BEFORE HEARING COMMISSIONERS
FOR THE PALMERSTON NORTH CITY COUNCIL

I MUA NGĀ KAIKŌMIHANA WHAKAWĀ
MO TE KAUNIHERA O PAPAIOEA

IN THE MATTER	of the Resource Management Act 1991
AND	
IN THE MATTER	of proposed Plan Change I: Increasing Housing Supply and Choice to the Palmerston North District Plan

SECTION 42A TECHNICAL REPORT OF SEAN SYMAN ON BEHALF OF PALMERSTON NORTH CITY COUNCIL

NOISE

Dated 25 July 2025

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A. EXECUTIVE SUMMARY

1. The key conclusions of my s 42A technical report are:

   (a) I do not consider that any changes to the noise component of MRZ-R2 or MRZ-R3 are required based on Submission 184 from Chris Teo-Sherrell.

   (b) I do not consider that any changes to the noise component of MRZ-S21 are required based on Submission 185 from Phocus Planning and Submission S199 from Kāinga Ora, beyond minor grammatical corrections raised in Submission S184 from Chris Teo-Sherrell.

B. INTRODUCTION

2. My full name is Sean Louis Syman.

3. I am an Associate Acoustic Consultant in the Wellington office of SLR Consulting New Zealand Limited, an environmental consultancy with offices across New Zealand and internationally.

4. I hold a Bachelor of Engineering with Honours (Mechanical) from the University of Canterbury, gained in 2014.

5. I have worked as a professional consultant in acoustics and vibration for 9 years. I began my current position with SLR Consulting New Zealand Limited in April 2023. Prior to this, I was employed by Aercoustics Engineering Ltd, an acoustics and vibration consultancy based in Toronto, Canada, for 5 years as a Senior Project Manager and the Residential Acoustics sector lead. I was previously employed from 2015 – 2018 by Marshall Day Acoustics working as an acoustic consultant in Wellington.

6. I am a Member of the Acoustical Society of New Zealand.

7. My involvement with Plan Change I ("**PC:I**") commenced October 2024, when I was engaged by Palmerston North City Council ("the **Council**") to review and provide recommendations related to the KiwiRail s32 Report and the Waka Kotahi/NZTA Proposed Acoustic Standards. I prepared and issued a technical memo on these matters dated 22 October 2024.

C. CODE OF CONDUCT

8. I confirm that I have read and agree to comply with the Code of Conduct for Expert Witnesses in the Environment Court Practice Note 2023. I confirm that I have stated the reasons for my opinions in this report and have considered all the material facts that might alter or detract from those opinions.

9. Statements expressed in this report are within the scope of my expertise. I have all the information necessary to assess the application within the scope of my expertise and am unaware of any gaps in the information or my knowledge.

D. SCOPE

10. My involvement and s42A report are limited to the consideration of technical noise related matters arising in the PC:I submissions noted below, specifically related to noise related matters arising from MRZ-R2 and MRZ-R3 and mechanical ventilation standard MRZ-S21:

    (a) S184 from Chris Teo-Sherrell;

    (b) S185 from Phocus Planning Limited; and

    (c) S199 from Kāinga Ora.

E. RESPONSE TO SUBMISSIONS

11. For ease of reference, I have attached all relevant provisions which I address in this report together at **Appendix 1**.

    Submission S184 Chris Teo-Sherrell

12. Submission S184 – 29, 30 and 31 from Chris Teo-Sherrell seeks amendments to how the Residential Noise Limits of R10.8.1 in MRZ-R2 and MRZ-R3 should apply in the Medium Density Residential Zone ("**MRZ**"). The amendments sought in the submission are summarised as follows:

    (a) For MRZ Home Businesses, a decrease in the daytime hours of R.10.8.1 from 7am – 10pm Monday to Saturday to 7am – 7pm Monday to Friday, due to the higher density of buildings and people in the zone likely to generate more noise.

(b) An L_{max} limit to apply for daytime activities as well as night-time activities, in recognition of nightshift workers and others who may need to sleep during the day.

(c) Noise limits to not apply only to fixed mechanical plant but also to non-fixed machines and the activities of people with short term exclusions allowed for certain activities.

(d) For MRZ-R3 Home-based childcare services, the submitter considers that R.10.8.1 does not adequately deal with the noise potentially generated by (up to) 4 children.

