BEFORE THE INDEPENDENT HEARINGS PANELS APPOINTED TO HEAR AND MAKE RECOMMENDATIONS ON SUBMISSIONS AND FURTHER SUBMISSIONS ON PROPOSED CHANGE 1 TO THE REGIONAL POLICY STATEMENT FOR THE WELLINGTON REGION

UNDER	Schedule 1 of the Resource Management Act 1991 (the Act)
IN THE MATTER OF	Hearing Submissions and Further Submissions on Proposed Change 1 to the Regional Policy Statement for the Wellington Region

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RIGHT OF REPLY EVIDENCE OF

DR IAIN NICHOLAS DAWE

AND

JAMES GARY BEBAN

ON BEHALF OF WELLINGTON REGIONAL COUNCIL

HEARING STREAM 3 - NATURAL HAZARDS

13 NOVEMBER 2023

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INTRODUCTION

1 Two authors have contributed to this this Right of Reply evidence; Dr Iain Dawe and James Beban, which has been prepared in respect to matters raised during Hearing Stream 3: Climate Change – Natural Hazards held on 28-31 August 2023.

2 Dr Iain Dawe and James Beban also contributed to the analysis of submissions in the s42A hearing report and in the preparation of this joint reply evidence for natural hazards.

3 We have listened to submitters in Hearing Stream 3, read their evidence and tabled statements, and considered the relevant written submissions and further submissions to the natural hazards topic.

4 Dr Iain Dawe was primarily responsible for the Introduction and Issues, Objective CC.6, Policies CC.16 and CC.17, Methods 14, 22 and 23, the Anticipated Environmental Results 1-3 (AERs) and other matters. James Beban was primarily responsible for Objectives 19, 20 and 21, Polices 29, 51 and 52.

5 The qualifications and experience of Dr Iain Nicholas Dawe and James Gary Beban are set out in paragraphs 16-32 of our section 42A report dated 14 August 2023. We repeat the confirmation given in those reports that we have read and agree to comply with the Code of Conduct for Expert Witnesses.

SCOPE OF REPLY

6 This Right of Reply follows Hearing Stream 3 held from Monday 28 August 2023 to Thursday 31 August 2023.

7 On 8 September 2023, the Hearing Panels (the Panels) issued Minute 12 and requested the natural hazards Right of Reply address a few matters that were raised during Hearing Stream 3. In particular (para. 6e) in relation to the use of the term 'Te Rito o Te Harakeke' and whether it is appropriate to use given the evidence of submitters on the natural hazards provisions to delete its use and replace it with 'taonga species'.

8 Minute 12 also directed, in accordance with s41C and clause 8AA of Schedule 1 of the RMA, expert caucusing on three subtopics, including natural hazards, in order to assist the Panels in their deliberations. These matters, and our responses, are set out below and cover:

a) Responses to questions of officers from the Panel members that were unable to be answered during the hearing;

b) Matters raised by the Panels during the hearing, and

c) Matters raised by submitters during the hearing.

9 Throughout this document wording changes are indicated with different colours as follows:

- Red strikeout and underline refers to s42A wording changes as of 14 August 2023.
- Blue strikeout and underline refers to rebuttal evidence wording changes as of 22 August 2023.
- Green strikeout and underline refers to expert witness caucusing wording changes as of 16 October 2023.
- Yellow highlight strikeout and underline refers to right or reply evidence as of 13 November 2023 (this report).

10 A full marked up version with all the changes to the natural hazard provisions is provided in Appendix 1 of this report.

RESPONSES TO QUESTIONS FROM THE PANELS

11 The Panels had three questions regarding the use of terminology in Policies 29 and 52 and AER 1:

1) Policy 29 uses the term 'new and existing' in clause (b) but is silent on this in the following clauses (c) and (d), and the Panels asked whether new and existing also applied to these two clauses.

2) Policy 52 uses the term 'structural protection works' and the Panels asked whether **hard engineering** (as currently defined in the RPS) adequately covers structural protection works.

3) Related to the use of 'new and existing' in Policy 29, the Panels asked whether this term is included in AER 1 and if not whether it would be appropriate to add it.

Question 1: Use of 'new and existing' in Policy 29

12 The framework of Policy 29 is that in clause (a) and (b), Local Authorities need to identify areas affected by natural hazards and then assess the risks and consequences to both new and existing subdivision, use and development and categorise the risk as either low, medium or high. Clauses (c) and (d) are concerned with how the risks are managed or avoided for the different areas. The direction is to manage for areas considered to pose a low to medium risk and avoid, unless there is a functional or operational need, for areas where the hazards and risks are assessed as high. It follows logically that this applies to both new and existing development, but for the purposes of clarity for Policy 29, we propose the policy is reworded as follows (underlined in yellow highlight):

> **Policy 29**
>
> (c) include hazard overlays, objectives, polices and rules to manage new and existing subdivision, use and development in those areas where the hazards ~~and~~ or risks are assessed as low to medium ~~moderate~~; and
>
> (d) include hazard overlays, objectives, polices and rules to avoid new and manage existing subdivision, use ~~or~~ and development and *hazard sensitive activities* where the hazards and risks are assessed as high ~~to extreme~~, unless there is a functional or operational need to be located in these areas.

13 For high hazard areas, a Local Authority has the ability to prevent inappropriate development. However, it may be the case that following a hazard and risk assessment, existing development has occurred in areas that are considered high hazard. In these situations, all a Local Authority can do is mange the risk retrospectively, for example by controlling matters such as extensions and additions to existing buildings or properties. It is therefore appropriate that Policy 29 recognises this nuanced difference between existing and new development, with a direction to avoid new subdivision, use and development, and to manage existing subdivision and use and development in the high hazard area.

Question 2: Use of 'structural protection works' in Policy 52

14 There has been considerable work over the past 10 years in the field of engineering related to hazard mitigation with the development of nature-based solutions and soft engineering methods. Consequently, Change 1 has been to updated to recognise the

methods and options that are available for mitigating natural hazards. This has involved including new terminology (nature-based solutions) and standardising existing terminology (soft engineering and hard engineering) and deleting terminology that means the same as either of these three terms.

15 The Panels noted that Policy 52 was using the term 'structural protection works' and sought clarity as to its definition and whether or not hard-engineering (as defined in the operative RPS) sufficiently covered this term. As notified, Change 1 had deleted the term non-structural from clause (b) and replaced it with nature-based solutions. There weren't any changes or submissions on the term 'structural protection works' in clause (c), (d) and (h) but upon checking the definition for *hard engineering*, we note that it uses the word 'structural' and defines what these methods are, so we propose that Policy 52 can be amended as follows (strikeout and underlined in yellow highlight):

Policy 52

(c) avoiding ~~structural protection works or~~ *hard engineering* methods unless it is necessary to protect existing development, *regionally significant infrastructure* or property from unacceptable risk and the works form part of a long-term hazard management strategy ~~agreed to by relevant authorities~~ that represents the best practicable option for the future;

(d) the long-term viability of maintaining a *hard engineering* approach ~~the structural protection works~~ with particular regard to how climate change may increase the risk over time;

(h) the cumulative effects of isolated *hard engineering* ~~structural protection~~ works;

Question 3: The use of 'new and existing' in AER 1

16 The term 'new and existing is included in AER 1. Our opinion is that this needs to be consistent with Policy 29, which uses this wording, so no further changes are needed.

