

BEFORE THE INDEPENDENT HEARINGS PANEL

**IN THE MATTER of the Resource Management
Act 1991 (“the Act”)**

AND

**IN THE MATTER of Plan Change 42 (“PC42”) – Rural and Rural
Lifestyle Environments, under the Taupō District Plan**

**STATEMENT OF EVIDENCE OF JON ROBERT STYLES ON BEHALF OF THE TAUPO
DISTRICT COUNCIL
ACOUSTICS
27 JULY 2023**

INTRODUCTION

1. My full name is Jon Robert Styles. I am an acoustic consultant and director and principal of Styles Group Acoustics and Vibration Consultants. I lead a team of 8 consultants specialising in the measurement, prediction and assessment of environmental and underwater noise, building acoustics and vibration working across New Zealand and internationally.
2. I have approximately 22 years of experience in the industry. I have been the Director and Principal of Styles Group Acoustics and Vibration Consultants for the last 18 years and was Auckland Council's Environmental Health Specialist – Noise for the 4 years prior. I lead a team of 8 consultants working across New Zealand and internationally. I have a Bachelor of Applied Science (EH) majoring in Environmental Health.
3. I am the past-President of the Acoustical Society of New Zealand (ASNZ). I completed two consecutive two-year terms as the President from 2016 to 2021 and have served on the ASNZ Council for approximately 15 years.
4. Styles Group is a member firm of the Association of Australasian Acoustical Consultants (AAAC) and I am on the Executive of the AAAC. My role in the Executive is to oversee the development of guidelines for acoustical consultants to follow in their day-to-day work, and to participate in the governance of the AAAC generally.
5. I have recently advised Gore District, Kaipara District, Napier City Council and Whangarei District through District Plan review processes. I assisted the Auckland Council through the development of the Auckland Unitary Plan and continue to provide advice to Auckland Council on both Council initiated and private plan change requests. I have also assisted many private and central government clients through plan change and review processes, most recently in Waikato, New Plymouth, Selwyn, Central Hawkes Bay, Wellington, Queenstown, Porirua, Central Otago, Auckland and Palmerston North.

Code of Conduct

6. I have read the Code of Conduct for expert witnesses in the Environment Court Practice Note 2023 and I have complied with it when preparing this evidence. Other than when I state that I am relying on the advice of another person, this evidence is within my area of expertise. I have not omitted to consider material facts known to me that might alter or detract from the opinions that I express.

INVOLVEMENT

7. In 2020, I provided preliminary advice to the Taupō District Council (the **Council**) on (what was then) a full District Plan review process. That advice comprised general high-level guidance on noise and vibration provisions. I understand that the Council then progressed with a bundle of plan changes rather than a full District Plan review. Plan Change 42 for the Rural and Rural Lifestyle Environments (the **Plan Change**) is one of the plan changes.
8. In 2023, I was engaged by the Council to provide advice and respond to submission points made in relation to acoustic matters on the Plan Change.

ASSESSMENT AND RECOMMENDATIONS

9. I have prepared a letter that sets out my recommendations on the Plan Change noise provisions and response to the relevant submissions. The advice is attached to this evidence as Attachment A.

Jon Styles

27 July 2023

27 July 2023

Hilary Samuel
Senior Policy Advisor
Taupō District Council

P. 09 308 9015
E. info@stylesgroup.co.nz
W. www.stylesgroup.co.nz
Saatchi & Saatchi Building,
L2, 125 The Strand, Parnell
PO Box 37857, Parnell,
Auckland 1151

By email: hsamuel@taupo.govt.nz

Dear Hilary,

Plan Change 42 – Advice on acoustic issues

1.0 Terms of reference

Styles Group has been engaged by the Taupō District Council (the **Council**) to provide advice and respond to submission points made in relation to acoustic matters arising in Plan Change 42 (the **Plan Change**).

This advice has been prepared in accordance with the brief provided by the Council on 12 June 2023. This advice addresses only the noise rules in the Plan Change and has not addressed objectives, policies or assessment criteria. We have provided general advice on these matters in our 2020 advice.

I understand that the Plan Change was prepared following our advice to the Council in July 2020. That advice comprised general guidance on noise and vibration provisions for (what was then) a full District Plan review process.

