

**BEFORE THE HEARINGS PANEL
FOR THE 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 JOLENE MARGARET IRVINE
ON BEHALF OF THE
CANTERBURY REGIONAL COUNCIL**

NATURAL HAZARDS

9 May 2025

INTRODUCTION

- 1 My full name is Jolene Margaret Irvine. I am employed by the Canterbury Regional Council (**Regional Council**) in the role of Team Leader – Rivers Planning.
- 2 I hold the following qualifications:
 - (a) Master of Science with Distinction in Zoology from University of Otago;
 - (b) Post Graduate Diploma in Science with Distinction in Environmental Science from Canterbury University; and
 - (c) Bachelor of Science in Zoology (major) and Ecology (minor) from University of Otago.
- 3 I have been employed by the Regional Council for over 16 years. I have been providing resource management advice for the Rivers team for 12 years, and prior to that, I was a Consents Planner.
- 4 My current role and relevant experience includes providing plan interpretation and consenting advice to the Rivers Section, which delivers the Regional Council's flood, erosion and drainage responsibilities and river enhancement works. I provided advice that informed the Regional Council's submission on the Mackenzie District Plan Review (**pMDP**) as it related to the delivery of the Regional Council's flood, erosion and drainage responsibilities.
- 5 I have prepared this planning evidence on behalf of the Regional Council.

CODE OF CONDUCT

- 6 While this is a council level hearing, 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.

- 7 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 Hearing Panel.

SCOPE OF EVIDENCE

- 8 I have been asked to provide evidence in support of the Regional Council's submission as it relates to the potential limitations the pMDP places on the Regional Council's ability to deliver flood, erosion and drainage protection to the Mackenzie community.
- 9 In preparing my evidence I have reviewed the following documents:
- (a) the notified and relevant provisions of the Natural Hazards (**NH**) chapter of the pMDP relating to Natural Hazard Mitigation Works (**NHMW**).
 - (b) the relevant paragraphs of the PC28 Section 42A Report Part A (**s42A**); and
 - (c) the relevant sections of the Canterbury Regional Council Asset Management Plan and Canterbury Regional Code of Practice for Defences Against Water and Drainage Schemes (**COP**).

Regional Council responsibilities in providing flood and erosion protection and drainage.

- 10 The Regional Council is responsible for keeping communities safe from floods, primarily through the Soil Conservation and Rivers Control Act 1941 (**SCRCA**) and Resource Management Act 1991 (**RMA**). The function of Catchment Boards (now regional councils) in providing flood and erosion protection and drainage are outlined in the SCRCA¹ and Land Drainage Act 1908 (**LDA**)².
- 11 These responsibilities are delivered through public commitments made under the Local Government Act 2002 (**LGA**) via the Long-

¹ Refer to s126 and s133 of SCRCA 1941

² Refer to s17 and s25 of LDA 1908

Term Plan³, and subsequent Annual Plans, which connect to the Infrastructure Strategy⁴. This is where the funding and objectives for various river and drainage schemes are set.

- 12 There are three (3) established River and Drainage Rating Districts/Schemes (**schemes**) that are entirely, or partly within the Mackenzie District:
 - (a) Opihi Catchment Control Scheme;
 - (b) Upper Waitaki Rivers; and
 - (c) Twizel River Rating District.
- 13 A summary of those schemes, as recorded in the Canterbury Regional Council Asset Management Plans is included in **Attachment 1**, and describes the objectives, work types, asset values, annual maintenance budget and the value of the infrastructure, land and other assets on the floodplains that benefit from protections delivered through each scheme. The spatial extent of those schemes is shown in the map in **Attachment 2**.
- 14 There is considerable on-going expenditure for the operation and maintenance of these established schemes and significant benefits to people's safety, community infrastructure, and the district's social, cultural and economic prosperity. Work delivered within these schemes is primarily funded through targeted rates raised by the Regional Council from landowners adjacent to the schemes who benefit most from the protection work. For the Upper Waitaki scheme, works are funded by the energy generators and general rates.
- 15 Flood and erosion protection may also occur outside of the existing schemes, typically in response to natural hazard events, community needs or additional funding opportunities. The Climate Resilience Projects, recently funded by central government, and the 2021 flood recovery program exemplify how the Regional Council has up-scaled works programs to deliver integrated flood and river resilience along

³ As required under section 93 LGA 2002

⁴ As required under section 101B LGA 2002

with river enhancement projects. These projects delivered additional improvements within and outside of established rating districts.