MATTERS RAISED IN MINUTE 12

17 In Minute 12, issued on 8 September 2023 the Panels requested that, with regard to Issue 5; "Can the relevant section 42A officers consider whether 'Te Rito o Te Harakeke' is appropriate in this issue statement given the evidence of submitters on the natural

hazards provisions. In particular, Rangitāne requested that the term be deleted and replaced with 'taonga species'.

18 The term 'Te Rito o te Harakeke' was included in the drafting of RPS Change 1 following discussions with mana whenua between the use of this term or 'Te Mana o te Taiao' in Objective 20, Policy 52(e) and Policy CC.16(e).

19 Both 'Te Rito o te Harakeke' and 'Te Mana o te Taiao' were being used in early exposure drafts of the National Policy Statement on Indigenous Biodiversity (NPS-IB), and there was some preference to have a national planning document on which to draw upon to provide guidance for its application. In the notified version of Change 1, 'Te Rito o te Harakeke' was selected over 'Te Mana o te Taiao' on the basis that this appeared to be the term the NPS-IB was settling on. The NPS-IB has subsequently become operative and neither of these terms have been included. This leaves some uncertainty over the use and practical interpretation of these terms in the RPS.

20 Rangitāne suggested replacing 'Te Rito o te Harakeke' with 'taonga species'. This was initially rejected for reasons outlined in the natural hazards rebuttal evidence in paragraphs 53-57. However, on reflection and following evidence and discussions at the hearing I (Dr Dawe) propose that 'Te Rito o te Harakeke' is replaced with 'taonga species', recognising that this term appears in other parts of the RPS and that there will be an assessment of use of the term 'Te Rito o te Harakeke' in the Indigenous Ecosystems provisions in Hearing Stream 6 and consistency in use across provisions can be addressed as part of Hearing Stream 7.

21 This was discussed at the caucusing meeting held on 16 October and agreed upon in the Joint Witness Statement of Planning Experts Climate Resilience, Nature-Based Solutions and Natural Hazards dated 20 October 2023 at paragraph 51. All participants agreed to either delete or replace the reference to 'Te Rito o te Harakeke' with 'taonga species' in the natural hazards provisions as follows (green text):

Objective 20

Natural hazard mitigation measures and *climate change* ~~*mitigation and*~~ *adaptation* activities *minimise* the risks from natural hazards, and impacts on, *Te Mana o te Wai*, ~~*Te Rito o te Harakeke*~~, taonga species, sites of significance to mana whenua/tangata whenua, natural processes, indigenous ecosystems and biodiversity.

Policy 52

(e) adverse effects on *Te Mana o te Wai*, mahinga kai, ~~*Te Rito o te Harakeke*~~, taonga species, natural processes, or ~~the local~~ indigenous ecosystems and biodiversity;

Policy CC.16

(e) a consideration of Te Mana o te Wai ~~and Te Rito o te Harakeke~~;

22 Taonga species is a suitable replacement in Objective 22 and Policy 52(e) but it needs to be deleted in Policy CC.16(e) as this clause is capturing a different focus (reference to specific Te Ao Māori concepts, rather than impacts on the environment), but the intent is captured in clause (a) of the same policy, which references the consideration of Te Ao Māori and Mātauranga Māori approaches.

MATTERS RAISED BY SUBMITTERS

23 There were a number of matters raised by submitters in the hearing, all of which were either discussed in the natural hazards rebuttal evidence report dated 22 August 2023 or in the caucusing meeting of 16 October 2023, as outlined in the Joint Witness Statement from that meeting. A summary of where wording changes were agreed upon following caucusing is provided in the remaining sub-sections.

Meaning of 'long-term hazard strategy' in Policy 52(c)

24 Wellington International Airport Limited had a question about the meaning of the term 'long-term hazard strategy' in Policy 52(c) and whether there was a way to clarify its intent. This was addressed in the caucusing meeting of 16 October and the associated Joint Witness Statement (paras. 84-86) by rewording the term to 'hazard risk management strategy' and including a new definition for it into the RPS as follows (green text):

Policy 52

(c) avoiding structural protection works or *hard engineering* methods unless it is necessary to protect existing development, *regionally significant infrastructure* or property from unacceptable risk and the works form part of a ~~long-term~~ *hazard risk management strategy* ~~agreed to by relevant authorities~~ that represents the best practicable option for the future;

"***Hazard risk management strategy***: A strategic approach for the management of the risks from natural hazards to minimise or reduce the overall risk of social, environmental and economic harm and adverse effects from natural hazards. It includes some or all of the following elements; hazard and hazard risk identification, impact assessment, potential mitigation works (costs/impacts/maintenance), assessment of environmental effects, assessment of alternate options, cost-benefit analysis, budget allocation; community engagement and implementation plan. The scale of a hazard risk management strategy should be commensurate to the size of the proposed development or activity."

Meaning of 'long-term viability' in Policy 52(d)

25 Wellington International Airport Limited also had a question about the interpretation of clause (d) in Policy 52, with particular regard to 'long-term viability.' This was addressed in our joint natural hazards rebuttal evidence dated 22 August 2023 (para. 77) and was discussed in the caucusing meeting of 16 October. In summary, the term 'long-term viability' refers to the way in which climate change may increase the intensity and frequency of hazard events and disasters, that in turn impact on the built environment. Thus, it refers to the viability of maintaining hard engineering approaches in the face of these changes. To aid the interpretation of this clause it was agreed in Joint Witness Statement (paras. 87-90) to refine the clause as follow (green text):

Policy 52

(d) the long-term viability of maintaining a *hard engineering* approach ~~the structural protection works~~ with particular regard to how climate change may increase the risk from natural hazards over time;

Listing of regulatory instruments in non-regulatory Policy CC.16 and Method 22

26 Upper Hutt City Council raised a concern that the non-regulatory Policy CC.16 and Method 22 included references to district plan instruments and requested that these be deleted or reworded for clarity. In the caucusing meeting of 16 October 2023, (paras. 93-97 of the Joint Witness Statement) it was agreed to retain reference to these instruments, but to reword them such that is was clearer that these were options to employ rather than a compulsion (green text):

Policy CC.16

Regional, city and district councils should~~, under the Local Government Act 2002,~~ partner with mana whenua / tangata whenua and engage local communities in a decision-making process to develop and implement strategic *climate change adaptation* plans that map out management options over short, medium and long term timeframes, using a range of tools and methods that may include ~~including~~, but are not limited to:

Method 22

(b) supporting the development of ~~developing~~ consistency in natural hazard provisions in ~~city~~, district and regional plans;

