

16 July 2024

Buller District Council  
6-8 Brougham St  
Westport 7866

**Attention: Rebecca Inwood**

## **PTTPP RESIDENTIAL RE-ZONING AND WESTPORT RIFLE RANGE NOISE MODELLING WITH DETAILED TERRAIN DATA**

Dear Rebecca

You have asked us to assess potential noise mitigation measures in light of the email request from Mr Craig Barr (Planning Consultant on behalf of Buller District Council) dated 25 June 2024. The text of Mr Barr's email is provided in Appendix A.

The following discussion focusses on the General Residential Zone south of Alma Road and is made with reference to Craig Barr's evidence (17 June 2024) and Marshall Day Acoustics' preliminary advice dated (14 June 2024). The modelling assumptions stated in our 14 June advice are still applicable.

Our comments are provided without a full appreciation of the substantial existing planning context - it may not be practicable to implement some of our recommendations.

### **No significant areas greater than 60 dB $L_{Amax}$ in the General Residential Zone**

1. Detailed modelling using rifle range noise levels and publicly available terrain data<sup>1</sup> indicates there are no significant areas of the proposed General Residential Zone with noise levels greater than 60 dB  $L_{AFmax}$ . This is shown in Figure 1. In the context of proposed TTPP rules, we interpret the contours as meaning there are no areas within this block of land where residential development should be discouraged. This advice differs from the preliminary modelling presented in our June letter.
2. Approximately half the block south of Alma Road, to the south and east, has a noise level above 55 dB  $L_{AFmax}$  (Area B in Figure 1). We agree with Mr Barr that amendments to Rule Noise-R3 would permit residents to manage noise effects in living areas both inside and outside the dwelling.
3. No mitigation is required between 50 and 55 dB  $L_{AFmax}$  (Area C in Figure 1).
4. In Figure 1, we have overlaid the noise from the rifle range's irregular shaped noise contours with simplified areas (A, B and C) that represent areas of similar noise exposure.

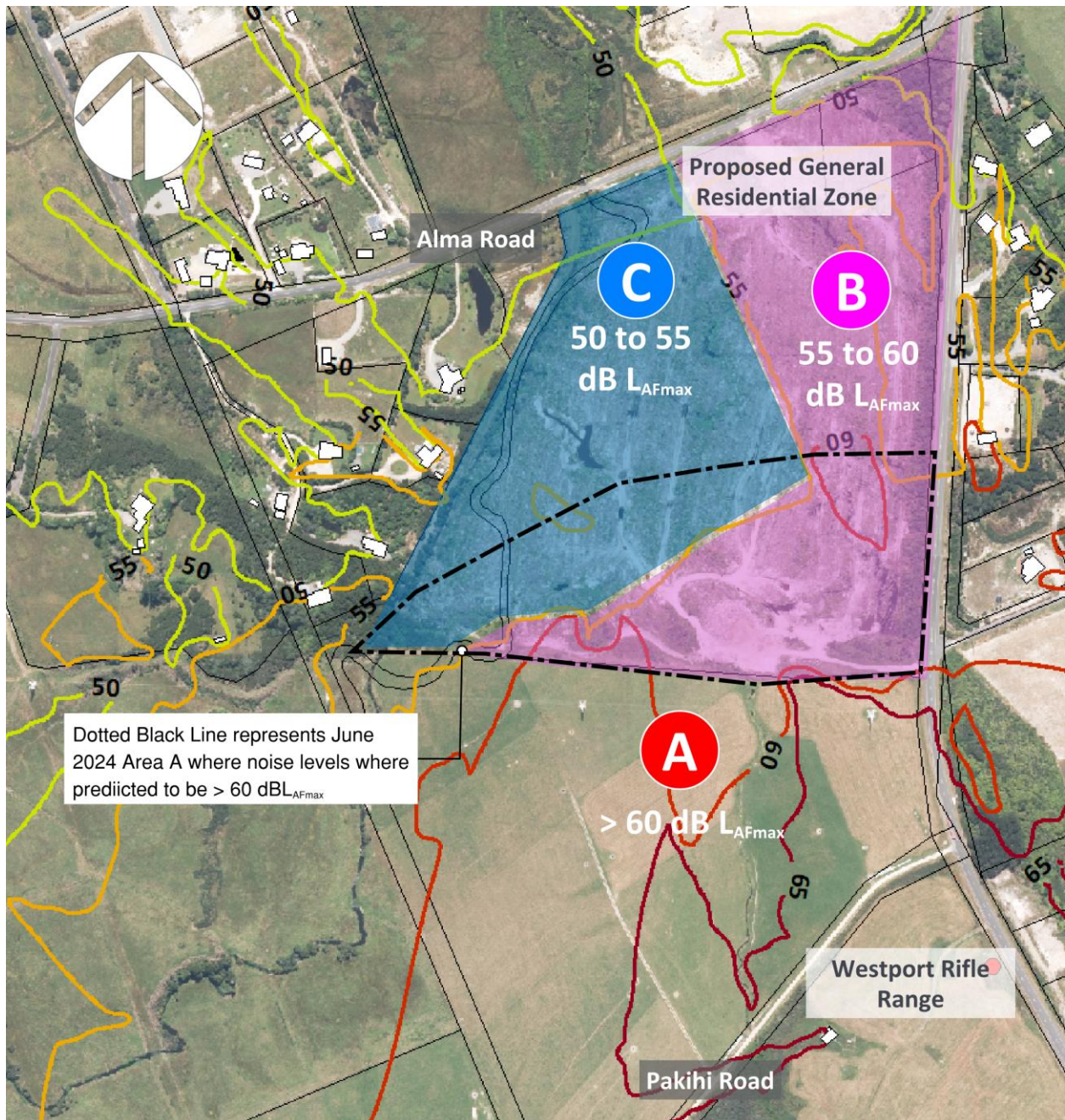
### **Subdivision boundary mitigation is ineffective**

