

Before the Independent Hearing
Commissioners

Under the Resource Management Act 1991

In the matter of A hearing on submissions on the proposed Te Tai o Poutini
Plan

Hearing Topic: Noise

Submitter:

**Westport Pistol Club (S336), Chris Hartigan (S338),
Westport Rifle Club Incorporated (S457)**

Statement of Evidence of Katherine McKenzie

6th August 2024

Introduction

- 1 My full name is Katherine McKenzie.
- 2 I have a Bachelor of Arts majoring in Geography. I am an Associate Member of the New Zealand Planning Institute and hold a Making Good Decisions foundation certificate.
- 3 I am currently Director and Principal Planner of WePlan Limited. I have worked as a resource management professional for 16 years and I have held a variety of planning roles in private, local and central government sectors. I have previously worked for Christchurch International Airport as a land use planner, and was involved in the Christchurch Replacement District Plan process where airport noise contours were revised for the Christchurch District Plan. I am therefore familiar with noise reverse sensitivity issues and how they can affect existing activities.
- 4 This evidence is provided in support of the submissions by Westport Pistol Club (S336), Chris Hartigan (S338), Westport Rifle Club Incorporated (S457) on the Noise provisions of the Te Tai o Poutini Plan (TTPP). I have been engaged to provide evidence for the submitters which primarily focuses on the potential for reverse sensitivity effects on the submitters' activities at the Westport Rifle Range as a result of the TTPP. I did not prepare the submissions for these submitters.
- 5 In preparing this statement of evidence I have considered the following documents:
 - (a) Section 42A report on Noise prepared by Ruth Evans;
 - (b) The evidence of Mr Peakall on behalf of WCRC dated 19 July 2024;
 - (c) Evidence presented to the panel during the Residential Zones hearing;
 - (d) Minute 34 issued by the Independent Hearings Panel.
- 6 This evidence should be read in conjunction with my evidence and summary statement for the Residential topic, where the issue of reverse sensitivity issues was originally canvassed in relation to the proposal to rezone parts of the Alma Road area to residential.

Code of Conduct for Expert Witnesses

- 7 While this is not a hearing before the Environment Court, I confirm that I have read the Code of Conduct for expert witnesses contained in the Environment Court of New Zealand Practice Note 2023 and that I have complied with it when preparing my evidence. Other than when I state I am relying on the advice 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 the opinions that I express.

Scope of evidence

- 8 I have prepared evidence in relation to:
- (a) Revised provisions tabled by Buller District Council at the Residential hearing
 - (b) Recommended provisions for the protection of the Westport Rifle Range and amenity values
 - (c) Matters arising from the directions in Minute 34 issued by the Independent Hearings Panel.
- 9 When drafting my evidence, I have had regard to higher level provisions, including the West Coast Regional Policy Statement, and the Strategic Directions chapter in the TTPP, as well as the National Planning Standards 2019.
- 10 As noted in my previous evidence there is some crossover between the Residential and Noise topics in terms of the reverse sensitivity issues the submitters have raised, and it has become necessary to address the issue in both hearings, because the focus of the earlier hearing was the change in zoning rather than the wider area and potential for future development. This evidence builds on my earlier opinion regarding the need for provisions in the TTPP which avoid reverse sensitivity effects arising on the Westport Rifle Range through future development.

Revised provisions tabled by Buller District Council at Residential Hearing

- 11 After I presented my evidence at the residential hearing, Mr Barr presented a revised set of provisions based on acoustic advice he had received the evening before. I was not privy to those provisions at the time of presenting my evidence.
- 12 I do not support the provisions provided by Mr Barr, nor the revised contours, because they are focused on a small subset of the wider contours (the area of interest to Buller District Council) and do not consider the wider area that could give rise to reverse sensitivity effects on the Westport Rifle Range. For example, the provisions do not include more stringent requirements for sensitive activities that might occur within the 60dB L_{AFmax} area, and fail to take into account the large area of rural-residential precinct zoning across State Highway 67.
- 13 It is my view that the provisions relating to the Westport Rifle Range need to be considered more holistically, so that they apply across different zones, and to the wider area of influence. It is not sensible to include bespoke provisions which only apply to a small part of the area subject to noise from the Westport Rifle Range, and therefore these provisions are not fit for purpose. These provisions would be appropriate in a plan change scenario where the scope would naturally be limited

to the area affected by the plan change – they are not appropriate in a plan review context and in the context of the submissions received on the TTPP.

