Attendees: Kenton Baxter (FNDC), James Witham (FNDC), Peter Ibbotson (Marshall Day), Stephen Chiles (Chiles Limited), Cath Heppelthwaite (Eclipse Group Ltd)

Date: 6 November 2024

Recovered: 11 November 2024

Agenda:

1. Definition of *operational rail line* . Since the hearing, we have thought further (red text) and put forward the following for discussion:

OPERATIONAL RAIL LINE
means a rail line (or part thereof) that has regular scheduled passenger or freight services; does not include maintenance activities or occasional / tourist activities (eg. steam train excursions) where KiwiRail Holdings Limited has ~~notified~~ demonstrated to FNDC's satisfaction of the date that regular rail services will commence.
The rail line will then be deemed operational from the date notified by KiwiRail Holdings Limited and accepted by FNDC.

Commented [PI1]: Although KiwiRail will not intend this, the clause would allow KiwiRail to notify Council of a date well in advance of the rail line actually becoming operational (cynically, this could be the day after the Plan becomes operative….).

There is no requirement for KiwiRail to provide objective evidence that the rail line will actually operate from a specific date.

The above change requires KiwiRail to show FNDC that trains will start running from a specific date and for FNDC to accept that.

2. NOISE-P2 – wording (suitability of changes in my evidence?)
3. NOISE-S5 – use of habitable rooms vs noise sensitive activities; adding *hospitals* to definition of noise sensitive activities.

Kenton to has provided 'marae layer' in GIS form to KR.

4. NOISE-S5 – rule structure
5. NOISE-S5 work through rule details
6. NOISE-S5 matters of discretion
7. Rail Alert Overlay text

[others?]

Attachment A: Amendments Sought

Base text (black) Section 42A Appendix 1 Recommendation
Recommended amendments; red underline / ~~strikethrough~~

Definitions
NOISE SENSITVE ACTIVITY
means buildings or land that may be affected by noise and require a higher standard of amenity. These include:

a. *residential or living activities;*
b. *education facilities;*
c. *health facilities;*
d. *hospitals*
e. *community facilities; and*
f. *visitor accommodation.*

NOISE-P2

Ensure noise sensitive activities proposing to locate:

within the Mixed Use Zone, Light Industrial Zone, or and Air Noise Boundary; or
on land near state highways or railways; or
and Air Noise Boundary and in close proximity of regionally significant infrastructure within these areas
are located, designed, constructed, maintained and operated in a way which will minimise adverse noise on community health, safety and wellbeing by having regard to:
a. any existing noise […]

NOISE-S5

NOISE-S5	Noise insulation standards for all noise sensitive activities	
All zones within 40m of a State Highway **All zones within 100m of an operational rail line**	1. Any habitable room in a new building used for a noise sensitive activity, or an alteration to an existing building that changes its use to a noise sensitive activity, must be designed, constructed, and maintained to achieve a internal noise limits set out in Table 1 by: of 40dB LAeq(24h); 2. Compliance with (1) above shall be achieved based on an existing noise level with a 3 decibel addition allowing for future traffic increases and design uncertainty; A. 3. Compliance with (1) above shall be achieved if, pPrior to the construction of any building containing a habitable room, an acoustic design certificate from a suitably qualified acoustic engineer is provided to the Council stating the design will achieve compliance with this standard, or the certificate shows that the noise at all exterior façades of that part of the building is no more than 15 dB above the relevant noise limits in Table 1 design noise level as determined in accordance with (2) above is less than 55 dB LAeq(24h) for road. When providing the acoustic design certificate the following applies: (i) For **roads,** the acoustic design certificate shall be achieved based on an existing traffic noise level with a 3 dB addition allowing for future traffic increases and design uncertainty; (ii) For **rail**, railway noise is assumed to be 70 $L_{Aeq(1h)}$ at a distance of 12 metres from the track, and must be deemed to reduce at a rate of 3 dB per doubling of distance up to 40 metres and 6 dB per doubling of distance beyond 40 metres. OR B. For **rail**: is at least 50 metres from any railway network, and is designed so that a noise barrier completely blocks line-of-sight from all parts of doors and windows to all points 3.8 metres above railway tracks.	**Matters of discretion are restricted to:** a. effects in the ability of existing or permitted activities to operate or establish without undue constraint; b. any legal instruments proposed; c. mitigation of noise achieved through other means; d. any topographical or other site constraints; e. any alternative solutions proposed by a suitably qualified acoustic engineer to achieve appropriate amenity for present and future residents of the site; f. any existing noise generating activities and the level of noise that will be received within any noise sensitive building; g. the primary purpose and the frequency of use of the activity; and h. the ability to design and construct buildings accommodating noise sensitive activities with sound insulation and/or other mitigation measures to ensure the level of noise received within the

