BEFORE THE HEARINGS PANEL

FOR THE KAIKOURA NATURAL HAZARDS PLAN CHANGE 3

IN THE MATTER	of the Resource Management Act 1991
AND	
IN THE MATTER	Hearing for the Natural Hazards Plan Change 3

REPLY OF KERRY ANDREWS

ON BEHALF OF THE KAIKOURA DISTRICT COUNCIL
DATED 13 December 2021

Introduction

1. My name is Kerry Andrews. I prepared the section 42a report for the Natural Hazards chapter for the Kaikoura District Plan, dated 15th October 2021. My qualifications and experience are listed in that s42a report.
2. I have reviewed the evidence filed by other expert witnesses and submitters. I attended the hearing on the 9th of November 2021 and have been provided with information tabled by submitters at the hearing.
3. This Right of Reply responds to matters raised by submitters and the Hearing Panel since my s42a Officer's' Report. Where I include recommendations in this Right of Reply, they replace the recommendations I made in my s42a Officer's Report, otherwise I stand by the recommendations made in my s42A Officers Report.
4. This reply covers the following issues:
   A. What the difference between a 500 yr ARI and 200 yr ARI standard would look like in regard to floor heights (Paragraphs 6 – 16)
   B. W. Loppe Submission: Update on technical evidence regarding liquefaction (Paragraphs 17 – 19)
   C. What a Flood Assessment Certificate would look like (Paragraphs 20 – 23)
   D. Object 8.2.3 and Policy 8.3.8: meaning of operational and technical constraints (Paragraphs 24 – 27)
   E. Objective 8.2.3 – Drafting Error (Paragraphs 28 – 31)
   F. Objective 8.2.4 (Paragraphs 32 – 36)
   G. Policy 8.3.2(2) (Paragraphs 37 – 42)
   H. Policy 8.3.10(2) (Paragraphs 43 – 48)
   I. Subdivision Policy 13.2.2 (Paragraphs 49 – 55)
   J. Definition of Critical Infrastructure (Paragraphs 56 – 69)
   K. Rule 13.11.1 (Paragraphs 70 – 74)
   L. Waiver of resource consent fees (Paragraphs 75 – 77)
   M. Rule 8.5.8 (Paragraphs 78 – 84)
   N. How a landowner knows if their property is affected by natural hazards (Paragraphs 85 – 89)
   O. Number of undeveloped properties in fault avoidance overlay (Paragraphs 90 – 98)
   P. Recommendation on submission point 14.13 (Paragraphs 99 – 102)
   Q. Finalised Recommended Changes (Paragraphs 103 -

5. Where I am recommending changes to the provisions as a consequence of the Hearing evidence, I have appended these as Appendix 1 (Recommended Chapter).

A. 200 year ARI vs 500 year ARI standard

6. The Panel raised a matter to address regarding the 200 year ARI standard versus the 500 year ARI standard.

7. The Panel asked to know what the difference in floor heights would look like between the 500 year ARI and the 200 year ARI standard within the Urban and Non-Urban Flood Assessment Overlays.

8. I note that this matter is regarding flooding areas outside of High Flood Hazard Areas as the RPS is directive in a 500yr ARI standard being applied to these areas.

9. Mr Matthew Hoggard has further comments to this matter which are detailed in the paragraphs below from 10-16.

10. The Panel raised a matter to address regarding the 200 year ARI standard versus the 500 year ARI standard.

11. The Panel asked to know what the difference in floor heights would look like between the 500 year ARI and the 200 year ARI standard within the Urban and Non-Urban Flood Assessment Overlays.

12. Given Environment Canterbury Science staff have provided technical flood hazard advice for the Plan Change and staff since been approached to provide additional technical advice.

13. The map in Appendix 3 provided by Environment Canterbury shows that the difference in floodwaters between the 200 year ARI standard versus the 500 year ARI standard. Flooding depth varies according to location. The Kaikoura Flats experience 10 to 20 centimetres changes in height as water is able to fan across the flats. Areas subject to ponding experience increased difference in depth as water is choked by the location of road and railway bridges which relates increased ponding. This sees the water levels around Lyell Creek increasing by 30-40 centimetres.

14. Policy 11.3.1 of the Canterbury Regional Policy Statement (CRPS) requires avoidance of development within high hazard areas. (High hazard areas in relation to flooding are required to be based on a 500 year ARI and include areas where depth x velocity grater or equal to one). The policy excludes areas zoned for urban residential, industrial or commercial use; in which case the effects must be mitigated.

15. Environment Canterbury have been asked to identify areas of high hazard (Appendix 4), which shows that the greatest increase in height is within the rural ponding area where development is restricted by Policy 11.3.1 of the CRPS.

16. Relating this information to the 1993 flood, a 1:500 year is approximately 1.7m higher than the 1993 flood based on the maps provided. A 1:200 year event would be 1.3m higher than the 1993 flood.

B. W. Loppe Submission

17. Further evidence was received by KDC staff prior to the hearing. However, this information was received after the cut-off date of the 29th or October 2021.

18. It was noted in the hearing that KDC staff would require more time to consider evidence provided by Mr Loppe. Kaikoura District Council staff have commissioned Golders to undertake a review of the work provided by Mr Loppe in his further evidence.

19. The Golder Review is attached as Appendix 5 based on this information the supporting planning maps have been amended and are attached as Appendix 6

C. Flood Assessment Certificate

20. The Panel had a query on what a Flood Assessment Certificate would look like.

21. Appendix 2 shows a form that CCC uses in its certificate approach. KDC will produce its own form and implement a process for issuing Flood Hazard Certificates.

22. KDC will also produce a template for issuing Flood Hazard Certificates. They are likely to be short in length (1-2 pages) and highlight FFL recommendations from the Regional Council.

D. Objective 8.2.3 and Policy 8.3.8 – operational and technical constraints

23. The Panel had a query for KDC staff which questioned what Main Power's operational and technical constraints referred to as the policy was ambiguous as to what they referred to.

24. Objective 8.2.3 and policy 8.3.8 refers to "operational and technical constraints" which was derived from a submission point Main Power requested to include and I recommended to accept this submission point.

25. Further correspondence with Mr J Scheele of Resource Management Group who is acting on behalf of Main Power commented on this matter. Mr Scheele made the following comments on what operational and technical constraints refer to:

- achieving compliance with NZECP:34
- technical requirements such as the need to install a transformer (or other vital equipment) in a specific location (perhaps not the best example in this case, as Main Power avoids assets that are susceptible to natural hazards being locating in risk areas, but the principle remains)

- ground conditions e.g., avoiding areas susceptible to erosion or are otherwise unstable
- to be able to provide customer connections or connect to other parts of the network where it is impractical or impossible to avoid hazard areas.

26. I stand by my original recommendation to accept the submission point and retain references to "operational and technical constraints" as set out in appendix 1.

E. Objective 8.2.3 – Drafting Error

27. It was noted in the Hearing that objective 8.2.3 has a drafting error.

28. The objective currently reads:

> *Objective 8.2.3*
>
> *(…)*
>
> *2. New critical infrastructure avoids High Flood Hazard Areas, but ~~where this is~~ **it is** not possible or is impractical **when considering operational and technical constraints and** is designed to maintain its integrity and ongoing function during and after natural hazard events or can be reinstated in a timely manner.*

29. I note the word "where" should be reinstated and the word "and" should be removed.

30. I recommend to word objective 8.2.3 as below and as set out in Appendix 1

> *Objective 8.2.3*
>
> *(…)*
>
> *2. New critical infrastructure avoids High Flood Hazard Areas, **but where this is** not possible or is impractical **when considering operational and technical constraints ~~and~~** is designed to maintain its integrity and ongoing function during and after natural hazard events or can be reinstated in a timely manner.*

F. Objective 8.2.4

31. During the Hearing, the Panel noted that as currently drafted, objective 8.2.4 does not read well.

32. I note that Federated Farmers recommended suggested wording for this objective and in my introductory statement, I voiced that I would need more time to consider this proposed wording.

33. Federated Farmers stated the proposed wording would align better with RPS Objective 11.2.2 which I agree with.

34. I am now recommending to the Panel to accept the recommended wording for objective 8.2.4 as recommended wording by Federated Farmers and as set out in appendix 1.

> *Objective 8.2.4 – Hazard Mitigation Works*
>
> *Hazard mitigation works that may adversely affect people, property and the environment is avoided in the first instance and mitigated where such works are necessary.*

35. I anticipate the recommended change to alleviate concerns regarding the clarity of the objective.

G. Policy 8.3.2(2)

36. The Panel questioned the what the definition of the word acceptable would be in policy 8.3.2(2). i.e., what defines acceptable risk in terms of people and significant assets.

37. At it currently stands, policy 8.3.2(2) reads as follows:

> *2. Manage natural hazard risk within all natural hazard overlays to an acceptable level*

38. It was discussed that the last four words of clause 2 could be deleted to remove the reference to the word "acceptable" as it was considered to be too ambiguous. However, I view that deleting the last four words would also leave clause 2 too ambiguous.

39. Clause 2 refers to the overlays, which does add value to the policy, however I note that the natural hazard overlays are referred to in policy 8.3.1.

40. I recommend deleting clause 2 in its entirety as I view clause 1 of policy 8.3.2 to sufficiently set out the risk-based approach KDC proposes to take.

