



NOISE CHAPTER REVIEW

GORE DISTRICT PLAN REVIEW GORE DISTRICT

PREPARED FOR
Gore District Council

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1.0 Introduction

Gore District Council (GDC) has engaged Styles Group Styles to assist in their review of the Gore District Plan noise provisions as part of their full District Plan review.

This advice provides a high-level overview of relevant issues and options for the management of noise in the Gore District and includes:

- i. A preliminary review of the Draft District Plan (**DDP**) noise chapter and opportunities and options for the Proposed District Plan (**PDP**) to address the issues we have identified.
- ii. Comments on community feedback on DDP Noise Chapter.
- iii. Recommendations to comply with the mandatory directions of the National Planning Standards (**NPS**), specifically the Noise and Vibration Metrics Standard (**NVMS**) and Definitions Standard as they relate to the assessment, measurement and management of noise and vibration.

This advice is intended to inform the development and refinement of the provisions for the PDP noise chapter. Our comments on the PDP noise chapter will be provided under separate cover.

2.0 The National Planning Standards (NPS)

The NPS were gazetted in April 2019. The PDP will need to meet the requirements of the NPS, including the specific requirements prescribed by the *Noise and Vibration Metrics Planning Standard (NVMS)* as it relates to the measurement, assessment and management of noise (and vibration). The *Definitions Standard* also contains definitions for noise symbols and terms that must be adopted in the PDP if they are referred to.

The NPS prescribes a *Zone Framework Standard* that District Plans must follow. This will result in the introduction of new zones. The District Plan noise management framework will need to deliver the noise amenity outcomes for each of the zones, and provide controls to manage the noise effects within and between the zones.

The NVMS and the broader NPS does not provide any direction on how a local authority must manage noise effects, nor does it prescribe numerical noise limits. The appropriate noise levels and noise performance standards for each zone rules will need to be determined to reflect the function and purpose of each zone, and to recognise and provide for the land use activities that are anticipated and provided for in each of the zones.

We understand the PDP will transition the operative zone framework into the zone framework set out below:

Zone group	Zone	Zone description
Residential	General Residential Zone (GRZ)	Areas used predominantly for residential activities with a mix of building types, and other compatible activities

Zone group	Zone	Zone description
	Large Lot Residential Zone (LRZ)	Areas used predominantly for residential activities and buildings such as detached houses on lots larger than those of the Low density residential and General residential zones, and where there are particular landscape characteristics, physical limitations or other constraints to more intensive development
	Medium Density Residential Zone (MDRZ)	Areas used predominantly for residential activities with moderate concentration and bulk of buildings, such as detached, semi-detached and terraced housing, low-rise apartments, and other compatible activities
Rural Zones	General Rural Zone (GRZ)	Areas used predominantly for primary production activities, including intensive indoor primary production. The zone may also be used for a range of activities that support primary production activities, including associated rural industry, and other activities that require a rural location
	Rural Lifestyle Zone (RLZ)	Areas used predominantly for a residential lifestyle within a rural environment on lots smaller than those of the General rural and Rural production zones, while still enabling primary production to occur
	Settlement Zone (SETZ)	Areas used predominantly for a cluster of residential, commercial, light industrial and/or community activities that are located in rural areas or coastal environments.
Open Space Zones	Sport and Active Recreation Zone (SARZ)	Areas used predominantly for a range of indoor and outdoor sport and active recreational activities and associated facilities and structures.
	Natural Open Space Zone (NOSZ)	Areas where the natural environment is retained and activities, buildings and other structures are compatible with the characteristics of the zone
Commercial and Mixed Use Zones	Town Centre Zone (TCZ)	Areas used predominantly for a range of commercial and community activities that service the needs of the residential catchment.
	Neighbourhood Centre Zone (NCZ)	Areas used predominantly for a range of commercial and community activities that service the needs of the residential catchment.
	Mixed Use Zone (MUZ)	Areas used predominantly for a compatible mixture of residential, commercial, light industrial, recreational and/or community activities.
Industrial Zones	General Industrial Zone (GIZ)	Areas used predominantly for a range of industrial activities. The zone may also be used for activities that are compatible with the adverse effects generated from industrial activities
	Light Industrial Zone (LIZ)	Areas used predominantly for a range of industrial activities, and associated activities, with adverse effects (such as noise, odour, dust, fumes and smoke) that are reasonable to residential activities sensitive to these effects

Zone group	Zone	Zone description
Special Purpose Zones	Māori Purpose Zone (MPZ)	Areas used predominantly for a range of activities that specifically meet Māori cultural needs including but not limited to residential and commercial activities.
	Airport Zone (AIRPZ)	Areas used predominantly for the operation and development of airports and other aerodromes as well as operational areas and facilities, administrative, commercial and industrial activities associated with airports and other aerodromes.
	Camp Columba Zone (CCZ)	Area used predominantly for regional camping facilities for school and other community camping groups.
	Field Days Zone (FDZ)	Area used for regional Field Day Events including a wide range of sporting, community, social, and corporate events such as conferences and concerts.

2.1 The Noise and Vibration Metrics Planning Standards (NVMS)

The NVMS requires District Plans to adopt specific noise measurement methods and symbols from the relevant New Zealand Acoustical Standards (**NZAS**) in plan rules relating to noise emissions. We have reviewed the DDP Noise Chapter to determine whether it meets the mandatory requirements of the NVMS.

2.1.1 Mandatory direction 1 of the NVMPs

Mandatory direction 1 requires the adoption of the noise measurement methods and symbols prescribed under the relevant NZAS. The direction requires (underlining our emphasis):

- Any plan rule to manage noise emissions must be in accordance with the mandatory noise measurement methods and symbols¹ in the applicable New Zealand Standards incorporated by reference into the planning standards and listed below:
 - 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
 - New Zealand Standard 6808:2010 Acoustics – Wind farm noise

¹ Terms includes noise metrics and symbols as defined within the Definitions Standard.

New Zealand Standard 6809:1999 Acoustics – Port noise management and land use planning

2.1.2 Compliance with Mandatory Direction 1

We have undertaken a general review of the **noise measurement methods and symbols** in the DDP Noise Chapter to establish whether any amendments are required to comply with the NVMS. Our findings are set out in the table below.

Table 1: NZAS referenced in Mandatory direction 1 of the NVMS

NZAS referenced in Mandatory Direction 1 of the NVMS	Styles Group Comment
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	The noise measurement methods and symbols specified in these NZAS will need to be correctly referenced in the DDP Noise Chapter ($L_{Aeq(15min)}$ or $L_{Aeq(t)}$ and $L_{AF(max)}$). The DDP will require updating to achieve compliance with Mandatory Direction 1.
New Zealand Standard 6805:1992 Airport noise management and land use planning – measurement methods and symbols only	We understand the Airport Zone will be applied to the Gore Airfield, however the Noise Chapter does not include rules or standards to control noise emissions from the airfield. If the PDP includes a plan rule to manage noise emissions from the airport, the rule must adopt the noise measurement methods and symbols in NZS 6805:1992. NZS6805:1992 requires the adoption of the L_{dn} metric.
New Zealand Standard 6806:2010 Acoustics – Road-traffic noise – New and altered roads	The DDP does not include a rule to manage the operational noise levels from new or altered roads. If the PDP includes a plan rule to manage noise emissions from new or altered roads, the rule must adopt the noise measurement methods and symbols in NZS 6806:2010.
New Zealand Standard 6807:1994 – Noise Management and Land Use Planning for Helicopter Landing Areas- excluding 4.3 Averaging	The DDP does not include a rule or standard to control the noise emissions from helicopter landing areas (the rules and standard rely on other performance standards such as setback distances). If the PDP includes a plan rule to manage noise emissions from helicopter landing areas, the rule must adopt the noise measurement methods and symbols in NZS 6807:1994 (i.e. the L_{dn} and L_{AFmax} metrics). The NPS allows a local authority to choose an averaging period or have no averaging period if that is desired. Further discussion on noise from helicopter landing areas is provided later in this advice.
New Zealand Standard 6808:2010 Acoustics – Wind farm noise	The DDP rules relating to small scale wind turbines and large scale renewable electricity generation activities refer to NZS6808:2010. Further comment on wind farms is provided later in this advice.

2.2 Mandatory direction 2 of the NVMS- mandatory assessment methods

Mandatory direction 2 of the NVMS requires:

2. Any plan rule to manage noise emissions must be consistent with the mandatory assessment methods in section 6 Rating Level and section 7 (L_{AFmax}) of New Zealand Standard 6802:2008 Acoustics – Environmental Noise (incorporated by reference into the planning standards), provided the type of noise emitted is within the scope of New Zealand Standard 6802:2008.

The NVMS adopts the procedures set out in NZS6802:2008 *Acoustics – Environmental Noise* for the assessment of environmental noise. However, as identified in the scope of NZS6802:2008, this standard does not apply to noise that is managed by other acoustical standards, or impulsive sounds, including gunfire and blasting. Clause 1.2 *Applicability to Specific Sources* of NZS 6802:2008 identifies the following noise sources are excluded from the scope of the Standard:

“In particular, assessment of specific sound including road or rail transport, flight operations of fixed or rotary winged aircraft associated with airports or helicopter landing areas, construction, port noise, wind turbine generators, and impulsive sound (such as gunfire and blasting).”

Further noise source exclusions in clause 1.2 of NZS6802:2008 include:

- Noise sources that are within the scope and subject of other New Zealand acoustical standards (including road traffic noise, port noise, airport noise, helicopter noise, wind turbine noise, construction noise).
- Structure-borne sound and vibration.
- Sound from rail-yards not attributable to vehicles on rails and sound from aircraft activities (except aircraft taxiing and in-flight).
- Light aircraft flight and ground movements not at airports.
- Impulsive sounds such as the noise from gunfire, and gas guns for bird scaring.

Our review of the DDP has identified that there are no proposed noise standards to manage noise emissions from helicopters, aircraft and road traffic. If controls are included in the PDP, these will need to refer to:

- New Zealand Standard 6807:1994 – Noise Management and Land Use Planning for Helicopter Landing Areas (excluding 4.3 Averaging)
- New Zealand Standard 6805:1992 Airport noise management and land use planning
- New Zealand Standard 6806:2010 Acoustics – Road-traffic noise – New and altered roads.

We have recommended updates to the noise standards to refer to “noise rating level”² where appropriate, and to ensure noise sources are required to be measured and/ or assessed in accordance with the relevant standard. Further discussion on each noise source, the options to manage these noise sources and application of the relevant acoustical standard is provided throughout this document.

2.3 Mandatory direction 3- construction vibration metrics

Mandatory direction 3 of the NVMS requires:

3. Any plan rule to manage damage to structures from construction vibration must be consistent with the metrics for peak particle velocity (ppv) in ISO-4866:2010 – Mechanical vibration and shock, incorporated by reference into the planning standards.

The DDP does not include a plan rule to manage damage to structures from construction vibration. We provide further comment on options to include a rule to manage construction vibration later in this advice.

2.4 Definitions Standard

The mandatory directions of *6. Introduction and General Provisions Standard* and *14. Definitions Standard* require that definitions of terms used in a District Plan must be located in the Definitions chapter of the District Plan and shall be defined in accordance with the prescribed terms of the *Definitions List*.

If the District Plan includes any of the following definitions, they must be consistent with those set out in the Definitions Standard of the NPS. The Definitions Standard provides definitions for:

- Best practicable option
- Habitable room
- L_{A90}
- L_{Aeq}
- $L_{AF(max)}$
- L_{dn}
- L_{peak}
- Noise
- Noise rating level
- Notional boundary
- Peak particle velocity

² The derived noise level used for comparison with a noise limit in a plan or consent condition

- Special audible characteristics

At this point in time, our review of the DDP indicates that definitions for all of the above terms should be included in the PDP.

The only definition that may not be required is the definition for “Peak particle velocity”. This would only be required if a construction vibration standard is included in the PDP.

2.4.1 Draft Definitions

The DDP includes several definitions that are relevant to the administration of the Noise Chapter. We have referred to the draft definitions in preparing our feedback. The definition of “noise sensitive activity” is a definition that is integral to the effective administration of a noise chapter. In this case, the DDP includes a definition for “sensitive activity” rather than “noise sensitive activity”³. We recommend the term “noise sensitive activity” is used in the noise chapter and defined to distinguish activities that are sensitive to noise from activities that may be sensitive to other effects (odour/ hazardous substances etc).

“Sensitive activity” is defined in the DDP as any:

- health care centre or hospital*
- educational facility, including school, early childhood facility, play centre*
- residential activity, including retirement village and supported residential accommodation*
- visitor accommodation*
- places of worship*
- marae or Papatipu Rūnanga complex*
- Graveyard or urupā*

The proposed acoustic treatment controls for noise sensitive activities apply in “habitable rooms”. Habitable rooms are defined by the Definitions Standard as:

“means any room used for the purposes of teaching or used as a living room, dining room, sitting room, bedroom, office or other room specified in the Plan to be a similarly occupied room”.

We have reviewed the activities covered by the definition of “sensitive activity”. Our general comments are that:

1. Health care centres or hospitals are often defined as noise sensitive where they involve an overnight stay facility. This narrows the definition considerably from any other healthcare facility. It is generally accepted that healthcare facilities involving noise or vibration sensitive equipment should also take responsibility for designing and locating their activities in appropriate locations.

³ Our advice highlights inconsistency across the DDP chapters in terms of the use of the terms “noise sensitive activity” and “sensitive activity”.

2. Educational facilities are generally noise sensitive. The exceptions are typically tertiary / trade-training facilities where they are accessory to an industrial activity on the site.
3. We agree that visitor accommodation should be defined as noise sensitive. Some District Plans do not include visitor accommodation on the basis that short term accommodation warrants a lower degree of amenity protection. We consider that accommodation activities are noise sensitive, and including controls requiring them to be appropriately designed and located will proactively manage the potential for incompatibility or conflict.
4. We agree that graveyards or urupā should be recognised as noise sensitive activities, however note that these activities do not involve habitable rooms and are not subject to the rules and standards requiring acoustic treatment. We consider that the plan controls may need to be broadened to ensure protection is provided to noise-sensitive parts of the noise sensitive activities that are listed. For example, there are no habitable rooms at a graveyard or urupā, however outdoor spaces in these places may be considered noise-sensitive.

We generally agree that the activities listed are appropriate to include as noise sensitive activities. We recommend that this list is considered further before finalising the PDP provisions. Defining the noise sensitive activities is often a critical part of the development of the Noise Chapter and careful attention at this stage can avoid potentially significant and unnecessary consent processing costs once the plan is operative.

2.4.2 Additional definitions

A local authority may include definitions for terms that are not defined in the *Definitions List*. The development of new definitions to support the PDP noise framework will be an important part of the plan review process. We consider definitions to be an integral part of a District Plan as they ensure plan rules can be administered efficiently and effectively.

Well-crafted and robust definitions are an integral part of a District Plan as they ensure plan rules can be administered efficiently and effectively. The development of new definitions to support the PDP noise framework will be an important part of the plan review process. This advice provides recommendations for several definitions to assist interpretation of the rules and standards.

3.0 The role of the noise chapter

Noise conflicts generally arise where the level, character, timing or duration of noise associated with adjacent land use activities are incompatible with one another. In general terms, conflict typically arises where noise sensitive activities establish in proximity to noise generating activities (and vice versa).

