

**Before Palmerston North City Council**

**Under** the Resource Management Act 1991

**In the matter of** a proposed plan change to rezone  
land at 611 Rangitikei Line to establish  
the Whiskey Creek Residential Area

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**STATEMENT OF EVIDENCE OF NIGEL ROBERT LLOYD  
IN SUPPORT OF FLYGERS INVESTMENT GROUP LIMITED**

**NOISE  
18 MAY 2022**

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**Counsel Acting**

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## **INTRODUCTION**

1. My full name is Nigel Robert Lloyd

## **Qualifications and Experience**

2. I have been an acoustic consultant with Acousafe Consulting & Engineering Ltd since 1985. I hold a degree in Mechanical Engineering from the University of Wales, University College Cardiff received in 1976.
3. My previous work experience includes five years as the noise control engineer with the New Zealand Department of Labour and three years with the Industrial Acoustics Company in the United Kingdom. Including my time spent with Acousafe as an acoustical consultant this is a total of forty-five years direct involvement with noise control and acoustical related work.
4. I have advised Council on a range of noise matters since the early-1990s and I gave advice at that time on noise provisions for the District Plan, and I have advised Council on noise matters pertaining to their latest round of Sectional District Plan reviews. I advised Council on the Whakarongo and Kikiwhenua Plan Changes.

## **Involvement in Proposed Plan Change**

5. In August 2020 I was asked by the requester to consider the Private Plan Change proposal for Flyers Line (now called Whiskey Creek). I prepared a draft report dated 17 August 2020 which is included as Appendix 9 of the supporting documentation for the Plan Change request.
6. Since preparing that report I have learnt of the proposal to link the Whiskey Creek residential subdivision with Benmore Avenue via the site at 127 Benmore Avenue. I rely on the assessment and evidence of Harriet Fraser where I discuss the noise mitigation measures that are available for the neighbouring dwellings.
7. I visited Meadowbrook Drive and Benmore Avenue on 28<sup>th</sup> April 2022 and toured the area.
8. I attended the submitter prehearing meeting on the evening of Wednesday 4<sup>th</sup> May 2020 via zoom.

### **Code of Conduct**

9. I have read the Code of Conduct for expert witnesses in the Environment Court Practice Note 2014 and I have complied with it when preparing this evidence. Other than when I state that I am relying on the advice of another person, this evidence is within my area of expertise. I have not omitted to consider material facts known to me that might alter or detract from the opinions that I express.

### **Scope of Evidence**

10. In this statement I traverse:
- (a) Noise matters in the s42A report and Appendix F, the Noise Review by Mr Wood,
  - (b) road traffic noise management from SH3 and the proposed local road,
  - (c) the appropriateness of different zone noise controls and zone interface controls,
  - (d) construction noise,
  - (e) Recommended draft S42A conditions for vibration,
  - (f) Submissions.

### **S42A Report**

11. I have read the S42A Report and the noise review by Bill Wood of Marshall Day Acoustics which is attached as Appendix F to the S42A report.
12. I substantially agree with the matters raised in the S42A report and with Bill Wood's reasoning in his review. The two differences I have with Mr Wood are:
- (a) the residential zone noise rules should not apply to the proposed commercial area rather the Local Business Zone noise rules should apply, and
  - (b) I consider that construction vibration limits should not be applied.

13. Mr Wood discusses the zone interfaces and identifies the different noise rules in the various zones that would apply. These rules are appropriate in the Operative District Plan, which is current, and are therefore appropriate for the different zones proposed for the Whiskey Creek Plan Change.
14. Mr Wood recommends that the Residential Zone noise rules are appropriate for the small commercial area. A better alternative though is to utilise the LBZ noise rules in this area. Rule 10.7.3.5 (in the Residential Zone Rules) permits any commercial activity shown on a lot which is part of a Comprehensive Development Plan for Greenfield Residential Area as Restricted Discretionary, and performance standards are identified as R11.10.7.1(a) and (b) – these are part the LBZ noise rule.
15. Rule R11.10.7 in the LBZ includes:
  - (a) noise limits for other sites in the zone,
  - (b) for the interface with the Residential zone, and
  - (c) provides for noise insulation and ventilation of residential activities that are located within the LBZ.
16. The noise limits in the LBZ for other sites that are zoned residential are the maximum guideline limits in NZS 6802:2008<sup>1</sup>, which would reflect the increased activity levels that would occur here.
17. The proposed commercial area is distinct in the Master Plan and sized to support a small number of local shops and community activities. It would be appropriate to build these shops with small apartments above them. The LBZ noise rule (R11.10.7(c)) deals with the noise insulation of these apartments, although this aspect of the LBZ noise rule is not included in R10.7.3.5.

