



ASSESSMENT OF NOISE EFFECTS

BROOKVALE GREEN
174-176 BROOKVALE ROAD, HAVELOCK NORTH

PREPARED FOR

Vermont Street Partners No.4 Limited

DATE

21 May 2026

Assessment of noise effects prepared by Styles Group for Vermont Street Partners No.4 Limited.

REVISION HISTORY

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1	10/04/26		Draft	Jon Styles, MASNZ	Gemma Styles Consultant
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Statement of experience

I am and have been the Director and Principal of Styles Group Acoustics and Vibration Consultants for over 21 years. I am a Council Member of the Acoustical Society of New Zealand, and I am on the Board of Directors of the Australasian Association of Acoustical Consultants.

I have over 25 years' experience advising on the management of construction and operational noise and vibration effects. I have worked on a significant number of plan changes and resource consent applications for large-scale residential and mixed-use developments across New Zealand. I have extensive experience advising on the management of noise effects from a large range of rural, urban and infrastructure noise sources, and development of controls to improve the compatibility of residential development with potentially noisy activity.

I am a regular and experienced expert witness for Council, Environment Court, District Court, High Court and Board of Inquiry hearings. I confirm that, in my capacity as author of this report I have read and abide by the Environment Court of New Zealand's Code of Conduct for Expert Witnesses Practice Note 2023.

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Executive summary

Styles Group has assessed the potential noise effects from the Brookvale Green development (the **Project**) at 174- 176 Brookvale Road, Havelock North (the **Site**).

Assessment of compatibility with adjacent land-use activities

We have assessed the potential for the Project to introduce a new noise-related constraint on the existing and permitted noise-generating activities surrounding the Site, including primary production activities (horticulture and viticulture), the “Shaggy Range” dog daycare facility that operates from 104 Arataki Road, a music venue and water pump station.

Our assessment finds that the Project will not introduce any new noise-related constraints on existing noise-generating activities adjacent to the Site. This conclusion is based on the following findings:

Established land-based primary production activities on adjacent sites

- Operational noise associated with the established primary production activities on adjacent sites is primarily generated by the use of vehicles, mobile machinery and portable equipment that are intermittent and short term noise sources and exempt from the requirement to comply with the noise limits prescribed by the Hastings District Plan. These noise sources are seasonal and intermittent.
- There are two frost fans on the neighbouring vineyard. We have undertaken noise modelling that demonstrates that adjacent frost fans will readily comply with the permitted noise standards for frost fans at all future notional boundaries within the Site. The introduction of new notional boundaries on the Site will not constrain frost fan operations associated with adjacent viticulture.
- We understand that bird scaring devices are used on the nearby Olive Grove. The Project will not constrain the operation of bird scaring devices on the Olive Grove, given the requirement for devices to comply with the relevant noise limits at existing noise compliance locations that are much closer than the Site.

Future potential land-based primary production activities on adjacent sites

- We have worked with the Planner to identify the potential for any noise- constraint on the potential establishment of permitted land-based primary production activities on adjacent sites. We have not identified any outstanding noise constraints on permitted industrial, commercial and winery activities. This finding takes into account the separation distances achieved by the scheme plan layout (i.e. the buffer provided by the stormwater reserve), the likelihood of activities establishing in proximity to a road corridor and the size of the adjacent sites providing suitable flexibility to locate noise generating activities in a way that can comply with the noise standards.

Shaggy Range Dog Daycare Facility

- The Project will not introduce any new noise constraint on the operation of Shaggy Range given the requirement for the Dog Daycare to comply with its consented noise limits at existing noise compliance locations that are much closer than the Site.
- The Shaggy Range site is also used for use for primary production activities, including a plant nursery and Christmas tree plantation. The vehicles, mobile machinery and portable equipment associated with land based primary production activities are intermittent and short term noise sources and exempt from the requirement to comply with the noise limits prescribed by the Hastings District Plan. The Project will not introduce any constraint on these activities.

We do not expect that the character, timing or level of noise on the Shaggy Range site will be unreasonable or otherwise incompatible with residential activity due to the seasonal and intermittent nature of horticultural activities and the Dog Daycare's operational requirements in their resource consent and Noise Management Plan.

Water Treatment Plant on 170 Brookvale Road

- We understand that the treatment plant is a very benign and quiet facility with little in the way of mechanical plant. We understand that it is quiet when observed from its boundary (close to the treatment building).
- We have recommended an acoustically effective 2m fence is constructed on the common boundary between the plant and closest residential lot.

Boneshed music venue on 184 Brookvale Road

- We understand that the owners of 184 Brookvale Road have provided their support to the Project. The noise modelling we have undertaken demonstrates that amplified sound associated with music events can comply with the permitted noise standards for temporary events at future notional boundaries within the Site. The Project will not introduce a compliance constraint on the operation of the Boneshed.

Assessment of construction noise and vibration effects

- The construction plant and machinery will be very typical for a development of this scale and nature. Our assessment finds that construction noise levels can comply with the permitted noise limits for long-term projects prescribed by Rule 25.1.6I of the Hastings District Plan at any occupied building on an adjacent site. We have recommended suitable conditions to control the timing and level of construction noise effects.

1.0 Introduction

Vermont Street Partners No.4 Limited has engaged Styles Group to provide an assessment of potential noise-related reverse sensitivity effects¹ and construction noise effects from the Brookvale Green development (the **Project**) at 174- 176 Brookvale Road, Havelock North (the **Site**).

We have assessed the potential noise effects from existing and permitted land use activities adjacent to the Site to determine whether the Project has the potential to introduce any new noise-related constraint. This assessment considers:

- The existing and permitted land based primary production activities (horticulture and viticulture) on the adjacent sites to the northern, eastern and southern boundaries,
- “Shaggy Range”- a dog daycare facility that operates from 104 Arataki Road.
- The Hastings District Council water pump station facility on 171 Brookvale Road.
- The Bone Shed live music venue on 184 Brookvale Road.

This assessment also provides an assessment of the potential construction noise effects in accordance with the permitted noise standards prescribed by Rule 25.1.6I *Construction Noise* of the Operative Hastings District Plan (**HDP**), along with recommended conditions of consent to manage construction noise and vibration.

This assessment has been prepared to accompany a substantive application under the Fast-Track Approvals Act 2024. This report should be read in conjunction with the documentation submitted with the Substantive application and site plans. A glossary of acoustical terms used within this document is attached as Appendix A.

2.0 The Site and Project

The Project is to develop the Site of approximately 24Ha for a comprehensively planned residential community comprising approximately 203 new homes as well as supporting infrastructure. The Masterplan is attached to the substantive application.

Residential development is sensitive to noise and falls within the Operative Hasting District Plan’s (**District Plan**) definition of “Noise Sensitive Activity²”.

¹ Reverse sensitivity is described as the legal vulnerability of a lawfully established activity to complaints from a new, sensitive land use.

²Residential development falls within the District Plan’s definition of “Noise Sensitive Activity”:
“Noise Sensitive Activity: means any use of land and/or buildings which is likely to be susceptible to the effects of noise emitted from nearby land uses in the course of their legitimate operation and functioning; and for the purposes of this plan, includes early

2.1 Zoning arrangements

Figure 1 displays the zoning of the Site and surrounding environment.

The Site is in the Plains Production Zone (**PPZ**) of the District Plan. All adjoining sites are in the PPZ.

The Te Mata Special Character Zone (**TMSCZ**) is located to south of the Site and the land on the western side of Arataki Road is in the General Residential Zone (**Residential Zone**).