41. I recommend amending policy 8.3.2 as set out in appendix 1 of this document.

H. Policy 8.3.10(2):

42. In relation to policy 8.3.10(2), the Panel queried how KDC would define significant risk. It was noted that as written, the word "significant" implies that a moderate increase in risk would be acceptable.

43. For clarity, clause 2 of policy 8.3.10 is currently drafted as:

> *2. the risk to surrounding properties is not significantly increased.*

44. It was determined that KDC would not be happy with moderate risk being inflicted on lives, assets and surrounding properties and noted that the policy should be redrafted so that moderate risk was captured.

45. I recommend replacing with 'any increase in risk to surrounding properties is no more than minor'.

46. I view the change to emphasise that risk no more than minor is acceptable to human life, significant assets and adjacent property.

47. This change is shown in appendix 1 of this document.

I. Subdivision Policy 13.2.2:

48. The Panel noted there were some inconsistencies in policy 13.2.2. Policy 13.2.2 refers to subdivision and new hazard sensitive building platforms.

49. As currently drafted, the policy reads:

> *Subdivision for new hazard sensitive buildings shall:*
>
> *6. Be managed within High Flood Hazard areas unless it is within the Urban Flood Overlay in which case the flood risk must be avoided or mitigated.*
>
> *7. Be avoided within the Fault Avoidance Overlay*
>
> *8. Be managed within all natural hazard overlays other than those referred to in Clause 1 and 2 above, to ensure that the natural hazard risk is acceptable*
>
> *9. Be managed in areas of the district that are subject to natural hazards but are not identified as within a natural hazard overlay, to ensure that the risk to life and property from natural hazards is acceptable.*
>
> *10. Be managed to ensure that development is not likely to require new or upgraded community scale*

50. I note the numbering of the clauses read 6-10, as opposed to 1-5 which is a drafting error.

51. Clause 6 (to be amended to clause 1) should read as follows:

> *1. Be managed in Urban High Flood Hazard Areas and avoided/mitigated in Non-Urban High Hazard Areas, as well as managed outside of all High Hazard Areas.*

52. Clause 7 (to be amended to clause 2) should read as follows:

> *2. Be avoided or mitigated in the Fault Avoidance Overlay*

53. Clause 10 (to be amended to clause 5) needs to have the words "hazard mitigation works" added onto the end of the clause.

54. All final recommended amendments to policy 13.2.2 are set out in appendix 1 of this document.

J. Definition of Critical Infrastructure:

55. The matter of the definition of Critical Infrastructure is unresolved.

56. The origin of the matter came into effect when Spark NZTL commented that there needed to be some alignment with the CRPS and the NESTF which is directive in that telecommunications regulated by the NESTF are exempt from District Plan rules relating to natural hazards.

57. Spark NZTL originally submitted to merge notations of Non-Critical and Critical Infrastructure together. In my s42A report, I commented that it was inappropriate to consider non-critical and critical infrastructure the same.

58. I came into agreement that there needed to be alignment between the NESTF and the CRPS in regard to critical infrastructure and I recommended an amendment to the definition of Critical Infrastructure which would emphasise some alignment with the NESTF.

59. In my introductory notes I presented to the Panel during the hearing, I put forward an amendment to the definition of Critical Infrastructure.

> *7. telecommunications installations and networks* ***(excluding that which is regulated by the NESTF)***

60. This was to acknowledge there should be some alignment between the District Plan and the NESTF which regulates certain telecommunications infrastructure.

61. Spark NZTL responded with a further amendment to the definition of Critical Infrastructure.

> *7. telecommunications installations and networks* ***(excluding that which is regulated by the NESTF, as well as all poles and antennas)***

62. It was noted in the hearing by Spark representatives that without the inclusion of the words "poles and antennas" the telecommunications would still be subject to natural hazard rules and the resource consent process would be triggered which essentially defeats the purpose of the regulated telecommunication activities being exempt from the district plan natural hazard rules.

63. Environment Canterbury noted during the hearing that the definition to Critical Infrastructure would not align with the RPS definition of Critical Infrastructure.

64. I note that the proposed definition of Critical Infrastructure does still essentially align with the RPS definition of Critical Infrastructure.

65. I view that the RPS and NESTF are at odds, and that preference should be given to the NESTF which has its own provisions for regulated telecommunication activities.

66. Post hearing, Environment Canterbury have agreed to this definition with minor amendment as set out as follows:

> *7. telecommunications installations and networks (excluding* ***~~that which is~~*** ***those which are*** *regulated by the NESTF, as well as all poles and antenna**s**).*

67. It has also been recommended by Environment Canterbury to include Clause 57 of the NESTF for completeness which I agree with.

68. I recommend accepting this proposed definition of Critical Infrastructure as set out in paragraph 67 and in appendix 1 of this document.

K. Rule 13.11.1

69. The Panel noted in the Hearing paragraphs 255 and 262 in the s42A report are inconsistent.

70. Paragraph 255 details rule 13.11.1 with four clauses however paragraph 262 details only two clauses.

71. Wording in clause 2 is also inconsistent in the two differing versions of the rule.

72. I note that this is a drafting error and paragraph 255 is the correct version.

73. I recommend the rule to read as follows a shown below and in Appendix 1.

> *Rule 13.11.1 – Subdivision*
>
> *Liquefaction within the liquefaction Hazard Overlay, with the matters of control restricted to:*
>
> 1. *Geotechnical recommendations from a site-specific geotechnical assessment of liquefaction hazard, including testing of soils;*
> 2. *Location, size, design of the subdivision*
> 3. *Recommendations for foundations for future buildings*
> 4. *Remediation and ground treatment*

L. Waiver of resource consent fees

74. The Panel queried whether costs for resource consents can be waived and whether there is a process around this.

75. The Panel has asked whether KDC has a policy of waiving consent fees. This was in relation to submission point 7.1 where the submitter requested that resource consent fees be waived for unbuilt properties in the Debris Flow Fan Overlay.

76. In the Hearing, it was explained that the Council does not have an official process for this and is done on a case-by-case basis.

M. Rule 8.5.8

77. The Panel noted that the way this rule 8.5.8 is drafted is hard to read.

78. As currently drafted, it reads:

> *New non-critical infrastructure, critical infrastructure, or the operation, maintenance, repair, replacement, upgrading of non-critical infrastructure and critical infrastructure where…*

79. To address this issue, I recommend amending rule 8.5.8 as follows:

> *New non-critical infrastructure, ~~critical infrastructure,~~ or the operation, maintenance, repair, replacement, upgrading of non-critical ~~and critical~~ infrastructure this infrastructure where…*

80. I agree that the rule as drafted is confusing to read and I view the recommended amendment will make rule clearer to read for plan users.

81. I recommend removing the reference to critical infrastructure in rule 8.5.8 and make this rule about non-critical infrastructure, as rule 8.5.9 has separate provisions for critical infrastructure.

82. As per Main Power's recommendation, we have made it clear that the plan is permissive for the operation, maintenance, repair, and replacement of existing critical infrastructure in rule 8.5.9. The reference to critical infrastructure in rule 8.5.8 can be removed as rule 8.5.9 already covers the operation, maintenance, replacement, and repair of critical infrastructure.

83. This amendment is also set out in Appendix 1 of this document.

N. How a landowner knows if their property is affected by natural hazards

84. The Panel queried how a landowner knows if they are affected by natural hazards.

85. Whilst KDC does not have an official process, what would normally happen is property owners, or potential property owners could get in contact with the Council, or the Regional Council to enquire about any potential natural hazards relevant to the property.

86. Relevant property information regarding natural hazards is also picked up by the PIM and LIM process.

87. Kaikoura District Council and the Regional Council have developed in conjunction a natural hazards map which is publicly available. The map can be found at the following address: https://www.arcgis.com/apps/webappviewer/index.html?id=c89001f0dd86401ca0226b49d8aa36df&extent=1586084.3692%2C5293679.0199%2C1732843.4636%2C5362243.0342%2C2193

88. The map shows the different natural hazard overlays that are relevant to properties in the Kaikoura District.

O. Number of undeveloped properties in fault avoidance overlay

89. The Panel queried how many undeveloped properties fall within the Fault Avoidance Overlay where development within the property was not possible.

90. This is in relation to a question the Panel had regarding section 85 of the RMA and whether any properties in the Kaikoura District would be subject to this.