- 16 The Regional Council continues to shift towards a more integrated approach to river enhancement works addressing flood, erosion and drainage management, biodiversity, biosecurity, cultural and other community and recreation enhancement. These programs are designed to provide many community benefits alongside the Regional Council's core functions of minimising and preventing flood hazards. These flood, erosion and drainage protection schemes also support natural character and biodiversity through weed management, providing access to rivers and protecting further encroachment from surrounding landowners into the riverbeds.
- 17 In undertaking the above powers/functions the Regional Council must still be compliant with the RMA, including any consenting requirements created through Regional and District Plans.

Types of Regional Council River and Drain Management maintenance works

- 18 The physical environments where the Regional Council delivers its flood, erosion and drainage responsibilities include drains and small watercourses, within single channel and braided rivers, within the vegetated berms/margins of braided rivers and in the coastal marine area. These areas straddle both Regional and District Plan jurisdictions.
- 19 The type of maintenance works may include (among others):
 - (a) Earthworks: lateral erosion control, channel realignment, placing rock, removing flood debris, stopbank and groyne maintenance, track maintenance, drain maintenance including bank re-battering for erosion management, silt removal and drain clearing.
 - (b) Vegetation clearance: agrichemical spraying, mechanical clearance from river fairways and small watercourses, weed cutting, hand clearance, mowing.
 - (c) Flood and erosion protection plantings: pole planting and layering, anchored tree protection, vegetative enhancement planting (both exotic and natives). The vegetated area along

the river berms can take on additional flood waters, slowing its energy, redirecting back towards the river and reduces erosion to stopbanks, land and other assets. The condition of the berm can be as important as the condition of the stopbank for it to perform as expected.

Regional Council's job set-up and environmental controls

- 20 The Regional Council has existing controls in place to ensure potential environmental risks are avoided or mitigated and is committed to continual improvement. Works undertaken by the Regional Council are designed and completed in accordance with the Canterbury Regional Code of Practice for Defences Against Water and Drainage Schemes⁵ (**COP**). This COP is linked to a Permitted Activity rule within the Canterbury Regional Land and Water Regional Plan (**LWRP**) to enable the Regional Council's flood and erosion protection work.
- 21 The COP addresses the broad range of potential effects that need to be considered when planning river works and is further supported by a 'Rivers Section Environmental Guide', which further describes specific environmental risks and the required operational practices. Prior to works occurring, Job Sheets are created for work delivered internally (or Statement of Works when contractors are engaged) that follow the requirements and direction of the COP and 'River Section Environmental Guide' and record sensitive sites, on-the-ground methodology to manage risks, and notification and engagement requirements (amongst other matters, such as health and safety).
- 22 As committed through the COP, the Regional Council prepares and engages on Annual Works Plans. These Plans discuss an overview of planned work, identification of sensitivities and appropriate mitigation to demonstrate conformance with the COP. Annual Works (overview) and Monthly works plans⁶ (more detailed) are shared with

⁵ <https://www.ecan.govt.nz/your-region/your-environment/river-and-drain-management/defences-against-water-code-of-practice/>

⁶ <https://www.ecan.govt.nz/your-region/your-environment/river-and-drain-management/current-works/>

Papatipu Rūnanga, the DOC, and Fish and Game with any feedback welcomed.

Assessment of pMDP on the Regional Council's delivery of flood and erosion protection works

23 My evidence will focus on the following requests within the Regional Council's submission as they relate to the Regional Councils flood and erosion protection and drainage works and includes:

- (a) NH definition and objectives
- (b) NHMW Rules – NH-R5 (submission #28.50, point 50.28).

NH Definitions and Objectives

24 The Regional Council submitted in support of the definition of 'natural hazard mitigation works', and no changes were recommended in the s42A report.

25 The s42A report has recommended the inclusion of a new definition for 'soft engineering natural hazard mitigation works', which is referred to within Rule NH-R5. The recommended definition is:

Means the use of natural materials, features and processes, including vegetation to stabilise waterway banks and reduce erosion and inundation. Soft engineering techniques include planting, bank re-profiling and the restoration of natural features such as wetlands and floodplains.

