

Before an Independent Hearings Panel
Appointed by Waimakariri District Council

under: the Resource Management Act 1991

in the matter of: Submissions and further submissions on the Proposed
Waimakariri District Plan and Variation 1

and: Hearing Stream 12: Rezoning requests (larger scale)

and: **Crichton Development Group Limited**

(Submitter 299)

Supplementary statement of evidence of Jeremy Trevathan
(Acoustics) on behalf of Crichton Development Group Limited in
relation to Gladstone Road rezoning request

Dated: 5 July 2024

Reference: J M Appleyard (jo.appleyard@chapmantripp.com)
T Parker (tallulah.parker@chapmantripp.com)

chapmantripp.com
T +64 3 353 4130
F +64 4 472 7111

PO Box 2510
Christchurch 8140
New Zealand

Auckland
Wellington
Christchurch



**SUPPLEMENTARY STATEMENT OF EVIDENCE OF JEREMY
TREVATHAN ON BEHALF OF CRICHTON DEVELOPMENT GROUP
LIMITED**

INTRODUCTION

- 1 My full name is Jeremy William Trevathan. I am the Principal Acoustic Engineer and Managing Director of Acoustic Engineering Services Limited (*AES*), an acoustic engineering consultancy with offices in Auckland, Wellington and Christchurch.
- 2 I prepared a brief of evidence dated 5 March 2024 (*rezoning evidence*) in relation to the submission by Crichton Development Group Limited (*Crichton*) seeking to rezone 145 and 167 Gladstone Road from Rural Lifestyle Zone (*RLZ*) to Large Lot Residential Zone (*LLRZ*) (*site*).
- 3 This supplementary brief of evidence summarises key points from my rezoning evidence and responds to Council's section 42A report.

CODE OF CONDUCT

- 5 Although this is not an Environment Court hearing, I note that in preparing my evidence I have reviewed the Code of Conduct for Expert Witnesses contained in Part 9 of the Environment Court Practice Note 2023. I have complied with it in preparing my evidence. I confirm that the issues addressed in this statement of evidence are within my area of expertise, except where relying on the opinion or evidence of other witnesses. I have not omitted to consider material facts known to me that might alter or detract from the opinions expressed.

SUMMARY OF REZONING EVIDENCE

- 6 Traffic noise likely to be received at the site from the proposed Woodend Bypass has been modelled to be between 52 dB LAeq(24 h) and 65 dB LAeq(24 h), if no mitigation is implemented by Crichton.
- 7 While the sound insulation Rule agreed in the Joint Witness Statement (*JWS*) produced by Camp, Chiles and Styles dated 24 October 2023 would ensure appropriate internal levels were achieved within dwellings on the Crichton site experiencing these external noise levels, Crichton have agreed to also install a three-metre-high acoustic barrier along the western side of the NZTA Designation. This will reduce noise levels received in ground level outdoor living areas – even though this is not something the Proposed Plan requires to be considered.
- 8 With the above mitigation, noise levels at ground level within the site are expected to be reduced to between 51 dB LAeq(24 h) and 57 dB LAeq(24 h), except for some small areas where 58 dB

LAeq(24 h) is received. These levels are modest, and comfortably within the range where any residual adverse effect would be minimal.

RESPONSE TO SECTION 42A REPORT

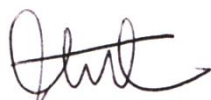
- 9 In his Section 42A report dated 23 May 2024, Mr Buckley for the Waimakariri District Council confirms that he has not been assisted by an acoustic engineer. He is however unconvinced that "*placing a subdivision up against the edge of a motorway will not result in some reverse sensitivity effects*" and cites (but does not discuss) three technical acoustics references in support of that view.
- 10 As explained in my rezoning evidence, three acoustic experts (including Mr Camp, engaged by the Council) have already agreed a sound insulation rule was appropriate for inclusion in the Proposed Plan, and that "*it should apply to the Woodend Bypass*". The sound insulation rule proposed would provide less protection for future residents than is embodied in the Crichton proposal.
- 11 Mr Buckley characterises the situation as "*placing a subdivision up against the edge of the motorway*". However, from a technical acoustics perspective, the key issue is the magnitude of the expected traffic noise levels. Multiple factors influence the noise levels that are received at dwellings due to nearby roads, such as the road surface, separation distances, and the amount of screening between the road and a receiver.
- 12 For context, a dwelling located 15 metres from a local road with a chipseal surface carrying 1500 vehicles per day and speed limit of 50 km/h would be exposed to traffic noise levels of greater than 57 LAeq(24 h). Such roads are abundant throughout the Waimakariri District – for example Mr Buckley has supported another rezoning request where new dwellings would be exposed to greater than 57 dB LAeq(24 h) traffic noise at 308 Cones Road. This illustrates that the noise levels in the case of Crichton's proposal are modest, and would not typically be the basis for avoiding residential development on a site.
- 13 I agree that it would be preferable for all new developments to only be located in areas of low noise however there are also other technical disciplines to consider, for example the appropriateness from a planning or urban design perspective of large setbacks between dwellings and the roads servicing them.
- 14 With the mitigation by Crichton, traffic noise at the site will be similar to that experienced through many current and future residential areas in the Waimakariri District. I am not aware of any situation where a similar arrangement has led to a 'reverse sensitivity effect' on a road operator.

- 15 The NZTA *Guide to Assessing Road-traffic Noise* (February 2024) states that transport noise and vibration "can cause a range of impacts on people and communities including annoyance and interference with daytime activities such as work, study and domestic living. Other effects include potential sleep disturbance, and long-term health impacts such as increased risk of heart disease." Mr Buckley has cited three technical acoustics references which point to the same conclusions - which are widely known and accepted.
- 16 The key issue for making 'on balance' planning decisions in real-world contexts, is under what conditions do the above potential adverse noise effects reach a tipping point. Where the references provided by Mr Buckley provide relevant comment in this area, those authors appear to generally support the same conclusions as I have reached - for example Welch et. al. describe a study where people were exposed to 45 dB LAeq within bedrooms (the sound insulation rule agreed by the other noise experts for the Proposed Plan achieves a significantly lower internal level than this), and refers to areas of external noise 58 dB LAeq or lower as 'low noise' (residents on the Crichton site will generally experience lower levels than this). Similarly, in their analysis of 'road traffic noise harmful to health', Khomenko et. al. use a lowest category of 55 dB Lden.
- 17 This consistency in findings and approach is not surprising, as the NZTA Guidelines, and for example NZS 6806:2010 *Acoustics – Road-traffic noise – New and altered roads*, all draw on similar research.

FURTHER RESPONSE FROM NZTA

- 18 On page 37 of the further document provided by Mr Buckley dated 27 June 2024, he has reproduced an email from NZTA (Bill Harrington, Principal Planner, dated 21 June 2024). Mr Harrington states "our designation NOR was lodged in 2013 and includes noise mitigation based on the corridor at that time, but subsequent development is a reverse sensitivity issue now that designation is in place". In my experience, by including a 3 metre high noise barrier on the Crichton site and sound insulation for dwellings, this proposal is the same as or goes beyond what the NZTA would typically consider necessary if the Crichton subdivision was already established and NZTA were applying for a new Designation. As above, I expect any reverse sensitivity effects to be negligible – and note that there is no opposing expert acoustic evidence on this.

Dated: 5 July 2024



Jeremy Trevathan