Recommended provisions for the Westport Rifle Range

- 14 Discussions have progressed with Mr Barr and Ms Evans on what suitable provisions might look like to address the Westport Rifle Range reverse sensitivity issue. I have attached my position on the provisions in **Attachment A** of my evidence. These provisions are important to protect both the Westport Rifle Range and the residential amenity of future residents.
- 15 The key elements of the provisions are:
 - (a) A set of noise contours (50dB L_{AFmax} , 55dB L_{AFmax} , 60dB L_{AFmax}) should be produced for the entire area surrounding the Westport Rifle Range. Both BDC and WCRC have engaged Marshall Day Acoustics to provide advice, and Marshall Day Acoustics holds the information to be able to produce these contours. I understand that WCRC have asked Marshall Day Acoustics to complete this work, and this will be available before the Noise hearing. The clubs will accept the Marshall Day Acoustics recommended contours, provided that they are complete, and do not just relate to the proposed residential zoning. I anticipate a hybrid of the 16 July version¹ for the residential area, and the 14 June version² for the wider area.
 - (b) Subdivision is a restricted discretionary activity within the 55dB L_{AFmax} contour. This is important to manage the reverse sensitivity effects within the 55dB L_{AFmax} and 60dB L_{AFmax} contours. This is important, not only to address potential options for residential development at Alma road, but also to manage the effects of subdivision in the General Rural Zone which may give rise to additional sensitive activities establishing within the 60dB L_{AFmax} contour where such activities should be discouraged.³⁴

¹ PTTTP Residential re-zoning and Westport Rifle Range – Noise modelling with details terrain data, dated 16 July 2024, Figure 1, presented by Craig Barr on 17 July 2024.

² PTTTP Residential re-zoning and Westport Rifle Range – Noise Assessment, prepared by Marshall Day Acoustics dated 14 June 2024, Figure 1, appended to the evidence of Craig Barr, dated 17 June 2024.

³ Statement of evidence of Stephen Jack Peakall, dated 19 July 2024, para 67

⁴ PTTTP Residential re-zoning and Westport Rifle Range – Noise Assessment, prepared by Marshall Day Acoustics dated 14 June 2024, paras 12-13, appended to the evidence of Craig Barr, dated 17 June 2024.

- (c) The Westport Rifle Range Noise Overlay Area is included in NOISE-P2 as a high noise environment, which provides policy support for the noise provisions relating to the area.
 - (d) Amendments to NOISE-R3 to ensure activities within the 55dB L_{AFmax} contour (but outside the 60dB L_{AFmax} contour) must achieve 35dB L_{AFmax} internal sound levels in habitable and sleeping areas, and provide an area of outdoor living space which is screened to achieve 50dB L_{AFmax} levels.
 - (e) A new restricted discretionary activity rule for sensitive activities within the 60dB L_{AFmax} contour, which ensures an assessment of whether the activity is appropriate or not; and recognises that it may not be possible to use acoustic mitigation to protect amenity within this noise contour.⁵
- 16 In addition to the above, the clubs recognise that there is benefit to plan users in including specific acoustic design options that could be employed as a means of compliance with NOISE-R3, and I would support the inclusion of these options within an appendix in the TTPP.
- 17 Subject to the inclusion of these provisions, I consider that the potential for reverse sensitivity effects on users of the Westport Rifle Range will be appropriately managed, in line with accepted practice around New Zealand and in accordance with the recommendations contained in the evidence of Mr Peakall and the advice provided by Buller District Council from Marshall Day Acoustics. The clubs remain open to further discussion to refine the provisions.

Minute 34

- 18 It is noted that directions were given to BDC to provide further information to support the rezoning at Alma Road. This included confirmation that the BDC will withdraw its TTPP submission points seeking rezoning beyond the now refined Alma Road rezoning. The clubs are in receipt of a letter which indicates that BDC are not pursuing these submission points, but at the time of submitting this evidence, I have not seen any confirmation that these submission points have been withdrawn. The noise evidence before the panel does not support residential activities within these areas, because they are within the footprint of the 60dB L_{AFmax} contours, where the ability to mitigate noise effects is unlikely.⁶

⁵ Statement of evidence of Stephen Jack Peakall, dated 19 July 2024, para 64-67

⁶ Statement of evidence of Stephen Jack Peakall, dated 19 July 2024, para 67

- 19 As also noted, the same submission points were also made by the Te Tai o Poutini Plan Committee, and these submission points have also not been withdrawn to my knowledge.
- 20 I remain hopeful that a Planning Joint Witness Statement will be able to be finalised in the coming weeks between Mr Barr, Ms Evans and myself, with planning provisions relating to the Westport Rifle Range agreed by all parties.