26 The Regional Council uses trees and vegetation cover, bank re-battering and river gravels as its most common forms of natural hazard mitigation, which presumably fit within this definition. There is ambiguity on whether large rocks would be included in this definition, and it is assumed to exclude erosion solutions involving materials such as concrete blocks, poles, wire rope. These latter options are often used in significant erosion bays, particularly where there is existing infrastructure at risk or where the erosion bay needs additional protection while the trees and vegetation establish. The use of this definition will be discussed under the appropriate rule.

- 27 The s42A report has recommended an update to NH-O4, as sought in the Regional Council's submission, that NHMW are enabled and maintained. I support this addition.

NHMW - NH Rules

- 28 The Regional Council submission, within its General Comments, paragraph 4., sought amendments that would enable the Natural Hazard Mitigation works undertaken by the Regional Council through Permitted Activity provisions. This was supported by the Regional Council's requested changes to Rule NH-R5 (submission PC28.50, point 50.28, and included here). The red text changes are those requested by the Regional Council.

<u>NH-R5</u>	<u>Natural Hazard Mitigation Works</u>	
<u>All zones</u>	<u>Activity Status: PER</u> <u>Where:</u> The works are: <ol style="list-style-type: none"> 1. The maintenance of operation of any existing natural hazard mitigation works, or 2. The upgrading <u>or establishment</u> of any <u>new</u> natural hazard mitigation works administered by a Regional Council or Territorial Authority <u>Note:</u> The <u>earthworks</u> provisions in <u>Earthworks any other</u> Chapter shall not apply to any activity permitted under <u>NH-R5.1.</u>	<u>Activity status when compliance is not achieved with R5.1-R5.2: RDIS</u> <u>Matters of discretion are restricted to:</u> <ol style="list-style-type: none"> a. <u>NH-MD2</u>
<u>All zones</u>	<u>Activity Status: RDIS</u> <u>Where:</u> The works are: <ol style="list-style-type: none"> 3. <u>The establishment of any new natural hazard mitigation works administered by a Regional Council or Territorial Authority.</u> <u>Matters of discretion are restricted to:</u> <ol style="list-style-type: none"> a. <u>NH-MD2</u> 	<u>Activity status when compliance is no achieved with R5.3: DIS</u>

- 29 In my opinion, the requested drafting provides for a simple rule structure that captures all of the Council's flood and erosion protection and drainage works, and enables that works to occur as a Permitted Activity. Where the conditions of the Permitted Activity are not met, the activity status escalates to RDIS, with those matters of restricted discretion listed in NH-MD2.

- 30 The s42A report has partly accepted this request, however, has not incorporated the requested drafting in their recommended changes. The author has instead recommended a new PER-3, to enable new natural hazard mitigation works administered by Regional Council or Territorial Authority, subject to the site being outside of an area identified as SASM, ONL and ONF, and that works are only 'soft engineering natural hazard mitigation.'
- 31 The addition on the s42A recommended PER-3 does not achieve the Regional Council's recommended outcome, as the majority of waterbodies in Mackenzie District are captured by those three overlays. The addition of 'soft engineering natural hazard mitigation works' also adds unnecessary ambiguity and restrictions (as signalled above in the context of the definition).
- 32 The s42A officer has included these controls due to their concerns with the range of NHMW solutions that could be used and it not being possible to anticipate the range of environmental effects these works may generate. The Regional Council's flood and erosion protection and drainage works, whether within established schemes or not, and whether within riverbeds or not, are managed through the same COP processes. These processes include reporting, engagement, and management of environmental risks in the same way. These established environmental controls and social licence provide certainty that any effects of NHMW undertaken by the Regional Council will be avoided or mitigated. This must be balanced with the need to act quickly and complete NHMW before flood and erosion risks exacerbate due to delays, which will often result in greater interventions being required.
- 33 The Regional Council also requested that the 'Note' was updated, so that this rule was overarching, and where the PER conditions were met, Rules in other chapters need not be considered. The s42A officer has not included this request in their recommendations. The COP processes already include pre-works engagement with both Territorial Authorities and Papatipu Rūnanga and create the opportunity to discuss any effects on those values. For this reason I consider there is no need to have other District Plan rules applying to these activities, as this would be unnecessarily duplicative where the

same effects are essentially addressed by the COP. NH-R5 can then operate as a “one-stop shop” for these important activities.