Commented [PI2]: In broad terms I agree with this policy and the extension of it to railway and state highways, provided the requirements are proportionate to the risk / potential effects.

Note that the NOISE standard S5 does not really mandate "maintenance" of the sound insulation requirements: there would be no obvious way to do so. Presumably KiwiRail and NZTAs recommended NOISE-S5 satisfies the "maintenance" aspect.

Commented [SC3]: NZTA submission seeks for this distance to be replaced by a mapped overlay

Commented [PI4R3]: My opinion is that both/all "control boundaries" should be mapped, whether based on a noise model output (NZTA's relief) or some other approach (perhaps a specific distance from the road determined by Council). This column should be accurate and clear as to where the rules apply.

Commented [PI5]: Striking out "habitable spaces" is understood (the table broadly refers to the specific noise sensitive spaces in question), however note that some spaces in the table ("libraries", "marae", "places of worship") are still very broad descriptions. It is not necessary to sound insulate bathrooms or storage areas in libraries or marae to achieve 45 dBA internally, but the rule as written might require that. The intention of the rule is that the noise sensitive rooms within those buildings are sound insulated, not the whole building. In my view the rule should clearly state that.

Commented [SC6]: I note this format should probably be lower case letters based on other provisions

Commented [PI7]: Habitable room is still referenced here, but not in Clause 1 above

Commented [SC8]: Added by SC post-meeting

Commented [PI9]: This seems an appropriate way of determining when the sound insulation measures are required (if the noise reduction is 15 dB or less then a …

Commented [PI10]: I believe this leaves the design approach to the acoustic engineer: measurements or noise model or combination, including the ability to …

Commented [PI11]: This is potentially a conservative approach to noise level and does not leave any discretion to the acoustic engineer (unless a resource consent is sought of course). The noise level assumed (70 dB …

Commented [PI12]: Need to ensure section referencing is correct. Goes from i) to ii) to B) to C) currently - I believe this requires more thought to ensure the sub-clause applications are really clear.

Commented [SC13]: In other plans this provision often includes an option for highways such as "all parts of the formed carriageway of the state highway."

Commented [PI14R13]: Agree that this could be useful for road, though a 3.8m high barrier above a road would likely only occur in very specific situations (large cuts, or large buildings between). …

OR

C. For rail: is a single-storey framed residential building with habitable rooms designed, constructed and maintained in accordance with the construction schedule in Schedule 'Z'.

Table 1: Internal noise limits for state highway and rail corridor noise

Building type	Occupancy/activity	Maximum internal railway noise level $L_{Aeq(1h)}$	Maximum internal state highway noise level $L_{Aeq(24h)}$
Residential	Sleeping spaces	35 dB	40 dB
	All other habitable rooms	40 dB	40 dB
Education	Lecture rooms/theatres, music studios, assembly halls	35 dB	35 dB
	Teaching areas, conference rooms, drama studios, sleeping areas	40 dB	40 dB
	Libraries	45 dB	45 dB
Health	Overnight medical care, wards	40 dB	40 dB
	Clinics, consulting rooms, theatres, nurses' stations	45 dB	45 dB
Cultural	Places of worship, marae	35 dB	35 dB

[4. Deleted]

2. ~~5.~~ If windows must be closed to achieve internal noise limits ~~Where design external noise levels~~ in (1A~~2~~) above ~~are greater than 55 dB LAeq(24 h)~~ the building ~~habitable rooms of the noise sensitive activity~~ must be designed, constructed and maintained with cooling and mechanical ventilation system(s) that ~~achieves the following requirements~~:

~~i. Provides mechanical ventilation to satisfy clause G4 of the New Zealand Building Code; and~~

~~ii. provides cooling that is controllable by the occupant and can maintain the inside temperature to below 25°C~~

(a) For habitable rooms for a residential activity, achieves the following requirements:

i. provides mechanical ventilation to satisfy clause G4 of the New Zealand Building Code; and

~~building is minimised particularly at night.~~

1. The extent of noncompliance with the noise and vibration standards.
2. Effects on the health and wellbeing of people.
3. The reverse sensitivity effects on the rail [or road]network, including the extent to which the activity will unduly constrain the ongoing operation, maintenance and upgrade of the rail [or road] network.
4. The outcome of any consultation with KiwiRail [or NZTA].

Commented [PI15]: The "deemed to comply" constructions in Schedule Z are likely to represent what would actually be used, as other constructions (as determined by an acoustic engineer) may need to be heavier and more expensive to achieve the required internal noise levels especially closer to the rail line. The "deemed to comply" constructions are potentially the least conservative options based on the required external design noise level and the required internal design criteria.

In my view the main issue with the Schedule Z construction is likely to be the requirement to use a resilient rail on the walls of dwellings with lightweight façades (lightweight cladding is what most relocatable dwellings would use and may be used in many on-site builds). The additional plasterboard layers will add cost also.

Schedule Z does not mention the floor of a raised dwelling.

Commented [SC16]: Road criteria and title added to table by SC post-meeting

Commented [PI17]: I am of the view that the constructions require to meet this are quite onerous/heavy, potentially heavier than the Schedule Z "deemed to comply" constructions out to 100m.

Commented [PI26]: In my view, these matters of discretion should provide a gateway for a resource consent to be obtained without veto rights from KiwiRail. This is because Council need to be able to consider rail noise on a case-by-case basis, given the uncertainty over future rail noise levels and the inflexible nature of the rules proposed. A resource consent should be able to be obtained on its merits.

Commented [SC18]: Clause altered by SC post-meeting (apologies this should have been raised for discussion; it is in part a consequential change from removing the 55 dB in 1A)

Commented [PI19]: Check subsection x-ref if changed.

Commented [PI20]: The whole building, or just the spaces set out in Table 1, or just the habitable / noise sensitive spaces? Needs careful checking.

Commented [PI21]: There is a line in Table 1 for "Sleeping spaces" and one for "All other habitable rooms". I assume this clause is intended to apply to sleeping spaces also. It would be preferable for the words to encompass both, so there is no potential confusion.

	ii. is adjustable by the occupant to control the ventilation rate in increments up to a high air flow setting that provides at least 1 air changes per hour; and iii. provides relief for equivalent volumes of spill air; iv. provides cooling and heating that is controllable by the occupant and can maintain the inside temperature between 18°C and 25°C; and v. does not generate more than 35 dB $L_{Aeq(30s)}$ when measured 1 metre away from any grille or diffuser. The noise level must be measured after the system has cooled the room to the temperatures in (2)(a)(iv) or after a period of 30 minutes from the commencement of cooling (whichever is the lesser). (b) For other spaces, is as determined by a suitably qualified and experienced person. [for (ii); air change no mechanical experts, some discussion on how 1 change per hour was ascertained vrs other figures for (v), Peter expressed some concern re: 35 dB LAeq(30s) in relation to high wall mounted heat pumps; doesn't want to preclude specific outcomes; an addition to the rule specifying when 35 dB LAeq(30s) applies (ie. after optimal temperature reached). See Waikato District Plan. 6. Noise levels from ducted ventilation and cooling systems must be designed to within the design sound level range of NZS2107:2016 when measured as a time and space average over the room beyond 1 metre from any diffuser or outlet. If split system air-conditioning systems are used, an HVAC design certificate must confirm these are of good quality, suitable for noise sensitive applications, and include a "low noise" or "quiet" operation mode. [strike though 6 if 5(v) adopted]	

Commented [SC22]: Sentence added by SC post-meeting

Commented [PI23]: This is an improvement, allowing the measurement to be made when the heat pump is hopefully "maintaining the set point temperature" in the room. I still think it is likely an unnecessarily prescriptive clause that is unnecessarily overreaching into the design of people's dwellings, though I recognise that NZTA want people to choose thermal solutions that they will actually use (and not avoid using because they are too noisy). The clause is probably more likely to allow for high-wall heat pumps to be used, which I think is pragmatic.

