

**BEFORE THE HEARINGS PANEL
FOR THE PROPOSED WAIMAKARIRI DISTRICT PLAN**

UNDER the Resource Management Act 1991 (RMA)
IN THE MATTER of the Proposed Waimakariri District Plan
AND
IN THE MATTER of Hearing Stream 3: Natural Hazards Chapter

**STATEMENT OF EVIDENCE OF JOANNE MITTEN ON BEHALF OF THE
CANTERBURY REGIONAL COUNCIL**

**HAZARDOUS SUBSTANCES, CONTAMINATED LAND, NATURAL
HAZARDS**

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SUMMARY STATEMENT

- 1 The Canterbury Regional Council (**Regional Council**) submission sought some amendments to the Hazardous Substances, Contaminated Land and Natural Hazards chapter of the notified Proposed Waimakairi District Plan (**pWDP**) provisions subject to this hearing stream.
- 2 I have reviewed the Section 42A (**S42A**) reports prepared by Ms Manhire (Matū mōrearea - Hazardous Substances and Whenua paitini - Contaminated Land) and Mr Willis (Matepā māhorahora - Natural Hazards Chapter) for the Waimakariri District Council.
- 3 The majority of the recommendations set out in the S42A reports address the Regional Council's concerns. Where concerns remain, I have suggested amendments beyond those provided by the S42A reports. Several key issues remain and the amendments to the provisions recommended in my evidence focus on the following:
 - a. minor wording changes for clarity;
 - b. the addition of a rule and consequential amendments to provide a more streamlined and simplified framework which ensures that offsite flood effects are required to be addressed for all earthworks, buildings and other structures;
 - c. amendments in relation to existing and new community scale natural hazard works to ensure that an achievable pathway is provided for the Regional Council to carry out its flood mitigation works;
 - d. an amendment to include the disposal of contaminated soil as part of the best practice policy to manage contaminated land.
- 4 My evidence focusses on the recommendations that are important in giving effect to the Canterbury Regional Policy Statement (**CRPS**) and in achieving the best outcomes in relation to hazard management. My amendments are attached as **Appendix 1** to my evidence.

INTRODUCTION

- 5 My full name is Joanne Maree Mitten.
- 6 I am a Principal Planner at the Canterbury Regional Council (**Regional Council**), a position I have held since October 2011.
- 7 My qualifications and experience are as set out in my evidence prepared for Hearing Stream 1 of the pWDP, as filed on 1 May 2023.
- 8 I have prepared this planning evidence on behalf of the Regional Council.

CODE OF CONDUCT

- 9 Whilst I acknowledge that this is not an Environment Court hearing, I 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.
- 10 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

- 11 I have been asked to provide evidence in relation to the hazardous substances, contaminated land and natural hazards chapters of the Proposed Waimakariri District Plan (**pWDP**). My evidence addresses:
- a. An overview of the Regional Council's interest in the pWDP and the Hazardous Substances, Contaminated Land and Natural Hazards chapters of the pWDP;
 - b. The relevant statutory framework with a particular focus on the CRPS
 - c. Recommendations in the following Section 42A Reports (insofar as they relate to the Regional Council's submission points):

- i. Officer's Report: Matepā māhorahora - Natural Hazards Chapter, prepared by Andrew Willis for Waimakariri District Council, dated 22 June 2023.
- ii. Officer's Report: Matū mōrearea - Hazardous Substances and Whenua paitini - Contaminated Land for Waimakariri District Council dated 15 May 2023.

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

- a. the Section 32 report prepared and notified by Waimakariri District Council (**WDC**);
- b. the notified provisions of the Hazardous Substances, Contaminated Land and the Natural Hazards chapters of the pWDP;
- c. the submissions made on the notified provisions within the Hazardous Substances, Contaminated Land and Natural Hazards chapters of the pWDP, to the extent they are relevant to the Regional Council's interests;
- d. the s42A reports;
- e. the CRPS;
- f. The evidence of Ms Irvine, Regional Council Rivers Planning Advisor;
- g. The evidence of Mr Griffiths, Regional Council Natural Hazards Scientist; and
- h. The Joint Witness Statement – Flood Assessment Overlays between Mr Chris Bacon and Mr Nick Griffiths, dated 9 June 2023.

REGIONAL COUNCIL'S INTEREST AND OVERVIEW OF SUBMISSIONS IN HEARING STREAM 3 OF THE PWDP

13 The Regional Council considers that the pWDP chapters the subject of Hearing Stream 3 generally give effect to the CRPS, but the Regional Council does have remaining concerns in relation to some specific provisions in the Chapters in Hearing Stream 3. The Regional Council's interest is outlined in the relevant sections below.

- 14 A copy of my recommended amendments to the provisions the subject of Hearing Stream 3 is provided as **Appendix 1** to this statement of evidence.

Natural Hazards

- 15 The majority of the Regional Council's submission points on the chapters in Hearing Stream 3 are in relation to the natural hazards provisions in the pWDP.
- 16 The Regional Council's submission in relation to natural hazards seeks:
- a. Amendments to the flood assessment and liquefaction overlays and the amendment of the Kaiapoi fixed minimum floor level.
 - b. Amendments to several definitions and to provisions regarding the maintenance of natural hazard mitigation schemes.
 - c. An additional objective specifically in relation to climate change.
 - d. An additional rule to address offsite flood effects and consequential changes.
- 17 Whilst many of these submission points have been addressed in the section 42A recommendations, the Regional Council is still seeking some further amendments as detailed below.
- 18 It is noted that a Joint Witness Statement (**JWS**) was signed between Mr Bacon of WDC and Mr Griffiths of the Regional Council in relation to the high hazard overlay. This JWS was progressed ahead of Mr Willis's S42A report. Several other concerns of the Regional Council were also discussed with WDC prior to the S42A report but given that these touched on the drafting of the provisions that may be of interest to other submitters, the Regional Council's preference was to formally address these matters in evidence.
- 19 Two other pieces of evidence have been provided for the Regional Council regarding Hearing Stream 3, specifically the natural hazards chapter:
- a. Mr Griffiths has provided technical evidence in relation to natural hazards; and

- b. Ms Irvine has provided evidence regarding the Regional Council's natural hazard mitigation schemes in rivers in the Waimakariri District.
- 20 This evidence has informed my assessment of the appropriate provisions.

Hazardous Substances

- 21 The focus of the Regional Council's submission regarding hazardous substances is to ensure the pWDP gives effect to the CRPS. The Regional Council generally supports the proposed changes, specifically the requirement for the need for specific consideration of the locations of sensitive activities. The Regional Council also supports the location of new hazardous activities outside of any high hazard area, unless the risk can be appropriately mitigated.
- 22 Where amendments have been sought, they are in relation to the need to avoid actual or potential adverse effects, resulting from the use, storage or disposal of hazardous substances in all high hazard areas rather than just in terms of high flood hazard as is currently set out in the pWDP. This would ensure consistency with Policy 18.3.1 of the CRPS.

Contaminated Land

- 23 The Regional Council generally supports the Contaminated Land provisions in the pWDP, however does seek some amendments.
- 24 The Regional Council's submission seeks that the scope of CL-P1 is broadened to include the consideration of sites that are not on the Listed Land Use Register (**LLUR**), especially sites that are known to be contaminated, or had activities in the past that could have caused contamination of the land. This would be consistent with Policy 17.3.1 (Identify potentially contaminated land) of the CRPS.
- 25 The Regional Council's submission also sought the addition of a policy to discourage the creation of new contaminated land.

STATUTORY FRAMEWORK

- 26 Section 75(3) of the RMA requires that:

A district plan must give effect to –

- (a) any national policy statement; and*
- (b) any New Zealand coastal policy statement; and*
- (ba) a national planning standard; and*
- (c) any regional policy statement.*

- 27 Relevant national and regional planning documents that the provisions relevant to Hearing Stream 3 of the pWDP must give effect to include the National Policy Statement on Urban Development 2020 (**NPS-UD**), the New Zealand Coastal Policy Statement (**NZCPS**) in relation to the coastal environment, and the CRPS.
- 28 Section 75(4) requires that a district plan must not be inconsistent with any applicable water conservation order or regional plan, including the Canterbury Land and Water Regional Plan (**LWRP**).
- 29 I have not sought to repeat all the provisions contained in these national and regional planning documents. My evidence focusses on those I consider to be most relevant to the Hazardous Substances, Contaminated Land and Natural Hazards chapters of the pWDP and the submission made by the Regional Council.
- 30 Section 62 of the RMA requires that a regional policy statement must state the local authority responsible in the whole or any part of the region for specifying the objectives, policies, and methods for the control of the use of land to avoid or mitigate natural hazards or any group of hazards. Section 62 of the RMA also requires a regional policy statement to state the local authority responsible, in the whole or any part of the region, for specifying the objectives, policies, and methods for the control of the use of land to prevent or mitigate the adverse effects of the storage, use, disposal or transportation of hazardous substances.
- 31 I address the CRPS further below.