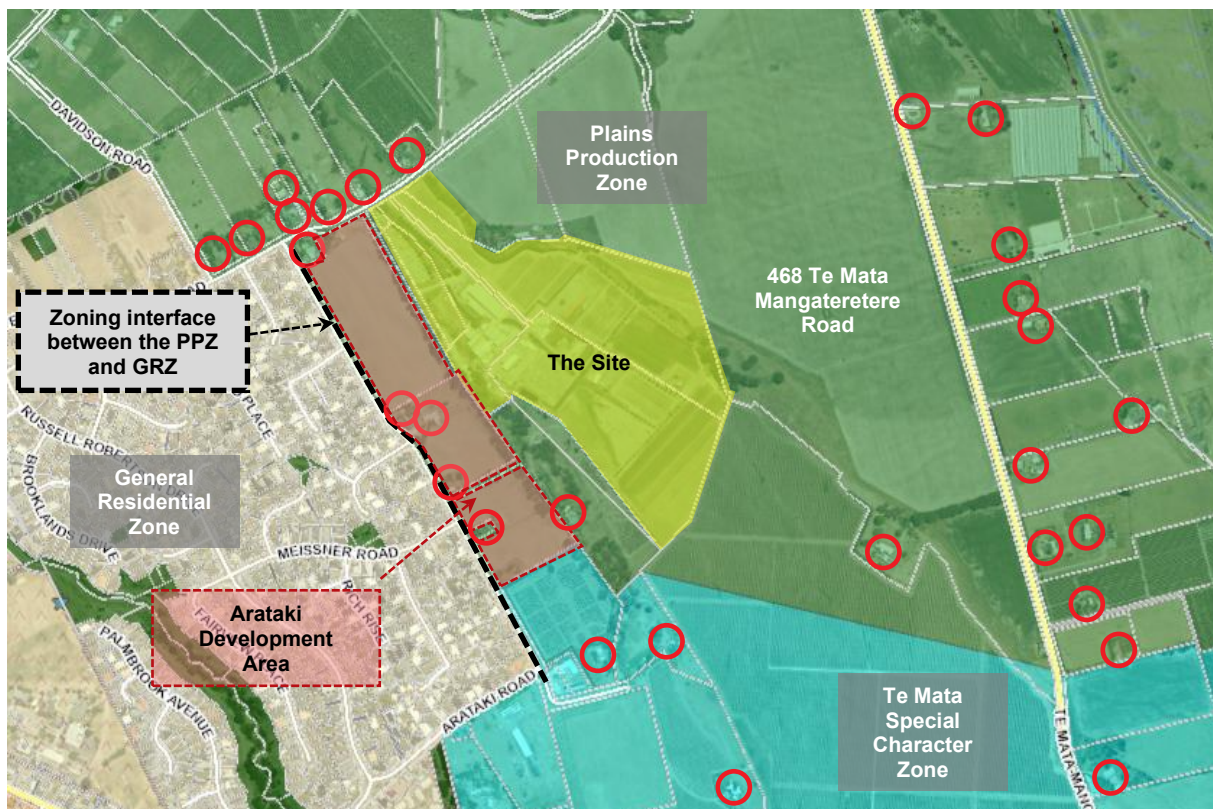


Figure 1 Zoning arrangements and interface with the General Residential Zone

Closest existing notional boundaries in the PPZ and TMSCZ are identified with a red circle. The Arataki Development (which enables 171 new dwellings / notional boundaries) is shaded red.

2.2 Existing notional boundaries

Figure 1 shows that the land surrounding the Site includes scattered residential development in the PPZ and TMSCZ. The notional boundaries of the physically existing PPZ and TMSCZ dwellings are identified with a red circle

childhood centres, educational facilities (but not any trade training or other industry-related educational facility), healthcare service, places of assembly, residential activities, retirement villages, visitor accommodation and camping grounds."

Figure 1 also shows that the Site is relatively close (between 150m and 315m) to the zoning interface between the PPZ and the Residential Zone on the western side of Arataki Road.

The notional boundaries of the dwellings in the PPZ and TMSZ and the boundary of the Residential Zone represent the locations where all noise generating activities must comply with the relevant District Plan noise limits (set out in the following section).

The existing notional boundaries form part of the existing noise environment.

2.3 Recently consented notional boundaries

We understand that new notional boundaries have been authorised by the recent approval of the Arataki Project. We understand that there is also a controlled activity subdivision application (currently being processed) for the adjacent site to the east (468 Te Mata Mangateretere Road). These applications are detailed below.



Figure 2 Arataki Development Area

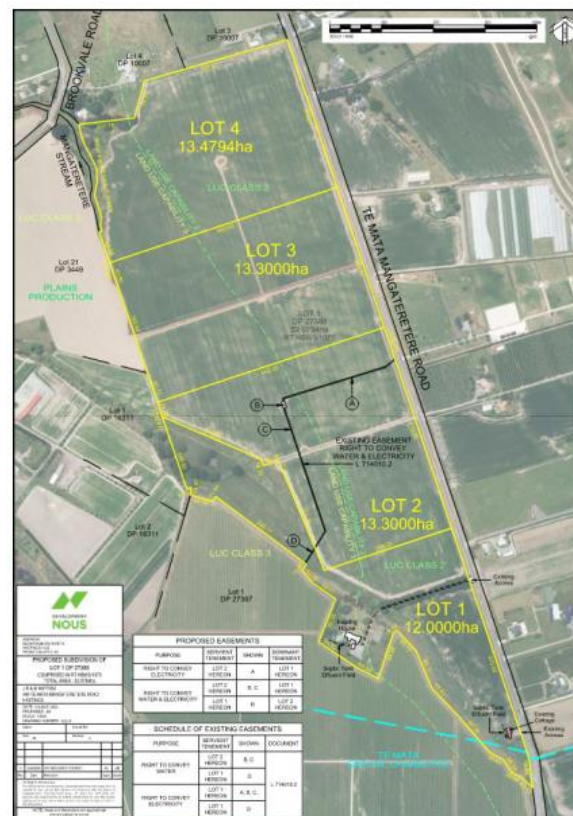


Figure 3 Proposed scheme plan of subdivision for 468 Te Mata Mangateretere Road

2.3.1 Residential development- the Arataki Project

Figure 2 displays the location of the consented notional boundaries enabled by the Arataki Project on the adjacent sites at 86, 108 and 122 Arataki Road.

The Arataki Project has recently obtained consent³ under the Fast-Track Approvals Act 2024. This assessment is based on the 171 residential notional boundaries enabled by the Arataki Project being part of the existing environment.

2.3.2 Subdivision of 468 Te Mata Mangateretere Road

We understand the adjacent site to the east, 468 Te Mata Mangateretere Road is subject to a current resource consent application for a four lot subdivision. Figure 3 displays the proposed scheme plan.

The application proposes to subdivide the site into four sites of 12ha, 13.3ha, 13.3ha and 13.48ha. We understand the application is a controlled activity.

The approval of this application will authorise three new notional boundaries (one per site) to be established on proposed Lots 2-4, with proposed Lot 1 containing the existing residential dwelling.

3.0 Noise effects from primary production activities in the PPZ and TMSCZ

The adjacent land is zoned PPZ and TMSCZ and contains established horticulture and viticulture activities.

We understand that the primary purpose of the PPZ is to provide for land based primary production activities and viticulture is a key function of the TMSCZ. Land based primary production activities are defined by the Plan as:

- a) livestock rearing which is primarily reliant on the underlying land (excludes farming of mustelids); and
- b) horticulture (including, orcharding, cropping, commercial vegetable production, berry fruit growing, nurseries and greenhouses not falling within the definition of Intensive Rural Production, but not garden centres); and
- c) trees, plants and crops grown in the ground but under cover;
- d) forestry;
- e) viticulture; and
- f) directly associated accessory buildings, structures and activities.