91. For completeness, section 85 states the following:

> 85 Environment Court may give directions in respect of land subject to controls
> (1) An interest in land shall be deemed not to be taken or injuriously affected by reason of any provision in a plan unless otherwise provided for in this Act.
> (2) Notwithstanding subsection (1), any person having an interest in land to which any provision or proposed provision of a plan or proposed plan applies, and who considers that the provision or proposed provision would render that interest in land incapable of reasonable use, may challenge that provision or proposed provision on those grounds—
> (a) in a submission made under Schedule 1 in respect of a proposed plan or change to a plan; or
> (b) in an application to change a plan made under clause 21 of Schedule 1.
> (3) Subsection (3A) applies in the following cases:
> (a) on an application to the Environment Court to change a plan under clause 21 of Schedule 1:
> (b) on an appeal to the Environment Court in relation to a provision of a proposed plan or change to a plan.
> (3A) The Environment Court, if it is satisfied that the grounds set out in subsection (3B) are met, may,—
> (a) in the case of a plan or proposed plan (other than a regional coastal plan or proposed regional coastal plan), direct the local authority to do whichever of the following the local authority considers appropriate:
> (i) modify, delete, or replace the provision in the plan or proposed plan in the manner directed by the court:
> (ii) acquire all or part of the estate or interest in the land under the Public Works Act 1981, as long as—
> (A) the person with an estate or interest in the land or part of it agrees; and
> (B) the requirements of subsection (3D) are met; and
> (b) in the case of a regional coastal plan or proposed regional coastal plan,—
> (i) report its findings to the applicant, the regional council concerned, and the Minister of Conservation; and
> (ii) include a direction to the regional council to modify, delete, or replace the provision in the manner directed by the court.
> (3B) The grounds are that the provision or proposed provision of a plan or proposed plan—
> (a) makes any land incapable of reasonable use; and
> (b) places an unfair and unreasonable burden on any person who has an interest in the land.
> (3C)
> Before exercising its jurisdiction under subsection (3A), the Environment Court must have regard to—
> (a)
> Part 3 (including the effect of section 9(3); and
> (b) the effect of subsection (1) of this section.
> (3D) The Environment Court must not give a direction under subsection (3A)(a)(ii) unless—

(a) the person with the estate or interest in the land or part of the land concerned (or the spouse, civil union partner, or de facto partner of that person)—
(i) had acquired the estate or interest in the land or part of it before the date on which the provision or proposed provision was first notified or otherwise included in the relevant plan or proposed plan; and
(ii)
the provision or proposed provision remained in substantially the same form; and
(b)
the person with the estate or interest in the land or part of the land consents to the giving of the direction.
(4)
Any direction given or report made under subsection (3A) has effect under this Act as if it were made or given under clause 15 of Schedule 1.
(5)
Nothing in subsections (3) to (3D) limits the powers of the Environment Court under clause 15 of Schedule 1 on an appeal under clause 14 of that schedule.
(6)
In this section,—
provision of a plan or proposed plan does not include a designation or a heritage order or a requirement for a designation or a heritage order

92. It was noted that the Panel would not be able to require this as section 85 only applies in the Environment Court. The Panel noted this was more of a general query rather an actual question.
93. A new matter of discretion has been drafted to go into rule 8.5.5 which refers to the establishment of new hazard sensitive building platforms.
94. This new matter of discretion would seek to lessen the application of section 85 of the RMA.

Whether the section has been created since 2008 and there is no other suitable location for the proposed building.

95. The fault maps have been reviewed in relation to properties which are near fully contained within a Fault Avoidance Overlay. The review has identified 12 properties which are near fully contained within the Fault Avoidance Overlay.
96. Four properties within the Mangamaunu Farm Park subdivision are undeveloped, with one property outside this area that has a building consent currently being processed.
97. This change is set out in appendix 1 of this document.

P. Recommendation on submission point 14.13

98. The Panel noted that the paragraph providing explanation for submission point 14.13 is missing from the s42A report.

99. Submission point 14.13 (Environment Canterbury) requests to amend Chapter 8: Natural Hazards Introduction as follows:

> This chapter anticipates the use of hazard mitigation ~~measures~~ **works** where it is appropriate to…

100. I note that the requested amendment is minor in nature, and I view that the deletion of the word "measures" to be replaced with "works" would provide further clarity of the plan change.

101. In the 42A report, I recommend accepting submission point 14.13 and I am consistent with this recommendation.

Q. Finalised Recommended Changes

102. A finalised copy of changes recommended to the Natural Hazards Plan Change 3 are set out in appendix 1 of this document.

103. Also to note, the changes shown are as a result of changes made post hearing.

Appendix 1: Finalised recommended provisions for the Kaikoura Natural Hazards Plan Change 3

Chapter 1: Introduction

1.3.1 The Kaikoura District

(…)

The major river systems in the District are the Clarence River, the Kowhai and Hapuku Rivers, with smaller systems including the Mt Fyffe Streams, Kahutara River and the Oaro River. Some of these river systems have been subject to flooding in extreme climatic events. Other natural hazards from which the Kaikōura District is at risk include earthquakes, **fault rupture, liquefaction, landslide debris** inundation, **debris fan flows,** tsunamis, **wildfire,** high winds and other extreme climatic events.

(…)

1.3.2 The Management Role of the Kaikōura District Council under the Resource Management Act

The Kaikoura District Council's role in managing the District's natural and physical resources is prescribed by section 31 of the Resource Management Act. This section states functions to which every territorial authority shall adhere in giving effect to this Act. These include:

(…)

- The control of any actual or potential effects of the use, development, or protection of land, including for the purpose of the avoidance or mitigation of **natural hazards** ~~**any adverse effects of the storage, use disposal, or transportation of hazardous substances**~~.
- The control of subdivision of land.

(…)

(…)

The Council has developed zones which recognise that different areas of the District have different resources, characteristics, levels of amenity, and different environmental outcomes which the community desires for these **areas. The zones provide opportunities for future development in keeping with the character and amenity sought for each area. The Council has also identified natural hazards overlays. Any particular activity**

must comply with the rules applicable to the zone <u>and overlay</u> in which it is situated, as well as the general rules covering a range of matters such as subdivision, heritage values and transportation.

(…)

Chapter 2: Policy and Legal Framework

2.3 Status of Activities

(...)

Prohibited activities are activities which may not be undertaken under any circumstances. Resource consent will not be granted, and no resource consent may even be applied for. The only prohibited activities in this Plan relate to ~~activities in the Flood Hazard Areas 1 and 1a and~~ the number of residential and low density residential allotments allowed in the Ocean Ridge Comprehensive Zone. ~~Refer to section 8 (Natural Hazards), Rule 13.11.4 (Subdivision) and to the Planning Maps (Part 4).~~

Chapter 3: User's guide

Drawings

(…)

r. a floor plan of each building (at a scale of not less than 1:100) showing:

— use of all parts of the building, including basements, parking, lift towers, storage or service areas;

— room layout of the building, if this is known, and a clear identification of the use of different rooms or parts of a floor.

<u>s. – the location of any known natural hazards in relation to the land.</u>

(…)

(…)

The site plan should also show where relevant:

a. topographical information (including New Zealand map grid references), wherever possible in terms of the Kaikoura Datum, together with a certificate as to its origin and accuracy;

b. details of hazardous areas (for example, uncompacted filling, areas potentially subject to liquefaction, landslide debris inundation, debris flow fans, fault rupture, or flooding ~~prone areas~~);

(...)

Chapter 4: Definitions

Average Recurrence Interval (ARI)

means the average time period between natural hazard events of a certain size.

Note:

- For example, a 500 year ARI flood will occur once every 500 years on average.
- The size of natural hazard events can also be described using Annual Exceedance Probability (AEP).
- A 500 year ARI flood has a 0.2% chance of occurring in any given year, and therefore it is also referred as having a 0.2% AEP.
- A 100 year ARI flood has a 1% chance of occurring in any given year, and therefore it is also referred as having a 1% AEP.

Community Scale Natural Hazard Mitigation Works

Means natural hazard mitigation works that serve multiple properties and are constructed and administered by the District Council, the Crown, the Regional Council or their nominated contractor or agent.

Critical Infrastructure

means infrastructure necessary to provide services which, if interrupted, would have a serious effect on the communities within the Region or a wider population, and which would require immediate reinstatement. This includes any structures that support, protect or form part of critical infrastructure. Critical infrastructure includes:

1. regionally significant airports
2. regionally significant ports
3. gas storage and distribution facilities
4. electricity substations, networks and distribution installations, including the electricity distribution network
5. supply and treatment of water for public supply
6. storm water and sewage disposal systems
7. telecommunications installations and networks **(except for those regulated by the NESTF, as well as poles and antennas)**
8. strategic road and rail networks (as defined in the Regional Land Transport Strategy).
9. Petroleum storage and supply facilities
10. Public healthcare institutions including hospitals and medical centres
11. Fire stations, police stations, ambulance stations, emergency coordination facilities.

Note: Clause 57 of the National Environmental Standards – Telecommunications Facilities reads as follows:

57 District rules about natural hazard areas disapplied

(1) A territorial authority cannot make a natural hazard rule that applies to a regulated activity.

(2) A natural hazard rule that was made before these regulations came into force, does not apply in relation to a regulated activity.

(3) In this regulation, **natural hazard rule** means a district rule that prescribes measures to mitigate the effect of natural hazards in an area identified in the district plan as being subject to 1 or more natural hazards.

Earthworks

Means the alteration or disturbance of land including by moving, removing, placing, blading, cutting, contouring, filling or excavation of earth (or any matter constituting the land including soil, clay, sand, and rock); but excludes gardening, cultivation, and disturbance of land for the installation of fenceposts

~~Hazard Mitigation Works~~

~~means works intended to control the effects of natural events hazards~~

Hazard Sensitive Building

means any building ~~or buildings~~ which:

1. is/are used as part of the primary activities on the site; or
2. contains habitable rooms; or
3. which are serviced with a sewage system and connected to a potable water supply,

For the purposed of clause 1, the following buildings are not included.

i. farm sheds used solely for storage; or
ii. animal shelters which comply with v below: or
iii. carports; or
iv. garden sheds; or
v. any buildings with a dirt/gravel or similarly unconstructed floor; or
vi. critical and non-critical infrastructure.

High Flood Hazard Area

High Flood Hazard Areas are subject to inundation events where the water depth (metres) x velocity (metres per second) is greater than or equal to 1 or where depths are greater than 1 metre~~, in a 0.2% annual exceedance probability flood event.~~

Land Disturbance

means the alteration of land, (or any matter constituting the land including soil, clay, sand and rock) that does not permanently alter the profile, contour or height of the land.