Canterbury Regional Policy Statement

CRPS Chapter 11 - Natural hazards

Responsibilities of the Regional Councils and Territorial Authorities

- 32 The CRPS (in Chapter 11 - Natural Hazards) states that the Regional Council is responsible for the control of the use of land for natural hazards in areas:

- a. within the 100-year coastal erosion hazard zones outside of greater Christchurch;
 - b. within areas in greater Christchurch (including Waimakariri)¹ likely to be subject to coastal erosion and sea water inundation, including sea level rise over the next 100 years where provisions are not specified in an operative district plan;
 - c. within the beds of lakes and rivers; and
 - d. within the coastal marine area.
- 33 Territorial authorities are responsible for controlling the use of land, to avoid or mitigate natural hazards outside of the beds of lakes and rivers and outside of the coastal marine area. Flooding from the coast often extends landward of mean high water springs (the Regional Council's jurisdiction) and into the territorial authority's jurisdiction where mitigation needs to occur, especially in relation to land use and development.
- 34 Joint responsibility between the Regional Council and territorial authorities exists for the control of land use, to avoid or mitigate natural hazards in areas subject to seawater inundation - however only territorial authorities are responsible for developing rules.

Policy framework

- 35 The policy framework in the CRPS that is relevant to natural hazards is mainly found in Chapter 11. This chapter provides an approach for risk-based management of natural hazards in Canterbury. A three-tiered hierarchy approach is applied. The priority is to avoid development in high-risk or hazard-prone areas and matching land use to anticipated change in climatic conditions in the future.²
- 36 If avoidance is not possible, the second priority management approach is to mitigate or reduce the effects of natural hazards, with the acknowledgement that there will be some residual adverse effects from natural hazards. The third priority outlined in Chapter 11 provides for the

¹ "greater Christchurch" is defined in the CRPS as the districts of the Christchurch City Council, the Selwyn District Council, and the Waimakariri District Council, and includes the coastal marine area adjacent to these districts, as defined in the Canterbury Earthquake Recovery Act 2011.

² CRPS Objectives 11.2.1, 11.2.3 and CRPS Policies 11.3.1, 11.3.2, 11.3.5, 11.3.9.

response to and recovery from the consequences of natural hazard events.

37 Objective 11.2.1 sets out this hierarchy as follows:

11.2.1 Avoid new subdivision, use and development of land that increases risks associated with natural hazards.

New subdivision, use and development of land which increases the risk of natural hazards to people, property and infrastructure is avoided or, where avoidance is not possible, mitigation measures minimise such risks.

38 Chapter 11 of the CRPS contains nine policies to manage the risks across different hazards - flooding, sea water inundation, coastal erosion and earthquakes. The policies also cover the location of new critical infrastructure, physical mitigation works, the effects of climate change, the role of natural features in hazard mitigation, and integrated management between agencies.

39 Policy 11.3.1 seeks the avoidance of inappropriate development in high hazard areas.³ This policy identifies seven exceptions for new development in high hazard areas, specifically:

- a. where it is not likely to result in the loss of life, or serious injury;
- b. is not likely to suffer significant damage or loss in the event of a natural hazard;
- c. is not likely to require new or upgraded hazard mitigation works; and

³

High hazard areas are defined in the CRPS as:

1. flood hazard areas subject to inundation events where the water depth (metres) x velocity (metres per second) is greater than or equal to 1, or where depths are greater than 1 metre, in a 0.2% AEP flood event;

2. land outside of greater Christchurch subject to coastal erosion over the next 100 years; and

3. land within greater Christchurch likely to be subject to coastal erosion including the cumulative effects of sea level rise over the next 100 This includes (but is not limited to) the land located within Hazard Zones 1 and 2 shown on Maps in Appendix 5 of this Regional Policy Statement that have been determined in accordance with Appendix 6; and

4. land subject to sea water inundation (excluding tsunami) over the next 100 years. This includes (but is not limited to) the land located within the sea water inundation zone boundary shown on Maps in Appendix 5 of this Regional Policy Statement.

When determining high hazard areas, projections on the effects of climate change will be taken into account.

- d. is not likely to exacerbate the effects of the natural hazard.
- 40 There is also an exception for new development within greater Christchurch (including the Waimakariri district) within a Greenfield Priority Area or an area that was zoned urban residential, industrial or commercial use at the time the Land Use Recovery Plan was gazetted (6 December 2013). In these specific areas there is an exception for development in a high hazard area so long as the effects of the natural hazard are avoided or appropriately mitigated. Within greater Christchurch, the maintenance and/or upgrading of existing critical or significant infrastructure is also provided for within high hazard areas.
- 41 Under Policy 11.3.1, high hazard areas are not required to be mapped in district plans but provisions within district plans within greater Christchurch need to identify high hazard areas.⁴ Outside of greater Christchurch, methods to achieve this may include objectives and policies in district plans to avoid new subdivision, use and development that does not meet criteria 1 - 5 of Policy 11.3.1.
- 42 The risk posed by any high hazard identified in a district plan within greater Christchurch is required to be managed in accordance with CRPS Policy 11.3.1. The pWDP currently includes definitions for “High flood hazard area” and “High coastal flood hazard area”. Both definitions are inconsistent with the “High Hazard Area” definition in the CRPS and to be more consistent with Policy 11.3.1 in the CRPS, I recommend the definitions in the pWDP are amended (as discussed later in my evidence).
- 43 Policy 11.3.2 of the CRPS seeks to avoid development in areas subject to inundation through managing natural hazard flooding (outside of high hazard areas) where flooding is expected to occur in a 0.5% AEP flood event (or 200-year Average Recurrence Interval (ARI) event).⁵ Like Policy 11.3.1, Policy 11.3.2 seeks to avoid new subdivision, use and development in areas subject to a 0.5% AEP event, unless there is no

⁴ CRPS, Policy 11.3.1 (Method 7.c).

⁵ A 200 year ARI flood event is expected to occur once in every 200 years on average. This means there is a 1 in 200 chance of the event occurring (or 0.5% chance of occurring) in any given year. Cf. the 500 year ARI event that is used in the high hazard definition, where there is a 1 in 500 chance of the event occurring (or 0.2% chance of occurring) in any given year

increased risk to life, and the subdivision, use or development is of a type that is not likely to suffer material damage in an inundation event, or is ancillary or incidental to the main development. A mitigation pathway as per Objective 11.2.1 is provided if new buildings have appropriate floor levels and hazardous substances will not be inundated. One of the methods notes that the Regional Council will provide guidance as to the appropriate floor levels to manage the adverse effects of flood events.

- 44 Policy 11.3.3 requires that *new subdivision, use and development of land on or close to an active earthquake fault trace, or in areas susceptible to liquefaction and lateral spreading, shall be managed in order to avoid or mitigate the adverse effects of fault rupture, liquefaction and lateral spreading.*
- 45 District plans are required to manage new subdivision, use and development of land in areas on or adjacent to a known active earthquake fault trace and in areas known to be potentially susceptible to liquefaction and lateral spreading.⁶ The Regional Council is required to assist in the delineation of fault avoidance zones along known active fault traces and the areas susceptible to liquefaction and lateral spreading.⁷
- 46 Policy 11.3.4 requires that new critical infrastructure is located outside of known high hazard areas unless there is no reasonable alternative. It also seeks that district plans should ensure that where critical infrastructure is located in high hazard areas, that it will be able to be maintained and reinstated, if necessary, within a reasonable timeframe.
- 47 Policy 11.3.5 requires that a general risk management approach is taken for the management of all other areas or natural hazards that are not addressed by Policies 11.3.1, 11.3.2, and 11.3.3. On the basis of considering risk as the likelihood of a natural event occurring and the likely consequences if it does, the policy requires that any unacceptable risk is avoided. In the case of uncertainty, the policy also requires that a precautionary approach should be adopted.

⁶ CRPS Policy 11.3.1 (Methods 4, 5 & 6)

⁷ CRPS Policy 11.3.1 (Methods 1 & 2).

- 48 Policy 11.3.6 recognises the role of natural features such as beaches, sand dunes and wetlands to help to avoid or mitigate natural hazards.
- 49 Policy 11.3.7 sets out that new physical mitigation works are only acceptable where the risk cannot be reasonably avoided and if any adverse effects are avoided, remedied or mitigated.
- 50 Policy 11.3.8 states that when determining if a new subdivision, use or development is appropriate that local authorities shall have regard to the effects of climate change in relation to natural hazard events.
- 51 Any other relevant CRPS policies are discussed in my evidence in the context of responding to the s42A report.

CRPS Chapter 17 - Contaminated land

Policy framework

- 52 The policy framework in the CRPS that is relevant to hazardous substances is found in Chapter 17. The chapter contains one objective and four policies with the main purpose being to identify issues associated with the contamination of land and to resolve the issues in relation to land that is already contaminated.
- 53 There is one objective in CRPS Chapter 17, Objective 17.2.1 (protection of adverse effects of contaminated land). The policies that implement this objective are:
- a. Policy 17.3.1 - Identification of potentially contaminated land;
 - b. Policy 17.3.2 - Development of, or discharge from contaminated land;
 - c. Policy 17.3.3 – Contaminants may remain in the land; and
 - d. Policy 17.3.4 - Integrated management.
- 54 In summary, these policies seek to ensure that the effects of discharges of contaminants are appropriately managed and that any potentially contaminated land is identified so that appropriate strategies for the management of adverse effects can be put in place.

