

**Before the Hearings Panel
At Waimakariri District Council**

Under Schedule 1 of the Resource Management Act 1991

In the matter of the Proposed Waimakariri District Plan

Between **Various**

Submitters

And **Waimakariri District Council**

Respondent

**Memorandum on Changes to the Council s42A Officer's Right of Reply on the
Natural Hazards Chapter on behalf of the Waimakariri District Council**

Date: 31/10/23

MEMORANDUM

- 1 My full name is Andrew Peter Willis. I am a planning consultant engaged by the Council to support the development of the Natural Hazards Chapter. I am authorised to provide this evidence on behalf of the District Council.

- 2 I prepared a Right of Reply report for the Natural Hazards Chapter dated 1st September 2023. The Hearings Panel requested that Appendix 2 of that report (the submissions accept reject table) be further updated with amended reasoning for the changes recommended.

- 3 Attached is an updated Right of Reply Report with an updated Appendix 2. To differentiate this updated report from the original report I have included an additional date on the front cover and shown the changes to Appendix 2 in blue text (with underline and ~~strike-out~~ as required).



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Andrew Willis
(Waimakariri District Council)

**Before the Hearings Panel
At Waimakariri District Council**

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In the matter of the Proposed Waimakariri District Plan

Between **Various**

Submitters

And **Waimakariri District Council**

Respondent

**Council s42A Officer's Right of Reply on the Natural Hazards Chapter on
behalf of the Waimakariri District Council**

**Date: 1st September 2023, then Updated 19th October 2023 *with an updated
Appendix 2 (Accept / Reject Submission Table)***

INTRODUCTION

- 1 My full name is Andrew Peter Willis. I am a planning consultant engaged by the Council to support the development of the Natural Hazards Chapter. I am authorised to provide this evidence on behalf of the District Council.
- 2 I have read the evidence and tabled statements provided by submitters relevant to the Section 42A Report – Natural Hazards.
- 3 The purpose of this statement is to provide a right of reply to matters raised in evidence before the PDP Hearings Panel on the Natural Hazards Chapter. It includes a response to further directions / questions from the Hearings Panel contained in Minute 7 in response to evidence presented at the hearing.

QUALIFICATIONS, EXPERIENCE AND CODE OF CONDUCT

- 4 I have the qualifications and experience as set out in Appendix G in my s42A report. I confirm that I am continuing to abide by the Code of Conduct for Expert Witnesses set out in the Environment Court's Practice Note 2023.

SCOPE OF REPLY

- 5 In Minute 7 the Hearings Panel made directions / asked questions based on matters arising at the hearing and in response to submitter evidence presented. My response to these are set out below.
- 6 I have also commented on other matters arising as a result of the evidence tabled or presented and the Panel's questions of myself and other experts at the hearing.

7 As a result of responding to the above matters, I have recommended changes to the Natural Hazards Chapter, as set out in **Appendix 1** to this report.

8 **Appendix 2** contains an updated accept / reject table as a result of the changes I am recommending.

9 **Appendix 3** contains statements from Mr Bacon and Mr Debski on my pre-hearing responses to Panel questions and this Right of Reply report.

HEARINGS PANEL DIRECTIONS / QUESTIONS

10 I have responded to the directions / questions in the order provided in Minute 7, repeating the direction / question first, then providing my response.

Direction: Please provide statements from Mr Bacon and Mr Debski which address whether they support your recommended amendments to the chapter, as set out in your response to questions and your reply report.

11 Responses have been received from Mr Bacon and Mr Debski who have commented on my pre-hearing Panel question responses and my Right of Reply report, including my recommended amendments, as set out in Appendix 3 of this report. These confirm they generally agree with my proposed amendments.

Direction: Please set out your understanding of how Ms Dale's approach to the flood maps and Assessment Area would work, compared to what you recommend. In setting out the comparison, please consider the steps plan users would need to take, and the relative differences in costs. Please confer with Mr Bacon in responding to this question.

- 12 Ms Dale’s approach would require a developer to identify that a document outside of the plan identifies areas that are susceptible to flooding. They would identify this by noting the advice notes or other statements in the Natural Hazards Chapter (including within the standards NH-S1 and NH-S2) and then going to the maps outside of the plan to determine this. Once they have identified that their property is within the external mapped overlay (generated using the proposed overlay definition within MS Dale’s evidence) they would presumably then apply for a flood assessment certificate which would likely tell them much the same information as is on the overlay. This is because Ms Dale’s flood definition, that generates the overlay, is based on the finished floor level calculation metrics that informs the flood assessment certificate output. I note in their submission Kainga Ora did not seek to remove the flood assessment requirement so I presume this, and any costs associated with it, would still apply. By comparison, the Council’s approach would show the assessment areas on the planning map (which for the non-urban overlay is larger – see below in paragraph 14) and this would come up via the property search function on the District Plan Map. The applicant would then apply for a flood assessment certificate. The applicant could choose to use the external GIS viewer at any point for guidance as to the likely level of flooding, or they may or not – it is not a required step.
- 13 The approach proposed by Ms Dale is best described as a hybrid approach as the other overlays (e.g. the fault avoidance overlay) would continue to be mapped in the District Plan.
- 14 Ms Dale’s proposed definition that identifies areas susceptible to flooding would identify areas that flood consistent with the notified mapping. However, under the proposed approach agreed with Environment Canterbury (ECAN) and supported by the Joint Witness Statement (JWS) of Mr Bacon and Mr Griffiths, the non-urban overlay also includes all ‘flat’ land whether there is modelled flood hazard

shown or not. The Council's amended approach is to identify any non-urban area that most likely floods and provide a pathway for assessing the actual flood risk (via the flood assessment certificate). As such, the Kainga Ora approach would shrink the overlay in the non-urban, or rural areas of the district and could potentially exclude some areas that may flood, as explained in the evidence of Mr Bacon and Mr Griffiths and their JWS.

- 15 I note Ms Dale indicated at the hearing in response to questions that the definition of urban and non-urban flood assessment areas may need further work. Mr Bacon has suggested the non-urban definition needs amending to be consistent with the amended non-urban overlay under the JWS and that this could be done by adding a fourth bullet point under the non-urban assessment area that captures all flat land. The actual definition of that is spelled out in the JWS.
- 16 I note however that while Kainga Ora's submission sought that the overlays be deleted from the PDP and included as non-statutory map layers in the Waimakariri District Natural Hazards Interactive Viewer, they did not submit to change how the overlay itself was produced or its extent, only that it should be outside of the plan so it can be improved and updated as inputs change. This change could possibly be made however under the scope of ECan's submission [316.51] which sought to amend the notified layers to capture all of the areas that have been identified as susceptible to flooding and which led to the JWS and overlay change.
- 17 In terms of Council costs, the costs of the two approaches are not too dissimilar. While Ms Dale's approach means the District Plan Map needs to never be updated even if the modelling changes, the Council's approach might require the flood assessment area to be updated when the LiDAR and modelling is redone which is estimated to be every 6-8 years. Any plan change required to incorporate the amended layer would most likely be bundled with another plan change and it would be

a straightforward plan change with likely only minor changes (e.g. it could be limited to the overlay extent only). I note that the extent of the biggest layer – the non-urban layer, is unlikely to change as it is not based strictly on flood modelling, as set out in the JWS. Rather it includes all ‘flat’ land whether there is modelled flood hazard shown or not. If an area was required to get a flood assessment certificate that actually no longer required one after the modelling was re-done, but before a plan change was undertaken, it is likely that the Council could advise this at no cost to the applicant.

18 I note that there is also a cost to the Council to ensure the GIS viewer is up-to-date, robust and continually working. Under its current and Council proposed use, the GIS viewer is merely a helpful informative guide on flood depths and areas. However, if the overlays were removed from the District Plan then the guide would need to be updated and regularly maintained to ensure it is properly working.

19 In terms of Applicant costs, both approaches still rely on a flood assessment certificate and therefore these costs are equivalent. However, the Council’s approach will likely result in more certificates being applied for if Ms Dale’s non-urban flood overlay definition was applied. If amended as suggested by Mr Bacon, then the same number of certificates would be required, irrespective of approach and therefore the costs to applicants would be the same.

20 Having considered the submission of Kainga Ora, the evidence of Ms Dale, and the likely costs and benefits of the two approaches, I remain firmly of the view that the additional certainty of having a mapped layer in the District Plan (that also comes up when using the property search function) is the best approach and is consistent for the other mapped natural hazards and therefore I remain of the view that the various submissions on this matter by Kainga Ora should be rejected. The main cost difference (if there is one for plan changes versus keeping the GIS viewer functioning) falls on the Council and this is a

cost the Council is willing to bear to provide greater certainty to their community.

Direction: Please respond to Ms Irvine and Ms Mitten's suggested response to managing consents for the Regional Council's community flood, erosion and drainage protection works.

- 21 For my s42A report, based on my understanding of ECan's flood management structures, I assessed where I thought they might be captured by the PDP district wide chapters. Ms Irvine has provided more information on ECan's flood management structures and identified specific rules that she thinks would capture these. Ms Irvine identifies NATC-R2 (paragraph 34(a) in her evidence) as a problematic rule that needs assessing. This rule refers to planting of non-indigenous vegetation and expressly states (in clause 1(a)) that planting is permitted if for erosion or flood control purposes where undertaken by or on behalf of the Regional Council or the District Council or their nominated contractor or agent. This appears to permit ECan's required planting for flood control and I therefore remain unclear why this rule has been identified by Ms Irvine as being problematic. Ms Irvine identified ECO-R1 (paragraph 34(b) in her evidence) and considered that Community Scale Natural Hazard Mitigation would not meet the exceptions in the rule. I noted in my s42A report (paragraph 461) that maintenance of ECan's flood management scheme might not meet the requirements in ECO-R1 but that this could be resolved by adding an exclusion to ECO-R1 (as stated in paragraph 464). I accept that the existing SASM-R4 exclusion for stopbanks may not go far enough to permit all of ECan's flood management requirements.
- 22 Irrespective of my assessment of the various exclusions, I do agree with Ms Irvine that maintenance of existing community schemes should be permitted, and that a simpler approach would be to exempt the rules from any other chapter applying to NH-R8, which covers the

maintenance of existing community scale natural hazard mitigation works.

23 In addition to maintenance, Ms Irvine also addresses upgrading and the construction of new community scale natural hazard mitigation works (beginning at paragraph 38 in her evidence), recommending that NH-R9 (upgrading schemes) and NH-R10 (new schemes) are the single applicable rules, such that the provisions in other chapters do not apply. It is questionable whether these changes are within scope of ECan's submission, which focusses on maintenance and operation of existing schemes, however in a broad sense operation could include upgrading and installing new structures as part of an existing flood management scheme which I understand can be extensive, and I therefore consider on balance that they are within scope.

24 I have discussed the merits of exempting ECan's schemes with the authors for the relevant district wide chapters, and noting the approach in the Natural Hazards Chapter and the matters of discretion in NH-MD2 which refer to the relevant district wide chapters, I consider this approach is workable and acceptable, with the exception of the construction of new community scale hazard mitigation schemes within listed and unlisted Significant Natural Areas (SNAs) covered in ECO-R1 and which require the removal of indigenous vegetation in ECO-R2 and for SASM-R4 and SASM-R5. I remain of the opinion that a resource consent should be required for such activities.

25 I therefore recommend amending the Natural Hazards Chapter 'how to interpret and apply use the rules section' as follows:

Activity Rules

How to interpret and apply the rules

1.

8. The rules in the following District Wide chapters do not apply to community scale natural hazard mitigation activities addressed in rules NH-R8, NH-R9 and NH-R10:

- a. CE - Coastal Environment;
- b. ECO – Ecosystems and Indigenous Biodiversity, with the exception of ECO-R1 and ECO-R2 which apply to NH-R10;
- c. NATC – Natural Character;
- d. SASM – Sites and Areas of Significance to Maori;
- e. NFL – Natural Features and Landscapes;
- f. EW – Earthworks.

26 Consequential changes are required to delete existing references to flood management schemes, insert statements on how to interpret and apply the rules, and for the SASM chapter, to include the relevant SASM provisions within NH-R9 and NH-R10. For the Earthworks Chapter, because I am recommending the above changes for community scale natural hazard mitigation works and also the inclusion of a new rule for flowpath disruption and stormwater displacement from earthworks (see the diversion and displacement of floodwater section later section in this report) within the natural hazards chapter, Rules EW-R4 (earthworks for community scale natural hazard mitigation works) and EW-R5 (earthworks within an overland flowpath), together with policy EW-P2 can be deleted.

27 These recommended changes are set out in Appendix A, with the exception of the ECO chapter. I have spoken to the s42A officer for the ECO chapter and understand that this chapter is scheduled for Hearing Stream 11. In addition to the above changes, further amendments are required to ECO-R1 and ECO-R2 to make the construction of new schemes restricted discretionary (as opposed to non-complying which would otherwise apply). An additional matter of discretion would be required that enables consideration of the operational and functional needs and consideration of alternatives for new community scale schemes. Given these are relatively significant changes, it is

recommended that all the required changes are addressed by the ECO chapter author at Hearing Stream 11. The scope for all these changes is provided by ECan submission [316.81].

- 28 In my s42A report, in response to ECan’s submissions on NH-R8 (ECan [316.81]), NH-R9 (ECan [316.82]) and NH-R10 (ECan [316.83]) I recommended that ECan’s submissions are accepted in part. Based on the changes I am proposing here, I recommend that ECan’s submissions are still accepted in part as some District Wide rules are anticipated to continue to apply (e.g. ECO-R1 and ECO-R2) or are proposed to be incorporated into the Natural Hazards Chapter (e.g. SASM-R5 into NH-R10). Given this, there are no changes required to the submission Accept / Reject tables.

Direction: Please also respond to the rest of Ms Mitten’s suggested amendments, beyond those you have already addressed in your opening statement and response to questions.

Recommended Amendments to the definition of ‘high hazard’

- 29 In his evidence (paragraph 13) Mr Griffiths identifies that the ‘and’ between clauses a and b should be an ‘or’. I agree. The change is set out in Appendix A of this report. In my s42A report I recommended accepting the submission by ECan [316.54] on this definition and therefore no changes are required to the submission Accept / Reject tables.

Attached garages and the definition of natural hazard sensitive activities

- 30 In his evidence (paragraphs 24 – 26) Mr Griffiths recommends that attached garages are excluded from the definition (as an exclusion) so that they would be considered to be hazard sensitive. He considers garages attached to modern residential units often have the same

potential for flood damage as the rest of the building and are integral to the structure and use of the building.