Summary

- 21 The Westport Rifle Range contains existing, permitted recreational and military shooting activities, which are capable of generating high decibel impulsive noise which can be annoying to residents at certain levels.
- 22 Since the Residential hearing, discussions have continued between the users of the Westport Rifle Range and Buller District Council. These discussions have now included Ms Evans.
- 23 My evidence sets out provisions which have been discussed among the relevant planning experts (although not yet confirmed by all parties), and which I can support as appropriately avoiding reverse sensitivity effects on the Westport Rifle Range. The clubs remain open to discussing the provisions to reach agreement with all involved parties.

Katherine McKenzie

Dated this 6th day of August 2024

Attachment A: Proposed TTPP provisions

Attachment A: Proposed TTPP Provisions

- Amend the Plan Maps to show a hybrid set of noise contours (to be supplied by Marshall Day Acoustics), comprising Areas A, B and C in image one, and the 50 dB L_{AFmax} , 55dB L_{AFmax} , and 60dB L_{AFmax} indicative noise contours identified in image two and labelled as the 'Westport Rifle Range Noise Overlay Area'.

Figure 1: Shooting noise contours overlaying the Alma Road subdivision (General Residential Zone)

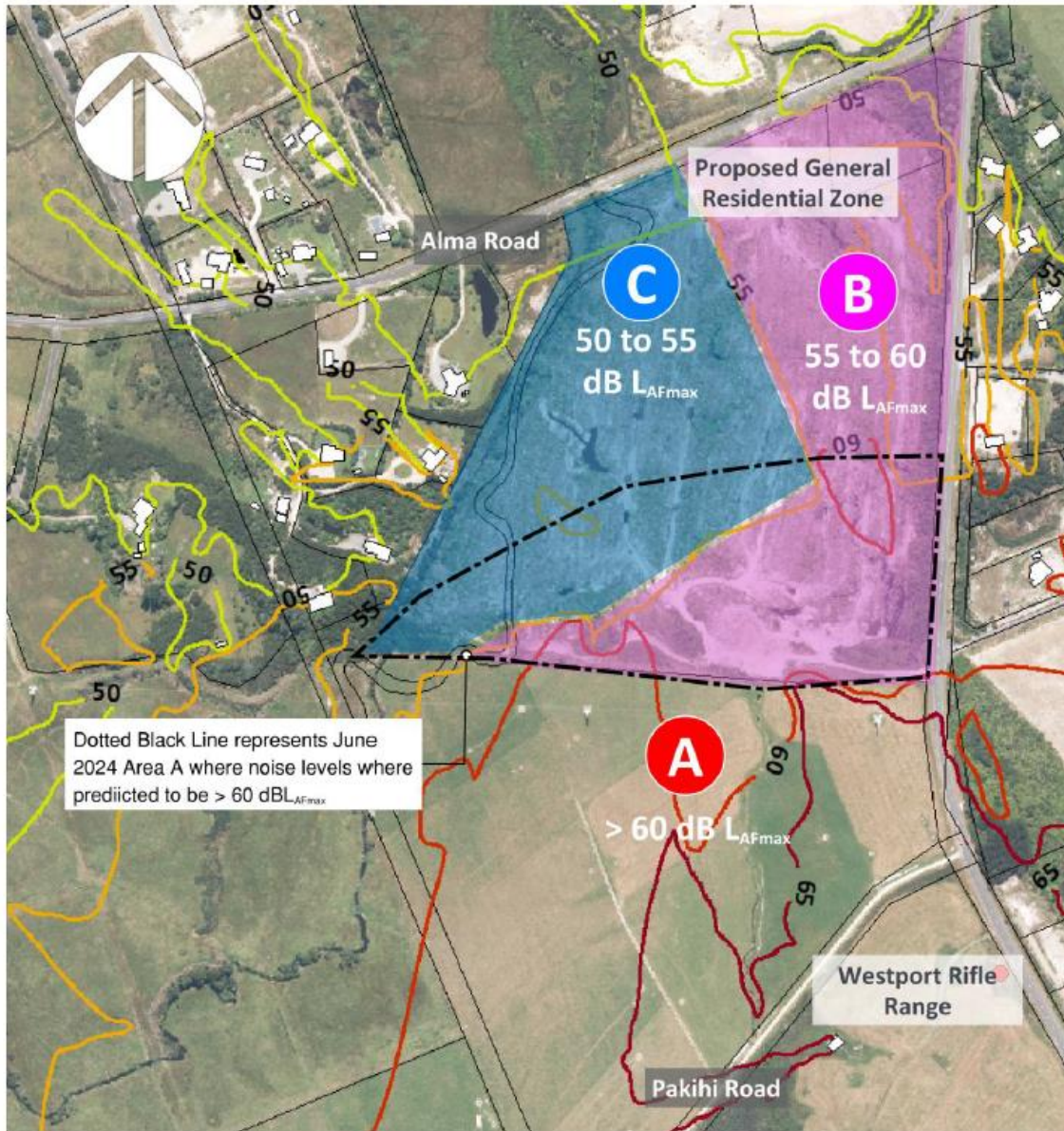


Image One

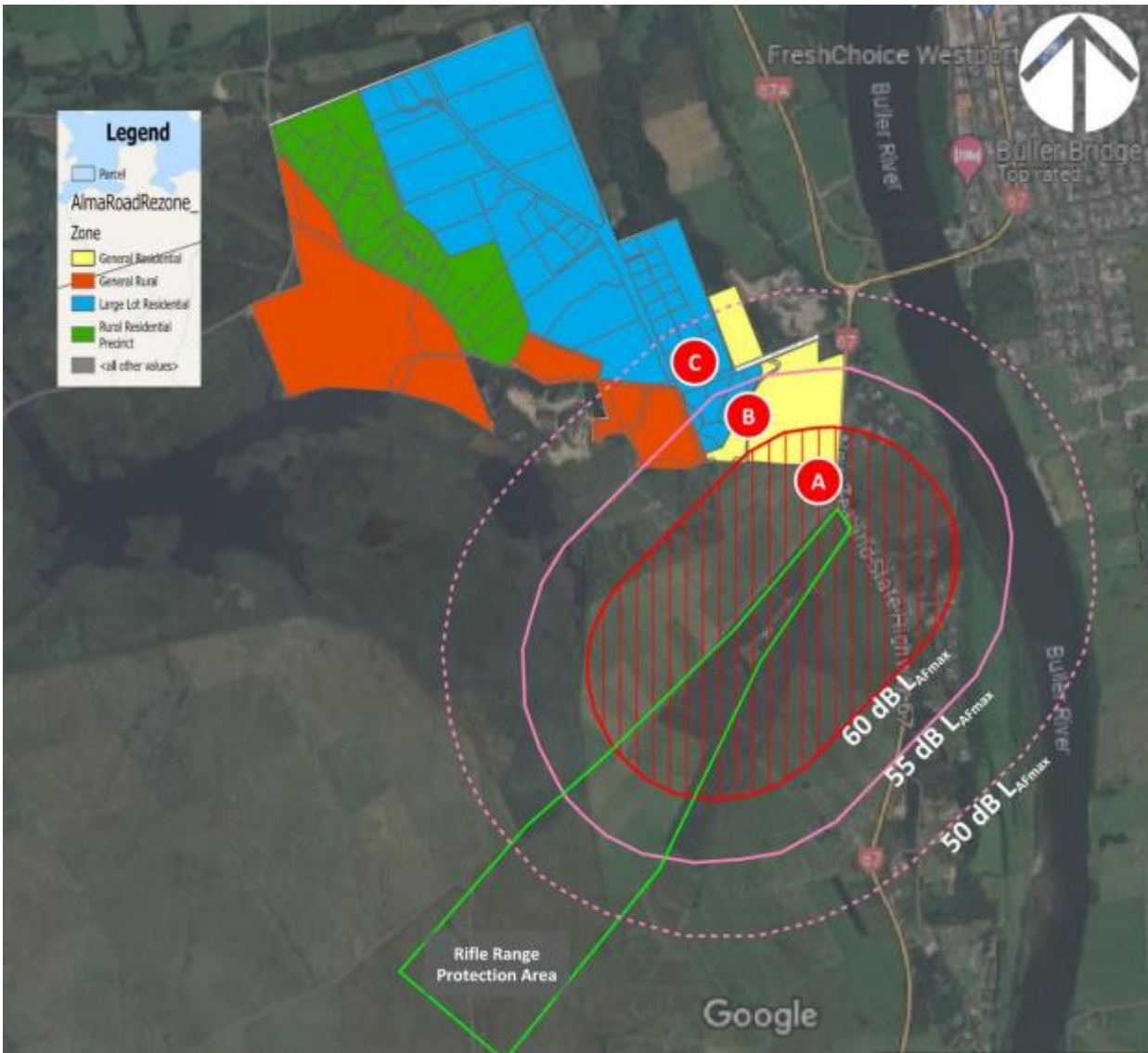


Image Two

Part 2 – District-Wide Matters- Subdivision

SUB – R5	Subdivision to create allotment(s) in all RESZ - Residential Zones, CMUZ - Commercial and Mixed Use Zones, INZ - Industrial Zones, SVZ - Scenic Visitor Zone or PORTZ - Port Zones	
<p>Activity Status Controlled Where:</p> <ol style="list-style-type: none"> 1. This is not within a Significant Natural Area as identified in Schedule Four subject to Rule SUB - R7; 2. This is not within one of the following locations in the coastal environment: <ol style="list-style-type: none"> i. Outstanding Natural Landscape as identified in Schedule Five; ii. Outstanding Natural Feature as identified in Schedule 	<p>Activity status where compliance not achieved:</p> <p><u>Restricted</u></p> <p><u>Discretionary</u> where 3 and 4 is not complied with.</p> <p><u>Discretionary</u> 2,6, 7 or 8 is not complied with.</p> <p><u>Non-complying</u> where 5 is not complied with.</p>	