Liquefaction Hazard

means land potentially at risk from liquefaction and lateral spread during an earthquake

Natural Hazard

means any atmospheric or earth or water related occurrence (including earthquake, tsunami, erosion, volcanic and geothermal activity, landslip, subsidence, sedimentation, wind, drought, fire, or flooding) the action of which adversely affects or may adversely affect human life, property, or other aspects of the environment.

Natural Hazard Mitigation Works

means works intended to control the effects of natural events

Natural Hazard Overlays

identifies areas subject to a natural hazard. Natural hazard overlays include:

a. Urban Flood Assessment Overlay
b. Non-urban Flood Assessment Overlay
c. Fault Avoidance Overlay
d. Fault Awareness Overlay
e. ~~Landslide~~ Debris Inundation Overlay
~~Debris Fans Overlay~~
f. Liquefaction ~~Hazard~~ Overlay

Non-critical infrastructure

~~Infrastructure that is not identified as critical infrastructure and includes customer connections, and any infrastructure that provides a service, facility or connection that does not have a public or community function.~~

Infrastructure that does not meet the definition of Critical Infrastructure

Operational Need

means the need for a proposal or activity to traverse, locate or operate in a particular environment because of technical, logistical, operational characteristics or constraints.

Plantation forestry

Plantation forest *or* plantation forestry means a forest deliberately established for commercial purposes, being—
(a) at least 1 ha of continuous forest cover of forest species that has been planted and has or will be harvested or replanted: and
(b) includes all associated forestry infrastructure; but
(c) does not include—

(i) a shelter belt of forest species, where the tree crown cover has, or is likely to have, an average width of less than 30m; or
(ii) forest species in urban areas; or
(iii) nurseries and seed orchards; or
(iv) trees grown for fruit or nuts; or
(v) long-term ecological restoration planting of forest species; or
(vi) willows and poplars space planted for soil conservation purposes

Structure

means any building, equipment, device, or other facility, made by people and which is fixed to land; and includes any raft.

Shelterbelt

means any trees planted primarily to provide shelter for stock, crops, or buildings from wind, and which are no greater than 30m ~~20m~~ wide.

Woodlot

means a stand of trees for the purposes of firewood, the creation of other wood products, a carbon sink, erosion control, pest, or wilding tree management purposes, but excluding plantation forestry.

7.2.2 Policies

1. To accommodate additional urban development only where the risk from natural hazards ~~flooding, land instability and coastal erosion or inundation~~ is acceptable ~~low~~.

(…)

(...)

2. Provision of rules and performance standards relating to the following:

   - Connection to reticulated potable water supply and sewage treatment and disposal systems within urban areas where such systems exist.
   - Development within areas ~~prone to~~ affected by natural hazards ~~flooding and land instability~~.

(…)

(…)

Parts of Kaikoura township and surrounding land have a high probability of being flooded from the Kowhai River and other streams in the Kaikoura Plains catchment. **Flooding has the potential to affect other parts of the district outside of the township, where low-lying land may be susceptible to floods.** Other natural hazards prevalent in the District include the threat of coastal erosion or inundation in coastal areas, **landslide debris inundation, debris flow fans, fault rupture, liquefaction** and **other** seismic hazards **and wildfire**. In order to reduce risks to life and property, it is important that urban development **only occurs where the risk of natural hazards is acceptable.** ~~**does not take place in areas at high risk of being affected by natural hazards. For flood hazard and inundation, low flood risk generally means land which is outside the risk areas as indicated on the flood hazard maps, or for areas not included in these maps, where the probability of a flood event is less than a 10% chance in 50 years (0.2% Annual Exceedance Probability**~~ The risk from coastal erosion is low on land outside the Coastal Hazard Lines, as shown in the Regional Council's Proposed Regional Coastal Environment Plan. **Chapter 8 is the designated Natural Hazards Chapter which contains rules and policies around the management of natural hazard risk in the District.**

(…)

8. Natural Hazards

8.1 Introduction

The Kaikoura District is susceptible to a wide range of natural hazards, including flooding, fault rupture, liquefaction, tsunami, ~~debris flow fans, landslide~~ debris inundation, and coastal inundation. Natural hazard events can damage property and infrastructure and can lead to injury or loss in human life. It is therefore important to identify areas subject to natural hazards and to restrict or manage subdivision, use and development.

This chapter focuses on the following natural hazards as they present the greatest risk to people and property, and the future effects can be addressed through appropriate land use planning measures.

- Flooding:
- ~~Landslide d~~Debris inundation,
- ~~Debris flow fans:~~
- Fault rupture:
- Liquefaction: and
- Wildfire

Some natural hazards are influenced by climate change. It is predicted that rainfall events will become more intense, storm events will become more common and sea level will rise. The flooding assessments required by this chapter will incorporate current climate change predictions based on the ~~International~~ Intergovernmental Panel on Climate Change's advice and current practice in local government.
The district is also susceptible to other natural hazards such as severe winds, wildfires and ground shaking from earthquakes. These hazards are primarily managed by other statutory instruments or processes. For example, the Building Act 2004 deals with severe winds by use of building materials during construction.

The Canterbury Regional Policy Statement (CRPS) recognises that for existing urban areas the community has already accepted some natural hazard risk in order to support the ongoing development of the district's existing communities. The CRPS accordingly requires development in high hazard areas in these locations to be either avoided or mitigated.

Risk

Risk is a product of both the consequences (for example, loss of life or damage to properties) and likelihood from a natural hazard occurrence. A risk based approach to natural hazards balances allowing for people and communities to use their properties and undertake activities, while also ensuring that their lives ~~or~~ and significant assets are not likely to be harmed as a result of a natural hazard event.

The level of risk can be either acceptable or unacceptable. This is determined by:

- The likelihood of the natural hazard event;
- The potential consequence of the natural hazard event for people and communities, property and infrastructure and the environment, and the emergency response organisations; and
- The consent process with the hazard overlays identifying areas for assessment.

This chapter anticipates the use of mitigation measures where it is appropriate to do so. These measures can reduce the consequences from natural hazards and reduce the associated risk.

Potential mitigation measures that can be incorporated into developments to reduce the consequences of natural hazards include:

- Building design and location (for example minimum floor levels or the ability for buildings to be relocated;
- Raising ground levels;

- The creation of flood water detention areas;
- The introduction, retention or improvement of existing natural systems that mitigate natural hazard effects;
- Use or size of materials in infrastructure design and building construction and location;
- The types of activities within buildings and structures;
- Provision of access to water sources for fire fighting
- Private mitigation works and community mitigation works

The chapter sets out a framework for determining where development in certain hazard areas should be avoided, including in areas identified as High Flood Hazard.

The District Council is required under the Resource Management Act to control any actual or potential effects of the use, development, or protection of land including for the purpose of the avoidance or mitigation of natural hazard events.

The District Council and the Regional Council both have functions for avoiding or mitigating natural hazard events in the District.

The areas potentially at ~~most~~ risk from flooding are shown on the Proposed District Plan Map Series as Flood Hazard Assessment Overlays ~~Part 4~~. Outside of the District Plan, the Regional Council also maintains flooding maps that indicate likely flow paths and depths for areas where more detailed flood modelling has been undertaken. These areas are based on geomorphological studies undertaken by the Regional Council and LIDAR information which incorporate historical flood data. While the flood hazard maps are based on the best available information, plan users should be aware that in extreme events, localised flooding or ponding may still occur on areas not marked as at-risk areas.

~~In addition, the flood hazard maps relate to the Kaikoura Plains only, and there may be other areas in the District at risk from flood events.~~ If there is any doubt as to the flood risk, it is recommended that developers check with the Regional Council prior to planning any building project. The Natural Hazard Chapter also recognises that not all areas of the District that may be at risk of flooding are identified on the planning maps.

Coastal erosion and inundation from the sea and tsunamis

Several sections of the Kaikoura coastline are subject to coastal erosion, and this erosion poses a threat to the main transport links which pass through the District. The November 2016 7.8M earthquake resulted in significant damage to Kaikoura where parts of the coast were uplifted. The North Canterbury Transport Infrastructure Recovery (NCTIR) has rebuilt the Road and Railway corridor to provide additional resilience to the coastal transport corridor.

Coastal erosion is widespread along the Kaikoura coastline and varies from -0.67 m/yr at Goose Bay to -0.29 m/yr at Oaro Beach. However, these rates are likely to vary significantly due to high intensity storms which can rapidly erode coastal areas. As a consequence of extreme weather events, some areas are potentially prone to inundation from the sea.

8.2 Objectives

8.2.1 Risk from natural hazards

New land use and development is managed in areas subject to natural hazards to ensure that natural hazard risk is avoided or mitigated to an acceptable level.

8.2.~~1~~2: Risk from Flood Hazards ~~natural hazards~~

New land use and development:

1. is managed in the Urban Flood Assessment Overlay to ensure the risk to people and property is avoided or mitigated and the ability of communities to recover from natural hazards is maintained;
2. is avoided in High Flood Hazard Areas outside of the Urban Flood Assessment Overlay; and
3. ~~is managed in in all other Hazard Overlays outside of High Flood Hazard Areas to an acceptable level.~~

8.2.~~2~~3 Infrastructure

1. Upgrading maintenance and replacement of existing critical infrastructure, and non-critical infrastructure, and new non-critical infrastructure, within all-natural hazard overlays is enabled where the infrastructure does not increase the risk to life or property from natural hazard events, or transfer the risk to another site; and

2. New critical infrastructure avoids High Flood Hazard Areas, **but where this is** ~~–~~not possible or is impractical **when considering operational and technical constraints** ~~**and**~~ is designed to maintain its integrity and ongoing function during and after natural hazard events or can be reinstated in a timely manner.