- 31 Attached garage use varies considerably. During drafting it was decided to exclude attached garages, however this was an 'on balance' decision. I have sought further advice from Mr Bacon who is comfortable following Mr Griffiths recommendation for attached garages. I am also comfortable with Mr Griffiths recommendation for the reasons he provided and therefore recommend 'attached garages' is deleted from clause ii in the definition as set out in Appendix A. This change was set out in Ms Mitten's Appendix 1 (page 33). ECan submitted on this definition [316.55] seeking it be amended to ensure that all high value buildings are captured and as such, I consider this change to be within scope of ECan's original submission. In my s42A report I recommended that ECan's [316.55] submission was accepted. Therefore, this change does not require any change to the submission Accept / Reject tables.
- 32 Mr Griffiths also commented on the need to insert the word 'increased' in policies NH-P2, NH-P3, NH-P4, NH-P7 and this change is shown In Ms Mitten's Appendix 1. This matter was also queried by the Hearings Panel in their questions before the hearing (in relation to para 74 of the s42a report). In my response to the Hearings Panel I noted that the word 'increase' was a useful addition. I agree with Mr Griffiths on the need for this addition and the changes proposed by Ms Mitten. I therefore recommend that the listed policies are amended by the insertion of the words 'increase in' as set out in Appendix A of this report.
- 33 In my s42A report I recommended that the ECan [316.49] submission on this matter was accepted, and therefore no changes are required to the submission Accept / Reject tables.

Diversion and displacement of floodwater provisions

- 34 A number of submissions were received on the rules for infrastructure which permitted earthworks associated with infrastructure up to 0.25m as a pragmatic approach to managing flood displacement and flowpath disruption for infrastructure. Such a rule was not considered necessary for natural hazard sensitive activities (i.e. residential and commercial buildings) as these needed to obtain a flood assessment certificate to identify the minimum floor level, which would also identify if the building was proposed within a flowpath.
- 35 In response to submissions, I recommended changes to remove the 0.25m height and replace it with an approach based on the Kaikoura and Selwyn district plan approaches that simply sought to capture activities that exacerbated flooding on other properties, and added a reference to a 0.5% AEP event. This change was made to NH-R4, NH-R5, NH-R6 and for the coastal flood assessment overlay, NH-R17 and NH-R18. In his evidence (paragraphs 33 to 43), Mr Griffiths states that it is inappropriate to specify a single magnitude flood event for effects to be assessed, and suggests that wording should be 'in events with an AEP of 0.5% or more' or similar. Noting a possible gap in the provisions (and with reference to the earthworks chapter), Mr Griffiths recommended an alternative approach that utilises a single permitted activity rule to provide a simpler, more effective and risk based means of addressing offsite flood effects. This rule is contained in Appendix 1 of Ms Mitten's evidence.
- 36 I consider that the alternative approach of a single rule as identified by Mr Griffiths and drafted by Ms Mitten is a good approach as it provides a simple single rule for both natural hazard sensitive activities and infrastructure and avoids the need for an earthworks rule in the earthworks chapter. I therefore recommend the changes proposed in Appendix A to this report, which involves the replacement of NH-R4 with the proposed new rule and new matter of discretion (NH-MD5) and deletion of references to flooding displacement in NH-R5, NH-R6,

NH-R17 and NH-R18. Given the application of the new rule, references to flowpaths can also be removed from NH-R1, NH-R2 and NH-R3, consistent with the evidence of Ms Mitten (paragraphs 115 and 119). Given the Natural Hazard chapter rules are split into non-coastal and coastal sections, a similar rule is required in the coastal section of the rules. I recommend this is a new rule NH-R18 replacing the existing NH-R18 that covered flood waters displacement and flowpath disruption. To avoid confusion, as the proposed new rules cover buildings and structures, an advice note has been included clarifying that the other chapter rules applying to buildings and structures also apply.

- 37 I consider that with the introduction of the new NH-R4 which covers earthworks, buildings and structures, NH-R5 which covers above ground infrastructure that is not critical is no longer needed and I therefore recommend it is deleted as set out in Appendix 1. The clauses in this rule sought to allow infrastructure where it was unlikely to exacerbate flooding on other properties through: restricting raising the height of land to 0.25m or less (clause 1); requiring new infrastructure to have a small footprint to avoid displacement (clause 2); or be limited to a customer connection, again to manage scale (clause 3). These clauses were included to reduce the need to apply for a Flood Assessment Certificate to demonstrate that the infrastructure was not proposed to be located within a flowpath.
- 38 In terms of the submission Accept / Reject tables, in my s42A report I accepted in part the ECan [316.79] submission on NH-R4 (and the related submission [316.87] on NH-R18) as, while it sought removal of the 0.25m fill approach and replacement of a Kaikoura-like approach, ECan's submission also sought that any filling above ground level is not in an overland flowpath. I stated that whilst not completely in accordance with the relief sought by ECan, I considered that the amended rule would achieve a similar outcome. As the proposed new

amended rule in NH-R4 does not expressly refer to overland flowpaths I remain of the view that the ECan [316.79] submission (and related submission [316.87] on NH-R18) remain accepted in part and as such no changes are required to the submission Accept / Reject tables.

Simplification of NH-S1 and NH-S2

39 In his evidence (paragraphs 44 to 48) Mr Griffiths recommends changes to the wording on NH-S1 and NH-S2 to describe the flood scenarios more generally, consistent with the recommended 'high hazard' definition. The recommended wording is set out in Appendix 1 to Ms Mitten's evidence.

40 I have discussed these proposed amendments with Mr Bacon and Mr Debski who agree that the recommended amendments are acceptable. I understand that the proposed amendments would provide greater flexibility to enable minimum floor levels to be based on other modelled scenarios, however, I consider that the current approach, while less flexible, provides more certainty and transparency to plan users as specifying the modelling parameters enables it to be more easily replicated by other technical experts. I consider this certainty and transparency is advantageous.

41 Irrespective of merit, I have reviewed ECan's submissions on NH-S1 [316.88] and NH-S2 [316.89] and their more general submissions and do not conder there is scope to make this change. ECan's submission on NH-S1 covered criteria for setting appropriate freeboard levels and referring to a 0.5% AEP, while the submission on NH-S2 sought to amend NH-S2 to delete permitted pathway for new natural hazard sensitive activities in the coastal flood assessment overlay. None of their general submissions can be sufficiently applied to this matter. As such, I do not recommend this change is made.

42 I have however recommended changes to ensure NH-S1 and NH-S2 are more consistent and clear on how climate change is to be considered. I consider there is scope to make this as a consequential change under ECan [316.61] which sought a new objective so that the chapter recognised and provided for the effects of climate change. New Objective NH-O5 refers to recognising and providing for the effects of climate change when assessing natural hazard risk. The changes proposed to NH-S1 and NH-S2 help to clarify that risk assessment to be undertaken.

Direction: Please respond to Ms McLeod's suggested amendments set out in her evidence. In doing so, please provide your opinion as to the scope of the amendments vis-à-vis the Transpower submission.

43 In her evidence (paragraph 23) Ms McLeod identifies those areas that she considers remain outstanding. These are:

- Policy NH-P14 New infrastructure and upgrading of infrastructure within fault overlays;
- Rule NH-R17 Above ground critical infrastructure; and
- Matters of Discretion NH-MD3 Natural hazards and infrastructure.

44 I have addressed these matters below. However, I note that there are additional amendments in Ms McLeod's Appendix 1 that are not covered in her evidence, such as the deletion of clause 2 in NH-R6. Given the absence of evidence on these changes, my assessment relates only to those matters identified as outstanding in her evidence at paragraph 23.

45 With regard to NH-P14, in its submission Transpower [195.59] sought targeted changes to NH-P14 as set out in Ms McLeod's evidence (paragraph 24) and in Appendix B to this report. I accept that the Ashley Fault Avoidance overlay is not defined as a high hazard area in the CRPS. However, ECan technical advice is that critical infrastructure should be avoided in this overlay irrespective of the CRPS definition and

I note that the principal reasons and explanation refers to ‘significant’ natural hazard exposure rather than ‘high hazard’. I disagree with Ms McLeod when she states that CRPS Policy 11.3.4 is not relevant to Policy NH-P14 [as the Ashley Fault Avoidance Overlay is not high hazard]. The second sentence of CRPS Policy 11.3.4 expressly states that “in relation to all areas [i.e. both within and outside of high hazard areas] critical infrastructure must be designed to maintain, as far as practicable, its integrity and function during natural hazard events. This part of the policy clearly applies within the Ashley Avoidance Overlay. A key issue with Ms McLeod’s suggested additional amendments in paragraph 32 of her evidence (and in Appendix 1 to her evidence) is that they capture all critical infrastructure, not just Transpower’s assets, and therefore include hospitals, medical centres, fire, police and ambulance stations. These activities have a different risk profile to transmission lines. In addition, I consider that these additional changes are not within the scope of Transpower’s original submission on this policy.

46 Noting that the Ashley Fault Avoidance overlay is not strictly high hazard, but that CRPS Policy 11.3.4 (and indeed 11.3.5 General Risk Management Approach) does still apply, I recommend that NH-P14 is amended as set out in Appendix 1. These changes to NH-P14 are more consistent with the application of CRPS Policy 11.3.4 and are consistent with, and therefore within scope of Transpower’s submission (Transpower [195.59]). In my s42A Report I recommended that the Transpower [195.59] submission on NH-P14 was rejected. Given the changes I am recommending in Appendix 1, I now recommended that this submission is accepted. I have included an amended submission Accept / Reject table in Appendix 2 showing this.

47 With regard to the suggested amendments to NH-R17, Transpower’s submission [195.63] generally supported NH-R17 but was concerned that it does not anticipate linear infrastructure, and particularly

infrastructure that is made up of a number of structures, such as a transmission line and it sought a limited amendment to clarify that the standard applies singly to each structure. Transpower also considered that the 'default' rules are overly complex and onerous and that the most stringent activity status that should apply is restricted discretionary.

- 48 Consistent with Transpower's submission, the s42A amendments proposed make NH-R17 apply on a per structure basis, and other amendments are proposed (consistent with the amendments proposed for NH-R6), that permit overhead transmission lines as these are clearly not subject to water damage. The remaining outstanding matter is the status of buildings as non-complying activities if these are proposed in areas subject to sea water inundation greater than 1m in height (buildings subject to less than 1m of sea water inundation are either permitted or restricted discretionary). Ms McLeod's evidence is that these should be restricted discretionary activities, as opposed to non-complying as currently proposed under NH-R17.
- 49 Buildings (and their contents) associated with Transpower's assets can be susceptible to damage in 1m or more of flooding and as these are critical infrastructure, CRPS Policy 11.3.4 is relevant which states that new critical infrastructure will be located outside of high hazard areas unless there is no reasonable alternative. However, I accept Ms McLeod's evidence where she states that Transpower's assets are uninhabitable and that they have a functional need to locate within high hazard areas. I also acknowledge the NPSET and the specific risk profile of transmission lines. Unfortunately, Ms McLeod's suggested amendments in Appendix 1 to her evidence captures all critical infrastructure, including hospitals, medical centres, fire, police and ambulance stations and therefore makes all these restricted discretionary, in addition to Transpower's buildings. I therefore propose the amendment set out in Appendix 1 to address this. I

consider this change is within the scope of the Transpower [195.63] submission.

50 In my s42A report I recommended accepting in part the submission by Transpower [195.63]. Despite the change in relation to buildings described above, I still recommend this submission is only accepted in part, as the submission sought to delete entirely Standard 2 and I have not recommended this change, but a different change.

51 Regarding NH-MD3, I remain of the opinion that the time taken to reinstate critical infrastructure (clause 4) is a relevant consideration as covered in the principal explanation and reasons of CRPS Policy 11.3.4. I therefore recommend that clause 4 remains in NH-MD3. However, I do agree with changing 'practical alternative' to reasonable alternative', consistent with my recommended changes to Policy NH-P13 and as set out paragraph 43 of Ms McLeod's evidence. This was requested in Transpower's [195.65] submission and is therefore within scope. As I recommended accepting in part Transpower's [195.65] submission in my s42A report, no change is required to the submission Accept / Reject tables.

Direction: Please consider the recommended wording of your recommended NH-O5, in particular considering the outcome that is sought by this objective.

52 I have reconsidered NH-O5 and how this could be interpreted and applied. It is intended to apply when assessing natural hazard risk. I therefore recommend NH-O5 is amended as set out in Appendix 1 to refer to this.

Question: As the Panel noted during the course of the hearing, we have received differing advice between officers on the status of carbon sinks, compared to carbon forest, and woodlots. In particular, if a carbon forest is not encapsulated within the definition of a woodlot and is not

subject to the NES-PF and in particular Regulation 14(2), what would the implication be in respect to NH-R7 and the potential ice hazard that may arise?

- 53 GRUZ R2 requires a 10m setback for carbon forestry, woodlots and production forestry that is smaller than 1ha. The NES-PF contains provisions for managing ice for plantation forestry. Woodlots is proposed to be removed from NH-R7 due to the overlap with GRUZ R2. If a carbon forest is not captured by the definition of a woodlot this is not an issue because GRUZ R2 specifically covers carbon forests as well. In any case I understand that the definition for woodlot is proposed to be reworded to refer to carbon forests instead of carbon sinks.

OTHER MATTERS ARISING

- 54 Having reviewed and considered the evidence presented and the Panel's questions of myself and other experts I also recommend that Policy NH-P19 is reworded to 'encourage the adoption' of a precautionary approach, as set out in Appendix 1. This is consistent with the rest of the policy, which is an 'encourage' policy.
- 55 Some minor wording and structural changes have been made to the chapter to simplify and standardise the wording where possible, simplify the clause numbering or add advice notes. These have been attributed to submissions where relevant, with the remainder attributed to RMA Schedule 1 Clause 16(2).¹

¹ RMA Schedule 1, Clause 16(2): A local authority may make an amendment, without using the process in this schedule, to its proposed policy statement or plan to alter any information, where such an alteration is of minor effect, or may correct any minor errors

56 As signalled in my summary statement, Appendix A now includes footnotes for all the recommended changes, including those discussed in this report.

57 Based on instructions contained within Minute 6 from the Hearings Panel I understand that s42A report authors are to provide updated s42A reports showing fixed errors in tracked changes. In my summary statement (dated 25th July) presented at the hearing identified I identified the following errors in the s42A report:

- i. NH-P14 should refer to 'non critical' infrastructure as opposed to 'not critical' infrastructure;
- ii. The word 'not' has been erroneously omitted from the proposed rewording of NH-R18 in paragraph 567. It is however correct in Appendix A of the s42A report;
- iii. The change made to NH-S1 to refer to a 0.5% AEP for storm surge events should also have been made to NH-S2;
- iv. Rule NH-R7 starts at '2', when the numbering should start at '1'.

58 Matters i, iii and iv are shown correctly in Appendix 1 to this report. An updated s42A report will be provided separately by the Hearings administrator.



.....
Andrew Willis
(Waimakariri District Council)

Appendix 1 - Recommended Amendments to the Natural Hazards Chapter

Where I recommended changes in response to submissions in my s42A report, these are shown as follows:

- Text recommended to be added to the Proposed Plan is underlined.
- Text recommended to be deleted from the Proposed Plan is ~~struck through~~.

Where I recommend changes in response to the Panel's questions, hearing evidence and other matters arising from the hearing these changes to the s42A version are shown in blue text (with underline and ~~strike out~~ as appropriate). This also applies to Appendix 2.