- 34 In my opinion, it would also be appropriate for the Regional Council to have the most efficient pathway possible for the upgrading, or construction of new community scale natural hazard mitigation works. The Regional Council’s established reporting, engaging and environmental planning toolbox (as described earlier in my evidence) can be relied on to manage potential effects.
- 35 I maintain the view that, the drafting requested by the Regional Council in its submission is required to enable the NHMW undertaken by the Regional Council.
- 36 For the avoidance of doubt, if the Regional Council’s drafting is not adopted by the Commissioners, the maintenance provisions for NHMW in NH-R3 need to clearly apply within the full footprint of established river and erosion protection schemes. River protection schemes are delivered at a catchment or river scale and not just to historic work sites or structures. River and catchment schemes are reliant on all work types playing an integrated and complementary role in the success of a scheme (ie. the schemes are only as strong as their weakest point). Whether the NHMW is reactive or proactive to erosion and flooding risks, the location and type of works varies year on year and must be responsive to the dynamic river environment. To ensure this is clear, Rule NH-R5 could benefit from an additional note:

Note 2: Maintenance includes any NHMW within the footprint of established river and erosion control schemes.

- 37 The commissioners should also be aware that with the recommended drafting in the s42A report, anyone other than the Regional Council or Territorial Authority is unable to undertake any new NHMW as a Permitted Activity, regardless of the scale. This issue could be partly overcome but the recommended drafting in paragraph 29, as it would allow a pathway where the public can request the Regional Council to support the delivery of other community needs, through use of their permitted activity. It is common for community groups and individuals to seek advice and, in some cases, for the Regional Council fund and complete flood and erosion protection outside of the established

rating schemes. The Regional Council has some funding outside of established schemes that enables supporting community groups through cost sharing of works, or can support others by providing advice and delivering the work in a 'user-pays' agreement. At the Regional Council, flood and erosion protection and drainage works, whether within established river control schemes or not, are managed through the same COP processes, with reporting, engagement and environmental risks managed in the same way.

- 38 As an addition, it is my opinion that the Plan should also clearly state that NH Rules do not apply within the bed of rivers, as the LWRP manages works within the bed of rivers.

CONCLUSION

- 39 Without a Permitted Activity rule enabling the Regional Council's flood and erosion and drainage protection works, the Regional Council may be prevented from being able to act quickly on funding opportunities, or to respond to changing damage and needs outside of established schemes - or at least increase the costs and delays in delivering any required 'new' protections in the district.



Jolene Irvine

09 May 2025

Attachment 1: Summary of River and Drainage Rating Districts within the Mackenzie District.

Scheme	Scheme objectives	Works type	Asset value	Annual maintenance budget	Value protected
Opihi Catchment Control Scheme <i>Upper scheme areas only are within Mackenzie District</i>	To maintain the Opihi Catchment Control Scheme to minimise flooding, erosion and degradation/aggradation in the lower river. - to prevent, or minimise, erosion and loss of land - to reduce the supply of detritus from the upper catchment to the lower river system.	Stopbanks (71.6km), erosion control works, tree planting (274.7km), lateral rock work (8200 tonne), drains and grassed waterways (13.8km), culverts and floodgates (12), channel clearing (vegetation and gravel) and upper catchment works.	\$102M (June 2022)	\$855,000 5 yr average 2018-2023	\$2.704B (Sep 2020)
Upper Waitaki Rivers	To maintain a cleared fairway system on the Upper Waitaki Rivers to ensure a degree of river stability, to reduce the likelihood of the rivers forming new channels on adjacent land.	Vegetation and weed clearance within fairways, flood protection plantings in berm.		\$239,000 5 yr average 2018-2023	
Twizel River Rating District	To provide protection from floods up to 255 cumecs and erosion protection to farmland downstream of the Pūkaki Canal.	Stopbanks (4.3km), erosion control works, tree plantings, weed clearance from river fairways.	\$357,000 (June 2022)	Works ~5yrly 2020/2021 \$2,300**	

** Note 30yr Infrastructure Strategy (within LTP 2024-2034) indicates capital expenditure of \$200,000 during 2024-2027 for stopbank repair, tree removal and enhancement of surrounding land.

Attachment 2: Details of the three (3) River and Catchment Schemes within the Mackenzie District.