CRPS Chapter 18 - Hazardous substances*Responsibilities of the Regional Council and Territorial Authorities*

- 55 The CRPS (in Chapter 18) states (in accordance with section 62 set out above) that the Regional Council is responsible for specifying the objectives, policies and methods for the control of the use of land for the purpose of preventing or mitigating the adverse effects of the storage, use, transport or disposal of hazardous substances on the quality of air and water.
- 56 The CRPS provides that territorial authorities are responsible for the control of the use of land for the purpose of preventing or mitigating the adverse effects of the storage, use, transport or disposal of hazardous substances on the environment other than air and water quality.
- 57 Joint responsibility between the Regional Council and territorial authorities exists for the control of land use to prevent adverse effects of hazardous substances entering land drainage systems.

Policy framework

- 58 The policy framework in the CRPS that is relevant to hazardous substances is set out in Chapter 18. The CRPS encourages first the avoidance, then the remediation or mitigation of the adverse effects of hazardous substances on the environment. It also looks to avoid actual adverse effects in sensitive areas and for sensitive activities. An integrated approach to hazardous substances management and a co-ordinated emergency response to hazardous substances events is required.
- 59 Chapter 18 of the CRPS sets out two objectives to avoid, remedy or mitigate adverse effects (objective 18.2.1) and to avoid new contamination of land (objective 18.2.2).
- 60 Chapter 18 of the CRPS contains five policies to manage the effects of hazardous substances in our environment. Policy 18.3.1 identifies sensitive areas and activities where actual or potential adverse effects resulting from the use, storage or disposal of hazardous substances are to be avoided, including high hazard areas, community drinking water protection zones, in areas of unconfined or confined aquifers where there is a risk of contamination to groundwater, within the coastal marine area and lakes and rivers, and any areas identified in a district or

regional plan as being sensitive to potential effects of hazardous substances, such as cultural sites and residential areas.

- 61 Policy 18.3.2 highlights the potential of hazardous substances to cause adverse environmental effects when stored, used, transported or disposed of and that these effects need to be avoided, remedied or mitigated.
- 62 Policy 18.3.3 promotes integration and co-ordination region-wide between the different authorities and agencies to promote consistency in hazardous substances management.
- 63 Policy 18.3.4 seeks to promote appropriate hazardous substances management practices and encourage improvement in measures taken to prevent or mitigate adverse effects on the environment (including the reduction of use of hazardous substances).
- 64 Policy 18.3.5 is in relation to an emergency response to hazardous substances entering the environment. This is especially relevant in times of a civil defence emergency where chances of hazardous substances entering the environment are increased (but is not directly relevant to the provisions of the pWDP).

RECOMMENDATIONS IN THE S42A REPORT

Natural Hazards

- 65 The majority of the Regional Council's submission points are focussed on the Natural Hazards chapter of the pWDP, hence why I address the S42A report on Natural Hazards first.
- 66 The Council supported NH-O2, NH-O3, NH-P1, NH-P5, NH-P6, NH-P9, NH-P10, NH-P13 as notified, in the pWDP.
- 67 The Council has also sought amendments to definitions in this chapter, specifically:
- a. High coastal flood hazard;
 - b. Natural hazard sensitive activities;
 - c. Community scale natural hazard mitigation works.
- 68 A number of general amendments were sought regarding the alignment of policies and rules to manage offsite flood effects, the urban and non-

urban flood assessment overlays, floor level certification and the liquefaction hazard overlay.

- 69 Amendments were sought to the introduction of the Natural Hazards chapter and to NH-O1, NH-O4, NH-P2, NH-P3, NH-P4, NH-P7, NH-P14, NH-P15, NH-P16, NH-P17, NH-P19, NH-R1, NH-R2, NH-R4, NH-R5, NH-R8, NH-R9, NH-R10, NH-R15, NH-R16, NH-R17, NH-R18, NH-S1, NH-S2, NH-MD1, NH-MD-4.

Objectives NH-O2 and NH-O3, Policies NH-P1, NH-P5, NH-P6, NH-P9, NH-P10 and NH-P13

- 70 The Regional Council's submission sought that the above objectives and policies be retained in the pWDP as notified.
- 71 I agree with Mr Willis's recommendations as set out in his S42A report as they are consistent with the provisions set out in the CRPS.
- 72 Where Mr Willis has suggested an amendment to these provisions, I agree that this is appropriate and consistent with the original intent of the provisions.

Definitions

Community Scale Natural Hazard Mitigation Works

- 73 The Regional Council submitted on the definition of "community scale natural hazards mitigation works" and sought an amendment to clarify that these works are maintained at a scheme level. The submission also sought that any upgrades and new community scale natural hazards mitigation works should address those activities beyond maintaining the delivery of existing schemes.
- 74 Ms Irvine in her evidence agrees with the amendments to the definition recommended by Mr Willis. I have also reviewed the definition and agree that it offers the clarity requested. I therefore support the recommendations of Mr Willis regarding this definition.

High coastal flood hazard area

- 75 The Regional Council submitted on the "High coastal flood hazard area" definition in the pWDP. The submission sought amendment to the definition to ensure consistency with the High Hazard Area definition in the CRPS.

- 76 I agree with the amendments recommended by Mr Willis as the redrafted definition of High Hazard Area (rather than separate definitions for areas subject to coastal and flood hazards) is more consistent with the CRPS definition. It is also now consistent with CRPS Policy 11.3.8 so that when considering hazards, local authorities shall have particular regard to climate change.
- 77 This definition recommended by Mr Willis was drafted in consultation with the Regional Council. However, on reflection I note that the “and” at the end of the first clause of the definition was an error and should be replaced by an “or”. I have provided this amendment in Appendix 1 to my evidence.
- 78 Mr Griffiths also addresses this matter in his evidence and notes that he supports the amendments provided by Mr Willis (subject to changing the ‘and’ to an ‘or’).

Natural hazard sensitive activity

- 79 The Regional Council sought an amendment to the “Natural hazard sensitive activity” definition to ensure that all high value buildings are captured. Mr Willis’s recommended amendments excluded attached garages. I agree with Mr Griffiths’ evidence that the default position should be that an attached garage is included as a natural hazard sensitive activity, and the necessary standard has to be met. If an attached garage was proposed to be a lower floor level, a reason why would be required to justify the potential adverse effects. For that reason, I recommend an amendment to the definition as set out in Appendix 1.

General

Alignment of policies and rules to manage offsite flood effects

- 80 The Regional Council’s submission sought alignment of the Natural Hazards policies and rules to manage offsite flood effects, including the conveyance of floodwaters and / or reduction in flood storage capacity. In the pWDP, policies NH-P2, P3 and P4 all refer to the risk from flooding to surrounding properties and the conveyance of floodwaters in an inconsistent way. In addition, another inconsistency is that policy NH-P7 does not refer to the conveyance of floodwater. The Regional

Council also submitted on Rule EW-R5 in the earthworks chapter of the pWDP in relation to offsite flood effects, seeking a new rule.

- 81 I am generally comfortable with Mr Willis's recommendations to include the words 'no more than minor risk' regarding NH-P2, P3 and P4 to address this concern but I suggest the addition of a new rule for the reasons Mr Griffiths sets out in his evidence in that a new single permitted activity rule 'would provide a simpler, more effective and risk-based means of addressing off site flood effects. The Regional Council considers that activities should only be permitted where there will be no offsite flood effects and require resource consent where there will be offsite flood effects. To provide this in a clearer, more simplified way the Regional Council through its submission sought a rule such as that provided in the proposed Kaikōura District Plan.
- 82 Mr Griffiths has addressed this concern in his evidence and considers that the natural hazards rules do not adequately implement the relevant policies as the rules only address offsite effects in specific circumstances. He states that "*the rules do not address the potential for offsite flood effects associated with natural hazard sensitive activities, outside of overland flow paths, earthworks unrelated to infrastructure outside of overland flow paths, or other activities*". This creates gaps in that some activities that could potentially cause offsite flood effects are not actually addressed by the current suite of rules. Mr Griffiths considers that all activities that could cause offsite flood effects should be dealt with in a consistent manner and that this is best dealt with through a single permitted activity rule.
- 83 I believe that the amendment suggested by Mr Griffiths is the most appropriate and streamlined approach and will ensure all offsite flooding effects are regulated. It would also better give effect to CRPS policies 11.3.1 and 11.3.5. As such, I have proposed an appropriate new rule in Appendix 1 to my evidence along with any consequential changes that would be necessary to the interlinking provisions in the natural hazards and earthworks chapters.
- 84 I would prefer the addition of a single simplified rule but as noted above, if these amendments are not accepted by the Hearing Panel, I am generally comfortable with the recommendations of Mr Willis. I address this in relation to each of the relevant provisions below.