The Plan Change includes changes such as:

- Some new and modified definitions
- A new chapter 3b which includes objectives and policies for the General Rural and the Rural Lifestyle Environments
- A new chapter 4b which includes new rules and performance standards for the General Rural and Rural Lifestyle Environments
- Establishment of a new rural lifestyle zone
- Deletion of the current 3b and 4b chapters
- Deletion of Appendix 3 – Mapara Valley Structure Plan

2.0 Background

A common theme throughout this advice is the need for the Plan Change to proactively manage the compatibility of land use activities. Noise conflicts arise where 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), or sometimes when the character and timing of a noise is unexpected in the zone.

In my experience, District Plans that provide clear and robust zone frameworks to manage the compatibility and co-location of land use activities proactively manage compatibility and avoid potential noise conflicts. I consider that one of the primary tools available to minimise or manage noise-related conflicts is the zone chapter itself, and the activities that it might anticipate and provide for. These provisions can manage the type of activities in the zone, the likely timing of noise emissions and the nature and character of the main anthropogenic noises heard in and around the zone.

The rules and standards managing noise limits and assessment methods can control the level of the noises that are anticipated and provided for in the zone. The general zone provisions will work *with* the noise rules and standards to control the type of noise sources that are generally anticipated and provided in the zone. Together, the controls work together to deliver the overall outcome for noise amenity in each zone.

I have prepared comments on the noise-related rules and standards in the Plan Change and the submissions that relate to each rule. The relevant rules are:

- 4b.2.9 to 4b.2.13
- 4b.4.13 to 4b.4.15

Where I refer to these rules collectively, I refer to them as the **Noise Rules**.

3.0 General amendments

I consider that there are some general technical amendments to the Noise Rules that are required for consistency with National Planning Standards (NPS) and technical acoustical standards.

3.1 The Noise and Vibration Metrics Planning Standard (NVMS)

The Plan Change will need to meet the requirements of the NPS, including the specific requirements prescribed by the 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 Plan Change if they are referred to. The NVMS or the wider NPS does not provide any direction on how a local authority must manage noise effects, nor does it prescribe numerical noise limits.

I have reviewed the metrics and descriptors used in the Noise Rules. I note that the maximum noise limits are generally written as “XX dBA L_{eq} ”.

The NVMS requires that the mandatory symbols from NZS6801:2008 are used in plan rules. I consider that the Noise Rules need a minor amendment to ensure that all numerical noise limits are written as:

- xx dB $L_{Aeq(15min)}$ in place of xx dBA L_{eq}
- xx dB $L_{AF(max)}$ in place of xx dBA L_{max}

3.2 Definitions

I recommend that the following definitions are incorporated:

Noise sensitive activity	Any dwelling, visitor accommodation, boarding house, marae, papakāinga, integrated residential development, retirement village, supported residential care, care centres, lecture theatres in tertiary education facilities, classrooms in education facilities and healthcare facilities with an overnight stay facility.
*Notional Boundary	Means a line 20 metres from any side of a residential unit or other building used for a noise sensitive activity, or the legal boundary where this is closer to such a building.
* L_{Aeq}	has the same meaning as ‘time-average A-weighted sound pressure level’ in New Zealand Standard 6801:2008 Acoustics -Measurement of Environmental Sound. <i>This will need to be included in addition to the operative definition of L_{eq} (as there will be chapters that will still refer to the older definition)</i>
* $L_{AF(max)}$	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. <i>This will need to be included in addition to the operative definition of L_{max} (as there will be chapters that will still refer to the older definition)</i>
*Noise rating level	means a derived noise level used for comparison with a noise limit.

* These terms are defined by the Definitions Standard of the NPS. A local authority may include definitions for terms that are not defined in the Definitions Standard. The definitions I have recommended above support the proposed amendments to the rules discussed in this advice.

4.0 Rule 4b.2.9 Maximum noise – Limits

This rule sets the maximum noise limits for activities in the zone when the noise is assessed at receivers in the General Rural Environment (**GRE**), Rural Lifestyle Environment (**RLE**) or at any residential environment.

The notified rule states:

- The noise level arising from any activity measured within the notional boundary of any General Rural Environment or Rural Lifestyle Environment site or within the boundary of any residential environment site, other than the site where the noise is generated, shall not exceed the following limits:

- a) 7.00am – 10.00pm 55dBA L_{eq}
- b) 10.00pm – 7.00am 40dBA L_{eq} and 70dBA L_{max}

NOTE: For specific noise refer to following Performance Standards.

