



# 50 GALVIN ROAD, WERRIBEE

## Acoustic Report for Subdivision Approval

Prepared For

**BAYCROWN PROPERTY GROUP C/- DAV CONSULTING &  
TAYLORS DEVELOPMENT STRATEGISTS**

DOC. REF: V1188-01-P ACOUSTIC REPORT (R0)  
13 NOVEMBER 2022

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**Plan: 1 of 13**

Project 50 Galvin Road, Werribee

Subject Acoustic Report for Subdivision Approval

Client Baycrown Property Group c/- Dav Consulting & Taylors Development Strategists

Document Reference V1188-01-P Acoustic Report (r0).docx

Date of Issue 13 November 2022

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# 1 Introduction & Scope

Enfield Acoustics has been engaged by c/- Dav Consulting and Taylors to address potential noise and vibration impacts from the rail corridor adjacent to the proposed subdivision at 50 Galvin Road (Subject Land).

This assessment has been prepared in accordance with Schedule 4 to Clause 37.07 of the Wyndham Planning Scheme, Alfred Road Precinct Structure Plan. The relevant noise and vibration provisions are as follows:

## 3.5 Rail noise assessment

15/08/2013  
C159

An application that proposes, or will allow, residential buildings within 80 metres of a rail track within the Melbourne-Geelong Rail Line land must be accompanied by an assessment of noise and vibration impacts on the development from the rail operations at the time of the application.

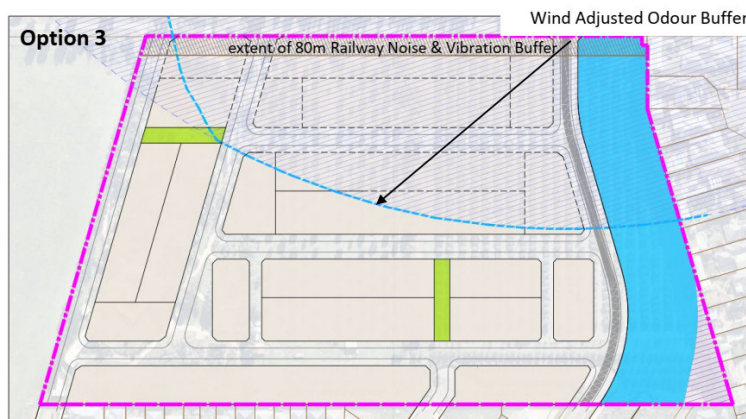
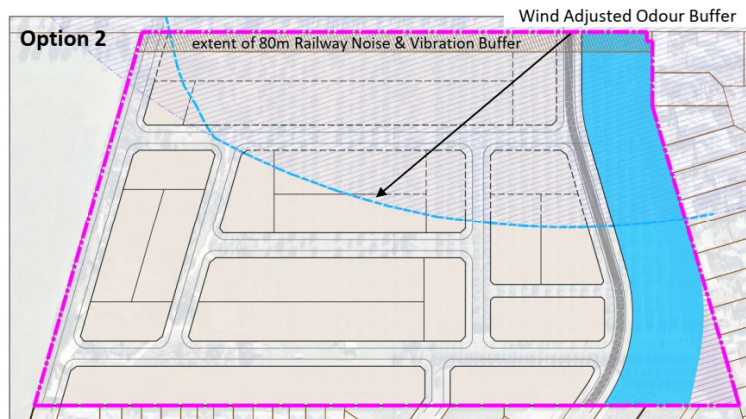
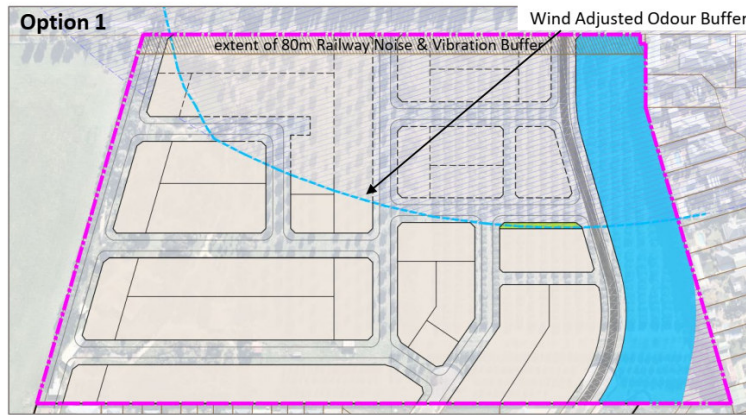
It is understood that a large portion of the land parcel is also subject to an odour assessment overlay, as shown in Plan 1 of Schedule 4 to Clause 37.07:



Our assessment proceeds on the basis that the odour requirements are satisfied for the entirety of Subject Land and that housing development can potentially occur along the northern boundary adjacent the rail corridor. This may also be relevant to restricted land development once the egg farm (for odour assessment) ceases operation. Where the odour assessment determines that greater setbacks are required from the northern boundary, the noise and vibration impacts would also be less.