Commented [PI24]: Why not also allow residential dwellings to have their ventilation and air-conditioning design determined by a suitably qualified person? Perhaps as an alternative.

Commented [PI25]: Although this is a non-prescriptive clause, I still consider it has merit in pragmatic mechanical design solutions. If this clause is used, it should not be a separate clause, rather it should be considered as a substitute for 5(v).

[Schedule 'Z' is proposed new text]

Commented [PI27]: See other comments on this schedule.

Schedule 'Z' Construction schedule for indoor noise control

Elements	Minimum construction for noise control in addition to the requirements of the New Zealand Building Code	
External walls	Wall cavity infill of fibrous insulation, batts or similar (minimum density of 9 kg/m3)	
	Cladding and internal wall lining complying with either Options A, B or C below:	
	Option A - Light cladding: timber weatherboard or sheet materials with surface mass between 8 kg/m2 and 30 kg/m2 of wall cladding	Internal lining of minimum 17 kg/m2 plasterboard, such as two layers of 10 mm thick high-density plasterboard, on resilient/isolating mountings
	Option B - Medium cladding: surface mass between 30 kg/m2 and 80 kg/m2 of wall cladding	Internal lining of minimum 17 kg/m2 plasterboard, such as two layers of 10 mm thick high-density plasterboard
	Option C - Heavy cladding: surface mass between 80 kg/m2 and 220 kg/m2 of wall cladding	No requirements additional to New Zealand Building Code
Roof/ceiling	Ceiling cavity infill of fibrous insulation, batts or similar (minimum density of 7 kg/m3)	
	Ceiling penetrations, such as for recessed lighting or ventilation, shall not allow additional noise break-in	
	Roof type and internal ceiling lining complying with either Options A, B or C below:	
	Option A - Skillion roof with light cladding: surface mass up to 20 kg/m2 of roof cladding	Internal lining of minimum 25 kg/m2 plasterboard, such as two layers of 13 mm thick high-density plasterboard
	Option B - Pitched roof with light cladding: surface mass up to 20 kg/m2 of roof cladding	Internal lining of minimum 17 kg/m2 plasterboard, such as two layers of 10 mm thick high-density plasterboard
	Option C - Roof with heavy cladding: surface mass between 20 kg/m2 and 60 kg/m2 of roof cladding	No requirements additional to New Zealand Building Code
Glazed areas	Aluminium frames with full compression seals on opening panes	
	Glazed areas shall be less than 35% of each room floor area Either, double-glazing with: • a laminated pane of glass at least 6 mm thick; and • a cavity between the two panes of glass at least 12 mm deep; and • a second pane of glass at least 4 mm thick Or, any other glazing with a minimum performance of Rw 33 dB	
Exterior doors	Exterior door with line-of-sight, to any part of the state highway road surface or to any point 3.8 metres above railway tracks	Solid core exterior door, minimum surface mass 24 kg/m2, with edge and threshold compression seals; or other doorset with minimum performance of Rw 30 dB
	Exterior door shielded by the building so there is no line-of-sight to any parts of the state highway road surface or any points 3.8 metres above railway tracks	Exterior door with edge and threshold compression seals

S416.041

Alert Layer

Overview

The Far North District is diverse with a range of rural and urban areas, made up of large tracts of rural land, small rural communities and

[…]
Council has responsibilities under the RMA to manage noise, however, it is important to note that some activities are exempt from the noise rules set out in this section as they are controlled by another Act or are controlled by section 16 and 17 of the RMA.

A Rail Alert Overlay has been applied which identifies the noise and vibration-sensitive area within 100 metres each side of the railway designation boundary as properties within this area may experience rail noise and vibration effects. No specific district plan provisions apply in relation to noise and vibration controls as a result of this Rail Alert Area unless the rail line becomes operative in which case Noise S5 will apply. The Rail Alert Overlay is to advise property owners of the potential noise and vibration effects should the rail line become operative but leaves with the site owner to determine an appropriate response.