NOTE: The noise levels shall be measured in accordance with the requirements of NZS 6801:2008 Acoustics – Measurement of Environmental Sound and assessed in accordance with the requirements of NZS6802:2008 Assessment of Environmental Sound.

4.1 Recommended amendments to Rule 4b.2.9

I consider that some minor amendments are required to improve clarity and certainty. My additions are shown underlined and deletions are ~~struck through~~.

i. The noise rating level arising from any site within the General Rural Environment or Rural Lifestyle Environment shall comply with the following noise limits when any activity measured and assessed within a the Notional Boundary of on any other site in the General Rural Environment or Rural Lifestyle Environment site or within the boundary of any residential environment site, other than the site where the noise is generated, shall not exceed the following limits:

- a) 7.00am – 10.00pm 55 dB L_{Aeq} ~~55dBA L_{eq}~~
- b) 10.00pm – 7.00am 40 dB L_{Aeq} and 70 dB L_{AFmax} ~~40dBA L_{eq} and 70dBA L_{max}~~

NOTE: For specific noise refer to following Performance Standards.

NOTE: The noise levels shall be measured in accordance with the requirements of NZS 6801:2008 Acoustics – Measurement of Environmental Sound and assessed in accordance with the requirements of NZS6802:2008 Assessment of Environmental Sound.

These amendments clarify the zones that the rule applies to, the noise measurement positions and where the noise must be measured and assessed to determine compliance. The introduction of the word “rating” at the beginning of the rule is for consistency with NZS6801:2008 and NZS6802:2008 (and the mandatory directions of the NVMS).

4.2 Submissions on Rule 4b.2.9

Submission OS112.9 (Radio New Zealand) seeks an exemption to these noise limits for the use of generators and other mobile equipment that might be used in an emergency. I understand that an example may include the use of generators to power radio transmission equipment in the event of an electricity outage.

I consider that it is common for exemptions to apply to emergency services and infrastructure providers that operate temporary noise sources in emergency situations.

The wording suggested by the submitter is:

x. The use of generators and mobile equipment (including vehicles) for emergency purposes, including testing and maintenance not exceeding 48 hours in duration, where they are operated by emergency services or lifeline utilities;

I understand that this would apply to the list of noise sources exempt from all noise limits as set out in Rule 4b.2.13.

If the Council determines that such an exemption is appropriate, I suggest the following wording:

x. The use of generators and mobile equipment (including vehicles) operated by emergency services or lifeline utilities for emergency purposes, and the testing and maintenance of the same generators and any associated equipment that does not exceed six hours in duration between the hours of 7am and 7pm are exempt from compliance with this rule.

I have reduced the allowable duration of testing of equipment from 48 hours to 6 and required that testing be undertaken during the daytime only. My experience is that six hours is ample for the testing of generators and associated equipment.

5.0 Rules 4b.2.10 and 4b.4.14 Maximum Noise – Construction Noise

Rules 4b.2.10 and 4b.4.14 both state:

- i. All construction noise shall meet the requirements of New Zealand Standard NZS 6803:1999 Acoustics Construction Noise.

I consider that this wording is too short and does not meet the requirements of NZS6803:1999. The rule does not set out what the construction noise limits are and does not set out any specifics for the assessment procedure and does not set out where any construction noise limit is assessed from. I consider that these are all critical elements of a rule that should be clearly set out. My suggestions do not change the level of effect that the rule would permit. They simply add in important and simple details that the reader would otherwise have to purchase the standard to obtain.

Section 7.3 of NZS6803:1999 states:

“7.3 Setting noise limits

Noise limits in rules or consent conditions should be based on the appropriate table from this Standard, and should specify the actual numerical noise limits and the time periods for which the limits apply rather than simply referring to the tables in this Standard. In some circumstances, it may be necessary to define the extent of works the rule or condition is intended to cover, and exactly what works constitute construction work as opposed to works associated with routine operations (see 1.3). The basic elements of a rule or condition are:

- (a) The activity or class of activity to be regulated and any exceptions;
- (b) Noise descriptors;
- (c) Numerical noise limits and time periods of application
- (d) Reference to appropriate Standards for the measurement and assessment methods (e.g. NZS6803:1999, NZS6801:1999).”

