



**MARSHALL DAY**  
Acoustics 

**WAIMAKARIRI DISTRICT PLAN REVIEW - NOISE  
DELIVERABLE 3 - ISSUES AND OPTIONS**

Rp 003 20181370 | 17 April 2019



**Project:** WAIMAKARIRI DISTRICT PLAN REVIEW - NOISE

**Prepared for:** Waimakariri District Council  
Private Bag 1005  
Rangiora 7440

**Attention:** Jessica Manhire

**Report No.:** Rp 003 20181370

**Disclaimer**

Reports produced by Marshall Day Acoustics Limited are based on a specific scope, conditions and limitations, as agreed between Marshall Day Acoustics and the Client. Information and/or report(s) prepared by Marshall Day Acoustics may not be suitable for uses other than the specific project. No parties other than the Client should use any information and/or report(s) without first conferring with Marshall Day Acoustics.

The advice given herein is for acoustic purposes only. Relevant authorities and experts should be consulted with regard to compliance with regulations or requirements governing areas other than acoustics.

**Copyright**

The concepts and information contained in this document are the property of Marshall Day Acoustics Limited. Use or copying of this document in whole or in part without the written permission of Marshall Day Acoustics constitutes an infringement of copyright. Information shall not be assigned to a third party without prior consent.

**Document Control**

---

<b>Status:</b>	<b>Rev:</b>	<b>Comments</b>	<b>Date:</b>	<b>Author:</b>	<b>Reviewer:</b>
Approved		For Council Review	17 April 2019	Stuart Camp	Rob Hay/Jon Farren

---

## TABLE OF CONTENTS

1.0	DISCUSSION.....	5
2.0	OVERALL FORMAT OF NOISE CHAPTER.....	5
3.0	OVERRIDING COMMENTS.....	5
4.0	GAPS NOT ADDRESSED .....	6
5.0	SPECIFIC SITES .....	7
5.1	Daiken MDF Plant .....	7
5.2	Woodford Glen .....	9
5.3	Oxford Sawmill.....	9
5.4	McAlpines Sawmill, Rangiora.....	9
5.5	Sutherlands Sawmill, Kaiapoi.....	9
6.0	SUGGESTED WORDING .....	10
6.1	Introduction .....	11
6.2	Objectives and Policies.....	11
6.3	How to Interpret and Apply the Rules .....	13
6.4	General Noise Standards.....	14
6.5	Explanation.....	15
6.6	Exceptions .....	16
6.6.1	Business 3 .....	16
6.6.2	Military Training .....	17
6.6.3	Construction Noise.....	18
6.6.4	Helicopter landing sites. ....	18
6.6.5	Audible bird scaring devices.....	19
6.6.6	Buildings within the Christchurch International Airport Limited 55 dB L <sub>dn</sub> noise contour .....	20
6.6.7	Road and Rail Noise .....	22
6.6.8	Farming and agricultural activity.....	24
6.6.9	Frost Control Fans. ....	24
6.6.10	Warning devices used by any emergency service. ....	25
6.6.11	Commercial dog boarding kennels. ....	26
6.6.12	Gun Clubs. ....	26
6.6.13	Motorised vehicle racing, events or other recreational uses. ....	26
6.6.14	Temporary events .....	27
6.6.15	Blasting.....	28
6.6.16	Bedrooms within Commercial Zones.....	28

6.6.17	Wind Turbines .....	29
6.6.18	Emergency Generators .....	30

## 1.0 DISCUSSION

This report follows our Deliverable 1 report<sup>1</sup> that established a list of issues to be addressed as part of reviewing noise rules for the Waimakariri District.

This current report does not repeat the discussion in the earlier report. As such, readers may need to refer to the earlier report if they wish to see the rationale behind recommended wording of rules.

The suggested wording of rules in this report should be read as an initial guide to the type of rules that we envisage. We anticipate that the wording will need review to fit with the format of the Plan, and to address legal and/or planning issues. We would value the opportunity to review future draft rules, to ensure that changes proposed by other parties do not affect the technical correctness of the rules.

## 2.0 OVERALL FORMAT OF NOISE CHAPTER

By agreement with Council<sup>2</sup> we recommend that the noise chapter is generally formatted in the following manner:

- A preamble making introductory comments, how to use the rules, list of applicable standards;
- General noise standards with a table of standards for most noise sources;
- Explanatory notes to assist in applying the general standards, if required; and
- Exceptions to rules for specific noise sources not covered by the general standards, and/or exempted sources.

Our rationale behind this layout is that almost all use of the noise chapter will be for noise sources which are required to comply with the general noise standards. Only a small percentage of situations will invoke exceptions/exemptions. As such, we consider it important to have the general standards clearly stated near the beginning of the chapter to ensure that they are clearly visible and understandable for all users.

We have been involved with several other district plan reviews, and this format works well in our experience.

## 3.0 OVERRIDING COMMENTS

Some of our comments and suggestions relating to the wording of noise rules have implications that flow across many clauses. We have therefore included these here as overriding comments for Council consideration.

- The Christchurch District Plan, and many other district plans, defines “sensitive activity” instead of “dwelling” to ensure that activities such as hospitals, and aged care facilities are also protected. Council may wish to consider a similar approach, as many of the noise rules should rightfully apply to any building where sleep or rest is expected, not just dwellings.
- The draft noise chapter suggested having specific matters of discretion for each activity. In our view it is appropriate to have one list of general matters of discretion, which can then be applied to all situations involving noise. Our suggested wording adopts this method.

---

<sup>1</sup> Rp 001 R01 20181370 Waimakariri DP Review Deliverable 1

<sup>2</sup> Meeting on 28<sup>th</sup> February 2019.

#### 4.0 GAPS NOT ADDRESSED

Several gaps identified during the Deliverable 1 phase of this project are not explicitly addressed within the suggested wording section of this report and will need to be considered separately. In particular:

- We previously recommended consultation with Christchurch International Airport Limited (CIAL) regarding the wording of any noise rules relating to aircraft. We are now of the view that this process can wait until the draft chapter is advanced further. The rules which we are proposing mimic the operative rules and have been compared against the more recent Christchurch District Plan rules. As such, there are no radical changes.
- We have not proposed listing New Zealand Standards relating to noise, as these are all listed in the National Planning Standards<sup>3</sup>. In addition, our suggested wording of permitted activity rules is such that very few rely on Standards. We have included a suggested matter of discretion which allows the use of “...any relevant standard...”, and in our view this would allow all current New Zealand noise standards to be used. The exceptions to this are the general noise Standards, NZS 6801 and NZS 6802 which are listed in the rules because they are critical to the implementation of the rules.
- We support operative policy 18.1.1.1, which recommends land use planning controls to limit future residential development within specific aircraft noise contours. This policy sits outside the noise chapter. We would appreciate confirmation from Council that this policy will remain in place.
- One issue which has been raised by Council is noise from jetpacks. In our view, there is nothing to be gained from trying to write noise rules to control jetpacks. If an individual chooses to use one in a public area, they are unlikely to check the District Plan for noise rules in advance, and by the time Council acts on complaints, the activity would have finished. If a company chose to test jetpacks on a regular basis, they would not comply with the general noise standards, and Council could therefore demand a resource consent for the activity.
- The only aircraft noise rules currently suggested relate specifically to Christchurch International Airport (CIAL). We anticipate that Rangiora airfield will require several rules, although most of these will be outside the noise chapter. We have made comments on the proposed sound insulation rules for CIAL to allow for the inclusion of Rangiora Airfield within the same rules. Other noise rules and contours for Rangiora airfield will require further consideration.
- In our view, noise from heat pumps should be expected to comply with the general noise rules. However, our experience suggests that installers almost never give any consideration to this source of noise. Council may therefore wish to include a specific rule, or perhaps an advice note, which explicitly states that these are expected to comply.
- We have not proposed a rule to address wedding and function venues in rural areas. Such venues could be handled in various ways. One option would be for any activity which generates music to be discretionary (or restricted discretionary) in the rural area. Another would be to have a specific noise rule. We suggest caution in wording the rules, as there is always a temptation for them to apply to any “...amplified music...”. The problem with this is that a small radio is amplified, yet a full symphony orchestra is not. We also suggest consideration of an earlier onset of night-time for this type of activity in rural areas. Our experience is that rural areas can be quiet at 7 pm, and that music until 10pm could easily result in complaints. Although the proposed matters of discretion allow for consideration of this issue, an explicit mention of this may be appropriate. We propose further discussion with Council on this issue.