Dr Iain Nicholas Dawe

Greater Wellington Regional Council

James Beban

Planner/Director

APPENDIX 1 – TABLE OF NATURAL HAZARD PROVISIONS WORDING CHANGES			
Provision	**Natural Hazards Proposed RPS Change 1 version (19 Aug 2022)**	**Natural Hazards RPS Change 1 s42A wording changes (14 Aug 2023)**	**Natural Hazards RPS Change 1 Rebuttal Evidence (22 Aug 2023) (blue); Caucusing wording changes (green) (16 Oct 2023); Right of Reply changes (yellow highlight) (13 Nov 2023)**
Issue 1	**~~Effects of~~ Risks from natural hazards** Natural hazard events in the Wellington region have an adverse impact on people and communities, businesses, property and infrastructure.	**~~Effects of~~ Risks from natural hazards** Natural hazard events in the Wellington region have an adverse impact on people and communities, the natural environment, businesses and the local economy, property and infrastructure.	No changes from S42A report
Issue 2	**Human actions can increase risk and consequences from natural hazards** People's actions including mitigation measures and ongoing development in areas at risk from natural hazards can cause, or increase, the risk and consequences from natural hazards.	Retain as notified	No changes from S42A report
Issue 3 FW	**Climate change will increase ~~both~~ the likelihood and consequences ~~magnitude and frequency of~~ from natural hazard events** Climate change will increase the likelihood and consequences ~~risks~~ from natural hazard events that already occur within the region, particularly: (a) sea level rise, exacerbating the effects of coastal erosion and inundation, ~~and~~ river, pluvial and	**Climate change will increase ~~both~~ the likelihood and consequences ~~magnitude and frequency of~~ from natural hazard events** Climate change will increase the likelihood and consequences ~~risks~~ from most natural hazard events that already occur within the region, particularly: (a) sea level rise, exacerbating the effects of coastal erosion and inundation, ~~and~~ river, pluvial and stormwater flooding in low	No changes from S42A report

	stormwater flooding in low lying areas, especially during storm ~~surge~~ tide events (b) increased frequency and intensity of storm events, adding to the risk from floods, landslides, severe wind, storm surge, coastal erosion and inundation (c) increased frequency of drought, placing pressure on water resources and increasing the wildfire risk	lying areas, especially during storm ~~surge~~ tide events (b) increased frequency and intensity of storm events, adding to the risk from floods, landslides, severe wind, storm surge, coastal erosion and inundation (c) increased frequency of drought, placing pressure on water resources and increasing the wildfire risk	
Objective 19	The risks and consequences to people, communities, ~~their~~ businesses~~s~~, property, ~~and~~ infrastructure and the environment from natural hazards and the effects of climate change ~~effects~~ are ~~reduced~~ minimised.	The risks ~~and consequences~~ to people, communities, ~~their~~ businesses~~s~~, property, and infrastructure ~~and the environment~~ from natural hazards and the effects of climate change ~~effects~~ are ~~reduced~~ avoided or *minimised*.	No changes from S42A report
Objective 20 FW	Natural hazard and *climate change mitigation and adaptation* activities minimise the risks from natural hazards and impacts on *Te Mana o te Wai*, *Te Rito o te Harakeke*, natural processes, indigenous ecosystems and biodiversity. ~~Hazard mitigation measures, structural works and other activities do not increase the risk and consequences of natural hazard events.~~	Natural hazard mitigation measures and *climate change ~~mitigation and~~ adaptation* activities *minimise* the risks from natural hazards, and impacts on, *Te Mana o te Wai*, *Te Rito o te Harakeke*, sites of significance to mana whenua/tangata whenua, natural processes, indigenous ecosystems and biodiversity.	Natural hazard mitigation measures and *climate change ~~mitigation and~~ adaptation* activities *minimise* the risks from natural hazards, and impacts on, *Te Mana o te Wai*, ~~*Te Rito o te Harakeke*~~, taonga species, sites of significance to mana whenua/tangata whenua, natural processes, indigenous ecosystems and biodiversity.
Objective 21	The resilience of our ~~C~~communities are ~~more resilient to natural hazards,~~	The resilience of our ~~C~~ communities ~~are more resilient to natural hazards, including the~~	The resilience of our ~~C~~ communities, infrastructure ~~are more resilient to natural~~

	~~including the impacts~~ and the natural environment to the short, medium, and long-term effects of climate change~~,~~ and sea level rise is strengthened, and people are better prepared for the consequences of natural hazard events.	~~impacts~~ and the natural environment is strengthened to the short, medium, and long-term effects of climate change~~,~~ and sea level rise ~~is strengthened,~~ and people are better prepared for the consequences of natural hazard events.	~~hazards, including the impacts~~ and the natural environment to natural hazards is ~~strengthened~~ improved including to the short, medium, and long-term effects of climate change~~,~~ and sea level rise ~~is strengthened,~~ and people are better prepared for the consequences of natural hazard events.
Objective CC.6	Resource management and adaptation planning increases the resilience of communities and the natural environment to the short, medium, and long-term effects of climate change.	Resource management and adaptation planning increases the resilience of communities, infrastructure and the natural environment to the short, medium, and long-term effects of climate change.	No changes from S42A report
Policy 29 [Regulatory]	**Policy 29: ~~Avoiding inappropriate~~ Managing subdivision, use and development in areas at risk from natural hazards – district and regional plans** Regional and district plans shall: (a) identify areas affected by natural hazards; and (b) use a risk-based approach to assess the consequences to subdivision, use and development from natural hazard and climate change impacts over a 100 year planning horizon; (c) include objectives, polices and rules to manage subdivision, use and development in those areas where the hazards and risks are assessed as low to moderate; and	**Policy 29: ~~Avoiding inappropriate~~ Managing subdivision, use and development in areas at risk from natural hazards – district and regional plans** Regional and district plans shall manage subdivision, use and development in areas at risk from natural hazards as follows: ~~Avoiding inappropriate Managing subdivision, use and development in areas at risk from natural hazards – district and regional plans~~ ~~Regional and district plans shall:~~ a) identify areas affected by natural hazards; and b) use a risk-based approach to assess the consequences to new or existing subdivision, use and development from natural hazard and climate change impacts over at least a 100 year planning	**Policy 29: ~~Avoiding inappropriate~~ Managing subdivision, use and development in areas at risk from natural hazards – district and regional plans** Regional and district plans shall manage subdivision, use and development in areas at risk from natural hazards as follows: ~~Avoiding inappropriate Managing subdivision, use and development in areas at risk from natural hazards – district and regional plans~~ ~~Regional and district plans shall:~~ a) identify areas affected by natural hazards; and b) use a risk-based approach to assess the consequences to new or existing subdivision, use and development from natural hazard and climate change impacts