³ <https://www.fasttrack.govt.nz/projects/arataki/the-decision>

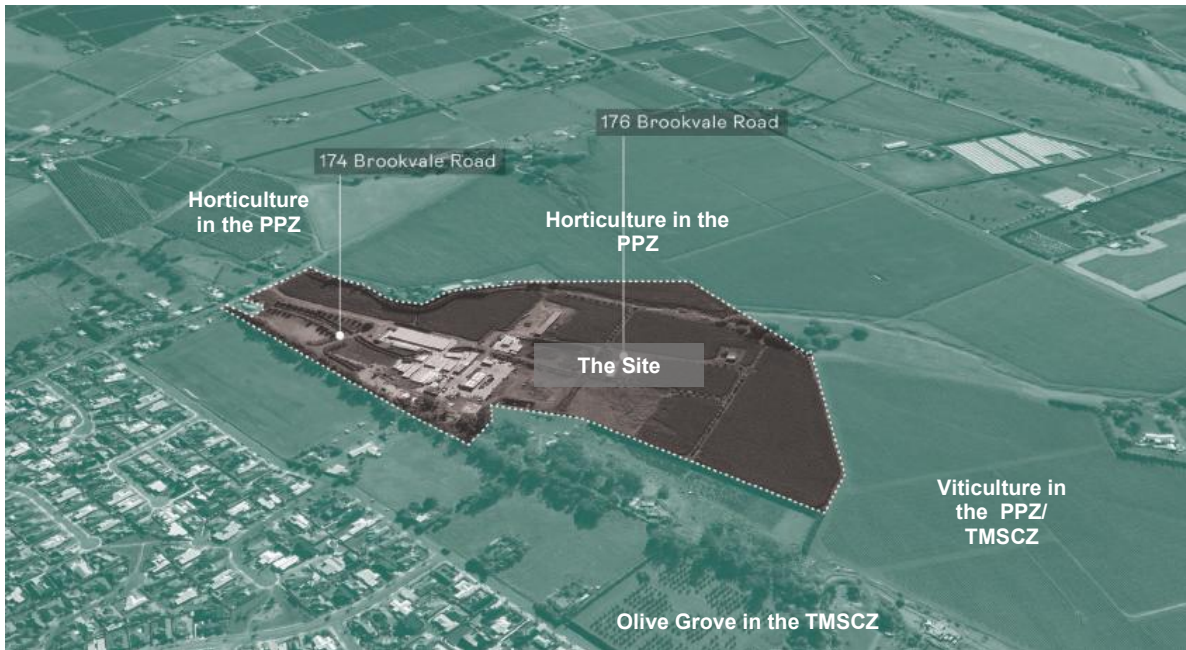


Figure 4 The Site and adjacent land based primary production activities (image from B&A referral application)

Land based primary production activities are permitted activities⁴ in both the PPZ and TMSZ, with the activity tables for both zones permitting commercial and industrial activities and wineries (within specified limits). Importantly, residential activity is permitted in both the PPZ and TMCZ.

3.1 Assessment of compatibility and potential noise-related constraint

We have assessed the potential for the Project to introduce a noise-related constraint and potential reverse sensitivity effect on land based primary production activities by undertaking the following tasks:

- i. We have identified the existing and permitted notional boundaries that currently form part of the existing noise environment. The notional boundaries (identified in Sections 2.2 and 2.3) represent the existing compliance locations for noise.
- ii. We have reviewed the HDP to identify the permitted noise environment in the PPZ and TMSZ, including the permitted noise standards for the operation of frost fans and audible bird scaring devices.

⁴ Except for forestry, which is not permitted in the TMSZ.

- iii. We have used computer noise modelling software to identify the spatial propagation of noise emissions from two established frost fans on the adjacent vineyard to the south of the Site (in the TMSCZ).
- iv. We have reviewed aerial photographs to determine the location of existing notional boundaries that currently control the noise emissions from the use of bird scaring devices on the Olive Grove.

Our findings are set out below.

3.2 Permitted noise environment in the PPZ and TMSCZ

The HDP uses a combination of noise limits, exemptions from maximum noise limits for seasonal and intermittent noise sources and noise performance standards to control the permitted noise environment in the PPZ and TMSCZ. The relevant noise standards are set out below.

3.2.1 The activities that are exempt from PPZ and TMSCZ noise limits

Rule 25.1.6B *Exemptions from Maximum Noise Limits* states that the noise standards in the HDP do not apply to:

- (a) In any Zone, to the emission of noise from the use of vehicles, machinery or other mobile or portable equipment for Land Based Primary Production. Except where a Specific Performance Standard applies in 25.1.7, this exemption does not apply to any fixed or permanently installed plant”.

This exemption means that the use of use of vehicles, machinery or other mobile or portable equipment for Land Based Primary Production activities are not controlled by the zone noise limits. These noises are typically seasonal and intermittent. The exemption does not apply to fixed or permanently installed noise sources such as compressors, refrigeration units, extractor fans and processing equipment. These are controlled by the zone noise limits as described below.

3.2.2 The permitted noise standards in the PPZ and the TMSCZ

Rule 25.1.6D controls the operational noise levels from Rural Zone land uses that are not subject to the exemptions in Rule 25.1.6B (or controlled by other plan standards).

Rule 25.1.6D requires that activities in the Rural Zones must comply with the following noise limits when measured and assessed at the notional boundary of any adjacent site:

- (a) The following noise limits shall not be exceeded at any point within the notional boundary of any noise sensitive activity on any other site within a Rural Zone, or at any point within the boundary of any site, in any Zone other than an Industrial Zone:

<u>Control Hours</u>	<u>Noise Level</u>
0700 to 1900 hours	55 dB LAeq (15 min)

1900 to 2200 hours	50 dB LAeq (15 min)
2200 to 0700 hours the following day	45 dB LAeq (15 min)
2200 to 0700 hours the following day	75 dB LA _{Fmax}

These noise limits apply at the notional boundary of any dwelling in a Rural Zone and must be complied with at the boundary of any site in a Residential Zone. The closest Residential Zone is located on the western side of Arataki Road.

The numerical noise limits in Rule 25.1.6D are generally consistent with the permitted noise levels found in many productive rural zones across New Zealand. The permitted noise standards are designed to ensure that the noise environment is enabling for primary production activities while ensuring the noise levels are reasonable for non-acoustically treated dwellings.

The permitted noise levels in Rule 25.1.6D also control the noise levels received in residential zones that are near to rural zones. The HDP therefore delivers the same level of acoustic amenity to dwellings in Residential Zones that are *near* to the interface with Rural Zones, as well as dwellings that are *inside* the Rural Zone.

The permitted noise levels in Rule 25.1.6D therefore represent the permitted noise environment inside the PPZ and TMSCZ as well as in the Residential Zone on the western side of Arataki Road.

3.2.3 Overall assessment of potential noise constraints on land-based primary production activities

We understand that the adjoining sites to the east and southern boundaries and on the northern side of Brookvale Road are primarily used for established horticulture (cropping) and viticulture. The noise sources associated with these activities primarily include vehicles, machinery or other mobile or portable equipment. These noise sources are not controlled by the District Plan noise limits. The introduction of new notional boundaries on the Site will therefore not introduce a noise compliance point for these noise sources.

We address frost fans and bird scaring devices in Sections 3.3 and 3.4.