Urban and non-urban flood assessment overlay

- 85 The Regional Council submission sought that the urban and non-urban flood assessment overlays be amended to address any gaps or limitations and to capture all of the areas that have been identified as susceptible to flooding.
- 86 A Joint Witness Statement (JWS) was prepared on behalf of Mr Bacon and Mr Griffiths, contained in Appendix D of the section 42A report. I agree with Mr Willis's recommendation on this matter, to accept the advice from Mr Bacon and Mr Griffiths in his S42A report. I am comfortable that there is scope for these amendments as the Regional Council's submission specifically sought amendments to the Urban Flood Assessment Overlay and the Non-Urban Flood Assessment Overlay to capture all areas in the District susceptible to flooding.

Floor level certification

- 87 The submission from the Regional Council sought that the Kaiapoi Fixed Minimum Floor Level Overlay is amended so that the whole district uses a standard approach in order to create more flexibility for future modelling. The Regional Council has also sought to keep the fixed floor level map outside of the plan for this same reason.
- 88 I agree with Mr Willis's recommendations in his S42A report to amend the Kaiapoi Fixed Minimum Floor Level Overlay and replace it with the Urban Flood Assessment Overlay as I consider this provides the flexibility sought by the Regional Council.

Liquefaction hazard overlay

- 89 The Regional Council sought that the liquefaction hazard overlay only captures the 'liquefaction damage possible' area and that the overlay is limited to areas within the Waimakariri District.
- 90 I agree with Mr Willis's recommendations (and Mr Griffiths' evidence as to why this is acceptable) to accept the submission and make the amendments sought by the Regional Council.

Introduction

- 91 The Regional Council sought that the Introduction in the Natural Hazards chapter of the pWDP be amended to give effect to the CRPS.

- 92 I agree with Mr Willis's recommendations in his S42A report to remove a policy-like feel in the introduction by removing reference to the CRPS. The implementation of the CRPS within the provisions of the pWDP is the most important thing, and this can be achieved without reference to the CRPS in the introduction.

Objective NH-O1

- 93 The Regional Council in its submission considered that the clarity and certainty of NH-O1 would be improved through setting direction for high hazard areas outside of, and inside of, the urban areas and that other hazards also need to be included. I consider rewording this objective would give better effect to CRPS Objective 11.2.1 and Policy 11.3.1.
- 94 I agree with Mr Willis's recommendations and amendments in the S42A report. The amendments Mr Willis provides includes natural hazard risk which covers all natural hazards, and also separates the urban environment. The avoid or mitigate framework set out in the CRPS is also provided for, therefore ensuring that the CRPS is given effect to.

Objective NH-O4

- 95 The Regional Council sought clarification of the term 'natural defences' in Objective NH-O4.
- 96 I agree with Mr Willis's recommendations that 'natural features' is more appropriate than 'natural defences' and agree that the new 'natural features' definition as set out in Mr Willis's amendments is appropriate and still achieves the intent of the original provision.

New objective

- 97 The Regional Council's submission considered that a new objective is required in the pWDP to give effect to CRPS Objective 11.2.3- Climate change and natural hazards.
- 98 I agree with Mr Willis's recommendation and the addition of a new climate change objective (NH-O5). I consider that the inclusion of this objective gives effect to CRPS Objective 11.2.3, and Objective 8 of the NPS-UD that seeks that New Zealand's environments are resilient to the current and future effects of climate change.

Policies NH-P2, NH-P3, NH-P4 and NH-P7

- 99 The Regional Council sought that NH-P2 be amended to require avoidance of development that increases risk in the first instance as this would align with the hierarchy framework established in the CRPS. I agree with Mr Willis's recommendation to achieve this in his S42A report. The addition of the words "avoid or mitigate" are consistent with the hierarchy framework provided in the CRPS.
- 100 In relation to Policies NH-P2, NH-P3, NH-P4 and NH-P7, the Regional Council sought that that the reference to 'significant' flood displacement effects be changed to 'less than minor' as it would be more consistent with Objective 11.3.5 of the CRPS and Objective NH-O4 and Policy NH-P15 of the pWDP.
- 101 I agree with Mr Willis's recommendation to insert the words 'no than minor'. I am comfortable with this wording compared to the Regional Council's suggested wording of 'less than minor' as it is consistent with the intent of the submission but is more practical, as I anticipate that there will always be some effects, rather than no effects.
- 102 In his evidence, Mr Griffiths also suggests that the intent of the rewording to 'no more than minor' is to state that the increase in offsite flood risk should be no more than minor. He suggests that the wording be amended to include the word 'increased'. I have included this amendment in Appendix 1 of my evidence.

Policy NH- P14

- 103 The Regional Council sought that a spelling mistake be amended in Policy NH-P14 from 'not critical' to 'non critical'.
- 104 In his recommendation Mr Willis has signalled that his preference is for the use of the word 'non critical' rather than 'not critical', however in his amendment in Appendix A the amendment states 'not critical'. I assume this is an error that Mr Willis will need to remedy. For completeness, I agree with the use of the term "non-critical".

Policy NH- P15

- 105 In its submission the Regional Council sought that 'terraces' be included as an example of natural features in NH-P15.

- 106 I agree with Mr Willis's recommendation to include 'terraces' in the proposed new definition of "natural feature".

Policy NH-P16

- 107 The Regional Council sought clarification of limits on redevelopment provided for in NH-P16, especially in coastal hazard areas.
- 108 I agree with Mr Willis's recommendation to delete the term 'redevelopment' within Policy NH-P16. However, the term 'redevelopment' has not been deleted from the title of the Policy. I recommend the deletion of this term in the title as well as within the policy and have set this out in my amendments in Appendix 1.

Policy NH-P17

- 109 The Regional Council sought that NH-P17 provides for the consideration of natural character (in accordance with the NZCPS and CRPS) and that clarification is required in regard to the interaction between clauses 4 and 5 of the policy. The Regional Council also sought to delete NH-P17 clause 3.
- 110 I agree Mr Willis' recommended amendments achieve the outcome sought by the Regional Council and is now more consistent with the NZCPS and the CRPS.

Policy NH-P19

- 111 The Regional Council's submission sought that NH-P19 be amended to better give effect to CRPS Policy 11.3.5 through a risk-based approach to avoid unacceptable risk, and to manage development to an acceptable level.
- 112 I agree with the amendments provided in Mr Willis's recommendation as they give effect to CRPS Policy 11.3.5.

Rule NH-R1

- 113 In its submission, the Regional Council sought to remove condition 1 of NH-R1, specifically the reference to 'consent notice' as it could enable inadequate standards of flood mitigation if information becomes outdated. The submission also sought the removal of reference to the Kaiapoi Fixed Minimum Finished Floor Level Overlay as discussed in NH-P7.

- 114 I agree with Mr Willis's recommendation to change the words 'consent notice' (technically up to 13 years from date) to 'consent decision' (about 5 years). I also agree with Mr Bacon's reasoning for this proposed change in that the modelling and LIDAR updates are only carried out every 6 to 9 years, so this allows reliance on the most recent data available. Therefore, I agree with the intention to allow development to a floor height approved in a consent decision that is up to five years old.
- 115 In addition, if the single rule for offsite flood effects, as discussed earlier in my evidence is accepted by the hearing panel, then NH-R1(2)(b) should also be deleted.

Rule NH-R2

- 116 The Regional Council sought that Condition 1 and 3 be removed in its entirety. The submission also sought that the flood assessment overlay is expanded to include all areas that have the potential for flooding.
- 117 I agree with the intent of Mr Willis's recommended amendments to Rule NH-R2 and I have addressed the amendments to the overlay earlier in my evidence.
- 118 However in reference to offsite flood effects, as set out in Mr Griffith's evidence there is no reference to the scale of effects. Mr Griffiths states in his evidence that the rule only addresses offsite effects associated with buildings that meet the 'natural hazard sensitive activity' definition, where they are proposed to be in overland flow paths.
- 119 As an alternative to Mr Willis's recommendations and based on Mr Griffiths' evidence as set out earlier, I have suggested that a new rule be added that addresses offsite flood effects. If the Hearing Panel accepts the Regional Council's submissions to include this rule, then it is recommended that Rule NH-R2(2)(c) be deleted. I set this out in Appendix 1 to my evidence.

Rules NH-R4 and NH-R5

- 120 The Regional Council's submission sought that a provision be inserted to NH-R4 and NH-R5 so that any filling above ground level is not in an overland flow path.
- 121 I agree with the intent of the changes to NH-R4 and NH-R5 but as set out in Mr Griffiths' evidence there is no reference to the scale of effects

in relation to offsite flood effects. Mr Griffiths states in his evidence that NH-R4 and NH-R5 only address offsite flood effects associated with infrastructure, regardless of whether the activity is within an overland flow path.

- 122 To address this, Mr Griffiths recommends a single activity rule, as discussed earlier in my evidence. He suggests this rule could be similar to the rule incorporated into the Kaikōura District Plan, and compared to the mechanisms that Mr Willis sets out in his S42A report it would be a simpler, more effective way to address offsite flood effects. I agree with Mr Griffiths' assessment and recommended rule, as I have discussed earlier in my evidence.
- 123 If the Hearing Panel does accept the proposed new rule regarding offsite flooding effects, then Rule NH-R4 should be deleted in its entirety and NH-R5 (1) and NH-R5(2)(b) should be deleted. I set this out in Appendix 1 to my evidence.
- 124 In the event that the Hearing Panel does not adopt the single rule approach, I agree with the intent of Mr Willis's recommendation of an AEP of 0.5% however in my view Mr Griffith's suggested wording of '...in events with an AEP of 0.5% or more' provide better direction so that it is clear that a range of flood events are considered. I include this amendment in Appendix 1 of my evidence.

