanced response; requires additional plan provisions (due to separate overlays and standards). Potential small dis-benefit on housing supply (external noise approach may result in over-mitigation and increased construction costs).

Table 3: Internal noise v external noise approach in noise standards

Benefits		Costs	
Internal noise (KiwiRail)	**External noise (HCC)**	**Internal noise (KiwiRail)**	**External noise (HCC)**
Allows for mitigation to be designed to accommodate the specific direction noise originates from e.g. building upgrade may	Likely over-mitigates for potential noise effects as it assumes noise comes from all directions.	Acoustic report required to determine compliance. Requires landowner / occupier to engage expert	Acoustic report required to determine compliance. This approach would require a full building mitigation

Benefits		Costs	
Internal noise (KiwiRail)	**External noise (HCC)**	**Internal noise (KiwiRail)**	**External noise (HCC)**
only be required on one side of the dwelling. Mitigation likely to be cheaper as does not over-mitigate.		to prepare report.	response which has the potential for 'overdesign' / increased construction costs.

Evaluation of each method against the objectives and policies

3.18 I have undertaken an evaluation of both KiwiRail's proposed 100m Noise Overlay and the HCC notified 40m Overlay against the relevant objectives and policies. This is included with this statement at **Attachment A**. I conclude that while both approaches will achieve the relevant objectives and policies, the 100m Noise Overlay as proposed by KiwiRail is more effective as the overlay extent will ensure appropriate mitigation of the predicted rail noise effects. It is therefore the most appropriate way of achieving the objectives of the Proposed Plan.

Retention of standardised construction method in conjunction with KiwiRail's preferred internal sound level approach

3.19 I consider that the standardised construction method noted by Mr Davis in the Initial Reply Memorandum, in conjunction with KiwiRail's preferred internal sound level approach, is conceptually a feasible compliance pathway. However, based on Dr Chiles' supplementary evidence, in its current form, the standardised construction method is not suitable to provide acoustic mitigation for rail.[11] Given this, I do not support the retention of the standardised construction method as a compliance pathway in the Proposed Plan as it applies to rail noise.

4. CONCLUSION

4.1 My s32AA evaluation concludes that while both approaches can achieve the relevant objectives and policies, the 100m Noise Overlay is more effective in achieving NOISE-O1, NOISE-O2 and NOISE-P3 of the Proposed Plan, and is therefore more appropriate.

11 Statement of evidence of Dr Stephen Chiles dated 29 September 2026 at [7.14].

4.2 Further, I consider the costs of KiwiRail's proposed 100m Noise Overlay are minimal and significantly outweighed by the benefits which result from a broader application of acoustic insulation and ventilation provisions, in particular, the longer-term, enduring health, amenity and reverse sensitivity benefits.

4.3 Accordingly, I consider the 100m Noise Overlay is the most appropriate way of achieving the objectives of the Proposed Plan and should be adopted by the Panel.

Catherine Lynda Heppelthwaite
19 November 2026

Attachment A: Evaluation of each method against the objectives and policies

Objectives and policies (S42A Recommendations)	20m-40m Moderate and High Noise Overlay Approach	100m Noise Overlay Approach
NOISE-O1 Adverse effects of noise Adverse effects from noise: 1. Do not compromise people's health, and 2. Are compatible with people's wellbeing, and the planned purposes, characters, and amenity values of zones and precincts, except: a. To the degree necessary to provide for short-term construction activities or temporary activities, and b. To the degree necessary to provide for an infrequent number of major events in public places in the city where these have traditionally occurred.	May result in compromise to health and wellbeing as extent of Overlay more limited.	Better achieves objective as provides for more fulsome consideration of noise effects in terms of extent and consequential mitigation.
NOISE-O2 Reverse sensitivity Existing noise generating activities, and future noise generating activities in locations anticipated for such activities, are not unreasonably constrained in their operations by reverse sensitivity from inappropriately located or designed activities sensitive to noise.	May result in reverse sensitivity effects as extent of Overlay more limited.	Better achieves objective as provides for broader consideration of noise effects in terms of extent and consequential mitigation.
NOISE-P1 Appropriate noise generating activities Enable the generation of noise from any activity where that noise: 1. Does not compromise people's health, and 2. Is compatible with people's wellbeing and the planned purposes, characters, and amenity values of the relevant receiving zones and precincts.	Not relevant, refers to noise generation.	Not relevant, refers to noise generation.
NOISE-P2 Short-term noise generating activities	Not relevant	Not relevant
NOISE-P3 Reverse sensitivity Require sound insulation where practical for activities sensitive to noise: 1. Near the rail network, 2. Near major highways, including State Highways, and 3. Within zones that anticipate higher levels of noise.	Will result in reduced provision of sound insulation as extent of Overlay more limited.	Better achieves objective as provides for broader consideration of noise effects in terms of extent and consequential mitigation.