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A Lot masterplan has not been provided however we have been provided with draft urban design layout options shown below:



The layout options are not critical to the acoustic assessment, as noise mitigation can be provided for any lot location, assuming that vibration impacts are also reasonable. An 80m influence area is noted on the urban design layouts based on 3.5 of Schedule 4 of Clause 57.07. Only lot development within that influence area requires assessment of noise and vibration impacts, which makes up developable land between approximately 70m and 80m from the rail corridor. Therefore in practice, this would only apply to the first row of lots along the entire northern

boundary. If dwellings are not developed within the 80m influence area, no further assessment is required.

In response to the planning requirements, Enfield Acoustics has:

1. Visited the Subject Land to install unattended noise and vibration monitors to establish existing rail impacts along the northern boundary where lots could be developed within 80m of the rail corridor;
2. In-lieu of Schedule 4 of Clause 37.07 prescribing noise and vibration levels to be met, assessed the impacts against other incorporated documents in the planning scheme; and
3. Where required, recommended mitigation measures such that the proposal can comply with the relevant planning requirements.

## 2 Planning Requirements

As stated above, 3.5 of Schedule 4 to Clause 37.07 does not prescribe specific noise and vibration levels to be complied with. There are also no other noise and vibration levels prescribed in statutory policies noting that:

1. Clause 56 (Residential Subdivision) of the planning scheme does not prescribe targets.
2. The Passenger Rail Infrastructure Noise Policy (PRINP) does not apply to this application based on our understanding that the rail corridor is used for freight, not passenger services.

Other planning policies and incorporated documents can be used as de-facto standards to satisfy Schedule 4 of Clause 37.07, as follows:

- Clause 13.05-1S refers to the *VicTrack Rail Development Interface Guidelines* (VicTrack, 2019) as a relevant reference document to satisfy rail noise impacts

The VicTrack Guidelines are consistent with Clause 58 of the planning scheme and set the following as criteria to satisfy noise impacts:

Buildings within a noise influence area specified in the table should be designed and constructed to achieve the following noise levels:

- not greater than 35dB(A) for bedrooms, assessed as an LAeq,8h from 10pm to 6am
- not greater than 40dB(A) for living areas, assessed LAeq,16h from 6am to 10pm.

For rail vibration impacts, there are no prescribed references in the planning scheme nor statutory policies, however the following standard is commonly referenced in assessments to demonstrate reasonable vibration impacts and best practice:

- *Department of Environment and Conservation NSW Guideline: Assessing Vibration (2006)*



The DEC Guideline recommends the use of the Vibration Dose Value (VDV) to assess intermittent vibration impacts from rail, as shown in the following extract:

**Intermittent vibration**

**Trains**, nearby intermittent construction activity, passing heavy vehicles, forging machines, impact pile driving, jack hammers. Where the number of vibration events in an assessment period is three or fewer this would be assessed against impulsive vibration criteria.

The recommended VDV thresholds from the DEC Guideline are shown in the following extract:

Location	Daytime <sup>1</sup>		Night-time <sup>1</sup>	
	Preferred value	Maximum value	Preferred value	Maximum value
Critical areas <sup>2</sup>	0.10	0.20	0.10	0.20
<b>Residences</b>	<b>0.20</b>	<b>0.40</b>	<b>0.13</b>	<b>0.26</b>
Offices, schools, educational institutions and places of worship	0.40	0.80	0.40	0.80
Workshops	0.80	1.60	0.80	1.60

<sup>1</sup> Daytime is 7.00 am to 10.00 pm and night-time is 10.00 pm to 7.00 am.

<sup>2</sup> Examples include hospital operating theatres and precision laboratories where sensitive operations are occurring. These criteria are only indicative, and there may be a need to assess intermittent values against the continuous or impulsive criteria for critical areas.

Source: BS 6472-1992

Where the above standard is met inside the proposed dwellings, vibration impacts would be considered reasonable and unlikely to result in adverse comments from building occupants. Where the above standard is met outside (i.e. ground vibration levels), no further assessment or controls are required.

### 3 Site Measurements

Enfield Acoustics visited the site on 28 October 2022 to install unattended long-term noise and vibration monitors. The location of the monitors is shown in the following Figure. The monitors were retrieved on 4 November 2022.