Rules NH-R8, NH-R9 and NH-R10

- 125 The Regional Council's submissions on Rule NH-R8 and NH-R9 sought that a provision be inserted in both rules for all works to maintain the effective operation of established river and drainage schemes that are administered by local authorities in all zones. The second part of the submission sought an exclusion from the earthworks requirements for the maintenance of existing community scale natural hazard mitigation works in any other chapter as these activities may require resource consent.
- 126 In her evidence Ms Irvine states that "*I do not agree with all matters of the assessment, nor do I consider the recommended changes address the concerns raised in the CRC submission*". Ms Irvine does however agree with the intent of Mr Willis to provide a permitted activity status for the work package that is required to maintain existing schemes through amendments to NH-R8, NH-R9 and NH-R10.

- 127 Ms Irvine is comfortable with the intent of the permitted pathway that NH-R8, R9 and R10 provides for schemes. However, Ms Irvine states that in reality the exclusion of works in areas of Outstanding Natural features and Sites and Areas of Significance to Māori means that the permitted pathway for the upgrading or new construction of community scale natural hazards works is largely unachievable. For instance, earthworks to maintain the schemes, other than for stopbanks, could require consent.
- 128 I agree with Ms Irvine's suggested amendments to ensure that the maintenance and effective operation of schemes is not held up by provisions that do not fully capture the full and complex requirements to manage flood hazard. I have included her suggested amendments in Appendix 1 of my evidence.

Rule NH-R15

- 129 The Regional Council's submission sought to remove condition 1 of NH-R15 as it could enable inadequate standards of flood mitigation if floor levels have been based on lower magnitude flood events or outdated information.
- 130 I agree with Mr Willis's recommendation in his S42A report as it is consistent with the recommendations for NH-R1 and NH-R3 in regard to using the words 'consent decision' rather than 'consent notice' as discussed above in NH-R1.

Rule NH-R16

- 131 The Regional Council's submission sought the removal of the permitted pathway for new natural hazard sensitive activities in the coastal flood overlay as it does not give effect to CRPS Objective 11.2 - Avoid new subdivision, use and development of land that increases risks associated with natural hazards and CRPS Policy 11.3.1 - Avoidance of inappropriate development in high hazard areas.
- 132 I agree with Mr Willis's recommendation and that through the amendment of high coastal flood hazard, the permitted pathway is consistent with CRPS Policy 11.3.1. I also agree with Mr Willis's recommendation to refer to consent decision rather than consent notice as this is consistent with his other recommendations.

Rule NH-R17

- 133 The Regional Council's submission sought the removal of the permitted pathway in NH-R17 for new infrastructure in the coastal flood assessment overlay as it does not give effect to CRPS Policy 11.3.1-Avoidance of inappropriate development in high hazard areas unless there is no reasonable alternative.
- 134 I agree with Mr Willis's recommendation and agree that the coastal flooding heights provided in NH-R17 are consistent with not being high hazard areas in the CRPS.

Rule NH-R18

- 135 The Regional Council's submission sought relief in accordance with its submission points on EW-R5 and the general comments on NH-P2 - P4. Regarding EW-R5, the Regional Council sought to change the applicability of the rule for overland flow paths to flood assessment overlays and amend the rule to capture all activities that have the potential to cause offsite effects (as addressed above). The general submission point sought that NH-P2-P4 all refer to the risk from flooding to surrounding properties and the conveyance of flood waters.
- 136 I partially agree with Mr Willis's recommended amendments to NH-R18 as set out in Appendix A of the s42A report. However, I do note an error in his recommended changes in paragraph 567 where the word 'not' is missing before the word 'exacerbate'. The wording is correct in his amendments in his Appendix A.
- 137 I also disagree with his recommendation to not include a similar rule to that which is included in the proposed Kaikōura District Plan, as suggested in the Regional Council's submission and as discussed earlier in my evidence. As discussed above, I have proposed wording of this rule in my Appendix 1.
- 138 I also note that if the Hearing Panel accept the overarching offsite flood effects rule sought by the Regional Council, as outlined earlier in my evidence then NH-R18 would no longer be required and should be deleted in its entirety.

Standard NH-S1

- 139 The Regional Council's submission on NH-S1 sought clarification regarding how the freeboard height will be determined. The submission also sought an amendment to NH-S1(1)(e)(iii) to change from the pWDP

of 1% AEP (1 in 200 year) storm surge event to 0.5% AEP (1 in 200 year) storm surge event.

- 140 I generally agree with the recommendations of Mr Willis in that they satisfy the Regional Council's request as they give effect to CRPS Policy 11.3.2. However, Mr Griffiths' evidence identifies a change to provide more consistency with the proposed High Hazard Area definition, to describe the flood scenarios more generally. I agree with Mr Griffiths' evidence, and this proposed amendment is set out in Appendix 1.

NH-S2

- 141 The Regional Council's submission sought to delete the permitted pathway for new natural hazard sensitive activities in the coastal flood assessment overlay.
- 142 I generally agree with Mr Willis's recommended amendments to NH-S2, however, Mr Griffiths' evidence identifies a change to provide more consistency with the proposed High Hazard Area definition, to describe the flood scenarios more generally. I agree with Mr Griffiths' evidence, and this proposed amendment is set out in Appendix 1.

NH-MD1 and NH-MD4

- 143 The Regional Council's submission sought that NH-MD1(7) and NH-MD4(6)(7) be deleted as it is not appropriate to reduce this risk as part of a non-notified process.
- 144 I agree with Mr Willis's recommendations in that any negative effects need to be considered first, as this goes some way to clarifying that risk is accounted for.

Hazardous substances

- 145 The Regional Council's submission on Hazardous Substances generally supported the pWDP in giving effect to the intent of the CRPS and the regional planning framework. The Council supported HS-O2, HS-P1, HS-P2, HS-R2, HS-R3 as notified.
- 146 The Council did however seek amendments to the introduction, HS-O1, HS-P3, HS-R1, and HS-MD1.

Objective HS-O2, Policies HS-P1, HS-P2 and Rules HS-R2 and HS-R3

147 The Regional Council's submission supported the objectives, policies and rules outlined above.

148 I support the recommendations of Ms Manhire on the objectives and policies listed above as they meet the hazardous substances provisions in the CRPS.

Objective HS-O1

149 The Regional Council sought in its submission that reference to all natural hazards is required, rather than just reference to flood hazards in Objective HS-O1. Reference to all natural hazards would ensure consistency with CRPS Policy 18.3.1 - Protection of sensitive areas and activities and CRPS Policy 18.3.2 – Avoid, remedy or mitigate adverse effects.

150 I agree with the amendments that Ms Manhire has recommended in her S42A report as they address the Regional Council's concerns. Ms Manhire has recommended that all natural hazards are included, providing consistency with the CRPS policies set out above.

Policy HS-P3

151 The Regional Council's submission on Policy HS-P3 sought that high hazard areas should be referred to in the policy rather than only flood hazards. The CRPS references high hazard areas in general which includes areas subject to freshwater flooding and coastal erosion and inundation.

152 I do not agree with the amendments that Ms Manhire has recommended in her S42A report to include high coastal flood hazard area and sea water inundation. I consider the policy should include reference to all high hazard areas as set out in the CRPS. Mr Willis in his S42A report has addressed the definition of High Hazard Area to include all flooding and for consistency, Policy HS-P3 should also refer to this. My recommended amendments are set out in Appendix 1 of my evidence.

Rule HS-R1

153 The Regional Council's submission sought to amend Rule HS-R1 to refer to high hazard areas rather than specifically flood hazards and the need to control the storage of hazardous substances in high flood hazard areas.

- 154 I agree with Ms Manhire's recommended amendments in her S42A report. I do note that Ms Manhire refers to the coastal flood assessment overlay. Through the Regional Council's submission on the Natural Hazards Chapter and the resulting JWS, this coastal flood assessment overlay has now been integrated into the high hazard overlay that includes both freshwater and coastal flooding. Therefore, reference should be made to the high hazard overlay.

Matters of Discretion HS-MD1

- 155 The Regional Council's submission on the Matters of Discretion in HS-MD1 sought that other natural hazards are referred to.
- 156 I agree with Ms Manhire's recommendation that all natural hazards are currently covered by the matters of discretion in HS-MD1 and therefore support that no amendments are required. This is consistent with Policy 11.3.5 of the CRPS.

Contaminated Land

- 157 The Regional Council's submission on Contaminated Land generally supported the pWDP. The Council supported CL-O1 and CL-P2 and opposed CL-P4. The Council sought amendments to CL-P1, CL-P3 and sought a new policy to discourage the creation of new contaminated land.