I note that access to the content of NZS6803:1999 currently costs approximately \$170 (including GST) from Standards New Zealand¹. This would be the cost to any plan user who wanted to understand what noise limits apply, when they apply, and where the compliance point would be.

5.1 Recommended amendments to Rules 4b.2.10 and 4b.4.14

I recommend that rules above are replaced with the following:

1. *Noise from construction work shall be measured and assessed in accordance with NZS6803:1999 Acoustics – Construction Noise, except where varied by the rules below. Construction work is defined in NZS6803:1999 Acoustics – Construction Noise.*
2. *Noise from construction work in the Rural Zones must not exceed the levels in Table XX when measured 1m from the façade of any building that contains a noise sensitive activity that is occupied during the work:*

Table XX - Construction noise levels for noise sensitive activities in the Rural Zones

Time of week	Time Period	Maximum noise level (dB)	
		L _{Aeq}	L _{AFmax}
Weekdays	6:30am – 7:30am	60	75
	7:30am – 6:00pm	75	90
	6:00pm - 8:00pm	70	85
	8:00pm - 6:30am	45	75
Saturdays	6:30am – 7:30am	45	75
	7:30am – 6:00pm	75	90
	6:00pm - 8:00pm	45	75
	8:00pm - 6:30am	45	75
Sundays and public holidays	6:30am – 7:30am	45	75
	7:30am – 6:00pm	55	85
	6:00pm - 8:00pm	45	75
	8:00pm - 6:30am	45	75

3. *Noise from construction work in the Rural Zones must not exceed the levels in Table YY when measured 1m from the façade of any other building that is occupied during the work.*

Table YY Construction noise levels for noise affecting any other activity

Time Period	Maximum noise levels dB L _{Aeq}
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¹ <https://www.standards.govt.nz/shop/nzs-68031999/>

7:30am – 6:00pm	75
6:00pm – 7:30am	80

4. For a project involving construction work that is less than 15 calendar days at any one location, the L_{Aeq} and L_{AFmax} noise levels applying between 6.30am and 8.00pm from Monday to Saturday in Tables XX and YY above shall be increased by 5dB.
5. For a project involving a total duration of construction work at any one location that is more than 20 weeks the L_{Aeq} and L_{AFmax} noise levels applying between 6.30am and 8.00pm from Monday to Saturday in Tables XX and YY above shall be decreased by 5dB.
6. Where there is no practicable way of measuring outside a building, and where the windows and doors of the building are normally closed, the upper limits for noise inside the building shall be those set out in Tables XX and YY minus 20dB.

5.2 Submissions on Rules 4b.2.10 and 4b.4.14

Submissions OS57.33, OS68.60, OS84.42, OS93.61 support the notified version of the rule.

As set out above, I disagree with these submissions and consider that the notified rule is unclear and requires amendment to state the noise limits, times of application, descriptors and assessment locations.

The recommended rule that I have provided is consistent with the recommended noise limits in NZS6803:1999, with minor amendments. The minor amendments are:

- 1) Applying the limits in Table XX to “noise sensitive activities”, rather than “dwellings” alone.
- 2) Applying the limits in Table YY to buildings that do not contain noise sensitive activities, rather than to “commercial areas”.

6.0 Rule 4b.2.11 Maximum Noise – Electricity Generation Core Sites

This rule sets the noise limits that apply to a number of electricity core generation sites. I understand that many or all of these sites have been through earlier plan change, plan review or resource consent processes where the noise effects, limits and noise control boundaries have been examined and applied carefully. Evaluating the appropriateness of this rule for all sites would require a comprehensive and site-specific assessment, including the history and existing and planned receiving environment. I have not therefore reviewed the appropriateness of the noise limits and assessment positions for each site.

6.1 Recommended amendments to Rule 4b.2.11

I have made some minor modifications to the proposed rule to ensure consistency with NZS6801:2008 and NZS6802:2008, the mandatory directions of the NVMS, and to improve clarity and certainty. My additions are shown underlined and deletions are ~~struck through~~.

