BEFORE THE WAIMAKARIRI DISTRICT PLAN REVIEW HEARINGS PANEL

IN THE MATTER OF	the Resource Management Act 1991
AND	
IN THE MATTER OF	the hearing of submissions and further submissions on the Proposed Waimakariri District Plan
AND	hearing of submissions and further submissions on Variations 1 and 2 to the Proposed Waimakariri District Plan
	Hearing Stream 12E: Rezoning Requests

SUPPLEMENTARY STATEMENT OF EVIDENCE OF ALASTAIR MCNABB (CIVIL WORKS AND SERVICING INFRASTRUCTURE) FOR RICHARD AND GEOFF SPARK (PDP SUBMITTER 183 / VARIATION 1 SUBMITTER 61)

Dated 2 August 2024

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Introduction

1. My name is Alastair Caleb Vincent McNabb.

2. My area of expertise, experience, and qualifications are set out in my First Statement of Evidence dated 5 March 2024 for this hearing stream.

3. The purpose of this supplementary evidence is to respond to matters raised in the Officer's Report dated 22 July 2024 relevant to my evidence.

Code of Conduct

4. I have read the Code of Conduct for Expert Witnesses (contained in the Environment Court Practice Note 2023) and I agree to comply with it. Except where I state that I rely on the evidence of another person, I confirm that the issues addressed in this statement of evidence are within my area of expertise, and I have not omitted to consider material facts known to me that might alter or detract from my expressed opinions.

Response to Officer's Report

5. In my evidence I focus on the matters discussed in the Memorandum of Mr Aramowicz (dated 15 July 2024), appended to the Officer's Report, insofar as they are relevant to my expertise. These matters are found at paragraphs 94 to 105 of Mr Aramowicz's Memorandum.

6. Specifically, I comment on:

   (a) On-site stormwater attenuation and the potential for effects on the downstream catchment;

   (b) Sizing of Stormwater Management Areas (**SWMAs**);

   (c) Timing of development relative to upgrades of existing infrastructure.

On-Site Stormwater Attenuation

7. I agree with paragraph 99 of the Memorandum, that *with careful engineering, the effect of any additional stormwater runoff from a future subdivision to downstream catchment can be largely mitigated using onsite and/or offsite attenuation.* Paragraph 99 also notes that *from this location in Rangiora, SW runoff from the area will ultimately drain down towards the Silverstream/West Kaiapoi area where there is an existing high flood hazard.* The Memo goes on to say *The FT report did not investigate this.*

8. I am unsure whether the commentary regarding the extent of Fraser Thomas investigation relates to evidence of stormwater attenuation or to flooding, or both of these elements, and I therefore address both.

9. On-site stormwater attenuation is discussed in Section 7.3 ("Stormwater Treatment, Attenuation and Disposal") of the Infrastructure Assessment Report, dated 1 March 2024. It is noted that WDC advised that all stormwater from the site is to be attenuated before discharging to the WDC river and stream network.

10. Section 7.3.1 ("General"), notes that Waimakariri District Council (WDC) advised storm events up to the 1 in 50 year event must achieve flow neutrality from the development area (i.e. post-development stormwater flows off-site must be attenuated to the pre-development stormwater flows for storm events up to the 1 in 50 year ARI). Attenuation to this level was discussed in the pre-application meetings with WDC.

11. Section 7.3.1 also provides a list of options for attenuation of stormwater on-site (in conjunction with treatment), to mitigate effects on the downstream catchment. The report notes that the options would be investigated for suitability and fit with the overall development layout during the developed design phase. The option of dry/attenuation basins was investigated to the concept level during preliminary plan change engineering investigation, and whilst preparing the Infrastructure Assessment Report.

12. In respect of stormwater and flooding, to clarify, a part of my infrastructure assessment and preparation of evidence, was to evaluate stormwater attenuation for flows from the proposed development up to the 50 year event, and does not consider the effects of downstream flooding or storm events exceeding this average recurrence interval.

13. Assessment of the effects of downstream flooding arising from storm events up to the 200 year average recurrence interval was undertaken by Amir Montakhab, who undertook two-dimensional computational flood hazard modelling to assess the suitability of the proposed development in accordance with Waimakariri District Council requirements. The investigation aimed to assess the impact of post-development within the site and the neighbouring area by comparing the results with pre-development conditions for several scenarios.

14. Details of the results of the flood modelling are presented in a separate flood modelling report, and separate evidence was prepared by Amir Montakhab, and submitted as part of the plan change application.

Sizing of Stormwater Management Areas (SWMA's)

15. Sizing of conceptual level SWMA attenuation basins is discussed in Section 7.3.2 ("Concept Stormwater Basin Design"), of the Infrastructure Assessment Report, dated 1 March 2024.

16. The report discussion provides design input parameters and the worst-case concept level minimum basin stormwater storage volumes.

17. Evidence of conceptual level SWMA attenuation basin sizing is provided on the 6th to last page of the Appendix of the Infrastructure Assessment Report, dated 1 March 2024.

18. A plan showing three proposed stormwater attenuation basin base levels, at a depth to avoid intercepting groundwater, is provided on pdf page 62.

19. Concept level stormwater attenuation basin sizing calculations for the Block A East basin, the Block A West basin and the Block B basin are provided on the last three pages of the Appendix of the Infrastructure Assessment Report, dated 1 March 2024. The calculation outputs provide both the live storage volume and the storage volume required to attenuate outflow to the pre-development rate.

20. I agree with paragraph 98 of the Memorandum, that *the use of wetlands and the need for onsite attenuation appears to be a logical approach for SW management in this area*, and that, *the ODP should allow flexibility to confirm sizing of both at subdivision stage*. Additionally, the ODP should allow flexibility to determine the method of stormwater management, and should not provide limitations to potential methods. As is normal and common practice, the most appropriate method(s) would be confirmed and/or determined during subsequent design stages of the development.

Timing of development relative to upgrades of existing infrastructure

21. I agree with paragraph 102 of the Memorandum, that *in summary, ultimately there are no significant wastewater constraints that would prevent the proposed land use*, and as the officer advises, future upgrades are planned.

22. In respect of the wastewater treatment plant capacity for the proposed development, WDC advised at the pre-application meetings that, "the Rangiora WWTP will have enough capacity to service this development, and future expansions and upgrades of the Rangiora WWTP may be fast tracked if required to allow for Rangiora to continue developing".

23. Additionally, as advised by WDC, the existing pipeline conveying wastewater to the treatment plant is at capacity, and a new transfer pipeline will be required to convey flows from the proposed development.

24. Preliminary discussions with WDC identified that the particular conveyance infrastructure required depends upon the timing of other developments and upgrades of the surrounding infrastructure. Co-ordination with WDC regarding proposed upgrades, and alignments for wastewater mains will be made during subsequent design stages.

25. I agree with paragraph 103 of the Memorandum, that *in summary, there are no water supply constraints that would prevent the proposed land use*, and as the officer advises, future conveyance upgrades are needed.

26. In respect of the waste supply capacity for the proposed development, WDC advised at the pre-application meetings that, there is sufficient water supply for Block A, and that this would be reconfirmed at the Subdivision Consent stage.

27. In addition, there are five water supply and capacity upgrade projects planned by WDC. These upgrades are triggered when specified numbers of rating units in Rangiora are exceeded

28. Planned WDC water supply conveyance upgrade projects that are needed to service the proposed development are triggered when development/subdivision begins east of the railway and east of Sparks Lane.

Alastair McNabb
2 August 2024