Section 32 Evaluation Report

Noise

PROPOSED Waitaki District Plan

Waitaki
DISTRICT COUNCIL
TE KAUNIHERA Ā ROHE O WAITAKI

Contents

1.0 Introduction

1.1 Overview

This section 32 report provides an evaluation of the objectives and provisions of the Noise chapter under the Proposed District Plan as required under section 32 of the Resource Management Act 1991 (RMA).

The Proposed District Plan provisions respond to technical matters or policy shifts that have arisen from national direction, review of the Operative District Plan, and consultation.

This section 32 evaluation report should be read in conjunction with the section 32 Overview Report, which also includes an overview of the section 32 legislative requirements, the methodology and approach to the evaluations, analysis of higher order policy documents, and the process that the Council has undertaken to date through its District Plan Review, including consultation and engagement.

1.2 The Proposed Plan Chapter

Most land use activities generate some degree of noise and can affect the health, safety and amenity of the District's residents and visitors. Excessive noise can detract from the character and amenity values associated with the local environment. Noise generating activities can also be restricted by sensitive activities locating close by that seek a higher level of amenity (reverse sensitivity).

The purpose of the Noise chapter is to manage the adverse effects of noise and vibration to ensure that they do not compromise amenity and safety values of individuals and communities. The Noise chapter also seeks to manage sensitive and incompatible activities located within close proximity to noise generating activities to ensure reverse sensitivity does not occur.

2.0 Strategic Direction

The objectives from the Strategic Objectives chapter of the Proposed District Plan that are most relevant to the Noise Chapter are:

- SD-CHI-O1 Character and Identity: Waitaki's character, historic and cultural heritage, and identity is recognised and protected throughout the District.
- SD-IEE-O1 Infrastructure: The significant benefits and local, regional and national importance of the use and development of regionally and nationally significant infrastructure are recognised and provided for.
- SD-RA-O1 Productive rural environments: Rural productive opportunities are enabled in the rural environment to recognise and sustain the significant contribution of primary production and rural industry activities to the social, cultural and economic well-being of the District.
- SD-UFD-O4 The urban environment: The District has urban environments and rural settlements that are liveable, connected, accessible, safe and well-designed for the community to live, work and play.

3.0 Statutory Context

The section 32 Overview Report provides an assessment of the statutory context for the Proposed District Plan. The following national direction has relevance to the Noise chapter

3.1 Resource Management Act 1991

In carrying out a Section 32 analysis, an evaluation is required to examine the extent to which the objectives of the proposal being evaluated are the most appropriate way to achieve the purpose of the RMA. Section 5 sets out the purpose of the RMA, which is to promote the sustainable management of natural and physical resources. Sustainable management means:

"…managing the use, development, and protection of natural and physical resources to enable people and communities to provide for their social, economic and cultural wellbeing and for their health and safety, while - (a)sustaining the potential of natural and physical resources (excluding minerals) to meet the reasonably foreseeable needs of future generations; and (b)safeguarding the life-supporting capacity of air, water, soil, and ecosystems; and (c) avoiding, remedying, or mitigating any adverse effects of activities on the environment'".

In achieving this purpose, authorities also need to:

- Recognise and provide for the matters of national importance identified in Section 6;
- Have particular regard to the range of other matters referred to in Section 7; and
- Take into account the principles of the Treaty of Waitangi/Te Tiriti o Waitangi in Section 8.

There are no section 6 matters that are considered relevant to this topic.

The section 7 matters that are considered relevant to the Noise chapter are:

Table 1: Relevant section 7 matters.

Section	Relevant Matter
s7(b)	*the efficient use and development of natural and physical resources* The location of sensitive or incompatible activities in close proximity to noise generating activities has the potential to create reverse sensitivity effects and undermine the efficient use and development of physical resources.
s7(c)	*the maintenance and enhancement of amenity values* Activities which generate noise and vibration effects have the potential to adversely affect amenity values, particularly where a higher standard of amenity value are anticipated under the Proposed District Plan.
s7(f)	*maintenance and enhancement of the quality of the environment* Activities which generate noise and vibration effects have the potential to adversely affect the quality of the environment

Section 8 requires Council to take into account the principles of the Treaty of Waitangi in managing the use, development, and protection of natural and physical resources. Council has undertaken

significant engagement with its mana whenua partners. Details of this engagement is outlined in the Section 32 Report for Strategic Direction.

Section 16 outlines a duty to avoid unreasonable noise including every occupier of land (including any premises and any coastal marine area), and every person carrying out an activity in, on, or under a water body or the coastal marine area, shall adopt the best practicable option to ensure that the emission of noise from that land or water does not exceed a reasonable level.

3.2 National Direction

3.2.1 National Policy Statements

There are no National Policy Statements relevant to this topic.

3.2.2 National Environmental Standards

3.2.3 Resource Management (National Environmental Standard for Electricity Transmission Activities) Regulations 2009 (NESET)

The purpose of the NESET is to:

- minimise the cost to councils of implementing the NPSET.
- ensure planning requirements are nationally consistent and provide adequately for maintenance and upgrading of transmission lines to achieve the intention of the NPSET.
- minimise RMA processing costs and delays.

Clause 37 of the NES has a permitted activity rule for a construction activity relating to an existing transmission line if both of the conditions in subclauses (2) and (3) are complied with.

Conditions

(2) The noise from the construction activity must comply with New Zealand Standard NZS 6803:1999 Acoustics—Construction Noise.

(3) The vibrations from the construction activity must comply with the peak particle velocity limits in table 1 of German Standard DIN 4150–3:1999 Structural Vibration—Effects of Vibration on Structures.

These provisions override any rules in the Proposed District Plan for the regulated activity described in National Environment Standard

3.2.4 Resource Management (National Environmental Standards for Commercial Forestry) Amendment Regulations 2023

These regulations have detailed permitted activities for commercial forestry activities that generate noise with reference to NZS6801, NZS6802 and ISO 4866 (for vibrations), and definitions for noise sensitive activities. There are also maximum noise level limits under the permitted rule. Activities that cannot meet the permitted activity conditions are a restricted discretionary activity.

These provisions override any rules in the Proposed District Plan for the regulated activity described in National Environment Standard.