A common theme throughout this advice is for the PDP to proactively manage the compatibility of land use activities. We recommend that zone-based rules, standards and activity tables are

the primary tool to ensure land use compatibility. This approach ensures that activities that co-locate within a zone are fundamentally compatible, or able to be designed to be compatible following the requirements of the Noise Chapter.

The role of the controls in the Noise Chapter is to provide performance standards (e.g. maximum permitted noise levels and acoustic treatment standards) to ensure that compatibility is maintained. In many ways the Noise Chapter is the supplementary tool to maintain land use compatibility, rather than the primary tool.

3.1 Fundamental principles

We consider it critical that the following fundamental principles are applied to the District Plan review for managing noise effects:

- 1) That the zone provisions provide clear direction on the land use activities that are anticipated and provided for in each zone, and those activities are compatible (or can practicably be made compatible) with one another.
- 2) The noise (and vibration) rules and standards in the noise chapter should give effect to the objectives and policies that have been developed for each zone, and the level of aural amenity anticipated in that zone.
- 3) The noise limits are appropriate for the land use activities that are anticipated and provided for in each zone, in accordance with contemporary best-practice.
- 4) Where compatibility between land uses requires additional mitigation or control, that those controls are carefully crafted to ensure expectations on noise makers and noise receivers are clear, and that the burden of mitigation is apportioned appropriately.
- 5) Where compatibility between land uses requires mitigation or control (effort and cost), the community and decision makers must have an understanding of the balance and cost of mitigation that is informing the decision-making process.
- 6) The District Plan must identify the most efficient way of protecting significant (legitimate) noise makers, from the encroachment of noise sensitive activities using measures such as noise control boundaries or buffer zones where these are necessary and justifiable. This includes major transport infrastructure, industries and regionally significant land use activities. The policy framework should also recognise the duties applying to the noise generators to avoid unreasonable noise levels under Section 16.

We can work with the Project Team to determine the appropriate “balance” for principles 4-6 above as the noise chapter is refined. These considerations will take into account a range of acoustical and non-acoustical considerations.

3.2 Considerations for enabling noise sensitive land use in high noise environments

We understand that growth demands, intensification and desire for vibrant mixed used environments will result in some commercial zones providing for a mix of business and residential activities. Commercial zones are inherently noisy zones. Ensuring ongoing land

use compatibility between noisy and noise sensitive activities requires robust controls to ensure a compatible activity mix.

We recommend that the zone activity tables/ activity status are drafted with consideration to the permitted noise environment, the degree to which a land use activity is likely to be compatible within that noise environment, and the likely mitigation likely to be required to maintain compatibility. We have provided zone-specific recommendations later in this advice.

3.3 Noise environments

Table 2 provides a summary of the typical maximum permitted noise levels typically found in District Plans and a summary of the zones and land use activities that are generally appropriate in these noise environments.

Table 2 Summary of typical District Plan noise environments

External noise environment	Typical zones and locations	General level of effect and comments on suitability of noise sensitive activities
Very high noise environment Noise levels above 65 dB L_{Aeq} during the day and at night.	Industrial Zones and adjacent to very busy parts of the road and rail network, or very close to airports (generally within their boundaries)	The noise environment is generally incompatible with noise sensitive land use, and other land use activities requiring a good level of acoustic amenity to operate (for example, retail, offices or call centres). Noise sensitive activities and other sensitive commercial activities should ideally be precluded or very restricted (i.e. unless they are ancillary to an industrial activity or have a functional requirement to locate in this environment, for example, training facilities that are accessory to an industrial activity on the site).
High noise environment Noise levels between: 56 – 65 dB L_{Aeq} in the day 46 – 65 dB L_{Aeq} at night.	Adjacent to busy roads (State Highways), railways and within Industrial, Commercial and Mixed-Use Zones	The outdoor noise environment is generally incompatible with noise sensitive land use. Indoor spaces of noise sensitive activities would need to be acoustically insulated from the external noise. This can be achieved by careful design of the building envelope and by providing fresh and cool air to the indoor spaces (so windows and doors can stay closed). Noise sensitive activities would ideally be precluded, unless they are located, designed and constructed in such a way that ensures the type of noise sensitive activity does not rely on outdoor areas as a key component of the use or amenity. For example, childcare centres with outdoor play areas would not be compatible. Residential activity would ideally be restricted

External noise environment	Typical zones and locations	General level of effect and comments on suitability of noise sensitive activities
		to apartment-style living with a limited outdoor component.
Moderate noise environment Noise levels from 51-55 dB L_{Aeq} during the day and 41-45 dB L_{Aeq} at night.	Residential zones and rural zones where noise levels must be compatible with the presence of noise sensitive activities without the need for any acoustic insulation.	Acoustic insulation of indoor spaces is not mandatory to achieve a reasonable level of noise indoors at night. The amenity in outdoor spaces is moderate / generally acceptable for rural and residential activity. Moderate-to-high annoyance effects are likely in a small proportion ($\leq 10\%$) of the population.
Low noise environment Noise levels no greater than 50 dB L_{Aeq} during the day and 40 dB L_{Aeq} at night.	Residential or rural zones well separated from roads and noise generating activities. Environments where a high level of acoustic amenity is desired.	The noise environment will be compatible with all noise sensitive activities. The noise environment will provide noise sensitive activities with a high degree of acoustic amenity, indoors and outdoors.

We note that the DDP noise chapter groups all of the Residential and Rural Zones into the “moderate noise environment” (providing for noise levels up to 55 dB L_{Aeq} during the daytime). We recommend the Project Team gives consideration to whether this permitted level of noise will deliver the noise amenity outcomes for “quieter” zones that seek to deliver a higher level of noise amenity. We consider that it may be appropriate to reduce maximum noise limits for some zones, including the Rural Lifestyle Zone and Large Lot Residential Zone.

4.0 Review of Draft Noise Chapter

4.1 Overview

The Overview “sets the scene” for the outcomes that the noise chapter seeks to deliver. The Overview is reproduced below:

Overview

Noise is an environmental effect that has the potential to cause adverse effects on amenity, cause annoyance and impact on health. Almost all activities produce some noise effects.

Noise may cause adverse effects depending on when and where the noise occurs in relation to other activities, its duration, the characteristics of the noise including the sound pressure level (loudness) and frequency (pitch), its steadiness, and whether it has special audible characteristics (noise that is tonal or impulsive). The sensitivities of an individual and their expectations are other factors that determine the level of annoyance. The background sound level in different environments also influences the level of acceptability to noise, which varies throughout the district. Some noise is accepted as part of day-to-day living, for example lawn mowing, or farm animal noise within rural areas or machinery in an industrial zone. However, in some cases the noise can become more significant and cause adverse effects to the surrounding environment.

The District Plan places controls on the level of noise that is considered generally acceptable in particular situations, these are expressed in the Objectives, Policies and Rules contained within this Chapter.

In addition, section 16 of the Resource Management Act 1991 (RMA) also places a duty on persons undertaking activities to adopt the best practicable option to ensure that the emission of noise does not exceed a reasonable level. In some cases, unreasonable levels of noise may occur at a level below the standards specified in the District Plan, and the Council can take action under the RMA to control unreasonable levels of noise.

Where noise generating activities have been legally established, such as processing industries in rural areas, or where noise and vibration occurs on an intermittent basis, such as on busy roads and railways, it may be appropriate to manage the location of noise sensitive activities, such as residential activities, to protect the amenity and health of people and avoid complaints arising in relation to the noise from those activities.

4.1.1 General comment on Overview

We recommend updates to the Overview to recognise:

- The purpose of the Noise Chapter is to ensure land use activities that are permitted in a zone are compatible with each other and with activities in neighbouring zones
- The DDP noise chapter does not control the location or establishment of noise sensitive activities in rural areas
- The DDP does not include controls to manage vibration effects from roads or railways

4.2 Objectives

Objectives

NOISE-O1	Noise generated from activities is compatible with the purpose and predominant character of each zone.
NOISE-O2	Activities do not generate noise effects which adversely affect amenity values, the health and wellbeing of people, communities and indigenous species.
NOISE-O2	New sensitive activities are located and designed to avoid reverse sensitivity effects.

4.2.1 General comments on objectives

4.2.1.1 NOISE-01

Consider wording such as *“Recognise and provide for activities that generate noise while ensuring that noise levels are reasonable and compatible with the anticipated purpose, character and amenity values of the relevant zone(s)”*.

4.2.1.2 NOISE-02 Reference to effects of noise on indigenous species

The DDO objectives, policies and matters of discretion specifically focus on noise effects on indigenous species.

We agree that noise has the potential to adversely affect fauna. However, we note that the noise measurement metrics referred to in the District Plan and managed through the relevant New Zealand Acoustical Standards (NZAS) are specifically designed to manage effects on people. Sound level is defined in NZS6801:2008 as the *“A-frequency-weighted sound pressure level”*, where the *“A”* (i.e. in L_{Aeq} and $L_{AF(max)}$) refers to the adjustment applied to a sound measurement to account for how noise is perceived by the human ear. The District Plan noise limits should not be used as appropriate criteria to manage noise effects on fauna. An animal’s response to noise effects is highly species specific.

We also note that an assessment of noise effects on indigenous species is generally outside the qualifications and experience of most acoustic experts. This means that an applicant may be required to engage an acoustic expert to determine the effects of noise on people, and an ecologist to determine the effects of noise on indigenous species. We note this will have cost implications in the decision-making process (especially for controlled and restricted discretionary activities) and raise this for the consideration of the Project Team.

Consideration of noise effects on indigenous species may be better managed through applying a more rigorous activity status (e.g. Discretionary or Non- Complying) to those activities that may give rise to adverse effects on the indigenous species of concern in the Gore District. The PDP could include an information requirement or other note that will enable a planner to commission an ecological effects assessment that would include consideration of noise effects on indigenous species. This approach would enable an ecological assessment to be commissioned as part of a resource consent application, if required.

4.2.2 Comment on NOISE-02 and reverse sensitivity

NOISE-02 requires that *“New sensitive activities are located and designed to avoid reverse sensitivity effects”*.

We recommend this objective is revised to address the following:

- The DDP includes controls to manage the location of sensitive activities in high noise environments, not in all zones.
- The objective only refers to new activities. It should be updated so it is consistent with NOISE-S2 that applies to new or altered noise sensitive activities.

- We generally recommend that the noise provisions have a primary focus on protecting people from adverse noise effects and ensuring ongoing land use compatibility. Management of potential reverse sensitivity conflicts will be achieved as the second positive outcome.
- The word “manage” may be more appropriate than the term “avoid”. Consider wording such as *“Manage compatibility between noise-generating and noise-sensitive activities by requiring noise sensitive activities to appropriately locate themselves and to design and insulate appropriately to achieve reasonable indoor noise levels”*.

4.3 Policies

Policies

NOISE-P1	Maintain the predominant character and amenity of each zone by controlling the types of activities and level of noise that is permitted in each zone.
NOISE-P2	Ensure any noise effects generated by an activity are of a type, scale and level that are appropriate for the activity’s location having regard to: - the frequency, intensity, duration and offensiveness of the noise being generated; - whether the level of effects are compatible with the character and amenity of the location and adjacent activities; - internalisation of effects to the extent practicable and minimisation of conflict at site boundaries; - any impact on the health and well-being of the surrounding community (including sleep disturbance) and on indigenous species; - the adoption/implementation of best practicable options to minimise the adverse effects; - any positive effects associated with the activity; and - the ability to avoid conflict with existing sensitive activities.
NOISE-P4	Require acoustic insulation within buildings used by sensitive activities in the following locations: - adjacent to transport corridors, including the rail network; - within Industrial, Light Industrial, Mixed Use, Local Centre and Town Centre Zones; and
NOISE-P7	Manage the frequency, duration and intensity of noise generated by temporary activities, including sound amplified activities.
NOISE-P8	Enable temporary military training activities provided that specified separation distances, vibration, and/or noise limits are met in relation to sensitive activities or the occurrence of such activity is limited.

4.3.1 Comment on Policies

Recommendation		Reasons for recommendation
Policy numbering	Needs correcting	
	NOISE-P2	We generally agree with the matters listed. We question how the weighting of “positive effects” from an activity’s noise levels would be weighted against adverse health and amenity effects in a decision-making process. We agree with Te Whatu Ora’s feedback that <i>“it is recommended this policy is redrafted or a new policy added that elevates the protection of public health from environmental noise”</i>. We recommend that the extent to which the intensity, timing or level of noise effects could reasonably be expected in the zone or across the zone interface is included.

Recommendation	Reasons for recommendation
NOISE-P4- reference to acoustic insulation and sensitive activities	Replace the term “acoustic insulation” with “acoustic treatment” throughout the noise chapter. Replace the term “sensitive activities” with a defined term for “noise sensitive activities” throughout the noise chapter.
NOISE-P4	This policy suggests that acoustic treatment is required for all sensitive activities adjacent to any transport corridors. NOISE-R6 only requires acoustic treatment for a sensitive activity located in the railway corridor overlay. We recommend Policy P4 is updated, subject to confirmation of the transport corridors captured by the controls.
NOISE- P7	We recommend that this policy is revised to include factors such as “timing”, ‘duration’ and “level”. These are important factors in the management of temporary activities, such as construction work. We note that the Noise chapter does not include any controls relating to amplified sound, as these are located within the <i>Temporary activities</i> chapter.
NOISE-P8	Recommend policy is revised. There are no vibration standards for TMTA.

4.4 Exemptions to noise limits

NOTE-1 lists all activities that are exempted from compliance with the noise rules and standards. It is common for District Plans to identify activities that are excluded from the need to comply with the maximum permitted noise levels. This approach provides for certain noise sources that are anticipated and reasonable within the zone and enables them to occur without control. Common examples include exclusions for lawn mowing, DIY work and normal household activities in a residential zone, and the seasonal or intermittent noise of animals, tractors, seasonal harvesting machinery and working dogs in rural zones.

We recommend that any determination to exempt an activity from compliance with the noise standards should be consistent with the principles below:

- i. The exclusions to the maximum permitted noise levels should be clear and certain, with the minimum degree of interpretation required (this may require use of clear and certain definitions for terms used in the exclusions)
- ii. Any exemption from an activity having to comply with the maximum permitted zone noise levels should only provide for zone-appropriate activities and industries, taking into account the presence of noise sensitive activities within the zone/ adjacent zones and the level, timing, duration and level of the noise source(s).
- iii. Any exemption from an activity having to comply with the maximum permitted noise levels should permit only the effects that could be reasonably anticipated in the zone.
- iv. The exclusions must not allow the generation of unreasonable levels of noise for other activities authorised in the zone.

- v. The exclusions must be clear and robust and be able to be administered without ambiguity.

