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Attention:	Sarah Trinder, James Witham, Kenton Baxter	Cross Reference:			
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Subject:	FNDC District Plan Proposed Revisions to NOISE-S1				

Marshall Day Acoustics has provided advice on the proposed District Plan review to Far North District Council. Our reports have included:

- *Far North District Council – Proposed District Plan, Review of Submissions* dated 20 June 2024
- *FNDC Proposed District Plan Revision – Noise and Vibration Review* dated 30 June 2020

In the *review of submission* report we stated that the NOISE-S1 was **not fit for purpose**. Our recommended solution was to redraft the section to resolve many of the expected problems in application. Subsequently, we were engaged to make recommendations for the redrafting of the noise limits.

This design advice sets out our recommended changes to **NOISE-S1**. We note that there are several other matters that we have raised in our submission review that also require improvement (e.g. NOISE-R7), but these are not within the scope of this current review.

Our recommended changes to the NOISE-S1 section is attached as Appendix A. We recommend that FNDC thoroughly review our recommendations to ensure that all relevant zones have been included and that the section is fit for purpose, aligns with the Definitions section, and is suitably integrated within the wider proposed District Plan.

The following bullet points summarise our recommended NOISE-S1 changes:

The recommended changes are intended to resolve errors in the notified NOISE-S1 section

- The changes are intended to assign noise limits to all zones. They are made to:
 - o avoid a situation where “no limits” would apply within or between certain zones
 - o avoid ambiguity in how noise limits should apply within and between zones
 - o apply suitable noise limits between zones
- In many cases, the notified noise rules were ambiguous. We have aimed, where possible, to keep the “implied intention” of the notified noise rules, provided this is in keeping with good practice. In some cases this has required judgement on our part.
- We consider the changes are supported by submission **S516.072** by Ngā Tai Ora - Public Health Northland.

There would still be two zones where noise limits would not apply

- The proposed changes would not apply noise limits to noise received **within** the *Mineral Extraction Overlay* or within the *Airport* zone. If a limit on noise received within these zones is desirable, the *Airport* zone could potentially be added to the *Mixed Use* or *Light Industrial* section and the *Mineral Extraction Overlay* could be added to the *Heavy Industrial* section. However, before any decision is made some further thought may be warranted on the type of activities that may be permitted in these zones

Our recommended noise limits vary depending on the zone noise is emitted from

- For example, noise emitted from a *Minerals Extraction Overlay* (e.g. quarrying activity) would need to meet a daytime noise limit of 55 dB L_{Aeq} when received at a *Rural Residential* property, however noise

emitted from a *Settlement* zone would need to meet a more restrictive noise limit of 50 dB L_{Aeq} when received in that same zone.

In some cases we have recommended higher noise limits for certain zones than were notified

- For example, we have provided noise limits for the *Hospital* zone that set a good level of amenity **within the zone**, but are relatively permissive on the level of noise **emitted** from the hospital. This is to avoid onerous constraints on hospital resource consent, noise control and operation. This is in keeping with submission points **S342.013**, **S316.003**, **S42.105** (and others).

New zones have been introduced since the Plan was notified

- In some cases there are new zones that were not notified (e.g. *Māori Purpose – Urban*), or there were zones that may have been missed in NOISE-S1 (e.g. *Quail Ridge*). For these zones, we have liaised with FNDC to ensure the zone has recommended noise rules that best suit the intention for the zone.

Noise limits applying to Aircraft operations at the *Airport* zone likely need their own section outside of NOISE-S1

- Aircraft operation (flight and engine testing) associated with the *Airport* zone is prescribed different noise rules (as per the notified chapter). It may be sensible to locate these rules outside of NOISE-S1. FNDC should give this further deliberation.
- Within NOISE-S1, we have suggested noise rules for **non-aircraft** operation that could occur within the *Airport* zone (for example: workshops, café, retail). Most airport sites are large, and these noise rules are unlikely to be a significant constraint on development within the sites. Nonetheless, noise rules are considered prudent, nonetheless. **(S516.072)**.

Noise limits applying to the three *Open Space* zones should be improved, but there remains some question on how to best provide for these zones.