<p>Six;</p> <p>iii. High or Outstanding Coastal Natural Character as identified in Schedules Seven and Eight; or</p> <p>3. This is not within an area of:</p> <p>i. Outstanding Natural Landscape as identified in Schedule Five;</p> <p>ii. Outstanding Natural Feature as identified in Schedule Six;</p> <p>iii. Sites of Historic Heritage as identified in Schedule One;</p> <p>iv. Any Flood Susceptibility, Flood Plain, Land Instability, Coastal Alert or Coastal Tsunami Hazard Overlay;</p> <p>v. <u>The 55dB L_{AFmax} or 60 dB L_{AFmax} noise contour of the Westport Rifle Range Noise Overlay Area;</u></p>	
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<p><u>SUB – R13A Subdivision within the 55dB L_{AFmax} or the 60dB L_{AFmax} contour of the Westport Rifle Range Noise Overlay Area</u></p>	
<p><u>Activity Status Restricted Discretionary</u></p> <p><u>Matters of Discretion are:</u></p> <p>a. <u>Those matters listed in a-p of Rule SUB – R5;</u></p> <p>b. <u>Management of reverse sensitivity effects on the Westport Rifle Range, including</u></p> <p>i. <u>the ability for future buildings to comply with Rule Noise-R3(1)(ex),</u></p> <p>ii. <u>If the subdivision will result in the establishment of additional sensitive activities within the Westport Rifle Range Noise Overlay Area;</u></p> <p>a. <u>the provision of an acoustic report which considers the effect that these activities may have on the ability of activities at the Westport Rifle Range to operate without undue constraint, and</u></p> <p>b. <u>the suitability and appropriateness of any acoustic mitigation measures which will avoid these effects arising.</u></p>	<p><u>Activity status where compliance not achieved:</u></p> <p><u>N/A</u></p>

NOISE - P2	<p>Require sensitive activities sited in higher noise environments <u>and new sensitive activities adjacent to higher noise environments</u>¹ to be located and designed so as to minimise adverse effects on the amenity values, public health and wellbeing and the safety of occupants and minimise sleep disturbance from noise, while taking into account:</p> <ol style="list-style-type: none"> a. The type of noise generating activity; and b. Other noise sources in the area; and c. The nature and occupancy of the noise² sensitive activity; and d. Mitigation measures, including acoustic insulation, screening and topography. <p>For the purpose