

**Before the Hearings Panel  
At Waimakariri District Council**

<b>Under</b>	Schedule 1 of the Resource Management Act 1991
<b>In the matter of</b>	the Proposed Waimakariri District Plan
<b>Between</b>	<b>Various</b> <b>Submitters</b>
<b>And</b>	<b>Waimakariri District Council</b> <b>Respondent</b>

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**Statement of evidence of Stuart Camp on behalf of Waimakariri District  
Council in relation to Noise**

**Date: 17 July 2023**

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## INTRODUCTION:

- 1           My full name is Stuart Camp.
- 2           I am a former Principal and Director of Marshall Day Acoustics, where I worked for 33 years, spending time in Auckland, Melbourne, Kuala Lumpur, and Christchurch. I established and managed both the Kuala Lumpur and Christchurch offices, with my posting in Christchurch being from 1997 until 2016. During my time with Marshall Day Acoustics, I was involved in a wide range of acoustics projects, with a particular focus on environmental noise.
- 3           I currently consult to Marshall Day Acoustics on specific noise-related projects, and I am also a self-employed builder.
- 4           I have previously given advice to a number of other Councils regarding noise rules in District Plans. These include Christchurch, Hurunui, Ashburton, Invercargill, and Southland.
- 5           I have presented evidence at both Council and Environment Court hearings on many occasions.
- 6           I am a Fellow of the New Zealand Acoustical Society.
- 7           I have prepared this statement of evidence on behalf of the Waimakariri District Council (**Council**) in respect of technical noise related matters arising from the submissions and further submissions on the Proposed Waimakariri District Plan (**PDP**).
- 8           Specifically, this statement of evidence relates to the matters in the Chapter on Noise.
- 9           I am authorised to provide this evidence on behalf of the District Council.

## **CODE OF CONDUCT**

- 10 I confirm I have read the Environment Court's Practice Note 2023, and I agree to comply with it. My qualifications as an expert are set out above. I confirm that the issues addressed in this brief of evidence are within my area of expertise. I have not omitted to consider material facts known to me that might alter or detract from the opinions expressed.

## **INVOLVEMENT WITH THE PROPOSED PLAN**

- 11 I have been involved in the PDP since 2018. Since that time, I have reviewed the operative District Plan, prepared recommendations for noise rules in the PDP, answered queries from Council staff, and responded to submissions. I have worked closely with the current Manager of the Marshall Day Acoustics Christchurch office, Mr Jon Farren.
- 12 My recommendations formed the basis for the noise rules notified in the PDP.
- 13 I live in the Waimakariri District, and as part of my work on the PDP, I spent some time driving around parts of the district to gain an understanding of potential noise issues.

## **SCOPE OF EVIDENCE**

- 14 I will confine my statement of evidence to my response to submissions relating to noise. In particular, I will discuss my views on relevant submissions as contained in the Marshall Day Acoustics memo Mm 008 R01 *Review of Noise-Related Submissions* provided to Council staff to assist them in preparing their s42A report.
- 15 In responding to submissions, I was guided by Council staff. I have not reviewed any submissions, or parts of submissions, other than those explicitly listed in this evidence. Also, I have not reviewed or

commented on any part of the Proposed District Plan other than those rules specifically referenced in the submissions.

- 16 I have not explicitly addressed further submissions where these express an opinion on a submission that I have already addressed.

**NEW ZEALAND DEFENCE FORCE (166)**

- 17 Point 18 of this submission asks to amend the noise standards for temporary military training (NOISE-R2) in line with attachment 3 of the submission, and amend the activity status when compliance is not achieved to Controlled.
- 18 I have recommended that this submission be rejected.
- 19 In my view, the requested rules set out in attachment 3 of the submission is overly complex, and does not achieve a better outcome than the notified rule. My comments below are prefaced with the relevant clause(s) of attachment 3 for clarity.
- 20 (1.a.) The requested rules propose 5 working days notice to Council. It is likely to be challenging for Council to be able to respond and/or have any effective control over an event with such a short timeframe. In my experience, temporary military training activities are not spur-of-the-moment events, and in my view the notified 10-day requirement is easily achievable.
- 21 (1.b.) The requested rule asks for a daytime separation distance of 500 metres from noise sensitive activities. In my view, shooting activity at this distance would result in significant adverse effects, and the notified setback of 1500 metres is more appropriate. Under the notified rule, the Defence Force would be able to obtain a restricted discretionary consent for specific events at closer distances if they could demonstrate that noise effects could be mitigated.