The unattended monitors were installed at a distance of approximately 65m from the nearest track, at a location representative of the worst affected lots on the draft urban design layouts (proposed northern boundary at approximately 70m from rail).



*Photo of Monitors*

A summary of the monitoring results is presented below.

Date	Measured Rail Noise and Vibration Levels			
	Noise $L_{eq-16hr}$ , dB(A)	Noise $L_{eq-8hr}$ , dB(A)	Vibration $VDV_{15hr}$ (m/s <sup>1.75</sup> )	Vibration $VDV_{9hr}$ (m/s <sup>1.75</sup> )
28 October 2022	Incomplete	56	Incomplete	0.01
29 October 2022	56	52	0.01	0.01
30 October 2022	46	54	0.02	0.01
31 October 2022	46	51	0.03	0.00
1 November 2022	49	53	0.02	0.01
2 November 2022	50	53	0.01	0.01
3 November 2022	48	57	0.01	0.01
<b>Average Levels</b>	<b>49</b>	<b>54</b>	<b>0.02</b>	<b>0.01</b>
<b>Highest Daily</b>	<b>56</b>	<b>57</b>	<b>0.03</b>	<b>0.01</b>

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Because the rail corridor services freight, movements on the network are sporadic and there are more services at night (average: 7) compared to the day (average: 4). We have taken the highest daily level as being reasonably representative of worst-case impacts on the site:

- $L_{eq,16hr}$  56dB(A),  $VDV_{15hr}$  0.03m/s<sup>1.75</sup>
- $L_{eq,8hr}$  57dB(A),  $VDV_{9hr}$  0.01m/s<sup>1.75</sup>

Refer to Appendix A for noise and vibration logging graphs.

## 4 Assessment

### 4.1 Noise Impacts

Where other separation buffers (i.e. odour) do not restrict land development within the range of 70m-80m from the rail corridor, any dwellings within that approximately 10m area would need to achieve the following Noise Reduction values:

- 21dB(A) for bedrooms
- 16dB(A) for living rooms

The above Noise Reduction values are modest and can be complied with where façade construction achieves a minimum sound insulation performance of:

- $R_w$ 30 for bedrooms
- $R_w$ 25 for living rooms

The above values can be met with standard forms of construction, as follows:

- Any façade system:
  - Any brick or masonry veneer walls
  - Lightweight cladding systems
    - Cement sheet with internal stud framed plasterboard wall and bulk insulation
    - Aluminium or other type of composite cladding system with internal stud framed plasterboard wall and bulk insulation
    - Rendered cladding with internal stud framed plasterboard wall and bulk insulation
- Any window glazing that is at least:
  - 6mm thick glass if single pane
  - Any double-glazed system

Given that the above glazing construction is a low performing glass and newer residential developments normally require better glazing systems to meet ESD requirements, we assess that the Subject Land is expected to comply with the rail noise criteria without requiring specific noise mitigation and/or treatment noted on individual Lot plans or restrictive covenants.

## 4.2 Vibration Impacts

No additional vibration attenuation via dwelling foundations as the ground measurements already meet the standards.

## 5 Conclusion and Recommendations

Enfield Acoustics has assessed potential rail noise impacts for the proposed subdivision at 50 Galvin Road, Werribee and conclude the following:

1. Because development is only proposed within an approximate 10m separation area between the 80m influence area and northern boundary of the Subject Land, the assessment indicates that standard construction methods would be satisfactory.
2. Vibration impacts are satisfactory at the development boundary.
3. On the above basis, no specific design standards need to be developed for individual lots and there is no need to address the impacts through restrictive land covenants.
4. Where other design requirements (odour) require development beyond 80m from the rail corridor, there are no further requirements for noise and vibration control.