NOTE-1 is reproduced below:

NOTE-1 Activities not subject to district plan rules	
All zones	Noise associated with the following activities is not subject to the Rules and Standards of the district plan: - Any warning device or fixed plant used by emergency services for emergency purposes, including routine testing and maintenance. - Helicopter landings and take offs associated with the hospital. - Vehicles on roads, including the use of sirens by enforcement agencies. - Trains on rail lines, including at railway yards, railway sidings or stations and level crossing warning devices. - Aircraft being operated during flight, other than associated with take-off and landing. - Motorcraft operating on the surface of waterbodies. - Noise from animals and birds associated with non-commercial activities on a site. - Agriculture, horticulture and pastoral farming activities, including noise from stock, and the use of agricultural vehicles and other machinery or equipment to carry out those activities. - Sporting and recreation activities and associated crowd noise on Reserve land. - Race events held at the Gore Racecourse - Temporary events which are permitted under Rule TEMP-R1. - Festivals and other community events, on a road or Reserve land, administered by the Gore District Council - Vibration from activities and vibration associated with low frequency noise - Noise from plantation forestry is managed under section 98 of the Resource Management (National Environment Standard for Plantation Forestry) Regulations 2017. Also note, section 16 of the RMA places a general duty on all operators and occupiers to adopt the best practicable option to ensure noise (including vibration) emitted from any site does not exceed a reasonable level. What constitutes a "reasonable level" is not prescribed by the RMA. However, the permitted day and night noise criteria as set out in the district plan may be used as a guide.

4.4.1 Comment on NOTE-1 exemptions

We generally agree with Te Whatu Ora's feedback that *"It is appropriate to specify exclusions from noise limits, but potentially this list is too wide ranging to adequately protect public health. It is recommended that this list be reviewed"*. Our comments are set out below.

Recommendation	Reasons for recommendation
Correct reference to "activities not subject to district plan rules"	This note reads as if the listed activities are exempt from any district plan rules, rather than just the noise standards in the Noise Chapter.
Exemption 1 Emergency services	We recommend this is refined to only exempt noise sources involved in an emergency response. It should not be used to exempt the operational noise associated with a permanent depot/ base. All noise from the operation of a permanent base should be considered when assessing its compatibility with neighbouring sites.

Recommendation	Reasons for recommendation
Exemption 2 <i>Hospital helicopter landings/ take offs</i>	It is relatively common for District Plan's to exempt noise from Hospital helicopter landings/ take offs. This approach reflects the importance of patient care during emergencies and the prioritisation of the welfare of sick or injured people over the (often relatively infrequent) effects on sleep disturbance and amenity of the surrounding residential receivers. In this case, we understand⁴ that the hospital helipad is located on the concrete tennis court at the south end of St Mary's School, about 100m from the hospital. The helipad is located in a residential zone and is surrounded by noise sensitive land use. We note that the potential effects of helicopter movements on the surrounding residential receivers may be mitigated by the low number of movements. The Otago Daily Times article cites a total of 8 to 15 visits per year, to airlift critically ill patients. We recommend that the Hospital confirms the anticipated number of movements per year, and whether this helipad location is used for any non-critical movements (such as regular patient or staff transfers). We recommend that the exemption (and associated definition) should only allow emergency helicopter movements that are critical to the function of the hospital in terms of patient care. It should not allow exemptions for non-critical helicopter movements, such as staff transfers unless, there is good evidence available to confirm that the noise levels at the receivers will be reasonable when considered on the basis of typical use in the day and night (including at night for emergencies). We recommend that further information from the hospital is sought to understand the type and frequency of helicopter movements.
Exemption 3 <i>Vehicles on roads</i>	Consider whether "Use of sirens enforcement agencies" is covered under exemption 1.
Exemption 4 <i>Trains on rail lines</i>	We recommend updates to distinguish noise from designated rail corridors and noise from private rail sidings. This will ensure that commercial activities relying on privately owned/ operated sidings are subject to appropriate noise limits. Consider updating to read <i>"this exemption does not apply to the testing (when stationary), maintenance, loading or unloading of trains, or trains on private sidings.</i>
Exemption 8 <i>Rural activities</i>	We note that it is relatively common for District Plans to provide some exemptions for rural activities. In our experience, rural noise exemptions are reasonable when they are designed to manage the effects of seasonal and intermittent noise sources that could reasonably be anticipated in a rural zone (i.e. permitted activities). In this case, we understand that the DDP seeks to provide for a range of industries and activities to operate in the Rural Zone. Many intensive productive rural activities and rural industries can generate relatively high levels of noise at the source. High noise-generating activities include the use of heavy machinery, truck movements, noisy stationary machinery, air handling systems and 24hr operations. For example, GRUZ-R2 permits "rural industry" with up to 12 staff and up to 1000m2. Exemption 8 may exempt such an activity from compliance with the noise limits if these activities are deemed to be associated with agriculture/ horticulture. This could result in significant adverse noise effects. We recommend that the Rural Zone noise exclusions are refined under the PDP, in accordance with the following objectives:

⁴ <https://www.odt.co.nz/regions/southland/school-court-be-used-helipad>

Recommendation	Reasons for recommendation
	i. The exclusions to the maximum permitted noise levels should be clear and certain, with the minimum degree of interpretation required (this may require use of definitions for terms used in the exclusions) ii. Any exclusions to the maximum permitted noise levels should only provide for appropriate (in terms of timing, level and duration) productive rural activities and industries to operate iii. Any exclusions to the maximum permitted noise levels should permit only the effects that are reasonable and that could be reasonably anticipated by a noise sensitive activity located in the rural zones. iv. The exclusions must not allow the generation of unreasonable noise levels on noise sensitive activities located in the GRZ (or the RLZ if subject to the same exclusions); v. Ensure that the exclusions are clear and robust and can be administered without ambiguity. We recommend that the exemption is refined to enable noise effects of seasonal and intermittent noise sources that could reasonably be anticipated in a rural zone. For example: <i>Any operational rural equipment which is mobile during its normal use for agriculture, horticulture and pastoral farming activities and that are seasonal and or intermittent. This includes tractors and harvesters and farm vehicles and the equipment towed by them.</i> The implementation of this exemption relies on robust definitions for the activities defined as agriculture, horticulture or pastoral farming activities.
Exemption 9	This exemption refers to activities on “reserve land” rather than land zoned “Sport and Active Recreation Zone” or “Natural Open Space Zone”. We understand that the reference to the Reserves Act status has been applied as neighbourhood reserves are often not zoned for recreation/ open space. We note that the <i>Temporary activities</i> chapter refers to “<i>Council-owned land</i>”. We recommend that the terminology across the District Plan is consistent. <i>Sporting and recreation activities and crowd noise on Reserve Land</i> We note that this exemption appears to be designed to control day-to-day recreational activities, as opposed to a recreational activity that may be temporary and involve crowd noise or amplified music. We recommend that this exemption is revised to refine the specific types of day-to-day reserve activities that are exempt from the noise limits. We recommend that recreational activities involving involve motorised activities, gunfire or amplified music should be subject to noise limits. If GDC seek to permit noise from recreational activities, we recommend that the exemption is refined. For example, to provide for sporting events and playground activities that do not involve amplified sound, motorised activities or gunfire. The exemption should also refers to activities undertaken in the daytime period only.
Exemption 10 <i>Race events at Gore Racecourse</i>	Race events held at the Gore Racecourse are proposed to be exempt from the noise standards. We note that the duty to avoid unreasonable noise still applies. We recommend that the temporary activity controls are used to provide for the frequency, level and duration of annual race events at the racecourse.
Exemption 12 <i>Festivals and community events</i>	This note exempts “<i>Festivals and other community events, on a road or Reserve land, administered by the Gore District Council</i>”. We note these activities are controlled by TEMP-R1 and therefore this exemption may conflict with the requirements of TEMP-R1. We recommend this exemption is reconsidered in terms of its alignment with the

Recommendation	Reasons for recommendation
	temporary activity noise standards and need to protect receivers from unreasonable levels of noise during the day and night.
Exemption 13 Vibration	We recommend this exemption is removed. The RMA defines noise as “Includes vibration” and the effects of vibration arising from any source should be considered as a potential effect.
S16 note	We support the statement “<i>However, the permitted day and night noise criteria as set out in the district plan may be used as a guide</i>”. We also note that it is very important for the Noise Chapter to identify that the permitted noise standards are designed to manage activities that are <u>permitted</u> in the zone. We support the inclusion of an advice note to confirm: • The permitted noise standards are designed to manage the effects of permitted activities • While the above noise sources are exempt from the noise sources are exempted from meeting the noise standards, any potential and actual adverse effects associated with the character, timing, duration or level of noise shall be considered for any discretionary or non-complying activity. We have been involved in a significant number of resource consent applications where the inclusion of such a statement helpfully enables the noise effects of ‘out-of-zone’ activities to be scrutinised more rigorously. Such a statement could be included here or in the chapter “Overview”.

4.5 NOTE-2

NOTE-2 sets out the relevant NZAS that must be adopted for the measurement and assessment of noise:

NOTE-2 Measurement of Noise

All zones Unless otherwise stated, all noise shall be:

1. Measured in accordance the requirements of NZS 6801:2008 Acoustics - Measurement of Environmental Sound; and
2. Assessed in accordance with the requirements of NZS 6802:2008 Acoustics - Environmental Noise.

4.5.1 Comments on NOTE-2

It is important that the rules and standards in the Noise Chapter provide direction on the relevant NZAS that must be adhered to in the measurement and assessment of noise.

This note may be superfluous in the event that the correct NZAS is identified in each rule/standard.

4.6 NOISE-R1 *Noise not otherwise provided for in this chapter*

NOISE-R1 Noise not otherwise provided for in this chapter		
All zones	Activity status: Permitted	Activity status where compliance not achieved: Restricted Discretionary
	Where: 1. All applicable Noise Standards are complied with.	Matters of discretion: 1. The matters of discretion for the relevant infringed standard.

4.6.1 Comment on NOISE-R1

We generally do not support a rule that allows any noise source to be permitted if it complies with the zone noise standards, especially if that noise source is not expected in the zone. We strongly recommend that the PDP makes it clear that the permitted noise standards only apply to activities that are permitted, and that noise sources not covered by the noise chapter or zone provisions require consent and careful consideration of the effects.

We understand that the secondary purpose of NOISE-R1 is to apply a restricted discretionary activity status to activities that cannot comply with all applicable noise standards. We note that for some rules (NOISE-R6, NOISE-R9), a discretionary activity or non-complying activity status applies. We recommend this is clarified.

We note that the note is titled “*Noise not otherwise provided for in this chapter*” which could also be interpreted to refer to noise sources that are not specifically controlled by the chapter. We recommend this is clarified.

NOISE-R1 essentially restricts the matters of discretion to the relevant standard within the Noise Chapter. In our experience, this can lead to a very narrow interpretation of the relevant amenity considerations for the particular zone, and the role of the zone-specific objectives and policies in delivering the anticipated results for noise. We recommend a second matter is included in NOISE-R1 that enables the decision-making process to take into account the relevant noise amenity objectives for the specific zone.

We have been involved in a significant number of resource consent applications involving restricted discretionary infringements to the permitted noise standards, where the overall activity status of the application is for a discretionary or non-complying activity. In many cases the nature of the activity is of an intensity, scale or character that would not be reasonably anticipated in the zone. In such cases, we have found it critical that the District Plan enables consideration of the noise-related objectives and policies of the specific zone.

For example, the Auckland Unitary Plan includes the following statement:

“When considering an application for resource consent for an activity that is classed as a restricted discretionary, discretionary or non-complying activity, the Council will consider all relevant overlay, zone, District-wide and precinct objectives and policies that apply to the activity or to the site or sites where that activity will occur”.

We recommend such a statement is included in the PDP. See additional comments under “s16 Note” in the previous section.

4.7 NOISE-R2 Noise from construction, maintenance and demolition activities

NOISE-R2 Noise from construction, maintenance and demolition activities		
All zones	Activity status: Permitted Where: 1. The noise generated is measured, assessed, managed, and controlled in accordance with the requirements of NZS 6803:1999 Acoustics Construction Noise.	Activity status where compliance not achieved: Restricted Discretionary Matters of discretion: 1. Effects on ambient noise levels. 2. Management of effects from the activity with particular regard to: a. the frequency, intensity, duration and offensiveness of the noise being generated; and b. any impact on the health and well-being of the surrounding community, including sleep disturbance and on indigenous species. 3. The ability to mitigate adverse effects through the imposition of conditions.

4.7.1 Styles Group comment on NOISE-R2

Recommendation	Reasons for recommendation
Revise rule to include noise limits for relevant timeframe	NOISE-R2 correctly references the correct NZAS standard (NZS6803:1999) for the measurement and assessment of construction noise. NZS 6803 sets out procedures for the measurement and assessment of noise from construction activities of limited duration. The noise limits in the standard are determined according to the duration of the works, with lower (more restrictive) noise limits for longer projects. Plan users will need to hold a copy of NZS6803 to understand the noise limits recommended by NZS6803 and to determine compliance with this rule. At the time of preparing this advice, the price of NZS6803 from Standards New Zealand is approximately \$150 including GST. We support updates to the rule to include the relevant construction noise limits and correct location for the measurement and assessment of construction noise (i.e. 1m from the façade of any occupied building) in the rule itself. We can provide input to the drafting of this rule on request. We have provided an example below.
Matters of discretion	We recommend that the matters of discretion are revised to better focus on the relevant considerations for the appropriate management of construction noise. These include factors such as: - the noise level, hours of operation, duration and character of the noise - whether the measures to minimise the noise or vibration generated by the activity represent the best practicable option

Recommendation	Reasons for recommendation
	• Whether the effects can be shown to have been minimised by the appropriate assessment of alternative options • The extent to which the noise will occur at times will occur at times when disturbance to sleep can be avoided or minimised • Whether the noise will be limited in duration, or frequency or by hours of operation • Whether the noise effects will result in unreasonable disruption to the activities in the receiving environment
Included defined term for construction work in the Definitions Chapter	We recommend the rule refers to "construction work" and that the PDP include's NZS6803:1999 definition of construction work and construction noise. NZS 6803:1999 defines construction work as: CONSTRUCTION WORK means any work in connection with the construction, erection, installation, carrying out, repair, maintenance, cleaning, painting, renewal, removal, alteration, dismantling, or demolition of: a) Any building, erection, edifice, structure, wall, fence or chimney, whether constructed wholly or in part above or below ground level; b) Any road, motorway, harbour or foreshore works, railway, cableway, tramway, canal or aerodrome; c) Any drainage, irrigation or river control work; d) Any electricity, water, gas or telecommunications reticulation; e) Any bridge, viaduct, dam, reservoir, earthworks, pipeline, aqueduct, culvert, drive, shaft, tunnel or reclamation; or f) Any scaffolding. Construction work includes: (a) Any work in connection with any excavation, site preparation, or preparatory work, carried out for the purpose of construction work; (b) The use of any plant, tools, gear, or materials for the purpose of any construction work; (c) Any construction work carried out underwater, including work on ships, wrecks, buoys, rafts, and obstructions to navigation; and (d) Any inspection or other work carried out for the purpose of determining whether construction work should be carried out. "Construction noise" means noise arising from any construction work, as defined above. We recommend that the PDP Definition of "Construction Work" also includes vegetation removal as a standalone inclusion.

