

**BEFORE THE HEARINGS PANEL
FOR PROPOSED PLAN CHANGES 28, 29 AND 30 AND PROPOSED
DESIGNATIONS CHAPTER TO THE MACKENZIE DISTRICT PLAN**

UNDER the Resource Management Act 1991 (RMA)
IN THE MATTER of Proposed Plan Changes 28, 29 and 30 and Proposed
Designations Chapter to the Mackenzie District Plan

**STATEMENT OF EVIDENCE OF HELEN ISABEL JACK
ON BEHALF OF THE
CANTERBURY REGIONAL COUNCIL**

NATURAL HAZARDS

9 May 2025

SUMMARY STATEMENT

- 1 The Canterbury Regional Council (**Regional Council**) sought amendments to various chapters proposed under Plan Change 28 (**PC28**) to the Mackenzie District Plan (**MDP**). These amendments were sought in order for the provisions to better give effect to the Canterbury Regional Policy Statement (**CRPS**) and to ensure that the CRC can continue to undertake its statutory functions and responsibilities.
- 2 I have reviewed the Section 42A (**S42A**) report for PC28 written by Meg Justice for Mackenzie District Council (**MDC**). My evidence presents my opinion on their recommendations, with reasons, and suggests additional points for consideration. Specifically, these are in relation to the Natural Hazards chapter.

INTRODUCTION

- 3 My full name is Helen Isabel Jack.
- 4 I am employed by the Regional Council as a natural hazard scientist and have been in this role since February 2007.

QUALIFICATIONS AND EXPERIENCE

- 5 I hold a Bachelor of Science in Geology and a Master of Science with First Class Honours in Engineering Geology from the University of Canterbury.
- 6 I have worked as a natural hazard scientist since 2004 and have experience in applying natural hazard science to resource management planning, emergency management planning and community resilience.

CODE OF CONDUCT

- 7 I can confirm that I have read and am familiar with the Code of Conduct for Expert Witnesses contained in the Environment Court Practice Note 2023. I have complied with the Code of Conduct in preparing this evidence and I agree to comply with it while giving any oral evidence during this hearing. Except where I state that I am relying on the evidence of another person, my evidence is within my area of expertise. I have not omitted to consider material facts known to me that might alter or detract from the opinions that I express.
- 8 Although I am employed by the Regional Council, I am conscious that in giving evidence in an expert capacity that my overriding duty is to the Hearings Panel.

SCOPE OF EVIDENCE

- 9 I have prepared my evidence on behalf of the Regional Council.
- 10 My evidence primarily relates to how the recommended provisions of PC28 give effect to the natural hazard policies of the CRPS.

11 In preparing my evidence I have reviewed the following documents:

- (a) The PC28 notified provisions;
- (b) The Section 32 report for PC28 prepared and notified by MDC;
- (c) The Regional Council's submission on PC28;
- (d) The Regional Council's further submissions on PC28;
- (e) The summary of decisions requested on PC28;
- (f) The s42A report prepared by Meg Justice on behalf of MDC and associated appendices;
- (g) The relevant provisions of the CRPS;
- (h) The evidence of Ms Rachel Tutty on behalf of the Regional Council;
- (i) The evidence of Mr Nick Griffiths on behalf of the Regional Council.

Recommendations in the section 42A report

12 I agree with the majority of recommendations provided in the s42A report.

Natural Hazard Overlays

13 It has become apparent during the district plan process, that the natural hazard overlays relating to earthquake hazards could be more clearly named to reflect their actual purpose. The notified names could be interpreted to mean that a hazard *does* exist in that location, not that it *may* exist.

14 For that reason, I request that the following changes be made, along with any consequential changes necessary for other provisions to align with the new names.

- (a) "Liquefaction Overlay" to "Liquefaction Assessment Overlay".
- (b) "Fault Hazard (Critical Infrastructure) Overlay" to "Fault Hazard (Critical Infrastructure) Assessment Overlay".