of NOISE - P2 higher noise environments include:</p> <ol style="list-style-type: none"> 1. CMUZ - Commercial and mixed use zones; 2. INZ - Industrial zones, PORTZ - Port Zone, AIRPZ - Airport Zone, STADZ - Stadium Zone, BCZ - Buller Coalfield Zone, MINZ - Mineral Extraction Zone and HOSPZ - Hospital Zone; and 3. Locations in close proximity to a State Highway and the Railway Corridor; 4. <u>The Westport Rifle Range Noise Overlay.</u>
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NOISE - R3	Acoustic Insulation Requirements for New Buildings for Use by a Sensitive Activity	
Activity Status Permitted	Where:	Activity status where compliance not achieved:
<ol style="list-style-type: none"> 1. The building will be used by a sensitive activity and is located within: <ol style="list-style-type: none"> a. 80m of the edge of the carriageway of a State Highway with a speed limit of 70kph or greater; or b.³ 40m of the edge of the carriageway of a State Highway with a speed limit of less than 70kph; where: <ol style="list-style-type: none"> i. Any habitable room used for a sensitive activity <u>and/or space used for sleeping</u>⁴ must be designed and constructed to achieve a minimum <u>maximum</u> internal noise limit <u>level</u>⁵ of 40dB LAeq (24h); and ii. Compliance with i. above must be achieved based on an existing noise level with 3 decibel addition adjacent to State Highways allowing for future traffic increase; and⁶ iii. Any building <u>within 20m of the edge of the</u> 	<ol style="list-style-type: none"> 1. The building will be used by a sensitive activity and is located within: <ol style="list-style-type: none"> a. 80m of the edge of the carriageway of a State Highway with a speed limit of 70kph or greater; or b.³ 40m of the edge of the carriageway of a State Highway with a speed limit of less than 70kph; where: <ol style="list-style-type: none"> i. Any habitable room used for a sensitive activity <u>and/or space used for sleeping</u>⁴ must be designed and constructed to achieve a minimum <u>maximum</u> internal noise limit <u>level</u>⁵ of 40dB LAeq (24h); and ii. Compliance with i. above must be achieved based on an existing noise level with 3 decibel addition adjacent to State Highways allowing for future traffic increase; and⁶ iii. Any building <u>within 20m of the edge of the</u> 	Restricted Discretionary