NH - Matepā māhorahora - Natural Hazards

Introduction

The District is susceptible to a wide range of natural hazards, including flooding, fault rupture, liquefaction, tsunami, slope instability, and sea water inundation from storm surges.

When natural hazards occur, they can result in damage to property and infrastructure, and lead to a loss of human life. It is therefore important to identify areas impacted by natural hazards and to restrict or manage subdivision, use and development, including infrastructure, relative to the natural hazard risk posed. This is in order to reduce the risk of damage to property and infrastructure and the potential for loss of human life.

The District Plan focuses on the following natural hazards as they are the hazards that present the greatest risk to life, property and infrastructure, and whose future effects can be addressed through appropriate measures:

- Flooding, including from sea water storm surges coupled with sea level rise;

- Fault rupture; and
- Liquefaction.

Where ~~freshwater~~ flooding may occur, a certification process enables a site specific assessment based on up-to-date modelling. ~~The approach to freshwater flood management in Kaiapoi involves the use of identified fixed minimum floor levels. The minimum fixed floor levels are shown on the planning map and have been determined from delineating areas or basins within Kaiapoi, with reference to different flood hazards and risks associated with pump failure.~~²

The main coastal hazard affecting the District is sea water inundation, which occurs through the Waimakariri River and Ashley River/Rakahuri channels. The sea water inundation extends beyond the mapped Coastal Environment inland. Because of this, and the fact that the sea water inundation extent in the District is affected by concurrent freshwater flows present in the rivers, coastal hazards are located within the Natural Hazards Chapter, rather than as a separate coastal hazard contained in the Coastal Environment Chapter. Areas potentially subject to sea water inundation are identified by the Coastal Flood Assessment Overlay.

Flooding and sea level rise are influenced by climate change. It is predicted that rainfall events will become more intense, storm events will become more common and the sea level will rise. The development of the flood assessment and coastal flood assessment overlays incorporate current climate change predictions. For the Waimakariri District, the modelling has been based on the climate change scenario of RCP 8.5, with 1m of sea level rise over the next 100 years.

Modelling indicates that the District is not susceptible to coastal erosion over the next 100 years, even when accounting for climate change, and as such the District Plan does not contain provisions for this hazard.

² ECan [316.52]

Slope stability is addressed through the earthworks provisions. These require appropriate measures and are incorporated into earthworks design to maintain stability of sloping sites.

The District is also susceptible to natural hazards such as tsunamis, severe winds, and ground shaking from earthquakes. These hazards are primarily managed by other statutory instruments or processes including the Building Act 2004, Civil Defence Emergency Management Act 2002 and the Local Government Act 1974.

A risk-based approach is taken which factors in the need to allow people and communities to use their property and undertake activities, while also ensuring that life or significant assets are not harmed or lost as a result of a natural hazard event. ~~The RPS recognises that for existing urban areas the community has already accepted some natural hazards risk in order to support the ongoing development of the District's existing towns. The RPS accordingly requires development in high hazard areas in these locations to be either avoided or mitigated.~~³ The District Plan maps do not identify high flood hazard areas or high coastal flood hazard areas, rather these are identified through the Flood Assessment Certificate process. This enables the most up-to-date technical information to be used. However, as a guide, areas that are potentially high hazard can be identified through the Waimakariri District Natural Hazards Interactive Viewer. This interactive viewer does not form part of the District Plan.

The provisions in this chapter are consistent with the matters in Part 2 - District Wide Matters - Strategic Directions and give effect to matters in Part 2 - District Wide Matters - Urban Form and Development.

³ ECan [316.50]

Other potentially relevant District Plan provisions

As well as the provisions in this chapter, other District Plan chapters that contain provisions that may also be relevant to natural hazards include:

- Earthworks: this chapter contains provisions for earthworks occurring within a natural hazard overlay.
- Subdivision: this chapter contains provisions for subdivision being undertaken within a natural hazard overlay.
- Special Purpose Zone (Kāinga Nohoanga): how the natural hazards provisions apply in the Special Purpose Zone (Kāinga Nohoanga) is set out in Appendices SPZ(KN)-APP1 to SPZ(KN)-APP5 of that chapter.
- Any other District wide matter that may affect or relate to the site.
- Zones: the zone chapters contain provisions about what activities are anticipated to occur in the zones.

Objectives	
NH-O1	<p>Risk from natural hazards</p> <p>New subdivision, land use and development <u>other than infrastructure</u>.⁴</p> <p>1 manages natural hazard risk, including coastal hazards, in the existing urban environment to ensure that any increased risk to people and property is low;⁵</p> <p>2-1. is avoided in the Ashley Fault Avoidance Overlay and high hazard areas for flooding ⁶outside of the urban environment where the risk to life and property are unacceptable; and</p>

⁴ Summerset Retirement Village [207.10] and ECan [316.57] for all these changes

⁵ ECan [316.57]

⁶ ECan [316.54]

	<p>2. <u>avoids or mitigates natural hazard risk in the existing urban environment to ensure that any increased risk to people life and property is acceptable; and⁷</u></p> <p>3. outside of the urban environment, in all other instances,⁸ is undertaken to ensure natural hazard risk, including coastal hazard risk,⁹ to people and property is avoided or mitigated and the ability of communities to recover from natural hazard events is not reduced.</p>
NH-O2	<p>Infrastructure and critical infrastructure¹⁰ in natural hazard overlays</p> <p>For infrastructure and critical infrastructure¹¹ within natural hazard overlays:</p> <ol style="list-style-type: none"> 1. existing infrastructure, <u>including critical infrastructure,</u>¹² can be upgraded, maintained and replaced; 2. new non-critical infrastructure does not increase the risk to life or property from natural hazard, including coastal hazard, events and is designed to maintain its integrity and ongoing function during and after natural hazard events, or is easily replaced; 3. <u>new</u>¹³ critical infrastructure is avoided in high flood hazard areas and high coastal flood hazard areas,¹⁴ unless there is a functional need or operational need for the location or route.
NH-O3	Natural hazard mitigation

⁷ ECan [316.57]

⁸ ECan [316.57]

⁹ ECan [316.57]

¹⁰ Federated Farmers [414.93]

¹¹ Federated Farmers [414.93]

¹² Federated Farmers [414.93]

¹³ RMA Schedule1 Clause 16(2) change – clause 1 covers existing infrastructure – clause 3 is intended to cover new infrastructure.

¹⁴ ECan [316.54]

	Adverse effects on people, property, infrastructure and the environment resulting from methods used to manage natural hazards are avoided or, where avoidance is not possible, mitigated.
NH-O4	<p><u>Natural defences features</u> ¹⁵</p> <p>Natural <u>defences features</u> and systems are maintained to reduce the susceptibility of people, communities and property and infrastructure from natural hazard events.</p>
<u>NH-O5</u>	<p><u>Climate change</u></p> <p><u>The effects of climate change, and its influence on sea levels and the frequency and severity of natural hazards, are recognised and provided for when assessing natural hazard risk.</u>¹⁶</p>
Policies	
NH-P1	<p>Identification of natural hazards and a risk-based approach</p> <p>Identify natural hazards, including coastal hazards, through the use of overlays and assess the risk for the management of subdivision, use and development within the overlays based on:</p> <ol style="list-style-type: none"> 1. the sensitivity of the building occupation to loss of life, damage to property from a natural hazard and the ability for communities to recover after a natural hazard event; and 2. the level of hazard presented to people and property from a natural hazard, recognising that climate change will alter the frequency and severity of some natural hazard events.

¹⁵ ECan [316.60]

¹⁶ ECan [316.61]

<p>NH-P2</p>	<p>Activities in high hazard areas for flooding within urban areas</p> <p>Manage Avoid or mitigate adverse effects arising from¹⁷subdivision, use and development for natural hazard sensitive activities within high flood hazard and high coastal flood hazard¹⁸-urban environments to ensure that:</p> <ol 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 <u>increase in</u>¹⁹ risk from flooding to <u>on</u> surrounding properties is not significantly increased <u>no more than minor</u>²⁰ 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>NH-P3</p>	<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 hazard²¹urban 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 <u>increase in</u>²² risk from flooding to <u>on</u> surrounding properties is not significantly increased <u>no more than minor</u>²³; 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>NH-P4</p>	<p>Activities outside of high hazard areas for flooding</p>

¹⁷ ECan [316.63]

¹⁸ ECan [316.54]

¹⁹ ECan [316.49]

²⁰ ECan [316.49]

²¹ ECan [316.54]

²² ECan [316.49]

²³ ECan [316.49]

	<p>Provide for subdivision, use and development associated with natural hazard sensitive activities outside of high flood hazard and high coastal flood hazard²⁴-urban environments where it can be demonstrated that:</p> <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 mitigated avoided,²⁵ and 3. the increase in²⁶ risk from flooding to on surrounding properties is not significantly increased no more than minor²⁷ and the net flood storage capacity is not reduced; and 4. the ability for the²⁸ conveyancing of flood waters is not impeded.
NH-P5	<p>Activities within the Fault Awareness Overlay and Ashley Fault Avoidance Overlay</p> <p>For activities within fault overlays:</p> <ol style="list-style-type: none"> 1. only allow subdivision, use and development for natural hazard sensitive activities in the Ashley Fault Avoidance Overlay where the risk to life or property is low; and 2. manage subdivision in the Fault Awareness Overlay so that the risk to life and property is low.
NH-P6	<p>Subdivision within the Liquefaction Hazard Overlay</p> <p>Manage subdivision within the Liquefaction Hazard Overlay to ensure that the risk to life and property is low.</p>
NH-P7	<p>Additions to existing natural hazard sensitive activities</p>

²⁴ ECan [316.54]

²⁵ ECan [316.63]

²⁶ ECan [316.49]

²⁷ ECan [316.49]

²⁸ ECan [316.49]

	<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>increase in</u>²⁹ risk from the natural hazard to <u>on</u> surrounding properties and people is not significantly increased <u>no more than minor</u>.³⁰
NH-P8	<p>Subdivision, use and development other than for any natural hazard sensitive activities</p> <p>Allow for subdivision, use and development associated with activities that are not natural hazard sensitive activities within all natural hazard overlays as there is a low risk to life and property.</p>
NH-P9	<p>Community scale nNatural hazard mitigation works³¹</p> <p>Natural hazard mitigation works:</p> <ol style="list-style-type: none"> 1. undertaken by the Crown, the Regional Council or the District Council are enabled where community scale natural hazard mitigation works are necessary to protect existing communities from natural hazard risk which cannot reasonably be avoided, and any adverse effects on the values of any identified <u>SNA</u>,³² ONL, ONF, SAL, scheduled natural character areas, the coastal environment, and Sites and Areas of Significance to Māori are mitigated; or 2. not undertaken by the Crown, the Regional Council or the District Council, will only be acceptable where: <ol style="list-style-type: none"> a. the natural hazard risk cannot reasonably be avoided; b. any adverse effects of those works on the values of any areas identified as <u>SNA</u>,³³ ONL, ONF, SAL, scheduled

²⁹ ECan [316.49]

³⁰ ECan [316.68]

³¹ MoE [277.28]

³² DoC [419.58]

³³ DoC [419.58]

	<p>natural character areas and the coastal environment, and on sites and areas of significance to Māori are avoided, remedied or mitigated in accordance with the provisions in those chapters;³⁴</p> <p>c. the mitigation works do not transfer or create unacceptable hazard risk to other people, property, infrastructure or the natural environment; and</p> <p>d. the mitigation works do not involve the construction of private flood mitigation measures such as stopbanks, or floodwalls to protect new hazard sensitive activities as these works could³⁵ result in significant residual risk to life or property if they fail.</p>
NH-P10	<p>Maintenance and operation of existing infrastructure</p> <p>Allow for <u>Enable</u>³⁶ the operation, maintenance, replacement, minor upgrading, repair and removal of all existing infrastructure in identified natural hazard overlays.</p>
NH-P11	<p>New below ground infrastructure and upgrading of infrastructure outside of high hazard areas</p> <p>Provide for new and upgrading of existing below ground infrastructure outside of high flood hazard and high coastal flood hazard³⁷ areas, where:</p> <ol style="list-style-type: none"> 1. if located within a flood assessment or coastal flood assessment overlay, the original ground level is reinstated at completion of the works; 2. it does not increase the risk to life or property from natural hazard events; 3. it does not result in a reduction in the ability of people and communities to recover from a natural hazard event; and 4. it is designed to maintain reasonable and safe operation during and after a natural hazard event.

³⁴ ECan [316.82]

³⁵ MoE [277.28]

³⁶ Transpower [195.57]

³⁷ ECan [316.54]

<p>NH-P12</p>	<p>New below ground infrastructure and upgrading of infrastructure within high flood ³⁸hazard areas</p> <p>Provide for the installation of new and upgrading of existing below ground infrastructure in high flood hazard or high coastal flood hazard ³⁹areas where:</p> <ol style="list-style-type: none"> 1. the infrastructure does not exacerbate the natural hazard risk or transfer the risk to another site; 2. the conveyance of flood waters is not impeded; 3. there is a functional need or operational need for the infrastructure to be located in a high flood hazard or high coastal flood hazard ⁴⁰area and there are no practical alternatives; ⁴¹ and 4. the location and design of the infrastructure address relevant natural hazard risk and appropriate measures have been incorporated into the design to provide for the continued operation.
<p>NH-P13</p>	<p>New above ground critical infrastructure and upgrading of critical infrastructure within high flood hazard areas</p> <p>Only allow for the new and upgrading of existing above ground critical infrastructure in high flood hazard or high coastal flood hazard ⁴²areas where:</p> <ol style="list-style-type: none"> 1. there is a functional need or operational need for that location, <u>including as a result of the linear nature of some infrastructure,</u> ⁴³ and there are no practical <u>reasonable</u> ⁴⁴ alternatives; 2. the location and design of the infrastructure address relevant natural hazard risk and appropriate measures have been incorporated into the design to provide for the continued operation; and

³⁸ ECan [316.54]

³⁹ ECan [316.54]

⁴⁰ ECan [316.54]

⁴¹ Waimakariri Irrigation Limited [210.6]

⁴² ECan [316.54]

⁴³ Waka Kotahi [275.22]

⁴⁴ Transpower [195.58]

	<p>3. the infrastructure does not exacerbate the natural hazard risk or transfer the risk to another site.</p>
<p>NH-P14</p>	<p>New <u>infrastructure</u> and upgrading of infrastructure <u>and critical infrastructure</u> ⁴⁵ 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. <u>only allow avoid</u> ⁴⁶ new and upgrading of existing critical infrastructure below and above ground in the Ashley Fault Avoidance Overlay <u>unless where there is an operational need or functional need and no reasonable alternative, in which case the infrastructure must be is</u> designed to:⁴⁷ <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 an operational or functional need or ⁴⁸ there is no reasonable alternative, in which case the infrastructure must: <ol style="list-style-type: none"> a. be designed to 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.