---

<sup>3</sup> Ministry for the Environment. 2019. National Planning Standards, April 2019

- Pubs and Clubs etc are not specifically addressed. In the central business districts, our understanding from discussions with Council is that residential accommodation will be discouraged by other rules, and hence, compliance with the general noise standards will be appropriate. In areas close to residential properties, pubs and clubs are unlikely to comply with the general noise standards unless specific attention is paid to noise control, and we consider this best done as part of a resource consent application. As such, we do not consider specific noise rules are required, although Council may wish to ensure that a resource consent is triggered by other matters to ensure that a noise assessment is undertaken.
- At this stage, we do not consider it necessary to write specific noise rules for schools. In our experience, it is rare to get complaints about noise from schools, and we therefore consider it best to leave the underlying zone rules in place rather than writing specific rules which might suggest that we are promoting schools as being noisy. In any case, schools are generally designated and operate under an outline development plan, not the underlying District Plan rules.
- In our earlier report, we raised a concern that the existing Business 2 zone currently includes a wide range of activities from small commercial shops to heavy industrial sites. We would like Council to consider splitting this zone in two to better reflect current usage.
- Commercial firewood processing is a source of noise that has been raised by Council. We have not proposed a specific rule to address this. However, we have proposed wording for the farming and agricultural activity exception (section 6.6.8) which aims to ensure that operators cannot claim this exception for firewood processing activities.

## 5.0 SPECIFIC SITES

Based on our review of various documents, and our brief noise monitoring undertaken as part of Deliverable 2, we make the following comments on several specific noise-producing sites in the District.

### 5.1 Daiken MDF Plant

The Daiken MDF plant appears to be slightly exceeding the operative District Plan noise standards when operating at full capacity, both during daytime and night-time.

In our view, there are three issues to be considered around this site:

1. A more detailed noise assessment may be warranted, but at this stage, it appears that there may be a need for the plant to reduce its noise emissions in order to achieve compliance with the operative noise standards.
2. There is nothing in the Operative Plan to indicate to prospective landowners in the area that noise from the plant will be audible. We consider this to be important from a reverse sensitivity perspective. We recommend that a line is developed around the site, to protect the plant from the possibility of any future dwellings in close proximity.
3. The plan change that resulted in the operative noise standard has achieved specificity for the plant, but has omitted any reference to other existing dwellings in the area. In particular, there is an existing dwelling on the north side of Upper Sefton Road, a few hundred metres west of the plant. Our noise survey shows that noise levels at this dwelling are currently well within the operative noise standards. However, if the company chose to expand their operations further west, this situation could change. We consider this to be another compelling reason for developing additional noise controls around the site.

Defining a noise contour around a site such as this involves a significant amount of noise monitoring, and there would need to be an agreement by all parties as to the aims of the process.

Notwithstanding this, it is our view that there is a need to develop additional noise controls around this site to protect both the plant and existing residents.



## 5.2 Woodford Glen

As previously identified, there are no noise rules for the Woodford Glen site. Our noise survey shows that people staying in the campground, and residents to the north of the site, are exposed to quite high noise levels during races. The acceptability of such levels is likely to be a function of how many events occur each year, and the hours during which they take place.

In our view, there are two issues which need to be addressed around this site.

1. We consider it important to protect the operation of Woodford Glen by developing noise controls around the site. These controls would act as a reverse sensitivity buffer to prevent the possibility of permanent dwellings being built in the area. Control options include a noise contour, setbacks broadly related to noise level, or sound insulation/activity status rules for noise sensitive activities within a defined area.
2. We also consider it important to develop rules which ensure that the operation of Woodford Glen does not significantly increase in the future. Such rules could only be developed in conjunction with Woodford Glen management, and it may be appropriate to involve the campground management in these discussions. We do not consider it necessary to include noise limits in these rules. We anticipate simple rules which specify the maximum number of events in any year, the required finish time, and the maximum duration of events. Based on our experience with other similar facilities, the finish time for events will likely need to be in two parts: a scheduled finish, and an allowance for an overrun in the case of a medical emergency<sup>4</sup>.

## 5.3 Oxford Sawmill

Our initial monitoring suggests that noise from the Oxford sawmill site is currently slightly above the operative (and proposed) residential daytime noise standard. We do not consider this to be a significant issue at present, although Council may wish to advise the sawmill that they may be exceeding the noise standards, and that they should therefore be careful if/when making any changes which might affect noise. We also suggest that the sawmill should be made aware that the acceptability of noise is highly dependant on the time of day. If the mill decided to operate into the evening, the existing level of noise may be perceived as unacceptable by adjoining residents.

We understand that it is possible that this sawmill site may be rezoned. This will not have any effect with respect to noise because the proposed noise standards are very clearly based on the zoning of the site receiving the noise. Hence, the sawmill will need to comply with the residential zone noise standards, irrespective of what zone the mill itself is in.

## 5.4 McAlpines Sawmill, Rangiora

As discussed in our Deliverable 2 report, McAlpines own the rural land immediately adjoining their sawmill. We therefore do not consider there to be any need to explicitly protect this site from the possibility of encroaching residential development.

## 5.5 Sutherlands Sawmill, Kaiapoi

Our initial noise monitoring around the Sutherlands sawmill shows that noise levels at existing residential properties are up to 66 dB  $L_{A10}$  (64 dB  $L_{Aeq}$ ). This is significantly above both the operative and proposed daytime noise standards.

As with the Oxford sawmill, Council may wish to advise the sawmill that they are exceeding the noise standards by a significant margin, and that they should therefore be careful if/when making any changes which might affect noise. More importantly, our rationalisation of the noise rules, if adopted, would result in the daytime noise standards extending to 10 pm, rather than the operative

---

<sup>4</sup> Racing is unable to recommence until an ambulance returns to site following a medical emergency.

7 pm. If the sawmill chose to take advantage of this and extend their operating hours without reducing noise levels, we would expect significant noise complaints to result.

From a noise perspective, a large sawmill such as this is not compatible with adjoining residential development. It would therefore be preferable if the District Plan could signal that any future redevelopment of the sawmill site should be for activities that are inherently quieter.

## **6.0 SUGGESTED WORDING**

The following table aims to offer a suggested outline of the proposed noise chapter. Text from Council's draft noise chapter (received by us on 13 December 2018) has been used where applicable, with comments shown in the right-hand column to discuss suggested changes and/or provide assistance to Council.

This table is intended only as a guide and should not be read as a definitive view of the final chapter.

The aim of this section is to address each of the gaps identified in our Deliverable 1 report.