- We have applied fairly stringent noise rules to the *Natural Open Space* zone. This would ensure a good level of amenity across *Natural Open Space* zones that have high character values, but it may constrain some activity adjacent to the boundary of these zones, even where no real effect may arise. An alternative would be to apply a higher noise limit at the site boundary on the basis that these sites are typically large and that noise levels across these sites would typically not be affected by activity near one boundary. This matter may benefit from further consideration by FNDC and by the commissioner panel. Note that it has been raised in part by submission **S463.084**.
- We have recommended more liberal limits be applied to the *Open Space* and *Sport and Active Recreation* zones than were notified. These zones do not require low noise levels to provide for community purposes and amenity – although it is important that there are some controls on noise levels across these sites. We have recommended a noise limit of 55 dB L_{Aeq} at all times. This still provides for a fairly high level of amenity in these zones **(S516.072)** but is less likely to significantly constrain nearby activities.

Some differentiation between “high amenity” and “lower amenity” rural zones has been provided for

- There are two sets of “rural” noise limits. Most “rural” zones have higher general daytime noise limits (55 dB L_{Aeq}) whereas two zones (*Rural Residential* and *Carrington Estate*) have lower general daytime noise limits (50 dB L_{Aeq}). The differentiation is based on the perceived amenity level of the zone and the proximity to productive rural industries, or zones that may have commercial components to them (e.g. *Settlement*) **(S516.072)**.
- We recommend the *Rural Residential* zone has a **notional boundary noise limit** (rather than a site boundary noise limit). A site boundary noise limit would be more restrictive and may discourage some development, but could potentially hedge against future reverse sensitivity. Conversely a notional boundary noise limit may allow fewer restrictions on nearby rural land development **(S516.072)**.

Many zones will have noise limits that remain broadly similar to what was notified

- The *Mixed Use, Light Industrial, and Horticulture Processing Facilities* zone limits remain largely as notified – but with greater clarity over how the noise limits should be applied throughout the District.
- The *Orongo Bay* zone is now treated as a *Light Industrial* zone for noise. The ambiguity over the noise limits applying within the zones has been resolved (**S516.072**).

We have updated the matters of discretion, but we understand that most activities that do not comply with the noise limits would be fully discretionary anyway

- We have aimed to limit the extent of the changes to the matters of discretion. We understand they are “guidance” rather than matters that Council need to limit their discretion to. We note that this may not be clear to non-expert readers of the District Plan.

Standards		
NOISE-S1: General noise rules applying to noise emitted from all zones and overlays (unless provided for by a specific standard elsewhere)		
<u>Receiving zone</u>	<u>Noise rule</u>	<u>Matters of discretion if compliance not achieved:</u>
<p>General Residential</p> <p>Māori Purpose - Urban</p> <p>Kororāreka Russell Township</p> <p>Hospital</p> <p>Quail Ridge</p> <p>Natural Open Space</p>	<p>a) <i>Noise generated in all zones, other than the zones in b) and c) below:</i></p> <p>Noise shall not exceed the following rating noise levels at any point within the receiving property boundary:</p> <p style="padding-left: 20px;">7.00 am to 10.00 pm (daytime): 50 dB L_{Aeq}</p> <p style="padding-left: 20px;">10.00 pm to 7.00 am (night-time): 40 dB L_{Aeq} and 70 dB L_{AFmax}</p> <p>b) <i>Noise generated in Mixed Use, Light Industrial, Horticultural Processing Facilities, Ngawha Innovation and Enterprise Park or Orongo Bay zones, or from non-aircraft operation activity within an Airport zone:</i></p> <p>Noise shall not exceed the following rating noise levels at any point within the receiving property boundary:</p> <p style="padding-left: 20px;">7.00 am to 10.00 pm (daytime): 55 dB L_{Aeq}</p> <p style="padding-left: 20px;">10.00 pm to 7.00 am (night-time): 40 dB L_{Aeq} and 75 dB L_{AFmax}</p> <p>c) <i>Noise generated in the Hospital or Heavy Industrial zones or Mineral Extraction Overlays:</i></p> <p>Noise shall not exceed the following rating noise levels at any point within the receiving property boundary:</p> <p style="padding-left: 20px;">7.00 am to 10.00 pm (daytime): 55 dB L_{Aeq}</p> <p style="padding-left: 20px;">10.00 pm to 7.00 am (night-time): 45 dB L_{Aeq} and 75 dB L_{AFmax}</p>	<p>a. ambient noise levels and any special character noise from any existing activities, the nature and character of any changes to the sound received at any receiving site and the degree to which such sounds are compatible with the surrounding activities;</p> <p>b. type, scale and location of the activity in relation to any noise sensitive activities;</p> <p>c. hours of operation and duration of activity;</p> <p>d. the temporary or permanent nature of any adverse effects;</p> <p>e. the ability to internalise and/or minimise any conflict with adjacent activities</p> <p>f. any mitigation proposed, in accordance with the best practicable option approach (e.g. site layout and design, design and location of structures, buildings and equipment and the timing of operation).</p> <p>g. The effects on any existing or future noise sensitive activity</p> <p>h. The effects on any outstanding natural character values</p>