	(d) include objectives, polices and rules to avoid subdivision, use or development and *hazard sensitive activities* where the hazards and risks are assessed as high to extreme. **Explanation** Policy 29 establishes a framework to: 1. identify natural hazards that may affect the region or district; and then 2. apply a risk-based approach for assessing the potential consequences to new or existing subdivision, use and development in those areas; and then 3. develop provisions to manage subdivision, use and development in those areas. The factors listed in Policies 51 and 52 should be considered when implementing Policy 29 and when writing policies and rules to manage subdivision, use and development in areas identified as being affected by natural hazards. ~~**Explanation**~~ ~~The process of identifying 'areas at high risk' from natural hazards must consider the potential natural hazard events that may affect an area and the vulnerability of~~	horizon which identifies the hazards as being low, medium or high; c) include hazard overlays, objectives, polices and rules to manage subdivision, use and development in those areas where the hazards ~~and~~ or risks are assessed as low to medium ~~moderate~~; and d) include hazard overlays, objectives, polices and rules to avoid subdivision, use ~~or~~ and development and *hazard sensitive activities* where the hazards and risks are assessed as high ~~to extreme~~, unless there is a functional or operational need to be located in these areas. **Explanation** Policy 29 establishes a framework to: **1.** identify natural hazards that may affect the region or district; and then **2.** apply a risk-based approach for assessing the potential consequences to new or existing subdivision, use and development in those areas; and then **3.** develop provisions to manage subdivision, use and development in those areas. The factors listed in Policies 51 and 52 should be considered when implementing Policy 29 and when writing policies and rules to manage subdivision, use and development in areas identified as being affected by natural hazards. Guidance documents that can be used to assist in incorporating a risk-based approach to	over at least a 100 year planning horizon which identifies the hazards as being low, medium or high; c) include hazard overlays, objectives, polices and rules to manage new and existing subdivision, use and development in those areas where the hazards ~~and~~ or risks are assessed as low to medium ~~moderate~~; and d) include hazard overlays, objectives, polices and rules to avoid new and manage existing subdivision, use ~~or~~ and development and *hazard sensitive activities* where the hazards and risks are assessed as high ~~to extreme~~, unless there is a functional or operational need to be located in these areas. **Explanation** Policy 29 establishes a framework to: **1.** identify natural hazards that may affect the region or district; and then **2.** apply a risk-based approach for assessing the potential consequences to new or existing subdivision, use and development in those areas; and then **3.** develop provisions to manage subdivision, use and development in those areas. The factors listed in Policies 51 and 52 should be considered when implementing Policy 29 and when writing policies and rules to manage

	~~existing and/ or foreseeable subdivision or development. An area should be considered high risk if there is the potential for moderate to high levels of damage to the subdivision or development, including the buildings, infrastructure, or land on which it is situated. The assessment of areas at high risk should factor in the potential for climate change and sea level rise and any consequential effect that this may have on the frequency or magnitude of related hazard events.~~ ~~Examples of the types of natural hazards or hazard events that may cause an area or subdivision or development to be considered high risk include – but are not limited to – fault rupture zones, beaches that experience cyclical or long-term erosion, failure prone hill slopes, or areas that are subject to serious flooding.~~ ~~The factors listed in policies 51 and 52 should be considered when implementing policy 29 and writing policies and rules to avoid inappropriate subdivision and development in areas at high risk.~~ ~~Most forms of residential, industrial or commercial development would not be considered appropriate and should be avoided in areas at high risk from natural hazards, unless it is shown that the effects, including residual risk, will be managed appropriately.~~ ~~Hazard mitigation works can reduce the risk from natural hazards in high hazard areas.~~	hazard risk management and planning include: • Risk Tolerance Methodology: A risk tolerance methodology for central, regional, and local government agencies who manage natural hazard risks. Toka Tū Ake | EQC (2023); • Planning for natural hazards in the Wellington region under the National Policy Statement on Urban Development, GNS Science Misc. Series 140 (2020); • Coastal Hazards and Climate Change: Guidance for Local Government, Ministry for the Environment (2017); • Risk Based Approach to Natural Hazards under the RMA, Prepared for MfE by Tonkin & Taylor (2016); • Planning for Risk: Incorporating risk-based land use planning into a district plan, GNS Science (2013); • Preparing for future flooding: a guide for local government in New Zealand, MfE (2010); • Guidelines for assessing planning policy and consent requirements for landslide prone land, GNS Science (2008); • Planning for development of land on or close to active faults, Ministry for the Environment (2003) and; • Other regional documents and strategies relating to the management of natural hazards.	subdivision, use and development in areas identified as being affected by natural hazards. Guidance documents that can be used to assist in incorporating a risk-based approach to hazard risk management and planning include: • Risk Tolerance Methodology: A risk tolerance methodology for central, regional, and local government agencies who manage natural hazard risks. Toka Tū Ake | EQC (2023); • Planning for natural hazards in the Wellington region under the National Policy Statement on Urban Development, GNS Science Misc. Series 140 (2020); • NZCPS guidance note: Coastal Hazards, Department of Conservation (2017); • Coastal Hazards and Climate Change: Guidance for Local Government, Ministry for the Environment (2017); • Risk Based Approach to Natural Hazards under the RMA, Prepared for MfE by Tonkin & Taylor (2016); • Planning for Risk: Incorporating risk-based land use planning into a district plan, GNS Science (2013); • Preparing for future flooding: a guide for local government in New Zealand, MfE (2010); • Guidelines for assessing planning policy and consent requirements for landslide prone land, GNS Science (2008);

	~~To give effect to this policy, district and regional plans should require assessments of the risks and consequential effects associated with any extensive structural or hard engineering mitigation works that are proposed. For a subdivision or development to be considered appropriate in areas at high risk of natural hazards, any hazard mitigation works should not:~~ • ~~Adversely modify natural processes to a more than minor extent,~~ • ~~Cause or exacerbate hazards in adjacent areas to a more than minor extent,~~ • ~~Generally result in significant alteration of the natural character of the landscape,~~ • ~~Have unaffordable establishment and maintenance costs to the community,~~ • ~~Leave a more than minor residual risk, and/or~~ • ~~Result in more than minor permanent or irreversible adverse effects.~~ ~~Examples of how this may be applied to identified high hazard areas include: fault rupture avoidance zones 20 metres either side of a fault trace; setback distances from an eroding coastline; design standards for floodplains; or, requirements for a geotechnical investigation before development proceeds on a hill slope identified as prone to failure.~~		• Planning for development of land on or close to active faults, Ministry for the Environment (2003) and; • Other regional documents and strategies relating to the management of natural hazards.

