

1.0 SUPPLEMENTARY TECHNICAL MEMO – Terrestrial Acoustics

To:	Stacey Sharp & Blair Masefield, Beca (consultant planners)
From:	Peter Runcie, Technical Director, SLR Consulting
Ref:	Northland Regional Council: APP.005055.38.01 Whangārei District Council: LU2200107
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2.0 PURPOSE

The purpose of this supplementary memorandum is to respond to technical matters, pertaining to terrestrial noise, raised during initial hearings proceedings as requested by Stacey Sharp on behalf of Whangārei District Council.

This memorandum is to be read in conjunction with the initial terrestrial noise technical memorandum dated 11 July 2023 appended to the Council s42A Officers Report, and the Terrestrial Noise Joint Witness Statement (JWS) dated 21 September 2023.

For the avoidance of doubt, the opinions and conclusions expressed in both the above-referenced documents remain unchanged.

3.0 TECHNICAL RESPONSE TO MATTERS RAISED

This memorandum covers the following matters:

- Continuous Noise Monitoring
- Managing Social Impacts of Noise
- Terrestrial Acoustics Assessment Scope

3.1 Noise Monitoring

I understand that the topic of continuous noise monitoring with results made available to the public or Council was discussed at the hearing, the concern related to providing a level of independence and enhancing potential community engagement.

Technology does exist to enable continuous monitoring of noise for the purpose of management of noise effects, complaints or compliance. Real-time information (such as noise monitoring results combined with records of which boats are in dock and meteorological conditions) could provide instant insight to the community or Council about what's going on at the port which could assist in elements such as transparent complaint verification – i.e., a complaint is lodged related to a certain day and both the Port and Council can confirm what the noise levels were and what was happening at that time as part of the investigation. This can overcome the issue of complaints being lodged but noise monitoring not taking place until after the event so making it difficult to verify the complaint.

However, as the monitoring equipment measures all noise, noise from non-port sources, such as dogs barking, can falsely be interpreted as port noise exceeding the performance criteria.

Real time noise monitoring appears to be used for Eastland Port¹; however, to my knowledge, extensive use of this technology in a public facing way is not common for ports in NZ. Other NZ ports may have noise monitoring but without such data provided in real time to the community. Such technology is, however, used by airports both locally and internationally, Auckland Airport as an example², with the intent of improving community engagement. In this specific instance it may best serve a function of noise management rather than strict compliance.

If such a system was to be required as a condition of consent for this project the following matters would need to be considered further to ensure a robust understanding of the likely outcomes:

- **The location(s) of permanent monitoring stations.** Typically, this would be at location(s) representative of the most exposed receiver(s). It would be beneficial for the location(s) to be agreed between the port and the community representatives (e.g., via the Port Noise Liaison Committee).
- **Reliance on data.** The monitoring is, by its nature, unattended and so can present difficulties in the ability to ascribe certain levels to specific activities (i.e., dog barking or container bangs) therefore making its use for enforcement potentially limited.
- **Real-time availability.** Whilst noise can be shown in real-time, the proposed performance criterion for the port is a $L_{dn, 5\text{-day}}$ metric – a 24-hour noise level, with night-time levels adjusted to account for the higher impact noise generates at night, averaged over 5-days. This means that a level of processing of the measured data would be required to present data which could be compared to the compliance metric. Real-time noise levels, however, would enable potential management to take place (i.e., correlating complaints to a particularly noisy ship or loading activity) to enable corrective action to take place but strict comparison with compliance criteria would not necessarily be achievable.
- **At property treatment information.** The measured levels would show trends in noise level changes over time as the port activity changes. These up to date results could be used by the port to determine when at property treatment is required due to noise approaching the agreed threshold levels set out in proposed Condition 20. This could support or replace the current proposed approach of yearly preparation of modelled contours.
- **Condition wording.** It will be important to ensure the specific wording of the condition requiring its use is appropriate and captures the purpose appropriately. This would need to consider the above points, among others, but I envisage could

¹ <https://noiseandweather.com/public/eastland>

² <https://akl.flighttracking.casper.aero/>

be relatively easily incorporated into condition 24 (Port Noise Management Plan) of the proposed condition framework.

3.2 Managing Social Impacts of Noise

I understand that enabling community self-management of social impacts of noise was raised at the hearing – an example being for neighbours to organise activities around port activities – particularly night-time activities and bulk loading.

Beyond achieving certain noise limits, set through conditions, management of the social impacts of noise on a community can be achieved through effective communication. As an example, this is commonly and effectively implemented for construction works by providing advance notice of certain noisy works such that surrounding receivers have a level of agency and can make their own decisions based on expected levels of disruption.

In the context of the port this could be achieved through advance notice of ship schedules, particularly activity at night involving bulk loading. I note that the port website currently provides a schedule of expected ships³ which provides part of the information and the community could actively seek this out; however, there appears to be no information around whether evening or night-time activity is proposed and, if so, on which day. Options for the active provision of this information (potentially as part of the requirements of Condition 24) could be issue of regular updates to the Port Noise Liaison Committee or enabling access to regular updates via a subscription type service so people can opt in.

3.3 Assessment Scope

As requested, I can confirm that my understanding of the scope of the acoustic assessment, specifically regarding the use of the proposed reclamation (proposed Berth 5) was limited to the establishment of a container terminal. This is shown on Figure G-6 of the acoustic assessment which identifies the noise sources included in the modelling being container terminal activities for that area. No acoustic assessment of the use of the Beth 5 area for activities other than containers has been provided in the application documentation.

If use of this space for bulk loading were to be enabled as part of the application, I would expect to see further assessment to understand the implications of this change. Use of Berth 5 for bulk loading instead of as a container terminal would generate different noise characteristics, and potentially levels, from that assessed in the acoustic assessment. Bulk loading is a higher generator of the more annoying noise events, bangs/crashes, and so the effects of a potential greater number of such events would need to be carefully considered and assessed.

4.0 CONCLUSION

Overall, I conclude that the above comments do not change the outcome of my previous review, that subject to conditions the actual and potential adverse effects of the proposal can be managed to be reasonable.

³ <http://www.northport.co.nz/expectedshipping>