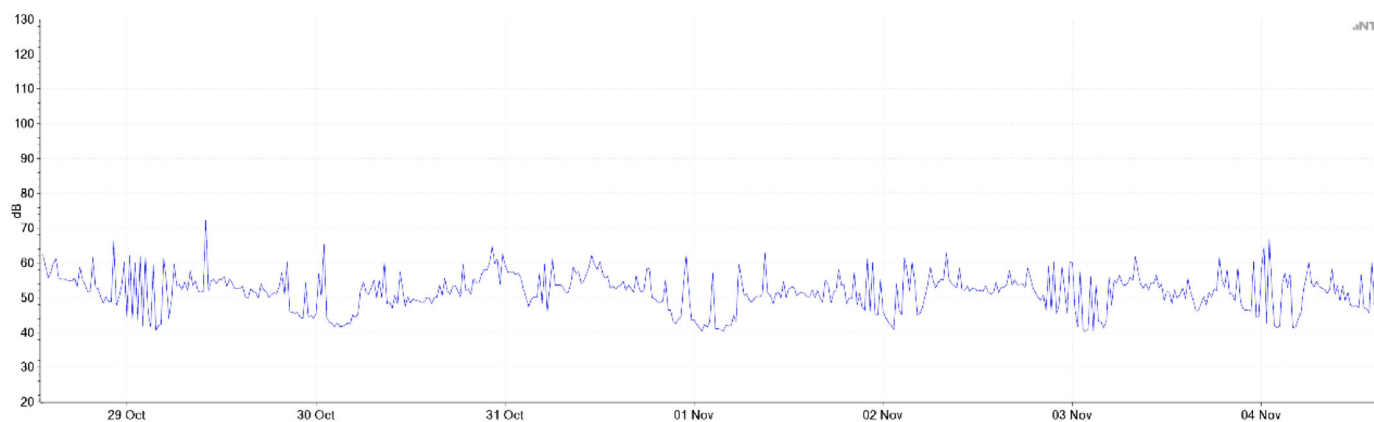
To that end, Enfield Acoustics is satisfied that the Application for land subdivision can be approved without requiring specific noise or vibration mitigation.

## Appendix A: Noise & Vibration Logging Graphs

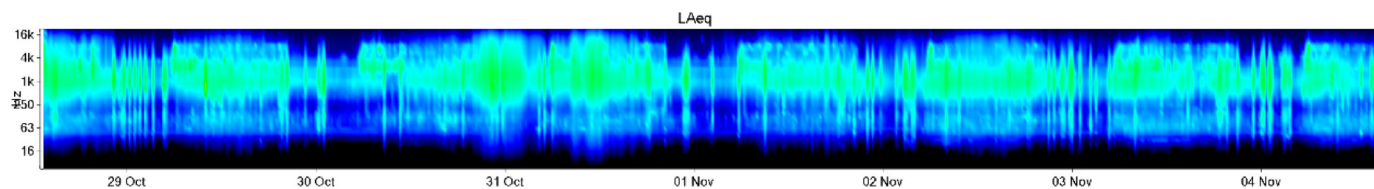
## Noise Logging - 50 Galvin Road, Werribee