<u>Receiving zone</u>	<u>Noise rule</u>	<u>Matters of discretion if compliance not achieved:</u>
<p>Rural Production</p> <p>Rural Lifestyle</p> <p>Māori Purpose - Rural</p> <p>Horticulture</p> <p>Moturoa Island</p> <p>Kauri Cliffs</p> <p>Ngawha Innovation and Enterprise Park</p> <p>Settlement</p>	<p><i>d) Noise generated in all zones, other than the zones in e) and f) below:</i></p> <p>Noise shall not exceed the following rating noise levels within the notional boundary of any noise sensitive activity within the receiving property:</p> <p>7.00 am to 10.00 pm (daytime): 55 dB LAeq</p> <p>10.00 pm to 7.00 am (night-time): 40 dB LAeq and 70 dB LAfmax</p> <p><i>e) Noise generated in Mixed Use, Light Industrial, Horticultural Processing Facilities, Ngawha Innovation and Enterprise Park or Orongo Bay zones, or from non-aircraft operation activity within an Airport zone:</i></p> <p>Noise shall not exceed the following rating noise levels within the notional boundary of any noise sensitive activity within the receiving property:</p> <p>7.00 am to 10.00 pm (daytime): 55 dB LAeq</p> <p>10.00 pm to 7.00 am (night-time): 40 dB LAeq and 75 dB LAfmax</p> <p><i>f) Noise generated in the Hospital or Heavy Industrial zones or in Mineral Extraction Overlays:</i></p> <p>Noise shall not exceed the following rating noise levels within the notional boundary of any noise sensitive activity within the receiving property:</p> <p>7.00 am to 10.00 pm (daytime): 55 dB LAeq</p> <p>10.00 pm to 7.00 am (night-time): 45 dB LAeq and 75 dB LAfmax</p>	<p>a. ambient noise levels and any special character noise from any existing activities, the nature and character of any changes to the sound received at any receiving site and the degree to which such sounds are compatible with the surrounding activities;</p> <p>b. type, scale and location of the activity in relation to any noise sensitive activities;</p> <p>c. hours of operation and duration of activity;</p> <p>d. the temporary or permanent nature of any adverse effects;</p> <p>e. the ability to internalise and/or minimise any conflict with adjacent activities;</p> <p>f. any mitigation proposed, in accordance with the best practicable option approach (e.g. site layout and design, design and location of structures, buildings and equipment and the timing of operation)</p> <p>g. The effects on any existing or future noise sensitive activity</p>