3.2.5 National Planning Standards

Section 7 of the National Planning Standards require that where the following matters are addressed, they must be included in the Noise chapter in Part 2 – District-Wide Matters of the District Plan:

- Noise provisions (including noise limits) for zones, receiving environments or other spatially defined area.
- Requirements for common significant noise generating activities.
- Sound insulation requirements for noise sensitive activities and limits to the location of those activities relative to noise generating activities.
- Any noise-related metrics and noise measurement methods must be consistent with the Noise and vibrations metrics Standard 1 set out in section 15 of the National Planning Standards.
- The Noise chapter must include cross-references to any relevant noise provisions under the Energy, Infrastructure, and Transport heading.

Section 15 of the National Planning Standards lists several New Zealand Standards that rules for noise must be in accordance with:

- New Zealand Standard 6801:2008 Acoustics – Measurement of environmental sound;
- New Zealand Standard 6802:2008 Acoustics – Environmental noise;
- New Zealand Standard 6803:1999 Acoustics – Construction noise;
- New Zealand Standard 6805:1992 Airport noise management and land use planning – measurement only;
- New Zealand Standard 6806:2010 Acoustics – Road-traffic noise – New and altered roads;
- New Zealand Standard 6807:1994 – Noise Management and Land Use Planning for Helicopter Landing Areas- excluding 4.3 Averaging; and
- New Zealand Standard 6808:2010 Acoustics – Wind farm noise New Zealand Standard 6809:1999 Acoustics – Port noise management and land use planning.

3.3 Iwi Planning Documents

There are two Iwi Management Plans (IMP) relevant to the Proposed District Plan:

- Kai Tahu ki Otago Natural Resource Management Plan 2005; and
- Waitaki Iwi Management Plan 2019.

The following Iwi Management Plans and associated provisions are considered relevant to this topic:

Iwi Management Plan	Relevant Provisions
Kai Tahu ki Otago Natural Resource Management Plan 2005	*2.4 General objectives* *i. The rakätirataka and kaitiakitaka of Käi Tahu ki Otago is recognised and supported.*

	ii. Ki Uta Ki Tai management of natural resources is adopted within the Otago region. *iii. The mana of Käi Tahu ki Otago is upheld through the management of natural, physical and historic resources in the Otago Region.*

The requirement to manage physical resources in the Iwi Management Plan have been identified as being directly related to the management of noise effects in the District.

Further details on the IMP are included in the section 32 Overview Report.

3.4 Regional Direction

3.4.1 Regional Policy Statement

Under sections 75(3) and 74(2)(a)(i) of the RMA the proposed District Plan needs to give effect to the Otago Regional Policy Statement 2019 and the Canterbury Regional Policy Statement 2013. The Proposed District Plan must also have regard to the Otago Regional Policy Statement 2023 (Decisions Version), where the provisions that are relevant to the Noise chapter are subject to appeal and cannot be treated as operative.

These Regional Policy Statements (RPS) set out the overall strategic statutory framework to achieve integrated management of natural and physical resources.

The provisions of the RPS seek to manage the development of physical resource to promote the social, economic, and cultural wellbeing for people and communities. Overall, the objectives and provisions of the Noise chapter are consistent with the objectives and resource management outcomes identified within the RPS'.

3.4.1.1 Otago Regional Policy Statement 2019

The objectives of the Otago RPS 2019 of relevance to the Noise chapter are:

- Objective 1.1: Otago's resources are used sustainably to promote economic, social, and cultural wellbeing for its people and communities

3.4.1.2 Canterbury Regional Policy Statement 2013

The objectives of the Canterbury RPS 2013 of relevance to the Noise chapter are:

- Objective 5.2.1 Location, design and function of development: Development is located and designed so that it functions in a way that:

  …

  1) Enables people and communities, including future generations, to provide for their social, economic and cultural well-being and health and safety; and which:

     a. maintains, and where appropriate, enhances the overall quality of the natural environment of the Canterbury region

     b. …

3.4.1.3 Otago Regional Policy Statement 2021 (Decisions Version)

The objectives of the Otago RPS 2021 (Decisions Version) of relevance to the Noise chapter are:

- UFD-O1 Development of urban areas: The development and change of Otago's urban areas occurs in a strategic and coordinated way, which:
    1) Accommodates the diverse and changing needs and preferences of Otago's people and communities, now and in the future,
    2) Integrates effectively with surrounding urban areas and rural areas,
    3) Results in a consolidated, well-connected and well-designed urban form which is integrated with infrastructure, and
    4) Supports climate change adaptation and climate change mitigation.

3.5 Other Legislation

From November 2022 it became a legal requirement under section 74(2)(d) and (e) of the RMA, to have regard to the Emissions Reduction Plan (ERP) and National Adaptation Plan (NAP) when preparing or changing a district plan. This requirement is to ensure that planning nationwide is in line with New Zealand's long-term climate strategies and goals. The ERP and NAP are requirements under the Climate Change Response Act 2002 and are not regulations in themselves; they set out the Government's plans to meet Aotearoa New Zealand's climate goals.

'Having regard to' a matter means giving the matter genuine attention and thought before deciding whether, or how, to reflect that matter in planning decisions. 'Having regard to' usually means the decision maker must give reasons for how they considered the matter.

3.5.1 National Adaptation Plan

The National Adaptation Plan is not relevant to this topic.

3.5.2 Emissions Reduction Plan

The Emission Reduction Plan is not relevant to this topic.

4.0 Resource Management Issues

The issues set out below have been identified for the Noise chapter. These issues were identified through:

- The need to respond to updated technical analysis;
- The need to respond to national direction;
- A review of the Operative District Plan provisions; and
- Consultation and engagement.

4.1 Analysis of the Operative District Plan Provisions

To determine the effectiveness and efficiency of the current provisions in the Operative Waitaki District Plan, a review of the objectives, policies, rules and standards identified was undertaken. A summary of the key findings from this review are listed below:

- There is no standalone chapter for noise, meaning there are no specific objectives, policies and assessment matters to guide the assessment of effects;
- The maximum noise level standards in each zone are generally still appropriate, but some refinements are necessary to achieve consistency with current best practice;
- The technical noise standards and references are out of date;
- There are no provisions around vibration (relevant for construction and demolition activities);
- There is no direction around internalising noise effects where possible;
- There is limited direction around managing reverse sensitivity effects from noise
- Some activities are exempt from noise provisions where controls may be necessary.

4.2 Resource Management Issues for the Noise Chapter

The following key resource management issues have been identified for the Noise chapter:

(1) Issue 1: Management of noise and vibration, including from construction activities and temporary activities, to protect public health and safety, the well-being of people and communities, and amenity values.

(2) Issue 2: The management of sensitive activities to minimise conflict with noise generating activities and potential reverse sensitivity effects.

