

7 RODGER RD, WANDIN NORTH, VIC 3139

NOISE IMPACT ASSESSMENT

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Project Information

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1 INTRODUCTION

Engineering Sciences has been engaged [REDACTED] to undertake an environmental Noise Impact Assessment (NIA) for a proposed domestic animal boarding facility (maximum 20 dogs) at 7 Rodger Road, Wandin North VIC 3139.

The assessment is required by Yarra Ranges Council in response to its Further-Information request application YR-2025/82, and must demonstrate compliance with:

- Environment Protection Act 2017 & Environment Protection Regulations 2021
- EPA Victoria Publication 1826 (Noise Protocol, May 2021)

This report has been prepared with reference to the RFI Fence Relocation Drawings provided by the client, outlined in Table 1.

Table 1 - Architectural Drawings

Drawing. No	Drawing Title	Revision	Date
TP03	Ground Floor Plan	-	-
TP04	Elevations		

2 SITE DESCRIPTION

2.1 Project Description

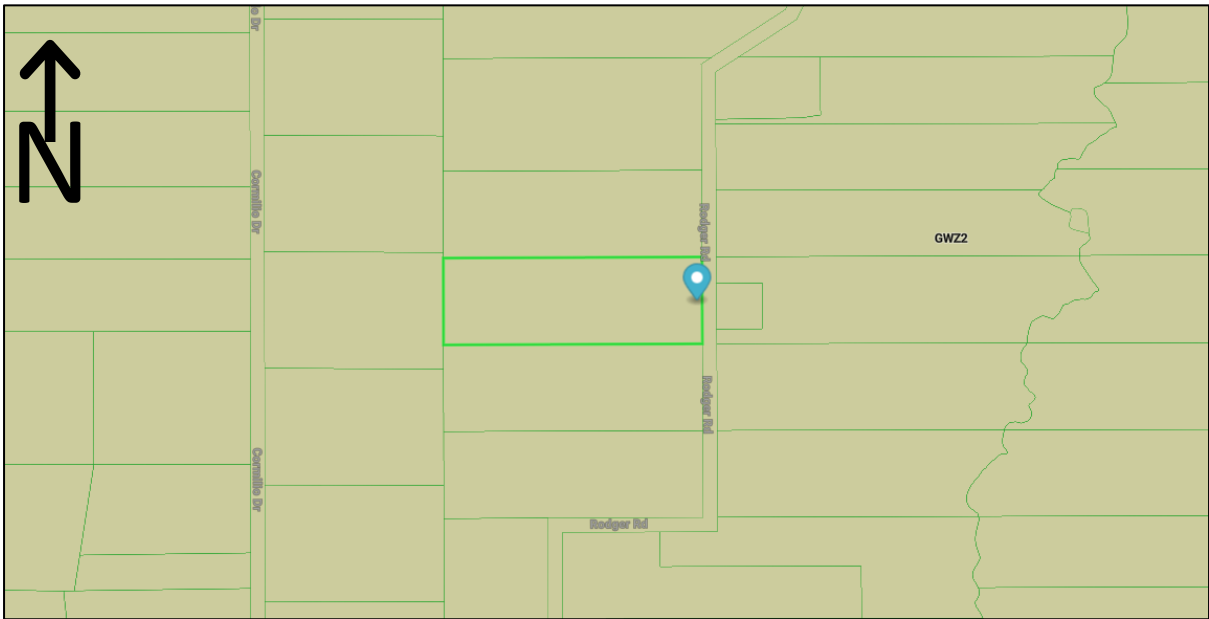
The proposal converts an existing 15 m × 10 m rural shed (light-weight metal cladding) into an indoor kennel containing 22 pens, storage/washing room, reception and one overnight staff room. A 1.8 m high chain-mesh fence encloses a 15 m × 10 m outdoor exercise yard directly west of the shed. Operating hours: 09:00-17:00, seven days; a staff member resides on site outside those hours. Maximum occupancy: 20 dogs of different breeds.

