

BEFORE THE HEARING PANEL

IN THE MATTER of the Resource Management Act 1991

AND

IN THE MATTER of Proposed Plan Change 37 - Nukuhau (private) by AN Rajasingham LPT Trustees No 124 Limited anors to the Taupō District Council to rezone c.78ha of land in the Nukuhau area from Rural Environment to a mix of General Residential and Mixed Density Residential with a Neighbourhood Shopping Centre overlay.

**REPLY STATEMENT OF EVIDENCE OF WARREN STANLEY BIRD
(THREE WATERS)**

Dated 5 November 2021

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INTRODUCTION

1. My full name is Warren Stanley Bird. My qualifications and experience are as set out in my primary statement of evidence, as is my commitment to comply with the Environment Court Expert Witness Code of Conduct. I maintain that commitment.

2. I have been engaged by the applicant to provide 3-waters' evidence in respect of Private Plan Change 37: Nukuhau Private Plan Change (**PC37**). I have read, and respond to, the statements of evidence relating to 3-waters issues provided by the following expert witnesses on behalf of submitters to PC37:
 - a) Ms Craven and Mr Palmer on behalf of Waikato Regional Council;

 - b) Mr Greaves on Behalf of Rangatira Blocks 8A17A5 and 8A17A6 and Rangatira 8A1T2X and 8A1T2Y and PT Rangatira A1T2 (**Rangatira 8A17A5 & Ors**); and

 - c) Mr Farquhar on behalf of Rangatira E Trust.

GULLY MODIFICATION

3. Waikato Regional Council and others have submitted that gully modification should be prevented, full-stop. My own view is that if primary gully and significant flow path modification is ultimately proposed, careful investigation, planning and design would need to occur to inform such a decision. This would rely on close attention to all relevant site factors and include meticulous execution.

4. I acknowledge that the bar for any gully modification proposal is likely to be very high, and modification will always be the exception rather than the norm.
5. Ms Craven, on behalf of Waikato Regional Council, considers that “hazards or constraints. . . are already well understood at a high level”.¹ Ms Craven and I are very likely to agree on these high-level factors. However, I consider it would be premature to outlaw gully modification without full consideration of specific site factors.
6. Moreover, gully modification should not be narrowly interpreted to mean gully relocation to maximise subdivisional yield. In fact, gully modification could take the form of certain desirable activities like restoration and enhancement.

USE OF GULLIES FOR STORMWATER MANAGEMENT

7. Ms Craven proposes the following addition to 4a.7 Nukuhau Structure Plan Area rules:

The management of stormwater in accordance with the Waikato Regional Council Stormwater Management Guideline (2020/07) and to ensure that stormwater is treated onsite to control the use of the existing natural gully systems as stormwater reserves.²

8. I agree with the first phrase but consider the second part needs revision. As proposed, it could be interpreted to prevent any stormwater management being undertaken in the gullies, which is contrary to the approach outlined in my primary evidence. I proposed that gully-based detention could be the final part of a train of stormwater management measures, controlling the largest storms. Gully floor detention may also

¹ Evidence of Hannah Craven for the Waikato Regional Council, 27 October 2021, paragraphs and 61 & 63

² Evidence of Hannah Craven for the Waikato Regional Council, 27 October 2021, Appendix 1, Rule 4a.7.2.ii.

provide a safer alternative to top-of-bank detention where there is a significant and increased risk of tomo failure.

9. Ms Craven and I are agreed that gullies should not be the first-choice option for management of routine storms. “[Gullies] should be left in their natural state where possible and not be considered major stormwater devices in the first instance”.³ It is not appropriate to use gullies for stormwater management simply to maximise the residential yield elsewhere. However, once reasonable peak flow attenuation has been provided on-site (suggested 10% AEP for residential and at least 50% AEP for roads), the extra-over detention could be provided via gully storage so that flow to the lower catchment is not increased across all storm events.
10. Accordingly, I propose the following modifications to Ms Craven’s wording (amendments shown in strikethrough and underline):

. . . and to ensure that stormwater is treated predominantly onsite to ~~control~~ limit the use of the ~~existing~~ natural gully systems as stormwater reserves.

STORMWATER IMPACTS ON NEIGHBOURS

11. Mr Farquhar, in his evidence for the Rangitira E Trust, cites a case where a downstream property has, through development, become sensitive to (unaltered) stormwater discharges from Trust land upstream⁴, and expresses fear that something similar could happen with the PC37 development (the Trust also owns land immediately upstream of the PC37 area). Reverse sensitivity may arise with any development, but the case described appears to be more one of poor engineering than reverse sensitivity.

³ Evidence of Hannah Craven for the Waikato Regional Council, 27 October 2021, paragraphs 34-35.

⁴ Evidence of Brett Farquhar, 29 October 2021, paragraphs 3.17-3.19.

12. Mr Farquhar suggests that an overall strategy, or catchment management plan is needed to avoid issues like this. I disagree. A wholistic catchment management plan may be helpful for other reasons, but boundary issues like that described can be avoided by sound engineering.
13. The most significant flow paths from the Trust's land into the Nukuhau Structure Plan area have already been identified and provided for in stormwater reserves/natural gullies shown on the Structure Plan. But all other drainage features crossing the boundary will also need to be assessed and provided for. This is a normal part of development engineering.

SOUTH-WESTERN STORMWATER RESERVE VS LANDSCAPING STRIP

14. Mr Farquhar's concerns provide an appropriate context for consideration of Mr Greaves' argument for conversion of the south-western stormwater reserve identified on the Nukuhau Structure Plan to a 3m wide landscape buffer⁵. I acknowledge Mr Greaves' point that the proposed reserve is not an existing, conventional gully, like the other proposed Stormwater Reserves, and as such it is not proposed due to any intrinsic value. However, I believe Mr Greaves has misunderstood the purpose of the proposed Stormwater Reserve. Multiple dry gullies within the Owners' land fall southwards towards the existing urban boundary. Most of these gullies stop short of the urban area and rely on soakage for disposal, the only connections to Council's stormwater system being at Docherty Drive and Northwood Road. This raises the risk of uncontrolled overflow across the boundary into the housing area during large storm events or hydrophobic conditions – the very problem reported by Mr Farquhar a few streets away.

⁵ Evidence of David John Greaves on behalf of the owners of Rangatira blocks 8A17A5 and 8A17A6 and Rangatira 8A1T2X and 8A1T2Y and Pt Rangatira A1T2, 29 October 2021, paragraphs 6.1-6.5.

17. In summary, I consider provision of a corridor to safely convey excess runoff is an essential aspect of responsible development in this area. The Stormwater Reserve shown on the Structure Plan ensures land is reserved for this purpose. However, it is not essential that this flow path is aligned along the south-western boundary, although it is logical. There is sufficient flexibility within the processes that follow to allow the corridor to be relocated if there is engineering justification to do so.

Warren Stanley Bird

5 November 2021