⁴⁵ Federated Farmers [414.93]

⁴⁶ Transpower [195.59]

⁴⁷ Transpower [195.59]

⁴⁸ Transpower [195.59]

<p>NH-P15</p>	<p>Natural features providing natural hazard resilience</p> <p>Protect natural features which assist in avoiding or reducing the impacts from natural hazards, such as natural ponding areas, wetlands, water body margins and riparian margins, dunes, berms and beaches⁴⁹ from inappropriate subdivision, use and development and restore, maintain or enhance the functioning of these features.</p>
<p>NH-P16</p>	<p>Redevelopment <u>Land use change</u>⁵⁰ and relocation in coastal hazard and natural hazard overlays</p> <p>Encourage redevelopment, or⁵¹ changes in land use where that would reduce the risk of adverse effects from natural hazards, including managed retreat and designing for relocation or recoverability from natural hazard events.</p>
<p>NH-P17</p>	<p>Hard engineering natural hazard mitigation within the coastal environment</p> <p>Only allow hard engineering natural hazard mitigation within the coastal environment that reduces the risk of natural hazards when:</p> <ol style="list-style-type: none"> 1. soft engineering measures would not provide an appropriate level of protection and it can be demonstrated that there are no other reasonable alternatives;

⁴⁹ CA & GJ McKeever [111.72], John Stevenson [162.75] Chloe Chai and Mark McKitterick [256.72] and Keith Godwin [418.79]

⁵⁰ ECan [316.74]

⁵¹ ECan [316.74]

	<p>2. the construction of hard engineering measures will not increase the risk from coastal hazards on adjacent properties that are not protected by the hard engineering measures;</p> <p>3. where managed retreat has not been adopted and there is an immediate risk to life or property from the natural hazard;</p> <p>4. it avoids the modification or alteration of natural defences <u>features</u> ⁵²and systems in a way that would compromise their function as natural defences; and</p> <p>5. significant adverse effects on natural defences and systems from those measures are avoided, and any other adverse effects are avoided, remedied or mitigated.⁵³</p>
<p>NH-P18</p>	<p>Fire and ice <u>hazards risks</u>⁵⁴</p> <p>Manage wildfire and ⁵⁵ vehicle crash risk on roads affected by ice hazards through restrictions on the planting of woodlots and shelterbelts.</p>
<p>NH-P19</p>	<p>Other natural hazards</p> <p>Encourage the consideration of <u>a risk-based approach for</u> ⁵⁶other natural hazards as part of subdivision, use and development <u>to achieve an acceptable level of risk, and where there is uncertainty in the</u></p>

⁵² CA & GJ McKeever [111.72], John Stevenson [162.75] Chloe Chai and Mark McKitterick [256.72] and Keith Godwin [418.79]

⁵³ ECan [316.75]

⁵⁴ Federated Farmers [414.96]

⁵⁵ Federated Farmers [414.96]

⁵⁶ ECan [316.76]

	<p><u>likelihood or consequences of a natural hazard event, encourage the adoption of a precautionary approach.</u> ⁵⁷</p>
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Activity Rules

How to interpret and apply the rules

1. Some sites may have more than one overlay applying. The rules of all the applicable overlays apply.
- ~~2. For rules that refer to the Kaiapoi Fixed Minimum Finished Floor Level Overlay, the minimum floor level is specified in the planning map.~~⁵⁸
3. Rules that refer to a Flood Assessment Certificate or Coastal Flood Assessment Certificate require a certificate to be obtained from the District Council to determine compliance with the rule. The alternative is to apply for resource consent as set out in the rule.
4. The District Council will issue a certificate, upon application, in accordance with the published Council guidance on the matter.
5. Certificates are valid for three years from the date of issue. If a land use consent is required, the five year period provided under the RMA to give effect to the resource consent overrides the three year certificate lifespan.
6. The Flood Assessment Certificate and Coastal Flood Assessment Certificate specify circumstances when required minimum building floor levels or land levels will not be provided.
7. The AEP flood event risk level, minimum floor levels and overland flow path locations are to be determined by reference to:
 - a. the most up to date models, maps and data held by the District Council and the Regional Council; and
 - b. any information held by, or provided to, the District Council or the Regional Council that relates to flood risk for the specific land.

8. The rules in the following District Wide chapters do not apply to community scale natural hazard mitigation activities addressed in rules NH-R8, NH-R9 and NH-R10: ⁵⁹

- a) CE - Coastal Environment;
- b) ECO – Ecosystems and Indigenous Biodiversity, with the exception of ECO-R1 and ECO-R2 which apply to NH-R10;

⁵⁷ ECan [316.76]

⁵⁸ ECan [316.52]

⁵⁹ ECan [316.82]

- c) [NATC – Natural Character](#);
- d) [SASM – Sites and Areas of Significance to Maori](#);
- e) [NFL – Natural Features and Landscapes](#); and
- f) [EW – Earthworks](#).

Non-Coastal Hazards

NH-R1	Natural hazard sensitive activities	
<p>Urban Flood Assessment Overlay</p> <p>Kaiapoi Fixed Minimum Finished Floor Level Overlay⁶⁰</p>	<p>Activity status: PER</p> <p>Where:</p> <ol style="list-style-type: none"> 1. the building is erected to the level specified in an existing consent notice <u>decision</u>⁶¹ that is less than five years old; or 2. the building: <ol style="list-style-type: none"> a. does not exceed the permitted building coverage for the zone; and i. if located within the Kaiapoi Fixed Minimum Finished Floor Level Overlay, the building has a finished floor level equal to or higher than the minimum finished 	<p>Activity status where compliance is not achieved: RDIS</p> <p>Matters of discretion are restricted to:</p> <p style="text-align: center;">NH-MD1 - Natural hazards general matters</p> <p>Notification</p> <p>An application for a restricted discretionary activity under this rule is precluded from being publicly notified, but may be limited notified.</p>

⁶⁰ ECan [316.52]

⁶¹ ECan [316.77]

	<p>floor level shown on the planning map; or</p> <p>ii. i. if not located within the Kaiapoi Fixed Minimum Finished Floor Level Overlay,⁶²</p> <p>b. the building has a finished floor level equal to or higher than the minimum finished floor level as stated in a Flood Assessment Certificate issued in accordance with NH-S1;⁶³ and</p> <p>b. is not located within an overland flow path as stated in a Flood Assessment Certificate issued in accordance with NH-S1.⁶³</p>	
NH-R2	Natural hazard sensitive activities	
Non-Urban Flood	Activity status: PER	Activity status where compliance with NH-R2 (1),

⁶² ECan [316.52]

⁶³ ECan [316.79]

<p>Assessment Overlay</p> <p>Rural Zones⁶⁴</p>	<p>Where:</p> <ol style="list-style-type: none"> 1. the building is erected to the level specified in an existing consent notice <u>decision</u>⁶⁵ that is less than five years old; or 2. if located within the Non-Urban Flood Assessment Overlay,⁶⁶ the building: <ol style="list-style-type: none"> a. is not located on a site within a high flood⁶⁷ hazard area as stated in a Flood Assessment Certificate issued in accordance with NH-S1; and b. has a finished floor level equal to or higher than the minimum finished floor level as stated in a Flood Assessment Certificate issued in accordance with NH-S1; and c. is not located within an overland flow path as stated in a Flood Assessment Certificate issued in accordance with NH-S1; or⁶⁸ 3. if the activity is a residential unit or a minor residential unit and is located outside of the Non-Urban Flood Assessment Overlay and located within 	<p>NH-R2 (2)(b), NH-R2 (2)(e) and NH-R2 (3) is not achieved:</p> <p>RDIS</p> <p>Matters of discretion are restricted to:</p> <p style="padding-left: 40px;">NH-MD1 - Natural hazards general matters</p> <p>Activity status where compliance with NH-R2 (2)(a) is not achieved: NC</p> <p>Notification</p> <p>An application for a restricted discretionary activity under this rule is precluded from being publicly notified, but may be limited notified.</p>
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⁶⁴ ECan [316.78]

⁶⁵ ECan [316.77]

⁶⁶ ECan [316.78]

⁶⁷ ECan [316.54]

⁶⁸ ECan [316.79]

	<p>Rural Zones, it has a finished floor level that is either:</p> <ul style="list-style-type: none"> i. 400mm above the natural ground level; or ii. is equal to or higher than the minimum finished floor level as stated in a Flood Assessment Certificate issued in accordance with NH-S1.⁶⁹ 	
NH-R3	Natural hazard sensitive addition to existing natural hazard sensitive activities	
<p>Urban Flood Assessment Overlay Kaiapoi Fixed Minimum Finished Floor Level Overlay⁷⁰ Non-Urban Flood</p>	<p>Activity status: PER</p> <p>Where:</p> <ol style="list-style-type: none"> 1. the addition to a building does not result in a new or additional natural hazard sensitive activity establishing on the site; and 2. the addition: <ul style="list-style-type: none"> a. is not located within the Ashley Fault Avoidance Overlay; or b. is erected to the level specified in an existing subdivision consent notice decision or on an approved subdivision consent plan⁷² that is 	<p>Activity status where compliance is not achieved: RDIS</p> <p>Matters of discretion are restricted to:</p> <p style="text-align: right;">NH-MD1 - Natural hazards general matters</p> <p>Notification</p> <p>An application for a restricted discretionary activity under this rule is precluded from being</p>

⁶⁹ ECan [316.78]

⁷⁰ ECan [316.52]

⁷² ECan [316.77]

<p>Assessment Overlay</p> <p>Ashley Fault Avoidance Overlay</p> <p>Rural Zones ⁷⁴</p>	<p>less than five years old; or</p> <p>e. if located in the Kaiapoi Fixed Minimum Finished Floor Level Overlay, any building footprint addition has a finished floor level equal to or higher than the minimum finished floor level shown on the planning map; or ⁷³</p> <p>d. <u>if located within the Non-urban Flood Assessment Overlay, the addition is located on a site outside of a high hazard area as stated in a Flood Assessment Certificate issued in accordance with NH-S1;</u> ⁷⁴</p> <p>e. if located within any Flood Assessment Overlay, the building footprint addition is:</p> <ul style="list-style-type: none"> i. located on a site outside of a high flood hazard area as stated in a Flood Assessment Certificate issued in accordance with NH-S1; and ⁷⁵ ii. <u>is not located within an</u> 	<p>publicly notified, but may be limited notified.</p>
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⁷¹ ECan [316.78]

⁷³ ECan [316.52]

⁷⁴ Summerset [207.13]

⁷⁵ Summerset [207.13]

	<p>overland flow path as stated in a Flood Assessment Certificate issued in accordance with NH-S1; and⁷⁶</p> <p>iii. has a finished floor level equal to or higher than the minimum finished floor level as stated in a Flood Assessment Certificate issued in accordance with NH-S1;⁷⁷ or</p> <p>f. if the activity is a residential unit or a minor residential unit and is located outside of the Non-Urban Flood Assessment Overlay and located within Rural Zones, it has a finished floor level that is either:</p> <ul style="list-style-type: none"> i. 400mm above the natural ground level; or ii. is equal to or higher than the minimum finished floor level as stated in a Flood Assessment Certificate issued in accordance with NH-S1.⁷⁷ 	
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⁷⁶ ECan [316.79]

⁷⁷ ECan [316.78]

<p>Urban Flood Assessment Overlay</p> <p>Kaiapoi Fixed Minimum Finished Floor Level Overlay</p> <p>Non-Urban Flood Assessment Overlay</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 <u>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>Activity status where compliance is not achieved: RDIS</p> <p>Matters of discretion are restricted to:</p> <p>NH MD3—Natural hazards and infrastructure</p> <p>Notification</p> <p>An application for a restricted discretionary activity under this rule is precluded from being publicly notified, but may be limited notified.</p>
	<p>Advisory Note</p> <ul style="list-style-type: none"> • This rule applies in addition to EI R1 to EI R56. 	
<p>NH R5⁸⁰</p>	<p>Above ground infrastructure that is not critical infrastructure</p>	
<p>Urban Flood Assessment Overlay</p> <p>Kaiapoi Fixed Minimum</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</p>	<p>Activity status where compliance is not achieved: RDIS</p> <p>Matters of discretion are restricted to:</p> <p>NH MD3—Natural hazards and infrastructure</p>

⁸⁰ ECan [316.79] for the entire rule

<p>Finished Floor Level Overlay</p> <p>Non-Urban Flood Assessment Overlay</p>	<p>compared to natural ground level <u>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>⁸¹</p> <p><u>1. new infrastructure or upgraded an extension to existing</u>⁸² <u>infrastructure:</u></p> <p style="padding-left: 40px;">a. <u>has a footprint of less than 10m²; or</u></p> <p style="padding-left: 40px;">b. <u>is not located within an overland flow path as stated in a Flood Assessment Certificate issued in accordance with NH S1; or</u>⁸³</p> <p style="padding-left: 40px;"><u>b. c. is limited to a customer connection; or</u></p>	<p>Notification</p> <p>An application for a restricted discretionary activity under this rule is precluded from being publicly notified, but may be limited notified.</p>
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⁸¹ ECan [316.79]

⁸² Transpower [195.63]

⁸³ ECan [316.79]

	<p><u>e. d. is for a temporary military training activity.</u>⁸⁴</p>	
	<p>Advisory Note</p> <ul style="list-style-type: none"> • This rule applies in addition to EI R1 to EI R56. 	
NH-R65	<p>Above ground critical infrastructure</p> <p><u>This rule does not apply to roads.</u>⁸⁵</p>	
<p>Fault Awareness Overlay</p> <p>Urban Flood Assessment Overlay</p> <p>Kaiapoi Fixed Minimum Finished Floor</p>	<p>Activity status: PER</p> <p>Where:</p> <p><u>1. the infrastructure is a road</u>⁸⁷ <u>and does not exacerbate flooding on any other property by displacing or diverting floodwater on surrounding land in a 0.5% AEP event;</u>⁸⁸</p>	<p>Activity status where compliance is not achieved: RDIS</p> <p>Matters of discretion are restricted to:</p> <p>NH-MD3 - Natural hazards and infrastructure</p> <p>Notification</p> <p>An application for a restricted discretionary activity under this rule is</p>

⁸⁴ NZDF [166.31]

⁸⁵ Waka Kotahi [275.23]

⁸⁷ Waka Kotahi [275.23]

⁸⁸ ECan [316.79]

<p>Level Overlay⁸⁶</p> <p>Non-Urban Flood Assessment Overlay</p>	<p>1.2 if located with the Fault Awareness Overlay, new critical infrastructure or an extension to existing upgraded critical⁸⁹ infrastructure has a footprint of less than 100m² per structure;⁹⁰ and</p> <p>2.3 2. if located within a Flood Assessment Overlay or the Kaiapoi Fixed Minimum Finished Floor Level Overlay⁹¹ new or upgraded critical infrastructure⁹²:</p> <p>a. the profile, contour or height of the land is not permanently raised by more than 0.25m when compared to natural</p>	<p>precluded from being publicly notified, but may be limited notified.</p>
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⁸⁶ ECan [316.52]

⁸⁹ RMA Schedule 1 clause 16(2) – replacing ‘extension to existing’ with the defined term ‘upgrading’

⁹⁰ Transpower [195.61]

⁹¹ ECan [316.52]