13. I consider the residential noise limits in R.10.8.1 are appropriate for the MRZ and are more restrictive than Guideline Residential Upper Noise Limits provided in *8.6.2 Table 3* of *NZS 6802:2008 – Acoustics: Environmental Noise*. *NZS 6802:2008* recommends an upper guideline daytime noise limit of 55 dB $L_{Aeq(15min)}$, and an upper evening (7pm – 10pm) noise limit of 50 dB $L_{Aeq(15min)}$. R.10.8.1 has a daytime noise level of 45 dB $L_{Aeq(15min)}$ (10 dB lower), and no evening noise level limit. I therefore consider that the daytime noise limit of R10.8.1 is appropriately restrictive, including for the evening period.

14. Per *NZS 6802:2008*, Maximum noise limits (L_{max}) are set for night-time hours to protect the majority of people from sleep disturbance in combination with lower average (L_{Aeq}) noise level limits. I do not agree that a daytime L_{max} limit is appropriate in the MRZ and consider this would be overly restrictive on general daytime activity.

15. R.10.8.1 applies for sound emission from any fixed mechanical plant or from any non-residential activity. Mobile equipment and workers associated with construction, demolition and related activities as per R.6.2.2.g of the Palmerston North District Plan ("**District Plan**") are assessed and measured with respect to *NZS 6803:1999 Acoustics – Construction Noise*. I consider therefore that the existing noise rules for activities within the residential zone are appropriate for the MDRZ.

16. I do not agree with the submitter regarding MRZ-R3 Home based childcare services, and I consider that R.10.8.1 provides appropriate noise limits to assess compliance for this use as a permitted activity within the MRZ.

17. In summary I do not consider that any changes to MRZ-R2 and MRZ-R3 are required based on Submission 184 from Chris Teo-Sherrell.

18. Submission S184 – 66 from Chris Teo-Sherrell looks to amend the wording in MRZ-S21 b). I support this and recommend that the word "relive" be corrected to "relief", i.e. "*Provide **relief** for equivalent volumes of spill air;*".

Submission S185 Phocus Planning

19. Submission S185 from Phocus Planning opposes Standard MRZ-S21 and seeks to remove the standard in its entirety, for reasons that the Building Act controls ventilation, and that it is difficult to measure compliance.

20. I do not agree with the submitter that it is difficult to measure compliance with the standard with regards to noise. Often the internal mechanical noise level required as per MRZ-S21 (d) can be assessed based on the selected mechanical unit specification sheet. Otherwise, if required, a handheld measurement with a calibrated sound level meter 1 metre from the grille or diffuser in each relevant habitable room serves to assess compliance with the standard and is both straightforward and achievable.

21. I do not support this submission, as the Building Act alone (or Building Code Clause G4 for Mechanical Ventilation) does not adequately consider situations where ventilating windows must remain closed for the purposed of achieving an internal noise level when external noise levels are above typical residential noise limits. MRZ-S21 therefore is required to ensure the relevant internal noise level requirements for road noise in MRZ-R20 and rail noise in MRZ-R22 are met.

22. Therefore, I do not consider that any changes to the noise component of MRZ-S21 are required based on Submission 185 from Phocus Planning.

Submission 199 Kāinga Ora

23. Submission 199 from Kāinga Ora opposes in part Standard MRZ-S21 and seeks to move this standard to the General Chapter and include a note that states that this standard is only applicable to MRZ-R20 and MRZ-R22. Further, they state that noise related to any other mechanical ventilation (domestic heat pumps etc) is adequately considered within the Noise Chapter. Kāinga Ora also seek

clarification on whether the grille and diffuser are only the external components of the mechanical ventilation system.

24. There is currently no unified Noise Chapter for the District Plan with noise rules and standards currently applied within the individual Zone Chapters of the District Plan. The General Rules Chapter Section 6.2 outlines the appropriate NZ Standards for noise for use in the plan, how noise should be measured and what activities have general exclusions from noise control rules.

25. Although I agree that a unified standard for mechanical ventilation (and more broadly noise) would benefit the District Plan, I do not consider the General Rules Chapter as currently structured to be an appropriate place to locate MRZ-S21. There are multiple other noise rules within other zones which require mechanical ventilation to ensure that openable windows can be closed to achieve a required internal noise level or external sound insulation level, examples being R10.6.1.1.(h).iv for air noise control in the Residential Zone, and R12.8.1(b) within the Industrial Zone. I recommend that when the District Plan is updated, all standards requiring mechanical ventilation are unified into one standard under a newly created Noise Chapter – again, I understand that this is out of scope of PC:I.