## **CONSTRUCTION VIBRATION**

18. In his proposed conditions on page 5 of Appendix F of the S42A report, Mr Wood recommends that (vi(2)) construction vibration should be measured and assessed in accordance with a German Standard. I note that this

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<sup>1</sup> NZS 6802:2008 Acoustics – Environmental noise

recommendation is not picked up in Appendix A of the S42A report (where changes to the Proposed Plan Change are recommended).

19. I have three issues with this recommendation to include vibration limits. In the first instance this condition would apply to all construction activities taking place within the subdivision, which would include the individual dwelling constructions. This would be unnecessarily expensive and time consuming.
20. Secondly, vibration assessment is a complex matter for construction works and monitoring is expensive to undertake. Construction work is transitory by nature and monitoring can only be piecemeal at best.
21. Thirdly, German Standard DIN 4150-3:2016 provides guideline values of vibration velocity for different frequencies measured at the foundations of dwellings and at the topmost floor (in each of the horizontal and vertical directions). Prediction of these levels is highly complex and measuring them on an ongoing basis would also be technically demanding and expensive.
22. My experience of the Palmerston North City District Plan has been that there have not been significant complaints about construction vibration and I do not consider the vibration condition to be necessary. While earthworks are proposed over a wide area (for which resource consent has already been granted), it is my understanding that these are only cuts and fills of approximately 1 metre in depth. Vibration is best controlled by considering the best practicable option as part of the construction works noise and vibration management plan.

#### **OTHER ZONE INTERFACES**

23. Aside from the Business/commercial area I consider that Mr Wood has succinctly addressed the various zone interfaces and I consider that the:
  - (a) Recreation Zone noise Rule (R15.4.7.1) applies appropriate levels of protection in the Recreation Zone and to the neighbouring Residential Zone, and
  - (b) Residential Zone noise rule (R10.8.1) is appropriate for the proposed Residential Area.

## **STATE HIGHWAY NOISE**

24. In my 17 August 20 report I considered the noise from State highway 3 that borders the eastern side of the site. I recommended that dwellings be set back from the carriageway edge of SH3 by 40 metres and that noise insulation is provided to dwellings within 80 metres of the State highway. These dwellings would be provided with ventilation to allow the doors and windows to be kept closed against road traffic noise (should residents choose to do this).
25. I stated indicative noise levels for SH3 in my draft report, which Mr Wood has picked up on and I agree that these were meant to be merely indicative rather than specific noise insulation requirements. The need will be to meet the internal traffic noise limit provided for.

## **LOCAL TRAFFIC NOISE**

26. The RFI identifies the proposed four-arm roundabout for the current intersection of Meadowbrook Drive with Benmore Avenue. I understand that a signalled intersection is also being considered.
27. This roundabout would form the primary access to the proposed development, via the current property of 127 Benmore Avenue. This would result in a road with up to 1,570 vehicles per day, being located very close to the existing dwellings at 125 Benmore Avenue and 1 Meadowbrook Drive.
28. I note the potential for more traffic that could use this link to access the State highway but that there are measures available to dissuade people from doing this<sup>2</sup>.
29. I agree with Mr Wood that this local traffic noise on 125 Benmore Avenue and 1 Meadowbrook Drive will need to be addressed (and refer to the assessment by Thomas Planning in 7.8 of Part B of the Plan Change Request Assessment and evaluation). This will be considered further during the resource consent process and noise mitigation measures, such as noise barriers or noise insulation incorporated in consultation with the property owners.

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<sup>2</sup> Refer to the evidence of Harriet Fraser.

30. I understand<sup>3</sup> that the construction of the road is a Restricted Discretionary Activity and I consider that noise attenuation and management can be appropriately included in the design of the new road and its mitigation which can be undertaken in consultation with the owners of 125 Benmore Avenue and 1 Meadowbrook Drive.

#### **SUBMISSIONS**

31. The submissions for noise effects are summarised in 3.23 of the S42A Report.
32. The submitters are concerned about transportation noise and construction noise. I have been closely involved in the preparation of the District Plan and I am confident that, when the provisions are applied to the proposed Whiskey Creek Plan Change Area, then the District Plan noise standards provide suitable framework to protect future infrastructure development with respect to noise.



**Nigel Robert Lloyd**

**18 May 2022**

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<sup>3</sup> Paragraphs 3.30 and 3.31 of the S42A Report.