The noise rating level ~~Noise from uses at~~ Electricity Generation Core Sites established either prior to the notification of this Plan (July 2000) or approved by way of resource consent shall comply with the noise limits specified in 4b.2.9 above as measured:

- a) Outside the noise control boundary relating to each Electricity Generation Core Site as shown on the Planning Maps; or
- b) Within any ~~the~~ Notional Boundary of ~~any Dwelling within~~ in the General Rural Environment or Rural Lifestyle Environment ~~where this is~~ beyond the noise control boundary; or
- c) At the boundary of the Residential Environment where this is beyond the noise control boundary.
- d) Any new Buildings with habitable rooms (i.e. Dwellings, retirement homes, etc), built within the noise control boundaries shall be required to ensure they are appropriately designed, constructed and maintained to ensure that the noise from Electricity Core Generation Sites does not exceed a noise rating level of 35 dB LAeq in those spaces. ~~achieve suitable internal noise levels (35dBA Leq).~~
- e) The noise control boundary will be either the Electricity Generation Core Site boundary or the existing 40dB LAeq ~~40dBA Leq~~ and 75 dB LAfmax ~~75dBA Lmax~~ contour where this is beyond the Core Electricity Generation Site boundary, as shown on the planning maps.

6.2 Submissions on Rule 4b.2.11

Submissions OS57.34, OS68.61, OS84.43 and OS93.62 all support the retention of the rule as it was notified.

As set out above, I consider that amendments are required for clarity and certainty, and to ensure that the rule meets the requirements of NZS6801:2008 and NZS6801:2008 (and therefore the NVMS).

My amendments do not change the intent, noise limits or overall outcomes of the notified rule.

7.0 Rule 4b.2.12 Maximum Noise – Well Drilling and Testing

This rule sets the noise limits that apply to well drilling and testing. The notified rule states:

- i. Noise from well drilling and testing:
 - a) at the boundary of any site within the Residential Environment;
 - b) within the notional boundary of any dwelling or accommodation activity within the General Rural Environment or Rural Lifestyle Environment shall not exceed the noise levels set out below, measured and assessed in accordance with the provisions of NZS 6803:1999 Acoustics – Construction Noise, if the occupiers do not agree to vacate the premises at the noise generator's expense during the drilling period.
- ii. Time Period Monday to Sunday (inclusive):

	Leq	Lmax
7.00am – 10.00pm	70	85
10.00pm – 7.00am	60	75

The descriptors are not written in accordance with the NVMS and there is no unit (dB) in the rule. I consider that the rule should be updated to address this and some other minor uncertainties. These changes to do not alter the level of effect or application of the rule.

I understand that there is no scope to change any other aspect of the rule.

7.1 Recommended amendments to Rule 4b.2.12

I consider that rule should be amended as follows:

i. The noise level from well drilling and testing shall comply with the following noise limits when measured and assessed in accordance with NZS6803:1999 at the boundary of any site in the Residential Environment, or at the Notional Boundary of any dwelling or accommodation activity that is occupied during the drilling or testing:

~~a) at the boundary of any site within the Residential Environment;~~

~~b) within the notional boundary of any dwelling or accommodation activity within the General Rural Environment or Rural Lifestyle Environment shall not exceed the noise levels set out below, measured and assessed in accordance with the provisions of NZS 6803:1999 Acoustics – Construction Noise, if the occupiers do not agree to vacate the premises at the noise generator's expense during the drilling period.~~

~~ii. Time Period Monday to Sunday (inclusive):~~

~~Leq — Lmax~~

~~7.00am – 10.00pm 70 dB LAeq and 85 dB LAfmax~~

~~10.00pm – 7.00am 60 dB LAeq and 75 dB LAfmax~~

7.2 Submissions on Rule 4b.2.12

Submissions OS57.35, OS68.62 and OS93.63 support the retention of the rule as it was notified. As set out above, I consider some amendments are required to ensure consistency with the relevant standards as required by the NVMS and to improve clarity and certainty.

8.0 Rule 4b.2.13 Maximum Noise – Other

This rule essentially sets out the activities that are exempt from complying with the noise limits in the earlier rules.

The notified wording states:

i. Nothing in the foregoing Performance Standards shall apply to farm animals including working dogs, and to agricultural and forestry vehicles, agricultural and forestry machinery or equipment (including mobile plant at produce packing facilities but excluding sawmilling equipment), operated and maintained in accordance with the manufacturer's specifications in accordance with accepted management practices (e.g. for milking, spraying, harvesting, packing, forest harvesting and the like). Provided that the activity shall comply with the requirements of S16 of the Resource Management Act 1991.

ii. Nothing in the foregoing Performance Standards shall apply to sirens, circuit breakers and hydro spills associated with the operation of Electricity Generation Core sites. Provided that the activity shall comply with the requirements of S16 of the Resource Management Act 1991.