3.2.3.1 Potential constraints on other primary production activities in the PPZ and TMSCZ

We understand that activities such as commercial and industrial activities and wineries (within specified limits) are permitted activities in the PPZ and TMSCZ.

These activities (i.e. processing, packing and coolstore-type activities) typically involve fixed and permanent operational noise sources such as refrigeration plant, processing equipment and loading operations. These noise sources are controlled by the maximum permitted noise levels in Rule 25.1.6D

We have liaised with the Planner to determine the primary production activities that could reasonably and potentially establish on the adjacent sites, the likely operational noise sources, and to identify the potential for any noise constraint arising from the Project.

Overall, in conjunction with the Planner, we have not identified any new noise constraints on permitted land based primary production activities due to the following factors:

- The adjoining sites to the north, east and south are large. The site sizes will provide suitable flexibility for a building platform and access arrangements for a commercial or industrial activity or winery to be established within the specified permitted activity limits.
- We understand that it is reasonably likely that any commercial, industrial activity or winery activities on the adjacent sites would establish close to Brookvale Road or Te Mata Mangateretere Road for access and servicing reasons. The Masterplan and future notional boundaries achieve ample separation distances to these locations due to the buffer provided by the proposed stormwater reserve along the eastern boundary of the Site.
- The relevant performance standards that control the scale and intensity of permitted industrial, commercial and winery activities in the PPZ and TMSZ.

Overall, we have not identified any noise constraint on potential permitted primary production activities on adjacent sites due to the easy ability to design and locate an activity that can comply with the relevant noise limits at future notional boundaries within the Site.

We note that that noise effects are an inherent consideration for the site selection of a industrial, commercial or winery operation in rural zones. The requirement to consider operational noise effects in the site selection and design process will always exist to some degree in Rural Zones due to the presence of established and permitted notional boundaries, particularly in areas close to established settlements.

3.3 Noise from frost protection fans

Frost protection fans are commonly used by orchards and viticulture activities across the district. Figure 3 identifies the location of two established frost fans on the adjacent Te Mata vineyard (in the PPZ and TMSZ) to the south.

We have not identified any other established frost fans on adjacent sites. We understand that it would be unlikely for a frost fan to establish on the adjacent PPZ sites to the north and east given that they do not appear to be used for horticulture activities requiring frost protection. We also understand that 468 Te Mata Mangateretere Road is subject to a current resource consent application for a four-lot subdivision. This application will introduce the potential for three new notional boundaries (Figure 3). Any frost fan on 468 Te Mata Mangateretere Road would therefore need to be located with regard to the potential effects on future notional boundaries enabled by the subdivision.

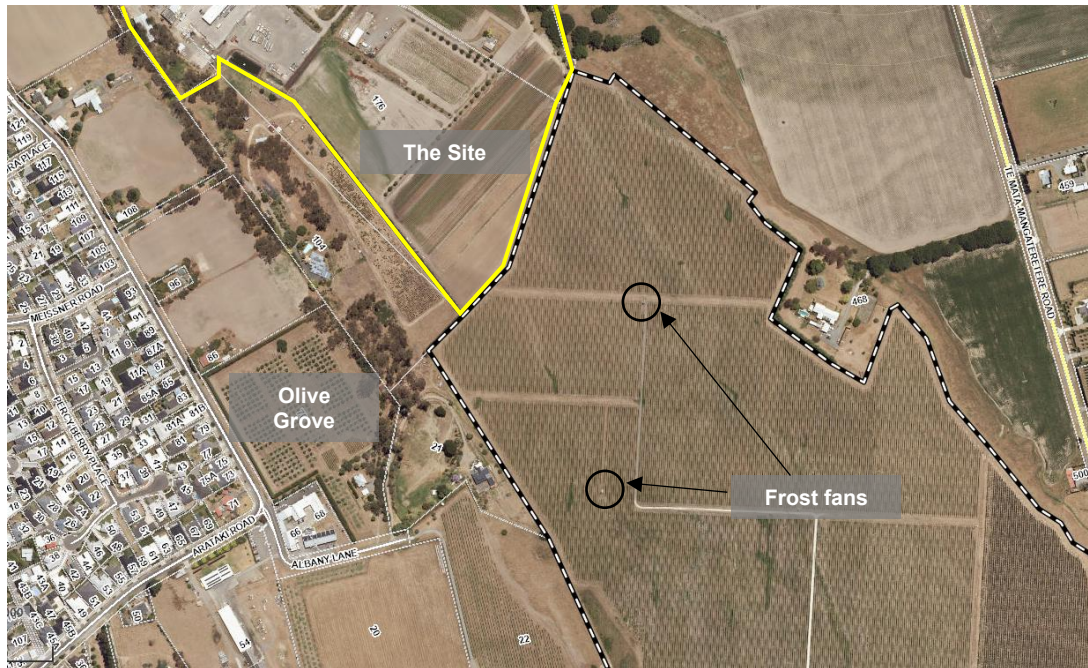


Figure 5 Frost fans on adjacent vineyard

3.3.1 Permitted noise standards for frost protection fans

Rule 25.1.7B requires that frost protection fans must comply with the following noise limits:

- (a) Shall be located such that noise from a frost fan shall not exceed 65 dB $L_{Aeq(15 \text{ min})}$ when measured outdoors at a distance which is the lesser of:
 - (i) 300 metres from the device; or
 - (ii) At the notional boundary of any existing noise sensitive activity (other than on the site on which the frost fan is situated or any other adjoining site in the same ownership), or at any point within a Residential Zone.

3.3.2 Frost fan noise level predictions

We have used DGMR iNoise computer noise modelling software to predict the cumulative noise emissions from the established frost fans across the Site, and to identify any noise-related constraint arising from the introduction of new notional boundaries on the application site.

We prepared the noise model using terrain contours, building footprints and parcel boundaries imported from Land Information New Zealand. The topographical contours encompass the entire site and a large area of the surrounding land. We understand⁵ that the frost fans are four

⁵ Verified from aerial photographs.

blade machines. Our noise model is based on noise measurements we have obtained from other four-blade frost fans. Our experience is that the noise level does not vary much between fans of similar sizes and fan designs. The frequency spectrum used in the modelling is set out below.

Table 3 – Frost fan - sound power level frequency spectrum (A-weighted)

63 Hz	125 Hz	250 Hz	500 Hz	1 kHz	2 kHz	4 kHz	8 kHz	L _{WA}
107 dB	103 dB	108 dB	107 dB	101 dB	92 dB	71 dB	55 dB	113 dB

3.3.3 Frost fan noise level predictions

Figure 6 shows the predicted frost fan noise levels across the Site. The noise level predictions demonstrate that the highest noise levels at the closest proposed notional boundaries on the Site will be approximately 59 dB L_{Aeq(15min)}. This noise level readily complies with the permitted noise standard of 65 dB L_{Aeq(15min)} when measured at any notional boundary as set out in Rule 25.1.7B.

The noise modelling demonstrates that the frost fans can readily comply with the permitted noise limits at any notional boundary established on the Site.

Our assessment finds that the frost fans can continue to operate in compliance with the permitted noise limits. The Project will not introduce any new compliance obligation for the frost fans to meet.



Figure 6 Cumulative noise level predictions for two frost fan machines

3.4 Noise from bird scaring devices

Bird scaring devices are sometimes used in horticulture operations to deter birds from eating the crop. In this case, we understand⁶ that bird scaring devices are used for the olive growing operation on the “Olive Grove” to the south-west of the Site (shown in Figure 3).