2.2 Project Locality

The 4.37 ha allotment is zoned Green Wedge Zone – Schedule 7 (GWZ7) and bounded mainly by open land that include residential dwellings.

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Figure 1 -Subject Site and Land Zoning of Surrounding Areas (Mecone Mosaic)



2.3 Nearest Noise Sensitive Receivers

The nearest noise-sensitive receivers are the neighbouring residential dwellings located along Rodger Road, situated to the North, South and East of the site. These receivers are considered the most acoustically sensitive in relation to potential emissions from site operations and have been a focal point in the assessment of environmental noise impact.

The nearest noise sensitive receivers are summarised in Table 3 and are presented in Figure 2.

Figure 2 - Aerial imagery of Project Site (Google Maps)



Table 2 - Noise Sensitive Receivers Locations

ID	Type	Receiver Description / Distance Approx.
R1	Residential	9 RODGER ROAD WANDIN NORTH 3139 / 100m
R2		5 RODGER ROAD WANDIN NORTH 3139 / 100m
R3		16 RODGER ROAD WANDIN NORTH 3139 / 115m

3 NOISE EMISSION CRITERIA

3.1 Sound level Descriptors

Noise level descriptors used in the assessment are explained below. For analysing noise, the following descriptors are used:

- L_{90} is known as background noise. L_{90} is a statistical sound level which describes the percentage of times a sound level is exceeded. This parameter is used to set up the allowable noise levels for intrusive noise sources since the level of disturbance of the intrusive noise source will be dependent on how audible it is above the existing noise environment.
- L_{eq} is the equivalent sound level which represents the average noise level during a measurement period. L_{eq} describes a receiver's cumulative noise exposure from all events over a specified period for compliance assessment purposes.
- L_{01} is the noise level exceeded for 1% of the measurement period. During the measurement period, the noise level is below the L_{01} level for 99% of the time
- L_{10} is the noise level exceeded for 10% of the measurement period. During the measurement period, the noise level is below the L_{10} level for 90% of the time. The L_{A10} is a common noise descriptor for environmental noise and road traffic noise
- L_{Amax} is the maximum instantaneous noise level during a measurement period
- A-weighted Sound Level (instantaneous) is the most common weighting used in noise measurements, and it represents the frequency range detectable by the human ear. A-weighted is used for noise measurements and prediction purposes.

3.2 Publication 1826 Part I, Environment Protection Authority

EPA Publication 1826 – *Noise Limit and Assessment Protocol for the Control of Noise from Commercial, Industrial and Trade Premises and Entertainment Venues* (Part 1, EPA Pub. 1826-P1) outlines the noise limits and assessment procedures required under the *Environment Protection Act 2017* and *Environment Protection Regulations 2021*.

For this site, the Rural Area Method (clauses 16–36 of the Protocol) applies, as the subject land and all surrounding receivers are zoned Green Wedge (GWZ7) and lie well outside any defined urban area or high-density township. As such, the Urban Zoning Level Method (clauses 1–15) is not applicable. Noise limits have therefore been determined using the background-adjusted rural method set out in clause 24 of the Protocol, which applies the following limits at nearby noise-sensitive receivers:

- Day (07:00–18:00): $L_{Aeq,30min}$ limit = 35 dB + 8 = 43 dB
- Evening (18:00–22:00): $L_{Aeq,30min}$ limit = 30 dB + 5 = 35 dB
- Night (22:00–07:00): $L_{Aeq,30min}$ limit = 30 dB + 3 = 33 dB
- Night L_{AFmax} : maximum event level = 55 dB(A) at sensitive room façades

These background values are taken from Table 9 of the Noise Protocol for Category 2 rural settings, which is appropriate given the low ambient development density and absence of substantial transport noise sources. This approach is permitted under clause 23, provided predicted levels fall below the adjusted limits.