26. The grilles or diffusers referred to in MRZ-S21 (d) are the internal components of the system that allow air to flow into or out of a room (being related to the fact that the noise criteria is to control noise levels within the room the system serves). The external noise levels related to fixed mechanical plant emissions are already managed in the Residential Zone by rule R10.8.1.

27. Therefore, I do not consider that any changes to MRZ-S21 are required based on Submission 199 from Kāinga Ora.

Sean Syman

25 July 2025

APPENDIX 1 – RELEVANT PROVISIONS

MRZ-R2 - Home businesses, excluding home-based childcare services

Activity status: **Permitted**

Where:

l. Noise complies with R10.8.1;

MRZ-R3- Home-based childcare services

Activity status: **Permitted**

Where:

d. Noise complies with R10.8.1;

R10.8.1 NOISE

Sound emissions from any fixed mechanical plant, or from any non-residential activity, when measured at or within the boundary of any other site (other than land from which the noise is emitted or a road) shall not exceed the following:

7.00am to 10.00pm 45dB L_{Aeq} (15mins)

10:00pm to 7:00am 40dB L_{Aeq} (15mins)

Night-time L_{max} 10:00pm to 7:00am 65dBA L_{max}

MRZ-R20 - New buildings or alterations or additions to buildings within 50m of the state highway

Activity status: Permitted

Where:

a) any alteration or addition to a building does not increase the floor area by more than 10% and the addition or alteration does not increase the number of bedrooms or sleeping rooms; and

b) habitable rooms are:

   i. Designed, constructed and maintained to achieve a maximum indoor design noise level of 40 dB $L_{Aeq\ (24hr)}$ inside any new or altered habitable room;

   ii. For buildings which require windows to be closed to achieve the relevant noise levels in (a), MRZ-S21 – Ventilation Standard can be met; and

c) A report, prepared by an *acoustical consultant**, is submitted to the Council* demonstrating compliance with (b).

MRZ-R22 - New buildings or alterations or additions to buildings within 100m of the rail corridor

Activity status: Permitted

Where:

a) any alteration or addition to a building does not increase the floor area by more than 10% and the addition or alteration does not increase the number of bedrooms or sleeping rooms; and

b) *noise sensitive activities**:

i. Are designed, constructed and maintained to achieve the indoor design noise levels in Table 1 or:

Building Type	Occupancy/activity	Maximum railway noise level $L_{Aeq(1h)}$
Residential	Sleeping spaces	35 dB
	Other habitable rooms	40 dB
Visitor Accommodation	Sleeping spaces	35 dB
	Other habitable rooms	40 dB
Education Facility	Lecture rooms/theatres, music studios, assembly halls	35 dB
	Teaching areas, conference rooms, drama studies, sleeping areas	40 dB
	Libraries	45 dB
Health	Overnight medical care, wards	40 dB
	Clinics, consulting rooms, theatres, nurses' stations	45 dB
Cultural	Cultural Places of worship, marae	35 dB

ii. It can be demonstrated by way of prediction or measurement that the noise at all exterior façades of the listed activity is no more than 15dB above the relevant noise level in Table 1; and

iii. For *buildings* which require windows to be closed to achieve the relevant noise levels in (a), **MRZ-S21 – Ventilation Standard** can be met; and

c) A report, prepared by an *acoustical consultant** is submitted to the *Council** demonstrating compliance with (b).

MRZ-S21 - Mechanical Ventilation

Any mechanical ventilation system must:

a) Be adjustable by the occupant to control the ventilation rate in increments up to a high air flow setting that provides at least 1 air change per hour;

b) Provide relive for equivalent volumes of spill air;

c) Provides cooling and heating that is controllable by the occupant, which can maintain the inside temperature between 18°C and 25°C; and

d) Not generate more than 35 dB $L_{Aeq(30s)}$ when measured 1 metre away from any grille or diffuser.

Matters of discretion if the standard is infringed:

- The extent of non-compliance with the standard
- Effects on the health and wellbeing of people
- Reverse sensitivity effects on the rail or state highway network