Start: 2022-10-28 13:19:52

End: 2022-11-04 15:00:56

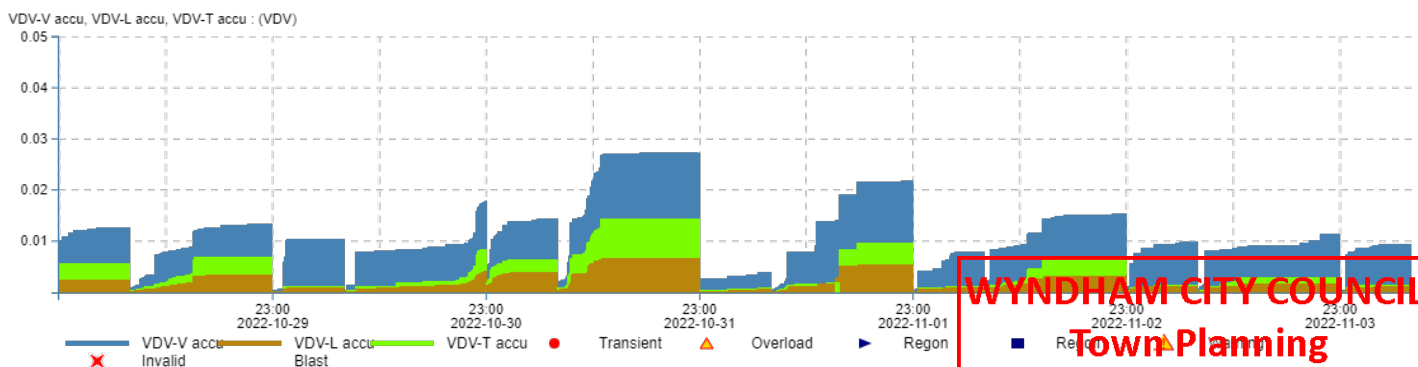
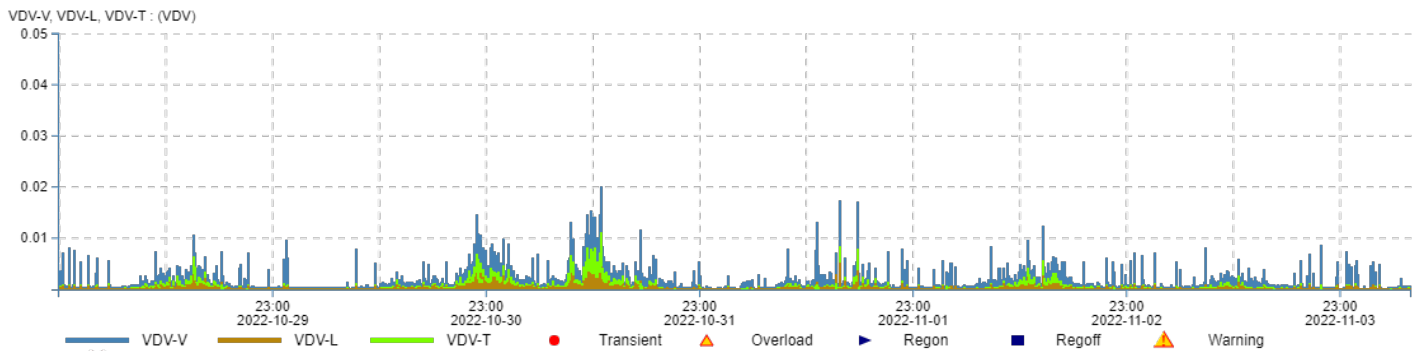
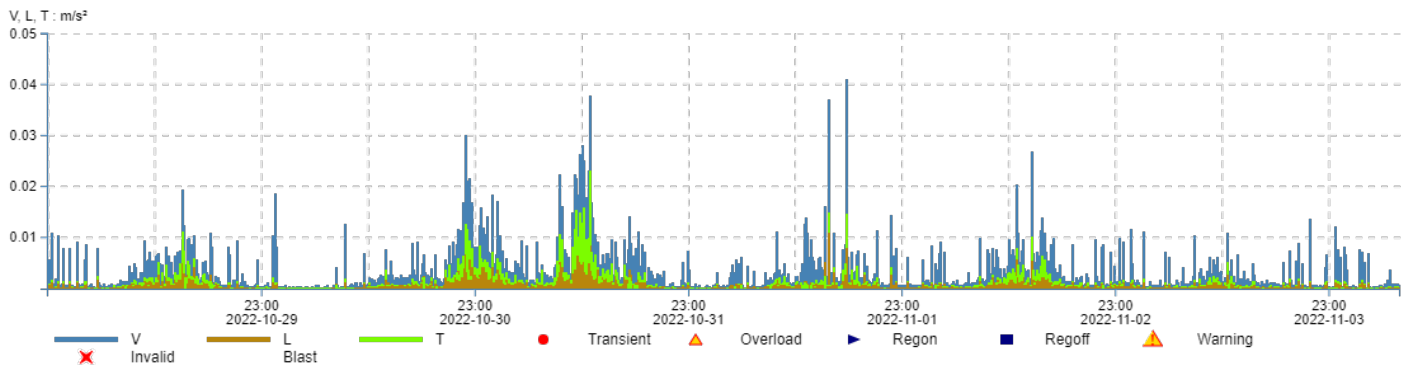


— LAeq\_dt





Project	Galvin
Project maintainer	Darren Tardio
Customer	Enfield Acoustics Pty Ltd
Customer contact	Enfield Acoustics (+61499049212)
Time frame	2022-10-28 23:00 - 2022-11-04 07:00 (Australia/Melbourne)
Measure point	MP_1
Location	-
Sensor type	C22
Serial no.	102095
Master(s) serial no.	102095
Latest calibration	2019-01-14
Standard	BS 6841 12.5m/s <sup>2</sup> (VDV)
Unit	m/s <sup>2</sup> , (VDV)
Quantity	Acceleration, VDV
Interval time	10 min
Max	V: 0.041 m/s <sup>2</sup> , L: 0.011 m/s <sup>2</sup> , T: 0.023 m/s <sup>2</sup> , VDV-V: 0.020 (VDV), VDV-L: 0.0050 (VDV), VDV-T: 0.011 (VDV), VDV-V accu: 0.027 (VDV), VDV-L accu: 0.0067 (VDV), VDV-T accu: 0.014 (VDV)



X-span	2022-10-28 23:00:00 - 2022-11-04 07:00:00
Y-span	V, L, T : m/s <sup>2</sup> : 0.0 - 0.050, VDV-V, VDV-L, VDV-T : (VDV): 0.0 - 0.050, VDV-V accu, VDV-L accu, VDV-T accu : (VDV): 0.0 - 0.050