I consider that these exemptions need to be considered very carefully, as they are prone to incorrect or inappropriate application and can in some cases authorise significant adverse effects on a temporary or permanent basis.

8.1 Submissions on Rule 4b.2.13

There are a number of submissions on this Rule, as follows:

- OS56.24 (Permapine Limited) seeks to include sawmilling on wood processing sites in the exemptions. I disagree with this exemption, particularly if the exemption could be extended to apply to permanent saw milling operations. I understand that the activities referred to by the submitter are in fact covered by the National Environmental Standards for Plantation Forestry (**NES-PF**). If the activity is not covered by the NES-PF and should be considered for the exemption, I consider that it should only apply to temporary mobile sawmilling operations associated with forestry or plantation harvesting.
- OS25.18 (Manulife Forest Management New Zealand) seeks that forestry activities be included in the exemption, or that the noise from forestry should be dealt with by the NES-PF. I agree that the NES-PF is the most appropriate control for the noise from the forestry activities it covers.
- OS57.36 (James Ryan), OS68.48 (Mercury), OS84.44 (Genesis Energy) and OS93.64 (Contact Energy Limited) seek amendments to the wording to read:
 - ii. Nothing in the foregoing Performance Standards shall apply to sirens, circuit breakers, bursting discs, emergency or upset operating conditions and hydro spills associated with the operation of **Renewable Electricity Generation Activities Core sites**. Provided that the activity shall comply with the requirements of S16 of the Resource Management Act 1991.

I consider that these amendments are generally acceptable provided the noise sources are temporary and uncommon. I do not comment on the highlighted words **Renewable Electricity Generation Activities Core sites**. These words change the activities and locations that the exemption applies to and the consideration of this is outside my area of expertise.

- OS72.1 (Bill Chisholm) seeks that the private use of aircraft, (but not helicopters) are exempt from the controls. I disagree with this and consider that the noise controls should apply to all aircraft operations that are not covered by the exemption for aviation that is suggested below. If the suggested exemption is accepted, I consider that it is necessary to ensure that it could only apply to intermittent and infrequent aircraft movements and could not be applied to an airstrip where flights are common and frequent.

If aircraft use is included in the exemptions, I recommend the following wording:

Noise from the take-off and landing of aircraft and helicopters used for agricultural aviation where:

- 1) The take-off and landing is to or from a rural airstrip, a helicopter landing area or the Airport Zone.
- 2) Take off and landings do not occur for more 315 hours in any 12 month period.
- 3) Where the airstrip or helicopter landing area is separated by at least 500m from any notional boundary on a site not being serviced by the use of the airstrip.

A record of take offs and landing times and dates is maintained and available to the Council upon request.

I consider that my suggested wording immediately above also addresses submission OS78.7 (Ballance Agrinutrients) and OS23.12 (New Zealand Agricultural Aviation Association).

- OS26.49 (Horticulture New Zealand) seeks that a significant portion of the exemptions is struck out and replaced with “Primary Production Activities” as defined by the National Planning Standards.

9.0 Rule 4b.4.13 Maximum noise - limits

This rule sets the maximum noise limits for activities in the zone when the noise is assessed at receivers in the RLE or at any residential environment.

The notified rule states:

i. The noise levels shall be measured in accordance with the requirements of NZS 6801:2008 Acoustics – Measurement of Environmental Sound and assessed in accordance with the requirements of NZS 6802:2008 Assessment of Environmental Sound.

7.00am – 7.00pm 50dBA Leq

7.00pm – 10.00pm 45dBA Leq

10.00pm – 7.00am 40dBA Leq and 70dBA Lmax

NOTE: The noise levels shall be measured in accordance with the requirements of NZS 6801:2008 Acoustics – Measurement of Environmental Sound and assessed in accordance with the requirements of NZS 6802:2008 Assessment of Environmental Sound.

It appears that there has been a formatting error in this rule where the first and last paragraphs are the same, and the original introductory paragraph has been omitted.

9.1 Recommended amendments to Rule 4b.4.13

I consider that some amendments are required to resolve the apparent error and to improve clarity and certainty. My additions are shown underlined and deletions are ~~struck through~~.