	~~This policy promotes a precautionary, risk-based approach, taking into consideration the characteristics of the natural hazard, its magnitude and frequency, potential impacts and the vulnerability of development.~~ ~~Guidance documents that could be used to assist in the process include:~~ ~~• Risk Management Standard AS/NZS 4360:2004~~ ~~• Guidelines for assessing planning policy and consent requirements for landslide prone land, GNS Science (2008)~~ ~~• Planning for development of land on or close to active faults, Ministry for the Environment (2003)~~ ~~• Coastal Hazards and Climate Change: A Guidance Manual for Local Government in New Zealand, Ministry for the Environment (2008)~~ ~~• Other regional documents relating to the management of natural hazards.~~ ~~This policy also recognises and supports the Civil Defence Emergency Management principles – risk reduction, readiness, response and recovery – in order to encourage more resilient communities that are better prepared for natural hazards, including climate change impacts.~~ ~~Policy 29 will act to reduce risk associated with natural hazards. The risks are to people and communities, including businesses, utilities and civic~~		

	~~infrastructure.~~ ~~This policy and the Civil Defence Emergency Management framework recognise the need to involve communities in preparing for natural hazards. If people are prepared and able to cope, the impacts from a natural hazard event are effectively reduced.~~		
Policy 51 [Consideration]	**Policy 51: Minimising the risks and consequences of natural hazards – consideration** When considering an application for a resource consent, notice of requirement, or a change, variation or review to a district or regional plan, the risk and consequences of natural hazards on people, communities, their property and infrastructure shall be minimised, and/or in determining whether an activity is inappropriate particular regard shall be given to: (a) the ~~frequency and magnitude~~ likelihood and consequences of the range of natural hazards that may adversely affect the ~~proposal or development~~ subdivision, use or development, including ~~residual risk~~ those that may be exacerbated by climate change and sea level rise~~,~~ ~~(b) the potential for climate change and sea level rise to increase in the~~	**Policy 51: Avoiding or *Minimising* the risks and consequences of natural hazards – consideration** When considering an application for a resource consent, notice of requirement, or a change, variation or review to a district or regional plan, the risk and consequences of natural hazards on people, communities, their property and infrastructure shall be avoided or *minimised*, and/or in determining whether an activity is inappropriate particular regard shall be given to: (a) the ~~frequency and magnitude~~ likelihood and consequences of the range of natural hazards that may adversely affect the ~~proposal or development~~ subdivision, use or development, including ~~residual risk~~ those that may be exacerbated by climate change and sea level rise~~,~~ ~~(b) the potential for climate change and sea level rise to increase in the frequency or magnitude of a hazard event;~~ (c) whether the location of the subdivision, use or development will foreseeably	No changes from S42A report

	~~frequency or magnitude of a hazard event;~~ (c) whether the location of the subdivision, use or development will foreseeably require hazard mitigation works in the future; (d) the potential for injury or loss of life, social and economic disruption and civil defence emergency management implications – such as access routes to and from the site; (e) whether the subdivision, use or development causes any change in the risk and consequences from natural hazards in areas beyond the application site; (f) *minimising* effects ~~on the impact~~ of the ~~proposed~~ subdivision, use or development on any natural features that may act as a buffer to ~~or~~ reduce the impacts ~~of a~~ from natural hazards ~~event~~; ~~and where development should not interfere with their ability to reduce the risks of natural hazards;~~ (g) avoiding ~~inappropriate~~ subdivision, use or development and *hazard sensitive activities* where the hazards and risks are assessed as high to extreme; ~~in areas at high risk from natural hazards;~~ (h) appropriate hazard risk management and/or adaptation	require hazard mitigation works in the future; (d) the potential for injury or loss of life, social and economic disruption and civil defence emergency management implications – such as access routes to and from the site; (e) whether the subdivision, use or development causes any change in the risk and consequences from natural hazards in areas beyond the application site; (f) *minimising* effects ~~on the impact~~ of the ~~proposed~~ subdivision, use or development on any natural features that may act as a buffer to ~~or~~ reduce the impacts ~~of a~~ from natural hazards ~~event~~; ~~and where development should not interfere with their ability to reduce the risks of natural hazards;~~ (g) avoiding ~~inappropriate~~ subdivision, use or development and *hazard sensitive activities* where the hazards and risks are assessed as high ~~to extreme~~; ~~in areas at high risk from natural hazards,~~ ~~u~~unless there is a functional or operational need to be located in these areas; (h) appropriate hazard risk management and/or adaptation ~~and/or mitigation~~ measures for subdivision, use or development in areas where the hazards and risks are assessed as low to moderate	

	~~and/or mitigation~~ measures for subdivision, use or development in areas where the hazards and risks are assessed as low to moderate ~~hazard areas~~, including an assessment of residual risk; and (i) the allowance for floodwater conveyancing in identified overland flow paths and stream corridors; and (j) the need to locate ~~habitable~~ floor ~~areas~~ levels of habitable buildings and buildings used as places of employment above the 1% AEP (1:100 year) flood level, in identified flood hazard areas. **Explanation** Policy 51 aims to minimise the risk and consequences of natural hazards events through sound preparation, investigation and planning prior to development. This policy reflects a need to employ a precautionary, risk-based approach, taking into consideration the likelihood of the hazard and the vulnerability of the development. ~~• Typical natural hazards in the region include, but are not limited to:~~ ~~• Flooding and inundation (river, stormwater, coastal)~~	~~hazard areas~~, including an assessment of residual risk; and (i) the allowance for floodwater conveyancing in identified overland flow paths and stream corridors; and (j) the need to locate ~~habitable~~ floor ~~areas~~ levels of habitable buildings and buildings used as places of employment above the 1% AEP (1:100 year) flood level, in identified flood hazard areas. **Explanation** Policy 51 aims to minimise the risk and consequences of natural hazards events through sound preparation, investigation and planning prior to development. This policy reflects a need to employ a precautionary, risk-based approach, taking into consideration the likelihood of the hazard and the vulnerability of the development.	

	• Earthquake (groundshaking, amplification, liquefaction, ground displacement) • Coastal hazards (erosion, storm surge, tsunami) • Mass movement (landslip, rockfall) Other site specific hazards may become apparent during the course of an assessment for a proposal or development; however, those above are the most serious hazards to consider. Policy 51 refers to residual risk, which is the risk that remains after protection works are put in place. Stopbanks, seawalls and revetments and other engineered protection works can create a sense of security and encourage further development. In turn, this increases the extent and value of assets that could be damaged if the protection works fail or an extreme event exceeds the structural design parameters. Policy 51(g) will cease to have effect once policy 29 has been given effect to in the relevant district plan. The term areas at high risk refers to those areas potentially affected by natural hazard events that are likely to cause moderate to high levels of damage to the subdivision or development, including the land on which it is situated. It applies to areas that face a credible probability of experiencing significant adverse impacts in a hazard event – such as such as fault		

	~~rupture zones, beaches that experience cyclical or long term erosion, failure prone hill slopes, or areas that are subject to repeated flooding.~~ ~~Policy 51(i) requires that particular regard to be given, in identified flood hazard areas, to the need to locate floor levels above the expected level of a 1 in 100 year flood or 1% annual exceedance probability (AEP), to minimise damages. It also recognises that access routes should be located above this level, to allow evacuation or emergency services access to and from a site. The clause uses the 1% annual exceedance probability as a minimum standard, allowing for the possibility that it may need to be higher in certain areas, depending on the level of risk.~~ ~~To promote more resilient communities that are better prepared for natural hazards, including climate change impacts, there is a need to support the Civil Defence Emergency Management principles of hazards and/or risk reduction, readiness, response and recovery.~~ ~~Reduction is concerned with minimising the adverse impacts from natural hazards through sound planning and management. Readiness is about preparing for hazard events before they occur and involves local authorities, civil defence emergency management and the community. An important way to achieve this is through public education and by~~		