<u>Receiving zone</u>	<u>Noise rule</u>	<u>Matters of discretion if compliance not achieved:</u>
<p>Rural Residential</p> <p>Carrington Estate</p>	<p><i>g) Noise generated in all zones, other than the zones in h) and i) below:</i></p> <p>Noise shall not exceed the following rating noise levels within the notional boundary of any noise sensitive activity within the receiving property:</p> <p>7.00 am to 10.00 pm (daytime): 50 dB LAeq</p> <p>10.00 pm to 7.00 am (night-time): 40 dB LAeq and 70 dB LAfmax</p> <p><i>h) Noise generated in Mixed Use, Light Industrial, Horticultural Processing Facilities, Ngawha Innovation and Enterprise Park or Orongo Bay zones, or from non-aircraft operation activity within an Airport zone:</i></p> <p>Noise shall not exceed the following rating noise levels within the notional boundary of any noise sensitive activity within the property:</p> <p>7.00 am to 10.00 pm (daytime): 55 dB LAeq</p> <p>10.00 pm to 7.00 am (night-time): 40 dB LAeq and 75 dB LAfmax</p> <p><i>i) Noise generated in the Hospital or Heavy Industrial zones or in Mineral Extraction Overlays:</i></p> <p>Noise shall not exceed the following rating noise levels within the notional boundary of any noise sensitive activity within the receiving property:</p> <p>7.00 am to 10.00 pm (daytime): 55 dB LAeq</p> <p>10.00 pm to 7.00 am (night-time): 45 dB LAeq and 75 dB LAfmax</p>	<p>a. ambient noise levels and any special character noise from any existing activities, the nature and character of any changes to the sound received at any receiving site and the degree to which such sounds are compatible with the surrounding activities;</p> <p>b. type, scale and location of the activity in relation to any noise sensitive activities;</p> <p>c. hours of operation and duration of activity;</p> <p>d. the temporary or permanent nature of any adverse effects;</p> <p>e. the ability to internalise and/or minimise any conflict with adjacent activities;</p> <p>f. any mitigation proposed, in accordance with the best practicable option approach (e.g. site layout and design, design and location of structures, buildings and equipment and the timing of operation)</p> <p>g. The effects on any existing or future noise sensitive activity</p>

<u>Receiving zone</u>	<u>Noise rule</u>	<u>Matters of discretion if compliance not achieved:</u>
<p>Open space</p> <p>Sport and Active Recreation</p>	<p><i>j) Noise generated in all zones</i></p> <p>Noise shall not exceed the following rating noise levels at any point within the receiving property boundary:</p> <p>All times: 55 dB L_{Aeq}</p>	<p>a. ambient noise levels and any special character noise from any existing activities, the nature and character of any changes to the sound received at any receiving site and the degree to which such sounds are compatible with the surrounding activities;</p> <p>b. type, scale and location of the activity in relation to outdoor activities within the zone;</p> <p>c. hours of operation and duration of activity;</p> <p>d. the temporary or permanent nature of any adverse effects;</p> <p>e. the ability to internalise and/or minimise any conflict with adjacent activities;</p> <p>f. any mitigation proposed, in accordance with the best practicable option approach (e.g. site layout and design, design and location of structures, buildings and equipment and the timing of operation);</p> <p>g. The effects on ongoing community activity, culture, wellbeing and amenity</p>

<u>Receiving zone</u>	<u>Noise rule</u>	<u>Matters of discretion if compliance not achieved:</u>
<p>Mixed Use</p>	<p><i>k) Noise generated in all zones:</i></p> <p>Noise shall not exceed the following rating noise levels at any point within the receiving property boundary:</p> <p><u>Sunday to Thursday</u></p> <p>7.00 am to 10.00 pm (daytime) 60 dB LAeq</p> <p>10.00 pm to 7.00 am (night-time) 55 dB LAeq and 80 dB LAFmax</p> <p><u>Friday and Saturday</u></p> <p>7.00 am to midnight (daytime) 60 dB LAeq</p> <p>midnight to 7.00 am 55 dB LAeq and 80 dB LAFmax.</p>	<p>a. ambient noise levels and any special character noise from any existing activities, the nature and character of any changes to the sound received at any receiving site and the degree to which such sounds are compatible with the surrounding activities;</p> <p>b. any existing noise generating activities and the level of noise that will be received within any noise sensitive building;</p> <p>c. the primary purpose and the frequency of use of the activity;</p> <p>d. 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 building is minimised particularly at night;</p> <p>e. any mitigation proposed, in accordance with the best practicable option approach (e.g. site layout and design, design and location of structures, buildings and equipment and the timing of operation); and</p> <p>f. the effects on any existing noise sensitive activities and the effects on worker health, safety and amenity</p>

