

UNDER

the Resource Management Act 1991
("RMA")

IN THE MATTER

of the Proposed Waikato District Plan:
Hearing 22 – Infrastructure.

**SUMMARY STATEMENT OF JON ROBERT STYLES ON BEHALF OF
KĀINGA ORA-HOMES AND COMMUNITIES**

NOISE AND VIBRATION

15 OCTOBER 2020

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1. INTRODUCTION

- 1.1 My full name is Jon Robert Styles. My qualifications, experience and involvement in this process are set out in my Primary Statement of Evidence.
- 1.2 This statement sets out a summary of the main issues raised in my Primary Statement, along with the results of some recent vibration measurements undertaken on my instruction to support my position.

2. SUMMARY

- 2.1 The rebuttal evidence of Dr Chiles has not addressed the concerns I raised in my Primary Statement.
- 2.2 In fundamental terms, I agree with the Submitters that there is a need to manage the noise and vibration of effects of land transport on activities sensitive to noise where adverse effects would otherwise arise.
- 2.3 I consider that the management of the issue requires an integrated approach where the noise and vibration generators are required to mitigate their effects at the source and as far as is practicable. Any controls in the receiving environment should be to deal with the effects that cannot be internalised following the adoption of the BPO. To achieve an integrated approach, the PWDP should include controls to promote the internalisation of effects. However, The PWDP does not contain any such controls.
- 2.4 In my view the recommendations in s42A report place the burden of mitigating the effects entirely onto the receiving environment, and without proper justification. Unless there is evidence to objectively and reliably demonstrate the actual nature and extent of the noise and vibration effects, the controls sought by the Submitters should not be adopted.

3. ROAD NOISE

- 3.1 Overall, I support the application of controls on the development of activities sensitive to noise near to land transport infrastructure, but only where the noise levels are high enough to warrant specific controls. However, I do not support the controls that the Submitter has suggested.
- 3.2 No evidence has been provided to demonstrate that the proposed 100m effects area reflects the required distance to manage the noise levels

received beyond all parts of the Waikato's state highway networks. No information has been presented to demonstrate the actual or future level of noise exposure generated beyond the state highway corridor after the BPO has been adopted to internalise the effects. The rebuttal evidence of Dr Chiles states that more detailed information is available to inform the extent of these controls, but that further work is needed (para 3.4).

- 3.3 I consider that the work referred to by Dr Chiles needs to be undertaken to inform this process to ensure that the controls are appropriate and do not extend over land that will not in fact be affected.

4. ROAD VIBRATION

- 4.1 In my experience, occurrences of significant vibration extending beyond the State Highway boundary at levels requiring investigation and at distances where built development could be reasonably anticipated are unusual.
- 4.2 No evidence has been provided which suggests vibration from road traffic is an issue that requires control in the receiving environment at all, let alone to a distance of 60m. My concerns as to the necessity of such provisions was not addressed through Dr Chiles' rebuttal.
- 4.3 To demonstrate my view that the road vibration controls proposed by the Submitters are inappropriate for adoption in the PWDP, I arranged for a colleague to undertake a series of vibration measurements adjacent to the state highway network in the Waikato on the 8th October 2020. All measurements were undertaken in accordance with the relevant standards using calibrated equipment. The measurement locations were chosen at random and where measurements could be undertaken safely.
- 4.4 **Appendix 1** is a table summarising those measurements. The measurements show that even at distances well within the proposed 60m setback from the state highway, the measured vibration levels from truck pass-bys were mostly significantly less than the proposed threshold of $V_{w,95}$ 0.3mm/s (even as close as 4m to the live traffic lane) except in two cases (SH39 and SH1B).
- 4.5 For the two cases where the measured vibration levels were above the threshold sought of $V_{w,95}$ 0.3mm/s, the pavement was noted to be damaged or potholed. These measurements were carried out at 7m and 12m from the edge of the nearest traffic lane, and well inside the 60m buffer area proposed

by the Submitters. The level of vibration at 60m from the road would have been much lower, and easily less than V_{w95} 0.3mm/s.

- 4.6 This measurement data demonstrates that if the Submitter maintains the road surface in good condition, the proposed highway vibration controls are likely to be unnecessary. The measurements are a sample only and are intended only to demonstrate the approximate magnitude of the problem that the Submitter suggests exists.

5. RAIL NOISE

- 5.1 For similar reasons to that set out for road noise, I agree in principle that, where it is necessary, and following the adoption of the BPO to reduce the effects at source, there will likely be areas of land where the development of activities sensitive to noise should be controlled to manage the noise effects.
- 5.2 However, I consider that the proposed controls are inappropriate on the basis that no information has been presented by the Submitter to demonstrate the actual or future level of noise exposure generated beyond the rail corridor after the BPO has been adopted to internalise the effects.

6. RAIL VIBRATION

- 6.1 In my experience, vibration effects extending beyond the rail corridor at a level requiring some degree of control is more common than for State Highway networks. However, I consider it extremely unlikely that there will be any effect at 60m that requires control. I consider that the effects area should be considerably smaller.
- 6.2 The Submitter has not provided any evidence to suggest that vibration from rail traffic is an issue that requires control in the receiving environment to a distance of 60m.
- 6.3 Before any rail vibration controls are considered for the PWDP, I consider that the Submitter should provide evidence to properly demonstrate the nature and extent of the adverse vibration effects extending beyond its own boundaries after the BPO has been adopted to internalise it as far as practicable, and for this district. Once that information is available, a more tailored and efficient control can be developed for the PWDP.

Jon Robert Styles, 15 October 2020

**APPENDIX 1 – Measurement of Road Vibration at various locations within
Waikato**

Location	Distance from live traffic lane	Measured V_{w95} (mm/s)
SH23, Raglan (Simon Road)	6m	0.25
SH23, Raglan, (Upper Bow St)	4m	0.04
SH2, Maramarua School	11m	0.27
SH2, Maramarua Rugby Club	20m	0.29
SH1, Waikato Expressway (Millstone Lane)	15m	0.10
SH1, Waikato Expressway (Market St West)	14m	0.06
SH1, Waikato Expressway (Helenvale Cres 20m)	20m	0.04
SH1, Waikato Expressway (Helenvale Cres 40m)	40m	0.03
SH39, Whatawhata (School)	7m	0.62
SH1B, Gordonton, (1020A Gordonton Rd)	12m	0.58