Suggested Wording	Comments
<p><b>6.1 Introduction</b></p> <p>This section is part of the General District-Wide matters chapter. It contains objectives, policies and rules to manage the effects of noise and light for different receiving environments and activities.</p> <p><b>Noise</b></p> <p>Noise can affect people’s health and perception of environmental amenity.</p> <p>Community acceptance of sound and whether it is perceived as noise, will depend on the character, level and duration of the sound and whether it is reasonable, having regard to the time and day.</p> <p>For instance, people may have a different tolerance for loud transient noise as compared with a quieter but more continuous noise, depending on the circumstances. In most situations occasional noise is tolerated at <del>much</del> higher levels than continuous noise. Separate noise standards have been drafted for temporary activities to recognise this, and give effect to the objectives and policies for temporary activities.</p> <p>The predicted <u>aircraft</u> noise contours <u>are</u> <del>is</del> used to assess the appropriateness of residential developments subject to <del>the</del> noise from aircraft using Christchurch International Airport and Rangiora Airfield.</p> <p>In residential zones, people are more sensitive to noise levels at night, as this can disturb relaxation and sleep. Commercial and industrial zones normally have a greater tolerance for noise which reflects the working environment.</p> <p>Sound levels have been set for the Open Space and Recreation Zones to maintain their character and minimise the disturbance of recreation, landscapes, ecosystems and indigenous biodiversity.</p> <p>A higher level of noise is anticipated at times in the sport and active recreation zone which provides for indoor and outdoor active recreation and sports. Facilities in the zone may have an ability to host events which provide entertainment to both residents and visitors.</p> <p><del>All sound levels shall be measured and assessed in accordance with the provisions of NZS 6801: 2008 “Acoustics- Measurement of environmental sound” and NZS 6802: 2008 “Acoustics- Environmental noise”.</del></p>	<p>Throughout this table, text shown highlighted in grey is taken from the draft chapter supplied by Council. Changes suggested by Marshall Day Acoustics are marked up. Numbering has been added to assist in navigating this report.</p> <p>Delete the word “much”</p> <p>Insert reference to Rangiora Airfield.</p> <p>Add the word “aircraft” and change to plural terms to allow for their being more than one contour shown in the Plan.</p> <p>Delete the word “the”.</p> <p>Insert reference to recreation (e.g. walking, tramping, biking etc.</p> <p>Move to section 6.5</p>
<p><b>6.2 Objectives and Policies</b></p>	

Suggested Wording		Comments
<p><b>NL–O1</b> Maintain amenity and an environmental quality that is appropriate for different parts of the District and ensure any adverse environmental effects from lighting, glare and noise are avoided or mitigated.</p>	<p><b>NL–P1</b> Control noise to a reasonable level and duration in relation to the characteristics of the zone or zones in which the noise is audible.</p> <p><b>NL–P2</b> Avoid noise that adversely affects the amenity, and health and safety of people on neighbouring sites or zones.</p> <p><del><b>NL–P3</b> Noise and vibration generated as a result of rebuilding activities following a natural disaster (including from traffic movements) shall be controlled to a level that will not create nuisance, damage structures, or adversely affect amenity values and the health and safety of people on neighbouring sites and zones.</del></p>	<p>Text taken from draft chapter.</p> <p>In our view, this policy is not required. We recommend deleting all noise rules that relate specifically to natural disaster recovery activities because the proposed rules are not significantly different to the general noise rules, and we have not seen any evidence of recovery activities that have or will generate noise levels which cannot comply with the general noise standards.</p>
<p><b>Rules</b></p> <p>NL = District-wide topic R = Rule P = Permitted activity, subject to compliance with all relevant Activity and Built Form standards C = Controlled activity RD = Restricted discretionary activity D = Discretionary activity NC = Non-complying activity Pr = Prohibited activity N/A = Not applicable BFS = Built form standard AN = Advice note EX = Exemptions MD = Matters of discretion</p>		<p>Taken directly from draft chapter.</p>

Suggested Wording	Comments
<p><b>6.3 How to Interpret and Apply the Rules</b></p> <p>Noise standards are based on the site or zone receiving the noise, irrespective of where the noise is generated. To determine the noise standards that apply, it is therefore necessary to determine the zoning of all sites which surround the site generating noise, and check the noise standards which apply in each of those zones.</p> <ol style="list-style-type: none"> <li>a. The noise rules that apply to activities are contained in the Activity Rules table below.</li> <li>b. Permitted activities are subject to compliance with all relevant Activity and Built Form standards. Activity standards are in the Activity Rules table below. Built form standards are in a separate table further below.</li> <li>c. Check Definitions and Abbreviations to confirm appropriate interpretation of rules and activity status.</li> <li>d. Activities and structures are also subject to District-wide rules, and zone rules (unless the Temporary Activities section applies). Check for any other relevant District-wide rules that may also apply.</li> <li>e. Noise from motorised craft on the Waimakariri River and Ashley River/Rakahuri is addressed in the <u>[Chapter Name] chapter Activities on the surface of water</u> section of this chapter.</li> <li>f. Where multiple rules are breached, the <u>highest</u> activity status will apply.</li> <li>g. Check for any relevant Advice Notes below.</li> <li>h. Matters over which the District Council has limited its control (controlled activities) or restricted the exercise of its discretion (restricted discretionary activities) are identified in the Activity Rules table below.</li> <li>i. Matters of discretion are contained in a separate table below and will be considered by the District Council for restricted discretionary activities.</li> <li>j. Unless otherwise specified, the District Council reserves the right to require written approvals from parties it considers may be potentially affected, to process applications on a public or limited or non-notified basis, and to grant or decline consent.</li> </ol>	<p>Text taken from draft chapter.</p> <p>We suggest an over-arching clause along the lines of this paragraph. We have not attempted to splice this into the other listed points.</p> <p>It is important that items in this section are read as rules rather than advice notes or commentary.</p> <p>The name of this table may need to be changed.</p> <p>We would prefer to see clause e. as a rule in section 6.6 Exceptions. Ensure that there is a clear cross reference to the chapter where the rules exist. We have not yet seen this draft chapter, and therefore cannot comment on the suitability of any references to noise.</p> <p>Is the word “highest” the best choice here? We question whether lay readers of the Plan will understand what this term means.</p>