	~~providing information and advice in order to raise awareness of natural hazard issues. Response and recovery are the important functions carried out by local authorities and civil defence emergency management during and after a civil defence emergency.~~ ~~The policy recognises the need to involve the community in preparing for natural hazards. If people are prepared and able to cope, the impacts from a natural hazard event are effectively reduced.~~		
Policy 52 FW **[Consideration]**	**Policy 52: Minimising adverse effects of hazard mitigation measures – consideration** When considering an application for a resource consent, notice of requirement, or a change, variation or review of a district or regional plan, for hazard mitigation measures, particular regard shall be given to: ~~(a) the need for structural protection works or hard engineering methods;~~ (b) whether non-structural, *soft engineering*, *green infrastructure*, room for the river or Mātauranga Māori options provide a more appropriate or suitably innovative solution; (c) avoiding structural protection works or *hard engineering*	**Policy 52: *Minimising* adverse effects of hazard mitigation measures – consideration** When considering an application for a resource consent, notice of requirement, or a change, variation or review of a district or regional plan, for hazard mitigation measures, particular regard shall be given to: ~~(a) the need for structural protection works or hard engineering methods;~~ (b) whether ~~non-structural~~ *nature-based solutions*, Mātauranga Māori ~~*green infrastructure, room for the river*~~ or *soft engineering* options provide a more appropriate ~~or suitably innovative~~ solution; (c) avoiding structural protection works or *hard engineering* methods unless it is necessary to protect existing development, *regionally significant infrastructure* or property from	**Policy 52: Avoiding or *Minimising* adverse effects of hazard mitigation measures – consideration** When considering an application for a resource consent, notice of requirement, or a change, variation or review of a district or regional plan, for hazard mitigation measures, particular regard shall be given to: ~~(a) the need for structural protection works or hard engineering methods;~~ (b) whether ~~non-structural~~ *nature-based solutions*, Mātauranga Māori ~~*green infrastructure, room for the river*~~ or *soft engineering* options provide a more appropriate ~~or suitably innovative~~ solution; (c) avoiding ~~structural protection works or~~ *hard engineering* methods unless it is necessary to protect existing development, *regionally significant*

		methods unless it is necessary to protect existing development, *regionally significant infrastructure* or property from unacceptable risk and the works form part of a long-term hazard management strategy that represents the best practicable option for the future;	unacceptable risk and the works form part of a long-term hazard management strategy agreed to by relevant authorities that represents the best practicable option for the future;	*infrastructure* or property from unacceptable risk and the works form part of a ~~long-term~~ hazard risk management strategy ~~agreed to by relevant authorities~~ that represents the best practicable option for the future;
	(d)	the long-term viability of maintaining the structural protection works with particular regard to how climate change may increase the risk over time;	(d) the long-term viability of maintaining the structural protection works with particular regard to how climate change may increase the risk over time;	(d) the long-term viability of maintaining ~~the structural protection works~~ a hard engineering approach with particular regard to how climate change may increase the risk from natural hazards over time;
	(e)	adverse effects on *Te Mana o te Wai*, mahinga kai, *Te Rito o te Harakeke*, natural processes, or the local indigenous ecosystem and biodiversity;	(e) adverse effects on *Te Mana o te Wai*, mahinga kai, *Te Rito o te Harakeke*, natural processes, or ~~the local~~ indigenous ecosystems and biodiversity;	(e) adverse effects on *Te Mana o te Wai*, mahinga kai, ~~*Te Rito o te Harakeke*~~, taonga species, natural processes, or ~~the local~~ indigenous ecosystems and biodiversity;
	(f)	sites of significance to mana/tangata whenua identified in a planning document recognised by an iwi authority and lodged with a local authority or scheduled in a city, district or regional plan;	(f) sites of significance to mana whenua/tangata whenua identified in a planning document recognised by an iwi authority and lodged with a local authority or scheduled in a ~~city~~, district or regional plan;	(f) sites of significance to mana whenua/tangata whenua including those identified in a planning document recognised by an iwi authority and lodged with a local authority or scheduled in a ~~city~~, district or regional plan;
	(g)	a no more than minor increase in risk to nearby areas as a result of changes to natural processes from the hazard mitigation works;	(g) a no more than minor increase in risk to nearby areas as a result of changes to natural processes from the hazard mitigation works;	(g) ~~a no more than minor increase in~~ the change in natural hazard risk to nearby areas as a result of changes to natural processes from the hazard mitigation works;
	(h)	the cumulative effects of isolated structural protection works;	(h) the cumulative effects of isolated structural protection works;	(h) the cumulative effects of isolated *hard engineering* ~~structural protection~~ works;
			(i) any residual risk remaining after mitigation works are in place,	(i) any residual risk remaining after mitigation works are in place,
			so that they *minimise* ~~reduce~~ and do not increase the risks from ~~of~~ natural hazards.	
			Explanation	

	(i) any residual risk remaining after mitigation works are in place, so that they *minimise* ~~reduce and do not increase~~ the risks from ~~of~~ natural hazards. **Explanation** Policy 52 recognises that the effects of hard protection structures can have adverse effects on the environment, increase the risks from natural hazards over time and transfer the risks to nearby areas. It provides direction to consider lower impact methods of hazard mitigation such as non-structural, soft engineering, *green infrastructure*, room for the river or Mātauranga Māori options, that may be more appropriate providing they can suitably mitigate the hazard. ~~Objective 19 seeks to reduce the risks and consequences from natural hazards, while Objective 20 aims to ensure activities, including hazard mitigation measures, do not increase the risk and consequences from natural hazards. Policy 52 promotes these objectives.~~ ~~Having established there is a need for protection works, non-structural and soft engineering methods should be the first option for hazard mitigation. Soft engineering methods may include, for example; hazard avoidance or controlled activity zones; setback or buffer distances; managed retreat or land retirement; a 'do nothing' policy; restoration projects for~~	Policy 52 recognises that the effects of *hard engineering* protection structures can have adverse effects on the environment, increase the risks from natural hazards over time and transfer the risks to nearby areas. It provides direction to consider lower impact methods of hazard mitigation such as ~~non-structural~~, *soft engineering*, *nature-based solutions* ~~*green infrastructure*, room for the river~~ or Mātauranga Māori options, that may be more appropriate, providing they can suitably mitigate the hazard.	so that they *minimise* ~~reduce~~ ~~and~~ or do not increase the risks from ~~of~~ natural hazards. **Explanation** Policy 52 recognises that the effects of *hard engineering* protection structures can have adverse effects on the environment, increase the risks from natural hazards over time and transfer the risks to nearby areas. It provides direction to consider lower impact methods of hazard mitigation such as ~~non-structural~~, *soft engineering*, *nature-based solutions* ~~*green infrastructure*, room for the river~~ or Mātauranga Māori options, that may be more appropriate, providing they can suitably mitigate the hazard.