3.4.1 Permitted noise standards for bird scaring devices

Rule 25.1.7A requires that audible bird scaring devices must be operated in compliance with the following noise limits:

1. Gas Guns

- (a) There shall be no device operated between half an hour after sunset and half an hour before sunrise.
- (b) Devices shall not operate unless a legible notice is securely fixed to the road frontage of the site in which the device is to operate stating the name, address and telephone number of the person(s) responsible for the operation of the device.
- (c) There are no restrictions on events or individual shots for sound levels less than 85dBC_{peak} either:
 - i) At any point within the boundary of any Residential Zone.
 - ii) At any point within the notional boundary of any noise sensitive activity in a Rural Zone.
- (d) Where sound levels are greater than 85dBC_{peak} but less than the limits specified in (e) below, measured at any point within the boundary of any Residential Zone, or within the notional boundary of a noise sensitive activity within a Rural Zone, then:
 - i) There shall not be more than 4 events in any 1 hour period, or a total of 12 individual shots in any 1 hour period, received:
 - a) At any point within the boundary of any Residential Zone.
 - b) At any point within the notional boundary of any noise sensitive activity within a Rural Zone.

Note: For the purposes of this rule, 'event' includes no more than 3 individual shots within any one minute period.

- ii) There shall only be one device per every 4ha of the site, provided that:
 - a) In the case of a single site less than four hectares in area, one device shall be permitted.

⁶ Invited party comments were provided from Bay Planning on behalf of the Olive Grove, Arataki Honey Limited and Te Mata Estate Winery to the Expert Panel for the Arataki Project. The comments note that bird scarers are used on the Olive Grove site at 70 Arataki Road: https://www.fasttrack.govt.nz/_data/assets/pdf_file/0026/14894/3_30Oct2025_M-and-C-Mckenzie_-_Comment-2_Redacted.pdf

- b) In the case where a site is over 4ha, but does not meet the next 4ha an additional device shall be permitted.

Note: As an example, a site of up to 4ha is permitted one device, a site between 4ha and an 8ha is permitted two devices, a site between 8ha and 12ha is permitted three devices and so on.

- (e) Sound levels generated by an audible bird scaring device shall not exceed:

- i) 100dBC_{peak} at any point within any boundary of a Residential Zone.
- ii) 115dBC_{peak} at any point within the notional boundary of any noise sensitive activity in a Rural Zone.

Note: As an indicative guide only, a setback distance of approximately 420 metres is required to achieve the limit in Rule 25.1.7A.1(e)(i) and a setback distance of approximately 150 metres is required to achieve the limit in Rule 25.1.7A.1(e)(ii) where a device is directed towards the respective boundary. A device directed away from the respective boundary is likely to comply with a lesser setback distance.

2. Firearms

- (a) Any firearm shall not be used for the purposes of bird scaring between half an hour after sunset and half an hour before sunrise.

3. Audible Avian Distress Alarms

- (a) There shall be no device operated between half an hour after sunset and half an hour before sunrise.
- (b) Devices shall not operate unless a legible notice is securely fixed to the road frontage of the site in which the device is to operate stating the name, address and telephone number of the person(s) responsible for the operation of the device.
- (c) Sound emitted from the device shall not exceed 50 dB L_{Aeq} (15 min) when measured at any point within the notional boundary of any rural dwelling or at any point within a Residential Zone.
- (d) No device shall be placed in such a manner that in any public place receives noise exceeding 80 dB L_{AFmax}

3.4.2 Assessment of noise emissions from bird scaring devices

We have assessed the potential for the Project to introduce a constraint on the Olive Grove by reviewing their existing noise compliance locations. Figure 5 displays the closest existing notional boundaries adjacent to the Olive Grove.

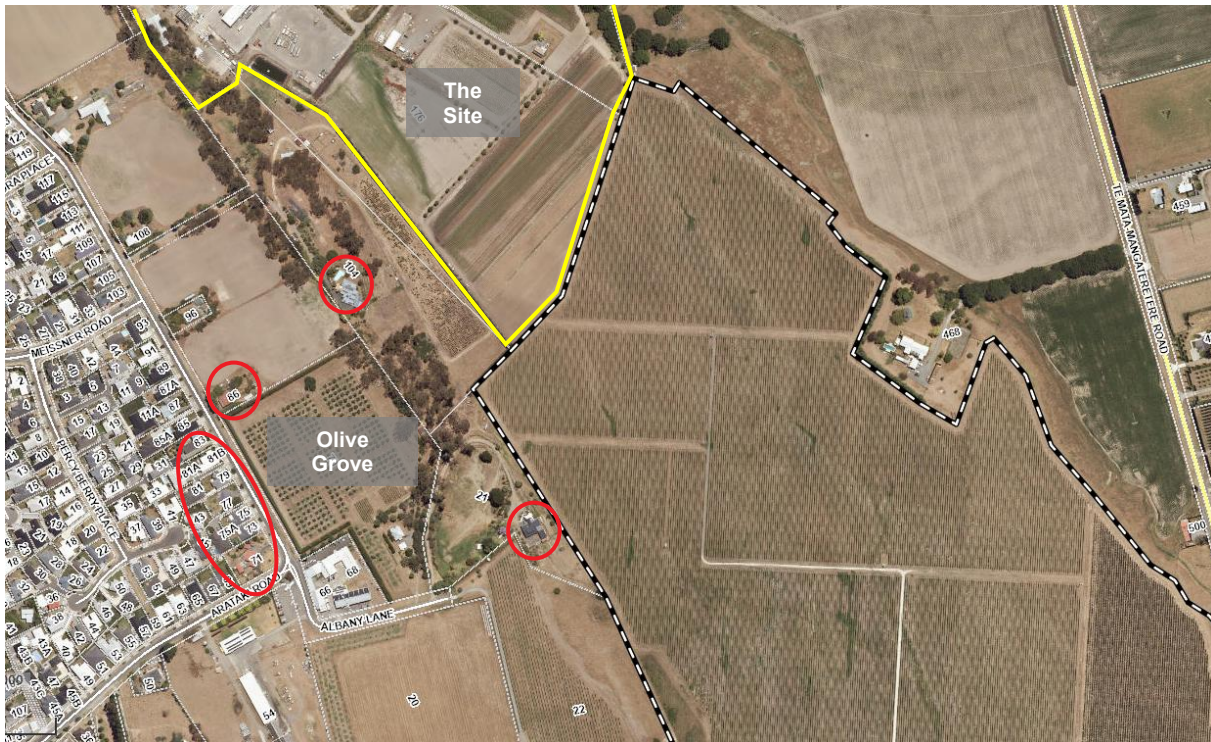


Figure 7 Existing notional boundaries that control the noise emissions from Olive Grove bird scaring devices

Noise effects from bird scaring devices on the Olive Grove site were considered by the Expert Panel for the Arataki Project. Paragraph [102] of the Expert Panel decision records:

“the bird scarer generates the highest noise levels but that is controlled by a specific District Plan standard which already requires compliance along the existing residential boundary to the west (Arataki Road). The proposed residential development on the Site is not expected to materially change the noise environment or result in any additional constraints on Olive Grove operations”

We agree that the Olive Grove is already constrained by the requirement to comply with the relevant noise limits for bird scaring devices at its proximate notional boundaries.

The Site is separated from the Olive Grove by much greater separation distances. The introduction of new notional boundaries on the Site will therefore not introduce any new noise compliance obligation for the Olive Grove.

3.4.3 Potential use of bird scaring devices on other sites

We understand that the cropping on the adjacent PPZ sites to the north and east of the Site do not involve crops that require protection from birds. The future notional boundaries enabled by the four-lot subdivision application for 468 Te Mata Mangateretere Road may constrain the potential use of bird scaring devices on this site.