8.2.4 Hazard Mitigation Works

~~Reliance on new or upgraded hazard mitigation works to enable new development is avoided in the first instance, unless outside of high flood hazard areas the works consist of raised floor levels, or they are unavoidable, and they do not have significant effects on the environment.~~

Hazard mitigation works that may adversely affect people, property and the environment is avoided in the first instance and mitigated where such works are necessary.

8.3 Natural Hazard Policies

8.3.1 Identification of natural hazards

1. Identify areas that may be susceptible to natural hazards through the use of natural hazard overlays, and use the most up to date information available to provide site specific natural hazard assessments;
2. Recognise that climate change will alter the frequency and severity of some natural hazard events, and ensure that natural hazard assessments, and any mitigation works take into account the effects of climate change

8.3.2 Risk based approach

1. Take a risk based approach to managing natural hazards commensurate with the scale of development, whereby the level of risk is assessed as the combination of the likelihood of a natural hazard event occurring and the consequences of that event – for people and communities, property and infrastructure.

~~2. Manage natural hazard risk within all natural hazard overlays to an acceptable level~~

8.3.3 Additions to buildings in all hazard overlays

Provide for additions to existing hazard sensitive buildings within all natural hazard overlays where it can be demonstrated that:

1. The change in onsite risk resulting from the building addition to life and property is not unacceptable; and
2. The change in risk resulting from the building addition to adjacent properties, activities and people is not unacceptably increased.

8.3.4 Hazard mitigation works

Hazard mitigation works:

1. undertaken by or on behalf of the Crown, Canterbury Regional Council or the Council are enabled for the purpose of reducing the risk to life and property from flooding where area wide mitigation is necessary to protect existing communities from natural hazard risk which cannot be reasonably avoided; or
2. not undertaken by or on behalf of the Crown, Canterbury Regional Council or Council, will only be acceptable where;

a. natural hazard risk cannot be reasonably avoided;

b. any adverse effects of those works on the natural and built environment and on the cultural values of Ngati Kuri are avoided, remedied or mitigated; and

c. the mitigation works do not transfer or create unacceptable hazard risk to ~~other~~ people. Property. Infrastructure or the natural environment.

8.3.5 Natural features providing natural hazard resilience

Restore, maintain or enhance natural features, such as natural ponding areas, coastal dunes, wetland, water body margins, and riparian vegetation, where they assist in avoiding or reducing natural hazards.

8.3.6 Operation, maintenance, replacement and repair of all infrastructure

Enable the operation, maintenance, replacement, repair or removal of all existing infrastructure in all identified natural hazard overlays

8.3.7 New and upgrading of non-critical infrastructure

1. Enable the development of new non-critical infrastructure and upgrading of existing non-critical infrastructure in flood hazard assessment overlays only where the infrastructure does not increase flood risk on another site; and

2. Provide for the development of new non-critical infrastructure and upgrading of existing non-critical infrastructure in all other identified natural hazard overlays

8.3.8 Critical infrastructure

1 Enable the operation, maintenance, replacement, repair and upgrading of existing critical infrastructure in Flood Assessment Overlays only where the infrastructure does not increase flood risk on another site;

2 Provide for operation, maintenance, replacement, repair and upgrading of existing critical infrastructure in all other identified Natural Hazard Overlays;

3 Manage new critical infrastructure in all Natural Hazard Overlays which are outside of High Flood Hazard Areas to ensure that there is a low risk to life and property damage;

4 Avoid new critical infrastructure in High Flood Hazard Areas unless:

a. Avoidance is impossible or impracticable when considering operational and technical constraints, in which case critical infrastructure must be designed to maintain, as far as practicable, its integrity and ongoing operation during and after natural hazard events, or be able to be reinstated in a timely manner; and

b. The critical infrastructure does not significantly increase the natural hazard risk to life on the site, or increase risk to life and property on another site

8.3.9 Earthworks

Manage earthworks to avoid significant offsite effects associated with the displacement of floodwaters.

8.3.10 High Flood Hazard Areas within the Urban Flood Assessment Overlay

Avoid land use and development for hazard sensitive buildings in High Flood Hazard Areas of the Urban Flood Assessment Overlay, as determined by a flood assessment certificate unless it can be demonstrated that;

~~the nature of the activity means the risk to life and potential for damage from flooding is acceptable; or~~

1. minimum floor levels are incorporated into the design of the development to ensure buildings are located above the flood level so that the risk to life and potential for property damage from flooding is mitigated; and
2. the risk to surrounding properties is **no more than minor** ~~not significantly increased.~~
3. The development is not likely to require new or upgraded community hazard mitigation works
4. ~~The hazard sensitive building can be accessed and serviced during flood events.~~

8.3.11 High Flood Hazard Areas outside of the Urban Flood Assessment Overlay

Avoid land use and development for Hazard Sensitive Buildings outside of the Urban Flood Assessment Overlay in High Flood Hazard Areas as determined by a Flood Hazard Assessment Certificate, unless:

1. **the activity incorporates mitigation measures so that the risk to life and property damage is acceptable**
2. **the risk to surrounding properties is not increased; and**
3. **the activity does not require new or upgraded community scale mitigation works.**

8.3.12 Flooding outside of High Flood Hazard Areas within the Urban and Non-Urban Flood Assessment Overlays

Provide for land use and development for Hazard Sensitive Buildings outside of High Flood Hazard Areas as determined by a Flood Hazard Assessment Certificate where it can be demonstrated that;

1. the nature of the activity means the risk to life and potential for damage from flooding is acceptable; or
2. the activity is ancillary to the existing main development; or
3. buildings are located above the flood level so that the risk to life is acceptable and potential for property damage from flooding is mitigated; and
4. the risk to surrounding properties is not significantly increased.

8.3.13 ~~Debris Flow Fan Overlay and Landslide~~ Debris Inundation Overlay

Land use and development is avoided for Hazard Sensitive Buildings in the ~~Debris Flow Fan Overlay and Landslide~~ Debris Inundation Overlay which results in unacceptable risk to either life or property.

8.3.14 The Fault Avoidance Overlay and Fault Awareness Overlay

Land use and development is:

1. enabled only where there is an acceptable risk to life and property;
2. avoided for Hazard Sensitive Buildings in the Fault Avoidance Overlay where these result in an unacceptable risk to life and property;
3. managed for Hazard Sensitive Buildings in the Fault Awareness Overlay by locating the building away from the fault or where it can be demonstrated that mitigation measures will result in an acceptable risk to life and property;

8.3.15 Other natural hazards

Encourage the consideration of other natural hazards such as wildfire as part of land use and development.

8.4 Coastal Hazards

Coastal erosion, tsunami, storm events and saltwater inundation have the ability to cause damage to property and threaten life.

Objective 1

To avoid damage to assets or infrastructure, disruption to the community and loss of life as a result of coastal hazard events.

Policies

1. To avoid subdivision, use and development that increases the risk to people and property from coastal hazard events.

2. To permit the establishment of new protection structures in the coastal environment only where they are the best practicable option for the future and so that adverse effects are avoided to the extent practicable. When considering any application to renew or replace existing structures, the abandonment or relocation of those structures will be considered among the options.

3. To recognise and enhance the ability of natural features such as hard rock shorelines, beaches, sand dunes and wetlands to protect the built environment from coastal hazard events and to recognise that some natural features may migrate inland as the result of dynamic coastal process including sea level rise..

4. To recognise the possibility of sea level rise, to monitor predictions and research relating to sea level rise, and to vary or amend the District Plan as and when necessary so that effects of sea level rise are mitigated or avoided.

Implementation Methods

1. To control subdivision in areas subject to coastal hazards.

2. Co-operate with the Regional Council, and consultation with interested people and organisations, including Te Runanga o Ngai Tahu, in the maintenance and construction of coastal protection works.

3. Support the inclusion of rules in Regional Plans of the Regional Council, in relation to activities located in areas subject to the effects of coastal erosion and inundation.

4. Avoid the duplication of relevant provisions, including rules, in the Proposed Kaikoura District Plan and Regional Council plans.

5. Through the Council's annual planning process discourage activities which increase the rates of coastal erosion by providing information or advice to adjacent landowners.

Explanation and Reasons

Past experience indicates that once assets are threatened by coastal erosion and inundation, there is pressure to provide physical protective works, especially where high value assets are involved. However, such works are often ineffectual, costly and have an adverse effect on the environment. Such structures should only be established when they are the best practicable option. Therefore, where possible, it is preferable to locate assets away from hazard prone areas rather than build protective works. This is consistent with the direction taken by the New Zealand Coastal Policy Statement.

8.5 Natural hazard Rules

Activities

Activities specified in the following table shall be assessed as permitted, restricted discretionary, or non-complying as shown.