Suggested Wording			Comments																									
<p><b>6.4 General Noise Standards</b></p> <p>Activity status: P</p> <p>Where noise generated on a site, except where specifically listed in [6.6 Exceptions] complies with the noise standards given in the following table.</p> <table border="1"> <thead> <tr> <th>At or within the boundary of any site zoned:</th> <th>Daytime 0700—2200</th> <th>Night-time 2200—0700</th> </tr> </thead> <tbody> <tr> <td>Residential</td> <td>50 dB L<sub>Aeq</sub></td> <td>40 dB L<sub>Aeq</sub> and 70 dB L<sub>Amax</sub></td> </tr> <tr> <td>Open Space Sport and Active Recreation</td> <td>55 dB L<sub>Aeq</sub></td> <td>45 dB L<sub>Aeq</sub> and 75 dB L<sub>Amax</sub></td> </tr> <tr> <td>Natural Open Space</td> <td>45 dB L<sub>Aeq</sub></td> <td>35 dB L<sub>Aeq</sub> and 65 dB L<sub>Amax</sub></td> </tr> <tr> <td>Business 1</td> <td>60 dB L<sub>Aeq</sub></td> <td>50 dB L<sub>Aeq</sub> and 80 dB L<sub>Amax</sub>.</td> </tr> <tr> <td>Business 2</td> <td>65 dB L<sub>Aeq</sub></td> <td>55 dB L<sub>Aeq</sub></td> </tr> <tr> <td>Business 3 {See also rule 6.6.1}</td> <td>65 dB L<sub>Aeq</sub></td> <td>55 dB L<sub>Aeq</sub></td> </tr> <tr> <td>Business 5</td> <td>65 dB L<sub>Aeq</sub></td> <td>55 dB L<sub>Aeq</sub></td> </tr> </tbody> </table>			At or within the boundary of any site zoned:	Daytime 0700—2200	Night-time 2200—0700	Residential	50 dB L <sub>Aeq</sub>	40 dB L <sub>Aeq</sub> and 70 dB L <sub>Amax</sub>	Open Space Sport and Active Recreation	55 dB L <sub>Aeq</sub>	45 dB L <sub>Aeq</sub> and 75 dB L <sub>Amax</sub>	Natural Open Space	45 dB L <sub>Aeq</sub>	35 dB L <sub>Aeq</sub> and 65 dB L <sub>Amax</sub>	Business 1	60 dB L <sub>Aeq</sub>	50 dB L <sub>Aeq</sub> and 80 dB L <sub>Amax</sub> .	Business 2	65 dB L <sub>Aeq</sub>	55 dB L <sub>Aeq</sub>	Business 3 {See also rule 6.6.1}	65 dB L <sub>Aeq</sub>	55 dB L <sub>Aeq</sub>	Business 5	65 dB L <sub>Aeq</sub>	55 dB L <sub>Aeq</sub>	<p>Activity status when compliance not achieved: RD</p> <p>Where noise generated on a site exceeds these noise standards by up to 10 dB.</p> <p>Activity status when compliance not achieved: NC</p> <p>Where noise generated on a site exceeds these noise standards by more than 10 dB.</p>	<p>This section drafted by Marshall Day. Layout and wording will need to be reviewed by Council to fit with overall drafting philosophy.</p> <p>In our experience, Sundays and Public holidays are no longer quiet days. In many areas, these days now generate more traffic and activity than any other day, and hence are no more sensitive to noise than any other day of the week. We therefore recommend simplifying the rules by deleting the drafted separate rules for Sundays and Public Holidays. This is common practice in most Districts throughout New Zealand.</p> <p>Zone names are based on operative zonings, and will need to be changed to reflect proposed names.</p> <p>We do not consider it necessary to include an L<sub>Amax</sub> standard during daytime because this control is primarily aimed at avoiding sleep disturbance which is essentially a night-time issue. Similarly, we do not see any need for night-time L<sub>Amax</sub> standards in the heavy industrial zones, on the basis that living accommodation is not a permitted activity in these zones.</p> <p>In our view, night-time should be standardised to 2200—0700 in all zones for simplicity. Under the operative rules, a site generating noise could have a complicated noise regime if surrounded by sites in more than one zone, where night-time could begin at different times in each of the receiving zones.</p> <p>Suggested noise limits for the three open space zones are in our initial proposals. Our impression of the term “natural open space” is that this zone is intended to cater for sites which have significant natural quiet and, as such, deserve greater protection from noise. However, the draft planning maps that we have received show a large number of very small natural open space areas, some of which adjoin business zones. If this continues to be the case, our suggested stringent noise</p>
At or within the boundary of any site zoned:	Daytime 0700—2200	Night-time 2200—0700																										
Residential	50 dB L <sub>Aeq</sub>	40 dB L <sub>Aeq</sub> and 70 dB L <sub>Amax</sub>																										
Open Space Sport and Active Recreation	55 dB L <sub>Aeq</sub>	45 dB L <sub>Aeq</sub> and 75 dB L <sub>Amax</sub>																										
Natural Open Space	45 dB L <sub>Aeq</sub>	35 dB L <sub>Aeq</sub> and 65 dB L <sub>Amax</sub>																										
Business 1	60 dB L <sub>Aeq</sub>	50 dB L <sub>Aeq</sub> and 80 dB L <sub>Amax</sub> .																										
Business 2	65 dB L <sub>Aeq</sub>	55 dB L <sub>Aeq</sub>																										
Business 3 {See also rule 6.6.1}	65 dB L <sub>Aeq</sub>	55 dB L <sub>Aeq</sub>																										
Business 5	65 dB L <sub>Aeq</sub>	55 dB L <sub>Aeq</sub>																										

Suggested Wording		Comments
Business 6	65 dB LAeq 55 dB LAeq	<p>limit would be unachievable. Further discussions with Council are required for this zone.</p> <p>Proposed noise standards are in line with operative standards, except for Business 1 which is currently 65 dB during the day. In our view, the Business 1 zone is commercial rather than heavy industry, and 60 dB is more appropriate in this situation. At night, commercial zones are not particularly sensitive to noise, and we therefore propose to relax the night-time noise standard from 45 dB (LA10) to 50 dB (LAeq).</p> <p>We have proposed a noise rule for the Business 3 zone for two reasons. First, it provides for consistency with all other zones. Second, it ensures that if a site adjoining the zone is developed, there is a noise rule controlling how much noise can be generated at the zone interface. This rule will have no effect on the MDF plant as long as they own all of the land in the zone.</p> <p>We have previously raised cross-district noise rules for consideration. As an example, it is possible that a noise-producing activity could be proposed on a site bordering the northern boundary of the Waimakariri District, adjoining Hurunui. This could result in noise effects on properties within Hurunui. We have suggested including a general noise standard to capture this situation in case it arises. Council will need to check that this doesn't raise jurisdictional issues.</p>
<b>At or within the notional boundary of any site zoned:</b>		
Rural	50 dB LAeq 40 dB LAeq and 65 dB LAmax	
<b>At or within any site not within the Waimakariri District</b>	55 dB LAeq 45 dB LAeq	
<b>6.5 Explanation</b>		<p>Some of these points need to be read as rules, not explanatory notes. Council will need to be mindful of this when considering the final heading and wording of the chapter.</p> <p>Clause 1 has been moved from the Introduction, to ensure it is read as a rule, not as commentary. Wording has been changed somewhat, firstly to clarify that NZS 6801 only deals with measuring noise, while</p>
1.	Sound levels shall be measured in accordance with NZS 6801: 2008 "Acoustics- Measurement of environmental sound" and assessed in accordance with NZS 6802: 2008 "Acoustics- Environmental noise" where the source of noise is within the scope of these standards.	
2.	For the purposes of compliance with these noise standards, public roads shall not be considered as a site receiving noise.	

Suggested Wording	Comments								
<p>3. The notional boundary of a site is a line 20 metres from any side of a dwelling, or the legal boundary where this is closer to the dwelling, as defined in NZS 6801:2008.</p> <p>4. Daytime noise standards are primarily intended to provide outdoor amenity. Compliance at upper levels of multi-level buildings shall therefore be confined to areas intended for outdoor activities.</p> <p>5. Night-time noise standards are intended to allow for sleep amenity. Compliance at upper levels of multi-level buildings shall therefore consider locations immediately outside bedrooms.</p> <p>5. Where a fence or other noise control structure is erected on a site boundary, compliance assessment shall consider the effect of such structure.</p>	<p>NZS 6802 is for assessment, and secondly to allow for the use of other relevant standards for specific noise sources.</p>								
<p><b>6.6 Exceptions</b></p>	<p>Note: This Exceptions section has not been written in any specific order. Council may wish to reorder it as they see fit.</p> <p>Headings in this section are for the convenience of this report only.</p>								
<p><b>6.6.1 Business 3</b></p> <p>Noise generated within the Business 3 zone shall comply with all general noise standards except for noise received within the rural zone, where noise levels shall not exceed the following standards at or within the notional boundary of the dwelling located at 126 Beatties Road:</p> <table data-bbox="414 1042 987 1201"> <tbody> <tr> <td>0700—1900 Monday to Saturday</td> <td>55dB L<sub>Aeq</sub></td> </tr> <tr> <td>0900—1900 Sundays and Public Holidays</td> <td>55 dB L<sub>Aeq</sub></td> </tr> <tr> <td>All other times</td> <td>45 dB L<sub>Aeq</sub></td> </tr> <tr> <td>2200—0700 on any day</td> <td>75dB L<sub>Amax</sub></td> </tr> </tbody> </table>	0700—1900 Monday to Saturday	55dB L <sub>Aeq</sub>	0900—1900 Sundays and Public Holidays	55 dB L <sub>Aeq</sub>	All other times	45 dB L <sub>Aeq</sub>	2200—0700 on any day	75dB L <sub>Amax</sub>	<p>The Business 3 zone is currently only used for the MDF plant at Sefton, and this rule is only applicable to this site. We therefore suggest that it may be appropriate to give this zone a specific name identifying its location. This would clarify that the exception is for one specific established area. The same zoning could then potentially be created elsewhere in the District without compromising the integrity of the general noise standards.</p> <p>This draft wording requires the Business 3 zone to comply with all general noise standards other than in the rural zone. At first glance, this suggests that we are imposing an additional control on the MDF plant of a limit of 50 dB (daytime) at any residential zone. However, there are no residential zones within several kilometres of the Business 3 zone, and this imposition therefore has no practical effect. We have recommended this wording solely to make the zone more generic in case another area of land is ever rezoned to Business 3.</p>
0700—1900 Monday to Saturday	55dB L <sub>Aeq</sub>								
0900—1900 Sundays and Public Holidays	55 dB L <sub>Aeq</sub>								
All other times	45 dB L <sub>Aeq</sub>								
2200—0700 on any day	75dB L <sub>Amax</sub>								