3.3 Sleep Disturbance

In addition to compliance with EPA Victoria Publication 1826.4 noise limits, consideration has been given to the potential for sleep disturbance due to short-duration maximum noise events occurring during the night-time period (10:00 pm to 7:00 am).

Sleep disturbance may include both full awakenings and partial disruptions to sleep architecture, which are influenced more strongly by maximum (LAFmax) noise levels than by time-averaged (LAeq) levels. Research and international guidance, including the *WHO Environmental Noise Guidelines for the European Region (2018)*, indicate that:

- Internal LAFmax levels below 50–55 dB(A) are unlikely to cause awakenings for most people;
- Up to one or two events per night with external LAFmax levels of 65–70 dB(A) are not expected to result in significant sleep disruption or adverse health outcomes.

For the purposes of this assessment, and in the absence of Victorian-specific LAFmax limits, the following indicative criteria have been applied to assess the likelihood of sleep disturbance at nearby noise-sensitive receivers:

- LAFmax 55 dB(A) internally, within a habitable room used for sleeping;
- LAFmax 65 dB(A) externally, measured near an openable bedroom window (in the absence of façade attenuation).

3.4 Resultant Criteria

Table 3 – EPA Pub. 1826-Part I Noise Criteria

Period	Background LA90 (dB)	Applicable Offset	Resulting Limit LAeq,30min (dB)
Day	35	+8 dB	43
Evening	30	+5 dB	35
Night	30	+3 dB	33
Night LAFmax	–	–	55 (external)

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4 NOISE EMISSION ASSESSMENT

4.1 Operational Scenario

Two potential noise emission scenarios have been identified for the project site. For each scenario, predictions of LAeq and LMax at receiver locations have been conducted and compared to the corresponding criteria.

Scenario 1 Day-time

- The first scenario involves a maximum of 22 dogs in the designated outdoor dog exercise areas during daytime hours.
- Each dog is emitting noise for 10% of the total 15 min assessment duration.
- It is assumed that a maximum of 11 dogs barks at the same time. (11 large dogs barking at the same time has been considered as the worst-case scenario).

Scenario 2 Night-time

- The second scenario involves a maximum of 22 dogs being housed inside the dog kennel shed during night-time hours in the instance of any night-time boarding.
- The maximum noise level assessment considers the instantaneous resultant noise levels from barking dogs. (Not time averaged)
- It is assumed that a maximum of 11 dogs barks at the same time. (11 large dogs barking at the same time has been considered as the worst-case scenario).

Existing shed – assumed acoustic performance:

- Shed Structure: single-skin 0.55mm custom orb **Rw 21**
- Doors: likely timber or steel-framed utility doors, unsealed **Rw 20**, dominated by air leakage

4.2 Noise Sources

The sound power level of dogs barking was taken from our technical database. Sound power levels are reported in A-weighting (Equivalent loudness perceived by human ear).

Table 4 – Sources Sound Power Levels

Noise Source	Overall Sound Power Level, LAeq dB(A)	Maximum Sound Power Level LMax dB(A)
Large Dog	96	100

4.2.1 Noise Modelling

Noise emissions levels at the nearest noise sensitive receivers have been calculated using computer-based 3D acoustic noise modelling software iNoise version 2023.1.1. iNoise utilizes ISO 9613 calculation algorithms to determine noise emission levels at the nearest affected noise sensitive receivers. The following assumptions have been included within the noise model:

- Distance attenuation.
- Atmospheric attenuation.
- Directivity.
- Ground absorption (G = 0.5)
- Barrier effects/screening.
- Ground Elevation Contours.

Noise contours have been generated to clearly identify the resulting noise level impacts at adjacent noise sensitive receivers at a height where the receiver is most impacted.

4.3 Predicted Noise Levels

Noise produced by the indoor entertainment venue is assessed for compliance with the criteria presented in Section 4. Noise predictions, which consider the predicted noise levels at the nearest noise-sensitive receivers, are detailed in the following Tables.