	~~wetlands, dunes or hillslopes prone to flooding, slipping or erosion.~~ ~~Activities such as river bed gravel extraction which may assist in the avoidance or mitigation of natural hazards are also a consideration under this policy.~~ ~~Structural measures or hard engineering methods can have significant environmental effects and should be considered as the least desirable option for natural hazard control. Where there is an unacceptable risk to development or property, there may be a place for structural measures or hard engineering methods, if they are part of a long-term hazard management strategy that includes other measures. Policy 51 will need to be considered alongside policy 52(c) when deciding whether a development faces an unacceptable risk or not.~~ ~~The risk that remains after protection works are put in place is known as the residual risk. Stopbanks, seawalls, and revetments and other engineered protection works can create a sense of security and encourage further development. In turn, this increases the extent and value of assets that could be damaged if the protection works fail or an extreme event exceeds the structural design parameters.~~		
Policy CC.16 [Non-regulatory]	**Policy CC.16: Climate change adaptation strategies, plans and implementation programmes – non-regulatory**	**Policy CC.16: Climate change adaptation strategies, plans and implementation programmes – non-regulatory**	**Policy CC.16: Climate change adaptation strategies, plans and implementation programmes – non-regulatory**

	Regional, city and district councils should, under the Local Government Act 2002, partner with mana whenua / tangata whenua and engage local communities in a decision-making process to develop and implement strategic *climate change adaptation* plans that map out management options over short, medium and long term timeframes, using a range of tools and methods including, but not limited to: (a) Te Ao Māori and Mātauranga Māori approaches; (b) Dynamic adaptive planning pathways or similar adaptive planning approaches; (c) City, district or regional plan objectives, policies and rules that address subdivision, use and development for areas impacted by climate change and sea level rise; (d) Options for managed retreat or relocation; (e) A consideration of *Te Mana o te Wai* and *Te Rito o te Harakeke*; (f) Hazard mitigation options including soft engineering, *green infrastructure* or room for the river, and methods to reduce the risks from natural hazards exacerbated by climate change and sea level rise; and (g) Equitable funding options required to implement the programme.	Regional, city and district councils should~~, under the Local Government Act 2002,~~ partner with mana whenua / tangata whenua and engage local communities in a decision-making process to develop and implement strategic *climate change adaptation* plans that map out management options over short, medium and long term timeframes, using a range of tools and methods including, but not limited to: (a) Te Ao Māori and Mātauranga Māori approaches; (b) Dynamic adaptive planning pathways or similar adaptive planning approaches; (c) ~~City, d~~District or regional plan objectives, policies and rules that address subdivision, use and development for areas impacted by climate change and sea level rise; (d) Options for managed retreat or relocation; (e) A consideration of *Te Mana o te Wai* and *Te Rito o te Harakeke*; (f) Hazard mitigation options including soft engineering, ~~*green infrastructure* or room for the river~~ *nature-based solutions* and methods to reduce the risks from natural hazards exacerbated by climate change and sea level rise; and (g) Equitable funding options required to implement the programme. **Explanation** Policy CC.16 provides a range of options for development and implementation of	Regional, city and district councils should~~, under the Local Government Act 2002,~~ partner with mana whenua / tangata whenua and engage local communities in a decision-making process to develop and implement strategic *climate change adaptation* plans that map out management options over short, medium and long term timeframes, using a range of tools and methods that may include ~~including~~, but are not limited to: (a) Te Ao Māori and Mātauranga Māori approaches; (b) Dynamic adaptive planning pathways or similar adaptive planning approaches; (c) ~~City, d~~District or regional plan objectives, policies and rules that address subdivision, use and development for areas impacted by climate change and sea level rise; (d) Options for managed retreat or relocation; (e) A consideration of *Te Mana o te Wai* ~~and *Te Rito o te Harakeke*~~; (f) Hazard mitigation options including soft engineering, ~~*green infrastructure* or room for the river~~ *nature-based solutions* and methods to reduce the risks from natural hazards exacerbated by climate change and sea level rise; and (g) Equitable funding options required to implement the programme. **Explanation** Policy CC.16 provides a range of options for development and implementation of adaptation strategies or plans to suit a particular programme or local circumstances. In some instances, the

	Explanation Policy CC.16 provides a range of options for development and implementation of adaptation strategies or plans to suit a particular programme or local circumstances. In some instances, the outcomes may require implementation as objectives, policies, and rules in regional or district plans, but this is not expected to be a requirement.	adaptation strategies or plans to suit a particular programme or local circumstances. In some instances, the outcomes may require implementation as objectives, policies, and rules in regional or district plans, but this is not expected to be a requirement.	outcomes may require implementation as objectives, policies, and rules in regional or district plans, but this is not expected to be a requirement. This policy should be read in conjunction with Policy CC.15 and Method CC.8 that address rural resilience to climate change, food and water security.
Policy CC.17 [Non-regulatory]	**Policy CC.17: Iwi climate change adaptation plans – non-regulatory** Regional council will assist mana whenua / tangata whenua in the development of iwi *climate change adaptation* plans to manage impacts that may affect Māori relationships with their whenua, tikanga and kaupapa Māori, sites of significance, wai Māori and wai tai values, mahinga kai, wāhi tapu and other taonga. **Explanation** Policy CC.17 recognises that climate change will disproportionately affect Māori, especially as a lot of Māori land is located in hazard prone areas near rivers and the coast. This policy directs the regional council to assist mana whenua / tangata whenua, where appropriate, with the development of iwi-led *climate change adaptation* plans.	Retain as notified	No changes from S42A report

Method 14	**Information about natural hazard and climate change effects** Undertake research, prepare and disseminate information about natural hazards and climate change effects in order to: (a) guide local authority planning and decision-making; and (b) raise awareness and understanding of natural hazards *Implementation: Wellington Regional Council*, city and district councils and Civil Defence Emergency Management Group*	**Information about natural hazard and climate change effects** Undertake research, prepare and disseminate information about natural hazards and climate change effects in order to: (a) guide local authority planning and decision-making; and (b) raise awareness and understanding of natural hazards and climate change *Implementation: Wellington Regional Council*, city and district councils and Civil Defence Emergency Management Group*	No changes from S42A report
Method 22	**Integrated hazard risk management and climate change adaptation planning ~~Information about areas at high risk from natural hazards~~** Integrate hazard risk management and *climate change adaptation* planning in the Wellington region by: (a) developing non-statutory strategies, where appropriate, for integrating hazard risk management and *climate change adaptation* approaches between local authorities in the region;	**Integrated hazard risk management and climate change adaptation planning ~~Information about areas at high risk from natural hazards~~** Integrate hazard risk management and *climate change adaptation* planning in the Wellington region by: (a) developing non-statutory strategies, where appropriate, for integrating hazard risk management and *climate change adaptation* approaches between local authorities in the region; (b) developing consistency in natural hazard provisions in ~~city~~, district and regional plans;	**Integrated hazard risk management and climate change adaptation planning ~~Information about areas at high risk from natural hazards~~** Integrate hazard risk management and *climate change adaptation* planning in the Wellington region by: (a) developing non-statutory strategies, where appropriate, for integrating hazard risk management and *climate change adaptation* approaches between local authorities in the region; (b) supporting the development of ~~developing~~ consistency in natural hazard provisions in ~~city~~, district and regional plans;