5.0 Evidence Base

5.1 Technical Evidence

The proposed provisions have been informed by a technical review undertaken by Marshall Day Acoustics and included at Appendix 1.

The technical review includes a number of recommendations in relation to the following key matters:

- General noise limits and best practice measures for measuring noise;
- The management of airport and mining activities;
- The management of temporary activities;
- The management of sensitive activities and requirements to achieve acoustic attenuation; and
- The inclusion of NOISE-APP1, which identifies acceptable construction solutions.

5.2 Consultation and Engagement

This section sets out the consultation and engagement undertaken for the development of the Proposed District Plan most relevant to the Noise chapter. Further details on all consultation and engagement undertaken for the development of the Proposed Plan are included in the section 32 Overview Report.

5.2.1 Public Engagement – Feedback on Discussion Document

Public engagement on the District Plan Review Discussion Document was undertaken between June and August 2019. The following feedback received from the general public and stakeholders on key resource management issues and possible options to address these is relevant to the Noise chapter:

- Meet industry requirements for ongoing operations e.g. Macraes, Network Waitaki.
- Provide for and manage rural production activities and reverse sensitivity effects of surrounding activities appropriately (bird scarers, frost fans, irrigation systems, harvesting).
- Recognise and manage noise generated from temporary activities and recreational boating.
- Recognise noise generated from roads.
- Site new noisy activities appropriately to minimise nuisance and reverse sensitivity effects.
- Manage construction noise appropriately.
- Manage noise effects from temporary activities appropriately.

5.2.2 Public Consultation – Draft Waitaki District Plan

Public consultation on the Draft Waitaki District Plan was undertaken between June and August 2022. The feedback received on the TRAN chapter has been summarised into the following key issues:

- Provide for additional exemptions from noise provisions, including agricultural aircraft movements.
- General support for noise controls and overall provisions.
- Clarification on intent of the objectives.
- Ensuring noise standards do not increase risk of reverse sensitivity issues for existing primary production activities and other industries.
- Additional standards where noise sensitive activities are within the rail corridor.
- Increased noise measurements and requirements to be added to better protect public health and amenity.
- Relaxation of some noise controls for General Rural Zone.
- Exclusion of frost fans and audible bird scarers from noise controls.

Further details on consultation and engagement undertaken for the development of the Proposed Plan are included in the section 32 Overview Report.

6.0 Summary of Proposed Approach

The proposed noise chapter seeks to manage the potential adverse effects of noise and vibration on the health and safety of people and communities and amenity values anticipated within each zone. The Noise chapter also seeks to manage the location of activities sensitive to noise in close

proximity to noise generating activities such as the state highway network to ensure reverse sensitivity does not occur.

In summary, the proposed provisions of the Noise chapter comprise:

- Three objectives and six policies which seek to manage the adverse effects of noise and vibration generating activities, including construction and temporary activities, and reverse sensitivity effects to ensure that they do not compromise the amenity and safety values of individuals and communities.
- Rules and associated standards that seek to ensure there are acceptable noise standards and noise mitigation measures in place to manage noise and vibration noise effectively.
- A rule and associated standards which require acoustic attenuation and ventilation for sensitive activities located within close proximity to noise generating activities.
- A number of new definitions are proposed, including aircraft, fixed (stationary) noise sources (other than firing of weapons and explosives), noise, noise rating level, noise sensitive activity, notional boundary, LA90, LAeq, LAF(max), and temporary Military Activity training to ensure that definitions are aligned with the national planning template and best practice.
- Exemptions from the noise standards are proposed for a range of activities under NOISE-S1.

7.0 Appropriateness of Proposed Objectives – section 32(1)(a)

This section evaluates the proposed objectives of the Noise chapter to examine the extent to which they are the most appropriate way to achieve the purpose of the RMA as required under section 32(1)(a) of the RMA.

7.1 Noise Chapter

The objectives in this chapter are:

Objective	
NOISE-O1: Noise generation	Activities generating noise and vibration are compatible with the character and amenity values of the zone and surrounding receiving environment.
NOISE-O2: Reverse sensitivity	New sensitive activities are designed and located to minimise conflict with, and reverse sensitivity effects on existing and lawfully established noise generating activities.
NOISE-O3: Construction activities and temporary activities noise	Construction activities and temporary activities that generate noise are enabled while ensuring that any adverse effects are minimised.

7.2 Alignment with Strategic Objectives

The proposed objectives for the Noise chapter achieve the relevant Strategic Objectives, and align with and give effect to the relevant strategic objectives as follows:

	SD-CHI-O1	SD-RA-O1	SD-IEE-O1	SD-UFD-O4
NOISE-O1	✓	✓		✓
NOISE-O2			✓	✓
NOISE-O3	✓			✓

7.3 Evaluation of Proposed Objectives

Section 32(1)(a) of the RMA requires that the evaluation report examine the extent to which the objectives of the proposal are the most appropriate way to achieve the purpose of the RMA. This evaluation is set out at Table 2 below.

Table 2: Evaluation of proposed objectives.

Proposed Objectives	Summary of Evaluation
NOISE-O1: Noise generation	This objective is considered the most appropriate way to achieve the purpose of the RMA because: It will maintain the quality of the built environment within zones to meet the needs of the community to provide for their social, economic, and cultural well-being and provide for their healthy and safety, and ensure that the potential adverse effects of noise can be avoided, remedied, or mitigated in accordance with section 5(2); and • It seeks to maintain the character and amenity values of zones and surrounding environment in accordance with sections 7(c) and 7(f).
NOISE-O2: Reverse sensitivity	This objective is considered the most appropriate way to achieve the purpose of the RMA because: • It recognises the need to enable noise generating activities and provide for the efficient use and development of physical resources in accordance with section 7(b); and • By requiring new sensitive activities to be located and designed to avoid reverse sensitivity effects, this objective will ensure that these activities are also designed to protect the health and safety of people, in accordance with section 5(2).
NOISE-O3: Construction activities and temporary activities noise	This objective is considered the most appropriate way to achieve the purpose of the RMA because: • By enabling construction activities and temporary activities, this objective will enable people and communities to provide

	for their social and economic well-being in accordance with section 5(2); and • By requiring construction activities and temporary activities to minimise adverse effects, this objective will provide for the healthy and safety of people and communities in accordance with section 5(2), and maintain amenity values in accordance with section 7(c).
Alternatives Considered	**Summary of Evaluation**
Status quo (Operative District Plan)	The objectives of the Operative District Plan are contained in Part 2 Issues, Objectives and Policies, and do not include objectives which specifically manage noise within the District. It is therefore considered that retaining the status quo under the Operative District Plan is not efficient or effective.