8.5.1 All zones	Any plantation forestry, woodlot or shelterbelt that complies with the following separation distances, measured from the outside extent of the canopy:	Permitted

	a. 30m from any hazard sensitive building on an adjoining property. Activity status when compliance is not achieved	Restricted discretionary Matters of discretion are restricted to: 1. The wildfire risk to life and property on the site and to adjacent properties 2. Proposals to mitigate any risk ~~including the enabling of firefighting and alignment with *the most up-to-date version of the Code of Practice for Firefighting Water Supplies*~~
8.5.2 All zones within the: URBAN FLOOD HAZARD ASSESSMENT OVERLAY	The establishment of any hazard sensitive building where it: a. Is located on land outside of High Flood Hazard Areas; b. Has a finished floor level equal to or higher than the minimum floor level; as stated in a FLOOD ASSESSMENT CERTIFICATE issued in accordance with activity standard 8.6.1	Permitted Matters of discretion are restricted to: 1. The likely extent of flooding on the site 2. the nature, design, and intended use of the building and its susceptibility to damage; 3. proposals to mitigate any risk arising from natural hazards on the site, including risk to the health and safety of occupants; 4. the extent of any positive effects from the proposal.

	Activity status when compliance is not achieved	Restricted Discretionary
8.5.3 All zones within the: NON-URBAN FLOOD HAZARD ASSESSMENT OVERLAY	The establishment of any new hazard sensitive building where it: a. Is located on land outside of High Flood Hazard Areas; b. Has a finished floor level equal to or higher than the minimum floor level; As stated in a FLOOD ASSESSMENT CERTIFICATE issued in accordance with activity standard 8.6.1	Permitted Matters of discretion are restricted to: 1. The likely extent of flooding on the site; 2. The nature, design and intended use of the building and its susceptibility to damage; 3. Proposals to mitigate any risk created by any failure to meet minimum finished floor levels, including risk to the health and safety of the occupants; 4. the extent of any positive effects from the proposal.
	Activity status where compliance with rule 8.5.~~2~~3.a is not achieved Activity status where compliance with rule 8.5.~~2~~3.b is not achieved	Non-complying Restricted discretionary
8.5.4 All zones within the:	The establishment of any new hazard sensitive building	Restricted discretionary Matters of discretion are restricted to: 1. The extent of debris flow or landslide inundation hazards on the site;

~~DEBRIS FLOW FAN OVERLAY; or~~ ~~LANDSLIDE~~ DEBRIS INUNDATION OVERLAY		2. The nature, design and intended use of the building, ~~or structure~~ and its susceptibility to damage; 3. Proposals to mitigate any risk arising from debris flow or landslide debris inundation hazards on the site; 4. Whether there is unacceptable risk to either life or property.
8.5.5 All zones within the: FAULT AVOIDANCE OVERLAY; or FAULT AWARENESS OVERLAY	The establishment of any new hazard sensitive building	Restricted discretionary Matters of discretion are restricted to: 1. The likely fault rupture hazards on the site; 2. The nature design and intended use of the building or structure and its susceptibility to damage; 3. Proposals to mitigate any risk arising from fault rupture hazards on the site, including risk to the health and safety of occupants. 4. **Whether the section has been created since 2008 and there is no other suitable location for the proposed building.**
8.5.6 All zones within the: URBAN FLOOD ASSESSMENT OVERLAY; or NON-URBAN FLOOD ASSESSMENT OVERLAY; or ~~DEBRIS FLOW FAN OVERLAY; or~~ ~~LANDSLIDE~~ DEBRIS INUNDATION OVERLAY; or	Additions to existing hazard sensitive buildings that: a. do not increase the floor area by more than 25m2 in any continuous 5-year period; or b. If located within a flood assessment overlay, have a finished floor level equal to or higher than the minimum floor level as stated in a FLOOD ASSESSMENT CERTIFICATE issued in accordance with activity standard 8.6.1. Activity status when compliance is not achieved	Permitted Restricted discretionary Matters of discretion are restricted to:

FAULT AVOIDANCE OVERLAY; or or FAULT AWARENESS OVERLAY		1. The natural hazard risk on the site 2. The nature, design and intended use of the building ~~or structure~~ and its susceptibility to damage; 3. Proposals to mitigate any risk arising from natural hazards on the site, including risk to the health and safety of occupants; 4. The potential to exacerbate natural hazard risk, including to any other site; and 5. The extent of any positive effects from the proposal.
8.5.7 All zones within the: URBAN FLOOD ASSESSMENT OVERLAY; or NON-URBAN FLOOD ASSESMENT OVERLAY	Above ground earthworks, buildings and new structures that: a. will not worsen flooding on another property through the diversion or displacement of floodwaters; or b. meet the definition of land disturbance Activity status when compliance is not achieved	Permitted Restricted discretionary Matters of discretion are restricted to: 1. The likely extent of flooding on the site; 2. The potential for the activity to exacerbate flooding on any other site; and 3. The extent to which the earthworks or new structure impedes the free passage of floodwaters
8.5.8 All zones within the: URBAN FLOOD ASSESSMENT OVERLAY; or NON-URBAN FLOOD ASSESSMENT OVERLAY	'New non-critical infrastructure, ~~critical infrastructure,~~ or the operation, maintenance, repair, replacement, upgrading of non-critical ~~and critical~~ infrastructure this infrastructure where: a. The activity does not result in permanent raising of the ground level. Activity status when compliance is not achieved	Permitted Restricted discretionary

		Matters of discretion are restricted to: 1. The likely extent of flooding on the site; 2. The nature, design and intended use of the infrastructure and its susceptibility to damage; 3. The potential for the activity to exacerbate natural hazard risk, including to any other sites; and **4.** The extent of any positive effects from proposal.
8.5.9 All zones within the: URBAN FLOOD ASSESSMENT OVERLAY; or NON-URBAN FLOOD ASSESSMENT OVERLAY; or ~~LANDSLIDE~~ DEBRIS INUNDATION OVERLAY; or FAULT AVOIDANCE OVERLAY; or or FAULT AWARENESS OVERLAY	Operation, maintenance, repair, replacement of existing critical infrastructure New critical infrastructure	Permitted Restricted discretionary Matters of discretion are restricted to: 1. The extent to which infrastructure exacerbates the natural hazard risk or transfers the risk to another site; 2. The ability for flood water conveyance to be maintained; 3. The extent to which there is a functional or operational requirement for the infrastructure to be located in the High Flood Hazard Overlay and there are no practical alternatives; 4. The extent to which the location and design of the infrastructure address relevant natural hazard risk and appropriate measures that have been incorporated into the design to provide for the continued operation
8.5.10. All zones within the: URBAN FLOOD ASSESSMENT OVERLAY; or	The change of use of any existing building that is not currently a hazard sensitive building to a hazard sensitive building where the activity: a. Is located on land outside of High Flood Hazard Areas; and	Permitted

NON-URBAN FLOOD ASSESSMENT OVERLAY	b. Has a finished floor level equal to or higher than the minimum floor level. As stated in a FLOOD ASSESSMENT CERTIFICATE issued in accordance with activity standard 8.6.1 Activity status when compliance with rule 8.5.~~9.~~10.a is not achieved Activity status when compliance with rule 8.5.~~9~~.10.b is not achieved	Non-complying Restricted discretionary Matters of discretion are restricted to: 1. The likely extent of flooding on the site; 2. The nature, design and intended use of the building or structure and its susceptibility to damage with reference to the hazard sensitivity classification 8.6.1 3. Proposals to mitigate any risk created by the failure to meet minimum finished floor levels, including risk to the health and safety of occupants; 4. The proposals for the activity to exacerbate natural hazard risk, including to any other sites; and 5. The extent of any positive effects from the reduction in floor levels
8.5.11 All zones within the: ~~DEBRIS FLOW FAN OVERLAY; or~~ ~~LANDSLIDE~~ DEBRIS INUNDATION OVERLAY; or FAULT AVOIDANCE OVERLAY; or	The change of use of any existing building that is not currently a hazard sensitive building to a hazard sensitive building	Restricted discretionary Matters of discretion are restricted to: 1. The nature, design and intended use of the building or structure; 2. An assessment of natural hazards on the site; 3. Proposals to mitigate any risk arising from natural hazards on the site, including risk to the health and safety of occupants; 4. The potential for the activity to exacerbate natural hazard risk, including to any other sites; and 5. The extent of any positive effects of the proposal.

FAULT AWARENESS OVERLAY		
8.5.12 All zones within the: URBAN FLOOD ASSESSMENT OVERLAY; or NON-URBAN FLOOD ASSESSMENT OVERLAY	The establishment of any new camping grounds where: 1. the land is not susceptible to flooding in a 500 year ARI flood event: as stated in a FLOOD ASSESSMENT CERTIFICATE issued in accordance with activity standard 8.6.1. Activity status when compliance is not achieved	Permitted Restricted discretionary Matters of discretion are restricted to: 1. An assessment of natural hazards on the site; 2. Proposals to mitigate any risk arising from natural hazards on the site, including risk to the health and safety of occupants; 3. The potential for the activity to exacerbate natural hazard risk, including to any other sites; and 4. The extent of any positive effects of the proposal.
8.5.13 All zones within the: FAULT AVOIDANCE OVERLAY; or ~~LANDSLIDE~~ DEBRIS INUNDATION OVERLAY	The establishment of any new Camping grounds	Restricted Discretionary Matters of discretion are restricted to: 1. An assessment of natural hazards on the site; 2. Proposals to mitigate any risk arising from natural hazards on the site, including risk to the health and safety of occupants; 3. The potential for the activity to exacerbate natural hazard risk, including to any other sites; and 4. The extent of any positive effects of the proposal.