¹ Silver Fern Farms Limited (S441.039)

² Silver Fern Farms Limited (S441.006), KiwiRail (S442.008)

³ Waka Kotahi (S450.171)

⁴ Minor amendment for clarity, Ngāi Tahu (S620.211), KiwiRail Holdings Limited (S442.088)

⁵ Minor amendment for clarity, Ngāi Tahu (S620.211), KiwiRail Holdings Limited (S442.088)

⁶ Jacobus Wiskerke (S95.004), Building - Coast Wide (S223.001), Chris & Jan Coll (S558.325), Chris J Coll Surveying Limited (S566.325), William McLaughlin (S567.386), and Laura Coll McLaughlin (S574.325), Ngāi Tahu (S620.211), Ngāi Tahu (S620.211)

carriageway⁷ must be designed, constructed and maintained to achieve vibration limits not exceeding 0.3mm/s (Class C criterion Maximum Weighted Velocity, Vw,95);

- c. 460m⁸ of the edge of the tracks of a railway line where:
- i. Any habitable room used for a sensitive activity and/or spaced used for sleeping⁹ must be designed and constructed to achieve a maximum internal noise limit level¹⁰ of 35 dB L_{Aeq} (1h);
 - ii. Compliance with i. above must be achieved based on an assumption of 70 LA_{eq} (1h) at a distance of 12m from the railway track and shall be deemed to reduce at a rate of 3 dB per doubling of distance up to 40m;
 - iii. Any building must be designed, constructed and maintained to achieve vibration limits not exceeding 0.3mm/s (Class C criterion Maximum Weighted Velocity, Vw,95);
- d. The 50 dBA Noise Contour boundary of Franz Josef Heliport or the 55 dBA¹¹ Noise Contour boundary of the Westport or Hokitika Airports or Greymouth or Karamea Aerodrome or Haast Airfield¹²; where:
- i. Any habitable room must be designed and constructed to achieve a ~~minimum~~ maximum¹³ indoor design noise level of 40 dB L_{dn};
- e. Any CMUZ - Commercial and Mixed Use Zone, INZ - Industrial Zone or AIRPZ - Airport Zone, PORTZ - Port Zone, STADZ - Stadium Zone, HOSZ - Hospital Zone, BCZ - Buller Coalfield Zone or MINZ - Mineral Extraction Zone; where
- i. The building is designed and constructed to ensure that the following indoor design noise levels are not exceeded:
 - A. 40~~35~~dB LA_{eq} inside any habitable room ~~bedrooms~~¹⁴;
 - B. 35~~40~~dB LA_{eq} inside any other habitable room, ~~except for bedrooms~~ between 10pm and 7am¹⁵;and
ex. The Rifle Range Protection Area Between the 55 dB

⁷ Ngāi Tahu (S620.211), Waka Kotahi NZ Transport Agency (S450.171)

⁸ Ngāi Tahu (S620.211), KiwiRail Holdings Limited (S442.088)

⁹ Minor amendment for clarity, Ngāi Tahu (S620.211), KiwiRail Holdings Limited (S442.088)

¹⁰ Minor amendment for clarity

¹¹ Minor amendment for clarity

¹² Consequential amendment to reflect recommendation of Ms Easton that the Haast Airfield be included in the Airport Zone

¹³ Minor technical amendment recommended by Mr Peakall

¹⁴ Minor technical amendment recommended by Mr Peakall

¹⁵ Minor technical amendment recommended by Mr Peakall

LAF_{max} and 60 dB LAF_{max} contours of the Westport Rifle Range Noise Overlay shown on the planning maps:

i. Any habitable room used for a sensitive activity and/or space used for sleeping must be designed and constructed to achieve a maximum internal noise level of 35 dB LAF_{max} from outdoor noise associated with lawfully established activities at the Westport Rifle Range Protection Area; and
ii. an outdoor living areas not less than 30m² must shall be screened from the Westport Rifle Range Protection Area to achieve an outdoor noise level not exceeding 50 dB LAF_{max}.¹⁶

f. Where windows need to be closed to achieve the internal noise levels specified in a. to ~~ex~~¹⁷. above an alternative ventilation system shall be provided which achieves the following requirements:

- i. Satisfies clause G4 of the New Zealand Building Code;
- ii. Is adjustable by the occupant to control the ventilation rate in increments up to a high air flow setting that provides at least 6 air changes per hour; and
- iii. Provides relief for equivalent volumes of spill air; and
- iv. Provides cooling and heating that is controllable by the occupant and can maintain the inside temperature between 18°C and 25°C; and
- v. Does not generate more than 35 dBLA_{eq(30s)} when measured at least¹⁸ 1m away from any grille or diffuser.

Advice Note:

1. Compliance with Rule NOISE - R3 will be achieved if, prior to the construction of any building containing a habitable room, an acoustic design certificate from a suitably qualified acoustic engineer is provided to the relevant district council stating that the design will achieve compliance with the relevant standard. The building shall be designed, constructed and maintained in accordance with the design certificate;
or-
2. For Rule R3 1 a i) or Rule R3 1 c i) compliance will be achieved if the construction conforms to the acceptable solutions listed in NOISE-APP1-Acceptable constructions requirement, Part A; or
3. For Rule R3 1 a iii) or Rule R3 1 c iii) compliance will be achieved if the construction conforms to the acceptable

¹⁶ Dean Trott (S330.002), Westport Pistol Club (S336.016), Chris Hartigan (S338.002), Westport Rifle Club Incorporated (S457.009),

¹⁷ Consequential amendment to inclusion of clause ex

¹⁸ Minor amendment for clarity

solutions listed in NOISE-APP1-Acceptable constructions requirement, Part B.¹⁹

¹⁹ Ngāi Tahu (S620.211), Buller District Council (S538.333), Waka Kotahi NZ Transport Agency (S450.171)

NOISE -R13	New Buildings for Use by a Sensitive Activity and Additions to Existing Buildings for Use by a Sensitive Activity not meeting Acoustic Insulation Requirements of Rule NOISE - R3
Activity Status Restricted Discretionary Discretion is restricted to: <ol style="list-style-type: none"> The provision of a report from an acoustic specialist which provides evidence that the level of acoustic insulation is appropriate to ensure the amenity of present and future residents of the site; and The impact of any sensitive activity that does not provide the required acoustic insulation on the ability of existing or future permitted business activities to operate or establish without undue constraint. 	Activity status where compliance not achieved: N/A

<u>NOISE -R13A</u>	<u>New Buildings for Use by a Sensitive Activity and Additions to Existing Buildings for Use by a Sensitive Activity within the 60dB L_{AFmax} contour of the Westport Rifle Range Noise Overlay</u>
<u>Activity Status Restricted Discretionary</u> <u>Discretion is restricted to:</u> <ol style="list-style-type: none"> <u>The provision of a report from an acoustic specialist which provides evidence that the level of acoustic insulation is appropriate to ensure the amenity of present and future residents of the site; and</u> <u>The impact of any sensitive activity that does not provide the required acoustic insulation on the ability of lawfully established activities at the Westport Rifle Range to operate without undue constraint.</u> 	<u>Activity status where compliance not achieved: N/A</u>

Recommended amendments to Definitions

'Audible bird scaring device' means a gas gun, avian distress alarm or other such device used for the purposes of scaring birds.²⁰

²⁰ Federated Farmers of New Zealand (S524.103)

Recommended amendments to Appendices

Appendix X – Acceptable Construction Design for Acoustic Insulation Requirements for New Buildings for Use by a Sensitive Activity Subject to Noise R3²¹

Part A: Approved construction requirements for compliance with Noise-R3 1 a i) and Noise-R3 1 c i)