7.4 Summary of Objectives Evaluation

Overall, and according to the evaluation above, the proposed objectives of the Noise chapter are considered to be the most appropriate way to achieve the purpose of the RMA.

8.0 Evaluation of Options for Provisions – section 32(1)(b)

8.1 Scale and Significance

Under section 32(1)(c) of the RMA, this evaluation report needs to contain a level of detail that corresponds to the scale and significance of the environmental, economic, social, and cultural effects that are anticipated from the implementation of the proposal. This evaluation assesses the scale and significance of the Noise chapter provisions to determine the level of analysis required.

Table 3: Evaluation of scale and significance

	Assessment		
	Low	Medium	High
Degree of change from the Operative District Plan		X	
Effects on matters of national importance (s6 RMA)	X		
Scale of effects – geographically (local, district wide, regional, national)		X	
Scale of effects on people (how many will be affected – single landowners, multiple landowners, the public generally, future generations)	X		
Scale of effects on those with specific interests e.g. takata whenua	X		
Degree of policy risk – does it involve effects that have been considered implicitly or explicitly by higher order documents? Does it involve effects addressed by other standards/commonly accepted best practice?	X		
Likelihood of increased costs or restrictions on individuals, businesses, or communities	X		

Overall assessment of scale and significance	Low		

Based on this assessment the scale and significance of the proposed provisions are considered to be *low* for the following reasons:

- Involve relatively minor changes to the current provisions.
- Gives effect to s7(b), s7(c) and s7(f) of the RMA and the National Planning Standards, as well as regional policy statements.
- The noise provisions are applicable throughout the district and therefore affect a wide range of landowners and operators. However, noise levels are reflective of those in the operative district plan, therefore the impact on owners and operators will be largely the same as those currently applying. The increased provisions aimed at managing potential reverse sensitivity will only affect new or altered sensitive activities in specific areas.
- Are unlikely to have significant impacts to different sectors of the community.

Consequently, a *high level* evaluation of these provisions has been identified as appropriate for the purposes of this report.

8.2 Quantifications of Benefits and Costs

Section 32(2)(b) of the RMA requires that, where practicable, the benefits and costs of a proposal are to be quantified.

Specific quantification of all benefits and costs associated with the Proposed District Plan is considered neither practicable nor readily available. Given the assessment of the scale and significance of the proposed changes (Table 3) it is considered that quantifying costs and benefits would add significant time and cost to the s32 evaluation process, therefore exact quantification of the benefits and costs in this report was not considered necessary, beneficial or practicable. In general, a qualitative assessment of costs and benefits associated with the Proposed District Plan is considered sufficient, and this is provided for in the assessment of policies, rules and other methods contained in section 8.2 of this report.

8.3 Evaluation

This section evaluates whether the proposed provisions within the Noise chapter are the most appropriate to achieve the proposed objectives as required under s32(1)(b) of the RMA.

The, policies, and provisions of the Noise chapter address the objectives and key issues of concern. For the purpose of the evaluation required under s32(1)(b) of the RMA, the provisions have been bundled into the following themes:

(1) Theme 1: Provide for noise generating activities in appropriate locations, while managing noise and vibration generating effects.

(2) Theme 2: Management of sensitive activities and reverse sensitivity effects.

The evaluation in accordance with s32(1)(b) of the RMA is set out below:

Table 4: Noise chapter: Theme 1 evaluation of options.

<table>
<tr><th colspan="2">Theme 1: Provide for noise generating activities in appropriate locations, while managing noise and vibration generating effects.</th></tr>
<tr><th colspan="2">Provisions</th></tr>
<tr><td colspan="2">The relevant objectives are:
NOISE-O1: Noise generation
NOISE-O3: Construction activities and temporary activities noise
The key proposed provisions that give effect to the objectives above and address the key issue are:
Policies which seek to establish and enable reasonable noise limits within zones, minimise adverse noise effects, and manage the effects of new noise generating activities (NOISE-P1, NOISE-P2, NOISE-P6);
A policy which seeks to recognise and provide for existing lawfully established activities which generate higher levels of noise (NOISE-P3);
A policy which seeks to manage noise from construction activities and temporary activities (NOISE-P4);
An exemption which identifies a range of activities which are not subject to the noise standards (NOISE-E1);
Rules which provide for a range of specific activities, including audible bird scaring devices, frost fans, noise and vibration from construction activities, temporary activity noise, and temporary military training activities (NOISE-R3, NOISE-R4, NOISE-R6, NOISE-R7, NOISE-R8);
A rule which manages vibration and blasting effects in the Special Purpose Zone – Macraes Mining (NOISE-R5); and
A rule which provides for other activities generating noise and a corresponding standard which sets out the maximum allowable noise limit within the zones. Activities which exceed the maximum noise limits by up to 10 dB require resource consent for a restricted discretionary activity while activities which exceed noise limits by more than 10 dB require resource consent for a non-complying activity (NOISE-R1, NOISE-S1).</td></tr>
<tr><th>Benefits</th><th>Costs</th></tr>
<tr><td>Environmental:
The maximum noise limits have been informed by technical acoustic analysis to ensure that a reasonable level of noise is maintained within the zones, having regard to the function and anticipated character and amenity of each zone.
Provides a clear framework for what levels of noise are anticipated in different zones or from particular activities and clear guidance as to the environmental outcomes any application to exceed those noise limits must meet.</td><td>Environmental:
The Proposed District Plan includes provisions which will provide for noise emissions as a permitted activity. While technical analysis has confirmed that the noise levels are appropriate, there is the potential for noise generating activities to affect amenity.</td></tr>
<tr><td>Economic:
The exemptions identified will reduce costs associated with compliance and/or obtaining resource consent for these activities.</td><td>Economic:
The maximum allowable noise limits will impose financial and time costs when resource consents are required.</td></tr>
</table>

