

CONSULTANT'S ADVICE NOTE

CAN-001

CAN Subject: TiGA Submissions

Project/site: Date: 15 November 2023

Client: TT Project No: 1017819

To: Mark Geddes

Copy to:

Introduction

Tonkin & Taylor Ltd (T+T) has been requested to respond to the submissions raised on the TiGA application.

We have gone through your summary of submissions and looked at a small selection of the 105 submissions raising noise concerns. We cannot guarantee this is an exhaustive list, but the main concerns we have identified are:

- Trucking noise and its effect on amenity values and community wellbeing, particularly given the quiet rural existing environment. There is mention of engines warming up and changing gears and one mention of air brakes and vibration.
- General noise concerns
- Concerns around stress and potential sleep loss – related to amenity and community wellbeing

We have provided a response to each of these concerns below.

Trucking noise

Vehicle noise on roads under the control of a council or road controlling authority, e.g. Waka Kotahi NZ Transport Agency, are not bound by the RMA. However, an assessment of effects is appropriate if there is a significant intensification in traffic movements.

The MDA noise assessment states there will be 29 truck movements per day associated with the development (s5.5). This would increase the average traffic noise level by less than 1 dB which is not a perceptible increase. The approach adopted by MDA is reasonable and acknowledges that road traffic noise is a 'permitted' activity.

To address the noise of vehicles at night, there is a proposed limit to only allow two hours of truck movements in the night-time between 5 am and 7 am and that only 3 movements per hour occur during that period. Although sleep disturbance is possible this is likely to be a relatively low level of effect.

The noise from heavy acceleration and use of engine brakes can lead to increased disturbance for those receivers close to the access point. The draft Noise Management Plan (NMP) recognises

vehicle noise as a high risk activity and controls are proposed in the NMP to avoid, remedy or mitigate this source of potential disturbance. Adoption of the controls proposed by MDA, the night-time restriction between 10 pm and 5 am and limited movement restriction between 5 am and 7 am will manage these effects.

There are no New Zealand standards applicable to annoyance or damage from road traffic vibration. In most cases where significant vibration is identified, the cause is a defect in the road surface, such as a pothole, rutting, or a poor transition to a manhole cover or between sections of road surface. It is therefore important that the road pavement surface is well maintained. Generally road traffic vibration will not be perceptible at distances greater than 20 m from the active carriageway, even with minor defects in the road surface. It is highly unlikely that minor building damage such as cracking of plaster linings will occur due to vibration caused by vehicles. We recommend that the finalised NMP should include reporting of any defects in the road surface near the site to the relevant road controlling authority¹.

Vibration may be experienced from low frequency sound incident on the building causing rattling of windows and doors if loosely fitted in the frames. This can cause regenerated noise from the movement of these loose elements of the building. Low frequency sound is usually associated with the likes of engine braking and hard acceleration. Both of these factors are addressed in the NMP and therefore the likely occurrence of regenerated noise is low.

Amenity values and community wellbeing

Environmental noise can disturb sleep, cause psychophysiological effects, reduce performance, and provoke annoyance responses and changes in social behaviour. It can cause negative impacts on physical and mental health and well-being depending upon the degree of noise exposure. Long-term annoyance, impaired well-being, as well as self-reported sleep disturbance due to noise are classified by the World Health Organisation (WHO) as health outcomes².

The WHO provides recommended external noise levels for amenity (noise annoyance) of 55 dB LAeq during the day and 45 dB LAeq at night (sleep disturbance). These noise levels are consistent with the District Plan noise limits which the proposal is expected to comply with. We consider these limits to be appropriate for a rural environment.

The WHO's recommendations are based on the community at large and not the noise sensitivities of individuals, especially those who may be more sensitive to noise. The recommendations are therefore intended to protect health and wellbeing of the majority of the population and not individuals who may have a lower noise sensitivity.

The existing ambient noise is dominated by surf noise and traffic on SH6, with ambient noise levels dropping to around 33 dB LA90 at times (from Table 1: Summary of attended ambient noise survey results).

Although noise levels will vary according to where mining is occurring, operational noise will be present for many years to come. As existing ambient levels are at times low, mining noise levels of 40 dB and above will be clearly perceptible. Unlike other similar activities, e.g. quarrying, noise from the mining will occur 7 days a week. There will be no respite from operational noise.

There is little guidance/evidence as to the effects of not providing respite. However, there is evidence that people start to become habituated to the source of a noise over time but this depends on circumstances and the severity of the noise. Noise of a constant nature is known to be less

¹ ~ 1 km to the north and south of the site.

² WHO, Guidelines for Community Noise, 1999.

annoying compared to that of a variable activity. Therefore the characteristics of the noise source are important. The draft NMP considers this issue, for example by recommending that there are no tonal reversing alarms, and plant is well maintained to avoid squeaks and squeals.

In our May 2023 review we did not reach a conclusion as to the degree of noise effects. Based on the magnitude of noise predicted and the suite of proposed controls (conditions and NMP) we considered that noise effects will be reasonable. In an email to you dated 26 September 2023 (Humpheson/Geddes) we stated that effects would remain minor provided that operational noise levels do not exceed 52 dB LAeq(15 min). This assessment was on the basis that there will be no respite as noise will likely be experienced 7 days a week and that noise levels will vary as the panels are mined – i.e. noise level will diminish when works move away from their closest point to each receiver.


On a separate matter, concerns were raised around the effects of noise on livestock. Although there is no guidance on levels of noise suitable for avoiding stress in livestock, it is our opinion that the relatively low level of noise from the site activities is unlikely to adversely impact livestock. There are no identified impulsive noise sources which cause a startle reaction.

Applicability

This Consultant's Advice Note is issued subject to our terms of engagement with our Client. Where issued to a person who is not our Client, it is intended to assist that person in carrying out their work on the project. It is not an instruction, and it is not to be construed as relieving any party of its responsibilities.

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