⁹² RMA Schedule 1 clause 16(2) – replacing ‘extension to existing’ with the defined term ‘upgrading’, and a clause restructure

	<p>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; and⁹³</p> <p>b. a. the infrastructure is located on a site outside of a⁹⁴ high flood⁹⁵ hazard area as stated in a Flood Assessment Certificate issued in accordance with NH-S1; or and</p> <p>e. b. new infrastructure or an extension to existing upgraded⁹⁶ infrastructure:</p> <p>i. has a footprint of less than 103m² per structure attached to the ground;^{97 98} or</p> <p>ii. c. is located 3m or more</p>	
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⁹³ ECan [316.79]

⁹⁴ RMA Schedule 1 clause 16(2) – clause restructuring and clause simplification to remove ‘on a site’

⁹⁵ ECan [316.54]

⁹⁶ Transpower [195.63]

⁹⁷ Transpower [195.61]

⁹⁸ MainPower [249.176]

	<p>⁹⁹above ground level, excluding any support base, towers or poles, at an elevation higher than the minimum finished floor level as stated in a Flood Assessment Certificate issued in accordance with NH-S1;</p> <p>¹⁰⁰or</p> <p>iii. d. has a finished floor level equal to or higher than the minimum finished floor level as stated in a Flood Assessment Certificate issued in accordance with NH-S1;</p> <p>and</p> <p>d. new buildings, or extensions to existing buildings that increase the footprint of the existing infrastructure by more than 25m², are not located within an overland flow path as stated in</p>	
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⁹⁹ MainPower [249.176]

¹⁰⁰ MainPower [249.176]

	<p>a Flood Assessment Certificate issued in accordance with NH S1.¹⁰¹</p>	
	<p>Advisory Note</p> <ul style="list-style-type: none"> • This rule applies in addition to EI-R1 to EI-R56. 	
NH-R76	Woodlots and shelterbelts	
Rural Zones	<p>Activity status: PER</p> <p>Where:</p> <p>1. any woodlot or shelterbelt shall comply with the following fire hazard setback distances, measured from the outside extent of the canopy at the time of planting:</p> <p style="margin-left: 20px;">a. 30m from any boundary of any adjoining site; and</p> <p style="margin-left: 20px;">b. 10m from any road.¹⁰²</p> <p>2. <u>1.</u> any woodlot or shelterbelt established on the north side of South Eyre Road, Tram Road, Oxford Road, or Birch Hill Road shall comply with the following ice hazard height and setback distances:</p>	<p>Activity status where compliance is not achieved: RDIS</p> <p>Matters of discretion are restricted to:</p> <p style="margin-left: 40px;">NH-MD1 - Natural hazards general matters</p> <p>Notification</p> <p>An application for a restricted discretionary activity under this rule is precluded from being publicly notified, but may be limited notified.</p>

¹⁰¹ ECan [316.79]

¹⁰² Federated Farmers [414.96]

	<ul style="list-style-type: none"> a. trees adjoining the road boundary shall be maintained at a height of no greater than 3m; b. trees capable of growing up to 6m in height shall be setback 5m from the road boundary; and c. trees capable of growing 8m in height or higher shall be setback 15m from the road boundary. 	
NH-R87	Maintenance of existing community scale natural hazard mitigation works	
All Zones	Activity status: PER	Activity status where compliance is not achieved: N/A
NH-R98	Upgrading existing community scale natural hazard mitigation works	
	<i>The rule does not apply to the planting of vegetation as part of natural hazard mitigation works.</i>	
All Zones	Activity status: PER	Activity status where compliance is not achieved: N/A

<p><u>SASM</u> <u>Wāhi Tapu Overlay</u> <u>Wāhi Taonga Overlay</u> <u>Ngā Tūranga Tūpuna Overlay</u></p>	<p><u>Activity status:</u> <u>PER</u>¹⁰³</p> <p><u>Where:</u></p> <ol style="list-style-type: none"> <u>the upgrading works and any other associated activities is within land previously disturbed by previous earthworks to the depth already disturbed.</u> 	<p><u>Activity status where compliance is not achieved: RDIS</u></p> <p><u>Matters of discretion are restricted to:</u></p> <p><u>SASM-MD1 - Wāhi tapu and wāhi taonga</u></p> <p><u>SASM-MD2 - Ngā tūranga tūpuna</u></p> <p><u>SASM-MD3 - Ngā wai</u></p> <p>Notification</p> <p>An application for a restricted discretionary activity under this rule is precluded from being publicly notified, but may be limited notified only to Te Ngāi Tūāhuriri Rūnanga and HNZPT, in respect of sites on the New Zealand Heritage List Rārangī Kōrero, where the consent authority considers this is required, absent their written approval.</p> <p>¹⁰⁴</p>
<p>Ashley River / Rakahuri Saltwater</p>	<p>Activity status: RDIS</p>	<p>Activity status where compliance is not achieved: N/A</p>

¹⁰³ ECan [316.81] for this whole addition

¹⁰⁴ ECan [316.81]

<p>Creek Estuary ONF</p> <p>Waimakariri River ONF</p> <p>Ashley River / Rakahuri SAL</p>	<p>Matters of discretion are restricted to:</p> <p>NH-MD2 - Natural hazard mitigation works</p>	
<p>NH-R109</p>	<p>Construction of new community scale natural hazard mitigation works</p>	
	<p><i>The rule does not apply to the planting of vegetation as part of natural hazard mitigation works.</i></p>	
<p>All Zones</p>	<p>Activity status: PER</p> <p>Where:</p> <ol style="list-style-type: none"> the works are limited to soft engineering natural hazard mitigation and do not include earth engineered bunds.¹⁰⁵; and the works are not located within a site and area of significance to Māori (refer also to Rule SASM R5).¹⁰⁶ 	<p>Activity status where compliance is not achieved: RDIS</p> <p>Matters of discretion are restricted to:</p> <p>NH-MD2 - Natural hazard mitigation works</p>

¹⁰⁵ 199 Johns Road Ltd, Carolina Homes Ltd, Carolina Rental Homes Ltd, Allan Downs Ltd [266.16]

¹⁰⁶ ECan [316.81]

<p>Ashley River / Rakahuri Saltwater Creek Estuary ONF</p> <p>Waimakariri River ONF</p> <p>Ashley River / Rakahuri SAL</p>	<p>Activity status: RDIS</p> <p>Matters of discretion are restricted to:</p> <p>NH-MD2 - Natural hazard mitigation works</p>	<p>Activity status where compliance is not achieved: N/A</p>
<p><u>SASM</u></p> <p><u>Wāhi Tapu Overlay</u></p> <p><u>Wāhi Taonga Overlay</u></p> <p><u>Ngā Tūranga Tūpuna Overlay</u></p> <p><u>Ngā Wai Overlay</u>¹⁰⁷</p>	<p><u>Activity status: RDIS</u>¹⁰⁸</p> <p><u>Matters of discretion are restricted to:</u></p> <p><u>SASM-MD1 - Wāhi tapu and wāhi taonga</u></p> <p><u>SASM-MD2 - Ngā tūranga tūpuna</u></p> <p><u>SASM-MD3 - Ngā wai</u></p>	<p><u>Activity status where compliance is not achieved: N/A</u></p>

¹⁰⁷ ECan [316.81]

¹⁰⁸ ECan [316.81] for this entire addition

	<p><u>Notification</u></p> <p><u>An application for a restricted discretionary activity under this rule is precluded from being publicly notified, but may be limited notified only to Te Ngāi Tūāhuriri Rūnanga and HNZPT, in respect of sites on the New Zealand Heritage List Rārangī Kōrero, where the consent authority considers this is required, absent their written approval.</u>¹⁰⁹</p>	
NH-R140	New and upgrading of above and below ground existing infrastructure that is not critical infrastructure	
	<i>This rule does not apply to customer connections.</i>	
Ashley Fault Avoidance Overlay	Activity status: RDIS Matters of discretion are restricted to:	Activity status where compliance is not achieved: N/A

¹⁰⁹ ECan [316.81]

	NH-MD3 - Natural hazards and infrastructure	
NH-R121	Natural hazard sensitive activities	
Ashley Fault Avoidance Overlay	Activity status: DIS	Activity status where compliance is not achieved: N/A
NH-R132	Upgrading of existing or construction of new non-community scale natural hazard mitigation works for flood mitigation	
	<i>The rule does not apply to the planting of vegetation as part of natural hazard mitigation works.</i>	
Urban Flood Assessment Overlay Kaiapoi Fixed Minimum Finished Floor Level Overlay¹¹⁰	Activity status: DIS	Activity status where compliance is not achieved: N/A

¹¹⁰ ECan [316.52]

Non-Urban Flood Assessment Overlay		
NH-R143	New and upgrading of above and below ground critical infrastructure	
Ashley Fault Avoidance Overlay	<p>Activity status: DIS <u>RDIS</u> ¹¹¹</p> <p>Where:</p> <ol style="list-style-type: none"> 1. the critical infrastructure involves any of the following: <ol style="list-style-type: none"> a. electricity substations, networks, and transmission and distribution installations, including the National Grid and the electricity distribution network; b. supply and treatment of water for public supply; c. stormwater and sewage treatment and disposal systems; d. radiocommunication and telecommunication installations and networks; e. strategic road and rail networks; f. petroleum storage and supply facilities. 	Activity status where compliance is not achieved: NC

¹¹¹ Transpower [195.62]

	<p><u>Matters of discretion are restricted to:</u></p> <p><u>NH-MD3 - Natural hazards and infrastructure</u> ¹¹²</p>	
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Coastal Hazards

NH-R154	<p>Natural hazard sensitive activities within the urban environment</p>
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¹¹² Transpower [195.62]

<p>Coastal Flood Assessment Overlay</p>	<p>Activity status: PER</p> <p>Where:</p> <ol style="list-style-type: none"> 1. the building is erected to the level specified in an existing subdivision consent notice decision <u>or on an approved subdivision consent plan</u> ¹¹³ that was approved after 1 January 2021, and is less than five years old; or 2. the building: <ol style="list-style-type: none"> a. does not exceed the permitted building coverage for the zone; and b. has a finished floor level equal to or higher than the minimum finished floor level as stated in a Flood Assessment Certificate issued in accordance with NH-S1. 	<p>Activity status where compliance is not achieved: RDIS</p> <p>Matters of discretion are restricted to:</p> <p>NH-MD4 - Natural hazards coastal matters</p>
	<p>Advisory Note</p>	

¹¹³ ECan [316.77]

	<ul style="list-style-type: none"> Further information on hazards including technical reports and hazard maps identifying areas potentially subject to freshwater flooding, sea water inundation flooding and areas that are potentially high hazard flooding¹¹⁴ areas can be found on the Waimakariri District Natural Hazards Interactive Viewer. This further information does not form part of the District Plan. 	
NH-R165	Natural hazard sensitive activities outside the urban environment	
Coastal Flood Assessment Overlay	<p>Activity status: PER</p> <p>Where:</p> <ol style="list-style-type: none"> the building is erected to the level specified in an existing subdivision consent notice decision <u>or on an approved subdivision consent plan</u>¹¹⁵ that was approved after 1 January 2021, and is less than five years old; or the building is identified as being subject to 0.29m <u>0.3m</u>¹¹⁶ or less of coastal flooding as stated in a Coastal Flood Assessment Certificate and has finished floor level equal to or higher than the minimum finished floor level 	Activity status where compliance is not achieved: RDIS (see NH-R16 (3))

¹¹⁴ ECan [316.54]

¹¹⁵ ECan [316.77]

¹¹⁶ RMA Schedule 1 Clause 16(2) amendment – to make the figures in clauses 2 and 3 better work together

	as stated in a Coastal Flood Assessment Certificate issued in accordance with NH-S2.	
Coastal Flood Assessment Overlay	<p>Activity status: RDIS</p> <p>Where:</p> <p>3. the building is identified as being subject to between 0.3m and 0.99m <u>more than 0.3m and less than 1m</u>¹¹⁷ of coastal flooding as stated in a Coastal Flood Assessment Certificate and is to be erected on raised land or utilises a combination of raised land and a raised floor level equal to or higher than the minimum requirements stated in a Coastal Flood Assessment Certificate issued in accordance with NH-S2.</p> <p>Matters of discretion are restricted to:</p> <p>NH-MD4 - Natural hazards</p>	Activity status where compliance is not achieved: NC

¹¹⁷ RMA Schedule 1 Clause 16(2) amendment – to make the figures in clauses 2 and 3 better work together

	coastal matters	
	<p>Advisory Note</p> <ul style="list-style-type: none"> • Further information on hazards including technical reports and hazard maps identifying areas potentially subject to fresh water flooding, sea water inundation flooding and areas that are potentially high hazard flooding areas can be found on the Waimakariri District Natural Hazards Interactive Viewer. This further information does not form part of the District Plan. 	
NH-R176	<p>Above ground critical infrastructure</p> <p><u>This rule does not apply to roads.</u> ¹¹⁸</p>	
Coastal Flood Assessment Overlay	<p>Activity status: PER</p> <p>Where:</p> <p><u>1. the infrastructure is a road and does not exacerbate flooding on any other property by displacing or diverting floodwater on surrounding land in a 0.5% AEP event;</u> ¹¹⁹</p> <p>the profile, contour or height of the land is</p>	<p>Activity status where compliance is not achieved: for NH-R17 (1), NH-R17 (1)(a) and NH-R17 (1)(e) <u>NH-R176 (2), NH-R17 (2)(a) and NH-R17 (2)(e)</u>:</p> <p>RDIS</p> <p>Matters of discretion are restricted to:</p> <p>NH-MD3 - Natural hazards and infrastructure</p>

¹¹⁸ Waka Kotahi [275.23]

¹¹⁹ ECan [316.79]

	<p>not permanently raised by more than 0.25m when compared to natural ground level.¹²⁰</p> <p><u>1.2. 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>¹²¹</p> <p><u>a. new infrastructure or an extension to existing upgraded critical infrastructure</u>¹²²<u>has a footprint of less than 103m² per structure attached to the ground;</u>^{123 124}<u>or</u></p> <p><u>1. b</u> any new building that is identified as being subject to 0.29m</p>	<p>Activity status where compliance is not achieved for NH-R176 (1)(b): RDIS (see NH-R176 (23))</p>
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¹²⁰ ECan [316.79]

¹²¹ ECan [316.79]

¹²² Transpower [195.63]

¹²³ MainPower [249.178]

¹²⁴ Transpower [195.63]

<p><u>0.3m</u>¹²⁵ or less of coastal flooding as stated in a Coastal Flood Assessment Certificate and has finished floor level equal to or higher than the minimum finished floor level as stated in a Coastal Flood Assessment Certificate issued in accordance with NH-S2; or</p> <p><u>2.</u> if not a building, new <u>or upgraded critical</u>¹²⁶ infrastructure, excluding any support base, towers or poles, is located <u>3m or more above ground level or has a footprint of less than 13m² per structure attached to the ground, above ground level at an elevation higher than the minimum floor</u></p>	
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¹²⁵ RMA Schedule 1 Clause 16(2) amendment – to make the figures in clauses 1 and 3 better work together