We are not aware of bird scaring devices being used on other adjacent sites, other than the Olive Grove. The Invited Party Comments⁷ provided on behalf of the Olive Grove, Arataki Honey Limited and Te Mata Estate Winery for the Arataki Project confirm that bird scarers are used on the Olive Grove, but do not identify their use on the Te Mata Estate Winery or any other site.

In the event that bird scaring devices are used on the Te Mata Estate vineyard, the noise emissions would be controlled by the requirement to comply with the relevant standards at the established notional boundaries that surround the vineyard, including 468 Te Mata Mangateretere Road, 21 and 22 Albany Lane and 104 Arataki Road.

4.0 Noise from “Shaggy Range” dog daycare facility

We have assessed whether the Project has potential to introduce a new noise constraint on the consented Shaggy Range dog daycare facility (the **Dog Daycare**) operating at 104 Arataki Road by undertaking the following tasks:

- We have reviewed the Dog Daycare’s conditions of resource consent and Noise Management Plan (**NMP**)
- We have reviewed the separation distances between the Dog Daycare and physically existing notional boundaries and compared these distances to the proposed notional boundaries introduced by the Project.

Our findings are set out below.

4.1.1 The resource consent conditions

The Dog Daycare operates under the conditions of resource consent RMA20170139. The conditions of consent require the Dog Daycare to be operated in accordance with the following requirements:

- The Dog Daycare must only operate between the hours of 7:00am and 6:00pm Monday to Friday
- Any drop-offs or pickups are precluded between the hours of 9:30am and 3:15pm
- No overnight boarding is allowed.

Condition 2 requires the Dog Daycare to operate in accordance with an approved NMP. The purpose of the NMP is to identify any noise mitigation methods that must be adopted to ensure the Dog Daycare operates in compliance with the permitted noise standards prescribed by the District Plan.

⁷ https://www.fasttrack.govt.nz/_data/assets/pdf_file/0027/14895/3_30Oct2025_M-and-C-McKenzie_Comments-received_Redacted.pdf

We have reviewed the NMP prepared by Malcolm Hunt Associates dated 23 November 2018. The NMP confirms that the Dog Daycare must comply with the maximum permitted noise levels prescribes by Rule 25.1.6D for the PPZ. The relevant noise limit for the consented hours of operation is therefore 55 dB $L_{Aeq}(15\text{ min})$ when measured and assessed at any notional boundary⁸ on an adjacent site.

The NMP confirms that the Dog Daycare must not accommodate more than 30 dogs at a time, with dogs located in the designated outdoor run area shown in Figure 8. The NMP states that *“dogs shall not be allowed or permitted in any other part of the property other than the outdoor enclosed run area”*.

Figure 8 displays the location of the designated outdoor run area as consented by RMA20170139. The run is approximately 50m from the common boundary with the Site.



Figure 8 Designated outdoor run area (from RMA20170139 Shaggy Range NMP prepared by Malcolm Hunt Associates)

⁸ The District Plan defines notional boundary to mean: “a line 20 metres from and parallel to any wall of a building or any wall of a building used by a noise sensitive activity or the legal boundary whichever is closer to the building”

4.2 Compliance distances to existing and future notional boundaries

The noise emissions from the Dog Daycare are controlled by the requirement to comply with a noise limit of 55dB L_{Aeq} at the closest notional boundary.

We have assessed the potential for the Project to introduce a constraint on the Dog Daycare by reviewing the location of the noise compliance locations (notional boundaries) that form part of the existing environment.

Figure 9 shows the Dog Daycare is separated from the closest physically existing notional boundaries on 86 and 96 Arataki Road by a separation distance of approximately 150m. These receivers are represented by the red circles.

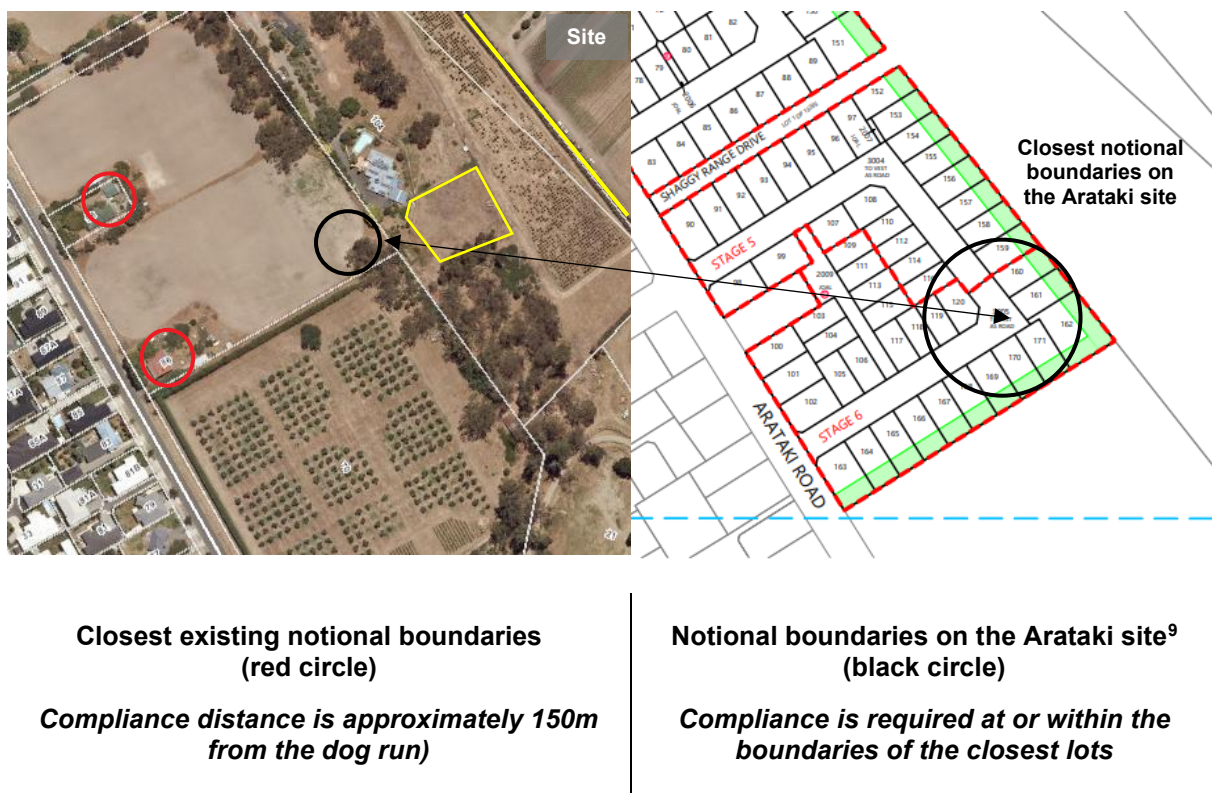


Figure 9 Separation distances to existing and consented notional boundaries

Figure 9 also shows the location of the closest notional boundaries on the Arataki development site. The approved scheme plan shows that the boundaries of the closest lots (Lot 161 and Lot 162) are approximately 15m from the designated dog area. The scheme plan shows a 10m buffer that is designed to provide additional separation distance between the Arataki dwellings and the Dog Daycare. However, based on the relatively small lot sizes and the requirement for the Dog Daycare to achieve compliance with the noise limits at the “notional boundary”, the

⁹ https://www.fasttrack.govt.nz/__data/assets/pdf_file/0020/20558/Scheme-Plan-and-Civil-Drawings_Final.pdf

Dog Daycare is required to comply with a noise limit of 55dB L_{Aeq} at or very near (i.e. within 10m of) their common boundary with the Arataki site.