Suggested Wording	Comments
	As discussed in section 5.1, we recommend that a noise control boundary is developed around the existing Business 3 zone.
<p><b>6.6.2 Military Training</b></p> <p>Military training activities, undertaken by the Ministry of Defence.</p> <p>Activity status: P</p> <p>Where this activity complies with the following rule requirements:</p> <p>i. <u>Written</u> notice must be provided to the Council at least <del>48 hours</del> <u>10 days</u> prior to the commencement of the activity</p> <p>ii. Firing of weapons and explosive events shall be undertaken no closer than 1500 metres to the notional boundary of any dwelling during the hours of 0700—1900, nor within 4500 metres during the hours of 1900—0700.</p> <p>iii. Helicopter movements shall comply with [exception 4 below].</p> <p>iv. Noise from all other sources shall comply with the general noise standards given in Table [section 6.4].</p>	<p>Activity status when compliance with ii is not achieved:</p> <p><del>RD</del> <u>C</u></p> <p>i. Where the firing of weapons and explosive events does not exceed a noise level of 65 dB <math>L_{Amax}</math> during the hours of 0700—1900, nor a level of 50 dB <math>L_{Amax}</math> during the hours of 1900—0700.</p> <p>ii. Compliance with these noise standards shall be demonstrated by way of a report prepared by a suitably qualified Acoustic Consultant submitted to Council no later than 10 days prior to the commencement of the activity.</p> <p>Activity status when compliance with iii is not achieved: [Refer to section 6.6.4]</p> <p>Activity status when compliance with iv is not achieved: [Refer to section 6.4]</p> <p>The draft temporary activities chapter includes a simple permitted activity standard for military training activities. We do not consider that standard to be sufficient, and suggest cross-referencing that rule to this chapter.</p> <p>This proposed text is based largely on the operative Christchurch District Plan, except that the noise standards are proposed as part of a controlled activity consent to ensure that there is a mechanism for Council to require compliance to be demonstrated in advance of the activity.</p> <p>The permitted activity rules are based entirely on separation distances as a proxy for achieving acceptable noise levels. If such distances cannot be maintained, demonstrating compliance with appropriate noise standards would be appropriate. In our view, this could be achieved as a controlled activity, although Council may wish to consider restricted discretionary.</p> <p>Temporary military training activities are planned well in advance for logistical reasons. There is therefore no reason why at least 10 days' notice cannot be provided to Council. Council may well wish to notify residents in the affected area, and 10 days should allow time for this to happen.</p> <p>The intent of our proposal for activities which don't achieve compliance with the helicopter or general noise standards (items iii and iv) is that they should be assessed in the same way that other helicopter and general sources are assessed.</p>

Suggested Wording		Comments
<p><b>6.6.3 Construction Noise</b></p> <p>Activity status: P</p> <p>i. Noise from construction activities shall comply with the following noise limits when assessed in accordance with NZS 6803:1999 Acoustics - Construction Noise.</p> <p>When received in a residential zone:</p> <p>0730—1800 Monday to Saturday: 70 dB <math>L_{Aeq}</math></p> <p>All other times: 45 dB <math>L_{Aeq}</math>.</p> <p>When received in an industrial zone:</p> <p>At all times: 70 dB <math>L_{Aeq}</math>.</p> <p>ii. Vibration from construction activities shall be assessed in accordance with <i>DIN 4150-3:2016, Vibration in Buildings – Part 3: Effects on Structures</i> and shall comply with the relevant limits given in tables 1 and 4 of that standard.</p>	<p>Activity status when compliance not achieved: RD</p> <p>Where the effects are shown to be minor when assessed in accordance with NZS 6803:1999 Acoustics - Construction Noise, as evidenced by a report produced by a suitably qualified acoustic consultant.</p>	<p>It is important that the permitted activity standards specify numeric limits, because NZS 6803 offers solutions to construction noise issues that go beyond simple compliance with limits.</p> <p>We have suggested a simple rule approach that mimics the limits given in the Standard for long duration construction, with shoulder time periods removed for simplicity.</p> <p>The alternative would be to specify compliance with the limits given in Tables 2 and 3 of the Standard.</p> <p>Under either option, we consider it appropriate to include limits on construction vibration.</p> <p>This clause on construction vibration follows the wording of the draft National Planning Standards. However, the final version of the NPS has changed to using ISO 4866. At this stage, the ISO standard does not appear to contain limits and it would therefore not form an enforceable permitted activity standard. We will need to review this standard in more detail before finalising this rule.</p>
<p><b>6.6.4 Helicopter landing sites.</b></p> <p>Activity Status: P</p> <p>Where:</p> <p>i. Helicopter movements only occur between 08:00 hours and 18:00 hours.</p> <p>ii. Within 25 metres of any residential unit, no helicopter movement shall take place, unless that</p>	<p>Activity status when compliance not achieved: RD</p> <p>Matters of discretion are restricted to:</p> <p>a. an assessment of noise in accordance with NZS 6807:1994 Noise Management and Land Use Planning for Helicopter Landing Sites.</p>	<p>Proposed wording follows the Christchurch District Plan, which in turn derived from work which Marshall Day Acoustics undertook several years ago. The aim is to provide for a small number of helicopter movements as a permitted activity, without the need for an assessment of noise levels.</p> <p>It would be useful for Council to define the term “movements”, which means either a landing or a takeoff. Hence, when a helicopter lands and then takes-off, this constitutes 2 movements.</p>

Suggested Wording		Comments
<p>residential unit is on the site on which the landing or take-off occurs.</p> <p>iii. Between 25 metres and 450 metres from a residential unit, the number of helicopter movements on a site shall not exceed 24 in any calendar year, or 10 in any month, or six in any week, unless that residential unit is on the site on which the landing or take-off occurs.</p>		<p>This rule as drafted does not specifically allow for helicopters at established airfields. Rangiora airfield, in particular, may need an exemption from this rule.</p> <p>Under this suggested wording, there is no restriction on helicopters more than 450 metres from a residential unit. We suspect that it would be very difficult to find a site in the District that is more than 450 metres from any dwelling. However, it may be appropriate to add a clause to control this situation.</p>
<p><b>6.6.5 Audible bird scaring devices.</b></p> <p>Activity status: P</p> <p>Where this activity complies with the following rule requirements:</p> <p>a. Activity Standards:</p> <p>Any Bird-scaring devices shall:</p> <p>i. only operate between sunrise and sunset</p> <p>ii. not be used within 200 metres of a notional boundary of a residential unit</p> <p>iii. not exceed 65 dB <math>L_{AE}</math> from any one event (comprising up to three reports/shots in quick succession), when assessed at any point within the notional boundary of any residential</p>	<p>Activity status when compliance not achieved: RD</p>	<p>Suggested noise standard is based on measurements undertaken by Marshall Day Acoustics and successfully incorporated into several other district plans throughout New Zealand.</p> <p>Council's earlier draft included additional controls which we have not included in our simple suggested rule, but which may have some merit. Our initial comments on these are:</p> <p><i>"Devices can only be operated on any one property for four months within any 12 month period"</i>. In our experience, bird scaring devices are only used when crops are ripening, and this is generally less than a four month period. However, we are aware of one case several years ago when the devices were used for 6 months, and hence Council may still wish to include this.</p> <p><i>"Shall have maximum of 18 shots per hour per device"</i>. A control such as this may be useful to include. However, we are not aware of the basis for the 18 shot limit. If this restriction is included, we recommend using the term "events" rather than shots for consistency with the rest of the rule.</p>