	(b) developing consistency in natural hazard provisions in city, district and regional plans; (c) assisting mana/tangata whenua in the development of iwi *climate change adaptation* plans. ~~Prepare and disseminate information about how to identify areas at high risk from natural hazards, as relevant to the development of hazard management strategies to guide decision-making.~~ *Implementation: Wellington Regional Council* and city and district councils*	(c) assisting mana whenua/tangata whenua in the development of iwi *climate change adaptation* plans. ~~Prepare and disseminate information about how to identify areas at high risk from natural hazards, as relevant to the development of hazard management strategies to guide decision-making.~~ *Implementation: Wellington Regional Council* and city and district councils*	(c) assisting mana whenua/tangata whenua in the development of iwi *climate change adaptation* plans. (d) ~~Prepare and disseminate~~ Preparing and disseminating information about classifying risks from natural hazards as low, medium and high to ensure regional consistency. ~~Prepare and disseminate information about how to identify areas at high risk from natural hazards, as relevant to the development of hazard management strategies to guide decision-making.~~ *Implementation: Wellington Regional Council* and city and district councils*
Method 23	~~**Information about natural features to protect property from natural hazards**~~ ~~Prepare and disseminate information about how to identify features in the natural environment that can offer natural protection to property from the effects of erosion and inundation.~~ ~~*Implementation: Wellington Regional Council * and city and district councils*~~	Retain as notified	No changes from S42A report
AER 1	1. Regional and district plans: a) identify areas at high risk from natural hazards; and	1. Regional and district plans have: (a) ~~identify areas at high risk from natural hazards;~~ used a risk-based approach to assess hazards and risks to new or existing subdivision, use and	No changes from S42A report

	b) contain policies and rules to avoid subdivision and inappropriate development in those areas. 2. There is no new subdivision and inappropriate development in areas at high risk from natural hazards	development from natural hazard and climate change impacts over at least a 100 year planning horizon; and (b) ~~contain policies and rules to avoid subdivision and inappropriate development in those areas~~. included hazard overlays, objectives, polices and rules to manage or avoid new or existing subdivision, use and development in those areas.	
AER 2	1. There is no increase in the risk from natural hazards as a result of subdivision, use or development (including mitigation works). 2. Where hazard mitigation and climate change measures are employed, there is a greater number and range of soft engineered measures used, that achieve integrated management and broad environmental outcomes.	1. There is no increase in the risk from natural hazards as a result of subdivision, use or development (including mitigation works). 2. Where hazard ~~mitigation~~ and climate change mitigation measures are employed, there is a greater number and range of ~~soft engineered measures~~ *nature-based solutions* used, that achieve integrated management and broad environmental outcomes.	No changes from S42A report
AER 3	1. Over 75 per cent of the community surveyed has an understanding of the consequences from local natural hazards. 2. Over 75 per cent of the community surveyed is prepared for natural hazard events.	Retain as notified	No changes from S42A report

Hazard sensitive activity **[Definition]**	**Hazard sensitive activity** Means any building that contains one or more of the following activities: • community facility • early childhood centre • educational facility • emergency service facilities • hazardous facilities and major hazardous facilities • healthcare activity • kōhanga reo • marae • residential activity • retirement village • research activities • visitor accommodation	**Hazard sensitive activity** Means any building that contains one or more of the following activities: • community facility • early childhood centre • educational facility • emergency service facilities • ~~hazardous facilities and~~ *major hazard~~ous~~ facility~~ies~~* • healthcare activity • kōhanga reo • marae • residential activity • retirement village • research activities • visitor accommodation	No changes from S42A report
Major hazard facility **[Definition]**		**Major hazard facility** Has the same meaning as the Health and Safety at Work (Major Hazard Facilities) Regulations 2016 - means a facility that WorkSafe has designated as a lower tier major hazard facility or an upper tier major hazard facility under regulation 19 or 20.	No changes from S42A report
Minimise **[Definition]**		Reduce to the smallest amount reasonably practicable. Minimised, minimising and minimisation have the corresponding meaning."	No changes from S42A report
Nature-based solutions **[Definition]**	**Nature-based solutions** FW Actions to protect, enhance, or restore natural ecosystems, and the incorporation of natural elements into built environments, to reduce greenhouse gas emissions and/or strengthen the	**Nature-based solutions** FW Actions to protect, enhance, or restore natural ecosystems, and the incorporation of natural elements into built environments, to reduce greenhouse gas emissions and/or strengthen the resilience of humans, indigenous	

	resilience of humans, indigenous biodiversity and the natural environment to the effects of climate change. Examples include: *Reducing greenhouse gas emissions (climate change mitigation):* • planting forests to sequester carbon • protecting peatland to retain carbon stores *Increasing resilience (climate change adaptation):* *(a) providing resilience for people* • planting street trees to provide relief from high temperatures • restoring coastal dunelands to provide increased resilience to the damaging effects of storms linked to sea level rise • leaving space for rivers to undertake their natural movement and accommodate increased floodwaters • the use of water sensitive urban design, such as rain gardens to reduce stormwater runoff in urban areas	biodiversity and the natural environment to the effects of climate change. Examples include: *Reducing greenhouse gas emissions (climate change mitigation):* • planting forests to sequester carbon • protecting peatland to retain carbon stores *Increasing resilience (climate change adaptation):* *(c) providing resilience for people* • planting street trees to provide relief from high temperatures • restoring coastal dunelands to provide increased resilience to the damaging effects of storms linked to sea level rise • leaving space for rivers to undertake their natural movement and accommodate increased floodwaters (also known as 'room for the river') • the use of water sensitive urban design, such as rain gardens to reduce stormwater runoff in urban areas *(d) providing resilience for ecosystems and species* • restoring indigenous forest to a healthy state to increase its resilience to increased climate extremes	

	(b) *providing resilience for ecosystems and species* • restoring indigenous forest to a healthy state to increase its resilience to increased climate extremes leaving space for estuarine ecosystems, such as salt marshes, to retreat inland in response to sea level rise.	leaving space for estuarine ecosystems, such as salt marshes, to retreat inland in response to sea level rise.	
Hazard risk management strategy **[Definition]**			Hazard risk management strategy: A strategic approach for the management of the risks from natural hazards to minimise or reduce the overall risk of social, environmental and economic harm and adverse effects from natural hazards. It includes some or all of the following elements; hazard and hazard risk identification, impact assessment, potential mitigation works (costs/impacts/maintenance), assessment of environmental effects, assessment of alternate options, cost-benefit analysis, budget allocation; community engagement and implementation plan. The scale of a hazard risk management strategy should be commensurate to the size of the proposed development or activity.