¹²⁶ RMA Schedule 1 clause 16(2) – as for NH-R6 - replacing ‘extension to existing’ with the defined term ‘upgrading’, and a clause restructure

	<p>level as stated in a Coastal Flood Assessment Certificate issued in accordance with NH-S2.^{127 128}</p>	
<p>Coastal Flood Assessment Overlay</p>	<p>Activity status: RDIS</p> <p>Where:</p> <p>2. <u>3.</u> any building that is identified as being subject to between 0.3m and 0.99m <u>more than 0.3m and less than 1m</u>¹²⁹ of coastal flooding, as stated in a Coastal Flood Assessment Certificate, is erected on raised land or utilises a combination of raised land and a raised floor level equal to or higher than the minimum</p>	<p>Activity status where compliance is not achieved: NC</p> <p><u>i. Any National Grid building that does not contain a habitable room: RDIS</u>¹³⁰</p> <p><u>Matters of discretion are restricted to:</u></p> <p><u>NH-MD3 - Natural hazards and infrastructure</u></p> <p><u>ii. Any other building: NC</u></p>

¹²⁷ MainPower [249.178]

¹²⁸ Transpower [195.63]

¹²⁹ RMA Schedule 1 Clause 16(2) amendment – to make the figures in clauses 1 and 2 better work together

¹³⁰ Transpower [195.63]

	<p>requirements stated in a Coastal Flood Assessment Certificate issued in accordance with NH-S2.</p> <p>Matters of discretion are restricted to:</p> <p>NH-MD4 - Natural hazards coastal matters</p>	
<p>NH-R18¹³¹ Below-ground infrastructure and critical infrastructure</p>		
<p>Coastal Flood Assessment Overlay</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</u></p>	<p>Activity status where compliance is not achieved: RDIS</p> <p>Matters of discretion are restricted to:</p> <p>NH-MD4—Natural hazards coastal matters</p>

¹³¹ ECan [316.79]

	<u>displacing or diverting floodwater on surrounding land in a 0.5% AEP event.</u>	
<u>NH-R17</u> ¹³²	<u>Above ground earthworks, buildings and new structures</u>	
Coastal Flood Assessment Overlay	<p><u>Activity status: PER</u></p> <p><u>Where:</u></p> <ol style="list-style-type: none"> 1. <u>the above ground earthworks, buildings and new structures:</u> <ol style="list-style-type: none"> a. <u>will not increase flooding on another property through the diversion or displacement of floodwaters; or</u> b. <u>meets the definition of land disturbance.</u> <p><u>Advice note: to avoid confusion, buildings and</u></p>	<p><u>Activity status where compliance is not achieved: RDIS</u></p> <p><u>Matters of discretion are restricted to:</u></p> <p><u>NH-MD5 - Floodwaters displacement and flowpath disruption</u></p> <p><u>Notification</u></p> <p><u>An application for a restricted discretionary activity under this rule is precluded from being publicly notified, but may be limited notified.</u></p>

¹³² ECan [316.79]

	structures still need to meet the other provisions in this chapter.	
NH-R198	Construction of new community scale natural hazard mitigation works involving hard engineering natural hazard mitigation	
	<i>The rule does not apply to the planting of vegetation as part of natural hazard mitigation works.</i>	
Coastal Flood Assessment Overlay	Activity status: DIS	Activity status where compliance is not achieved: N/A
NH-R2019	Upgrading of existing or construction of new non-community scale natural hazard mitigation works for coastal flood hazard mitigation	
	<i>The rule does not apply to the planting of vegetation as part of natural hazard mitigation works.</i>	
Coastal Flood Assessment Overlay	Activity Status: NC	Activity status where compliance is not achieved: N/A

Natural Hazard Standards

NH-S1 Flood Assessment Certificate

1. The District Council will issue a Flood Assessment Certificate (which will be valid for three years from the date of issue) that specifies:
 - a. whether the activity is located on a site that is within a high ~~flood~~ hazard area¹³³; and
 - b. whether the activity is located within an overland flow path; and
 - c. where the activity is located on land that is within the Urban Flood Assessment Overlay, the minimum finished floor level in accordance with (e); or
 - d. where the activity is located on land that is within the Non-Urban Flood Assessment Overlay and is located on land that is outside of a high ~~flood~~¹³⁴ hazard area, the minimum finished floor level in accordance with (e); and
 - e. the minimum finished floor level shall be calculated as the highest of the following:
 - i. flooding predicted to occur in a 0.5% AEP (1 in 200-year) localised Rainfall Event plus up to 500mm freeboard [\(including allowances for climate change\)](#)¹³⁵;
 - or
 - ii. flooding predicted to occur in a 0.5% AEP

Activity status where compliance is not achieved: N/A

¹³³ ECan [316.54]

¹³⁴ ECan [316.54]

¹³⁵ ECan [316.61]

<p>(1 in 200-year) Ashley River/Rakahuri Breakout Event concurrent with a 5% AEP (1 in 20-year) Localised Rainfall Event plus up to 500mm freeboard (including allowances for climate change) ¹³⁶</p> <p>; or</p> <p>iii. flooding predicted to occur in a 1-0.5% AEP (1 in 1200-year) ¹³⁷Storm Surge Event concurrent with a 5% AEP (1 in 20-year) River Flow Event with an allowance for sea level rise based on an RCP8.5 climate change scenario ¹³⁸, plus up to 500mm freeboard.</p> <p>2. <u>Freeboard will be applied as follows:</u></p> <p>a. <u>Low Hazard - 400mm freeboard</u></p> <p>b. <u>Medium to High Hazard - 500mm freeboard</u> ¹³⁹</p>	
<p>Advisory Notes</p> <ul style="list-style-type: none"> • An application form and guidance on how to obtain a Flood Assessment Certificate are available on the District Council's website. 	

¹³⁶ ECan [316.61]

¹³⁷ ECan [316.88]

¹³⁸ ECan [316.61]

¹³⁹ ECan [316.88]

- Certificates are valid for three years from the date of issue. If a land use consent is required, the five year period provided under the RMA to give effect to the resource consent overrides the three year Certificate lifespan.
- Under NH-S1 the District Council will not provide a required minimum floor level for high flood¹⁴⁰ hazard areas within the Non-Urban Environment Flood Assessment Area. A resource consent will be required in this situation.
- Further information on hazards including technical reports and hazard maps identifying areas potentially subject to freshwater flooding, sea water inundation flooding and areas that are potentially a high hazard area can be found at the Waimakariri District Natural Hazards Interactive Viewer. This further information does not form part of the District Plan.
- The AEP flood event risk level, minimum floor levels and overland flow path locations are to be determined by reference to:
 - The most up to date models, maps and data held by the District Council and the Regional Council; and
 - Any information held by, or provided to, the District Council or the Regional Council that relates to flood risk for the specific land.
- [The inclusion of climate change allowances should always be based on the latest government advice and the latest available data. A 100 year horizon should be used wherever possible and if forecast values do not extend to 100 years then the longest available horizon should be used. The climate change or emissions scenario should align with the latest government advice. Note that emissions scenario RCP8.5 was used in 2021 to develop the current iteration of the plan.](#)¹⁴¹

NH-S2 Coastal Flood Assessment Certificate

<p>1. The District Council will issue a Coastal Flood Assessment Certificate (which will be valid for three years from the date of issue) for a site within the Coastal Flood Assessment Overlay that specifies:</p> <ul style="list-style-type: none"> a. whether the activity is located on a site that is likely to be affected by sea water storm surge flooding; and b. whether the activity is located on a site that is 	<p>Activity status where compliance is not achieved: N/A</p>
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¹⁴⁰ ECan [316.54]

¹⁴¹ ECan [316.61]

<p>within a high coastal flood hazard area¹⁴²; and</p> <p>c. where the activity is located on a site that is within the Non-Urban Flood Assessment Overlay and is outside of a high coastal flood hazard area and (a) is met¹⁴³, the minimum land level in accordance with (d), or the minimum land and finished floor level combination in accordance with (e);</p> <p>d. the minimum land level shall equal:</p> <p style="padding-left: 20px;">i. the flooding level predicted to occur in a <u>0.5+%</u> AEP (1 in <u>±200</u>-year)¹⁴⁴ Storm Surge Event concurrent with a 5% AEP (1 in 20-year) River Flow Event with <u>an allowance for sea level rise of 1m based on an RCP8.5 climate change scenario</u>;¹⁴⁵</p> <p>e. the minimum land and floor level combination shall equal:</p> <p style="padding-left: 20px;">i. land filled to be within 300mm of the required land level under (d); and</p> <p style="padding-left: 20px;">ii. a floor level that meets the minimum level specified in NH-S1.</p>	
<p>Advisory Notes</p>	

¹⁴² ECan [316.54]

¹⁴³ ECan [316.54]

¹⁴⁴ ECan [316.88]

¹⁴⁵ ECan [316.61]

- [NH-S2 only applies for natural hazard sensitive activities outside the urban environment under NH-R15 and above ground critical infrastructure under NH-R16.](#)¹⁴⁶
- An application form and guidance on how to obtain a Flood Assessment Certificate are available on the District Council's website.
- Certificates are valid for three years from the date of issue. If a land use consent is required, the five year period provided under the RMA to give effect to the resource consent overrides the three year Certificate lifespan.
- Under NH-S2 the District Council will not provide a required minimum floor/land level for high ~~coastal flood~~¹⁴⁷ hazard areas within the Non-Urban Flood Assessment Area. A resource consent will be required in this situation.
- Further information on hazards including technical reports and hazard maps identifying areas potentially subject to freshwater flooding, sea water inundation flooding and areas that are potentially high hazard ~~flooding~~¹⁴⁸ areas can be found on the Waimakariri District Natural Hazards Interactive Viewer. This further information does not form part of the District Plan.
- The AEP flood event risk level, minimum floor levels and overland flow path locations are to be determined by reference to:
 - The most up to date models, maps and data held by the District Council and the Regional Council; and
 - Any information held by, or provided to, the District Council or Regional Council that relates to flood risk for the specific land.
- Freeboard will be applied as follows:
 - a. Low Hazard - 400mm freeboard
 - b. Medium to High Hazard - 500mm freeboard¹⁴⁹
- [The inclusion of climate change allowances should always be based on the latest government advice and the latest available data. A 100 year horizon should be used wherever possible and if forecast values do not extend to 100 years then the longest available horizon should be used. The climate change or emissions scenario should align with the latest government advice. Note that emissions scenario RCP8.5 was used in 2021 to develop the current iteration of the plan.](#)¹⁵⁰

Matters of Discretion

¹⁴⁶ RMA Schedule 1 Clause 16(2) – to add an advice note to clarify which rules trigger NH-S2

¹⁴⁷ ECan [316.54]

¹⁴⁸ ECan [316.54]

¹⁴⁹ ECan [316.88]

¹⁵⁰ ECan [316.61]

<p>NH- MD1</p>	<p>Natural hazards general matters</p> <ol style="list-style-type: none"> 1. <u>The extent to which the The setting of minimum floor levels are not achieved by the proposal and the effect of the lower levels, and the effects of ¹⁵¹ minimum land levels and the predicted sea water and other inundation that will occur on the site.</u> 2. <u>The frequency at which any proposed building or addition is predicted to be damaged and the extent of damage likely to occur in such an event, including taking into account:</u> <ol style="list-style-type: none"> a. <u>the building material and design proposed;</u> b. <u>the anticipated life of the building;</u> c. <u>the proposed use of the building, including whether it is a retail, commercial or industrial activity or has a low staff occupancy rate, that would lessen the adverse effects of it being damaged in a natural hazard event;</u> d. <u>whether the building is relocatable; and</u> e. <u>for redevelopments, the extent to which overall risk will change as a result of the proposal.</u> ¹⁵² 3. The extent to which site access will be compromised in a natural hazard event and any alternative access provided. 4. The extent to which the proposal causes flood water displacement or flow path disruption onto other sites. 5. The extent to which any flood mitigation measures are proposed, their effectiveness and environmental effects, and any benefits to the wider area associated with flood management. 6. The extent to which the proposal relies on Council infrastructure and the risks to that infrastructure from natural hazards, including taking into account maintenance and repair costs that might fall on the wider community. 7. The extent to which there are any positive <u>negative</u> effects from a reduction <u>an increase</u> ^{153 154} in floor levels in relation to neighbouring buildings or the streetscape. 8. In relation to wildfire and ice, the degree of risk posed to life and property due to the non-compliance. 9. In relation to tsunami risk, the nature of the proposed activity and the ease of evacuation.
<p>NH- MD2</p>	<p>Natural hazard mitigation works</p> <ol style="list-style-type: none"> 1. The extent to which the natural hazard risk cannot be avoided. 2. Any adverse effects of those works on the natural and built environment and on the cultural and spiritual values of Ngāi

¹⁵¹ Summerset [207.14]

¹⁵² Summerset [207.14]

¹⁵³ ECan [316.90]

¹⁵⁴ Summerset [207.14]

	<p>Tūāhuriri, including any matters specified in CE-MD1, ECO-MD1, NATC-MD3, NATC-MD4, NATC-MD5, NATC-MD6 and CE-MD1, SASM MD1, SASM MD2 and SASM MD3.¹⁵⁵</p> <ol style="list-style-type: none"> 3. Any adverse effects on the values of any identified ONL, ONF or SAL including any matters specified in NFL-MD1. 4. The extent to which the mitigation works transfer, or create, unacceptable hazard risk to other people, property, infrastructure, or the natural environment.
<p>NH-MD3</p>	<p>Natural hazards and infrastructure</p> <ol style="list-style-type: none"> 1. Any increase in the risk to life or property from natural hazard events. 2. Any negative effects Effects¹⁵⁶ on the ability of people and communities to recover from a natural hazard event. 3. The extent to which the infrastructure will suffer damage in a hazard event and whether the infrastructure is designed to maintain reasonable and safe operation during and after a natural hazard event. 4. The time taken to reinstate critical infrastructure following a natural hazard event. 5. The extent to which the infrastructure exacerbates the natural hazard risk or transfers the risk to another site. 6. The ability for flood water conveyance to be maintained.¹⁵⁷ 7. The extent to which there is a functional need and operational need for that location and there are no practical reasonable alternatives.¹⁵⁸ 8. The extent to which any mitigation measures are proposed, their effectiveness and environmental effects, and any benefits to the wider area associated with hazard management. 9. The positive benefits derived from the installation of the infrastructure.¹⁵⁹ 10. Any effects on cultural values.¹⁶⁰
<p>NH-MD4</p>	<p>Natural hazards coastal matters</p> <ol style="list-style-type: none"> 1. The frequency at which any proposed building or addition is predicted to be damaged and the extent of damage likely to occur in such an event, taking into account: <ol style="list-style-type: none"> a. proposed land and floor levels;

¹⁵⁵ ECan [316.81]

¹⁵⁶ Transpower [195.65]

¹⁵⁷ ECan [316.79]

¹⁵⁸ Transpower [195.58] and [195.65]

¹⁵⁹ Transpower [195.65]