Suggested Wording		Comments
<p>unit on any other site when based on measurements not less than 10 seconds in duration.</p>		<p><i>“Any device shall not be placed closer than 150m to the property boundary of a neighbouring property which contains a dwelling and if positioned within 400m of a property boundary of a neighbouring property which contains a dwelling must be pointed away from the dwelling and tethered and have straw bales placed between it and the dwelling to absorb sound”</i> This is complex, and the final section about straw bales is too vague to be enforceable.</p> <p><i>“Devices may be placed no closer than 40 metres to any public road and pointed away from that road and if positioned within 100m of any road shall be pointed away from that road and tethered”.</i> We do not consider roads to be sensitive to noise, and therefore do not see a need to control setback distances from roads.</p> <p><i>“Devices must not operate unless a legible notice is securely fixed to the road frontage of the site in which the device is to operate stating the name, address and phone number of the person(s) responsible for the operation of the device and the farm the device is operating on”.</i> This may be worth adding.</p> <p><i>“Must be placed no closer than: a. 150m to any Residential 4 Zone boundary; and b.420m to any boundary of any other Residential Zone”.</i> We prefer the simpler version of a single setback distance. Based on our measurements to date, it would be hard to justify a 420 metre setback on an effects basis.</p>
<p><b>6.6.6 Buildings within the Christchurch International Airport Limited 55 dB L<sub>dn</sub> noise contour</b></p>		<p>The sound insulation requirements for areas within the Waimakariri District are very simple. In many cases, a standard house construction will achieve compliance. In our view, there is therefore no reason why anything other than non-complying status should be specified for an activity that does not meet the permitted standard. Non-complying status would also be consistent with Christchurch.</p>

Suggested Wording		Comments												
<p>Activity status: P</p> <p>Where this activity complies with the following rule requirements:</p> <p>a. Activity Standards</p> <p>i. Within the 55dB L<sub>dn</sub> noise contour shown in table XXX, any <del>proposed new dwelling building, or any addition to existing buildings, or part of a building described in XXX,</del> shall be insulated from aircraft noise to ensure indoor sound levels stated in that table are not exceeded, when windows and doors are closed.</p> <p>ii. The external noise levels for a site shall be determined by the application of the <u>aircraft</u> noise contours dB L<sub>dn</sub> (shown on District Plan Map XXX) and the <u>L<sub>AE</sub> SEL</u> dB noise contours (shown on District Plan Map XXX). Where a site falls within the contours the calculation shall be determined by linear interpolation between the noise contours.</p>	<p>Activity status when compliance not achieved: NC</p>	<p>It is likely that the opening paragraph of this rule could be amended to read “...Buildings within the Christchurch International Airport Limited 55 dB L<sub>dn</sub> noise contour, and buildings within the Rangiora Airfield 55 dB L<sub>dn</sub> noise contour...”. However, we suggest considering this once a full package of rules are developed for Rangiora Airfield.</p> <p>We are of the view that new buildings and alterations to existing buildings can both be dealt with in one rule, as long as the wording in the first part of this paragraph is carefully considered. We suggest including Table XXX within the rule rather than having to refer to a table elsewhere.</p> <p>Add the word “aircraft” for clarity.</p> <p>Under the latest version of the standards, the term SEL has been replaced by L<sub>AE</sub>. The two terms have identical meanings.</p> <p>There is a need for a number of contours to facilitate the implementation of this rule. We recommend obtaining contours at 1 dB intervals. This would include all contours greater than or equal to 55 dB L<sub>dn</sub>, and all L<sub>AE</sub> contours between 85 and 89 dB. Unless all of these contours are available in the Plan, it is not possible to apply “...linear interpolation...” as required in the rule.</p>												
<p><b>Table XXX: Indoor Design Sound Levels within 55 dB L<sub>dn</sub> Noise Contour</b></p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th></th> <th>dB L<sub>AE</sub></th> <th>dB L<sub>dn</sub></th> </tr> </thead> <tbody> <tr> <td><b>Residential Units</b></td> <td></td> <td></td> </tr> <tr> <td>Sleeping areas</td> <td>65</td> <td>40</td> </tr> <tr> <td>Other habitable areas</td> <td>75</td> <td>50</td> </tr> </tbody> </table>			dB L <sub>AE</sub>	dB L <sub>dn</sub>	<b>Residential Units</b>			Sleeping areas	65	40	Other habitable areas	75	50	<p>Table taken from draft. Criteria for some relatively non-critical spaces are not strictly required if this rule only applies to Christchurch International Airport. However, we have left them in the table because they will be relevant if this rule is applied to the Rangiora Airfield.</p>
	dB L <sub>AE</sub>	dB L <sub>dn</sub>												
<b>Residential Units</b>														
Sleeping areas	65	40												
Other habitable areas	75	50												

Suggested Wording			Comments
<b>Travellers' Accommodation</b>			
Relaxing or sleeping	65	40	
Conference meeting rooms	65	40	
Service activities	85	60	
<b>Education Activities</b>			
Libraries, study areas	65	40	
Teaching areas, assembly areas	65	40	
Workshops, gymnasias	85	60	
<b>Retail Activities, Retail Services and Offices</b>			
Conference rooms	65	40	
Private offices	70	45	
Drafting, open offices, exhibition spaces	75	50	
Typing, data processing	80	55	
Shops, supermarkets, showrooms	85	60	
<b>6.6.7 Road and Rail Noise</b>			<p>NZTA commonly submit on District Plans asking for sound insulation rules to be included for all significant roads. We consider this appropriate, and suggest that the rules should apply to all areas of the district, not just the North Woodend Outline Development Plan Area. NZTA have previously adopted 80 metres for this type of rule. Our experience of traffic noise levels shows that the rules are only required for roads within the District which are currently classified as arterial or strategic.</p> <p>Proposed wording follows that developed by NZTA on other District Plan projects, simplified to fit with the Waimakariri District.</p>
<p>Dwellings within <del>100</del> <u>80</u> metres of <u>any road classified as Arterial or Strategic in Chapter ZZZ State Highway No. 1 within the North Woodend Outline Development Area, or within 80 metres of any rail designation.</u></p> <p>Activity status: P</p> <p>Where this activity complies with the following rule requirements:</p> <p>a. Activity Standards:</p>	Activity status when compliance not achieved: RD		

Suggested Wording	Comments
<p>i. <u>Any dwelling shall be designed and constructed to achieve a minimum external to internal noise reduction of 30 dB <math>D_{tr,2m,nT,w} + C_{tr}</math> to any habitable space; or</u></p> <p>ii. <u>Be designed and constructed to meet the following indoor design sound levels:</u></p> <ul style="list-style-type: none"> <li>• <u>Road traffic noise within habitable spaces – 40 dB <math>L_{Aeq(24hr)}</math></u></li> <li>• <u>Rail noise inside bedrooms between 22:00 hours and 07:00 hours – 35 dB <math>L_{Aeq(1h)}</math></u></li> <li>• <u>Rail noise inside habitable spaces excluding bedrooms – 40 dB <math>L_{Aeq(1h)}</math>;</u></li> </ul> <p>iii. <u>The design for road traffic noise shall take into account future permitted use of the road, either by the addition of 2 dB to predicted sound levels or based on forecast traffic in 20 years' time.</u></p> <p>iv. <u>Rail noise shall be deemed to be 70 dB <math>L_{Aeq(1h)}</math> at 12 metres from the edge of the track, and shall be deemed to reduce at a rate of 3 dB per doubling of distance up to 40 metres and 6 dB per doubling of distance beyond 40 metre</u></p> <p>v. <u>The indoor design sound level shall be achieved at the same time as the ventilation requirements of the New Zealand Building Code. If windows are</u></p>	<p>The term dwelling should be taken to mean all sensitive activities.</p>