5. We have investigated the noise reduction provided by a four-metre-high noise control structure along the southern boundary of the proposed subdivision. We have modelled this as a 2-metre-high earth bund plus 2-metre-high fence which represents the likely practical maximum noise barrier size. Because of the change in existing terrain levels, and the large separation distances, the bund/fence does not provide any significant further noise reductions across the Alma Rd subdivision and is therefore ineffective.
6. We have also investigated a 3-metre-high noise control bund along the Pakihi Road boundary of the Rifle Range and this also proved to be ineffective. In theory, local screens or partial enclosures directly adjacent to the shooting position can be effective at reducing noise emissions, but we have found these to be impractical to implement for several classes of shooting.

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<sup>1</sup> LINZ LiDAR West Coast 2020-2022, 1 metre grid

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



### Internal and outdoor noise mitigation in Area B

7. Regarding internal noise in Area B (>55 dB L<sub>AFmax</sub>), no additional constructions, over and above what would be required to comply with the Building Code, is necessary to control noise intrusion. However, so that windows can be kept closed to mitigate noise, an alternative means of ventilation will be required such as currently required by NOISE-R3.f. We do not consider that setting an internal noise limit or the requirement to have an acoustic assessment is necessary – just the requirement to comply with NOISE-R3.f (or equivalent).
8. With respect to outdoor amenity, we consider it reasonable to allow for a minimum area for outdoor living (e.g. sufficient for a table and chairs) as a refuge against rifle range noise noting that the noise will still be audible. The outdoor area would require acoustical screening, either by a dwelling or 2-metre-high noise control fence which should be located between the nominated outdoor area and any Rifle Range.

shooting areas. The fence or dwelling would need to completely block line-of-sight to the shooting areas. A noise control fence must have a minimum height of 2 metres, be constructed of solid materials with a minimum surface density of 10 kg/m<sup>2</sup> (e.g., masonry, thick timber) and have no gaps or cracks.

Please contact us if you have any questions.

Yours faithfully

**MARSHALL DAY ACOUSTICS LTD**



**Jon Farren**  
**Principal Consultant**



**APPENDIX A MR BARRS'S EMAIL 25 JUNE 2024**

From: Craig Barr <[craig@waveformplanning.co.nz](mailto:craig@waveformplanning.co.nz)>

To: Rebecca Inwood <[inhill@xtra.co.nz](mailto:inhill@xtra.co.nz)>

Date: 25/06/2024 15:23 NZST

Subject: Alma Road area TTPP zoning - noise information

*Hi Rebecca*

*It would be good to get some advice from MDA whether the proposed rule offered in my evidence would be effective, the rule permits noise sensitive activity within the 55 dB LAFmax area but requires the following:*

- 1. Internal areas containing activity sensitive to noise achieves 35 dBA (Rule Noise-R3)*
- 2. There is a minimum outdoor area (50msq) which achieves 50 dBA (Rule Noise-R3)*
- 3. A matter of control is added to the subdivision rule (existing matter relating to reverse sensitivity) to continue to operate without due constraint. (Rule SUB-R5)*

*In relation to the proposed areas of General Residential Zone (yellow shading), I didn't initially offer more restrictive rules within the 60 dB LAFmax because the subdivision development may be able to design specific noise mitigation elements such as an earth bund which could further reduce noise and make it feasible for buildings and carefully designed outdoor areas to be able to achieve the noise Rule R3.*

*The subdivision process would enquire as to whether it is feasible that buildings can comply with the noise rules.*

*Unfortunately we didn't have time to test these before filing evidence, so it we be great if we could get some advice from MDA in relation to potential noise mitigation in the form of physical barriers between the General Residential Zone sites and the Rifle Range, in particular, what extent of barrier would be required to achieve attenuation. This may result in the area of influence of the 60 dB and 55 dB reducing/migrating southwards.*