An example of a construction noise standard with noise limits is provided below. This example is consistent with the noise limits for long term and typical duration construction work in NZS6803:1999:

- (1) Noise from construction work in all zones shall comply with the following noise limits when measured and assessed in accordance with New Zealand Standard 6803:1999 Acoustics – Construction Noise. Construction noise shall be measured at 1m from the façade of any building containing an activity sensitive to noise that is occupied during the works:

Time of Week	Time Period	Noise Level, (dBA)	
		L _{eq}	L _{max}
Weekdays	0630 – 0730	55	75
	0730 – 1800	70	85
	1800 – 2000	60	80
	2000 – 0630	45	75
Saturdays	0630 – 0730	45	75
	0730 – 1800	70	85
	1800 – 2000	45	75
	2000 – 0630	45	75
Sundays & Public Holidays	0630 – 0730	45	75
	0730 – 1800	55	85
	1800 – 2000	45	75
	2000 – 0630	45	75

- (2) Noise from construction work in all zones shall comply with the following noise limits when measured and assessed in accordance with New Zealand Standard 6803:1999 Acoustics – Construction Noise at 1m from the façade of any other building that is occupied during the works:

Time of Week	Time Period	Noise Level, L _{eq} (dBA)
All days	At all times	75

- (3) For a project involving a total duration of construction work that is less than 15 calendar days, the permitted standard shall be the noise limits in (1) and (2) above increased by 5dB in all cases.
- (4) For a project involving a total duration of construction work that is more than 20 weeks the permitted standard shall be the noise limits in (1) and (2) above decreased by 5dB in all cases.

4.8 Rules and standards for wind turbines and electricity generation activities

The Noise Chapter includes two separate rules to control the noise from “small scale wind turbines” (NOISE-R3) and the noise levels from large scale renewable electricity generation activities (NOISE-R7). The rules are reproduced below:

NOISE-R3 Noise from small scale wind turbines		
All zones	Activity status: Permitted Where: 1. The noise complies with the underlying zone noise standards in NOISE-S2 Note: Measurement is to be undertaken in accordance with section 7.7 of NZS 6808:2010 Acoustics Wind Farm Noise.	Activity status where compliance not achieved: Restricted Discretionary Matters of discretion: 1. Effects on ambient noise levels. 2. Management of effects from the turbine(s) with particular regard to: a. the frequency, intensity, duration and offensiveness of the noise being generated; b. whether the level of effects are compatible with the character and amenity of the location and adjacent activities; and c. any impact on the health and well-being of the surrounding community, including sleep disturbance and on indigenous species. 3. The extent to which alternative locations and methods have been considered, recognising: a. the practical constraints associated with renewable electricity generation activities, and b. the environmental benefits of renewable electricity generation activities. 4. The ability to mitigate adverse effects through the imposition of conditions such as noise attenuation.

NOISE-R7 Noise from large scale renewable electricity generation activities		
Rural Zone	Activity status: Restricted Discretionary Matters over which discretion is restricted: 1. The ability to mitigate off-site adverse noise effects 2. The ability to meet noise levels specified in any relevant New Zealand Standard. 3. On-site and off-site construction traffic noise impacts. 4. The ability to control noise resulting from any on-site manufacture of concrete and any quarrying, by reference to the relevant permitted noise standards. 5. The provisions for safeguards and contingencies particularly concerning: a. The confirmation of the manufacturer's noise emission levels for the actual turbines to be used at the wind farm when these have been determined. b. The early identification and remedy of any special audible characteristics present when the wind turbines commence operation. c. Changes to background sound levels that may occur between the time consent is granted and when the wind farm is constructed. d. Effective noise monitoring programmes to demonstrate compliance beyond the commissioning stage. e. Procedures for addressing turbine malfunctions.	Activity status where compliance not achieved: Not Applicable

	f. Community liaison and methods of dealing with complaints and reporting such complaints to the Council.			
All Other Zones	Activity status: Discretionary	Activity compliance	status not achieved:	where Not Applicable

4.8.1 Comments on NOISE-R3 and NOISE R7

4.8.1.1 Recommendation to revise rules

The DDP rules distinguish “*small scale wind turbines*”⁵ from the “*large scale renewable electricity generation activities*” controlled by NOISE-R7. Definitions for both terms are required if these activities are controlled by separate rules.

We also note that “large scale renewable electricity generation activities” would include activities such as wind farms as well as solar farms, hydroelectric and bioenergy plants. These all have different noise-generating characteristics and require different methods of assessment. We note that the current wording of the rule is focussed on controlling the noise levels of wind farms.

If the intent of the rule is to control various types of large-scale renewable electricity generation activities, we recommend that the rule is revised. We can provide further input to the drafting of the rule subject to confirmation of the specific activities that the rule seeks to control.

4.8.2 Appropriate noise limits for small scale turbines

NOISE-R3 requires the noise levels from small scale wind turbines to comply with the underlying noise standards⁶. We consider that any wind turbine operating at the maximum permitted noise levels in NOISE-S1 would generate a significant level of adverse noise effect due to:

- The timing and duration of the noise. Turbines can generate a fluctuating noise on a 24/7 basis. The permitted rural noise standards are not designed to control activities that generate a fluctuating level of noise at all times.
- The character and frequency of the noise. In our experience, small scale turbines can often generate high frequency noise from their gearbox and drive systems that is likely to give rise to annoyance and adverse amenity effects at noise sensitive receivers, and at noise levels much lower than the zone noise standards.

⁵ We note that NZS 6808:2010 defines a “small wind turbine” as “a wind turbine with a swept rotor area less than 200m², as fined in accordance with IEC61400-2”. This would provide for a maximum blade length of approximately 8m. Wind farm is defined as by NZS6808:2010 as “a wind turbine or a group of wind turbines installed in close proximity to one another and electrically interconnected to a common grid.

⁶ The reference to the “underlying zone noise standards in NOISE-S2” appears to be a drafting error. We understand the intent is to refer to the maximum zone noise levels in NOISE-S1.

If the PDP includes a rule to control noise from small scale wind turbines, we recommend that the noise limits are set 10dB lower than the permitted zone standards to provide receivers with an adequate level of noise amenity (experienced indoors and outdoors).

4.8.3 Wind farms

NZS 6808 provides guidance on the limits of acceptability for noise levels received from windfarms. We recommend that a permitted activity status only applies where the lower noise limits for 'High Amenity' areas as defined in section 5.3.1 of NZS6808:2010 are achieved. The application of the higher noise limit for general amenity should require resource consent as a restricted discretionary or discretionary activity, where the assessment criteria would be the matters set out in NZS6808:2010.

We can provide further guidance on appropriate noise limits and activity status for wind turbines (small and large scale) subject to resolution of the additional issues we have identified.

4.8.4 Effects beyond boundaries

Wind farms/ turbines have the potential to propagate noise over large distances and onto neighbouring land. The noise emissions can often extend beyond the subject site and onto vacant parts of neighbouring sites, using the neighbouring land as a buffer.

We recommend that the consenting pathway should require the windfarm operator to provide noise level contour information to the Council that makes the spatial extent of the noise emissions very clear. This can be used to identify what areas of neighbouring land might be affected and to determine whether the development of neighbouring land might be affected. An assessment of the effects on neighbouring land and existing activities sensitive to noise should be required.

The contours can also be provided for the Council to incorporate in GIS maps where it is appropriate to do so and once consent is granted. They could be added as a non-statutory layer. This can assist the landowners of neighbouring properties to identify where the noise effects extend beyond the boundaries of the windfarm site. The contours should be the same as those used to assess the noise effects in any resource consent process, and should form the basis of the noise limits that would apply to the wind farm or turbine.

We support the inclusion of an advice note or information requirement such as the one below:

Prior to the operation of any wind farm or wind turbine, the operator shall provide the Council with a noise contour map showing the noise level contour representing the maximum noise output of the wind farm or wind turbine and that also represents the noise limit that can be used to set the noise limit for the activity. The contours shall be consistent with those used to assess the effects of the activity in any resource consent process. The contours shall be supplied to the Council in a digital form in a coordinate system and format that is consistent with the Councils GIS mapping systems.

4.8.4.1 Example of a rule and standard for wind turbines and wind farms

Option 1 Rule: Wind turbines and wind farms		
All Zones	Activity status: Permitted	Activity status where compliance not achieved: Non-complying

	Where: The noise complies with S-X- Wind Turbines	
Standard- Wind Turbines		
All zones	1. At any wind speed, the LA90 (10min) sound level from a wind turbine generator or wind farm must not exceed the background sound level by more than 5dB, or a level of 40dB LA90 (10min) whichever is the greater when measured within the notional boundary on any property which is a noise sensitive location as defined in New Zealand Standard 6808: 2010 Acoustics – Wind farm noise. 2. The noise level generated by wind farms must be measured and assessed in accordance with New Zealand Standard 6808:2010 Acoustics – Wind farm noise	

4.9 Rules and standards for Temporary Military Training Activities (TMTA)

The DPD includes three rules to manage noise levels from TMTA:

- NOISE-R4 controls noise from “fixed” TMTA
- NOISE-R5 controls noise from TMTA involving mobile noise sources
- NOISE-R6 controls noise levels from temporary TMTA involving mobile noise sources from TMTA involving live firing, firing of blank ammunition, and/or the use of explosives

It is commonplace for District Plans to prescribe specific rules for TMTA. In general terms, TMTA provisions seek to recognise and provide for the unique and generally infrequent range of activities undertaken by the Defence Force under the Defence Act 1990.

We understand that TMTA typically range from office/ classroom-based activities to large scale military exercises and may involve Search and Rescue, bomb deactivation training, weapons firing and personnel movements. TMTA may be undertaken over a period of days or weeks on an intermittent or continuous basis, during both day and night. The Ministry of Defence (MoD) provide input to the development of District Plans across New Zealand with the objective of seeking consistent permitted activity standards for TMTA. The NZDF have provided feedback to the DDP seeking the inclusion of their standard controls.

Our comments on the TMTA provisions and MoD feedback are set out below.

4.9.1 NOISE-R4 Noise from temporary military training activities (fixed)

NOISE-R4	Noise from temporary military training activities involving fixed (stationary)		
All zones	Activity status: Permitted	Activity status where compliance not achieved: Restricted Discretionary Matters of discretion:	

Where:

1. The noise generated complies with Noise Standard NOISE-S1

1. Management of effects from the noise source with particular regard to the matters of discretion for NOISE-S1.
2. Whether the noise levels are likely to cause alarm or adversely affect the character, Ngāi Tahu cultural values or amenity values of the location and adjacent activities.
3. Any mitigation of the noise proposed, in accordance with a best practicable option approach (e.g. site layout and design, design and location of structures, buildings and equipment and the timing of operations), recognising the practical constraints associated with temporary military training activities.
4. The ability to mitigate adverse effects through the imposition of conditions such as noise attenuation.
5. The provision of a noise management plan that specifically identifies the likely noise impacts for the area and describes the measures required to avoid or mitigate these.
6. The programme for notification and communication with occupiers and owners of affected sites prior to the activities commencing, including updates during the event.
7. The method for following up any complaints received during or after the event including communications with the Council.

4.9.2 Comment on NOISE-R4

4.9.2.1 Noise sources controlled by rule

We understand that this rule is designed to control stationary/ fixed noise sources. The implementation of this rule will require a definition of TMTA activities with “fixed” noise sources. NZDF’s feedback suggests:

“Fixed (stationary) noise sources (other than firing of weapons and explosives) include power generation, heating, ventilation or air conditioning systems, or water or wastewater pumping/treatment systems.

We agree with this definition and recommend that the term is defined in the Definitions Chapter.

4.9.2.2 Noise limits

NOISE-R4 requires compliance with the underlying noise standards in NOISE-S1. We consider that reference to the underlying noise standards is generally appropriate to control the noise of fixed / stationary noise sources.

NZDF’s feedback seeks the following bespoke noise limits.

3. Fixed (stationary) noise sources

Shall comply with the noise limits set out in the table below when measured at the notional boundary of any building housing a noise sensitive activity*.

Time (Monday to Sunday)	L _{Aeq} (15 min)	L _{AFmax}
0700 to 1900 hours	55 dB	n.a.
1900 to 2200 hours	50 dB	
2200 to 0700 hours the next day	45 dB	75 dB

Note: Fixed (stationary) noise sources (other than firing of weapons and explosives) include power generation, heating, ventilation or air conditioning systems, or water or wastewater pumping/treatment systems.

These noise limits are generally consistent with the draft noise limits for the Rural Zones in NOISE-S1, except a prescribed timeframe for the evening is included with noise limits that are 5dB lower than the daytime noise limits.

We consider it generally unnecessary to include NZDF's proposed noise limits on the basis that they are generally consistent with the General Rural Zone noise limits in NOISE-S1. The requirements of NOISE-S1 should simply be integrated with this aspect of the TMTA provisions.

4.9.3 NOISE-R5 Noise from temporary military training activities involving mobile noise sources

NOISE-R5 controls the noise levels from "mobile" TMTA activities. The rule is reproduced below:

NOISE-R5 Noise from temporary military training activities involving mobile noise sources		
All zones	Activity status: Permitted	Activity status where compliance not achieved: Restricted Discretionary
	Where: The noise generated complies with Tables 2 & 3 of NZS 6803:1999 Acoustic Construction Noise.	Matters of discretion: - Management of effects from the noise source with particular regard to the matters of discretion for NOISE-S1. - Whether the noise levels are likely to cause alarm or adversely affect the character, Ngāi Tahu cultural values or amenity values of the location and adjacent activities. - Any mitigation of the noise proposed, in accordance with a best practicable option approach (e.g. site layout and design, design and location of structures, buildings and equipment and the timing of operations), recognising the practical constraints associated with temporary military training activities. - The ability to mitigate adverse effects through the imposition of conditions such as noise attenuation. - The provision of a noise management plan that specifically identifies the likely noise impacts for the area and describes the measures required to avoid or mitigate these. - The programme for notification and communication with occupiers and owners of affected sites prior to the activities commencing, including updates during the event. - The method for following up any complaints received during or after the event including communications with the Council.

4.9.4 Comment on NOISE-R5

4.9.4.1 Noise sources

We understand that this rule is designed to control include temporary/ mobile TMTA activities such as personnel, light and heavy vehicles, self-propelled equipment and earthmoving equipment. A definition is required to enable this rule to be administered effectively. We recommend that input from the NZDF is consulted with to develop the definition.

4.9.4.2 Reference to NZS 6803:1999 and compliance with the NVMS

NOISE-R5 seeks to control noise levels from mobile TMTA noise sources through the recommended noise limits of NZS 6803:1999. NZS 6803:1999 is the relevant NZAS for activities that fall under the specific scope of “construction work”.

We consider that the proposal to manage noise from TMTA activities under NZS 6803:1999 does not comply with the requirements of Mandatory Directions 1 and 2 of the NVMS. This is because:

1. Mandatory direction 1 of the NVMS requires any plan rule to manage noise emissions must be in accordance with the applicable New Zealand standard. NZS6803:1999 is only applicable to activities defined as construction work. TMTA mobile noise sources do not meet the definition of construction work in NZS 6803:1999
2. Mandatory direction 2 of the NVMS requires “*Any plan rule to manage noise emissions must be consistent with the mandatory assessment methods in section 6 Rating Level and section 7 LMAX of New Zealand Standard 6802:2008 Acoustics – Environmental Noise (incorporated by reference into the planning standards), provided the type of noise emitted is within the scope of New Zealand Standard 6802:2008*”. TMTA mobile noise sources are a better fit with the scope of NZS6802:2008, rather than NZS 6803:1999. We are also mindful that some of the sources of noise may be from construction or aircraft and could be outside the scope of NZS6802:2008. NZS6802:2008 also introduces a more complicated assessment procedure involving duration adjustments and special audible character. These become complex for project planning, monitoring and enforcement and are more complex than the arrangements under NZS6803:1999.
3. We consider that because the activity is outside the scope of NZS6803:1999 (and possibly NZS6802:2008) and that NZS6802:2008 introduces an unnecessarily complex assessment procedure, it may be most-prudent to draft a specific rule and a specific assessment procedure that overcomes these issues. This could be as simple as including a table of noise limits (derived from, but not referencing NZS6803:1999) and a requirement for the noise levels to be assessed:
 - a. As the incident level 1m from the façade of the receiving building (with lower noise limits at night for activities sensitive to noise) (the same as NZS6803:1999)
 - b. Where the L_{Aeq} and L_{AFmax} noise levels must comply with the stated limits in any 30 minute period, (with no adjustments for duration or special audible character) (the same as NZS6803:1999)
 - c. Only at buildings that are occupied when the noise is being generated (the same as NZS6803:1999)
 - d. And measured in accordance with NZS6801:2008 (the same as NZS6803:1999)

We consider that the NZDF clarifies whether or not all noise sources that would be controlled by this rule are within scope of NZS6802:2008:

- a) If they are, then the NVMS requires that the rule be based on the assessment methods in Sections 6 and 7 of NZS6802:2008. The NVMS allows the PDP to include bespoke noise limits provided they are assessed in accordance with these sections of the standard.
- b) If they are not (including in-part) we suggest that a rule is drafted on the basis of our suggestions in (3) above.