Objective CL-O1, Policies CL-P2 and CL-P4

- 158 The Regional Council's submission sought that Objective CL-O1 and Policies CL-P2 and CL-P4 be retained as notified.
- 159 I agree with Ms Manhire's recommendations regarding CL-O1 and CL-P2. However, I disagree with her recommendation to delete Policy CL-P4 and the reasons for this.
- 160 Ms Manhire has suggested that Policy CL-P2 addresses the disposal of contaminated soil and therefore there is no need for Policy CL-P4. In my view, CL-P2 seeks to ensure the best practice management of contaminated land by requiring applications for subdivision, use and development of contaminated land, or potentially contaminated land to include an investigation of the risks and to remediate the risks or manage the activities on contaminated land. It does not specifically

address the disposal of soil from contaminated land, and this is a concern for me.

- 161 I consider that Policy CL-P4 could be deleted but only if an amendment to CL-P2 is made to include the disposal of soil from contaminated land. This would ensure that the contaminated land policies are consistent with the CRPS, specifically CRPS Policy 17.3.2- Development of, or discharge from contaminated land. I include my suggested amendment in Appendix 1.

Policy CL-P1

- 162 The Regional Council's submission sought that the scope of Policy CL-P1 be broadened to also consider sites not listed on the Regional Council's Listed Land Use Register (**LLUR**) but which are known to be contaminated or have had activities onsite that warrants investigation.
- 163 Ms Manhire has accepted the Regional Council's submission and I agree with her amendments to reference District Council records, alongside the LLUR - this is consistent with CRPS Policy 17.3.1.

Policy CL-P3

- 164 The Regional Council's submission on Policy CL-P3 sought clarification on what is meant by the term 'natural values'.
- 165 I agree with Ms Manhire's recommended amendment to change 'natural values' to the words 'ecological values'. I consider this provides the clarification sought by the Regional Council.

New policy

- 166 In its submission, the Regional Council sought that a new policy be added to discourage the creation of new contaminated land, the reasons being that staff continue to identify contaminated land. Ms Manhire has rejected the submission, stating that the Contaminated Land chapter in the pWDP is focussed on the adverse effects of contaminated land rather than land use that causes land to become contaminated. She also states that it is not a function of the District Council under section 31 of the RMA and that neighbouring district councils do not have any provisions regarding the creation of contaminated land. Ms Manhire goes on to suggest that this is dealt with to an extent in Policy HS-P3.

167 I agree with Ms Manhire's recommendation. I agree that it is dealt with in a sense in the Hazardous Substances chapter of the pWDP, particularly in the rule framework regarding hazardous substances and the Matters of Discretion in MS-D1(4) and the level of risk in terms of the probability and potential consequences of an accident leading to the loss of control of hazardous substances.

CONCLUSION

168 In summary, I generally agree with the recommendations of the S42A report officers. I have however provided several amendments that in my view would help with clarity of the provisions, and to ensure that the CRPS is given effect to. The amendments also help to ensure that appropriate hazard mitigation can be achieved.

169 The key issues that my evidence addresses include:

- a. minor wording changes to address clarity issues;
- b. the addition of a new rule to address offsite flood effects in a more cohesive manner than was provided in the S42A report;
- c. the need for a more achievable permitted pathway in relation to flood hazard mitigation; and
- d. an amendment in relation to the disposal of contaminated soil.

Dated this 10th day of July 2023



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Joanne Mitten

Appendix 1 – Amendments sought to the pWDP through the Regional Council submission on Natural Hazards, Hazardous Substances and Contaminated Land

Provision	As notified	Council S42A Drafting	Canterbury Regional Council Relief Sought (in red)
High Hazard Area	<p>‘High flood hazard area’</p> <p>means:</p> <p>a. land where there is inundation by floodwater, and where the water depth (metres) x velocity (metres per second) is greater than or equal to 1, or where depths are greater than 1 metre, in a 0.2% Annual Exceedance Probability flood event</p>	<p><u>High Hazard Area means:</u></p> <p><u>a. land likely to be subject to coastal erosion; and</u></p> <p><u>b. land where there is inundation by floodwater and where the water depth (metres) x velocity (metres per second) is greater than or equal to 1, or where depths are greater than 1 metre, in a 0.2% Annual Exceedance Probability flood event.</u></p> <p><u>When determining a. and b. above, the cumulative effects of climate change over the next 100 years (based on latest national guidance) and all sources of flooding (including fluvial, pluvial, and coastal) must be accounted for.</u></p>	<p>High Hazard Area means:</p> <p>a. land likely to be subject to coastal erosion; and-or</p> <p>b. land where there is inundation by floodwater and where the water depth (metres) x velocity (metres per second) is greater than or equal to 1, or where depths are greater than 1 metre, in a 0.2% Annual Exceedance Probability flood event.</p> <p>When determining a. and b. above, the cumulative effects of climate change over the next 100 years (based on latest national guidance) and all sources of flooding (including fluvial, pluvial, and coastal) must be accounted for.</p>
Natural hazard sensitive activity	<p>means buildings which:</p> <p>a. contain one or more habitable rooms; and/or</p> <p>b. contain one or more employees (of at least one full time equivalent); and/or</p> <p>c. is a place of assembly;</p> <p>except that this shall not apply to:</p> <p>i. regionally significant infrastructure;</p> <p>ii. any attached garage or detached garage to a residential unit or minor residential unit that is not a habitable room;</p>	<p>means buildings which:</p> <p>a. contain one or more habitable rooms; and/or</p> <p>b. contain one or more employees (of at least one full time equivalent); <u>are serviced with a sewage system and connected to a potable water supply;</u> and/or</p> <p>c. is a place of assembly;</p> <p>except that this shall not apply to:</p> <p>i. regionally significant <u>infrastructure or critical</u> infrastructure;</p>	<p>means buildings which:</p> <p>a. contain one or more habitable rooms; and/or</p> <p>b. contain one or more employees (of at least one full time equivalent); <u>are serviced with a sewage system and connected to a potable water supply;</u> and/or</p> <p>is a place of assembly; except that this shall not apply to:</p> <p>i. regionally significant <u>infrastructure or critical</u> infrastructure;</p>

Provision	As notified	Council S42A Drafting	Canterbury Regional Council Relief Sought (in red)
	<ul style="list-style-type: none"> iii. any building with a footprint of less than 25m²; or iv. any building addition in any continuous 10-year period that has a footprint of less than 25m². 	<ul style="list-style-type: none"> ii. any attached garage or detached garage to a residential unit or minor residential unit that is not a habitable room; iii. any building with a footprint of less than 25m²; or iv. any building addition in any continuous 10-year period that has a footprint of less than 25m²; <u>or</u> v. <u>any building with a dirt/gravel or similarly unconstructed floor</u> 	<ul style="list-style-type: none"> ii. any attached garage or detached garage to a residential unit or minor residential unit that is not a habitable room; iii. any building with a footprint of less than 25m²; or iv. any building addition in any continuous 10-year period that has a footprint of less than 25m²; <u>or</u> v. <u>any building with a dirt/gravel or similarly unconstructed floor</u>
NH-P2	<p>Activities in high hazard areas for flooding within urban areas</p> <p>Manage subdivision, use and development for natural hazard sensitive activities within high flood hazard and high coastal flood hazard urban environments to ensure that:</p> <ul style="list-style-type: none"> 1. minimum floor levels are incorporated into the design of development to ensure the risk to life and potential for building damage from flooding is mitigated; and 2. the risk from flooding to surrounding properties is not significantly increased and the net flood storage capacity is not reduced; and 3. the conveyance of flood waters is not impeded; or 4. the nature of the activity means the risk to life and potential for building damage from flooding is low. 	<p>Activities in high hazard areas for flooding within urban areas</p> <p>Manage <u>Avoid or mitigate adverse effects arising from</u> subdivision, use and development for natural hazard sensitive activities within high flood hazard and high coastal flood hazard urban environments to ensure that:</p> <ul style="list-style-type: none"> 1. minimum floor levels are incorporated into the design of development to ensure the risk to life and potential for building damage from flooding is mitigated; and 2. the risk <u>from flooding to on</u> surrounding properties is not significantly increased <u>no more than minor</u> and the net flood storage capacity is not reduced; and 3. the conveyance of flood waters is not impeded; or 	<p>Activities in high hazard areas for flooding within urban areas</p> <p>Manage <u>Avoid or mitigate adverse effects arising from</u> subdivision, use and development for natural hazard sensitive activities within high flood hazard and high coastal flood hazard urban environments to ensure that:</p> <ul style="list-style-type: none"> 1. minimum floor levels are incorporated into the design of development to ensure the risk to life and potential for building damage from flooding is mitigated; and 2. the increased risk <u>from flooding to on</u> surrounding properties is not significantly increased <u>no more than minor</u> and the net flood storage capacity is not reduced; and 3. the conveyance of flood waters is not impeded; or 4. the nature of the activity means the risk to life and potential for building damage from flooding is low.