<u>Applicability</u>	
	<p>Construction requirements detailed in this appendix are only applicable where:</p> <ol style="list-style-type: none"> 1. <u>The building containing the sensitive activity is located with the State Highway Noise Control Boundary Overlay shown on the planning maps or is within 60m of an Existing Rail Corridor,</u> 2. <u>The building is a single level construction,</u> 3. <u>The floor of the building is a reinforced concrete slab,</u> 4. <u>No habitable room of the building is located less than 4.5 metres from the road boundary,</u> 5. <u>The total area of glazing in any habitable room is no greater than 20% of the total area of external walls of that room.</u> 6. <u>The roof of the building is a standard timber truss design, with a pitch of not less than 15 degrees. Ventilation of the roof space must only be via casual ventilation typical of the jointing, capping and guttering detail used in normal construction.</u> <p><u>In all other situations, a design report from a suitably qualified acoustics specialist is required.</u></p>
<u>Construction Options</u>	
<p><u>Exterior Walls</u> <u>Option 1</u></p>	<p><u>Exterior cladding of Aerated Concrete or similar, with a surface mass not less than 27 kg/m².</u></p> <ul style="list-style-type: none"> • <u>Timber framing of not less than 90 mm, with studs at 600 mm centres. A ventilated cavity is not required under this option but is permissible, with or without a rigid air barrier,</u> • <u>Fibrous insulation of minimum R2.6. This includes fibreglass, polyester and wool, but does not include polystyrene or other foam sheet insulation products,</u> • <u>1 layer of 10 mm thick Standard Gib board or alternative gypsum board having a surface mass not less than 6 kg/m².</u>

²¹ KiwiRail Holdings Limited (S442.088), Gina Hogarth (S304.002), Misato Nomura (S151.002), Ngāi Tahu (S620.211)

Applicability	
<u>Exterior Walls</u> <u>Option 2</u>	<p><u>Exterior cladding of Profiled sheet metal not less than 0.45 mm thick.</u></p> <ul style="list-style-type: none"> • <u>20 mm thick battens forming a ventilated cavity.</u> • <u>Rigid air barrier consisting of Plywood not less than 9 mm thick or Fibre Cement not less than 4 mm thick, or alternative sheet product having a surface mass not less than 5 kg/m².</u> • <u>Timber framing of not less than 90 mm, with studs at 600 mm centres.</u> • <u>Fibrous insulation of minimum R2.6. This includes fibreglass, polyester and wool, but does not include polystyrene or other foam sheet insulation products.</u> • <u>1 layer of 10 mm thick Standard Gib board or alternative gypsum board, having a surface mass not less than 6 kg/m².</u>
<u>Exterior Walls</u> <u>Option 3</u>	<p><u>Exterior cladding of Fibre Cement weatherboards, with a surface mass not less than 18 kg/m² (Hardies Linea or equivalent)</u></p> <ul style="list-style-type: none"> • <u>20 mm thick battens forming a ventilated cavity.</u> • <u>Rigid air barrier consisting of Plywood not less than 7 mm thick or Fibre Cement not less than 4 mm thick, or alternative sheet product having a surface mass not less than 3.8 kg/m².</u> • <u>Timber framing of not less than 90 mm, with studs at 600 mm centres.</u> • <u>Fibrous insulation of minimum R2.6. This includes fibreglass, polyester and wool, but does not include polystyrene or other foam sheet insulation products.</u> • <u>1 layer of 10 mm thick Standard Gib board or alternative gypsum board, having a surface mass not less than 6 kg/m².</u>
<u>Glazing and</u> <u>Exterior doors</u> <u>- All options</u>	<ul style="list-style-type: none"> • <u>Windows to consist of double glazing consisting of a minimum of 2 layers of 4 mm thick glass separated by a 12 mm airgap, with airtight seals.</u> • <u>External doors to be either double glazed to the same standard as windows, or be a solid timber construction with a surface mass not less than 24 kg/m² and incorporating full perimeter seals.</u>
<u>Roof – All</u> <u>Options</u>	<ul style="list-style-type: none"> • <u>Profiles metal roofing not less than 0.45 mm thick profiled steel or tiles.</u> • <u>Fibrous insulation of minimum R6. This includes fibreglass, polyester and wool, but does not include polystyrene or other foam sheet insulation products.</u> • <u>2 layers of 10 mm Standard Gib board or alternative gypsum board, with each layer having a surface mass</u>

Applicability	
	<u>not less than 6 kg/m².</u>

Part B: Approved construction requirements for compliance with Noise-R3 1 a iii) and Noise-R3 1 c iii)

Any new buildings or alterations to existing buildings containing a sensitive activity, closer than 60 metres to the boundary of an Existing Rail Corridor and is a single storey framed building with:

- a. a constant level floor slab on a full-surface vibration isolation bearing with natural frequency not exceeding 10 Hz, installed in accordance with the supplier's instructions and recommendations:
and
- b. vibration isolation separating the sides of the floor slab from the ground; and
- c. no rigid connections between the building and the ground

In all other situations, a design report from a suitably qualified specialist is required demonstrating Compliance with Rule R3 1 c iii).

Part C: Approved construction requirements for compliance with Noise-R3