• The provisions recognise and provide for primary production activities by providing for bird scaring devices, frost fans, and enabling noise in the Rural Lifestyle Zone and General Rural Zone to be measured at the notional boundary. • Bespoke provisions for other specific activities, including mining in the Special Purpose Zone Zone – Macraes Mining will enable these to occur, potentially without resource consent, achieving time and cost efficiencies. • Enabling activities which only exceed the maximum allowable noise by a small margin to obtain resource consent for a restricted discretionary activity will create economic efficiencies for landowners.	• The maximum allowable noise limits may discourage or prevent development from taking place.
Social: • The maximum allowable noise limits within zones have been informed by technical acoustic analysis to ensure that noise effects provide for the ongoing health and safety of people and communities. • Improved health and wellbeing for occupants of buildings adjoining existing noise generating activities and zones through the requirement to achieve indoor design sound levels. • The limitations for specific activities, including construction activities and temporary activities will protect the amenity and health and safety of people and communities.	Social: • The exemption for noise general provisions for permitted activities may create adverse amenity effects for receiving sites.
Cultural: • There are no direct cultural costs under this option.	Cultural: • There are no direct cultural costs under this option.
Risk of acting or not acting if there is insufficient information	
The information available is considered sufficient to inform this aspect of the review as no significant changes in policy direction are proposed.	
Efficiency	
The provisions are efficient at achieving the objectives as the benefits generally outweigh the costs, for the reasons set out in the table above.	
Effectiveness	
The proposed provisions are considered to be the most effective means of achieving the objectives as together they will: • In accordance with NOISE-O1 this option will provide for a range of activities, while ensuring that noise and vibration generated within the District and associated adverse effects are within reasonable limits that maintain the character and amenity values of the zones and protect public health and safety.	

• In accordance with NOISE-O3, this option will enable construction activities and temporary activities to occur within reasonable limits, while ensuring these activities are appropriately managed and their effects minimised. • Be consistent with relevant New Zealand Standards for the management of noise emissions. • Be efficient and effective in achieving strategic objectives SD-CHI-O1, SD-RA-O1, and SD-UFD-O4.	
Alternative options	
Option 1: Status quo (Operative District Plan)	This option is not considered appropriate for the following reasons: • The permitted noise limits in the Operative District Plan do not take into account the latest best practice and national technical standards for noise activities. In particular, there is no consideration for noise and vibration associated with construction and demolition. • There are gaps in the management of some noise generating activities such as frost fans, bird scaring devices, vibration and blasting. • The absence of specific policies to manage noise may result in a lack of direction and is less efficient and effective than the Proposed District Plan. • The Operative District Plan includes noise limits within the zone chapters and is inconsistent with the National Planning Standards. • The provisions are less efficient and effective in achieving NOISE-O1, NOISE-O3, NOISE-P4, and SD-UFD-O4.

Table 5: Noise chapter: Theme 2 evaluation of options.

Theme 2: Management of sensitive activities and reverse sensitivity effects.
Provisions
The relevant objective is: NOISE-O2: Reverse sensitivity The key proposed provisions that give effect to the objectives above and address the key issue are: • A policy which seeks to manage the design, construction, and maintenance of sensitive activities located in close proximity to high noise generating activities and ensure appropriate indoor design noise levels can be achieved; • A policy which seeks to recognise and provide for existing lawfully established activities which generate higher levels of noise (NOISE-P3); • A rule which requires new buildings, change of use of existing buildings and additions to existing buildings, for use by a sensitive activity to achieve associated standards for mechanical ventilation and indoor design noise levels (NOISE-R2, NOISE-S2, NOISE-S3). The rules apply to sensitive activities within:

- 40m of Commercial and Mixed Use Zones;
- Residential Zones within 20m of the boundary of a Town Centre Zone and/or Industrial Zones;
- A Transport Corridor.

- A rule which requires new buildings, change of use of existing buildings and additions to existing buildings, for use by a sensitive activity within the Ōmārama Airfield Noise Control Area to be designed with acoustic insulation materials and mechanical ventilation requirements (NOISE-R9, NOISE-S2); and
- An appendix which identifies acceptable design solutions that achieve the required indoor design noise levels (NOISE-APP1).

Benefits	Costs
Environmental: • This option will ensure that an appropriate quality of internal amenity can be achieved for sensitive activities locating in close proximity to high noise generating activities. • This option will manage potential reverse sensitivity effects.	Environmental: • There are no direct environmental costs under this option.
Economic: • The proposed rules provide for sensitive activities in identified locations as a permitted activity, provided that the design requirements can be met. • The identification of acceptable design solutions will provide certainty to landowners and reduce complexities associated with demonstrating compliance against the relevant standard. • The management of potential reverse sensitivity effects will enable the ongoing operation of commercial and industrial areas and transport infrastructure.	Economic: • The requirements to achieve acoustic attenuation and mechanical ventilation will add additional construction costs.
Social: • This option will ensure that sensitive activities are designed to protect the health and safety of people from potential high noise generating activities while they are indoors.	Social: • Additional design requirements and development costs may reduce the development of new sensitive activities, and in particular residential activities.
Cultural: • There are no direct cultural costs under this option.	Cultural: • There are no direct cultural costs under this option.
Risk of acting or not acting if there is insufficient information	
The information available is considered sufficient to inform this aspect of the review as no significant changes in policy direction are proposed.	
Efficiency	
The provisions are efficient at achieving the objectives as the benefits generally outweigh the costs, for the reasons set out in the table above.	

Effectiveness	
The proposed provisions are considered to be the most effective means of achieving the objectives as together they will: • In accordance with NOISE-O2, will ensure that sensitive activities are designed appropriately to minimise conflict and reverse sensitivity with noise generating activities located within close proximity; • Provide certainty to plan users through the identification of acceptable design solutions under NOISE-APP1; and • Be efficient and effective in achieving strategic objectives SD-IEE-O1 and SD-RA-O1.	
Alternative options	
Option 1: Status quo (Operative District Plan)	This option is not considered appropriate for the following reasons: • The absence of direction around reverse sensitivity and other targeted provisions is not likely to result in an effective and efficient rule framework being imposed. • There is a lack of management of noise sensitive activities where these are located in proximity to existing noise generating activities or zones to reduce risks of reverse sensitivity. • This option is not efficient or effective in achieving NOISE-O2 or strategic objectives SD-IEE-O1 and SD-UFD-O4.

9.0 Conclusion

This evaluation has been undertaken in accordance with section 32 of the RMA in order to identify the need, benefits and costs and the appropriateness of the proposed provisions having regard to its effectiveness and efficiency relative to other means in achieving the purpose of the RMA.

The evaluation demonstrates that this proposal is the most appropriate option as:

- The objectives and policies provide certainty and clear direction regarding the purpose of the Noise chapter and level of amenity anticipated within the zones with respect to noise and vibration. The objectives and policies supported by a framework of rules and standards that achieve the objectives. Overall, the proposed Noise chapter aligns with the objectives under the Strategic Direction chapter.
- The provisions give effect to all relevant higher order direction and requirements.
- The provisions in the Noise chapter have been informed by technical evidence.
- The benefits of the proposed approach outweigh the costs.