<u>Receiving zone</u>	<u>Noise rule</u>	<u>Matters of discretion if compliance not achieved:</u>
<p>Light Industrial</p> <p>Orongo Bay</p>	<p><i>l) Noise generated in all zones:</i></p> <p>Noise shall not exceed the following rating noise levels at any point within the receiving property boundary:</p> <p>7.00 am to 10.00 pm (daytime) 65 dB L_{Aeq}</p> <p>10.00 pm to 7.00 am (night-time) 60 dB L_{Aeq} and 80 dB L_{AFmax}</p>	<p>a. ambient noise levels and any special character noise from any existing activities, the nature and character of any changes to the sound received at any receiving site and the degree to which such sounds are compatible with the surrounding activities;</p> <p>b. type, scale and location of the activity in relation to any noise sensitive activities;</p> <p>c. hours of operation and duration of activity;</p> <p>d. the temporary or permanent nature of any adverse effects;</p> <p>e. the ability to internalise and/or minimise any conflict with adjacent activities;</p> <p>f. any mitigation proposed, in accordance with the best practicable option approach (e.g. site layout and design, design and location of structures, buildings and equipment and the timing of operation); and</p> <p>g. effects on any existing noise sensitive activities and the effects on worker health, safety and amenity</p>

<u>Receiving zone</u>	<u>Noise rule</u>	Matters of discretion if compliance not achieved:
<p>Heavy Industrial</p> <p>Horticulture Processing Facilities</p>	<p><i>m) Noise generated in all zones:</i></p> <p>Noise shall not exceed the following rating noise level at any point within the receiving property boundary:</p> <p>All times: 75 dB L_{Aeq}</p>	<p>a. ambient noise levels and any special character noise from any existing activities, the nature and character of any changes to the sound received at any receiving site and the degree to which such sounds are compatible with the surrounding activities;</p> <p>b. type, scale and location of the activity in relation to any noise sensitive activities;</p> <p>c. hours of operation and duration of activity;</p> <p>d. the temporary or permanent nature of any adverse effects;</p> <p>e. the ability to internalise and/or minimise any conflict with adjacent activities;</p> <p>f. any mitigation proposed, in accordance with the best practicable option approach (e.g. site layout and design, design and location of structures, buildings and equipment and the timing of operation);</p> <p>g. the effects on worker health, safety and amenity</p>

NOISE-S1a: Airport Noise Rules		
Applies to aircraft operations and engine testing within the Airport zone	<p>Within the Airport zone:</p> <ol style="list-style-type: none"> 1. Aircraft operation associated with the Airport zone is excluded from compliance with the NOISE-S1 zone standards, provided it complies with the following rules 2. Noise generated from aircraft operations at the Bay of Islands Airport, Kaitaia Airport and Kaikohe Airport zones over any 90 continuous days, measured in accordance with <i>NZS 6805:1992 Airport Noise Management and Land Use Planning</i>, shall not exceed: <ol style="list-style-type: none"> a. 55 dB L_{dn} at or beyond the outer control boundary on the planning maps; and b. 65 dB L_{dn} at or beyond the air noise boundary shown on the planning maps. 3. Noise levels from aircraft engine testing measured in accordance with <i>NZS 6801:2008 Acoustics - Measurement of Environmental Sound</i> and assessed in accordance with <i>NZS 6802:2008 Acoustics - Environmental Noise</i> at any point within the notional boundary of a noise sensitive activity on another site shall not exceed: <ol style="list-style-type: none"> a. 7.00 am to 10.00 pm: 55 dB L_{Aeq} (15 hour); and b. 10.00 pm to 7.00am: 45 dB L_{Aeq} (9 hours) and 75 dB L_{AFmax}, with the exception that on any 12 nights between the hours of 10.00 pm to 7.00 am in any calendar year, the maximum noise levels from aircraft engine testing shall not exceed 50 dB L_{Aeq} (9 hour) and 75 dB L_{AFmax}. 	<p><u>Matters of discretion if compliance not achieved:</u></p> <ol style="list-style-type: none"> a. All potential aircraft noise matters