- 22 (1.c.) I see no benefit in the request to include noise limits as part of a permitted activity rule - appropriate noise levels are inherent in the notified rule. Being permitted, there is no requirement to demonstrate compliance, nor is there any requirement for Council resources to be expended monitoring noise levels for a permitted activity. The notified rules are predominantly based on separation distances which can be easily verified before, during, or even after an event.
- 23 (2&3) I see no need to provide exemptions from general noise rules (Table Noise-2) for mobile and stationary noise sources. The required setback distances to accommodate shooting will generally be more than adequate to ensure that these sources comply with the general noise rules.
- 24 As with my comments against Item 1.c. above, I do not agree with using NZS6807 as part of a permitted activity rule because there is no mechanism for demonstrating or checking compliance. I prefer the notified rule which allows for small numbers of helicopter movements close to noise sensitive receivers, and unlimited movements if further than 450 metres from noise sensitive receivers. Given the overall setback distances required, I consider this to be appropriate. NZS6807 can be used for exceptions as part of a restricted discretionary consent.

#### **NZ AGRICULTURAL AVIATION ASSOCIATION (310)**

- 25 This submission requests that NOISE-R4 is amended by adding an exclusion such that it does not apply to intermittent helicopter movements for primary production activities such as application of fertilisers, spray or frost protection. In addition, the submitter requests that NOISE-R7 is amended by adding the words “including aircraft” to the list of temporary agriculture activities which are permitted activities.
- 26 I have recommended that this submission be rejected.

- 27 With the exception of frost protection, helicopter use as part of primary production should generally be a daytime activity, and I anticipate that these activities would comply with the notified version of Noise R4. In my view, using a helicopter for frost protection purposes means that the helicopter is a "frost fan". Allowing the requested exemption would therefore provide a means to circumvent Noise R20 which aims to control the adverse effects of noise from frost fans. I therefore do not support the requested exception.
- 28 I am reluctant to add the words "including aircraft" because in my experience, greater specificity in a rule inevitably results in a greater number of loopholes, which in turn lead to unintended consequences. In my view, fertiliser application (for example) could be undertaken using aircraft within the notified wording of Noise R7, without any need to add additional words.

#### **OBJECTIVE NOISE-02 REVERSE SENSITIVITY**

- 29 There are 3 submissions relating to Noise Objective Noise-02 (Reverse Sensitivity).
- 30 North Canterbury Clay Target Association (61) seeks to explicitly include noise generating activities in Rural areas. NZ Pork and Horticulture New Zealand (169 & 295 & 414) similarly ask for Rural zones to be added to the objective.
- 31 I have recommended that these submissions be rejected.
- 32 The requested change would move the objective from one offering protection for a small number of "identified" activities in the district to any noise generating activity in a Rural zone. In my view, this would be inappropriate.
- 33 Daiken New Zealand (145, point 24), asks for an explanation of what is meant by 'identified existing activities'.

- 34 I have recommended that this submission be accepted in part.
- 35 I agree that “identified existing activities” is somewhat vague. However, based on my involvement in the Plan review process, the intent was to provide reverse sensitivity protection for a small number of large scale established activities such as Daiken’s MDF plant, Rangiora Airfield and Woodford Glen. There may be alternative wording that clarifies this intent.

#### **NORTH CANTERBURY CLAY TARGET ASSOCIATION (61)**

- 36 This submission asks for a new rule to be added, to provide a framework for activities at the existing Clay Target facility. Specifically, the submission requests the following wording:

*Insert new rule:*

*"NOISE-RXX Sports Facility Activities – Boundary Road Activity*

*status: PER*

*Where:*

- 1. a maximum of 48 events may be held in any year;*
- 2. a maximum of 96 practice events may be held in any year (that will not be assessed as an event under (1));*
- 3. events, shall conclude by 9pm and have a maximum duration of 12 hours, not including event preparation and clean-up;*
- 4. practice events, shall conclude by 9pm and have a maximum duration of 5 hours, not including event preparation and clean-up;*
- 5. activities other than sporting events shall comply with NOISE-R19."*

*And add overlay to the planning maps.*

- 37 I have recommended rejecting this submission, with provisions.
- 38 Under the proposed plan, Sport Shooting Facilities are a discretionary activity. However, the North Canterbury Clay Target Association facility already exists, and there is therefore merit in including a rule to address noise from this activity.

