

PROPOSED ALTERATION TO DESIGNATION 3802

KOROWAI MANAAKI YOUTH JUSTICE FACILITY

NOISE ASSESSMENT

Report No 19017v2

Prepared for:

Ministry for Children
c/- Boffa Miskell

Prepared by:



Rhys Hegley

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1. INTRODUCTION

The Korowai Manaaki residence at 21 – 24 Kiwi Tamaki Road in East Tamaki (Korowai Manaaki) is a designated Youth Justice facility under the Oranga Tamariki Act 1989 (Act). It currently provides residential care up to 46 young persons up to the age of 17 in three accommodation blocks, and includes three outdoor paved recreation areas, a gymnasium, an education block and an administration centre.

The site is designated¹ within the Auckland Unitary Plan – Operative in Part (AUP). The proposal is to alter the designation purpose to align it with changes to the Act that will become effective on 1 July 2019 along with future responsibilities of the Chief Executive of Oranga Tamariki. The proposed alterations are:

1. To include the ability to provide for young persons under the care of the Chief Executive of Oranga Tamariki youth justice purposes;
2. To increase the upper age limit of the residents on site from 17 to 18;
and
3. To increase the number of young persons from 46 to 56.

No other changes are proposed to the operations at Korowai Manaaki and no new construction is proposed as part of this project in the immediate future. This assessment addresses the potential noise effects from the proposed alterations to the designation.

¹ Designation 3802 – Minister for Social Development, Youth Justice Centre

2. CRITERIA

2.1. Designation 3802

Condition 4 of the current designation provides the only noise criteria for the residence, as follows:

4. *That the parts of the proposed facility comprising of the sleeping, living and learning areas shall be designed and constructed to comply with the following internal noise limits*

<i>Internal Noise Limits</i>	<i>L_{dn}</i>	<i>L_{max}</i>
	<i>45dBA</i>	<i>55dBA</i>

2.2. AUP

Since the original designation, the AUP has become operative and introduced noise rules from those that the designation was based upon. As such, consideration has been given to updating the designation noise rule to be consistent with the AUP.

The site is zoned Business - Heavy Industry within the AUP. Other than the Coastal – General Coastal Marine zone/ Open Spaces Informal Recreation zone– zone to the south, the remaining neighbors to the proposal are also zoned Business -Heavy Industry, as shown in Figure 1 below.