We can provide further input to the provisions once this has been confirmed and following discussions with the NZSF's acoustic expert.

4.9.4.3 Matters of discretion

We can provide further input to improve the matters of discretion, subject to confirmation of the types of activities that the rule seeks to control and the final rule itself.

4.9.5 NOISE- R6 Noise from temporary military training activities involving live firing, firing of blank ammunition, and/or the use of explosives

NOISE-R6 controls the noise levels from TMTA activities involving live firing, firing of blank ammunition, and/or the use of explosives. The rule is reproduced below:

NOISE-R6 Noise from temporary military training activities involving live firing, firing of blank ammunition, and/or the use of explosives		
Rural Zone	Activity status: Permitted Where: - The activity only occurs: between 7am to 7pm; and for a maximum duration of three consecutive days within any rolling 90 day period on any one site and shall not reoccur within that period on any other site within 2km of any of the site boundaries on which the activity takes place; and - Sound emissions shall not exceed 70 dB L measured at the notional boundary of any building housing a noise sensitive activity; and - Notice must be provided to the Chief Executive of the Gore District Council at least 5 working days prior to the commencement of the activity, specifying: - whether the activity involves live firing and/or the use of explosives, or firing of blank ammunition; - the location of the activity and the boundaries within which the activity will take place, and - distances to buildings housing noise sensitive activities; and - the timing and duration of the activity.	Activity status where compliance not achieved: Discretionary
All Other Zones	Activity status: Non-Complying	Activity status where compliance not achieved: Not Applicable

There are several issues with NOISE-R6, including lack of a correct noise measurement metric, referring only to "dB L" (we assume it was intended to be L_{AFmax}). We note that NZDF seek the inclusion of their proposed standard, as set out below. We recommend that a meeting with

NZDF's acoustic expert is held to discuss and refine the proposed standard for the Proposed District Plan.

4.9.5.1 NZDF Feedback

NZDF's feedback includes a proposed standard for live firing, firing of blank ammunition, and/or the use of explosives. Their feedback states *"NZDF's standard uses separation distances (for day time and night time) from sensitive receivers to ensure that the sound levels received will be reasonable. This has the advantage of being easy to comply with and monitor. The standard does not specify a limit on duration, however it is noted that these exercises are costly and would typically only occur in one locality for a period of a few days."*

1. Weapons firing and/or the use of explosives

- a. Notice is provided to the Council at least 5 working days prior to the commencement of the activity.
- b. The activity complies with the following minimum separation distances to the notional boundary of any building housing a noise sensitive activity:
0700 to 1900 hours: 500 m.
1900 to 0700 hours: 1,250 m.
- c. Where the minimum separation distances specified above cannot be met, then the activity shall comply with the following peak sound pressure level when measured at the notional boundary of any building housing a noise sensitive activity:
0700 to 1900 hours: 95 dBC.
1900 to 0700 hours: 85 dBC.

NZDF proposed rule

4.9.6 Temporary military training activities in the Temporary Activity Chapter

TEMP-R5 (in the Temporary Activities Chapter) controls temporary military training activities. We note that the relationship between this rule and the Noise Chapter is not clear. We recommend this rule is updated to require compliance with the relevant TMTA controls in the Noise Chapter. We also recommend that the meaning of "adjacent" in TEMP-R5(4) is clarified.

We recommend that all noise limits relating to TMTA are included in the noise chapter.

4.10 NOISE-R6 and NOISE-S2 – acoustic treatment for noise sensitive activities

NOISE-R6 identifies the zones that are subject to the acoustic insulation standards in NOISE-S2. NOISE R6 is reproduced below:

NOISE-R6	Erection of, additions to or alterations to buildings for a sensitive activity
All zones	Activity status: Permitted Where: any building for a sensitive activity is located within the railway corridor overlay the provisions of Noise Standards NOISE-S2 are complied with.

NOISE-R6	Erection of, additions to or alterations to buildings for a sensitive activity
Town Centre Zone, Local Centre Zone, Neighbourhood Centre Zone, Mixed Use Zone, Light Industrial, General Industrial Zone	2. any building for a sensitive activity complies with Noise Standards NOISE-S2.

NOISE S2 is reproduced below:

NOISE-S2	Acoustic Insulation
All Zones	1. The following internal noise levels shall be met: 35 dB L inside bedrooms with ventilating windows open; 40 dB L inside other habitable rooms with ventilating windows open. 40 dB L inside room used for teaching, worship or the treatment of patients. 2. For new buildings and additions or alterations to existing buildings, compliance with (1) above shall be achieved if an acoustic design certificate from a suitably qualified acoustic engineer is provided to the Council which certifies that the proposed design and construction of the building, alterations or additions will achieve the required internal sound levels. The building shall be designed, constructed, and maintained in accordance with the design certificate. 3. Where the noise level specified in (1) above cannot be met with ventilating windows open, a ventilation system shall be installed. Note: For the purpose of this standard, ventilation system means a system complying with Acceptable Solutions and Verification Methods for New Zealand Building Code Clause G4 Ventilation. This standard will ensure a minimum level of mechanical ventilation with ventilating windows closed.

Activity status where compliance not achieved: Restricted Discretionary

Matters of discretion:

- The frequency, intensity, duration and offensiveness of the noise environment.
- The provision of a report from an acoustic specialist which provides evidence that the level of acoustic insulation is appropriate to ensure the amenity, health and well-being of present and future residents of the site.

4.10.1 Effects area for rail

We understand the proposed extent of the railway corridor overlay is 70m. KiwiRail's feedback on the DDP does not provide any information on the frequency or type of rail movements through the Gore District. We consider that there is no evidence to justify an effects area of 70m. We suggest that KiwiRail needs to demonstrate that the noise and/ or vibration effects generated by the use of its network are great enough to justify noise and vibration controls in the PDP, and if they are great enough, what should the extent of the control area be.

We recommend that further information is sought from KiwiRail to demonstrate the proposed rail effects area represents the appropriate distance to manage noise effects from the Gore rail network. Any controls applying to the receiving environment need to be drafted and applied

based on a strong evidential basis of the effects, and covering only the land that is actually affected.

Further information from KiwiRail is required to understand the volume of rail traffic through the Gore district, the realistic potential future volumes or the typical times of the day when trains pass through the district. This should include predicted noise level contours for the busiest typical and foreseeable hour of rail traffic on the lines. This will inform the spatial extent of the controls.

Without this information, the controls are likely to be formulated inaccurately and possibly even without any reasonable evidential justification at all.

4.10.2 Road-traffic noise

The Noise Chapter does not include any controls relating to noise effects from state highways. Our experience is that Waka Kotahi are likely to submit on the PDP seeking requirements for acoustic treatment for noise sensitive land use in proximity to state highways.

We recommend that any consideration of the need for road-traffic noise controls are informed by Waka Kotahi providing accurate computer noise modelling of the spatial extent of noise emissions arising from traffic on the Gore state highway network. This information will assist understanding of the road-traffic noise levels and extent of the effects areas through residential and rural zones.

The Whangarei District Council have recently settled appeals on their District Plan review that related to the control of noise sensitive activities near to the state highways and rail line. We suggest that Gore aim for a similar outcome if the transport authorities can demonstrate that the noise effects are great enough to warrant controls. We can provide the Whangarei Consent Order (from the Environment Court⁷) under separate cover.

4.10.3 Zones listed in NOISE-R6

We note that the Airport Zone chapter (AIR-R8 and AIR-R9) requires residential activity to comply with NOISE-S2. The Airport Zone should be included in the list of zones subject to NOISE-R6.

4.10.4 “Acoustic insulation” versus “Acoustic treatment”

Acoustic insulation is one of a variety of treatments that can be adopted to achieve a reasonable internal noise environment. For example, mechanical ventilation is also used to ensure windows can be kept closed in high noise environments. We recommend the term “acoustic treatment” is adopted instead of “acoustic insulation”. This could cover all forms of treatment necessary to achieve the requirements of any particular standard, including insulation or ventilation and temperature control.

We support defining the term “acoustic treatment” and including the definition below:

⁷ ENV-2020-AKL-000131.

Acoustic treatment

Building modifications or improvements to reduce external noise levels inside a building. The primary means of Acoustic Treatment includes the provision of mechanical ventilation and cooling to enable occupants to remain thermally comfortable when windows and doors are closed to reduce external noise. In some cases where external noise levels are high, Acoustic Treatment means additional measures such as improved glazing and window frames, solid core doors, additional wall and / or ceiling linings and other specific building treatments.

4.10.5 Correct metrics

The metric referred to in NOISE-S2 should be expressed as $L_{Aeq(15\text{ min})}$ not “L”.

4.10.6 Internal design noise level in bedrooms

NOISE-S2 will require bedrooms to achieve an indoor noise level of 35 dB L_{Aeq} . We note that this design level represents the upper threshold of acceptability. A lower noise limit (30 dB L_{Aeq}) should be considered if a higher level of protection from sleep disturbance effects is sought.

4.10.7 Mechanical ventilation and temperature control

The advice note identifies that “*This standard will ensure a minimum level of mechanical ventilation with ventilating windows closed*”.

It is our experience that simple compliance with clause G4 of the Building Code will supply a relatively low volume of fresh air but will not provide any appreciable cooling. This will often lead to occupants in high noise environments needing to open windows and doors for thermal comfort, thereby negating any benefits of the acoustic insulation and invalidating the cost and effort to meet the acoustic controls.

We agree with Te Whatu Ora’s feedback that “*this rule should specify higher air flows, temperature ranges, system controls and self-noise limits. Without adequate ventilation any acoustic insulation is nullified when windows have to be opened to maintain thermal comfort.*”

We note that most contemporary District Plan rules and acoustic treatment provisions around New Zealand all require mechanical cooling in addition to a mechanical ventilation system for compliance with G4. We consider that this would be appropriate in this case also.

We recommend that S2(3) is updated to provide the relevant performance standards for a mechanical ventilation and temperature control system, the rooms that the system must service (i.e. habitable rooms) and the compliance pathway for demonstrating compliance. We can provide further input to the drafting of the rule and a range of examples to draw from.

4.11 Agricultural aviation noise limits

NOISE-R8 permits the noise from the take-off and landing of aircraft and helicopters used for agricultural aviation, where the activity complies with the relevant standards set out in NOISE-S3. NOISE-R8 and NOISE-S3 are reproduced below:

NOISE-R8 Noise from the take-off and landing of aircraft and helicopters used for agricultural aviation		
All Zones	Activity status: Permitted	Activity status where compliance not achieved: Restricted Discretionary
	Where: 1. The noise generated complies with Noise Standard NOISE-S3	
		Matters of discretion: 1. The matters of discretion for the relevant infringed standard.

NOISE-S3 Requirements for noise from aircraft and helicopter used for agricultural aviation		
General Rural Zone	1. The airstrip or helicopter landing area is set back 2km from any zone boundary 2. The airstrip or helicopter landing is set back 50m from any road 3. The airstrip or helicopter landing is setback at least 500m from any side or rear boundary 4. There is no more than four aircraft or helicopter movements per day and no more than 20 per week 5. Aircraft and helicopter movements are limited to between the hours of 0700-1900 6. A log detailing the time and date of all aircraft movements and helicopter movements shall be maintained and made available to the Council at its request.	Activity status where compliance not achieved: Restricted Discretionary
		Matters of discretion: 1. Whether the hours of operation and flight frequency will affect the amenity values of the surrounding area. 2. The provisions of NZS 6805:1992 Airport Noise Management and Land Use Planning and NZS 6807:1994 Noise Management and Land Use Planning for Helicopter Landing Areas. 3. Whether the approach and departure flight paths minimise overflight over sensitive activities. 4. Any mitigation of the noise proposed, in accordance with a best practicable option approach (e.g. site layout and design, design and location of structures, buildings and equipment and the timing of operations). 5. The ability to mitigate adverse effects through the imposition of conditions such as noise attenuation.

4.11.1 Comment on NOISE-S3 and NOISE-R8

4.11.1.1 Striking the balance

We have reviewed feedback on the DDP from Southland Federated Farmers, Ballance and New Zealand Agricultural Aviation Association (NZAA). The feedback opposes the controls in NOISE-S3 / NOISE R8 on the grounds the controls are overly restrictive and do not recognise and provide for agricultural aviation in the Gore District.

We note that is relatively common for District Plans to exempt the noise from aerial agricultural aviation activities, particularly in rural districts that seek to protect the function of productive rural land use. The basis for the exemption is typically based on:

- i. The relatively infrequent/seasonal nature of aircraft movements and generally large separation distances to noise sensitive receivers
- ii. The District Plan seeking to recognise and provide for activities that are important for the economic well-being of the District

We consider that the intermittent and seasonal nature of agricultural aviation activities warrants flexibility in terms of the noise standards. We consider that it would be prudent to target the exemption at take-offs and landings that are from or to the same property. This is a common feature of many similar exemptions in other District Plans.

We consider that the focus of the noise standard should be to control the noise effects from commercial helicopter depots/ airstrips that are likely to generate noise effects on a consistent basis.

We note that the performance standards in NOISE-S3 are not particularly relevant for controlling noise effects at noise sensitive receiver. For example, NOISE-S3 relies on nominated setback distances from a rural interface zone boundary, road boundary, side or rear boundary to manage effects. These setbacks do not enable consideration of the actual effects noise levels when measured and assessed at a notional boundary. The separation distance requirements would be more effective if they referred to the notional boundary of a dwelling on another site (for example).

We recommend that the exemptions provide for an appropriate level of agricultural aviation activity but that airstrips or landing areas that are used to service farms or horticulture on other sites are not exempt. We consider any permanent or semi-permanent establishment of an airstrip should be subject to specific noise controls given that they can generate significant adverse effects. We can provide further input to the drafting of the exemption on request.

4.11.1.2 Use of helicopters for “construction work”

We have reviewed the submission of Aviation NZ which highlights that helicopters are used for a diverse nature of activities, including lifting of materials for construction projects.

We note that where a helicopter is used for an activity defined by NZS6803:1999 as “construction work”, the construction noise standard will apply rather than NOISE-R8 or NOISE-R9. These noise standards are generally permissive for helicopter activity.