Provision	As notified	Council S42A Drafting	Canterbury Regional Council Relief Sought (in red)
		4. the nature of the activity means the risk to life and potential for building damage from flooding is low.	
NH-P3	<p>Activities in high hazard areas for flooding outside of urban areas</p> <p>Avoid subdivision, use and development for natural hazard sensitive activities outside urban environments in high flood hazard and high coastal flood hazard urban environments unless:</p> <ol style="list-style-type: none"> 1. the activity incorporates mitigation measures so that the risk to life, and building damage is low; 2. the risk from flooding to surrounding properties is not significantly increased; 3. the conveyance of flood waters is not impeded; and 4. the activity does not require new or upgraded community scale natural hazard mitigation works. 	<p>Activities in high hazard areas for flooding outside of urban areas</p> <p>Avoid subdivision, use and development for natural hazard sensitive activities outside urban environments in high flood hazard and high coastal flood hazard urban environments unless:</p> <ol style="list-style-type: none"> 1. the activity incorporates mitigation measures so that the risk to life, and building damage is low; 2. the risk from flooding to <u>on</u> surrounding properties is not significantly increased <u>no more than minor</u>; 3. the conveyance of flood waters is not impeded; and 4. the activity does not require new or upgraded community scale natural hazard mitigation works. 	<p>Activities in high hazard areas for flooding outside of urban areas</p> <p>Avoid subdivision, use and development for natural hazard sensitive activities outside urban environments in high flood hazard and high coastal flood hazard urban environments unless:</p> <ol style="list-style-type: none"> 1. the activity incorporates mitigation measures so that the risk to life, and building damage is low; 2. the increased risk from flooding to <u>on</u> surrounding properties is not significantly increased <u>no more than minor</u>; 3. the conveyance of flood waters is not impeded; and 4. the activity does not require new or upgraded community scale natural hazard mitigation works
NH-P4	<p>Activities outside of high hazard areas for flooding</p> <p>Provide for subdivision, use and development associated with natural hazard sensitive activities outside of high flood hazard and high coastal flood hazard urban environments where it can be demonstrated that:</p>	<p>Activities outside of high hazard areas for flooding</p> <p>Provide for subdivision, use and development associated with natural hazard sensitive activities outside of high flood hazard and high coastal flood hazard urban environments where it can be demonstrated that:</p>	<p>Activities outside of high hazard areas for flooding</p> <p>Provide for subdivision, use and development associated with natural hazard sensitive activities outside of high flood hazard and high coastal flood hazard urban environments where it can be demonstrated that:</p>

Provision	As notified	Council S42A Drafting	Canterbury Regional Council Relief Sought (in red)
	<ol style="list-style-type: none"> 1. the nature of the activity means the risk to life and potential for building damage from flooding is low; or 2. minimum floor levels are incorporated into the design of development to ensure building floor levels are located above the flood level so that the risk to life and potential for building damage from flooding is avoided; and 3. the risk from flooding to surrounding properties is not significantly increased and the net flood storage capacity is not reduced; and 4. the ability for the conveyancing of flood waters is not impeded. 	<ol style="list-style-type: none"> 1. the nature of the activity means the risk to life and potential for building damage from flooding is low; or 2. minimum floor levels are incorporated into the design of development to ensure building floor levels are located above the flood level so that the risk to life and potential for building damage from flooding is <u>mitigated</u> avoided; and 3. the risk from flooding to on surrounding properties is not significantly increased <u>no more than minor</u> and the net flood storage capacity is not reduced; and 4. the ability for the conveyancing of flood waters is not impeded. 	<ol style="list-style-type: none"> 1. the nature of the activity means the risk to life and potential for building damage from flooding is low; or 2. minimum floor levels are incorporated into the design of development to ensure building floor levels are located above the flood level so that the risk to life and potential for building damage from flooding is <u>mitigated</u> avoided; and 3. the <u>increased</u> risk from flooding to on surrounding properties is not significantly increased <u>no more than minor</u> and the net flood storage capacity is not reduced; and 4. the ability for the conveyancing of flood waters is not impeded.
NH-P7	<p>Additions to existing natural hazard sensitive activities</p> <p>Provide for additions to buildings for existing natural hazard sensitive activities where it can be demonstrated that:</p> <ol style="list-style-type: none"> 1. the additions provide for the continued use of the existing building; and 2. the change in on site risk from the building additions to life and property is low; and 3. the risk from the natural hazard to surrounding properties and people is not significantly increased. 	<p>Additions to existing natural hazard sensitive activities</p> <p>Provide for additions to buildings for existing natural hazard sensitive activities where it can be demonstrated that:</p> <ol style="list-style-type: none"> 1. the additions provide for the continued use of the existing building; and 2. the change in on site risk from the building additions to life and property is low; and 3. the risk from the natural hazard to on surrounding properties and people is not significantly increased <u>no more than minor</u>. 	<p>Additions to existing natural hazard sensitive activities</p> <p>Provide for additions to buildings for existing natural hazard sensitive activities where it can be demonstrated that:</p> <ol style="list-style-type: none"> 1. the additions provide for the continued use of the existing building; and 2. the change in on site risk from the building additions to life and property is low; and 3. the <u>increased</u> risk from the natural hazard to on surrounding properties and people is not significantly increased <u>no more than minor</u>

Provision	As notified	Council S42A Drafting	Canterbury Regional Council Relief Sought (in red)
NH-P14	<p>New infrastructure and upgrading of infrastructure within fault overlays</p> <p>Within the fault overlays:</p> <ol style="list-style-type: none"> 1. provide for new and upgrading of existing non critical infrastructure below and above ground in the Ashley Fault Avoidance Overlay where: <ol style="list-style-type: none"> a. it does not increase the risk to life or property from a natural hazard event; and b. it does not result in a reduction in the ability of people and communities to recover from a natural hazard event; 2. avoid new and upgrading of existing critical infrastructure below and above ground in the Ashley Fault Avoidance Overlay unless there is no reasonable alternative, in which case the infrastructure must be designed to: <ol style="list-style-type: none"> a. maintain, as far as practicable, its integrity and ongoing operation during and after natural hazard events; or b. be able to be reinstated in a timely manner; 3. enable small scale critical infrastructure and other infrastructure in the Fault Awareness Overlay, while ensuring that larger critical infrastructure does not increase the risk to life or property from natural hazard events unless: <ol style="list-style-type: none"> a. there is no reasonable alternative, in which case the infrastructure must be designed to maintain, as far as 	<p>New infrastructure and upgrading of infrastructure within fault overlays</p> <p>Within the fault overlays:</p> <ol style="list-style-type: none"> 1. provide for new and upgrading of existing not critical infrastructure below and above ground in the Ashley Fault Avoidance Overlay where: <ol style="list-style-type: none"> a. it does not increase the risk to life or property from a natural hazard event; and b. it does not result in a reduction in the ability of people and communities to recover from a natural hazard event; 2. avoid new and upgrading of existing critical infrastructure below and above ground in the Ashley Fault Avoidance Overlay unless there is <u>an operational need or functional need and</u> no reasonable alternative, in which case the infrastructure must be designed to: <ol style="list-style-type: none"> a. maintain, as far as practicable, its integrity and ongoing operation during and after natural hazard events; or b. be able to be reinstated in a timely manner; 3. enable small scale critical infrastructure and other infrastructure in the Fault Awareness Overlay, while ensuring that larger critical infrastructure does not increase the risk to life or property from natural hazard events unless: <ol style="list-style-type: none"> a. <u>there is an operational need or functional need or there is no reasonable alternative,</u> in which case the infrastructure must be 	<p>New infrastructure and upgrading of infrastructure within fault overlays</p> <p>Within the fault overlays:</p> <ol style="list-style-type: none"> 1. provide for new and upgrading of existing <u>non</u> critical infrastructure below and above ground in the Ashley Fault Avoidance Overlay where:

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	<p>practicable, its integrity and ongoing operation during and after natural hazard events; or</p> <p>b. be able to be reinstated in a timely manner.</p>	<p>designed to maintain, as far as practicable, its integrity and ongoing operation during and after natural hazard events; or</p> <p>b. be able to be reinstated in a timely manner.</p>	
NH-P16	Redevelopment and relocation in coastal hazard and natural hazard overlays	Redevelopment and relocation in coastal hazard and natural hazard overlays	Redevelopment and Rrelocation in coastal hazard and natural hazard overlays
NH-R4	<p>Below ground infrastructure and critical infrastructure</p> <p>Activity status: PER</p> <p>Where:</p> <p>1. the profile, contour or height of the land is not permanently raised by more than 0.25m when compared to natural ground level; and</p>	<p>Below ground infrastructure and critical infrastructure</p> <p>Activity status: PER</p> <p>Where:</p> <p>1. <u>the profile, contour or height of the land is not permanently raised by more than 0.25m when compared to natural ground level the activity does not exacerbate flooding on any other property by displacing or diverting floodwater on surrounding land in a 0.5% AEP event.</u></p>	<p>Below ground infrastructure and critical infrastructure</p> <p>Activity status: PER</p> <p>Where:</p> <p>1. <u>the profile, contour or height of the land is not permanently raised by more than 0.25m when compared to natural ground level the activity does not exacerbate flooding on any other property by displacing or diverting floodwater on surrounding land in events with an AEP of 0.5% or more. in a 0.5% AEP event.</u></p>
NH-R5	<p>Above ground infrastructure that is not critical infrastructure</p> <p>Activity status: PER</p> <p>Where:</p> <p>1. the profile, contour or height of the land is not permanently raised by more than 0.25m when compared to natural ground level; and</p>	<p>Above ground infrastructure that is not critical infrastructure</p> <p>Activity status: PER</p> <p>Where:</p> <p>1. <u>the profile, contour or height of the land is not permanently raised by more than 0.25m when compared to natural ground level the activity does not exacerbate flooding on any other property by displacing or diverting floodwater on surrounding land in a 0.5% AEP event; and</u></p>	<p>Above ground infrastructure that is not critical infrastructure</p> <p>Activity status: PER</p> <p>Where:</p> <p>1. <u>the profile, contour or height of the land is not permanently raised by more than 0.25m when compared to natural ground level the activity does not exacerbate flooding on any other property by displacing or diverting floodwater</u></p>