Suggested Wording		Comments
<u>required to be closed to achieve the indoor design sound levels then an alternative means of ventilation shall be required within bedrooms.</u>		
<p><b>6.6.8 Farming and agricultural activity.</b></p> <p>Activity status: P</p> <p>Where this activity complies with the following requirements:</p> <p>i. The activity is intermittent or temporary in nature, and is mobile during its normal use.</p>		<p>Council may wish to consider whether there is a need to also state that the activity shall be undertaken in a rural zone.</p> <p>We have not specifically considered what the status of this activity should be if compliance with the standards is not achieved.</p> <p>The proposed wording of this rule needs to be carefully considered, to ensure that it doesn't create loopholes.</p>
<p><b>6.6.9 Frost Control Fans.</b></p> <p>Activity status: C</p> <p>Where this activity complies with the following requirements:</p> <p>i. The resultant level of noise predicted or measured at any point within the notional boundary of any dwelling on a separate lot under different ownership when the frost control fan or fans are assessed either on their own or in combination with the</p>	Activity status when compliance is not achieved: RD	<p>Text is a simplified version of rules developed by Marshall Day Acoustics for Hurunui District. Given that the Waimakariri District doesn't currently have any frost fans, we consider a simple rule to be appropriate.</p> <p>Another possible format for this rule would be to have:</p> <ol style="list-style-type: none"> <li>1. A permitted standard, which doesn't mention noise levels at all, only the other items listed,</li> <li>2. A controlled standard, subject to a report demonstrating compliance with the 55 dB noise limit, to be applied when the setback distances in the permitted standard aren't achieved, and</li> <li>3. A discretionary standard for noise levels exceeding 55 dB but not exceeding 60 dB.</li> </ol>



Suggested Wording	Comments
<p>cumulative sound from all frost control fans operating simultaneously within 1 km of the dwelling, shall not exceed 55 dB LAeq (10min);</p> <p>ii. Compliance with this rule shall be demonstrated by an acoustic report from a suitable qualified acoustic consultant.</p> <p>iii. Frost control fans shall not be located within 300 m of a dwelling on a separate lot under different ownership, nor within 1000 m of a residential zone.</p> <p>iv. Frost control fans shall only be operated for protection of crops from frost from bud burst to harvest.</p> <p>v. Frost control fans shall only be operated in wind speeds not exceeding 8 km/hr and when the local air temperature is less than or equal to 2°C. The thermometer used to measure the air temperature must be located at a height relevant to the height above ground of the buds on the plants being protected;</p> <p>vi. Operation for maintenance purposes shall only occur between the hours of 7.30am and 6.00pm weekdays.</p>	<p>In all cases, we consider it important that controls on when and how fans can be used should apply. We would be happy to discuss this further with Council if required.</p>
<p><b>6.6.10 Warning devices used by any emergency service.</b></p> <p>Activity status: P</p>	<p>As per draft chapter.</p>

Suggested Wording		Comments
<p><b>6.6.11 Commercial dog boarding kennels.</b></p> <p>Activity status: D</p>		<p>In our experience, noise from barking dogs must be much lower in level than the general noise standards to avoid adverse effects. In addition, kennels need to be designed and managed in a manner that minimises how frequently dogs bark. We therefore suggest that all commercial dog kennels should be required to obtain a resource consent.</p> <p>We imagine that commercial kennels wouldn't be acceptable in a residential zone. However, we don't think it is necessary to explicitly state this, because a detailed noise assessment would quickly show that it is unlikely to achieve appropriate noise levels.</p>
<p><b>6.6.12 Gun Clubs.</b></p> <p>Activity status: D</p>		<p>As with kennels, gunshot noise needs to be controlled to levels much lower than the general noise standards. We consider the simplest way to address these is to mandate a consent process.</p> <p>We recommend that Council consider broadening the heading. "Gun Clubs" is a very specific term which may not encompass all facilities. Other plans have use "shooting range", but even this may not be sufficiently broad.</p>
<p><b>6.6.13 Motorised vehicle racing, events or other recreational uses.</b></p> <p>Activity status: RD</p>		<p>Council should carefully consider the title of this exception, and/or provide a definition of what is included in this rule. We consider it important to ensure that the rule explicitly captures activities such as commercial jet boating operations, commercial off-road adventure businesses, and structured motorbike tracks.</p> <p>The draft temporary activities chapter includes a definition of motorised vehicle events. Our comments on this definition are:</p> <ol style="list-style-type: none"> <li>1. We do not particularly like the term "event", as there is a risk that informal motorised vehicle activities are not considered to be "events".</li> <li>2. We would prefer to see additional examples added, such as watercraft and motorbikes.</li> </ol>

Suggested Wording	Comments
	<p>3. We do not agree with excluding scaled-down versions of vehicles. We understand that there is increasing interest in petrol powered remote-controlled vehicles, and these have the potential to result in significant noise effects.</p>
<p><b>6.6.14 Temporary events</b> (other than temporary military training activities)</p> <p>Activity status: P</p> <p>Where this activity complies with the following rule requirements:</p> <p>a. Activity Standards:</p> <p>Where located at a location not listed in Table # below, shall:</p> <p>i. Be located no closer than 25 metres from any residential unit.</p> <p>ii. <u>Occur only between 0900 and 2200 hours on any day.</u></p> <p>iii. restrict sound amplified activities to a total duration not exceeding 4 hours per day on any sites which the temporary activity is located, including all sound checks</p> <p>iii. For sound amplified activities, <del>either:</del></p> <p>i. have a total amplified power not exceeding 500 Watts RMS;<del>or</del></p>	<p>Activity status when compliance is not achieved: <del>RD</del> <u>C</u></p> <p><u>Where this activity complies with the following rule requirements:</u></p> <p>i. <u>Occur only between 0900 and 2200 hours on any day.</u></p> <p>ii. <u>Restrict sound amplified activities to a total duration not exceeding 4 hours per day on any sites which the temporary activity is located, including all sound checks</u></p> <p>iii. <u>For sound amplified activities, result in a sound level not exceeding 65 dB LAeq at any residential unit, to be evidenced by a report from a suitably qualified acoustic consultant.</u></p> <p>Activity status when compliance is not achieved: RD</p>
	<p>Text from draft chapter.</p> <p>Some of the rules suggested in this section are similar to draft wording in the temporary activities chapter. It may be possible to merge the two sets of rules into one. We can see some benefits in moving these rules to the temporary activities chapter, and only leaving a cross reference in this chapter. We would be happy to discuss this further with Council if required.</p> <p>The suggested wording follows the Christchurch Plan, and was developed by Marshall Day Acoustics. The aim of the permitted standard is to allow a layperson to determine whether their proposal is permitted, with no need to engage a specialist to determine what noise level will result. Our view is therefore that the permitted standard should end with the requirement to limit amplified power to 500 Watts. The requirement to meet 65 dB then forms a controlled activity standard, provided that all other items were still achieved. An additional RD status may be warranted for situations where sound levels exceed 65 dB.</p> <p>We have considered adding separate noise standards for specific locations in the district. Our current view is that this could result in a layer of complexity that is not warranted. We expect this rule to generally work for most sites. As an example, we understand that recent noise monitoring by Council staff at an event in Victoria Park showed noise levels of 55—60 dB, which comply with this standard.</p>