10.0 Appendix 1: Marshall Day Acoustics – technical report

MEMO

MARSHALL DAY Acoustics

Project:	Waitaki District Plan Review	**Document No.:**	Mm 002		
To:	Katrina Clark	**Date:**	11 September 2023		
Attention:		**Cross Reference:**			
Delivery:	by email	**Project No.:**			
From:	Stuart Camp / Jon Farren	**No. Pages:**	23	**Attachments:**	No
Subject:	**Technical Comments on Draft Noise Chapter**				

This memo provides technical comments on the Draft Noise Chapter of the proposed Waitaki District Plan.

The first table provides our comments and questions. We have not included the objectives and policies from the draft chapter. The wording of these are largely a planning matter, and our reading of them has not highlighted any technical concerns.

Section	Comment
Noise-E1	• We assume that the term "road" in this exemption will be cross-referenced to the definitions section. We consider this important to ensure there is no ambiguity with regards to private roads, which should not be exempted from the noise rules. • Whilst trains are exempt, no mention is made of sidings and loadouts on private sites. In our view, train related activity on a siding on private property needs to be subject to the noise rules.
Noise limits—general comments	• In our experience, the addition of evening periods in noise rules adds an unwarranted layer of complication with little or no benefit. We recommend that noise rules use only daytime and night-time limits. • Noise limits must apply to the zone which receives the noise, not the zone which generates it. As such, noise from one site may have to consider more than one noise limit, depending on the zoning of the various surrounding sites. This is best achieved by having all noise limits contained within one table. The current drafting with multiple tables would require, for example, a residential property to achieve 50 dB at its site boundary, yet if that site adjoined a mixed use zone, the mixed use activity would be permitted to generate 55 dB at the same location. • It is also our view that the activity status when compliance is not achieved must be a 2-tiered approach. When noise limits are exceeded by a small margin, the effects could be minor in some circumstances, whereas a more significant exceedance probably wouldn't be. As such, we recommend restricted discretionary status for exceedance up to 10 dB, and non-complying beyond that. • We generally agree with the noise limits proposed in the draft chapter, with a few exceptions as follows: ○ Noise-R2. In the general rural zone, the rule would apply at the notional boundary of a dwelling (20 metres from that dwelling), and our view is that the rule should be the same as for residential zones. Such a rule then allows for higher noise levels in rural areas well away

Section	Comment
	from dwellings. ○ Noise-R7 & R8. The draft rules for the two airport zones are predicated on noise produced in those zones as it might affect surrounding zones. As noted above, by making it clear that it is always the receiving zone that is of interest, the general noise limits for airport zones need only reflect the sensitivity to noise from activities outside the zone. In our view, such zones are more akin to commercial zones. We will discuss noise from aircraft activity separately. ○ Noise-R9. Similarly, the rule for Macraes mining reflects rural zones surrounding the special purpose zone. In our view, Macraes is not sensitive to noise and more correctly belongs with industrial zones. Having said this, if the Macraes site will ultimately revert to a rural zone when the mining ceases, Council may wish to include the special purpose zone within the rural noise rule, to ensure that a noise-producing activity establishing close to the mining zone doesn't end up producing high noise levels after cessation of the mine. Note that our suggested re-wording of Noise-R1 would change the level of noise which the Macraes site would be permitted to produce, from a daytime limit of 55 dB "…at any point beyond the site boundary…" to 50 dB at the notional boundary of any dwelling in a rural zone. Whilst at first glance this appears to be a lower noise limit, the paucity of dwellings in the area means that in practice the two rules are likely to be very similar. However, Council may need to consider whether our proposed change would affect any resource consent conditions which might currently apply to the Macraes operation. ○ Noise-R4. The L_{AFmax} noise limit at night is designed to protect sleep amenity. Because residential activity is not permitted in an industrial zone, we do not consider it necessary to include an L_{AFmax} control in industrial areas.
Airport-R7 & R8	• As discussed above, we propose deleting R7 and R8 in their draft form. • Noise contours are typically developed around airports for land-use planning purposes, both to place an upper limit on the noise which can be generated by aircraft movements, and to control potential reverse sensitivity effects. However, noise contours developed for Oamaru airport in 2020 suggest that the small scale of the airport is such that noise effects are currently confined to the airport site. Given this, and given that we understand there is some uncertainty over the future use of the airport, we do not see a need for specific airport noise contours at this time. • Noise-R13 addresses reverse sensitivity effects at Omarama, and this rule suggests that there are noise contours around Omarama airport. For completeness, it would be appropriate to add a rule requiring the operation of the Omarama airport to not exceed 55 L_{dn} at or beyond the Outer Control Boundary shown on the relevant Planning Maps.
McRaes-R9	• We have suggested some minor wording changes in the vibration rule for grammatical correctness.
Construction-R10	• The name of the standard was given incorrectly [written as NZS68036 and should be NZS6803]. • The draft rule references NZS6803. However, this standard does not explicitly provide noise limits. Rather, it gives guideline limits based on the duration of the construction activities. To function as a permitted activity standard, definitive noise limits are necessary, and we have proposed a simple rule along these lines. The limits we have proposed are consistent with the long term duration guidelines given in the standard. • The draft rule for construction vibration references ISO 4866 as required under the National Planning Standards. Unfortunately, this standard does not provide any limits for the acceptability of vibration. We have therefore proposed limits based on DIN 4150. This standard is consistent