~~i. The noise levels shall be measured in accordance with the requirements of NZS 6801:2008 Acoustics – Measurement of Environmental Sound and assessed in accordance with the requirements of NZS 6802:2008 Assessment of Environmental Sound.~~

i. The noise rating level arising from any site within the Rural Lifestyle Environment shall comply with the following noise limits when measured and assessed within a Notional Boundary on any other site in the Rural Lifestyle Environment or within the boundary of any residential environment site:

7.00am – 7.00pm 50 dB LAeq ~~50dBA-Leq~~

7.00pm – 10.00pm 45 dB LAeq ~~45dBA-Leq~~

10.00pm – 7.00am 40 dB LAeq and 70 dB LA_{F(max)} ~~40dBA-Leq and 70dBA-Lmax~~

~~NOTE:~~ The noise levels shall be measured in accordance with the requirements of NZS 6801:2008 Acoustics – Measurement of Environmental Sound and assessed in accordance with the requirements of NZS 6802:2008 Assessment of Environmental Sound.

These amendments clarify the zones that the rule applies to and the positions where the noise levels must be measured and assessed to determine compliance.

9.2 Submissions on Rule 4b.4.13

9.2.1 Submission OS11.4 (Douglas Wallace)

This submission seeks that the rule is amended so that the noise from stereos (music) cannot be heard in the rural environments.

I agree that music noise is typically an unwanted noise in the rural environments, aside from infrequent temporary events. I consider that the activities that the general zone provisions provide for should carefully control activities that could generate music noise on a regular basis. This could include hospitality venues, function venues, formal recreation activities (that might involve a PA system) and other commercial activities that could reasonably include the noise from amplified music or voice.

I consider that it would be unusual for a District Plan to require the noise of music to be inaudible (when experienced from another site) in the rural environments.

9.2.2 Submission OS38.7 and OS38.8 (Terry Palmer)

This submission seeks that this rule (and Rule 4b.2.13) is amended to reduce the limits that apply at night down to 20dB LAeq and 40dB LA_{Fmax} in order to 'halve' the noise emissions and essentially permit almost no audible noise at night.

I agree that a peaceful night time that is free or largely free of anthropogenic noise is an attractive feature for many people living in rural areas. If the Plan Change were to deliver this outcome, it would come at the expense of essentially prohibiting any activity that generated noise that was audible at another existing or permitted noise sensitive activity. This could have a significant effect on the operation and efficiencies of the transport industry (including depots) contractors depots, rural industries and processing facilities and milking sheds etc. I also note that the relief sought by the submitter would not control noise generated from transport infrastructure and other infrastructure subject to designations or resource consents.

It would be helpful to understand whether the Submitter's relief is designed to address a specific noise source of concern and whether this activity is currently exempt from the noise standards.

I consider that the numerical noise limits in the notified rule are very typical in rural zone provisions in District Plans around the country. I consider that it would be rare to find limits lower than those notified. I understand that no change to the numerical limits is proposed in response to this submission point.

10.0 Rule 4b.4.15 Maximum noise – Telecommunications and electricity equipment

This rule sets the maximum noise limits for telecommunication equipment and electricity substations and transformers.

The notified rule states:

- i. Noise from telecommunication equipment and electricity substations and transformers located in the road reserve permitted by the plan shall comply with the noise limits specified in 4a.4.12 above as measured at a point 1 metre from the closest façade of the nearest dwelling.

I consider that there are some issues with this rule, as follows:

- 1) I understand that the noise from telecommunications equipment in the road reserve is managed by the National Environmental Standards for Telecommunication Facilities (NES-TF).
- 2) There is no rule 4a.4.12 in the Plan Change and therefore no noise limits to apply. I expect that this is a typographical error or formatting / revision issue.
- 3) Specifying the “closest” façade may be too specific and may not allow assessment at the part of the façade where the noise is the greatest. This can occur if the closest part of the façade is screened (by a shed, fence or other structure) and an unscreened part of the façade further away is exposed to higher noise levels.

10.1 Recommended amendments to Rule 4b.4.15

I recommend that the noise from telecommunications facilities are managed by the NES-TF. The Plan Change could specifically note this if required.

If the normal zone limits are to be applied to the noise from electricity substations and transformers, I recommend that the rule reference needs to be changed to 4b.4.13.