¹⁶⁰ Transpower [195.65]

	<ul style="list-style-type: none"> b. the building material and design proposed; c. the certainty of the modelling; and d. the time frame over which sea level rise inundation is predicted to occur. <ol style="list-style-type: none"> 2. The extent to which the building is readily relocatable and when inundation is predicted to occur as a result of sea level rise, including the use of ‘trigger’ decision-points that take into account actual sea level rise and how such triggers will provide advance warning of the need to relocate the building, and proposals to manage residual risk. 3. The extent to which site access will be compromised in a coastal hazards event and any alternative access provided. 4. The extent to which any coastal flooding mitigation measures are proposed, their effectiveness and environmental effects, including displacement onto surrounding sites and disruption of flow paths and any benefits to the wider area associated with flood management. 5. The extent to which the proposal relies on Council infrastructure and the risks to that infrastructure from coastal hazards, including taking into account maintenance and repair costs that might fall on the wider community. 6. Whether there are any positive <u>negative</u> effects from a reduction <u>an increase</u> ¹⁶¹ in floor or land levels in relation to accessibility, the height of the existing building, neighbouring buildings or the streetscape or the financial viability of the development. ¹⁶² 7. Whether the site is located within an existing urban area and raised land or floor levels would create an unreasonable burden on the ability to continue to use an existing building and support the local community.
<p><u>NH-</u> <u>MD5</u></p>	<p><u>Floodwaters displacement and flowpath disruption</u> ¹⁶³</p> <ol style="list-style-type: none"> 1. <u>The likely extent of flooding on the site;</u> 2. <u>The potential for the activity to exacerbate flooding on any other site; and</u> 3. <u>The extent to which the earthworks, building or new structure impedes the free passage of floodwaters.</u>

¹⁶¹ ECan [316.91]

¹⁶² ECan [316.91]

¹⁶³ ECan [316.79]

Overlay Amendments

Liquefaction Hazard Overlay

Amend the Liquefaction Hazard Overlay so that it only captures the gold coloured ‘liquefaction damage is possible’ area (i.e. it excludes the green coloured ‘liquefaction damage is unlikely’ area) and is limited to areas within the Waimakariri district.¹⁶⁴

Urban and Non-urban Flood Assessment Overlays

Replace the Urban and Non-Urban Flood Assessment Overlays with the overlays as agreed in the Joint Witness Statement included as Appendix D (this includes an overlay based on the 200-year return period (0.5% AEP)).¹⁶⁵

Kaiapoi Fixed Minimum Floor Level Overlay

Delete the Kaiapoi Fixed Minimum Floor Level Overlay and replace it with the Urban Flood Assessment Overlay.¹⁶⁶

Definitions

Community scale natural hazard mitigation works

Community scale natural hazard mitigation works means:

*a natural hazard mitigation scheme ~~works~~ that serves multiple properties and is ~~are~~ constructed and administered by the District Council, the Crown, the Regional Council or their nominated contractor or agent.*¹⁶⁷

Coastal hazard mitigation works means:

¹⁶⁴ ECan [316.53]

¹⁶⁵ ECan [316.78]

¹⁶⁶ ECan [316.52]

¹⁶⁷ ECan [316.56]

Any means work and or structure designed to prevent or mitigate coastal hazards, such as coastal erosion and seawater inundation. It includes ~~soft engineering natural hazard mitigation beach re-nourishment, dune replacement, and sand fences, seawalls, groynes, gabions and revetments and hard engineering natural hazard mitigation.~~ ¹⁶⁸

~~‘High coastal flood hazard area’~~

~~means:-~~

- ~~a. land likely to be subject to coastal erosion, including the cumulative effects of sea level rise, over the next 100 years; and~~
- ~~b. land subject to water depth of 1 metre or greater in a 1% AEP (1 in 100-year) storm surge event (excluding tsunami), concurrent with 5% AEP (1 in 20 year) river flow event with a median sea level rise projection over the next 100 years based on an RCP8.5 high emissions scenario.~~¹⁶⁹

~~‘High flood hazard area’~~

~~means:~~

- ~~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.~~¹⁷⁰

High Hazard Area means:

- a. land likely to be subject to coastal erosion; and or¹⁷¹
- 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.

¹⁶⁸ 199 Johns Road Ltd, Carolina Homes Ltd, Carolina Rental Homes Ltd, Allan Downs Ltd - Claire McKeever [266.177]

¹⁶⁹ ECan [316.54]

¹⁷⁰ ECan [316.54]

¹⁷¹ ECan [316.54]

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.¹⁷²

Natural feature, in relation to the Natural Hazards Chapter, means:

natural ponding areas, wetlands, water body margins and riparian margins, terraces, dunes, and beaches. It excludes artificial water races and drainage infrastructure such as swales and Stormwater Management Areas.

173

Natural hazard sensitive activity means:¹⁷⁴

buildings and conversions of existing buildings¹⁷⁵ which:

- a. contain one or more habitable rooms; ~~and/or~~
- b. ~~contain one or more employees (of at least one full time equivalent)~~ are serviced with a sewage system and connected to a potable water supply;
~~and/or~~

- c. are ~~is~~ a place of assembly;

except that this shall not apply to:

- i. ~~regionally significant~~ infrastructure or critical¹⁷⁶ infrastructure;
- 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~~

¹⁷² ECan [316.54]

¹⁷³ John Stevenson [162.168], Chloe Chai and Mark McKitterick [256.168], CA and GJ McKeever [111.168] and Keith Goodwin [418.169]

¹⁷⁴ ECan [316.55] for all these definition changes except were specifically identified

¹⁷⁵ ECan [316.77]

¹⁷⁶ RMA Schedule 1 Clause 16 – the Natural Hazards Chapter does not refer to Regionally significant Infrastructure

- iv any building addition in any continuous 10-year period that has a footprint of less than 25m²; or
- v. any building with a dirt/gravel or similarly unconstructed floor.

Soft engineering natural hazard mitigation

means the use of natural materials, features and processes, including vegetation to stabilise waterway banks, and absorb wave energy and reduce coastal erosion and inundation, but does not include earth engineered bunds.¹⁷⁷ Soft engineering techniques include planting, beach re-nourishment, beach and bank re-profiling and the restoration of natural features such as dunes, coastal wetlands/saltmarsh and floodplains.

Upgrading

In relation to the natural hazards chapter, means the replacement, renewal, improvement or realignment of a network utility structure or building, or natural hazards mitigation works that:

- a. is within 5m of the alignment or location of the original structure or building; and
- b. does not increase the footprint of the original structure or building by greater than 10 percent across any continuous 5-year period; or
- c ~~does not include works limited to maintenance for community scale natural hazard mitigation works flood schemes.~~ it does not increase the footprint of the original scheme by greater than 10 percent across any continuous 5-year period.

¹⁷⁷ 199 Johns Road Ltd, Carolina Homes Ltd, Carolina Rental Homes Ltd, Allan Downs Ltd [266.16]

Note: upgrading does not include works limited to maintenance.¹⁷⁸

Coastal Environment Chapter

CE-R3 Any building or structure

This rule does not apply to buildings or structures located in existing Residential Zones that are within 20m of identified coastal natural character areas, or the maintenance, repair or replacement of existing flood protection works administered by ECan.¹⁷⁹

Earthworks Chapter

~~EW P2 Earthworks within Flood Assessment Overlays~~¹⁸⁰

~~Allow earthworks within the Urban Flood Assessment Overlay and Non-Urban Flood Assessment Overlay where:~~

- ~~1. the earthworks do not increase the flooding risk to the site or neighbouring sites through the displacement of flood waters;~~
- ~~2. the earthworks associated with proposed subdivision, development or use do not increase the risk to life or property; and~~
- ~~3. the ability to convey flood waters is not impeded as a result of the earthworks.~~

~~EW R4~~ _____

~~Earthworks for community scale natural hazards mitigation works~~

~~Activity status: PER~~

~~Where:~~

~~EW S1 to EW S7 are met.~~

¹⁷⁸ ECan [316.82]

¹⁷⁹ ECan [316.81]

¹⁸⁰ ECan [316.81] for all the EW changes

~~Activity status where compliance not achieved: DIS~~

~~EW R5 — Earthworks within an overland flow path~~

~~Activity status: PER~~

~~Where:~~

- ~~1. EW-S1 to EW-S7 are met; and~~
- ~~2. the height of any filling does not exceed 0.25m above the ground level at (18 September 2021); or~~
- ~~3. the filling is for a building platform that is located greater than 2m from any site boundary within the Urban Flood Assessment Overlay, or greater than 10m from any site boundary within the Non-Urban Flood Assessment Overlay; or~~
- ~~4. the flood depth in a 0.5% AEP event is less than 100mm.~~

~~Activity status where compliance not achieved: RDIS~~

~~Matters of discretion are restricted to:~~

~~EW MD4 — Natural hazards~~

~~Advisory Notes~~

~~A Flood Assessment Certificate issued in accordance with NH S1(b) will identify whether the site is located within an overland flow path.~~

~~The District Council holds publicly available information showing flood modelling for the District.¹⁸¹~~

Natural Character Chapter

NATC-R2 Planting of non-indigenous vegetation

Activity status: PER

Where:

¹⁸¹ ECan [316.81]

1. planting is for one of the following purposes:
 - a. ~~erosion or flood control purposes where undertaken by or on behalf of the Regional Council or the District Council or their nominated contractor or agent;~~ ~~or~~¹⁸²

Natural Features and Landscapes Chapter

Activity Rules

How to interpret and apply the rules

...

(2) The rules within this chapter shall not apply to the activities provided for in NH-R8 (the maintenance of existing community scale natural hazard mitigation works), NH-R9 (upgrading existing community scale natural hazard mitigation works) and NH-R10 (construction of new community scale natural hazard mitigation works).¹⁸³

NFL-R5

This rule does not apply to structures and buildings provided for under NFL-R1 to NFL-R4, NFL-R8 ~~or natural hazards mitigation structures for flooding.~~¹⁸⁴

Sites and Areas of Significance to Maori Chapter

¹⁸² ECan [316.81]

¹⁸³ ECan [316.81]

¹⁸⁴ ECan [316.81]

~~SASM R5—Construction of new community scale natural hazard mitigation works¹⁸⁵~~

~~This rule applies to Wāhi Tapu/Wāhi Taonga , Ngā Tūranga Tūpuna and Ngā Wai in SASM SCHED1.~~

~~Wāhi Tapu Overlay~~

~~Wāhi Taonga Overlay~~

~~Ngā Tūranga Tūpuna Overlay~~

~~Ngā Wai Overlay~~

~~Activity status: RDIS~~

~~Matters of discretion are restricted to:~~

~~SASM MD1—Wāhi tapu and wāhi taonga~~

~~SASM MD2—Ngā tūranga tūpuna~~

~~SASM MD3—Ngā wai~~

~~Notification~~

~~An application for a restricted discretionary activity under this rule is precluded from being publicly notified, but may be limited notified only to Te Ngāi Tūāhuriri Rūnanga and HNZPT, in respect of sites on the New Zealand Heritage List Rārangī Kōrero, where the consent authority considers this is required, absent their written approval.~~

¹⁸⁵ ECan [316.81]

~~Activity status when compliance not achieved or provided for: N/A~~

Ecosystems and Indigenous Biodiversity Chapter

To be covered by the ECO s42A Author¹⁸⁶

¹⁸⁶ ECan [316.81] for all the SASM changes

Appendix 2 – Amended Accept / Reject Tables in response to submissions and further submissions

Sub. Ref.	Submitter / Further Submitter	Provision	Decision Requested (Summary)	Section of this Report where Addressed	Officer's Recommendation	Officers' Reasons/Comments	Recommended Amendments to Proposed Plan?
195.59	Transpower New Zealand Limited	NH-P14	Amend NH-P14: Within the fault overlays: ... 2. <u>only allow</u> avoid new and upgrading of existing critical infrastructure below and above ground in the Ashley Fault Avoidance Overlay <u>where unless there is no reasonable alternative, in which case the infrastructure is</u> must be designed to: 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; ...	3.6.14	Reject <u>Accept</u>	The reference to 'no reasonable alternatives' in Policy NH-P14 gives effect to the CRPS requirement to demonstrate the absence of 'reasonable alternatives'. It is considered that linear infrastructure should be able to demonstrate the lack of reasonable alternatives. <u>The reference to 'no reasonable alternative' in CRPS Policy 11.3.4 does not apply to fault overlays. The submitted amendments are more consistent with Policy 11.3.4. Therefore, it is recommended that this submission is rejected. Therefore it is recommended that this submission is accepted.</u>	No <u>Yes</u>

316.61	Canterbury Regional Council	All / Objective	Amend the current objectives or include new objectives to give effect to Canterbury Regional Policy Statement objectives 11.2.3.	3.5.5	Accept	The natural hazards chapter includes consideration of the effects of climate change as evidenced by the flood modelling which includes allowances for changes in rainfall intensity, and in NH-S1 and NH-S2, which calculate minimum finished floor levels with reference to sea level rise. However, as climate change is not explicitly referred to at the objective level it is considered that this would be appropriate. Consequential changes are also proposed to NH-S1 and NH-S2 to ensure these standards are more consistent and clearer on how climate change is to be considered.	Yes
316.79	Canterbury Regional Council	NH-R4	Insert a provision in NH-R4 that any filling above ground level is not in an overland flow path.	3.7.5	Accept in part	The proposed rules covering 0.25m of fill in the chapter are considered a pragmatic response to this issue and an approach that is able to be measured. However, it is accepted that up to 0.25m of earthworks in an overland flow path could cause adverse effects. It is therefore recommended to amend this rule	Yes

						the chapter to refer to the effects of displacing or diverting floodwaters. This is to be achieved by deleting references to earthworks in NH-R4, NH-R5, NH-R6, NH-R17 and NH-R18 and introducing two new rules to cover displacement and disruption in coastal and non-coastal hazard affected areas. This is a simpler, more effective and risk-based means of addressing offsite flood effects.	
316.81	Canterbury Regional Council	NH-R8	<p>Insert provision in NH-R8 for all works to maintain the effective operation of established river and drainage schemes that are administered by local authorities within all zones.</p> <p>Include an exclusion from the earthworks requirements for the maintenance of existing community scale natural hazard mitigation works in any other chapter.</p>	3.7.10	Accept in part	The activity status of river and drainage schemes has been assessed under other chapters of the PDP and amendments are recommended to various chapters as set out in the Right of Reply Report the CE and EW chapters to facilitate the maintenance and ongoing operation of ECan's flood protection schemes.	Yes
316.82	Canterbury Regional Council	NH-R9	Insert provision within NH-R9 for all works to maintain the effective operation of established river and	3.7.12	Accept in part	The NH-R9 covers upgrading rather than maintenance. The maintenance component of the	Yes