Section	Comment
	with the requirements of ISO 4866, but contains tables of suitable limits.
Temporary Events-R11	• The draft noise rule for temporary events, with a 75 L_{Aeq} noise limit, seems geared to significant/large events. We are of the view that events which produce such high levels of noise are likely to be infrequent, and should arguably require a resource consent. We would prefer to see a rule which allows for small temporary events as a permitted activity, with restrictions on hours of operation, number of events per year, etc. • As written, the rule would allow sound checks to start at 9am "…on any day…", as long as they finish by 7pm "…on the day of the event…" and don't exceed 6 hours in total. Taking this to the absurd, sound checks for a Saturday event could start on the prior Monday and last for 1 hour per day. We recommend that sound checks are explicitly limited to the day of the event. • We anticipate that the Temporary Events chapter of the proposed plan will include a number of other controls on temporary activities, and we therefore suggest it would be appropriate to note this, and have cross-references in both chapters.
Military Training-R12	• As part of our recent work on other District Plans, we have come to understand that there are two distinct types of events which make up military training. Firstly, there are a very small number of events which involve firearms, perhaps as infrequently as once every 2 years. These are often large events and are typically held in relatively remote locations. Secondly, there is a wide variety of events which from a noise perspective are somewhat benign. Unfortunately, noise rules for temporary military activities often seem to be predicated on the use of firearms. In our view, it is appropriate to specify some control on the infrequent activities where firearms are used, whilst all other activities could be permitted. We have initially suggested a controlled activity status for any training involving firearms, to ensure that Council is notified of any proposed activities.
Noise-S1, S3, & S3	• There are various requirements in these 3 rules which conflict with one another. As an example, S1 requires an internal noise level of 35 dB, whereas S3 requires 40 dB. In addition, S1 and S3 seem to be addressing essentially the same issue. S1, however, does not define what the internal noise level is related to, whereas S3 clearly relates to rail and traffic noise. We recommend deleting S1, and amending S3 to apply to all noise sensitive activities within prescribed distances of a road or rail designation. • The draft rule S1 specifies a distance of 40 metres from a road as the distance within which specific consideration of noise effects must occur. From the "consultant feedback" spreadsheet, Waka Kotahi request 50m for a speed limit of less than 70km/h and 100m above that. In our experience, the distances requested by Waka Kotahi are more appropriate. We note that this initial feedback from Waka Kotahi doesn't clearly state where their distances are measured from. Their requests are normally phrased as being from the edge of the nearest carriageway. We consider this to be tricky in a District Plan context because the carriageway could change from time to time. We therefore prefer a measurement taken from the property boundary adjoining a road. Our brief review of SH1 at Oamaru, as an example, suggests that property boundaries are typically 5-10 metres from the nearest carriageway. We have therefore suggested slightly smaller distances than requested by Waka Kotahi. We have incorporated these into S3. • We do not consider it necessary to impose sound insulation requirements on noise sensitive activities "…within 20 metres of an industrial zone…" because the re-structuring we have proposed for the general noise limits requires that noise from an industrial site is controlled to a suitable level at the boundary of any zone which contains noise-sensitive activities. • We do not consider it necessary to include the final paragraph in S3 relating to the use of NZS

Section	Comment
	6801/6802. This is essentially a repeat of a paragraph included in the introduction to the chapter. • There is some merit in the requirement in S1 to apply sound insulation to noise sensitive activities within commercial and mixed use zones. However, it is not possible to specify an internal design noise level in these situations because there is no defined external noise source against which the protection is being sought. If Council wish to impose sound insulation requirements in these zones, it would need to take the form of a $D_{tr,2m,nT,w} + C_{tr}$ requirement as in the first part of S3. We have not included this in our recommendations at this stage, but would be happy to comment further if required.
Vibration-S4	• In our view, limits on rail vibration are unwarranted given the small number of trains using the rail network in the Waitaki district. We are not aware of any rail vibration complaints in the region, and the cost/difficulty in complying with the draft rules is too onerous. As an example, the option given in part b of the rule that there be "no rigid connections between the building and the ground" would essentially require a building with some form of vibration isolation mounts as its supporting foundation. We are not aware of such a design ever having been used for a residential dwelling, and the cost would almost certainly prevent the construction of any new dwellings in the affected areas. We recommend deleting this section in its entirety.
Noise-App1	• Although we support the inclusion of an Appendix with acceptable construction solutions, we note the construction information in the tables is outdated and does not reflect current New Zealand building practice. If required, we could undertake a review of these tables and submit an amended version for Council consideration.

Other sources	• There are currently no noise limits proposed to deal with a number of sources which can generate noise complaints. These include:
	  ○ Helicopters
	  ○ Bird Scaring devices
	  ○ Wind turbines
	  ○ Frost Fans
	  ○ Emergency generators (unless operated by emergency services or lifeline utilities, whereby they are exempt)
	  ○ Motorsport
	  ○ Shooting facilities
	  ○ Commercial boating activities
	  ○ Boarding kennels
	• We recommend that rules are included to cover each of these sources, irrespective of whether or not they currently exist in the district. In our experience, some of the most significant noise problems have arisen because of activities installed without consent by virtue of the District Plan being silent on them. In some cases, it may be sufficient to use a placeholder rule making the activity discretionary. In others, specific rules may be appropriate. We would be happy to assist further with this if required.

Section	Comment

- At this stage, we offer the following for Council consideration. **Note that these are offered as suggestions for Council consideration/action. We have not included these into the tracked changes version of the chapter (Appendix A)**.

  - Helicopters: We have previously developed a rule which permits a small number of helicopter movements close to noise-sensitive activities, and unlimited activity in remote locations. The aim of this rule is to ensure that commercial helicopter landing sites cannot be established close to residential areas without a resource consent. The rule takes the following form.

    1. *helicopter movements shall only occur between 8:00am and 6:00pm, unless further than 450m from any noise sensitive activity;*
    2. *within 25m of any noise sensitive activity, no helicopter movement shall take place, unless that noise sensitive activity is on the site on which the landing or take-off occurs;*
    3. *between 25m and 450m from a noise sensitive activity not located on the same site as the activity, the number of helicopter movements on a site shall not exceed 24 in any 12 month period within which there may be a maximum of 10 in any month, or six in any week, unless that residential unit or minor residential un noise sensitive activity is on the site on which the landing or take-off occurs.*

  - Bird Scaring devices: We suggest a rule along the lines of the following.

    Audible bird scaring devices shall:

    1. *only operate between 30 minutes before sunrise and 30 minutes after sunset;*
    2. *not exceed a maximum of six events per device per hour, where each event has a maximum of three clustered shots;*
    3. *not be used within 200m of a notional boundary of any noise sensitive activity on any other site of different ownership; and*
    4. *not exceed 65 dB L_{AE} from any one noise emission, when assessed at any point within the notional boundary of any noise sensitive activity on any site of different ownership.*

  - Wind Turbines: As far as we are aware, there are no wind turbines in the Waitaki District at present. We recommend making the operation of any wind turbine a discretionary activity. Any application for consent should be assessed in accordance with *NZS6808:2010 Acoustics—Wind farm noise*.