8.6 Natural Hazards Activity Standards

8.6.1 Flood assessment certificate within the Urban and Non-urban Flood Assessment Overlays

A flood assessment certificate will be issued by Council (that is valid for three years from the date of issue) which specifies:

1. whether or not the activity is located on land that is within a High Flood Hazard Area; and
2. where the activity is located on land that is within the Urban Flood Assessment Overlay, a minimum finished floor level for any new building or extension (or part thereof) that is 300mm above the 500 year ARI flood level; and
3. where the activity is located on land that is within the Non-Urban Flood Assessment Overlay outside of High Flood Hazard Areas, a minimum finished floor level for any new building or structure (or part thereof) that is 300mm above the 500year ARI flood level; or
4. for campgrounds, whether the land is susceptible to flooding in a 500 year ARI flood event

The above will be determined with reference to:

a. The most up to date models and maps held by Kaikoura District Council or Canterbury Regional Council; and

b. Any relevant field information

Note:

1. Subdivision of any land located within the Natural Hazard Overlays ~~flood hazard areas 1, 1a, 2, 2a, or P~~ is ~~controlled~~ addressed in ~~Section~~ Chapter 13 Subdivision.~~, Rule 13.11.2.~~

(…)

~~2. 0.2% AEP Annual Exceedence Probability. equates to a 10% chance in 50 years of a building or site being subject to inundation from a flood event.~~

Chapter 13: Subdivision

13.2 Issue 1 - Natural Hazards

Land **<u>may</u>** ~~**likely to**~~ be subject to damage by erosion, subsidence, **<u>fault rupture,</u>** **<u>liquefaction, flooding,</u>** ~~**landslide**~~ **<u>debris inundation,</u>** ~~**debris flow fans, slippage**~~ **<u>or flooding</u>**. ~~**inundation from any source should not be subdivided unless the adverse effects can be avoided, remedied or mitigated**~~.

13.2.1 Objective 1

~~To avoid subdivision in localities where it is likely to increase risk to people or property from erosion, sea level rise, subsidence, fault rupture, liquefaction, flooding, landslide debris inundation and debris flow fans slippage or inundation from any source, unless this risk can be remedied, avoided or mitigated without significant adverse effects on the **environment.**~~

Subdivision is:

1. avoided in areas where the risk to life or property from natural hazards is unacceptable

2. managed in other areas to ensure that the risk of natural hazards to people and property is appropriately mitigated

13.2.2 Policies

(...)

~~Manage subdivision within all natural hazard overlays to ensure risk to life and property is acceptable.~~

Subdivision for new hazard sensitive buildings shall:

1. ~~6.~~ Be managed in Urban High Flood Hazard Areas and avoided/mitigated in Non Urban High Hazard Areas, as well as managed outside of High Flood Hazard Areas. ~~within High Flood Hazard areas unless it is within the Urban Flood Overlay in which case the flood risk must be avoided or mitigated.~~
2. ~~7.~~ Be avoided**/or mitigated** within the Fault Avoidance Overlay
3. ~~8.~~ Be managed within all natural hazard overlays other than those referred to in Clause 1 and 2 above, to ensure that the natural hazard risk is acceptable
4. ~~9.~~ Be managed in areas of the district that are subject to natural hazards, but are not identified as within a natural hazards overlay, to ensure that the risk to life and property from natural hazards is acceptable .
5. ~~10.~~ Be managed to ensure that development is not likely to require new or upgraded community scale **hazard mitigation works**

Subdivision Rules

13.11 Subdivision Activities

13.11.1 Controlled Subdivision Activities

Except as provided for in 13.11.2, 13.11.3, ~~and~~ 13.11.4 and 13.11.5 below, any subdivision which complies with all performance standards shall be a Controlled subdivision activity with Council's control being reserved to the following matters:

(…)

Natural Hazards

~~— Erosion~~

~~— Flooding and Inundation~~

~~— Landslip~~

~~— Rockfall~~

~~— Aggregation~~

~~— Unconsolidated Fill~~

~~— Subsidence~~

~~— Coastal erosion~~

~~— Tsunami.~~

— **Liquefaction within the Liquefaction Hazard Overlay, with the matters of control restricted to:**

1. **Geotechnical recommendations from a site-specific geotechnical assessment of liquefaction hazard, including testing of soils;**
2. **Location, size and design of the subdivision, roads, access, services;**
3. **Recommendations for foundations for future buildings;**
4. **Remediation and ground treatment**

~~— Provision of protection works, and measures to avoid, remedy or mitigate effects of such works, the location and type of services, building location, and location and quantity of filling and earthworks that could be affected by the following natural hazards or which could affect the impact of those natural hazards on the site or other land in the vicinity.~~

(…)

13.11.2 Restricted Discretionary Subdivision Activities

Subdivisions locating a new hazard sensitive building platform within:

1. **the Urban Flood Assessment Overlay;**
2. **the Non-Urban Flood Assessment Overlay outside of a High Flood Hazard Area as stated in a FLOOD ASSESSMENT CERTIFICATE issued in accordance with activity standard 8.6.1;** **~~the Debris Flow Fan Overlay;~~**
3. **the ~~Landslide~~ Debris Inundation Overlay; or**
4. **the Fault Awareness Overlay.**

Matters of discretion are restricted to:

1. **Geotechnical recommendations from a site-specific geotechnical assessment of hazards, including testing of soils;**
2. **Flooding mitigation recommendations from a site-specific flooding assessment;**
3. **Location, size, and design of the subdivision, roads, access, services and the extent to which natural hazard risk is managed;**
4. **Recommendations for foundations for future buildings and ground remediation;**
5. **The level of risk; and**
6. **The potential effects of mitigation measures.**

13.11.**4~~3~~** Non-complying Subdivision Activities

(…)

4. **Any subdivision locating a platform for a new hazard sensitive building within the Fault Avoidance Overlay;**
5. **Any subdivision locating a platform for a new hazard sensitive building within a High Flood Hazard Area within the Non-urban Flood Assessment Overlay as stated in a FLOOD ASSESSMENT CERTIFICATE issued in accordance with activity standard 8.6.1.**

Renumber 13.11.4 to 13.11.5

Make consequential amendments to numbering cross references to Table 13.12.1.a

Appendix 2: Examples of Flood Hazard Assessment Certificate Form

Christchurch City Council

Resource Consents Unit

Request for District Plan certificate: Minimum Floor Level

Submit this form online at: onlineservices.ccc.govt.nz; or
Email to: resourceconsentapplications@ccc.govt.nz; or
Deliver to: Resource Consents Unit, Christchurch City Council, 53 Hereford Street, Christchurch; or
Send to: Resource Consents Unit, Christchurch City Council, PO Box 73014, Christchurch Mail Centre, Christchurch, 8154

For enquiries phone: (03) 941 8999

About this form

This form is used to request a **Minimum Floor Level certificate** under Rules 5.4.1.2, 5.4.2.2 and 5.4.3.2 in Chapter 5 Natural Hazards, of the Christchurch District Plan.

Important information:

- A Minimum Floor Level certificate will specify the minimum floor level for new buildings and additions to existing buildings that increase the ground floor area of an existing building, within the relevant Flood Management Area but outside of the Fixed Minimum Floor Level Overlay as shown on the District Plan maps.
- The certified minimum floor level is the level required for a building or addition to be a permitted activity under P3 and P4 in Rule 5.4.1.1, P1 in Rule 5.4.2.1, and P15 and P16 in Rule 5.4.3.1 of the Christchurch District Plan.
- The certificate will be valid for two years from the date of issue.
- Please note that the minimum floor level certified under the District Plan may be different to the floor level required by the Building Act 2004 which must be met in order to obtain a building consent.
- The required fee (refer Resource Management Fee Schedule) must be paid before your request will be processed. An invoice will be issued when the request is received.

1. Property location

Address of the site(s):	
Legal description of the site(s):	

Note: For large properties, provision of a plan showing the proposed building location will enable the Council to certify the level for that specific location. If no plan is provided, the certificate will specify the highest floor level requirement anywhere on the property.

2. Applicant details

Full name (including middle name):	
Registered Company / Trust / Organisation name:	
Contact person / Trustee names:	
Landline:	
Mobile:	
Email:	
Postal Address:	

Signature of Applicant: (Or person authorised to sign on behalf of Applicant)

Date:		Name:	

3. Agent (if applicable)

Name of Agent:			
Name of firm:			
Landline:		Mobile :	
Email:			
Postal Address:			

4. Invoicing details

All consent-related invoices are to be made out to:

☐ Applicant *(Their full details must be provided in section 2 above)*

☐ Agent

☐ Existing 'on-account' customer Account customer name:

☐ Other (specify below)

Name:	
Email:	
Postal Address:	

Note: Where the application fee is to be charged to an account holder no deposit is required. Instead the actual fees will be invoiced on completion of processing.

5. Privacy information

The information on this form is required for the Council to process your request. All information submitted is required to be kept available for public record, therefore the public (including business organisations, media and other units of the Council) may view this application, once submitted. It may also be made available to the public on the Council's website. If there is sensitive information in your request please let us know.

The Council is subject to the Privacy Act 1993. For a full privacy statement see: https://ccc.govt.nz/the-council/how-the-council-works/privacy-statement/. If you would like to request access to, or correction of, your details, please contact us.