Suggested Wording		Comments
<p>ii. _____ result in a sound level not exceeding 65 dB <math>L_{Aeq}</math> at any residential unit, to be evidenced by a report from a suitably qualified acoustic consultant.</p> <p>Advice note: Standards of the Temporary Activities section also apply.</p>		
<p><b>6.6.15 Blasting</b></p> <p>Activity status: D</p>		<p>Our understanding is that blasting is relatively uncommon in the Waimakariri district because many quarries only extract river gravels. As such, we anticipate that there will be little demand from applicants wishing to undertake blasting work, and hence we suggest that a consent process would be simpler than trying to develop rules without a context.</p>
<p><b>6.6.16 Bedrooms within Commercial Zones</b></p> <p><u>Activity status: RD</u></p> <p><u>Where the activity meets the following requirements:</u></p> <p><del>Acoustic Insulation—All Commercial Zones except the Commercial Large Format Retail zone and Specific Purpose (Business) Zone</del></p> <p>Any bedroom <del>that forms part of a Residential or Traveller Accommodation activity</del> within a commercial zone, must be designed and constructed to achieve an external to internal noise reduction of not less than 35 dB <math>D_{tr,2m,T,w}+C_{tr}</math>.</p> <p>Advice note XXX-AN1</p>	<p>Status when compliance is not achieved: D [or NC]</p>	<p>Text taken from Council draft, received by email 18 December 2018.</p> <p>We recommend that bedrooms within Commercial zones are restricted discretionary, to ensure that there is a trigger for submitting the required acoustic assessment. When compliance isn't achieved, we suggest discretionary or non-complying because we cannot imagine any scenario under which lesser acoustic performance would be acceptable.</p> <p>In our view, this rule needs to be contained within the noise chapter, because acoustic consultants are unlikely to notice it when it is hidden in the commercial chapter. It would be appropriate to clearly cross-reference this rule within the commercial chapter.</p> <p>We are satisfied that the required noise reduction is appropriate for most general commercial areas. However, it would not be adequate for residential development in an area where there are late night bars/entertainment venues.</p>

Suggested Wording		Comments
<p><del>For development subject to XXX-BFSS Acoustic Insulation— <math>D_{tr,2m,nT,w} + C_{tr}</math> means the Weighted Standardised Level Difference of the external building envelope (including windows, walls, roof/ceilings and floors where appropriate) and is a measure of the reduction in sound level from outside to inside a building, assessed in accordance with ISO 140-5:1998 Acoustics – Measurement of sound insulation in buildings and of building elements – Part 5 and ISO 717-1:2013 Acoustics – Rating of sound insulation in buildings and of building elements – Part 1. <math>D_{tr,2m,nT,w} + C_{tr}</math> is also known as the external sound insulation level.</del></p> <p><u>The indoor design sound level shall be achieved at the same time as the ventilation requirements of the New Zealand Building Code. If windows are required to be closed to achieve the indoor design sound levels then an alternative means of ventilation shall be required within bedrooms.</u></p> <p><del>Where bedrooms have opening windows or doors in the external walls, compliance only needs to be achieved when the windows and doors closed and does not require the installation of mechanical ventilation.</del></p>		<p>We do not like the “...except the commercial large format retail zone and specific purpose (business) zone...” wording, because the implication is that bedrooms could be built in these zones without any sound insulation.</p> <p>The term <math>D_{tr,2m,nT,w} + C_{tr}</math> is used elsewhere in this chapter in relation to road and rail noise. As such, this definition may be better placed in a more general location.</p> <p>In our view, it is essential to achieve appropriate ventilation in bedrooms, otherwise residents may be forced to choose between quiet and comfortable. As such, we have suggested the same wording as proposed for the road/rail noise clause.</p>
<p><b>6.6.17 Wind Turbines</b></p>	<p><u>Activity status when compliance is not achieved: D</u></p>	<p>It is likely that the only instances where noise from wind turbines exceeds the requirements of the Standard are large scale wind farms,</p>

Suggested Wording		Comments
<p>Activity status: P</p> <p>Where this activity complies with the following rule requirements:</p> <p>i. The turbine has a rated generation capacity of no greater than 15 kW.</p> <p>li The turbine is located no closer than 500 metres to the notional boundary of any dwelling.</p>	<p>Where the activity complies with the following requirements:</p> <p>i. Noise from wind turbines is assessed in accordance with NZS 6808:2010 Acoustics - Wind farm noise and complies with the limits given in that standard.</p>	<p>and a discretionary consent may be required for these applications for reasons other than noise.</p> <p>The 500 metre setback from dwellings is based on typical small turbines achieving noise levels less than 40 dB L<sub>Aeq</sub>.</p>
<p><b>6.6.18 Emergency Generators</b></p> <p>Activity status: P</p> <p>Where this activity complies with the following rule requirements:</p> <p>i. The generator is only used for electricity generation in cases of emergency.</p> <p>ii. Routine testing is only undertaken between the hours of 0900 and 1700.</p> <p>iii. Noise from the generator does not exceed the daytime (0700—2200) noise standard at any site receiving noise.</p>		<p>It may be appropriate to have RD status where the noise standards are exceeded because there will be situations where there are no nearby sensitive receivers and hence an argument can be made for higher noise levels.</p>

Suggested Wording	Comments
<p><b>Matters of Discretion (Noise)</b></p> <p>a. The length of time noise is emitted, the time of day the noise is emitted, the level and <del>total</del> character of the noise, and the likely disturbance this may cause <u>in the receiving environment</u>;</p> <p>b. <del>In respect of earthquake recovery rebuilding activities within Residential Zones, the level, duration and timing of ground borne vibration and the likely disturbance or structural impact this may cause;</del></p> <p>c. <del>Within residential zones, the control of noise and vibration generated as a result of earthquake recovery rebuilding activities (including from traffic movements) in regard to creation of nuisance, damage to structures, effects on amenity values and the health and safety of people on neighbouring sites and zones.</del></p> <p>a. <del>_____ The nature and location of nearby activities and the effects they may experience;</del></p> <p>b. <del>_____ Effects on the characteristics of any zone receiving the noise or vibration;</del></p> <p>c. <del>_____ Effects on the zone within which the noise or vibration is generated;</del></p> <p>d. <del>_____ Effectiveness of any mitigation measures.</del></p> <p>b. <u>_____ Any effects on the health or well-being of persons living or working in the vicinity.</u></p> <p>c. <u>_____ Any proposals made by the applicant to reduce noise generation, including:</u></p> <p>_____ <u>- reduction of noise at source;</u></p> <p>_____ <u>- alternative techniques or machinery which may be available;</u></p> <p>_____ <u>- insulation or enclosure of machinery;</u></p> <p>_____ <u>- mounding or screen fencing/walls;</u></p> <p>_____ <u>- hours of operation;</u></p> <p>d. <u>_____ The adequacy of measures to address the adverse effects of noise on the natural character of the coastal environment.</u></p> <p>e. <u>_____ The extent to which achieving the standard is appropriate based on the characteristics of the existing noise environment.</u></p>	<p>Initial text taken from draft chapter, and includes items previously shown under 2 separate sub-headings.</p> <p>There are characteristics of noise other than tonality which need to be considered.</p> <p>As previously discussed, we propose that all noise rules relating to earthquake recovery activities be deleted, and these two clauses are therefore redundant.</p> <p>We consider that the first of these items is encompassed within item a. above, and subsequent items are better dealt with using different terminology as suggested. Suggested wording broadly follows the Christchurch Plan.</p> <p>We note that the draft temporary activities chapter includes its own list of matters of discretion for noise. We would prefer to see that chapter adopt this same list, either by repeating it, or by cross-referencing this chapter.</p>

Suggested Wording	Comments
<p>f. <u>Any relevant standards, codes of practice or assessment methods based on sound acoustic principles, including those which address the reasonableness of the noise in terms of community health and amenity and/or sleep protection.</u></p>	