  - Frost fans: We are not aware of whether there are any frost fans in the Waitaki District. However, frost fans have caused significant noise complaints in other parts of New Zealand. We recommend as a minimum that Council include a rule controlling noise from frost fans. There is also an argument for including a reverse sensitivity rule to prevent new noise-sensitive activities being established close to existing frost fans. However, our current view is that reverse sensitivity rules are less critical and could be added as part of a later Plan review if frost fans start becoming common in the district.

  - Emergency generators: Generators are often required to cope with power outages, and they are not restricted to emergency services. As an example , following the Christchurch earthquakes, major supermarkets made provision for generators to avoid the loss of refrigerated goods and allow food supplies to reach the public. We are of the view that emergency use of generators should be permitted, and that they should be allowed to

Section	Comment
	produce higher levels of noise on the basis that they are only used infrequently. We propose a rule along the lines of the following, with the rule clearly only permitting the use of generators for emergency purposes. *Activity status: PER* *Where:* 1. *routine testing is only undertaken between the hours of 9:00am and 5:00pm;* 2. *noise from the generator does not exceed the daytime (7:00am-10:00pm) noise limit at any site receiving noise.* ○ Motorsport: Regular motorsport activities, including cars and motorbikes, and even jet boats, can result in significant noise complaints if they establish close to noise-sensitive activities. We therefore recommend that such activities are required to obtain resource consent. We suggest applying such a rule to "organised motorsport activities" or similar to avoid inadvertently implying a control over informal recreational activities. ○ Shooting facilities: We recommend that shooting facilities are listed as a discretionary activity. ○ Commercial boating: Activities such as commercial jetboating have resulted in noise complaints in other districts, and we therefore recommend listing them as a discretionary activity. We do not suggest any control on recreational boating. ○ Boarding kennels: We recommend that boarding kennels are listed as a discretionary activity.

MEMO

Project:	District Plan Review	**Document No.:**	Mm 003 R01		
To:	Waitaki District Council	**Date:**	10 October 2023		
Attention:	Katrina Clark	**Cross Reference:**			
Delivery:	by email	**Project No.:**	2023513c		
From:	Stuart Camp / Jon Farren	**No. Pages:**	3	**Attachments:**	No
Subject:	**Updated Sound Insulation Appendix**				

As requested, we have reviewed the draft *NOISE-APP1 Noise attenuation construction requirements for 30 and 35 dB*, and prepared a revised version to accommodate current building construction materials and methods.

Based on our previous comments on the draft noise chapter (Mm002 dated 11 September 2023), there are no rules requiring 35 dB performance, and our updated appendix therefore only provides construction requirements to achieve 30 dB. However, because this appendix is only referenced in one rule, we propose to drop the term "30 dB…" and simply refer to approved constructions. Note that Noise-S3 will consequently need to be changed to read:

2…

b) conforming to the acceptable solutions listed in NOISE-APP1-Approved construction requirements.

This revision of the appendix incorporates several minor changes as a result of comments from Council building officers.

NOISE-APP1 – Approved construction requirements for compliance with Noise-S3

Applicability	
	Construction requirements detailed in this appendix are only applicable where: 1. The road(s) passing the building containing the noise sensitive activity has/have a posted speed limit of less than or equal to 60 km/hr, 2. The building is a single level construction, 3. The floor of the building is a reinforced concrete slab, 4. No habitable room of the building is located less than 4.5 metres from the road boundary, 5. The total area of glazing in any habitable room is no greater than 20% of the total area of external walls of that room. 6. The roof of the building is a standard timber truss design, with a pitch of not less than 15 degrees and horizontal ceiling. Ventilation of the roof space must only be via casual ventilation typical of the jointing, capping and guttering detail used in normal construction. In all other situations, a design report from a suitably qualified acoustics specialist is required.
Construction Options	
Exterior Walls Option 1	**Exterior cladding of brick, Aerated Concrete or similar, with a surface mass not less than 27 kg/m^2.** • Timber or steel framing of not less than 90 mm, with studs at 600 mm centres. A ventilated cavity is not required for noise control purposes under this option but is permissible, with or without a rigid air barrier, • Fibrous insulation of minimum R2.6. This includes fibreglass, polyester and wool, but does not include polystyrene or other foam sheet insulation products, • 1 layer of 10 mm thick Standard Gib board or alternative gypsum board having a surface mass not less than 6 kg/m^2,
Exterior Walls Option 2	**Exterior cladding of Profiled sheet steel not less than 0.4 mm thick, or profiled aluminium not less than 1.3 mm thick, or treated pine weatherboards not less than 19mm thick.** • Battens forming a ventilated cavity not less than 18mm deep, • Rigid air barrier consisting of Plywood not less than 9 mm thick or Fibre Cement not less than 4 mm thick, or alternative sheet product having a surface mass not less than 5 kg/m^2. • Timber or steel framing of not less than 90 mm, with studs at 600 mm centres, • Fibrous insulation of minimum R2.6. This includes fibreglass, polyester and wool, but does not include polystyrene or

Applicability	
	other foam sheet insulation products, • 2 layers of 10 mm thick Standard Gib board or alternative gypsum board, each layer having a surface mass not less than 6 kg/m^2,
Exterior Walls Option 3	**Exterior cladding of Fibre Cement weatherboards, with a surface mass not less than 18 kg/m^2.** • Battens forming a ventilated cavity not less than 18 mm deep, • Rigid air barrier consisting of Plywood not less than 7 mm thick or Fibre Cement not less than 4 mm thick, or alternative sheet product having a surface mass not less than 3.8 kg/m^2. • Timber or steel framing of not less than 90 mm, with studs at 600 mm centres, • Fibrous insulation of minimum R2.6. This includes fibreglass, polyester and wool, but does not include polystyrene or other foam sheet insulation products, • 2 layers of 10 mm thick Standard Gib board or alternative gypsum board, each layer having a surface mass not less than 6 kg/m^2,
Glazing and Exterior doors - All options	• Windows to consist of double glazing consisting of 2 layers of glass not less than 4 mm thick, separated by an airgap of not less than 12 mm, with full perimeter seals, • External doors to be either double glazed to the same standard as windows, or be a solid panel construction with a surface mass not less than 24 kg/m^2 and incorporating full perimeter seals.
Roof – All Options	• Profiled metal roofing not less than 0.4 mm thick, in either sheet or tile form, • Fibrous insulation of minimum R6 within the ceiling cavity. This includes fibreglass, polyester and wool, but does not include polystyrene or other foam sheet insulation products, • 2 layers of 13 mm Standard Gib board or alternative gypsum board, with each layer having a surface mass not less than 8 kg/m^2.