39 A detailed assessment of noise around the Clay Target Association site clearly concludes that the construction of residential dwellings since the Association established has resulted in justified complaints about shooting related noise. In my view, there are unlikely to be any practicable noise mitigation options to enable the Association to comply with the notified permitted activity standards.

40 In principle, I am of the view that the only way to manage the existing situation is to provide a rule which achieves some degree of compromise for all parties. Such a rule would broadly be along the lines of that requested in this submission, in that monitoring and enforcement of the number of events are much simpler and more effective when the rule does not involve having to measure the noise level of the activity. Given the history of the site, all parties know how noisy the Association's activities can be. I anticipate the number of events would require further scrutiny.

41 If Council are of a mind to accommodate the Association's submission, I offer the following comments for consideration:

- Any agreed rule must include a stipulation that the Association site shall only be used for clay target shooting involving shotguns. Other firearms are not part of clay target shooting, and their use could result in a different magnitude of noise effect.
- It is not clear to me what constitutes an "event". In other sporting codes, an event would often span several days. For clarity, I suggest that any agreed rule would be better referring to "days" rather than events.
- Based on my involvement at other shooting facilities, it is my view that the requested number of events is excessive. 48 events and 96 practice sessions is almost 3 days shooting per week (assuming 1 day for each). The club's certificate of compliance allows for up to 52 events and 52 practice sessions, which could serve as a

starting point for new rules. I would also like to see greater clarity around which days of the week activities can take place on. The wording proposed in this submission could be interpreted as shooting every day for 20 weeks (144 days). I am of the view that residents should be entitled to well defined shooting-free days, perhaps one day per weekend.

- A duration of 12 hours for any event also appears to be excessive. This could mean having a 2 day shooting event from 9am to 9pm on some weekends (for example). I would prefer to see an event duration around 5 hours, with perhaps a provision for a much smaller number of events up to 12 hours to allow for significant competitions.
- Whilst I agree that "event preparation and clean-up" needn't be included in the event time, I recommend that this should be clarified to be "non-shooting event preparation and clean-up" to ensure that the start of shooting signals the start of an event for the purposes of enforcing the rules.
- While 9pm may be desirable for the Association, it is unlikely to be palatable to residents on a regular basis, and I therefore suggest consultation with residents. It may be possible, for example, to allow some key events to operate until 9pm during summer months, with reduced hours for other events/practice/winter months.
- The use of the term "sporting events" in point 5 of the requested rule suggests the possibility of activities other than clay target shooting. For clarity, I suggest that any agreed rule should explicitly refer to "clay target shooting" or "shooting events".
- Adding an overlay to the District Plan maps may be a useful tool to ensure that additional residential dwellings do not contribute to reverse sensitivity issues.

**NOISE-R16 – RESIDENTIAL UNITS AND MINOR RESIDENTIAL UNITS NEAR  
ARTERIAL ROAD, STRATEGIC ROAD OR RAIL DESIGNATION**

- 42 George Jason Smith (270) supports Noise-R16 but questions the adequacy of the 2 dB allowance for future proofing.
- 43 I have recommended rejecting this submission. Future proofing is always a balancing act. The proposed 2 dB allowance is equivalent to more than a 50% increase in current traffic volumes. In my view, this is a sufficient imposition on land owners. However, I note that Waka Kotahi generally recommend a 3 dB allowance, which would provide for a doubling of traffic. Council may wish to change to a 3 dB allowance for consistency. The additional cost of such a change, in terms of building a new dwelling, would almost certainly be negligible.
- 44 Waka Kotahi (275) request that the distance within which reverse sensitivity rules are applied is increased from 80 metres to 100 metres.
- 45 I have recommended accepting this submission in part.
- 46 I originally recommended the 80 metre setback on the basis that it was consistent with Waka Kotahi recommendations at that time. However, there is an important distinction to be made with respect to this submission.
- 47 Waka Kotahi, in their published guidelines, clearly show their current 100 metre setback being measured from the edge of the nearest traffic lane. In a district plan context, I am of the view that it is much simpler to establish a setback based on property boundaries, given that these are well defined, whereas the location of the road can be less so. My brief review of some of the busier roads in the district suggests that 80 metres from the road designation boundary is very similar to 100 metres from the nearest traffic lane. I therefore recommend retaining the notified 80 metres, but suggest that Council may wish to

add wording to clarify that this distance is measured from the boundary of a site adjoining the road.