We have been involved in several resource consent applications where helicopters were required to assist with tree removal to facilitate “vegetation restoration projects”. In that case, the activity did not meet the definition of “construction work” as the work was to facilitate replanting and not construction of a building. The much lower noise standards of the underlying zone applied and consent was required to authorise the works, even though the effects were indistinguishable (and arguably less than) a construction project involving the same noise sources.

We have recommended that the District Plan definition of construction work provides for vegetation removal.

We consider that the concerns raised by Aviation NZ should be addressed with this change.

4.12 NOISE-R9 Noise from the take-off and landing of aircraft and helicopters (other than for agricultural aviation)

NOISE-R9 essentially permits noise from the take-off and landing of aircraft and helicopters in the Airport Zone, Rural Zone and Settlement Zone, including where they are not associated with agricultural aviation. The noise from the take-off and landing of aircraft and helicopters is a non-complying activity in all other zones. Our comments are set out below.

NOISE-R9 Noise from the take-off and landing of aircraft and helicopters (Other than for agricultural aviation)		
Airport Zone, Rural Zone and Settlement Zone	Activity status: Permitted	Activity status where compliance not achieved: Discretionary
All Other Zones	Activity status: Non-complying	Activity status where compliance not achieved: Not Applicable

4.12.1 Comment on NOISE-R9

4.12.1.1 The Rural Zone and Settlement Zone

As a general principle, we support provisions that exempt the noise from helicopters from complying with noise standards where they are used for very short periods in any particular, such as for emergencies. We do not support an exemption from compliance with a reasonable noise standard for any formal landing area that might be used on any more than an irregular or very occasional basis.

This rule is not linked to a standard that controls the noise level, timing or frequency of the aircraft or helicopter take-off or landings. In the absence of any standards to control the potential level and frequency of effects, we consider that NOISE-R9 could give rise to significant adverse noise effects on receivers.

Helicopter use is becoming increasingly popular as a transport mode to facilitate a number of activities. It is our experience that noise effects from helicopter movements associated with informal landing areas are becoming an increasing source of noise complaints (across New Zealand).

We recommend that this rule is redrafted to provided appropriate noise performance standards for the take-off and landing of aircraft and helicopters in all zones. We can provide input under separate cover. We provide comment on the controls for the Airport Zone below.

4.12.1.2 Gore Airfield / Airport Zone

We understand that the Airport Zone will be applied to Gore airfield that operates from 40ha of Council land, with three grass runways. We understand that the Gore Aero Club and two aerial fertiliser companies also operates from the airfield.

NOISE-R9 permits noise from aircraft or helicopter take-off or landings in the Airport Zone. The PDP does not include any controls to manage noise emissions from the Airport Zone.

At this point in time, we have not reviewed any information relating to the level, frequency and number of aircraft movements from the Airport Zone, or whether the facility is expected to grow in the future. We consider that these are relevant matters to consider over (at least) the life of the PDP.

The next District Plan should recognise and provide for the future anticipated use of Gore's Airfield for the next ten years, and possibly beyond. We recommend that consideration is given to the adoption of NZS6805:1992 and use of air-noise boundaries as a means of protecting the facility from encroachment and potential reverse sensitivity effects.

NZS6805:1992 uses air-noise boundaries as the basis for local authorities to establish noise control measures and compatible land use planning controls. This approach would involve defining the areas around the airport *"within which the current or future daily amount of aircraft noise exposure will be sufficiently high as to require appropriate land use controls, or other measures to avoid, remedy or mitigate any adverse effect on the environment, including effects on community health and amenity values whilst recognising the need to operate an airport efficiently"* (Clause 1.4.1.1 of NZS 6805).

NZS 6805 requires the air noise exposure predictions for the airport to be based on an average day calculated from all operations during the busiest three months of the year.

Clause 1.4.3.7 of NZS 6805 sets out the matters which must be considered by a local authority when considering "whether those contours would be a reasonable basis for future land use planning". The acoustical matters include (but are not restricted to) an evaluation of the noise impacts on surrounding land use, the effects of aircraft noise on the welfare, amenity values and health of the community, and the costs and benefits of any land use controls within the air-noise boundaries.

We note that the NPS does not require the adoption of the NZS6805's air-noise boundary concept to manage aircraft noise effects. It simply requires that the L_{DN} noise level metric is adopted, and only if the PDP adopts a noise control for aircraft movements. If the PDP proposes to manage noise effects through the air-noise boundary concept, we expect that a Section 32 analysis will be required. This evaluation would take into account the level of acoustic amenity anticipated and provided for in the areas surrounding the airport, and any effects arising from the establishment of air-noise boundaries and any accompanying land use controls.

We expect that given the low intensity of use of the airfield, the air-noise boundary and OCB could be readily determined by noise modelling and the land use controls associated with it would be relatively straightforward. If requested, we can provide advice to inform the land use planning measures inside the air-noise boundary and OCB, and an assessment of noise effects to inform the Section 32 analysis and plan review process.

As an alternative, the ICB and OCB could be combined into a simple separation buffer that is estimated to be well outside a modelled 55dB L_{DN} contour for the actual aircraft operations. This option can reduce costs significantly as no modelling is required, but the generous estimation of the separation can be inefficient in many cases.

4.12.1.3 Activity status

The standard applies a permitted activity status for “Airport Zone, Rural Zone and Settlement Zone” and states that a discretionary activity status applies where compliance is not achieved.

The rule does not operate in conjunction with a standard, and there are no performance standards to identify when compliance is not achieved. We recommend the rule is revised.

4.12.1.4 Non-complying activity status for all other zones

A non-complying activity status applies for “*Noise from the take-off and landing of aircraft and helicopters (Other than for agricultural aviation)*” in all zones except for the Airport Zone, Rural Zone or Settlement Zone. We recommend that performance standards are developed to control the level of noise at receivers (in various zones), rather than imposing a blanket non-complying activity status with no performance standards. The permitted noise performance standards could (for example) be very restrictive if that was desired. The restrictive permitted standards would assist in informing an application for consent to infringe those standards. These could be combined with specific / directive objectives and policies to provide a clear context for any assessment of effects to infringe the permitted standard.

4.12.1.5 Define movements

We recommend the Definitions Chapter includes a definition of aircraft and helicopter movements.

NZS 6807:1994 defines a “movement” as a single flight operation that is either an arrival or departure of a helicopter, but not both. An arrival and departure is two movements under the standard. We suggest the PDP adopts a definition that reflects this.

5.0 Zone noise limits

Our general comments on the structure and format of the noise standards in NOISE-S1 is set out below. We provide zone-specific comments in the following sections.

Recommendation	Reasons for recommendation
Compliance with NVMS- refer to Noise Rating Level	“Noise rating level” is defined in the Definitions Standard as “<i>A derived noise level used for comparison with a noise limit</i>”. Mandatory direction 2 of the NVMS requires that any plan rule to manage noise emissions “must be consistent with the mandatory assessment methods in section 6 Rating Level and section 7 (L_{AFmax}) of New Zealand Standard 6802:2008 Acoustics – Environmental Noise (incorporated by reference into the planning standards), provided the type of noise emitted is within the scope of New Zealand Standard 6802:2008”. We recommend that the statement “Noise generated by any activity shall not exceed...” is replaced with the following wording: <i>“The noise (rating) level and maximum noise level arising from any activity shall not exceed....”</i>

Recommendation	Reasons for recommendation
Compliance with NVMS- use of correct descriptor for $L_{AF(max)}$	The DDP refers to “Lamax”. This will need to be correct to “$L_{AF(max)}$”. The PDP should include the following definition from the Definitions Standard and NZS6801:2008. “$L_{AF(max)}$ “has the same meaning as the ‘maximum A-frequency weighted, F-time weighted sound pressure level’ in New Zealand Standard 6801:2008 Acoustics – Measurement Of Environmental Sound”
Interface noise limits	We recommend that the interface noise standards should be updated or streamlined through a “catch-all” requirement to meet the noise limits applying in a receiving zone. For example, Standard E25.6.22 of the AUP requires: <i>“where noise generated by any activity on a site in one zone is received by any activity on a site in a different zone, the activity generating the noise must comply with the noise limits and standards of the zone at the receiving site”</i>
Measurement and assesment location for noise in Residential Zones	NOISE-S1 requires noise levels to be measured “at the boundary”. Obtaining a noise measurement at the boundary in accordance with the requirements of NZS6801:2008 may be problematic if there are boundary fencing arrangements or other obstructions that prevent a measurement 1.5m above the ground, at the boundary. We recommend that compliance with the noise standards should be measured “at or within the boundary of an adjacent site”. This is a common requirement in District Plans around New Zealand. When applied in the full context of NZS6801:2008 and NZS6802:2008 it will allow for the noise to be measured and assessed at a position that reflects the exposure of the receivers.

5.1 Residential Zone noise limits

NOISE-S1	Maximum Noise Levels
Residential Zones (GRZ, LLR, MDR)	Noise generated by any activity shall not exceed: a. 7am to 10pm – 55 dB LAeq b. 10pm to 7am – 40 dB LAeq c. 10pm to 7am – 75 dB L_{Amax} Measured at the boundary of any other site.

5.1.1 Inclusion of an evening noise limit or respite on one day of the week

We note that the DDP noise limits for residential and rural receivers are the same for all days of the week and all standards specify a daytime period that runs for 15 hours from 7am to 10pm.

In our experience, it is common for District Plan noise standards around New Zealand to provide a degree of respite from the noise effects authorised by the higher noise limits applying for the 15 hour-long day time period each day. This is often achieved by either:

- 1) introducing an evening noise limit applying between the hours of 7pm and 10pm, where the evening limit is 5dB lower than the daytime limit, or
- 2) significantly shortening (or even doing away with) the daytime period on one day per week. Often this day is Sundays and sometimes it also

includes Public Holidays. The change would see the night time noise limit apply through until (say) 9am and commence again at (say) 6pm. Alternatively, the night time limit could apply all day on Sunday.

These measures provide an effective reduction in intensity of commercial activities that might affect residential and rural receivers during these hours.

We recommend that the GDC consider the imposition of either an evening noise limit or a 'Sunday' restriction of the daytime period to provide a degree of respite.

5.1.2 Comments on noise levels for Residential Zones

The DDP noise limits for Residential Zones are 55dB L_{Aeq} daytime, and 40 dB L_{Aeq} and 70 dB L_{AFmax} at night.

A daytime noise limit of 55dB L_{Aeq} represents the uppermost acceptable level of noise for residential zones where dwellings are not subject to acoustic treatment. The level of acoustic amenity would be relatively low. This can be tolerable in terms of the relevant guidance, but the trade of amenity for greater flexibility should be considered with care.

In general terms:

- A 55dB L_{Aeq} daytime noise level may be appropriate for the medium density residential zone within the urban area, particularly if it contains an existing mix of community and office activities or is exposed to noise levels from major traffic corridors or commercial areas.
- A daytime noise level of 50dB L_{Aeq} would be appropriate in large lot or general zones subject to low-to-moderate ambient noise levels and would provide for a greater level of amenity. It may be appropriate to reduce the daytime noise levels to 50 dB L_{Aeq} in some of the Residential or Rural Zones that seek to deliver a higher level of amenity.

Overall, we consider that the permitted activities for each of the Residential Zones will determine the extent to which Residential Zones are exposed to noise sources which have a different character, timing or duration to typical residential activities.

For example, the primary noise sources in residential zones (where residential activity is the primary activity) typically include children at play, activities associated with property maintenance (e.g. lawn mowing), and domestic vehicle movements. The noise levels generated and received between sites in residential zones is very unlikely to reach noise levels of 55dB L_{Aeq} on a consistent, day to day basis. On the other hand, operational noise sources associated with commercial and industrial activities in residential zones mean that non-residential activities can easily generate noise levels up to the maximum permitted noise levels, on a day-to-day basis. This can significantly reduce the amenity of an otherwise typical residential environment.

We suggest that the day time noise standard is reduced to 50dB L_{Aeq} . The night time standards of 40dB L_{Aeq} and 70dB L_{AFmax} as set out in the DDP would be acceptable.

5.1.3 Type and scale of commercial activity in Residential Zones

If the PDP seeks to provide for commercial activities in Residential Zone, we recommend that the PDP provides for small scale commercial activities that have a functional need to locate in residential zones, where the nature, timing and duration of the noise levels are compatible with noise sensitive land use (e.g. home occupations, childcare centres).

In our experience, without specifying the types of commercial activities that are compatible in residential zones, this activity mix is likely to give rise to conflicts due to the inherent incompatibility of these land use activities, even where compliance with the maximum permitted noise levels is achieved.

We recommend that the anticipated zone outcomes for noise amenity in each of the Residential Zones are reflected in the relevant objectives and policies and associated activity tables for the zones. The maximum permitted noise levels for each of the Residential Zones should be consistent with the amenity outcomes.

5.1.3.1 Childcare centres

Many District Plans are now providing activity specific noise standards that enable ECEs to operate in residential zones subject to a day-time noise limit of 55dB L_{Aeq} . This approach responds to the locational constraints faced by ECEs (which often results in them establishing inappropriately in industrial zones) and the growing community demand to locate ECE facilities in residential areas, close to homes and schools.

We understand the DDP seeks to provide for educational facilities subject to permitted standards, including restricting the number of children to no more than 8. We note that the DDP noise limit of 55 dB L_{Aeq} would be enabling for an ECE to operate.

We suggest that this noise limit (55dB L_{Aeq}) could be applied only between the hours of 7am and 6pm on weekdays only. At all other times the normal zone noise standards would apply.

5.2 Rural Zone noise standards

NOISE-S1	Maximum Noise Levels
Rural Zones (GRZ, RLZ, SETZ, MPZ, SPZ-Field Days & Camp Columba)	Noise generated by any activity shall not exceed: a. 7am to 10pm – 55 dB L_{Aeq} b. 10pm to 7am – 40 dB L_{Aeq} c. 10pm to 7am – 75 dB L_{Amax} Measured at the notional boundary of a sensitive activity.

5.2.1 Comment on Rural Zone noise standards

5.2.1.1 Noise limits

The DDP divides the ODP Rural Zone into three rural zones, the General Rural zone' (**GRZ**), 'Rural Lifestyle Zone' (**RLZ**), and Settlement Zone (**SZ**). Each of these zones has a distinct

purpose and amenity considerations, however the DDP proposes the same noise standards for all of the Rural Zones.

The proposed daytime noise limit of 55dB L_{Aeq} represents the uppermost threshold of acceptable noise for noise sensitive land use that is not subject to acoustic treatment. Outdoor noise levels of 55 dB L_{Aeq} are relatively high and would not provide a high level of amenity for the RLZ where typically, a high level of aural amenity is sought by residents, and background noise levels are very low.

The range of daytime / night-time maximum permitted noise levels typically applied to Rural Zones across NZ are (in order of permissiveness):

- a) 55 dB L_{Aeq} daytime and 45 dB L_{Aeq} night time
- b) 55 dB L_{Aeq} daytime and 40 dB L_{Aeq} night time
- c) 50 dB L_{Aeq} daytime and 45 or 40 dB L_{Aeq} night time.

There are some instances of very low noise standards of 45dB L_{Aeq} during the day and 35dB L_{Aeq} at night. These are uncommon and generally regarded as very restrictive. They will deliver a very high level of amenity though.

The daytime noise levels in (a) and (b) are very enabling and can provide a reasonable level of flexibility for productive rural activities to operate during the day and night, whilst avoiding unreasonable noise levels at noise sensitive receivers.