Figure 9 demonstrates that the Dog Daycare is already constrained by the requirement to comply with its consented noise limits at its proximate notional boundaries. The Site is separated from the Dog Daycare by separation distances that are much greater than those that exist now.

The introduction of new notional boundaries on the Site will not introduce any new noise compliance obligation for the Dog Daycare.

We understand the site is also used for use for primary production activities, including a plant nursery and Christmas tree plantation. The vehicles, mobile machinery and portable equipment associated with land based primary production activities are intermittent and short term noise sources and exempt from the requirement to comply with the noise limits prescribed by the Hastings District Plan. The Project will not introduce any constraint on these activities.

5.0 Noise from the water pumpstation on 170 Brookvale Road

The Site is adjacent to the Hastings District Council water pump station facility on 170 Brookvale Road.

The facility is not designated. Operational noise levels from the facility are controlled by the requirement to meet the noise limits in Rule 25.1.6D (set out in Section 2.2). The closest existing compliance location for noise is the existing notional boundary of 163 Brookvale Road (20m from the boundary of the pumpstation).

The Project will introduce new notional boundaries to the south of the pumpstation. Figure 10 shows that proposed Lot 188 will share a common boundary with the pumpstation.



Figure 10 Water pump station on 170 Brookvale Road

We understand the treatment plant enclosed within the building, and that the main feature of the plant is for dosing the water supply.

We understand that the noise from the pump station is very quiet when observed from outside the building.

The proposal is to construct a close boarded fence along the common boundary with the pump station and Lot 188 for amenity reasons. We have recommended a condition of consent in Section 8.0 to ensure the fence is also acoustically effective.

6.0 Temporary event noise from the “Boneshed” Music Venue

The “Boneshed” music venue (the **Venue**) is located 184 Brookvale Road. We understand that Venue features occasional live music gigs.

6.1.1 Permitted noise standards for temporary events

We understand the Venue does not operate under a resource consent. We consider that it will not comply with the underlying noise standards for the zone either (45dB L_{Aeq} at night). We have therefore reviewed the HDP temporary event controls in Rule 6.2.6H and associated noise limits in Rule 25.1.6.J to determine the permitted level, frequency and duration of noise from Temporary Events in the Bone Shed.

Rule 6.2.6H of the HDP permits up to six temporary events on a site over any 12 month calendar period (January to December), where no more than three events are held over consecutive days and the maximum attendance does not exceed 1000 people. Temporary events must comply with the noise limits in Rule 25.1.6.J, which are reproduced below:

25.1.6J TEMPORARY EVENTS

1. Temporary Events (other than Temporary Military Training Activities)

- (a) Any amplified sound equipment shall not be operated during the following hours:
 - i) Sunday to Thursday inclusive 2200 hours to 1000 hours (the following day).
 - ii) Fridays and Saturdays 2400 hours to 1000 hours (the following day).Except that on 1st January of any calendar year, any amplified sound equipment shall not operate from 0100 hours to 1000 hours.
- (b) Any sound checks that include testing and balancing of sound systems, sound equipment and vocal checks by performers shall not:
 - i) Exceed a cumulative period of 6 hours
 - ii) Commence before 0900 hours on any day and shall be completed by 1900 hours on the day of the temporary event.
- (c) Any noise arising from the temporary event shall not exceed a limit of 75 dB L_{Aeq} (15 min) at any point within a Residential Zone or within the notional boundary of any noise sensitive activity in a Rural Zone.

The Venue is currently controlled by the requirement to comply with a noise limit of 75 dB L_{Aeq} (15min) at the notional boundary of 185 Brookvale Road, approximately 250m away.

6.1.2 Amplified sound noise modelling

We have used DGMR iNoise computer noise modelling software to predict the cumulative noise emissions from amplified sound inside the Venue. We have used the predictions to determine whether events can meet the noise limit of 75 dB L_{Aeq} (15min) at future notional boundaries within the Site.

The noise model is based on the following assumptions:

- i. An internal reverberant noise level of 98 dB L_{Aeq} using a spectrum representative of music with a prominent bass beat. This represents a very high level of noise for a high energy performance.
 - We have applied a +5dB penalty for special audible characteristics in accordance with NZS 6802:2008. No adjustment for duration has been applied.
 - The noise model assumes a worst-case scenario where the northern façade of the Venue is open, with 50 people outside the Venue.

The noise level predictions demonstrate that the closest lots will receive noise levels up to 71 dB L_{Aeq} . This noise level complies with the permitted temporary event noise limit of 75 dB L_{Aeq} and with a 4dB margin of safety.

6.2 Overall assessment of compatibility with the Venue

The HDP anticipates and provides for the noise of Temporary Events on any site, where they do not exceed six events per site over any 12 month calendar period and comply with all other aspects of the rule that require the duration of amplified sound to not exceed 6 hours, and conclude by 10pm (Sunday to Thursday) 1am on Friday and Saturdays, and 1am on New Year's Eve.

The noise modelling we have undertaken demonstrates that noise emissions from Temporary Events held at the Venue can comply with the noise limits in Rule 25.1.6J at the proposed notional boundaries inside the Site.

We consider that the noise effects from up to 6 permitted Temporary Events in the Boneshed will be reasonable. We also understand that the owners of the Boneshed have provided their written support to the Project.

7.0 Assessment of construction noise and vibration effects

We understand the majority of enabling works (Phase 1) will comprise bulk earthworks over an area of approximately 24Ha to prepare stormwater management and overland flow channels and to prepare suitable building platforms. We understand the earthworks will be

staged over three earthworks seasons and completed in four separate areas. Phase 2 works will involve secondary earthworks and infrastructure construction (paving of roads and installation of services) over five distinct stages. This work will be followed by construction of built development. The noise levels from the construction of buildings will generally be quieter than the noise from civil works.

We understand the preliminary bulk earthworks and civil works will be carried out using standard civil construction plant and equipment, such as excavators for bulk excavation, bulldozers for stripping and spreading, articulated dump trucks for haulage of materials, and graders for final contouring. Compaction will be undertaken using rollers suitable for the material type, while water carts will be used for dust suppression and moisture conditioning. Additional equipment such as loaders, trench diggers, and other small plant may be used as required for specific tasks.

We understand that the ground conditions mean that no blasting, rock breaking or piling will be required and therefore the construction noise effects will be typical for a project of this nature and scale.

We understand that the Project has an overall construction duration of approximately 7 years but that works will be very intermittent over this period.

7.1 Permitted construction noise standards

Rule 25.1.6I of the HDP permits noise generated from construction work where it complies with the guideline noise limits and assessment procedures set out in NZS6803:1999 Acoustics - Construction Noise (**NZS6803**).

Rule 25.1.6I is reproduced below:

- (a) Any noise arising from construction, maintenance and demolition work in any Zone shall comply with NZS6803:1999 Acoustics - Construction Noise.
- (b) Construction noise shall be measured and assessed in accordance with NZS6803:1999 Acoustics - Construction Noise.

NZS6803 provides guideline noise limits that are based on the duration of construction works at any one location, and the occupation of the receiving site. We understand that the construction timeframe will be greater than 20 weeks in duration. We have therefore assessed the potential construction noise levels in accordance with the NZS6803's recommended noise limits for long term projects¹⁰.

Construction activity will take place between 7:30am and 6:00pm, Monday to Saturday, when NZS6803 recommends that a noise limit of 70 dB L_{Aeq} and 85 dB L_{AFmax} applies when measured and assessed 1m from the façade of any occupied building. The construction noise limits do not apply at vacant sites or buildings that are not occupied at the time of construction work.