- 48 Rail corridors are somewhat more variable, but arguably less concerning given the small number of trains. For consistency I therefore recommend also retaining the notified 80 metre setback from property boundaries for rail.
- 49 I agree with the request to use “noise sensitive activities” rather than “residential units and minor residential units” because it then includes such activities as schools, retirement homes and hospitals. The notified plan already includes a suitable definition of noise sensitive activities.
- 50 Further submission 88 opposes the increase from 80 metres to 100 metres. My response to this can be inferred from the above discussion.
- 51 Bellgrove Rangiora Ltd (408) asks that the setback be reduced from 80 metres to 40 metres. Noise effects are well established at distances much greater than 40 metres, and I therefore recommend that this submission be rejected.
- 52 Bellgrove Rangiora Ltd (408) also ask that Council provide an alternative approval pathway that does not require an acoustic assessment for each residential unit that can demonstrate compliance with NOISE-R16(1) and NOISE-R16(2).
- 53 I agree with this request, and support the idea of a dual pathway approach. I do not like a single path rule which compels applicants to employ an acoustic consultant when an off-the-shelf solution may be significantly cheaper.
- 54 Christchurch City Council rules offered a dual approach until recently, when their plan change 5E decision was released. I can understand the rationale behind that decision in that the updated rules are much

simpler. However, the price of that simplicity will now be borne by every applicant wishing to build a house near a busy road.

55 I recommend that Council accept this submission and amend point 6 of Noise R16 along the lines of :

6. The external to internal noise reduction shall either:

a. be assessed in accordance with ISO 12354-3:2017 *Building acoustics — Estimation of acoustic performance of buildings from the performance of elements — Part 3: Airborne sound insulation against outdoor sound*, or:

b. comply with the schedule of typical building constructions set out in Appendix XX.

56 If Council accepts my recommendation, some work would need to be undertaken to develop the required appendix. It would be possible to adopt the previously operative appendix from the Christchurch Plan as an interim measure, but that appendix has been criticized as being outdated and overly onerous. It would therefore be appropriate for Council to commission some additional work to revise and update it.

#### **FROST FAN NOISE (ACTIVITY RULES)**

57 Horticulture New Zealand (295) request a new rule as follows:

*"NOISE-RX Noise Sensitive activities Rural Zones Activity status :  
CON*

*Where: 1. Any new noise sensitive activity located on a separate site of different ownership within 1000m of any frost control fan must be designed and constructed to ensure that the noise level inside any bedroom of the dwelling will not exceed 30 dB  $L_{Aeq}$  with all fans operating at normal duty.*

*Compliance with this standard must be demonstrated by the production of a design certificate from an appropriately qualified*

*and experienced acoustic engineer. The design certificate must be based either on actual noise measurements with all fans operating at normal duty, or on an assumed noise level from any one frost fan, corrected for the number of fans present at the time.*

*Matters of control are restricted to:*

*NOISE-MD1 - Noise*

*NOISE-MD3 - Acoustic insulation*

*Activity status when not achieved: RDIS*

*Matters of discretion are restricted to:*

*NOISE-MD1 - Noise*

*NOISE-MD3 - Acoustic insulation"*

58 As far as I am aware, there are currently no frost fans within the Waimakariri District. Rule Noise R-20 was inserted as a precautionary measure in the event that frost fans are installed in the future. Using the same precautionary approach, it would be sensible to also include a reverse sensitivity rule. This would ensure that once a frost fan was lawfully established, the development of noise sensitive activities would have to be mindful of the noise from the fan(s).

59 The rule proposed in this submission is consistent with that which I have recommended for other District Plans, and I recommend that it is adopted in its entirety.