(c) “Fault Hazard (Subdivision) Overlay” to “Fault Hazard (Subdivision) Assessment Overlay”.

- 15 The requested changes would enable these overlay names to be consistent with the name and intention of the Flood Hazard Assessment Overlay. (Note that the Ostler Fault Hazard Area Overlay doesn’t need ‘assessment’ in its name because it has been mapped in detail and the hazard does exist in the overlay.)

Liquefaction provisions

- 16 Apart from the minor change requested in paragraph 14 above, I agree with recommendations at [144] and [324] of the s42A report in relation to the liquefaction provisions.
- 17 In my opinion, NH-P9 and SUB-R7C of the proposed Mackenzie District Plan give effect to the direction contained in Policy 11.3.3 of the CRPS. The Liquefaction Overlay shows areas where liquefiable sediments may be present and therefore where a site-specific investigation is required to determine the liquefaction hazard during subdivision and whether enhanced foundations are required. The Liquefaction Overlay uses mapping that follows the Ministry for Building, Innovation and Employment and Ministry for the Environment’s 2017 *Planning and engineering guidance for potentially liquefaction-prone land* and is consistent with information used by Mackenzie District Council to determine whether site-specific liquefaction assessments are required as part of building consents to determine whether enhanced foundations are needed.

Surface fault rupture hazard provisions

- 18 Apart from the minor change requested in paragraph 14 above, I agree with the recommendations at [78], [131], [144], [206], [207], [244], [245] and [316] of the s42A report in relation to the surface fault rupture definition, overlays and provisions.

- 19 With regard to paragraph 197 of the s42A report, in addition to the analysis provided, the area covered by the Ostler Fault Hazard Area Overlay is already subdivided meaning there is an expectation to build. Because of this a different planning approach, whereby buildings may be allowed within the area of fault deformation if the surface fault rupture hazard can be mitigated, it is appropriate to have a different approach to that taken in Greenfield areas covered by the Fault Hazard (Subdivision) Overlay. This is allowed for in the Ministry for the Environment's 2004 *Planning for development of land on or close to active faults*.
- 20 In my opinion, NH-P7, NH-P8, NH-R6, NH-R7, NH-R8, NH-R9, SUB-R7A, SUB-R7D give effect to the direction contained in Policy 11.3.3 of the CRPS.
- 21 The Ostler Fault Hazard Area Overlay is based on detailed mapping of fault deformation that follows the Ministry for the Environment's 2004 *Planning for development of land on or close to active faults*. The provisions associated with the overlay encourage avoiding building within the overlay but allow for building if the structure can withstand likely ground deformation from fault rupture. This recognises that there is an expectation to build in already subdivided sites, and that in some areas the likely ground deformation may be relatively gentle tilting that can be mitigated through structural design.
- 22 The Fault Hazard (Critical Infrastructure) Overlay is based on mapping of fault deformation that follows Environment Canterbury's 2015 *Guidelines for using regional-scale earthquake fault information in Canterbury*. The faults in this overlay, which include all known and suspected faults within Mackenzie District, have not been mapped in detail. The overlay triggers a requirement to assess the surface fault rupture hazard posed by the fault as part of the development of new critical infrastructure, which may include more detailed fault mapping and set back from the area of fault deformation.

- 23 The Fault Hazard (Subdivision) Overlay is also based on mapping of fault deformation that follows Environment Canterbury's 2015 *Guidelines for using regional-scale earthquake fault information in Canterbury*. This overlay only includes known faults with a recurrence interval of less than 5,000 years that should be considered on any applications for subdivision. The overlay triggers a requirement to map the fault deformation in detail and set back buildings and other structures from the area of fault deformation.

Dated this 9th day of May 2025

A handwritten signature in black ink, appearing to read 'Helen Isabel Jack', with a stylized flourish at the end.

Helen Isabel Jack