The 55dB L_{Aeq} noise limit is often prescribed to enable most rural production activities to operate without unreasonable restriction (while maintaining some degree of compatibility with residential activities). As above, a daytime noise limit of 55dB L_{Aeq} represents the upper-most daytime noise limits for a zone which includes noise sensitive activities that are not acoustically treated.

The daytime noise levels in (c) provide a good level of aural amenity indoors and outdoors. These noise limits are typically adopted in rural lifestyle zones where a high level of aural amenity is sought, and background noise levels are very low. Option (c) is likely to be appropriate in the RLZ, depending on the purpose and objectives of the zone.

We recommend the PDP rural noise management framework delivers the following outcomes:

In the GRZ and potentially the SZ (the noisier rural zones):

- Sets the maximum permitted noise levels high enough to enable the efficient operation of productive rural activities and industries in the zone, but also to avoid unreasonable noise effects on noise sensitive activities in the zones (55dB L_{Aeq} during the day and 45dB L_{Aeq} and 75dB L_{AFmax} at night);
- Provide for appropriate exclusions to the rural noise limits for seasonal and intermittent noise sources.
- Ensure that the anticipated zone outcomes for noise are reflected in the relevant objectives and policies.

In the RLZ and potentially the SZ (the high amenity rural zone)

- Set maximum permitted noise levels that prioritise a high level of aural amenity for noise sensitive activities over the operation of productive rural activities and industries (50dB L_{Aeq} during the day and 40dB L_{Aeq} and 65-70dB L_{AFmax} at night)
- Ensure that the anticipated zone outcomes for noise amenity are reflected in the relevant objectives and policies

5.2.1.2 Assessment location

NOISE-S1 requires noise levels for all Rural Zones to be measured “*at the notional boundary*”. We recommend that compliance with the noise standards should be measured “*at or within the notional boundary of an adjacent site*”, and potentially at the site boundary if a high degree of protection is required in a particular zone.

A common application of the notional boundary concept requires the physical presence of a noise sensitive activity for the Rural noise standards to apply on an adjacent site. This means that no noise limits will apply at any land or zone that does not include a noise sensitive activity. This can be problematic at consenting stage when there are no physical dwellings on neighbouring sites, but where development of them is imminent.

If there is no noise sensitive activity on land adjacent to a noise maker, noise makers may use the adjacent land as a buffer for their noise effects. This can potentially cause issues when dwellings are established in the future. Where the District Plan anticipates and provides for the presence of a future dwelling as part of the legal existing environment, we recommend that the District Plan includes an advice note to recognise the notional boundary concept includes existing and future permitted dwellings.

Assessment at the notional boundary will only provide protection to the immediate area adjacent to a building used for a noise sensitive activity. Assessment at the site boundary could be required where a zone anticipates and provides for a greater level of noise amenity (potentially the RLZ and Residential Zones). Assessment at the site boundary is appropriate in the rural zones where smaller lot sizes are anticipated and provided for.

We consider it sensible to consider imposing a noise limit at the boundary of sites in the zones with smaller lot sizes. The consent status for an infringement could be Restricted-Discretionary and the matters for assessment could include a careful evaluation of the degree to which the noise effects ‘spill’ over the boundaries into other sites and the effects this may have on the use and development of neighbouring land. The objective of this approach is to encourage the internalisation of noise effects as a priority, and if the effects cannot be internalised then the effect of using neighbouring land as a buffer is a matter for assessment.

5.2.2 Interface noise limits

We note that the Rural Zone noise limits do not contain a separate zone-interface noise limit. We suggest that an interface noise standard is drafted that requires noise levels for an activity in the Rural Zone to comply with the noise limits of the receiving zone when assessed at the locations specified for the noise standards of the receiving zone. This approach ensures that

noise levels and relevant noise standard are controlled in accordance with the assessment location requirements of the receiving zone (i.e. if a site is located at the interface of the Rural and Residential Zones, the assessment location for noise would be within the site boundary of the Residential Zone receiver, regardless of whether a residential dwelling exists at that point in time).

5.2.3 Commercial Zones and Light Industrial Zone

NOISE-S1	Maximum Noise Levels
Commercial Zones and Light Industrial Zone (TCZ, LCZ, NCZ & MUZ, LIZ)	Noise generated by any activity shall not exceed: a. At any time - 65 dB LAeq b. 10pm to 7am - 85dBA LAmax Measured at or within the boundary of any site in the Town Centre Zone, Local Centre Zone, Neighbourhood Centre and Mixed Use Zone. a. 7am to 10pm – 55 dB LAeq b. 10pm to 7am – 40 dB LAeq c. 10pm to 7am – 75 dB LAmax Measured at or within the boundary of any site in the General Residential Zone, Medium Density Residential Zone, Large Lot Residential Zone, General Rural Zone, Rural Lifestyle Zone and Māori Purpose Zone.

5.2.4 Comments on Commercial and LIZ noise standards

5.2.4.1 Providing for noise sensitive activities authorised in high noise zones

We understand that the proposed zone framework is likely to provide for a mix of residential and employment activities. Commercial zones are inherently noisy zones, and therefore we recommend the PDP incorporates appropriate controls to ensure the mix of noise sensitive and noise generating activities will be compatible.

If the PDP seeks to encourage a mix of noise sensitive and noise generating activities in commercial and mixed use zones, it will be necessary to ensure that:

- the noise from noisy activities are controlled to a reasonable level during the day and night time
- The type of noise sensitive activity is compatible with the permitted noise environment
- Noise sensitive activities are insulated to ensure that a reasonable level of noise is achieved in the noise sensitive spaces, and that sleep disturbance effects are avoided.

We have reviewed the activity tables for each of the Commercial and Light Industrial Zones to understand the extent to which the activity tables protect the operation of noisy generating activities from noise sensitive activities by ensuring that any noise sensitive activities will be:

- i. Generally compatible with the type of commercial/ industrial activities permitted in the zone
- ii. Adequately insulated from the noise levels permitted in the zone.

We generally agree with the “R9” standards in each of the chapters to control the scale and typology of residential dwellings in Commercial Zones. These controls will limit the potential for incompatibility and potential conflict by restricting the number, type and scale of residential activity. The controls also require any residential dwellings to have a very limited outdoor component.

The definition of “noise sensitive activities” will identify the specific types of residential, educational, community, accommodation and health-care activities that are captured by the definition. We recommend that the Project Team reviews the permitted activity status for all types of “noise sensitive activities” in the high noise zones with a view to ensuring that:

- i. Noise sensitive activities with an “outdoor component” are precluded or restricted in terms of scale/type/use. For example, certain types of education facilities may be compatible in the Commercial and Light Industrial Zones if they do not involve outdoor play areas (e.g training facilities associated with trades). Similar, residential activity with outdoor spaces intended for relaxation or recreation would also be inappropriate. It may be acceptable to provide for noise sensitive activities that are wholly or substantially contained indoors where the noise effects can be reduced by acoustic treatment.
- ii. Indoor spaces of noise sensitive activities are required to be acoustically to reduce the external noise level and provide a good degree of amenity and sleep protection indoors.

5.2.4.2 Educational facilities in high noise environments

We recommend that ECEs with outdoor play areas or other educational facilities with outdoor learning components are not Permitted in the Commercial and Industrial zones due to incompatibility with the high permitted level of noise in these zones.

The Ministry of Education (MoE) licencing requirements for ECEs require noise levels must not unduly interfere with normal speech and/or communication or cause any child attending distress or harm. The potential outdoor noise levels in the Commercial and Industrial Zones are not compatible with this requirement and may give rise to noise complaints from the ECE centre (reverse sensitive conflicts) or a scenario where the Ministry of Education may withhold a license on grounds of external noise levels in outdoor play areas⁸.

This [newspaper article](#) is an example of an ECE being unable to operate in a high noise environment.

⁸ https://assets.education.govt.nz/public/Documents/Early-Childhood/Licensing-criteria/Sept-22/TPA-0861-Updates-ECE-Licensing-Criteria-Booklets-Early-Childhood_AW.pdf

5.2.4.3 Clarify interface noise limits

Interface noise limits applying between zones are standard practice across District Plans throughout New Zealand. Interface noise limits are an effective way of requiring noise generating activities in a noisy zone to meet the noise limits applying at a noise sensitive zone (and sometimes vice versa). They ensure an appropriate level of amenity is provided between zones. Without interface controls, the noise amenity of noise sensitive receivers could easily be compromised to the extent that the land uses become incompatible.

Typically, interface noise standards require the noise generating activity to meet the noise limit applying at the receiving zone.

We consider that the interface noise standards are not well set out and do not control the noise levels at all potential receiving zones. We recommend updates to ensure the interface noise limits are robust and easy to understand.

5.2.4.4 NCZ noise limits

We note that the noise limits for the NCZ are consistent with the noise limits for the Town Centre Zone, Local Centre Zone, Mixed Use Zone and Light Industrial Zone.

We understand that the purpose of the NCZ is predominantly for small-scale commercial and community activities that service the needs of the immediate residential neighbourhood. In our experience, this zone is typically applied to “corner shops” or very small shopping precincts containing small scale activities such as dairies and take-aways. These zones typically abut or are in very close proximity to residential dwellings. It is common for noise limits for the NCZ to “mirror” the Residential Zone noise limits. This approach typically ensures that the type and scale of commercial activities is compatible with the adjacent noise sensitive land use.

We suggest a lower noise limit for the NCZ may be appropriate for the intensity and scale of NCZ activities, and proximity to residential activity. We recommend that the NCZ activity table is reviewed if this recommendation is adopted (e.g. to preclude light industrial activities).

Our suggestion to apply the zone interface noise standards will control the noise that is received in the adjacent zones.

5.2.5 Noise limits between LIZ activities

The standard requires compliance with the Commercial and Light Industrial Noise limits when measured “*at or within the boundary of any site in the Town Centre Zone, Local Centre Zone, Neighbourhood Centre and Mixed Use Zone*”. The LIZ is omitted from the list of zones, meaning that there is no noise limit for noise generated and received between sites in the LIZ.

We recommend that the standard is revised to include noise limits between sites in the LIZ.

5.3 General Industrial Zone noise standards

General Industrial Zones (GIZ)	Noise generated by any activity shall not exceed: a. At any time - 70 dB LAeq b. 10pm to 7am - 85dBA LAmax Measured at or within the boundary of any other site in the General Industrial Zone. a. 7am to 10pm – 55 dB LAeq b. 10pm to 7am – 40 dB LAeq c. 10pm to 7am – 75 dB LAmax Measured at or within the boundary of a site within any other zone.
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5.3.1 Comments on GIZ noise standards

5.3.1.1 Interface noise limits

The interface noise limit for noise generated in the General Industrial Zone and received “*at or within the boundary of a site within any other zone*” requires compliance with 55 dB LAeq daytime and 40 dB LAeq and 75 dB LA_{F(max)} at night, regardless of the specific zoning of the receiving site.

This means that an activity located in the GIZ that is generating noise in the LIZ would need to meet noise limits far lower than the permitted zone noise limits in the LIZ. We don’t consider this reasonable given that the LIZ is not sensitive to noise and could easily operate when exposed to much higher noise levels.

We note that the interface noise limits included in the standard would be appropriate for noise received in the Residential Zones, Rural Zones, Natural Open Space Zones and Sport and Active Recreation Zones.

Where the noise from a site in the GIZ is received in the Commercial and Light Industry Zone, the activity should meet the noise limits applying within those zones.

As per our comments in the previous sections, we recommend updates to better clarify the interface noise limits applying to noise generated in the GIZ and received at any other zone. A simply requirement to meet the noise limits of the receiving zone is often used to control noise levels for various zoning interface scenarios.

5.3.2 Noise limits for Natural Open Space and Sport and Active Recreation Zones

Natural Open Space Zones	Noise generated by any activity shall not exceed: a. 7am to 10pm – 55 dB LAeq b. 10pm to 7am – 40 dB LAeq c. 10pm to 7am – 75 dB LAmax Measured at any point within the notional boundary of a sensitive activity.
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Sport & Active Recreation Zones	Noise generated by any activity shall not exceed: a. 7am to 10pm – 55 dB LAeq b. 10pm to 7am – 40 dB LAeq c. 10pm to 7am – 75 dB LAmax Measured at any point within the notional boundary of a sensitive activity.
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5.3.2.1 Comment on NOSZ noise standards

We have reviewed the rules and standards for the NOSZ. The zone overview and purpose for the NOSZ is as follows:

“Natural Open Space zone will comprise both Dolamore Park and Croydon Bush. Dolamore Park is a large Scenic Reserve of 95 hectares, administered by the Gore District Council and adjoins the greater Croydon Bush Scenic Reserve of 874 hectares which is administered on behalf of the Crown by the Department of Conservation. A specific Reserve Management Plan (RMP) has been prepared for Dolamore Park, and this will be subject to review over time. The RMP refers to in excess of 10,000 visitors per year for a range of outdoor recreational and leisure activities including walking, climbing, running, mountain biking, nature study, passive recreation, camping, photography, active recreation, bus tours, picnicking, and concerts.

We note that the proposed noise standards for the NOSZ provide for a relatively high level of noise. Lower noise limits should be considered if the purpose of the zone is to provide for more activities that would value a peaceful or natural noise environment. For example: if a ‘very high’ level of acoustic amenity is sought, noise limits of 45dB LAeq during the day and 35dB LAeq at night would be appropriate. For a good level of acoustic amenity, noise limits of 50dB LAeq during the day and 40dB LAeq at night would be appropriate.

5.3.3 Comment on SARZ noise standards

We understand the purpose of the SARZ is to:

“Provide open space areas for a range of sport and recreation activities, including organised sport and recreation for local, district-wide and regional communities. These spaces are areas where people can also enjoy informal exercise and leisure activities... It is generally accepted that the level of development in this zone is higher than other Open Space zones and that the sport and recreation activities that are anticipated to take place in this zone can generate noise, light and traffic effects in surrounding neighbourhoods”.

The SARZ will apply to those sites where higher recreational noise levels from organised/ formal sport activities are likely to be generated. Noise sources may include amplified noise sources (use of PA systems) and people noise from spectators and game play. There are a variety of options to manage noise from sport and active recreation zones to create a balance between allowing them to be intensively and providing respite for the neighbouring receivers, including:

- i. Authorising slightly higher noise levels for a set number of hours per day/week. For example, a noise level of 55dB L_{Aeq} normally applies during the day except that for a cumulative period of: (i) 3 hours per day between 7am and 9.30pm Monday to Friday; and (ii) 6 hours between 7am and 10pm on Saturdays, the noise level must not exceed 60dB L_{Aeq} ; or
- ii. Partial exclusions to the noise controls (i.e. excluding all people noise, or excluding unamplified noise from sporting events for a period of time, i.e. up to 20 hours per week between 0700 and 2100 hours; or
- iii. Prescribing separate controls for the use of amplified noise systems, specifying permitted hours of use, noise levels and total duration of use per week

We note that Exemption 9 proposes to exclude “*sporting and recreation activities and associated crowd noise on Reserve land*”. We understand that not all reserve land will be zoned SARZ, and vice versa. We have previously recommended this exemption is refined to exclude high-noise generating activities. We also recommend that the relationship between Exemption 9 and the SARZ standards is refined for consistency.