I recommend the following amendments. My additions are shown underlined and deletions are ~~struck through~~.

- i. The noise rating level ~~Noise from telecommunication equipment and~~ electricity substations and transformers located in the road reserve permitted by the plan shall comply with the noise limits specified in ~~4a.4.12~~ 4b.4.14 above ~~as~~ when measured and assessed at a point 1 metre from the ~~closest~~ façade of the nearest dwelling.

10.2 Submissions on Rule 4b.4.15

Submission OS106.21 (The Lines Company Ltd) mentions this rule and refers to the cross-referencing error. I consider that my amendments address the submission point.

11.0 Potential new rules

11.1 Bird scarers

Submission OS26.48 (Horticulture New Zealand) seeks a new rule to control the noise of bird scarers. I consider that the noise from bird scarers has the potential to generate significant adverse noise effects if they are used regularly and are not properly controlled.

I also understand that the use of bird scarers is unlikely in the District due to an absence of horticultural activity. Council has confirmed that there is no need to regulate bird scarers on the basis that there is no evidence that they are used commonly in the District or that there is an issue.

11.2 Road noise and vibration

Submission OS 113.11 and 113.5 (Waka Kotahi) seeks new rules to manage 'reverse sensitivity' effects on the state highway network. The controls essentially require any new or alteration or addition to existing noise sensitive activities to be acoustically treated to reduce the internal road traffic noise level and to be located, designed and constructed in a way that manages vibration from the road network to be less than a specific threshold in the noise sensitive activity.

I have been involved in a significant number of plan changes and plan reviews that have addressed this topic. This includes in Auckland, Whangarei, New Plymouth, Waikato District, Wellington, Central Hawkes Bay, Napier, Kaipara, Selwyn, Christchurch and Porirua. I was heavily involved in the recent Consent Order from the Environment Court that sets out the provisions that now apply in the Whangarei District. The provisions in this consent order are generally accepted as a good example of what the general provisions should look like and deliver, acknowledging that every district will have different circumstances that require different provisions.

I generally support the submission from Waka Kotahi. My general position on the submission is as follows:

- 1) I consider that the emphasis should be shifted from managing reverse sensitivity effects to a combination of a) managing the adverse health and amenity effects of noise on people, and b) in turn managing or avoiding reverse sensitivity effects on the roading network.
- 2) I consider that it is appropriate to require new noise sensitive activities and alterations and additions to existing noise sensitive activities to be acoustically treated and appropriately ventilated and cooled (in the warmer months) to ensure that the road traffic noise levels

indoors is managed to a level that is reasonable and the worst of the adverse health and amenity effects on people are avoided.

- 3) The area subject to the controls should be mapped using computer modelling software. This method ensures that the controls are not applied over land that is screened or otherwise not exposed to noise levels high enough to warrant any controls. This has been the outcome in other districts recently and I understand that Waka Kotahi are willing to provide modelled setbacks in this process.
- 4) I do not support any controls relating to road vibration. I consider that there is a lack of empirical evidence to establish that there is a vibration issue that is significant enough to warrant controls and that cannot be adequately managed by maintaining and repairing the road. The vibration controls sought by Waka Kotahi are complex and will have a number of unintended consequences if imposed. I consider that no vibration controls should be imposed. Notwithstanding, I understand that there is likely to be a requirement for dwellings to be set back 40m from any state highways in the rural zone. I consider that this will address any vibration issues and will mean that no specific vibration controls will be necessary.
- 5) In addition to the controls sought by Waka Kotahi, I consider that the District Plan should contain clear and certain provisions that require Waka Kotahi to adopt the Best Practicable Option to minimise road noise in all circumstances. This includes when building new or altering existing roads through or near to planned and existing noise sensitive activities, and in situations where an existing road design is generating significant adverse noise effects on people.

I acknowledge that the evaluation of these provisions involves considerations beyond acoustics. From my experience and from an acoustics perspective, I recommend that controls similar to those set out in the Whangarei consent order are included in the Plan Change. These should be accompanied by a clear and certain requirement to deliver the outcomes noted in (5) above in the appropriate section of the District Plan when that is reviewed in the future (if it is not in this Plan Change).

I assist the Council in drafting the appropriate provisions if it decides to implement a set of controls.

Please contact me if you require any further information.

Yours sincerely,



Jon Styles, MASNZ
Director and Principal