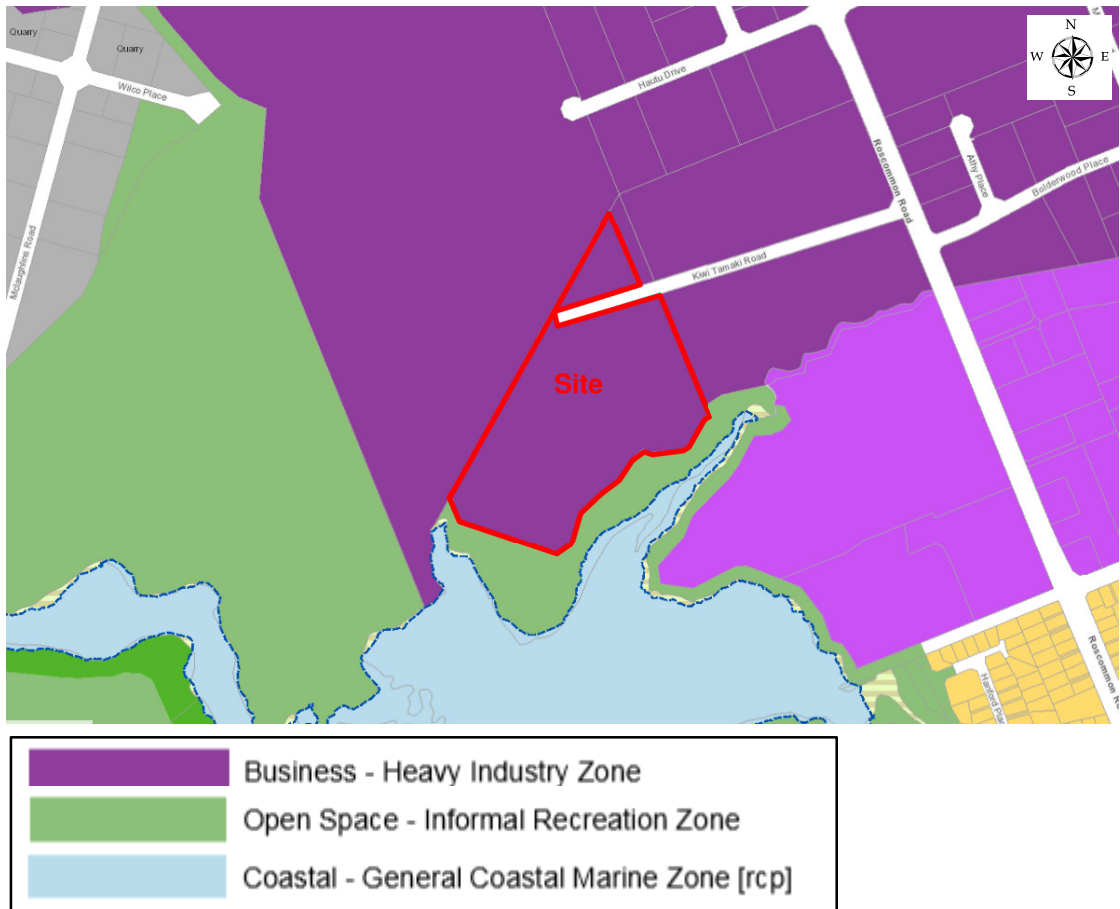


Figure 1. AUP Zoning Map

AUP Rule E25.6.5(1) provides the noise levels that the site can expect from its neighbor, when measured within the boundary, as follows:

Table 1. AUP Limits between Heavy Industry sites

Time	Noise Level
All times	70dB L_{Aeq}

Given the potential for relatively high noise from the neighboring sites, Rule E25.6.10 requires residential activities to be designed and constructed to achieve an appropriate level of internal amenity, defined as:

Table 2. Internal Noise Requirements for Residential Units

Unit Affected	Time	Level
Bedrooms	11pm – 7am	35dB L _{Aeq} 45dB L _{eq} at 63Hz 40dB L _{eq} at 125Hz
Other noise sensitive spaces	At all other times	40dB L _{Aeq}

E25.6.10 goes on to provide ventilation requirements that apply when windows are required to remain closed for the control of external noise, which is likely to be the case at Korowai. However, as ventilation is outside of the scope of this report, no performance criteria are recommended. The suggested condition below proposes the spaces be adequately ventilated in accordance with a design provided by a mechanical engineer experienced in ventilation design.

3. ASSESSMENT OF NOISE TO ADJACENT SITES

Given the residential nature of the Korowai Manaaki, the noise levels produced by the onsite activities to the neighboring Business – Heavy Industry zoned sites are expected to be well below the 70dB L_{Aeq} permitted by the AUP. This applies to both the current situation and to any possible future activities at Korowai Manaaki.

While there are no limits within the AUP to the remaining Open Space zone to the south, it is considered that a residential activity such as the proposal would not result in any undue effects.

Based on the above, it is considered that the noise resulting from activities described by the proposed alteration to the designation will not result in any adverse effects on the neighboring properties. This being the case, it is not considered necessary to include a specific designation condition for the control of noise from Korowai Manaaki.

4. ASSESSMENT OF INTERNAL NOISE LEVELS

Given the proximity of the neighboring Heavy Industry zoned sites, there is the potential for noise from their legitimate activities resulting in higher noise levels within the residential and teaching areas that are considered desirable. This was potential effect was mitigated for the existing buildings through condition 4 of the designation that required the building façade to design the building envelopes to control the permitted high external noise levels to internal levels that were fit for purpose. In this respect, the proposed change to the designation will not result in any adverse noise effects.

While no additional buildings are proposed at present, it is considered that any conditions of the proposed designation should allow such work to be undertaken, which would also cover the situation of a major refit to the existing buildings. While condition 4 could be maintained, it is not ideal and a replacement condition is therefore proposed, noting that it would be for any new future work at Korowai Manaaki and not apply retrospectively to the existing buildings that were constructed under the existing designation. For the maintenance of the existing buildings, the inclusion of the existing condition was considered. However, this condition is technically infeasible and has therefore been updated to one that includes its intent, but which uses consistent noise metrics. The updates made are:

1. The incident noise level of the current condition is 65dBA L_{10} at all times when measured at or within the boundary of Korowai Manaaki in accordance with Rule 14.11.7 of the Legacy District Plan (LDP). To make this compatible with the internal criteria, it has been converted to 63dB L_{Aeq} ;

2. The internal criterion within sleeping, living and learning areas is 45dB L_{dn} which approximates to 43dB L_{Aeq} , based on the steady source noise permitted by the LDP;
3. The internal L_{max} criterion of the existing rule has been omitted as it is considered of no practical benefit to the project.

The internal criterion of current designation condition uses the L_{dn} metric, which is typically used when describing noise from air ports or ports. As Korowai Manaaki is outside of the air noise and port noise overlays of the AUP (and the Legacy District Plan), the choice of this metric is unusual for use in describing industrial noise, such as could be expected from Korowai's neighbours. Given that E25.6.10 provides specific internal criteria for dwellings within the Business – Heavy Industry zone, it is considered appropriate to update the internal noise rules of the designation.