We note that the proposed daytime noise standard of 55 dB L_{Aeq} is generally enabling for organised sporting activities, subject to locating and designing activities with good separation distances between adjacent sites containing noise sensitive activities. Any noise standard that is higher than this is likely to compromise the compatibility with other activities, unless the higher noise level is permitted for short durations over a week (as in the examples above).

5.3.4 Interface noise limits

In this case, we note that the noise standards for the NOSZ and SARZ only require compliance with the noise standards when measured and assessed at the notional boundary of a noise sensitive activity. This approach means that no noise limits will apply at any site that does not contain a noise sensitive activity.

We generally recommend that interface noise standards require the noise generating activity to meet the noise limit applying at the receiving zone. This approach ensures that activities in all zones are provided with a level of protection. In this case, the interface limit could apply at all receiving zones that are not Residential or Rural (as the DDP rule requires assessment at these zones).

5.4 Special Purpose Zones

5.4.1 Airport Zone

The Noise Chapter does not provide maximum permitted noise levels for activities in the Airport Zone (including aircraft movements).

We note that the Airport Zone seeks to provide for a wide range of activities including aviation, industrial, emergency service facilities, conference facilities, office, food and beverage, retail and residential activity.

It is common and generally acceptable for there to be no noise limits between sites in the Airport Zone. Most District Plans rely on the activity table for the zone to achieve compatibility between activities.

We suggest that noise sensitive activities have a very restrictive status (e.g. non-complying) in the zone given the high probability of incompatibility with the potentially very high noise levels.

Interface noise limits are also required to ensure compatibility with adjacent zones.

5.4.2 Camp Columba Zone (CCZ) and Field Days Zone (FDZ)

We understand the purpose of the CCZ is to:

“Enable the existing activity to continue to operate and expand to meet the needs of the District and wider region. Camp Columba offers camps and programmes which include overnight accommodation catering for groups including youth groups, Scouting New Zealand, the Health Foundation, church groups and sports teams. In the future, the camp seeks to engage with other family groups, secondary schools and adult groups”.

The purpose of the FDZ is to provide for field day events:

“The Fields Day Zone incorporates land at Waimumu used for the biennial field days since 1982. These three-day events are the second largest of their type in the country, and are nationally significant, attracting over 40,000 visitors, predominantly from throughout the South Island. The infrastructure and resources developed at the site enables a wide range of sporting, community, social, cultural and corporate events and exhibitions to take place between field day events, including concerts and conferences. Parts of the site when not being used for events are subject to agricultural activities, predominantly grazing by stock. The relative isolation of the site facilitates management of any adverse environmental effects of activities taking place there, for example, noise and glare. Large scale events generate significant volumes of traffic in the vicinity of the site.

Interface noise limits are required for the CCZ and FDZ to ensure compatibility with adjacent zones.

The requirement for internal noise limits between sites in the CZS and FDZ will depend on the nature of the land holding. Noise limits between sites in the CZS and FDZ should be considered if the zones are comprised of multiple sites held in different ownership (or have the potential to be in the future). If the land is held in common ownership and unlikely to be fragmented, noise limits between sites in the same zone may not be required.

A key part of the FDZ is to provide for temporary events, however the Temporary Events chapter does not specifically recognise and provide for temporary events on the FDZ.

We recommend that the temporary activities chapter recognise and provides for the field day event (subject to appropriate controls) and that the zone noise standards control the effects of permanent land use activities.

6.0 Temporary activity noise limits

6.1 Definition of “temporary event” and “noise event”

The term “noise event” and “temporary event” are used throughout the Temporary Activities chapter. These terms are defined in the Definitions Chapter as follows:

noise event	means an event, or any particular part of an event, whereby amplified sound, music, vocals or similar noise is emitted by the activity, but excludes people noise. Where amplified noise ceases during a particular event, the event is no longer considered a noise event.
Temporary event	means the use of land, buildings, tents and marquees and structures, for a limited duration, including for the following activities: a) carnivals b) fairs; c) public art; d) festivals; e) fundraisers; f) galas; g) markets; h) meetings; i) exhibitions (Including Southern Field Days); j) concerts; k) community, recreation, or ceremonial events; l) parades; m) rallies; n) shows (including the A&P Show); o) musical and theatrical entertainment, p) uses similar in character.

In our experience, the term “noise event” is typically defined in District Plans as a temporary event or activity that exceeds the general noise standards either in level or duration. This approach essentially means that the noise standards for temporary activities are focussed on controlling the noise effects of temporary events that are unable to comply with the permitted noise standards for the zone.

6.2 General comment on noise effects authorised by controls

We have reviewed the noise effects authorised by the Temporary Activities chapter. We understand that:

1. TEMP-R1 permits a temporary event in all zones (except for SARZ or the NOSZ) where it is held within a “permanent, purpose-built, hotel complex, conference centre, or civic buildings” or “Council-owned land”, and the “noise event” does not occur outdoors or in the prescribed night time period (except for on New Years Eve)
2. TEMP-R1 authorises temporary events on SARZ or NOSZ land when the “noise event” does not occur outdoors during the prescribed night time period (except for on New Years Eve). If the event is for more than 100 people, the event must be located at least 25m from a Residential Zone boundary (no setback is required for the Gore A&P Show Ground”).
3. TEMP-R1 stipulates that the relevant noise standards for the zone do not apply between 0700 and 2200 (note, “houses” should be corrected to “hours”).

4. “Any other temporary events” in all zones (except for SARZ or the NOSZ) are restricted to 1,000 persons, a three day duration, timing during the day, and a maximum number of events per site, per year⁹. No noise standards apply between 0700 and 2200.

We consider that the noise standards for temporary events are extremely permissive. There are no noise limits for events during the daytime period. We consider that the temporary activity rules authorise noise levels of a duration and level likely to give rise to significant adverse effects on adjacent noise sensitive receivers. We expect that there may be few or no issues historically, primarily because no single piece of land has been used to the extent permitted by the controls.

We recommend that the noise controls for temporary activities are revised to provide for temporary events in the District’s key venues and open spaces, at reasonable noise levels and / or for shorter durations.

The options for managing temporary events include:

- Restricting the location in which temporary activities generating high noise levels can be undertaken within the District (e.g. by zone, or specific locations)
- Prescribing a set number of days per year that noise events can be undertaken from specific sites (e.g. key public parks and reserves or other private clubs or facilities identified by GDC such as the Field Days Zone, Gore Racecourse);
- Prescribing maximum permitted noise levels for amplified music, and times during the day and durations in which the noise levels can be generated (i.e. to ensure high noise events are not permitted when sleep is important).

We recommend that if temporary events are important for the District they should be provided for, but at reasonable noise levels and durations. In addition to “blanket” temporary activity provisions, we recommend the use of bespoke controls that are more enabling for events on suitable public places (e.g. the key parks, domains, reserves) within the District. From an acoustics perspective, these “suitable” sites should be sufficiently large enough to ensure that any noise sensitive receivers will not receive unreasonable noise levels.

In terms of noise limits, our experience is that temporary activity noise limits of 75dB L_{Aeq} or 80dB L_{Aeq} are common and generally easily achievable for temporary events. In our opinion, such levels are reasonable, and would not require hearing protection for those nearby (when using workplace health and safety criteria as the benchmark) and would be consistent with the highest construction noise limits that would be permitted in most District Plans in New Zealand. Whether 75dB L_{Aeq} or 80dB L_{Aeq} is selected as the limit should be determined with reference to the duration of each event, the finishing time and the number of events permitted per year, and the day of the week. At these levels, it would be typical to permit between four and ten events per year.

⁹ a. Two per site per year in a General Residential, Medium Residential zone, Large Lot Zone and Settlement Zone. Six per site per year in all other zones.

We also recommend that the limit is specified as a 5-minute L_{Aeq} level where every 5-minute sample must comply with the stated limit. This avoids the need for the entire event to be monitored to calculate a rating level (for comparison with the limit in accordance with NZS6802). It also provides a clearer, certain and more enforceable limit for the Council and event organiser to administer and comply with.

We also suggest a clause that removes the need to apply a 'penalty' or adjustment of -5dB for event noise that contains special audible character in accordance with NZS6802. Again, this simplifies the requirements and avoids the need for any interpretations of acoustical standards and further rating level adjustments during field measurements. The net effect of shortening the measurement duration and removing the duration adjustment, as well as removing the special audible character adjustment is effectively no or minimal change to the overall level of noise permitted compared to a limit requiring full assessment in terms of NZS6802.

In terms of timing and duration, we suggest the temporary activity noise standard adopt a 10pm curfew with an optional 11pm (night before a weekend or public holiday) curfew arrangement, or annual allowance for a New Years Eve celebration on appropriate site(s).

7.0 Other noise sources not controlled by the Noise Chapter

7.1 Telecommunication Facilities

We have been asked by the Project Team comment on whether there should be any controls relating to noise from telecommunication facilities which are not covered by the Resource Management (National Environmental Standards for Telecommunication Facilities) Regulations 2016 (**NESTF 2016**).

The NESTF 2016 provides nationwide regulations for the installation of telecommunications facilities. The NESTF 2016 controls the noise emissions from a cabinet when installed in locations that are within and outside of the road reserve.

The NESTF 2016 enables a local authority to prescribe District Plan noise standards for telecommunications cabinets installed outside the road reserve that are more stringent than the regulations.

Regulation 24 requires:

- (3) If the cabinet is located in a residential zone¹⁰ or an adjoining road reserve¹¹, the noise limits for the cabinet are, -
 - (a) between 7am and 10pm, 50 dB $L_{Aeq}(5min)$; and
 - (b) between 10pm and 7am,-

¹⁰ Defined in the NESTF 2016 as "...an area identified in a district plan or proposed district plan as being zoned primarily for residential activities, but not an area zoned for rural/residential or countryside living activities (however described)."

¹¹ Defined in the NESTF 2016 as a "formed legal road and any land next to it up to the legal boundary of the adjoining land".

- (i) 40 dB LAeq(5min); and
- (ii) 65 dB LAFMax,
- (4) For any other cabinet, the noise limits for the cabinet are,-
 - (a) at any time, 60 dB LAeq(5min); and
 - (b) between 10pm and 7am, 65 dB LAFMax

Regulation 24(6) requires the noise levels must be measured and assessed:

- a) 1m from the side of the building (or on the vertical plane of the side of the building) if a building containing a habitable room is within 4m of the road reserve where the cabinet is located
- b) Or, in all other cases, at least 3m from the cabinet and within the boundaries of land adjoining the road reserve where the cabinet is located.

We consider that the NESTF noise limits provide receivers with an adequate level of acoustic amenity. More stringent noise limits could be considered for zones that recognise and provide for a greater level of acoustic amenity. We can provide further input to control noise from telecommunications facilities in high amenity zones, if required.

7.2 New and altered roads

The DDP Noise Chapter does not include a rule to manage noise levels from the creation of new road or alteration of existing roads.

We recommend the PDP responds to the current policy gap by including a rule to manage the noise levels from new and altered roads that are within scope of New Zealand Standard 6806:2010 Acoustics – Road-traffic noise – New and altered roads (**NZS6806**). The NVMS requires that any plan rule to manage noise emissions from new and altered roads must adopt the noise measurement methods and symbols in NZS6806.

The application of NZS6806 requires the anticipated traffic flow of a new or altered road to exceed 2000 vehicles per day to trigger an assessment under the Standard. The provisions of this standard are designed for major roads that could generate noise effects worthy of assessment and generally preclude its application to roads constructed within subdivisions before being vested with the Council for long term ownership and management.

We suggest that if the PDP includes a standard to manage noise levels from new or altered roads in accordance with NZS6806, the rule/standard should specifically require an assessment of the effects of road traffic noise on people. This approach addresses a deficiency in NZS6806:2010 (the Standard does not require an assessment of effects on people to be undertaken). We note that in most recent cases where road traffic noise has been assessed for large projects, the road controlling authorities have submitted an assessment of noise effects along with the assessment against NZS6806:2010. A rule that requires the assessment of road traffic noise effects to be undertaken will ensure it is always included.

We consider that there are other minor adjustments to some provisions of NZS6806:2010 that should be included in any rule to avoid unnecessary complications and to ensure that the

planned environment (and not just the physically existing environment) is accounted for when planning new or altered roads. We can provide advice on this separately.

7.3 Gunfire and shooting venues

The DDP does not contain any specific provisions to control the gun fire noise emissions from shooting ranges.

Due to the impulsive nature of gunfire noise, measurement and assessment against the underlying noise standards is not appropriate for the following reasons:

- The L_{Aeq} metric (an energy average) alone is generally not appropriate for the assessment of impulsive gun fire noise. There are no stand descriptors or criteria for shooting noise in New Zealand.
- Due to its impulsive nature, gun fire noise is explicitly excluded from the measurement/assessment scope of NZS6802. Due to the special audible characteristics and impulsive nature of gun fire noise, specific measurement and assessment methods should be prescribed in District Plans to address the level and character of this noise source.

Noise effects from shooting ranges is an issue in many parts of New Zealand, particularly in the rural zones. We recommend that the PDP responds to this issue through the development of a specific noise control that specifies the maximum permitted noise levels (using the L_{AFmax} metric), and the specific process for the measurement and assessment of gunfire noise from shooting ranges.

The L_{AFmax} noise limit could be set at 50dB to provide a reasonably high level of acoustic amenity, along with standards that limit the hours and days of shooting at that noise level. We would typically suggest that one to two days of shooting per week for up to six hours a day (or thereabouts) would be reasonable for a new facility.

Alternatively, the PDP could require an RD or D consent for all activities involving organised shooting or gunfire with assessment criteria aimed at achieving outcomes similar to those above (a limited duration of shooting per day and week with modest noise limits).

It is our experience that managing the extent to which neighbouring land can be used as a buffer for noise effects is a critical aspect of the consenting process. We consider that all parties must be acutely aware of the effects over neighbouring land and the risks that can arise when neighbouring land is used as a buffer.

The measurement and assessment location could be the Notional Boundary alone, or the Notional Boundary and the boundary of the site that the shooting is undertaken on. This will encourage the internalisation of effects. If the former (Notional Boundary only) position is adopted, GDC may wish to consider making shooting ranges a Restricted Discretionary or Discretionary activity, with assessment criteria/ matters of discretion considering the degree to which the activity externalises effects on to neighbouring land.

7.4 Construction vibration

The DDP does not control construction or operational vibration. Vibration effects typically arise most-often from construction activities. Land use activities generating operational vibration effects across the receiving environment are typically rare, and the wide variance in the nature of the specific activities, levels and effects means that it is difficult to craft a standard that would manage potential vibration effects from all potential noise sources.

It is common for District Plans to include limits for construction vibration. The limits are typically designed to avoid cosmetic building damage and / or to manage potential effects on the occupants of the building. There are no construction vibration limits in the DDP.

We recommend that the PDP includes a standard to manage construction vibration only. Mandatory direction 3 of the NVMPS requires any plan rule to manage damage to structures from construction vibration must be consistent with the metrics for peak particle velocity (PPV) in ISO-4866:2010 – *Mechanical vibration and shock*.

We can provide further advice on the content of a rule if the GDC consider that a rule controlling this effect is required.

7.5 Vibration from transport infrastructure

We note that Waka Kotahi and KiwiRail commonly submit on Draft District Plans seeking controls to mitigate potential operational vibration effects from rail and state highway corridors. We recommend that any request by the agencies to incorporate vibration controls in the PDP is accompanied by evidence that demonstrates such controls are necessary and appropriate in the Gore District.