Table 5 - Predicted External Levels at the Nearest Receivers (Day-time)

Receiver	Noise Criteria L _{Aeq} dB(A)	Noise Level L _{Aeq} dB(A)	Compliant?
RG1	43	35	✓
RG2		43	✓
RG3		29	✓

Table 6 - Predicted External Levels at the Nearest Receivers (Night-time)

Receiver	Noise Criteria L _{Aeq} dB(A)	Noise Criteria L _{AFMax} dB(A)	Noise Level L _{Aeq} dB(A)	Noise Level L _{AFMax} dB(A)	Compliant?
RG1	33	55	28	39	✓
RG2			23	40	✓
RG3			33	47	✓

5 RECOMMENDATIONS

Based on the predicted noise levels and the applicable assessment criteria, the following recommendations are made to ensure continued compliance with EPA Publication 1826 noise limits and to reduce the risk of amenity impact on nearby residential receivers:

- Outdoor activity yard usage (day-time only):**
 Limit use of the external exercise yard to **09:00–17:00 only**, consistent with the operational hours nominated in the planning submission. Outdoor use should cease after 17:00 to prevent evening or night-time exceedance of the lower EPA criteria.
- Yard occupancy control:**
 The modelled day-time scenario assumed up to 10 dogs barking concurrently, it is recommended that **a maximum of 11 dogs be allowed in the outdoor yard at any one time**, under direct supervision, to reduce peak sound pressure levels and potential cumulative exposure.
- Night-time bark management:**
 While predicted **night-time LAeq and LAFmax levels are compliant**, the risk of sleep disturbance from unexpected dog barking during overnight boarding cannot be entirely excluded. It is therefore recommended that:
 - Barking be actively minimised via **calming protocols** (e.g., separation of reactive dogs, controlled feeding schedules).
 - A **night-time response plan** be implemented, requiring the on-site staff member to intervene promptly if sustained barking occurs.
 - Staff be trained to recognise and de-escalate signs of distress vocalisations.
- Internal acoustic upgrade (optional mitigation):**
 Should operational experience or complaints suggest a need for improved internal containment, the shed envelope may be upgraded with internal **acoustic lining** (e.g., 50 mm

glass-fibre with perforated metal finish) to achieve **Rw 30–35**, improving transmission loss and resilience to tonal or impulsive bark events.

- **Mechanical plant selection (if applicable):**

Any ventilation or cooling equipment installed must have a maximum **L_w ≤ 63 dB(A)** and be located on the **south or east façade** of the kennel building. Units must be free of tonal or impulsive noise characteristics, or such characteristics must be addressed via shielding or selection of alternative equipment.

6 CONCLUSION

An environmental noise impact assessment has been conducted for the proposed domestic animal boarding facility at 7 Rodger Road, Wandin North VIC 3139, in accordance with EPA Victoria Publication 1826 (Part I) and the Environment Protection Regulations 2021. Noise modelling has been performed for both day-time and night-time scenarios, including worst-case assumptions for concurrent dog barking, and has been assessed against the rural-area criteria applicable under clause 24 of the Noise Protocol.

Predicted noise levels at all assessed noise-sensitive receivers are compliant with the applicable LAeq,30min and LAFmax thresholds during both day and night periods. This includes a margin of compliance under typical and worst-case operating conditions.

Although night-time noise predictions indicate compliance, the assessment recognises the potential risk of sleep disturbance associated with unexpected barking events during overnight housing. As a precautionary measure, it is recommended that calming protocols and active supervision be maintained after hours to minimise such occurrences in the event that night-time boarding is proposed.

The proposed development is considered acoustically acceptable for planning approval subject to the implementation of the recommendations outlined in Section 5. These include outdoor yard controls, bark management strategies, and optional envelope enhancements. No additional mandatory acoustic treatments are required at this stage.

Please contact us if you have any further queries.

Sincerely,

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Appendix A – iNoise Noise Contours (Day-Time)



Appendix A – iNoise Noise Contours (Night-Time)