¹⁰ The construction noise limit applying to construction projects greater than 20 weeks in duration.

The proposal is to comply with Rule 25.1.6l at all receivers.

7.2 Receivers of construction noise

This assessment is focussed on construction work in areas of the Site that are near (i.e within 80m) of occupied dwellings on adjacent sites. The closest receivers (dwellings) within 80m of proposed construction work are displayed in Table 3.

Address	Building type	Separation distance from closest potential construction activity and building façade
161 Brookvale Road	Single level dwelling	≈ Approximately 27m from the closest area of earthworks
163 Brookvale Road	Single level dwelling	≈ Approximately 28m from the closest area of earthworks
185 Brookvale Road	Single level dwelling	≈ Approximately 45m from the closest area of earthworks
184 Brookvale Road	Single level dwelling	≈ Approximately 20m from the closest area of earthworks

All other receivers are well separated from areas of the site that will be subject to construction work. The construction noise levels generated from construction work in other areas of the Site will be much lower and will readily comply with the noise limits in NZS6803 due to the large separation distances.

7.3 Assessment of compliance with permitted construction noise limits

Table 1 includes reference noise levels for the noisiest potential construction activities likely to be undertaken near to occupied buildings on adjacent sites.

The reference noise levels are based on our database of construction noise measurements undertaken by Styles Group on numerous projects nationwide. They are generally consistent with guideline noise data provided in NZS 6803:1999 Appendix C *Guide to Sound Level Data on Site Equipment and Site Activities* and best practice.

Our reference levels are based on worst-case assumptions for noise emissions. Good plant selection, regular maintenance, and experienced operators will generally result in lower noise emissions during the works.

Table 1 displays the minimum separation distance for each activity to comply with the permitted construction noise limit for the proposed hours of work (i.e. times when a noise limit of 70 dB L_{Aeq} applies) under the following assumptions:

- The distances include an adjustment of +3 dB to the noise levels for reflections from the façade of the receiving building (in accordance with NZS 6803:1999).
- The compliance distance stated is from the noise generating plant (or the noisiest part of the plant e.g., an excavator engine) to the most exposed façade of the building.
- The plant is being used continuously at the reference distance over a 15-minute sample period (i.e., 100% on-time) unless otherwise stated.
- Hard, acoustically reflective ground is assumed between the noise source and the building.
- The mitigated noise levels include a reduction of 10 dB from an effective acoustic barrier such as topography or fencing that blocks line of sight between the noise generating part of the plant and the assessment point.

Table 1 Reference noise levels and compliance distances

Construction activity	Unmitigated $L_{Aeq(15 \text{ min})}$ noise level at 10 m	Unmitigated compliance distance	Mitigated compliance distance (with noise barrier)
D6, D7, or D8 bulldozer working in small area	76 dB*	27 m	9 m
Padfoot vibratory compaction roller 15t – 20-t	76 dB*	27 m	9 m
Cut and fill, clearing, and loading trucks with a 40-t – 50-t excavator	72 dB	17 m	6 m
Cut and fill, clearing, and loading trucks with a 20-t excavator	69 dB	12 m	4 m
Cat 815 static compactor 18-t	69 dB*	12 m	4 m
Concrete pump and truck discharging	69 dB	12 m	4 m
Cut and fill, clearing, and loading trucks with a 12-t excavator	67 dB	10 m	3 m
Large generator	66 dB	9 m	3 m
Terex TS14 30-t motor scraper	65 dB*	8 m	3 m
7,000 L watercart	65 dB	8 m	3 m
Grader	62 dB*	6 m	2 m
Idling delivery truck, dump truck, moxy, tractor	62 dB	6 m	2 m

Paving works (with all ancillary equipment operating)	75 dB	25 m	8 m
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* Reference noise level is for a moving noise

7.3.1 Assessment of compliance with permitted construction noise limits

The closest receivers are approximately 20-27m from the closest part of the Site boundary where earthworks for recontouring will be undertaken. This is relatively quiet work that is capable of complying with the 70dB L_{Aeq} limit at distances less than 20m.

The higher noise generating works such as compaction, grading and paving works will be undertaken much further away from receivers.

Based on our review of the earthworks plan, we expect that the construction noise levels can comply with the permitted construction noise limit of 70 dB L_{Aeq} without any specific noise mitigation or management. We have recommended conditions of consent based on our findings.

7.4 Construction vibration

The HDP does not include any rules or standards to control vibration generated from construction work.

We have reviewed the areas of proposed construction work on the Site and proximity to neighbouring buildings to determine whether the works will comply with vibration limits set out in German Standard DIN 4150-3:1999 *Structural vibration – Effects of vibration on structures* (the **DIN limits**). The DIN limits are commonly adopted in other District Plans to ensure construction vibration avoids any damage to buildings.

We have not identified any concerns in terms of vibration affecting adjacent sites due to the separation distances between potential vibration-generating construction activities on Site and the nearest physically buildings.

8.0 Recommended conditions

We recommend the following conditions are attached to the consent.

Acoustic fence along the common boundary of the water pump station and proposed Lot 188	Prior to the occupation of the dwelling on Lot 188, the consent holder shall construct an acoustically effective barrier along the common boundary of Lot 188 and the waterpump station on 170 Brookvale Road. The acoustic barrier shall be no less than 2 m in height and shall have no gaps along its length or at its base, including where it adjoins any other structure. The surface density of the barrier shall be no less than 10 kg/m², with any timber palings overlapped or battened to prevent gaps. The barrier shall be maintained to be acoustically effective for as long as this consent is given effect to.
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Timing of construction work	Construction work and heavy vehicle movements on the site may only take place between the hours of 7:30 am. and 6:00 pm, Monday to Saturday. No noisy works shall be undertaken on Sundays or public holidays. This condition does not preclude quiet works from taking place outside of standard construction hours, providing they comply with the permitted construction noise limits at these times (e.g., site meetings, interior fitouts, planting or other works that are well-separated from neighbouring receivers).													
Construction noise limits	Construction noise levels generated from the Site shall comply with the following limits, when measured and assessed 1m from the façade of any occupied dwelling or building on any other site in accordance with NZS 6803:1999: <i>Acoustics – Construction Noise</i>: <table><tr><th rowspan="2">Time period</th><th colspan="2">Maximum noise levels</th></tr><tr><th>L_{Aeq}</th><th>L_{AFMax}</th></tr><tr><td>7:30am- 6:00pm, Monday to Saturday</td><td>70 dB</td><td>85 dB</td></tr><tr><td>All other times and on Public Holidays</td><td>45 dB</td><td>70 dB</td></tr></table>			Time period	Maximum noise levels		L _{Aeq}	L _{AFMax}	7:30am- 6:00pm, Monday to Saturday	70 dB	85 dB	All other times and on Public Holidays	45 dB	70 dB
Time period	Maximum noise levels													
	L _{Aeq}	L _{AFMax}												
7:30am- 6:00pm, Monday to Saturday	70 dB	85 dB												
All other times and on Public Holidays	45 dB	70 dB												
Notice of construction work	The consent holder must advise and all other occupants of all buildings within 50 m of the site boundary about the construction works at least five days before demolition or earthworks begin on site. The advice must be provided in writing and include the following information: i. An overview of the construction works including the duration of the project and the working hours on site. ii. The approximate dates and duration of the noisiest activities on site iii. A contact name and phone number to advise of any sensitive times for high noise levels and for any questions or complaints regarding noise and vibration throughout the project.													

9.0 Summary

Overall, our assessment finds that the Project will be compatible with the established and permitted land use activities on adjacent sites.

We have recommended conditions of consent based on our findings.