			<p>drainage schemes that are administered by local authorities within all zones.</p> <p>Provide an exclusion from the earthworks requirements in any other chapter.</p>			<p>submission is already generally provided for as set out under NH-P8. Upgrading would also be permitted under NFL-R5, NATC-R8 and NATC-R9 and potentially under ECO-R2 and SASM-R4, but would likely be required under CE-R3, ECO-R1.</p> <p>It is noted that the submitter runs schemes, as opposed to individual hazard mitigation structures. This was identified by the submitter in its submission on 'community scale natural hazard mitigation works' covered in the definitions section of this report. There is value in recognising this scheme approach within the definition of 'upgrading'. It is therefore recommended to amend the definition of 'upgrading' to include a footprint increase of up to 10% of the original scheme across any continuous 5-year period for ECan's flood infrastructure. This definition change will further</p>	
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						support the submitter to maintain the effective operation of existing river and drainage schemes consistent with their submission on NH-R9. <u>As for NH-R8, amendments are recommended to various chapters as set out in the Right of Reply Report to facilitate the maintenance and ongoing operation of ECan’s flood protection schemes.</u>	
316.83	Canterbury Regional Council	NH-R10	<p>Insert provision into NH-R10 for all works to maintain the effective operation of established river and drainage schemes that are administered by local authorities within all zones.</p> <p>Provide an exclusion from the earthworks requirements in any other chapter.</p>	3.7.13	Accept in part	NH-R10 is about the construction of new mitigation schemes, whereas the submitter’s submission refers to the effective operation of established river and drainage schemes. As such, it is not clear if this submission applies to NH-R10. Given the adverse effects that can occur from the construction of new hazard mitigation schemes, it is considered appropriate that a resource consent is required for these. Regarding excluding earthworks, it is considered acceptable for EW-R4 to be deleted, relying on <u>the new</u>	Yes

						provisions as set out in the Right of Reply Report NH R10 instead.	
195.63	Transpower New Zealand Limited	NH-R17	<p>Amend NH-R17:</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>a. new infrastructure or an extension to existing infrastructure has a footprint of less than 10m2 <u>per structure</u>; or</p> <p>b. any new building that is identified as being subject to 0.29m or less of coastal flooding as stated in a Coastal Flood Assessment Certificate and has finished floor</p>	3.7.20	Accept in part	<p>Consistent with the recommendation for NH-R6, it is accepted that the area thresholds can apply on a 'per structure' basis as it would be impractical to apply this as a total area across an entire flood assessment overlay.</p> <p>Regarding the submitter's request to delete standard 2, standard 2 is connected to standard 1 in a cascade. Standard 2 only applies to buildings that are proposed in areas subject to between 0.3 and 0.99m of flooding. It does not apply to structures. As set out earlier in the definitions section, flooding of more than 1m is likely to be high hazard under the CRPS. As set out in the assessment under NH-R6, CRPS Policy 11.3.4 states that new critical infrastructure will be located outside of high hazard areas unless there is no reasonable alternative. It is therefore</p>	Yes

		<p>level equal to or higher than the minimum finished floor level as stated in a Coastal Flood Assessment Certificate issued in accordance with NH-S2; or</p> <p>c. if not a building, new infrastructure, excluding any support base, towers or poles, is located above ground level at an elevation higher than the minimum floor level as stated in a Coastal Flood Assessment Certificate issued in accordance with NH-S2.</p> <p>Activity status where compliance is not achieved: for NH-R17 (1), NH-R17 (1)(a) and NH-R17 (1)(c): RDIS</p> <p>Matters of discretion are restricted to:</p> <p>NH-MD3 - Natural hazards and infrastructure</p>			<p>considered that it is appropriate that buildings associated with critical infrastructure proposed to be located in areas subject to more than 1m of flooding in the prescribed hazard event are non-complying if they are not built higher than the minimum requirements stated in a Coastal Flood Assessment Certificate. It is therefore recommended that this submission component is rejected. Overall, the submitter's submission is accepted in part. However, I note that Transpower's assets are unhabitable (unlike some other critical infrastructure) and that they sometimes have a functional need to locate within high hazard areas. I also acknowledge the NPSET and the specific risk profile of transmission lines. I therefore consider it acceptable to make buildings associated with the National Grid which do not contain a habitable room RDIS, instead of non-complying in areas subject to</p>	
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			<p><u>NH-MD4 - Natural hazards coastal matters</u></p> <p>Activity status where compliance is not achieved for NH R17 (1)(b): RDIS (see NH R17 (2))</p> <p>Activity status: RDIS</p> <p>Where:</p> <p>2. any building that is identified as being subject to between 0.3m and 0.99m of coastal flooding, as stated in a Coastal Flood Assessment Certificate, is erected on raised land or utilises a combination of raised land and a raised floor level equal to or higher than the minimum requirements stated in a Coastal Flood Assessment Certificate issued in accordance with NH S2.</p>		<p><u>1m or more of flooding. As I have not adopted Transpower's recommended relief in full, I recommend accepting this submission in part.</u></p>	
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			<p>Matters of discretion are restricted to:</p> <p>NH MD4— Natural hazards coastal matters</p> <p>Activity status where compliance is not achieved: NC:"</p>				
316.87	Canterbury Regional Council	NH-R18	Change the applicability of this rule from the overland flow paths to the flood assessment overlays, amend the rule to capture all activities that have the potential to cause offsite effects and only permit activities where there will be no effects and only require resource consent in situations where there will be effects.	3.7.21	Accept in part	It is accepted that 0.25m of earthworks in an overland flow path could cause adverse effects, and also that consent might be required for earthworks that do not cause adverse effects due to the blunt and arbitrary nature of the rule. As for NH-R4, it is proposed to delete references to earthworks in NH-R4, NH-R5, NH-R6, NH-R17 and NH-R18 and introduce two new rules to cover displacement and disruption in coastal and non-coastal hazard affected areas. This is a simpler, more effective and risk-based	Yes

						means of addressing offsite flood effects. It is <u>therefore</u> recommended that [316.87] is accepted in part.	
195.65	Transpower New Zealand Limited	NH-MD3	<p>Amend NH-MD3:</p> <ol style="list-style-type: none"> 1. Any increase in the risk to life or property from natural hazard events. 2. <u>Any negative e</u>Effects on the ability of people and communities to recover from a natural hazard event. 3. The extent to which the infrastructure will suffer damage in a hazard event and whether the infrastructure is designed to maintain reasonable and safe operation during and after a natural hazard event. 	3.10.1	Accept in part	<p>The proposed changes to NH-MD3(2) and NH-MD-3(9) simplify the matters of discretion. Regarding the proposed deletion of NH-MD(4), in considering whether a proposal maintains its integrity and function, a relevant matter to consider in a consent application is the time taken to reinstate the critical infrastructure. It is noted that the time taken to reinstate critical infrastructure following a natural hazard event is identified in the CRPS Principal explanation and reasons to Policy 11.3.4.</p> <p>Regarding the proposed deletion in NH-MD(7) of the reference to practical alternatives, CRPS 11.3.4 expressly refers to whether there is</p>	Yes

		<p>4. The time taken to reinstate critical infrastructure following a natural hazard event.</p> <p>45. The extent to which the infrastructure exacerbates the natural hazard risk or transfers the risk to another site.</p> <p>56. The ability for flood water conveyance to be maintained.</p> <p>67. The extent to which there is a functional need and operational need for that location and there are no practical alternatives.</p> <p>78. The extent to which any mitigation measures are proposed, their effectiveness and environmental effects, and any benefits to the wider area associated with hazard management.</p>			<p>a practical alternative. As such, there is higher order policy support for referring to practical alternatives. However, I do agree with changing ‘practical alternative’ to reasonable alternative’, consistent with my recommended changes to Policy NH-P13 in response to the Transpower [195.58] submission.</p> <p>Regarding the submitter’s proposed amendments to NH-MD3(8) to remove the reference to mitigation effectiveness and environmental effects, it is considered appropriate to enable a decision maker to consider the environmental effects of proposed mitigation which could be very minor or could include significant works. The rules for infrastructure do not distinguish between infrastructure occurring in within or outside sensitive.</p>	
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			<p>89. The positive benefits derived from the installation of the infrastructure.</p> <p>10. Any effects on cultural values.</p>			<p>Regarding the submitter's request to delete NH-MD3(10) which enabled a decision maker to consider effects on cultural values, there is a separate sites and areas of significance to Maori chapter that covers these matters. As such, this clause should be deleted.</p>	
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Appendix 3 – Statements from Mr Bacon and Mr Debski

**Before the Hearings Panel
At Waimakariri District Council**

Under Schedule 1 of the Resource Management Act 1991

In the matter of the Proposed Waimakariri District Plan

Between **Various**
Submitters

And **Waimakariri District Council**
Respondent

**Minute 7 – Matters and Questions Arising from Hearing Stream 3
Christopher Paul Bacon on behalf of Waimakariri District Council**

Date: 30th August 2023

INTRODUCTION:

59 My full name is Christopher Paul Bacon. I am employed as a Civil Engineer by the Waimakariri District Council in the role of Network Planning Team Leader.

60 The purpose of this document is to provide a statement commenting on the responses of the Section 42A Officer to the Panel's pre-hearing questions and questions on the Natural Hazards Chapter contained in Minute 7.

61 I am authorised to provide this evidence on behalf of the District Council.

RESPONSE

62 I have reviewed the Officer's responses to the pre-hearing questions from the Panel and agree with those where related to my field of expertise. I have reviewed the responses to the right of reply dated 1st September 2023 and I support all of the responses in the Section 42 Officer's report related to my field of expertise as summarised below.

63 In regards to Paragraphs 11 to 19 on the subject of the Kainga Ora submissions, I can confirm I was consulted on these responses and I agree with the statements made by Mr Willis.

64 In regards to Paragraph 30 I agree with the proposed change in terminology identified by Mr Griffiths and drafted by Mr Willis.

65 In regards to Paragraph 31 I agree with the proposed inclusion of attached garages as flood sensitive structures as recommended by Mr Griffiths and I can confirm I was consulted on this issue by Mr Willis. I note that it is possible to construct attached garages at a lower level than the main habitable structure without compromising the main structure and there will be situations where this is desirable. I am satisfied that there will still be a consenting pathway available to applicants who wish

to construct an 'at risk' garage below the habitable floor level where this is appropriate.

66 In regards to Paragraph 32 I agree with the proposed change in terminology identified by Mr Griffiths to insert the word increased in policies NH-P2, NH-P3, NH-P4, NH-P7.

67 In regards to Paragraphs 33 to 36, I agree with the proposed amendments to the provisions relating to diversion and displacement of floodwaters as recommended by Mr Griffiths and Ms Mitten and confirm that I was consulted on this by Mr Willis.

68 In regards to Paragraphs 37 to 39, I support the proposed changes to the wording for NH-S1 and NH-S2 as recommended by Mr Griffiths to simplify the description of the flood scenarios modelled. I also agree with the evaluation made by Mr Willis that the proposed change would allow greater flexibility to consider other modelled scenarios but may provide less certainty and transparency to plan users attempting to replicate the modelling parameters. I note that following further consideration of this matter Mr Willis does not consider there is scope to make this change based on the original submission made by ECan. I therefore support Mr Willis's recommendation that this change is not made.

Date: 30/08/2023



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**Before the Hearings Panel
At Waimakariri District Council**

Under Schedule 1 of the Resource Management Act 1991

In the matter of the Proposed Waimakariri District Plan

Between **Various**

Submitters

And **Waimakariri District Council**

Respondent

**Minute 7 – Matters and Questions Arising from Hearing Stream 3
Damian Debski on behalf of Waimakariri District Council**

Date: 1 September 2023

INTRODUCTION:

69 My full name is Damian Debski. I am employed as a Principal Hydraulic Engineer by Jacobs New Zealand Limited.

70 The purpose of this document is to provide a statement responding to the list of responses from the Section 42 Officer's report to written questions on the Natural Hazards Chapter (Minute 7).

71 I am authorised to provide this evidence on behalf of the District Council.

SUMMARY

72 I have reviewed the Council s42A Officer's Preliminary Response to written questions on the Natural Hazards Chapter and support the responses to those questions which relate to my field of expertise of coastal flood hazard matters.

73 I have also reviewed the Council s42A Officer's Right of Reply dated 1 September 2023 in the matters related to my field of expertise and my comments are as summarised below.

74 Regarding Paragraph 30, I agree with the proposed change in terminology identified by Mr Griffiths and drafted by Mr Willis.

75 I note that while the new definition of High Hazard Area refers to the depth of flooding in a 0.2% Annual Exceedance Probability (AEP) event, paragraph 1(e) of NH-S1, including proposed amendments, and paragraph 1(d) of NH-S2, including proposed amendments, define minimum land and floor level in terms of the 0.5% AEP event water level. This implies that the depths of coastal flooding referred to in NH-R16 and NH-R17 also relate to the 0.5% AEP event. This is inconsistent with the intent of these rules to apply non-complying activity status in the High Hazard Area – i.e., as defined by the 0.2% AEP depth. NH-S1 and NH-S2 could be amended to include additional definitions in relation to the

0.2% AEP event. However, this could create additional complexity. I note that in both NH-S1 and NH-S2, a minimum floor level or land level will not be provided in a High Hazard Area (i.e., as defined by the 0.2% AEP event), a resource consent being required in this situation, and this may therefore address any potential ambiguity in definitions. I also note that non-complying status does not apply within existing urban areas and therefore the definition of High Hazard is not relevant in those locations.

76 Regarding Paragraph 32, I agree with the intent of the proposed change in terminology identified by Mr Griffiths and Ms Mitten to refer to the increase in flood risk resulting from an activity in policies NH-P2, NH-P3, NH-P4 and NH-P7 and support the amendment to the wording of these policies proposed by Mr Willis.

77 Regarding Paragraphs 33 to 36, I agree with the intent of the proposed amendments to the provisions relating to diversion and displacement of floodwaters as recommended by Mr Griffiths and Ms Mitten and support the new rules NH-R4 and NH-R18 proposed by Mr Willis. In my opinion, the proposed advice note to these rules provides additional clarity on the application of the proposed rules.

78 Regarding Paragraphs 37 to 39, I support the proposed changes to the wording for NH-S1 and NH-S2 as recommended by Mr Griffiths to simplify the description of the flood scenarios modelled. I also agree with the evaluation made by Mr Willis that the proposed change would allow greater flexibility to consider other modelled scenarios but may provide less certainty and transparency to plan users attempting to replicate the modelling parameters. I note that following further consideration of this matter Mr Willis does not consider there is scope to make this change based on the original submission made by ECan. I therefore support Mr Willis's recommendation that this change is not made.

79 Regarding the amendments to NH-S1 and NH-S2 proposed by Mr Willis, I support the clarifications confirming the need to include allowances for future climate change when defining minimum floor and land levels in

terms of its effects on rainfall and sea level. Given the evolving nature of the understanding of climate change effects and the likelihood of future changes to guidance and policy on these matters, I agree that allowances should be based on the latest government advice and available data. I also agree that a 100 year horizon should be considered where possible or the longest available horizon if forecast values do not extend to 100 years and that the climate change or emissions scenario adopted should align with the latest government advice.

Date: 01/09/2023

A handwritten signature in blue ink, appearing to read "Janine H. H.", is written above a horizontal dotted line.

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