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			<u>on surrounding land in events with an AEP of 0.5% or more. in a 0.5% AEP event.</u>
NH-R8	<p>Maintenance of existing community scale natural hazard mitigation works</p> <p>All Zones</p> <p>Activity status: PER</p> <p>Activity status where compliance is not achieved: N/A</p>	No amendments	<p>Maintenance, of existing community scale natural hazard mitigation works</p> <p>All Zones</p> <p>Activity status: PER</p> <p><u>The rules within any other chapter shall not apply to the activity provided for in NH-R8.</u></p> <p>Activity status where compliance is not achieved: N/A</p>
NH-R9			<p>Maintenance of existing community scale natural hazard mitigation works</p> <p><u>Add as a note to Rule NH-R9 :</u></p> <p><u>“if the upgrading / construction of new community scale natural hazard mitigation works triggers a consent requirement in any other chapter of this Plan, then this rule is to be the single applicable rule”</u></p>
NH-R10			<p>Construction of new community scale natural hazard mitigation works</p> <p><u>Add as a note to Rule NH-R10 :</u></p> <p><u>“if the upgrading / construction of new community scale natural hazard mitigation works triggers a consent requirement in any other chapter of this Plan, then this rule is to be the single applicable rule”</u></p>

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<p><u>New Rule- Above ground earthworks</u></p>			<p><u>All zones within the: Urban Flood Assessment Overlay or Non-urban flood assessment overlay</u></p> <p><u>Permitted activity:</u></p> <p><u>Above ground earthworks, buildings and new structures that:</u></p> <p><u>a. will not exacerbate flooding on another property through the diversion or displacement of floodwaters; or</u></p> <p><u>b. meet the definition of land disturbance.</u></p> <p><u>Restricted Discretionary:</u></p> <p><u>Where:</u></p> <p><u>a. Compliance with rule NH-RX(1) is not achieved.</u></p> <p><u>Matters of discretion are restricted to:</u></p> <p><u>1. The likely extent of flooding on the site;</u></p> <p><u>2. The potential for the activity to exacerbate flooding on any other site; and</u></p> <p><u>3. The extent to which the earthworks, building or new structure impedes the free passage of floodwaters</u></p> <p><u>consequential changes to the following:</u></p> <p><u>delete:</u></p> <p><u>NH-R1(2)(b), NH-R2(2)(c), NH-R3(2)(e)(2), NH-R4, NH-R5(1), NH-R5(2)(b), NH-R6(1), NH-R6(3a), NH-R17(1), NH-R17(2), NH-R18</u></p>

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NH-S1	<p>Flood Assessment Certificate</p> <p>NH-S1(1)(e)</p> <p>i. flooding predicted to occur in a 0.5% AEP (1 in 200-year) Localised Rainfall Event plus up to 500 mm freeboard; or</p> <p>ii flooding predicted to occur in a 0.5% AEP (1 in 200-year) Ashley River/Rakahuri Breakout Event concurrent with a 5% AEP (1 in 20-year) Localised Rainfall Event plus up to 500 mm freeboard; or</p> <p>iii. flooding predicted to occur in a <u>1%</u> AEP (1 in 100-year) Storm Surge Event concurrent with a 5% AEP (1 in 20-year) River Flow Event with sea level rise based on an RCP8.5 climate change scenario, plus up to 500 mm freeboard.</p>	<p>Flood Assessment Certificate</p> <p>NH-S1(1)(e)</p> <p>i. flooding predicted to occur in a 0.5% AEP (1 in 200-year) Localised Rainfall Event plus up to 500 mm freeboard; or</p> <p>ii flooding predicted to occur in a 0.5% AEP (1 in 200-year) Ashley River/Rakahuri Breakout Event concurrent with a 5% AEP (1 in 20-year) Localised Rainfall Event plus up to 500 mm freeboard; or</p> <p>iii. flooding predicted to occur in a <u>4-0.5%</u> AEP (1 in <u>4</u>200-year) Storm Surge Event concurrent with a 5% AEP (1 in 20-year) River Flow Event with sea level rise based on an RCP8.5 climate change scenario, plus up to 500 mm freeboard.</p>	<p>Flood Assessment Certificate</p> <p>NH-S1(1)(e)</p> <p>i. flooding predicted to occur in a 0.5% AEP (1 in 200-year) Localised Rainfall Event plus up to 500 mm freeboard; or</p> <p>ii flooding predicted to occur in a 0.5% AEP (1 in 200-year) Ashley River/Rakahuri Breakout Event concurrent with a 5% AEP (1 in 20-year) Localised Rainfall Event plus up to 500 mm freeboard; or</p> <p>iii flooding predicted to occur in a <u>1-0.5%</u> AEP (1 in <u>1</u>200-year) Storm Surge Event concurrent with a 5% AEP (1 in 20-year) River Flow Event with sea level rise based on an RCP8.5 climate change scenario, plus up to 500 mm freeboard.</p> <p><u>i. flooding predicted to occur in a 0.5% AEP flood event, accounting for the cumulative effects of climate change over the next 100 years (based on latest national guidance) and all sources of flooding (including fluvial, pluvial, and coastal).</u></p>
NH-S2	<p>Coastal Flood Assessment Certificate</p> <p>NH-S2(1):</p> <p>d. the minimum land level shall equal:</p> <p>i. the flooding level predicted to occur in a 1% AEP (1 in 100--year) Storm Surge Event concurrent with a 5% AEP (1 in 20-year) River Flow Event with sea level rise of 1m based on an RCP8.5 climate change scenario;</p>	no amendments	<p>Coastal Flood Assessment Certificate</p> <p>NH-S2(1):</p> <p>d. the minimum land level shall equal:</p> <p>i. the flooding level predicted to occur in a 1% AEP (1 in 100--year) Storm Surge Event concurrent with a 5% AEP (1 in 20-year) River Flow Event with sea level rise of 1m based on an RCP8.5 climate change scenario;</p>

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			<p><u>i. flooding predicted to occur in a 0.5% AEP flood event, accounting for the cumulative effects of climate change over the next 100 years (based on latest national guidance) and all sources of flooding (including fluvial, pluvial, and coastal).</u></p>
CL-P2	<p>Best practice management of contaminated land</p> <p>Require applications for subdivision, use or development of contaminated land, or potentially contaminated land, to include an investigation of the risks and to remediate the contamination, or manage activities on contaminated land, to protect the health of people and the environment. The remediation or mitigation works for contaminated land shall be undertaken in such a way to not pose further risk to human health or the environment than if remediation had not occurred.</p>	No amendments	<p>Best practice management of contaminated land</p> <p>Require applications for subdivision, use or development of contaminated land, or potentially contaminated land, <u>along with the disposal of contaminated soil</u>, to include an investigation of the risks and to remediate the contamination, or manage activities on contaminated land, to protect the health of people and the environment. The remediation or mitigation works for contaminated land shall be undertaken in such a way to not pose further risk to human health or the environment than if remediation had not occurred.</p>
HS-P3	<p>Hazardous substance storage and flood hazards</p> <p>Within the Non-Urban Flood Assessment Overlay, Urban Flood Assessment Overlay and the Kaiapoi Fixed Minimum Finished Floor Level Overlay, any hazardous substance shall be stored to minimise the risk of spillage or leakage and contamination of land and water in a flood event.</p>	<p>Hazardous substance storage and flood hazards</p> <p>Within the Non-Urban Flood Assessment Overlay, Urban Flood Assessment Overlay and the Kaiapoi Fixed Minimum Finished Floor Level Overlay, <u>and High Coastal Flood Hazard Area</u> any hazardous substance shall be stored to minimise the risk of spillage or leakage and contamination of land and water in a flood event <u>or from sea water inundation.</u></p>	<p>Hazardous substance storage and flood hazards</p> <p>Within the Non-Urban Flood Assessment Overlay, Urban Flood Assessment Overlay and the Kaiapoi Fixed Minimum Finished Floor Level Overlay, <u>and High Coastal Flood Hazard Area</u> <u>High Hazard Area</u> any hazardous substance shall be stored to minimise the risk of spillage or leakage and contamination of land and water in a flood event <u>or from sea water inundation.</u></p>