The internal criteria of E25.6.10 includes both an A-weighted level and specific criteria at 63 and 125Hz. For most Business zones, the AUP provides limits for noise generation using the same A-weighted and low frequency criteria. However, as shown in Table 1 above, the AUP rule for the Heavy Industry zone limits itself to the A-weighted criterion with no low frequency criteria. Without limits on the production of the low frequency component to noise, it is not realistic to expect a development to be able to guarantee an internal noise level at those frequencies in the same way it would not be possible to confirm an internal level of 35dB L_{Aeq} within bedrooms without the 70dB L_{Aeq} limit on external noise. While it could be perceived that this lack of control on low frequency noise may result in unreasonable internal noise levels at Korowai Manaaki, it should be noted that Council has previously advised that the low frequency criteria are for the description of amplified music, an event considered unlikely in to occur on the neighboring sites, which includes the women's prison to the north west. While there will undoubtedly be low frequency noise produced by the

surrounding Heavy Industry sites, the 35dB L_{Aeq} reduction in the A-weighted level required by the AUP is reasonably high and would, by default, result in significant reductions at 63 and 125Hz. This being the case, it is proposed to adopt the A-weighted internal criteria of the AUP but not the low frequency criteria.

Notwithstanding the above comments on the amount of low frequency noise from the source sites, a spectrum for the incident level has been proposed in response to a query from Council. This is included in the suggested condition below and is based on heavy diesel plant, such as trucks, forklifts and excavators.

In accordance with E25.6.22, any activity within the Open Space – Informal Recreation zone to the south could also produce levels of up to 70dB L_{Aeq} at the Korowai Manaaki boundary. While permitted, such levels are unlikely to eventuate and it is not considered appropriate to design and construct any future residences at Korowai Manaaki for such an unlikely event. This being the case, the consideration of noise from an activity on the southern Open Space zone has been omitted for the proposed condition.

A further change to the AUP rule relates to the bedrooms where the rule only applies during the night time, which starts at 11pm. Given Korowai Manaaki is for young people, it is reasonable to assume that they will be in bed prior to 11pm. The reality is that as the external limit of 70dB L_{Aeq} applies over the entire 24 hour period, any building complying with the night time criterion would comply at any time of the day. For this reason, the day and night time periods used by the AUP have been omitted from the suggested condition.

The AUP rule applies to noise sensitive spaces which it defines as any indoor space within a residential activity excluding any bathroom, water closet, laundry, pantry, walk in wardrobe, corridor, hallway, lobby, stairwell, clothes drying area, kitchens not part of a dwelling, garage or other space of a specialised nature occupied neither frequently nor for extended periods. For the proposed

condition, teaching areas have been added to the definition in line with the existing designation.

From the above, the condition proposed for the altered designation becomes:

x. Noise sensitive spaces constructed or altered to the point that a building consent is required after July 2019 must be designed and constructed so that the internal noise levels do not exceed:

- *35dB L_{Aeq} in bedrooms; and*
- *40dB L_{Aeq} in all other noise sensitive spaces.*

Based on the assumption of an incident level of at the at site boundaries shared with Business zoned sites as shown below:

	<i>Incident Noise at Business Zoned Site Boundaries, dB L_{eq}</i>						
<i>Frequency</i>	<i>63Hz</i>	<i>125Hz</i>	<i>250Hz</i>	<i>500Hz</i>	<i>1kHz</i>	<i>2kHz</i>	<i>4kHz</i>
<i>Noise Level</i>	<i>76</i>	<i>75</i>	<i>70</i>	<i>66</i>	<i>64</i>	<i>62</i>	<i>60</i>

Noise sensitive spaces are teaching spaces and residential spaces excluding any bathroom, water closet, laundry, pantry, walk in wardrobe, corridor, hallway, lobby, stairwell, clothes drying area, kitchens not part of a dwelling, garage or other space of a specialised nature occupied neither frequently nor for extended periods.

Noise sensitive spaces shall be adequately ventilated in accordance with a design provided by a mechanical engineer experienced in ventilation design.

That the parts of the facility existing at 1 July 2019 comprising the sleeping, living and learning areas shall be maintained in a state to

ensure compliance with an internal noise limit of 43dB L_{Aeq} based on adjacent sites within the Business zone producing a level of 63dB L_{Aeq} when measured at, or within, the Korowai Manaaki boundary.

5. CONCLUSION

The proposed alteration to the designation for Korowai Manaaki will not result in any significant changes to noise received or produced by the site. This being the case, the noise produced by the activities permitted by the proposed alteration to the designation will readily comply with the AUP noise rules to the surrounding sites with the conclusion being that there will be no noticeable effects on the neighboring activities.

The current designation requires residences and teaching facilities to be designed to control internal noise levels as a result of the surrounding business activities. As the alteration to designation will not change these buildings, or their use, there will be no change in the current effects. An amended condition is proposed however to future proof the designation should new buildings be developed on the site or should the existing buildings ever undergo a major refit.