#### **KAINGA ORA—HOMES AND COMMUNITIES (325)**

60 This submission opposes the noise corridor overlay and related provisions within the Noise Chapter and seeks a balance between providing for noise generating activities and managing effects on the community. It also asks that the noise corridor overlay maps be deleted as they do not reflect the distances prescribed in the rules/standards in relation to the State Highway and railway.

- 61 The submission argues that additional requirements for indoor noise design levels are unnecessary and overly restrictive, without a corresponding burden on infrastructure providers to manage effects. In addition, it opposes management of vibration effects as this adds cost for compliance, relies on a Standard that is not publicly available, and requires specialist assessment.
- 62 The submission also asks that the Aircraft noise provisions be deleted, including any mapped noise overlays and contour maps, and seeks that the relevant Airport designation(s) is included along with any proposed noise contour overlay and provisions.
- 63 I have recommended that this submission be rejected.
- 64 In my view, the notified rules relating to roads, railways, and airports already provide a balance between the noise producer and noise receivers.
- 65 As an example of this, Christchurch International Airport are bound by rules within the Christchurch District Plan which limit their total noise emissions. It is not necessary to duplicate these rules in the Waimakariri Plan. Notwithstanding this, the overall reduction of noise from transport related activities is fundamentally tied to the long term reduction of noise from individual vehicles or aircraft, and therefore somewhat outside the control of our infrastructure operators. Given this, it is prudent to ensure that noise sensitive activities wishing to establish close to roads, rail lines or airports should be required to incorporate reasonable measures to ensure that their internal noise environment is acceptable. The notified rules represent industry best practice for managing reverse sensitivity noise effects in New Zealand.
- 66 I am unclear on the intent behind the submission paragraph on vibration. As far as I am aware, the notified plan doesn't contain any rules to control vibration from road or rail.

## **NOISE-R6 - AUDIBLE BIRD SCARING DEVICES**

- 67 Several submissions request changes to the notified rules on audible bird scaring devices.
- 68 In particular, Michael John Baynes (357) asks for a 7 am to 7 pm operating period and a limit of 12 shots per hour per gun. In addition, the submission asks that the rule be amended to require devices to be a minimum of 400 metres from the notional boundary of adjoining residences, and to place a limit on the number of devices per hectare.
- 69 Federated Farmers (414) ask for an increase from 6 events per device per hour to 10, claiming that this is necessary to cover the function of most devices.
- 70 I have recommended that these submissions be accepted in part.
- 71 Rules to control the noise effects of bird scaring devices are, of necessity, a compromise between growers trying to protect their crops, and those affected by the noise. There is therefore arguably no perfect rule.
- 72 In my view, the permitted operating hours are best tied to sunrise and sunset because I understand bird damage to crops tends to occur around these times. I therefore recommend rejecting the requested 7am to 7pm timeframe.
- 73 I have previously suggested "...between sunrise and sunset..." as a possible rule. The notified plan opts for an additional 30 minutes either side of these extents. I am not qualified to choose between these two options.
- 74 I do not like the use of the term "shots" in isolation, because this implies that the only suitable device is a "gun". There are other devices

on the market, such as ones which mimic bird distress calls, and in my view the rule should accommodate these.

75 A limit on the number of noise events per hour has merit. However, the requested "12 shots per hour, per gun" could involve 4 bursts of 3 shots, or 12 individual shots, with potentially different effects. The notified rule provides for a "noise event" as comprising up to "three clustered shots", both to allow for something which is not uncommon in commercial bird scaring devices, and to acknowledge that a small number of closely spaced "shots" is generally less disturbing than more widely spaced shots. With this in place, I consider the notified limit of 6 events per hour to be appropriate, and consistent with the request by submitter 357.

76 I do not accept the suggestion from submitter 414 that "...10 events per device per hour... does not cover the functioning of most devices...". One of the major suppliers of gas guns in New Zealand (Bird Control NZ) offers a gun with adjustable timing from 2 to 20 minutes, which means as few as 3 events per hour.

77 If my suggestions above are adopted, Council should ensure that item d. in the notified rule uses the same terminology of "noise event" as per the other clauses in the rule, rather than "noise emission" as notified.