EXCERPT FROM THE CHRISTCHURCH DISTRICT PLAN

Chapter 5 Natural Hazards

5.4.1.2 Minimum floor level certificate

a. For P3 and P4 in Table 5.4.1.1b *[see below]*, new buildings or additions to existing buildings within the Flood Management Area, but outside of the Fixed Minimum Floor Level Overlay shall have a floor level that is greater than or equal to that specified in a Minimum Floor Level Certificate. The Council will issue a Minimum Floor Level Certificate (which will be valid for 2 years from the date of issue) which specifies the design floor level for a building calculated as the highest of the following:

   i. flooding predicted to occur in a 0.5% AEP (1 in 200-year) rainfall event concurrent with a 5% AEP (1 in 20-year) tidal event, including 1m sea level rise plus 400mm freeboard, as predicted by the most up to date Christchurch City Council model and any relevant field information; or

   ii. flooding predicted to occur in a 0.5% AEP (1 in 200-year) tidal event concurrent with a 5% AEP (1 in 20-year) rainfall event, including 1m sea level rise plus 400mm freeboard, as predicted by the most up to date Christchurch City Council model and any relevant field information; or

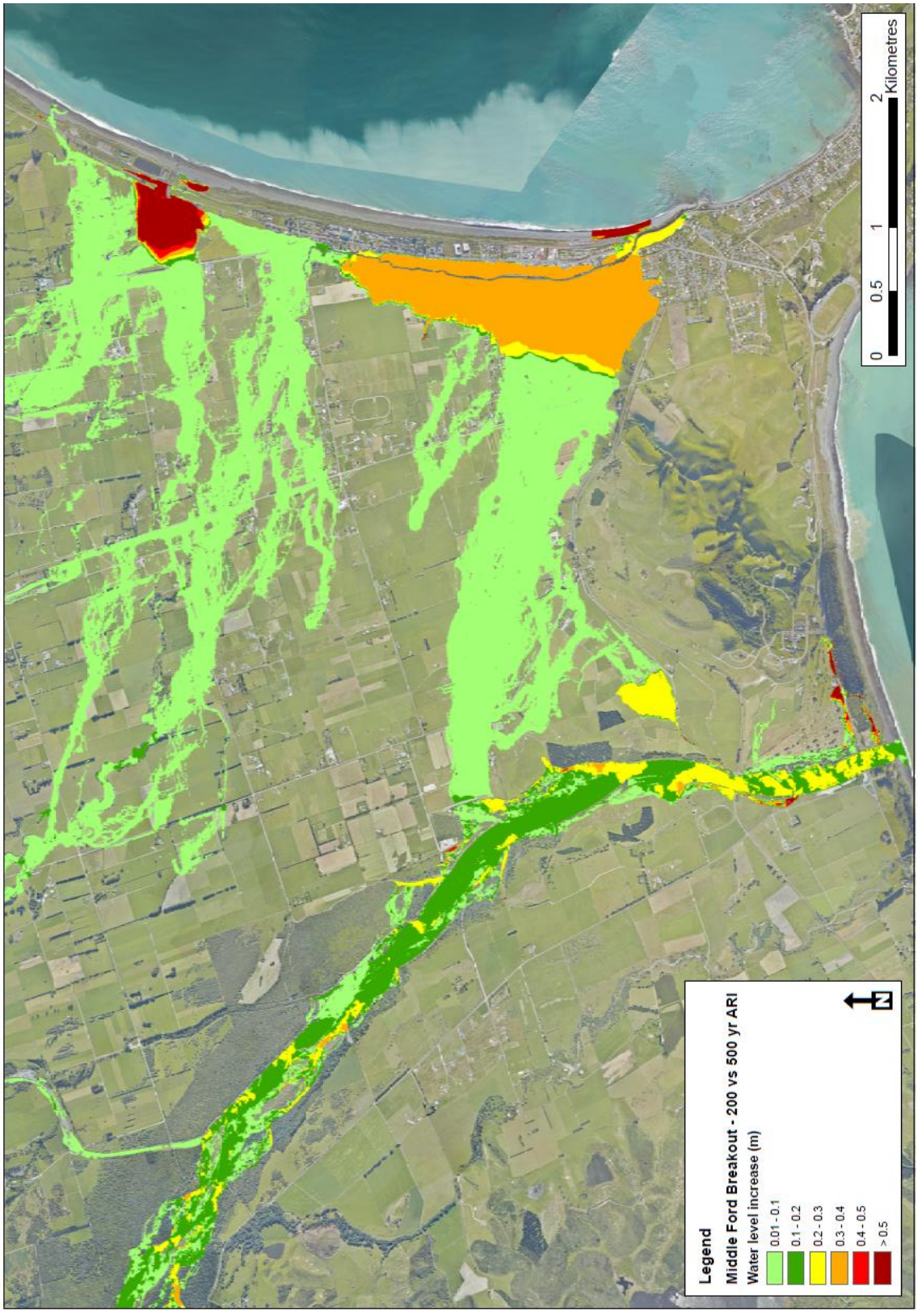
   iii. 12.3 metres above Christchurch City Council Datum.

P3: New buildings outside the Fixed Minimum Floor Level Overlay unless specified in P5, P6, P7, P8 or P9 in Rule 5.4.1.1.

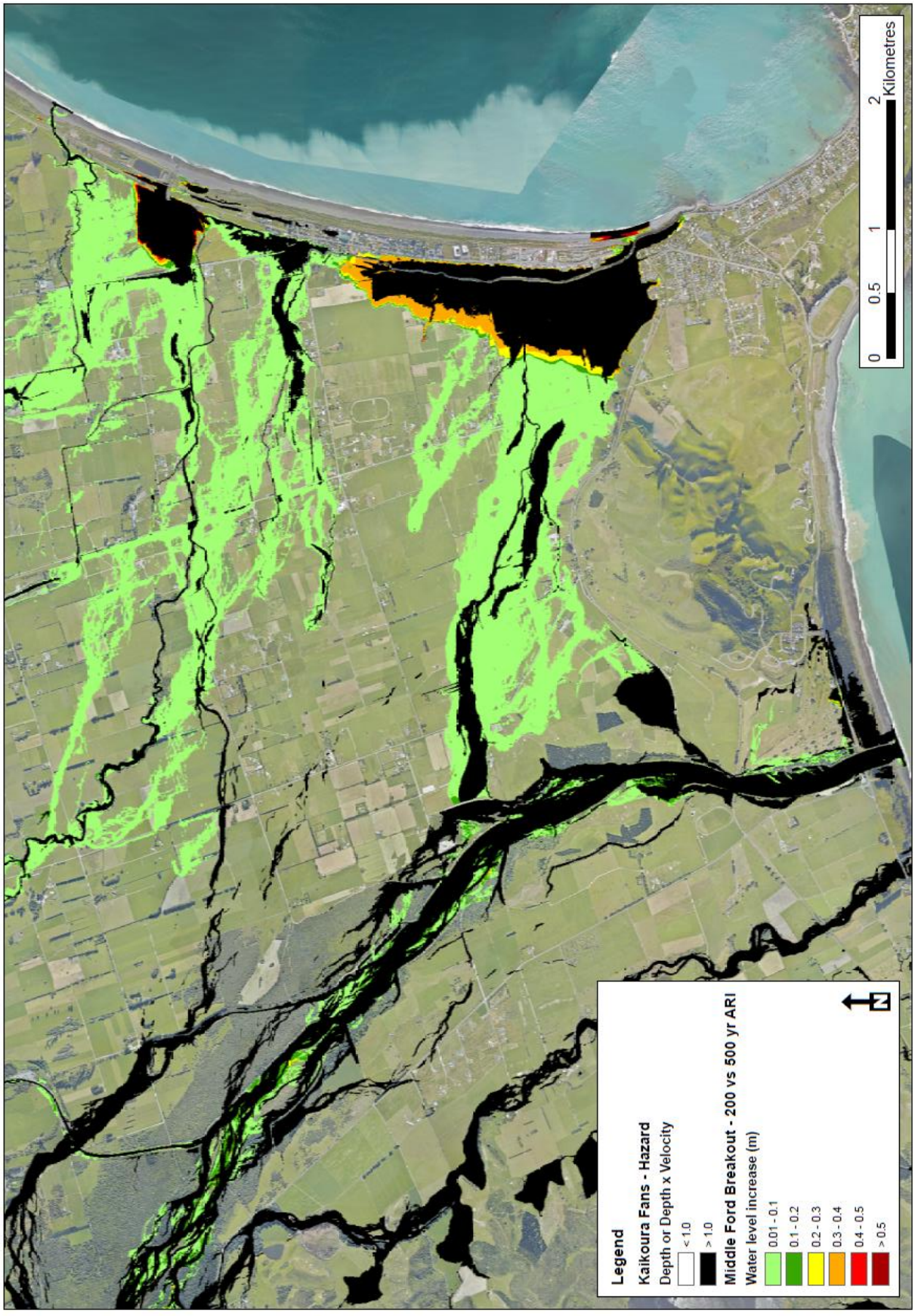
P4: Additions to existing buildings which increase the ground floor area of the building outside the Fixed Minimum Floor Level Overlay unless specified in P6, P7, P8 or P9 in Rule 5.4.1.1.

NOTE: Refer instead to Rule 5.4.2.2 for the Te Waihora/Lake Ellesmere and Wairewa/Lake Forsyth Flood Management Areas, or Rule 5.4.3.2 for the Waimakariri Flood Management Area.

Appendix 3: Difference in floodwaters between the 200 year ARI standard versus the 500 year ARI standard.



Appendix 4: High hazard areas as per policy 11.3.1 of the RPS



Appendix 5: Review of Proposed Plan Change Submission by Tetra Tech Coffey Regarding Liquefaction Hazard at Ocean Ridge

Appendix Six: Revised Natural Hazards Plan Change 3 Maps