78 Whilst I accept the merit of limiting the number of devices per hectare, such a control may have unintended consequences. Multiple small devices may result in lesser noise effects than one very large one. However, the request does highlight a potential loophole in the rules as notified. The noise limit arguably applies to any one device. A grower could theoretically install several devices in essentially the same location to circumvent the limit on the number of shots per hour. Given that gas guns are currently the most commonly used scaring device, I recommend accepting the requested limit on the number of devices. I am aware of gas guns which are advertised as protecting areas of 4 to

25 hectares, with others suggesting only 0.6 hectares. On balance, a limit of 1 per hectare may be appropriate.

79 HortNZ (295.114) requests that the wording of Noise-R6 be changed from “...at any point within the notional boundary...” to “...the notional boundary...” on the basis that noise levels diminish with increasing distance.

80 There are a number of references to “notional boundary” in the Proposed Plan. The notional boundary is defined in the National Planning Standards and included in the list of definitions in the Proposed Plan.

81 Whilst I understand the reasoning given in this submission, there are good technical reasons for the wording as proposed.

82 Firstly, the notional boundary is a line 20 metres from a dwelling. This line is easy to draw on a plan, but in real life it can be somewhat difficult to locate it precisely.

83 Secondly, there are times when a solid fence, for example, is located just outside the notional boundary. This can mean that the noise level at the notional boundary is reduced by the fence, and hence the noise level can actually increase closer to the dwelling. Topographical features can result in the same effect.

84 In terms of measuring noise, there is no downside to the proposed wording. Industry best practice is that a number of noise measurements are made at various positions within and on the notional boundary, and the highest noise level measured is ultimately reported.

85 On this basis, I recommend that this submission is rejected, and the notified wording “...at any point within the notional boundary...” is retained.

## FULTON HOGAN (41)

86 Submission point 41.40 ask for a new rule as follows:

*"RX Sensitive activities*

*Activity status: PER*

*1. The establishment of a new, or alteration, or expansion of an existing sensitive activity. Where:*

*1. The sensitive activity shall be setback from the boundary of any legally established quarrying activity:*

*a. 200m to any allowable excavation area; and*

*b. 500m to any allowable processing area; and*

*c. 500m to any activity that involves blasting.*

*The establishment of residential units, or minor residential units on the same site as the quarry are exempt from this rule requirement.*

*Existing residential units or minor residential units within the specified setback that are rebuilt on their existing site but no closer to the quarry are exempt from this requirement.*

*Activity status when compliance not achieved: DIS"*

87 I have recommended that this submission be accepted in part.

88 This submission is arguably addressing effects other than just noise. As an example, I have assisted in consenting numerous quarries throughout Canterbury over the past 30 years, and there has never been a need for buffer distances greater than about 50 metres from excavation areas to achieve District Plan noise limits. This is not the case in other parts of the country, but in Canterbury, gravel is generally dug out of the ground, with machinery located well below ground level. Additionally, the vast majority of Canterbury quarries do not require any blasting.

89 Council may wish to consider other effects which may warrant setbacks consistent with those requested in the submission. However, I am concerned that the request is too complex. Council may not be in a

position to determine what activities occur at a quarry, and may therefore incorrectly set a setback distance. I would prefer to see a single setback distance for this reason. Given my discussion about typical quarries in Canterbury, I am not satisfied that the final setback should be based upon blasting.

### **NOISE—R3**

- 90 I have been asked to comment on part 2 of rule Noise-R3, in that the standard referenced for assessing vibration from construction (DIN 4150) is not that which is required under the National Planning Standards (ISO 4866).
- 91 The reason I have recommended the DIN standard is that while the ISO standard gives extensive guidance on measuring and assessing vibration, it does not make any recommendations in terms of limits on vibration. Instead, it simply notes that "...Some national (e. g. DIN 4150-3...) documents offer guidance maximum limit values to ensure the safety of buildings..." [Section 12.4].
- 92 A permitted activity standard which does not contain limits is of no use. An applicant could undertake a details assessment in accordance with the stipulated standard, but there would be nothing to compare the outcomes of that assessment against.
- 93 The DIN standard gives suitable limits, and uses similar methods to the ISO standard for measuring and assessing vibration effects. As such, it is my view that the DIN standard is appropriate, and is consistent with the National Planning Standards. I therefore recommend retaining the notified rule without change.

**Date:** 17 July 2023

*Scamp*

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